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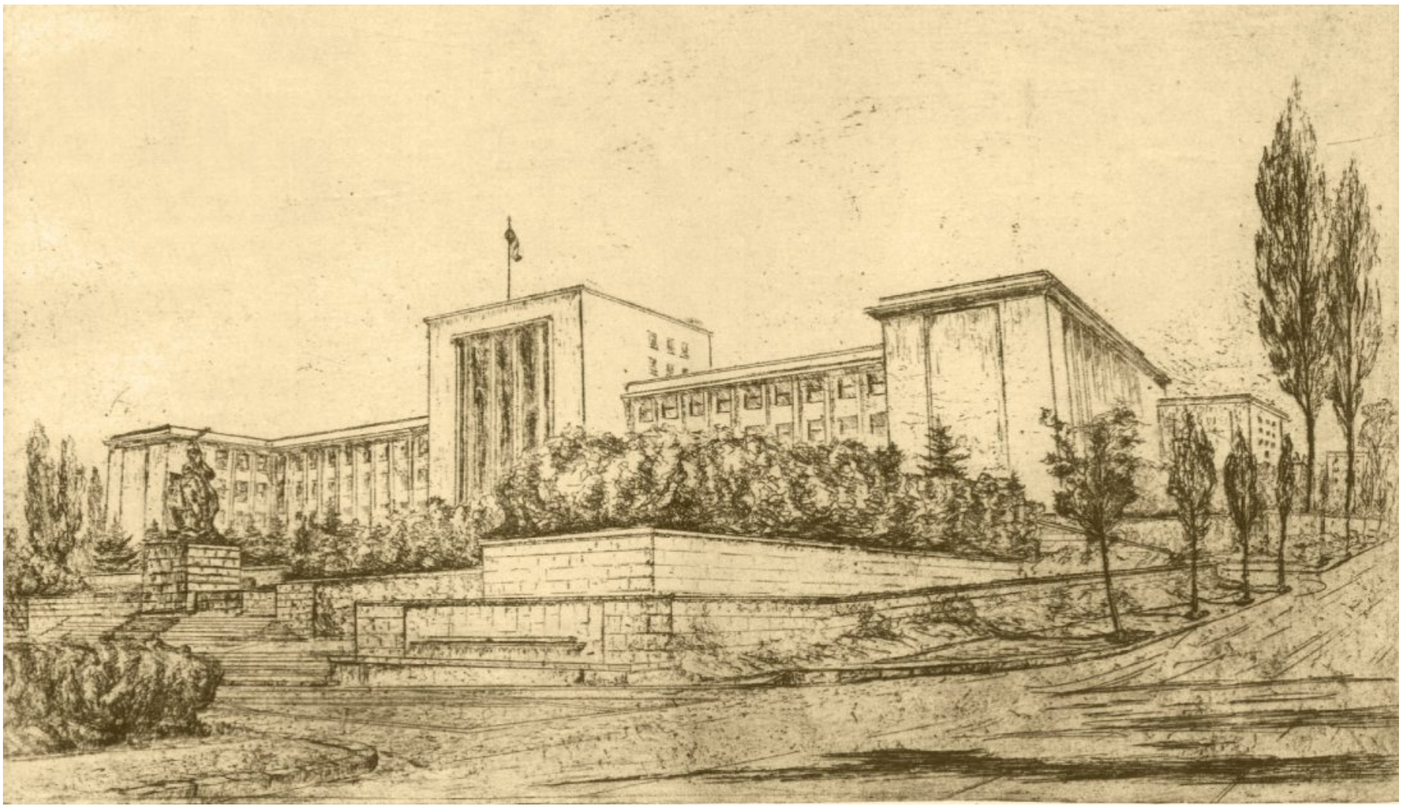

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CONTENT

MOTIVATION AND SATISFACTION IN THE NATIONAL SECURITY ENVIRONMENT

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This research has studied the relation between motivation and job satisfaction in a national security organization. Two questionnaires for motivation and professional satisfaction were used as assessment tools. The research group consisted of 80 militaries, respectively 80 civilian subjects representing the control group. Several types of relations were studied, considered relevant for the study objectives, such as: the relation between work motivation and management satisfaction and interpersonal relationships within the team, with respect to work organization and functional communication; the relation between the motivation for accomplishment through work and the degree of salary satisfaction, rewards and career advancement opportunities; the relation between the levels of general satisfaction and the motivation for accomplishment through work; the relation between the higher levels of satisfaction with work organization and functional communication, respectively with management and interpersonal relationships of the military group, compared to the control group of civilian employees. The results of this research have some practical value, advancing the possibility that some conclusions can be assimilated in the human resources policies of national security institutions, in order to optimize staff motivation and maximize performance.

Keywords: motivational dominants; professional satisfaction; human resources; national security.

The global theoretical study of the relationship between motivation and professional satisfaction is not, at this stage of knowledge, a matter of novelty. What are endeavouring, through this study, is to highlight the way in which the motivation-satisfaction relation works concretely in one of the of the national security structures, in order to streamline the professional training and preparation process.

Clear understanding of all research presented in this study involves, first of all, a general problem of conceptual delimitation on motivation and satisfaction in the military profession and, secondly, a problem of methodology, highlighting the specifics and particularities between motivation and satisfaction in the national security system.

Classical theories of motivation are based on personal needs analysis[1,2,3,4], equity theory[5], expectation theory[6], interactionist theories, respectively the force field theory[7] and the individual-environment relational theory [8,9].

In a very general definition, motivation is a ”great category of internal determinations of behaviours, psychological activities, and subjective states, which explains and justifies a person’s action” (larousse.fr/dictionnaire/).

From the perspective of the human needs’ theory pyramidally hierarchic (physiological, security, social, self-esteem and self-realization), these needs are in themselves motivation sources, due to the fact that they require to be satisfied, and when a need has been met, the need for higher level will become a new source of motivation[10,11,12]. Criticized[13,14,15] or revised[16,17,18,19] the human needs’ theory remains a benchmark in explaining the relation between work motivation, satisfaction, and performance. In the same sense, it is estimated that there is a constellation of factors determinants of satisfaction, some of which are largely related to professional activity (career, promotion, job content; responsibility; performance; feeling of power, etc.) and are considered motor factors or intrinsic, and others related to the work environment (personnel policy, working conditions, job security, interpersonal relationships, salary and rewards, social benefits, etc.), are considered hygiene factors[20]. Over time, studies have been conducted that have either refuted[21], or confirmed[22,23] Herzberg’s assertions. In another approach it is

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considered that the main agents of motivation are represented by: the need for self-fulfilment through success and self-surpassing; the need for power through the realisation of the desire to influence and to lead others; the need for affiliation or association by establishing, maintaining and strengthening a positive emotional relationship with others[24]. A later study demonstrated the importance of motivation, incentive value and probability of success for predicting the achievement of performance and of the frequency the affiliation acts are performed. Both theory and research lead to the following conclusions: the force of motivation, especially in relation to the force of other personal factors, is the most important determinant of the frequency of the operative act; the value of the incentive is the most important determinant of cognition-based choices; driving force and the probability of success is combined multiplicatively to predict the strength or the probability of the response; all determinants and the highlighted interaction represent collectively over 75% of the variation of operators, such as frequency of the affiliated acts. The rest of the variation is easily attributable to environmental opportunities[25]. Survival needs[26] are identified (material and physiological needs), relational needs (needs of esteem and belonging) and needs development or growth (self-fulfillment, self-realization, taking responsibility) expressed synthetically by the acronym ERG. An applied study of this theory highlighted the causal relationship between meeting human needs, performance at work and individual personality differences (self-esteem) both for managers, and for employees[27]. Another study, conducted in the military, proposed three new concepts to be included in the relation category (respect from the organization, respect for the supervisor, the need for personal freedom). For this purpose, a questionnaire, on the concepts of existing and proposed needs, was created and administered on a number of 630 soldiers of 11 types of organizational structures in the US naval forces. The results were subjected to factor analysis and regression analysis which confirmed both empirical validity, as well as the predictive power of the concept of organizational respect. At the same time, the statistical analysis of the results rejected the other two proposed concepts but provided unexpected support for the discussion of two new relation concepts[28]. The literature offers numerous other studies regarding the relation between the components reflected by the ERG theory[29,30,31].

From the perspective of the equity theory, it is stated that, always, people compare the efforts made and the rewards obtained at work with the efforts and results of another relevant person or group. This comparison emphasizes the quality of the exchange, starting from the premise that the proof of fairness contributes to job satisfaction, while unfairness is perceived as inequity that generates job dissatisfaction[32,33,34,35].

From the expectations' theory perspective, it is considered that any motivated behaviour is the product of certain key variables, such as: expectation or anticipation, a foreseeable outcome as a result of an action; instrumentality or the ability to resolve; valence or attractiveness and the individual importance of work[36]. Subsequent studies have revealed the importance of motivated behaviour and of its determining factors [37,38,39,40,41,42].

The described perspectives (needs theory, expectations theory, equity theory) have one thing in common, that they mainly focus on the individual.

The literature shows that there are other perspectives centered on the idea that motivation is born when the individual meets their environment. A perspective is provided by field theory, which considers the motivation of the individual to be generated by the attractions or barriers present in the environment where their activity takes place[43]. The fundamental idea is that this theory can be a tool for the integration of various divergent physiological, psychological, and sociological aspects on an interdependent basis, explaining social behavior as the result of the interaction between a structure of a total situation and the distribution of all the forces present in its field[44]. The force field theory has found a wide applicability in various research areas, such as organizational, economic, educational, sociological, psychological, etc.[45,46,47,48] Another perspective considers that the basic unit to be studied is neither the individual nor the environment, but the interaction between the individual and the environment, which generates the real motivations[49]. The conceptual model of human motivation is presented in terms of behavioral, interactional and relational, where motivation is the result of cognitive processing in behavioral action plans of dynamics or individual needs[50]. This model of dynamic behavior achieved in three interactional phases (motivation, planning, action) aroused great interest for disciplines such as sociology, education, law, economics, psychiatry, clinical psychology, medicine, philosophy, sports and others[51,52,53].

Given these theories of the interaction between motivation, satisfaction and performance, with their inherent advantages and limitations, we aim to study how they can be applied, in their essence, to the specifics of the military organization environment.

Objectives

The purpose of this research is to investigate the relation between motivation and professional satisfaction dimensions in the specific military structures of the national security system[54].

The research objectives are constrained by three obvious areas of professional and scientific concern, respectively theoretical, methodological, and practical-applicative [55].

The theoretical objective was to test some hypotheses resulting from the postulates on the relation between motivation and satisfaction advanced by some of the field specific theories.

The methodological objective aimed at the concrete approach assumed by any empirical investigation in the field of organizational psychology, including randomization groups of subjects, the choice and application of the research tools consecrated from the specialized literature, the explanation of the instructions and experimenting in direct contact with subjects on the field, creating thus, an adequate research design and statistical processing.

The practical-applicative objective advanced the possibility that some of the conclusions of the research can be transmitted and used in human resources policies of the national security system organizations, in order to increase the level of motivation and professional satisfaction of the staff and, implicitly, their performance.

Method

Hypotheses

The research aimed at testing in two groups – a research group (military) and a control group (civilians) – following the basic assumptions of the literature on the relations between motivation and satisfaction, the following hypotheses being formulated:

- H_1 – The more satisfied they are with the management and the interpersonal relationships in group, respectively by the manner of work organization and the functional communication, the military have a higher motivation of accomplishment through work.
- H_2 – Militaries with a high level of salary satisfaction, rewards and career advancement opportunities show a high, directly proportional level for motivation of accomplishment through work.
- H_3 – The military personnel with a high level of general satisfaction have a high, directly proportional level for motivation of accomplishment through work.
- H_4 – The military personnel have higher levels of satisfaction with work organization and functional communication, respectively towards the management and interpersonal relationships in the team, compared to employees in civil organizations.

Participants

The investigated group included 160 subjects, grouped in two numerically equal sublots, the first representing the research group formed by the military (G 1), and the second being the control group consisting of civilians (G 2). To establish the subjects, we used a random selection (convenience sample), so the two groups, on which we have applied the research tools, cannot be considered representative, and the results cannot be generalized for the entire personnel in national security environment, nor for the civilian population.

For G 1, consisting of N = 80 subjects belonging to a military structure, the statistical analysis of the central trend indicators highlighted the following results: mean age 38.07 years (min. = 25, max. = 50, standard deviation =6.26); 75 men (93.8%) and 5 women (6.2%); 53 (66.3%) of the subjects are high school graduates, one (1.3%) graduated post-secondary courses, and 26 (32.5%) hold university degrees, but do not hold positions or ranks corresponding to the obtained undergraduate level, forming a significant socio-professional layer of the military overqualified in relation to the work they currently carry out. From G1, 54 subjects (67.5%) occupy positions and ranks at the level corresponding to their graduated studies.

Group G 2 included 80 civilian subjects, and the statistical analysis of the central indicators trend showed that: the average age was 41.08 years (min. = 25, max. = 58, standard deviation = 7.74); 47 (58.8%) men and 33 (41.3%) women; 22 (27.5%) of the subjects are high school graduates, 12 (15%) graduated post-secondary courses, and 46 (57.5%) have university degrees. In group G 2, 43.8% of the subjects occupy positions and ranks below their training level, attested by the obtained diplomas, 1.2% declare the occupation well below the level of training, 52.5% occupy positions in accordance with the level of training, and 2.5% declare a socio-professional status superior to their training.

Instruments

To achieve the empirical undertaking of collecting the data necessary for testing the research hypotheses, we chose two standardized tools used at organizational evaluations in companies and institutions: the "Motivational Dominant" – DM questionnaire, and the "Professional Satisfaction" – SP questionnaire [56].

The DM questionnaire comprises of 32 items with direct scoring, representing statements about various emotions, feelings, attitudes and organizational behaviors, correlative to professional motivation, grouped from the perspective of four factors: leadership, expertise, relations and subsistence [57]. Referring to the validity of the instrument, the author states that, on a sample of 320 subjects, the initial study obtained an internal consistency α = 0.941 at the level of the questionnaire as a whole and the following internal consistencies by factors: α = 0.881 (leadership), α = 0.902 (expertise), α = 0.906 (relationship) and α = 0.802 (subsistence).

The SP questionnaire includes 32 items, out of which 18 with direct scoring and 14 with reverse scoring, representing statements about various emotions, feelings, organizational attitudes and behaviors related to professional satisfaction, grouped from the perspective of three specific and one cumulative factor, calculated based on their average, representing the overall satisfaction: remuneration and promotion, leadership and interpersonal relationships, organization and communication, respectively general satisfaction (Constantin, 2004, p. 285). The author states that, after validation on a sample of 320 subjects, an internal consistency α = 0.872 was obtained on the whole questionnaire and the following internal consistencies on factors: α = 0.820 (remuneration and promotion), α = 0.760 (management and interpersonal relationships) and α = 0.738 (organization and communication).

Demographic data were collected for the two instruments, as well age, sex, education and profession or occupation. Because the two instruments had different measurement scales, the DM questionnaire being provided with a seven-step scale, and the SP questionnaire with a six-step scale, was chosen to unify the quantification of responses method, by adopting a common Lickert-type scale in five steps, with the following meanings: 1 – Never agree, 2 – Very rarely agree, 3 – Sometimes agree, 4 – Very often agree, 5 – Always agree.

Procedure

The research was designed as a quantitative, correlational, and differential study, aiming at testing the hypotheses stated above.

The research design defined three classes of variables, as follows: motivational variables, job satisfaction variables and socio-demographic factors. At the same time, they were grouped into two other categories: dependent variables (motivational and job satisfaction) and independent variables (socio-demographic). The research tools were selected so that the variables involved in the hypotheses to be identified in the factors provided by the questionnaires. Therefore, the motivational variables were assessed with the DM questionnaire, and the job satisfaction variables were assessed with the SP questionnaire.

In accordance with the instructions of the DM questionnaire, the motivational factors, respectively motivational factors variables were defined, as follows:

- need for power: the desire to influence others, the propensity for leadership functions and decision-making independence – the leadership factor (M_con);
- needs of accomplishment through work: the desire to excel in professional activities, to be considered a good professional – the expertise factor (M_exp);

• affiliation needs: the desire to establish and cultivate friendships within the group, to work with pleasure in a stenic and supportive environment, the propensity for harmonious relationships – the relational factor (M_rel);

• basic needs of existence: concern for the fundamental needs of existence, such as rest, stability, money, food, security - the subsistence factor (M_sub).

Similarly, the variables of job satisfaction, respectively the factors of professional satisfaction, were defined in accordance with the instructions of the SP questionnaire, as follows:

• satisfaction with salaries, rewards, and career advancement opportunities: the degree of satisfaction of the staff regarding work recognition provided through pay, bonuses or other financial incentives, possibilities of promotion or recognition of merit – the remuneration and promotion factor (Sat_rp);

• satisfaction with leadership and interpersonal relationships within the team: degree of staff satisfaction towards an optimal psychosocial climate as well as regarding a harmonious working relation with colleagues and superiors – the factor of communication and interpersonal relations (Sat_cr);

• satisfaction with work organization and functional communication: the degree of satisfaction on how work is organized and carried out through task definition, effort efficiency, effective communication, feedback – the organization and communication factor (Sat_oc);

• general satisfaction: the degree of satisfaction of the staff with work in general, in terms of organization, rewards existence and level, the quality of the psychosocial climate – the general satisfaction factor (Sat_ge).

Regarding the demographic variables, we specify that the age was entered in the database as an absolute value, and the other variables were coded in numerical expressions, for statistical processing, as follows:

• sex/gender was transformed into a binary variable, having code 1 for men, respectively code 2 for women;

• the following codes have been assigned to the training level: 1 - elementary studies, 2 - middle school, 3 - high school, 4 - post-high school and 5 - University studies;

• the adequacy of the occupation at the level of training was coded with – 2 - much below level of education, – 1 - below the level of education, 0 - at the level of education, 1 – above education level and 2 - well above education level.

The administration of the questionnaires was carried out with the assurance of anonymity and guarantee the confidentiality of both the answers and the demographic and socio-professional data.

Results

Descriptive analysis of motivational variables

Table no. 1 presents the descriptive statistics of the motivational variables, for the two research groups.

It is observed that the military in G 1 have higher averages and higher homogeneity of responses (smaller standard deviations) compared to civilians in G 2, except for the subsistence factor, respectively the motivation for subsistence (M_sub), where the situation is reversed.

In G1, the difference between the motivational factor and the highest average, that is, the expertise factor, represented by the needs of accomplishment through work (M_exp = 4.60) and the motivational factor with the lowest average, i.e., the subsistence factor,focused on the basic needs of existence (M_sub = 4.34) is Δ 1 = 0.26.

In G2, the difference between the motivational factor and the average is the largest, represented by the affiliation needs (M_rel = 4.46) and the motivational factor with the lowest average, represented by the power needs (M_con = 3.93), is of Δ 2 = 0.53.

In G1, the highest motivational homogeneity is recorded at the level of the expertise factor, of the needs for achievement through work, where the deviation SD standard = 0.50, and the highest heterogeneity is recorded at the level driving factor, deriving from the power needs, where the standard deviation is SD = 0.56.

At the same time, in G2, the highest homogeneity is recorded at the level of the subsistence factor, of the subsistence needs, where the standard deviation is SD = 0.51, and the highest heterogeneity is identified by the driving factor, deriving from the power needs, where the standard deviation is SD = 0.69.

Comparing the results of the driving factor, a higher homogeneity can be seen for group G1 (military) in relation to group G2 (civilians).

Table no. 1

DESCRIPTIVE STATISTICS OF THE MOTIVATIONAL VARIABLES, FOR THE TWO RESEARCH GROUPS

Group			M_con	M_exp	M_rel	M_sub
G_1	N	Valid	80	80	80	80
		Missing	0	0	0	0
	Mean		4.3526	4.6022	4.5080	4.3419
	Std. Deviation		.56400	.50524	.54868	.55221
G_2	N	Valid	80	80	80	80
		Missing	0	0	0	0
	Mean		3.9306	4.4319	4.4613	4.4098
	Std. Deviation		.69876	.52004	.57205	.51496

(*Author's conception*)

Descriptive analysis of job satisfaction variables

Table no. 2 presents the descriptive statistics of the satisfaction variables for the two groups under study.

It is observed that the subjects in group G 1 have higher averages than the subjects in group G2, both at the general satisfaction level factor, Sat_ge_G 1 (M = 3.72) compared to Sat_ge_G 2 (M = 3.46), as well as at the level of each source of satisfaction in slice, as follows: the average remuneration and promotion factor of G 1 is higher than the average remuneration and promotion factor of G 2 , where Sat_rp_G 1 (M = 3.18)> Sat_rp_G 2 (M = 2.93); the average of the communication and interpersonal relations factor of G 1 is higher than the average factor of communication and interpersonal relationships of G 2 , where Sat_cr_G 1 (M = 4.04)> Sat_cr_G 2 (M = 3.78); the mean of the organization and communication factor of G 1 is higher than the average of the organization and communication factor of G 2 , where Sat_oc_G 1 (M = 3.95)> Sat_oc_G 2 (M = 3.69).

At the same time, it is evident that at the level of the G 1 group there is a higher heterogeneity, objectified by higher standard deviations, at the level of all job satisfaction variables.

In G1, the source of satisfaction with the highest average for the military it is given by the communication and interpersonal relations factor, i.e., by the satisfaction regarding the management and interpersonal relationships in the team (Sat_cr = 4.04), and the source of satisfaction with the lowest average is given by the remuneration and promotion factor, that is, satisfaction with pay, rewards, and opportunities

Table no. 2

DESCRIPTIVE STATISTICS OF THE SATISFACTION VARIABLES FOR THE TWO GROUPS

Group			Sat_rp	Sat_cr	Sat_oc	Sat_ge
G_1	N	Valid	80	80	80	80
		Missing	0	0	0	0
	Mean		3.1895	4.0406	3.9538	3.7258
	Std. Deviation		.51036	.66761	.70799	.55214
G_2	N	Valid	80	80	80	80
		Missing	0	0	0	0
	Mean		2.9387	3.7870	3.6988	3.4680
	Std. Deviation		.48791	.63231	.62955	.49709

(*Author's conception*)

for advancement in career (Sat_rp = 3.18). The difference between the averages of the two factors is Δ 3 = 0.86.

In group G2, the satisfaction factor with the highest average is represented by satisfaction with leadership and interpersonal relationships within the team (Sat_cr = 3.78), and the satisfaction factor with the lowest average, is given by the satisfaction regarding salary, rewards and career advancement opportunities (Sat_rp = 2.93), the difference between them being Δ 4 = 0.85.

In group G1, the highest homogeneity is recorded at the level satisfaction regarding payments, rewards, and opportunities for career advancement, where the standard deviation is SD = 0.51, and the highest heterogeneity is at the level of satisfaction with work organization and functional communication, where the standard deviation is SD = 0.70.

In G2 group, the highest homogeneity is recorded at the level satisfaction regarding payments, rewards, and opportunities for career advancement, where the standard deviation is SD = 0.48, and the highest heterogeneity is found at the level of management satisfaction and interpersonal relationships in the team, where the standard deviation is SD = 0.63.

Motivational and job satisfaction variable correlational analysis

Table no. 3 shows the matrix of correlations between the job satisfaction and motivational variables, for the two groups, where noteworthy are the following results:

a. For G_1 (military)

- salary, rewards and career advancement opportunities satisfaction Sat_rp correlates significantly (r = 0.238; p <.03) only with power requirements M_con;
- satisfaction with management and interpersonal relationships Sat_cr correlates significantly with all motivational variables, thus with the needs of power M_con (r = 0.327; p <.003), work requirements M_exp (r = 0.460; p <.001), M_rel affiliation needs (r = 0.318; p <.004) and basal existence M_sub (r = 0.316; p <.004);
- satisfaction with work organization and functional communication Sat_oc correlates significantly with all motivational variables, thus with the needs of power M_con (r = 0, 364; p <.001), work requirements M_exp (r = 0.472; p <.001), M_rel affiliation needs (r = 0.329; p <.003) and basal existence M_Sub (r = 0.313; p <.005);
- overall satisfaction correlates significantly with all motivational variables, thus with power needs M_cond (r = 0.364; p <.001), power needs achievement through work M_exp (r = 0.437; p <.001), affiliation needs M_rel (r = 0.324; p <.003) and the basic needs for existence M_sub (r = 0.319; p <.004);
- all variables of job satisfaction correlate significantly with each other and, each in section, with general satisfaction.

Table no. 3

THE CORRELATION MATRIX BETWEEN JOB SATISFACTION AND MOTIVATIONAL VARIABLES

Group		M_con	M_exp	M_rel	M_sub
G_1	Sat_rp	.238*			
	Sat_cr	.327**	.460**	.318**	.316**
	Sat_oc	.373**	.472**	.329**	.313**
	Sat_ge	.364**	.437**	.324**	.319**
G_2	Sat_rp	.258*			
	Sat_cr	.301**	.412**	.362**	
	Sat_oc	.410**	.548**	.501**	.232*
	Sat_ge	.378**	.459**	.413**	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

(*Author's conception*)

b. for G_2 (civilians)

• salary satisfaction, rewards, and career advancement opportunities Sat_rp correlates significantly (r = 0.258; p <.021) only with power requirements M_con;

• satisfaction with management and interpersonal relationships Sat_cr significantly correlates with M_con power requirements (r = 0.301; p <.007), work needs M_exp (r = 0.412; p <.001), work needs M_rel affiliation (r = 0.362; p <.001), but not with the basic necessities of existence M_sub;

• satisfaction with work organization and functional communication Sat_oc correlates significantly with all motivational variables, thus with the needs of power M_con (r = 0.410; p <.001), the work requirements M_exp (r= 0.548; p <.001), M_rel affiliation needs (r = 0.501; p <.001) and with the basic necessities of existence M_sub (r = 0.232; p <.038);

• overall satisfaction Sat_ge correlates significantly with power needs M_con (r = 0.388; p <.001), work requirements M_exp (r =0.459; p <.001), M_rel affiliation needs (r = 0.413; p <.001), but not with the basic necessities of existence M_sub;

• as in the experimental group G 1 (military), in group G 2 (civilians) all job satisfaction variables correlate significantly with each other and, individually, with general satisfaction.

Table no. 4 shows the matrix of correlations between the job satisfaction and demographic variables for the two groups, respectively group G 1 (military) and group G 2 (civilians), where the following are notable results:

• while in G1 there are no statistically significant correlations between job satisfaction and any of the demographic variables, in G 2 we found that occupation adequacy and training level - Adequacy correlates significantly with salary satisfaction, rewards and career advancement opportunities Sat_rp (r = 0.255; p <.022) and overall satisfaction Sat_ge (r = 0.239; p <.032), the gender variable has a statistically significant correlation with satisfaction in leadership and interpersonal relationships in the Sat_cr collective (r = 0.238; p <.033), with satisfaction with work organization and functional communication Sat_oc (r = 0.396; p <.001) and with the general satisfaction Sat_ge (r = 0.285; p <.010);

• in group G 1 it is observed that age correlates statistically negatively with education - Educ (r = -0.410, p <.001) and positively with the occupation adequacy and training level - Adequate (r = 0.411, p <.001), and education correlates significantly statistically, negatively with the occupation adequacy and training level - Adequacy (r = - 0.993, p <.001);

• in group G 2 statistically significant correlations are observed between the various variables demographic, thus: age has an inverse correlation with the level of education - Educ (r = -0,298; p <.007) and a direct correlation with the occupation adequacy and training level - Adequate

Table no. 4
THE CORRELATION MATRIX BETWEEN JOB SATISFACTION AND DEMOGRAPHIC VARIABLES

Group	Var	Age	Gen	Educ	Adecv
G_1	Educ	$-.410^{**}$			
	Adecv	$.411^{**}$		$-.993^{**}$	
G_2	Educ	$-.298^{**}$	$-.236^{*}$		
	Adecv	$.321^{**}$		$-.493^{**}$	
	Sat_rp				$.255^{*}$
	Sat_cr		$.238^{*}$		
	Sat_oc		$.396^{**}$		
	Sat_ge		$.285^{*}$		$.239^{*}$

**. Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

(*Author's conception*)

(r = 0.321; p <.004), and the level of training - Educ presents an inverse correlation with the occupation adequacy and training level - Adequacy (r = - 0.493; p <.001).

Table no. 5 shows the matrix of correlations between the motivational and demographic variables in the two groups, respectively the group G 1 (military) and group G 2 (civilians), where the following results are emphasised:

between the analyzed groups.

By applying the *t* test to determine the significance of the differences between averages by gender and level of training no differences were identified as significant. Also, no significant differences were observed between the two groups neither for affiliation needs or relational factor (M_rel) nor for the basic needs of subsistence or the subsistence factor (M_sub).

Table no. 5
THE CORRELATION MATRIX BETWEEN THE MOTIVATIONAL AND DEMOGRAPHIC VARIABLES

Group	Variabile	Age	Adecv
G1	M_con	-.352**	
	M_exp	-.315**	
G2	M_con		.369**
	M_rel		.230*

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

(*Author's conception*)

• for the G 1 group there are significant negative correlations between age and power needs M_con (r = - 0.352; p <.001), as well as between age and work needs M_exp (r = - 0.315; p <.004);

• for group G 2 there are significant positive correlations between occupation adequacy and training level - Adequacy and power needs M_con (r = 0.369; p<.001), as well as between occupation adequacy and training level - Adequacy and relational needs M_rel (r = 0.230; p <.040).

Analysis of the difference between the averages of the two groups

Table no. 6 presents the averages of the variables for the two groups, which were the basis for calculating the significance of the difference in averages.

The significance of the difference between the subjects' averages from those two groups was analyzed, for the variables of motivation and satisfaction, in accordance with gender, training level and belonging to group G 1 (military) or group G 2 (civilians).

Table no. 7 presents the statistical results specific to the significant differences establishment

Instead, as presented in Table no. 7, significant differences were found between group G 1 (military) and group G 2 (civilians), for other variables of motivation and satisfaction, as follows:

• power requirements or driving factor (M_cond): F = 11,913, sig. = .001, t = 4.13, p < .001, CI 95% (.21450, .60080);

• performance requirements or expertise factor (M_exp): F = 1,542, sig. = .216, t = 2.101, p < .037, CI 95% (.01024, .33046);

• satisfaction with salaries, rewards, and opportunities for career advancement or remuneration and promotion factor (Sat_rp): F = .012, sig. = .914, t = 3.176, p < .002, CI 95% (.09884, .4666);

• satisfaction with leadership and interpersonal relationships or communication factor and interpersonal relationships (Sat_cr): F = .308, sig. = .580, t = 2.467, p < .017, CI 95% (.04579, .46421);

• satisfaction with work organization and communication or the organizing factor, and communication (Sat_oc): F = .308, sig. = .397, t = 2.407, p < .017, CI 95% (.05057, .45668);

• general satisfaction (Sat_ge): F = 1,393, sig. = .240, t = 3,103, p < .002, CI 95% (.09369, .42181).

Table no. 6

AVERAGES OF MOTIVATION AND SATISFACTION VARIABLES FOR EXPERIMENTAL AND CONTROL GROUPS

Variabile	Group	N	Mean	Std. Deviation	Std.Error Mean
M_con	G_1	80	4.3526	.56400	.06306
	G_2	80	3.9306	.69876	.07812
M_exp	G_1	80	4.6022	.50524	.05649
	G_2	80	4.4319	.52004	.05814
M_rel	G_1	80	4.5080	.54868	.06134
	G_2	80	4.4612	.57205	.06396
M_sub	G_1	80	4.3419	.55221	.06174
	G_2	80	4.4097	.51496	.05757
Sat_rp	G_1	80	3.1895	.51036	.05706
	G_2	80	2.9388	.48791	.05455
Sat_cr	G_1	80	4.0406	.66761	.07464
	G_2	80	3.7870	.63231	.07069
Sat_oc	G_1	80	3.9537	.70799	.07916
	G_2	80	3.6988	.62955	.07039
Gat_ge	G_1	80	3.7258	.55214	.06173
	G_2	80	3.4680	.49709	.05558

(*Author’s conception*)

Table no. 7

***t* TEST FOR SIGNIFICANT DIFFERENCES ESTABLISHMENT BETWEEN G_1 (MILITARY) AND G_2 (CIVILIANS)**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference: Lower	Upper
M_con	Equal variances assumed	11.913	.001	4.130	158	.000	.41125	.09957	.21458	.60792
	Equal variances not assumed			4.130	149.988	.000	.41125	.09957	.21450	.60800
M_exp	Equal variances assumed	1.542	.216	2.101	158	.037	.17035	.08106	.01024	.33046
	Equal variances not assumed			2.101	157.868	.037	.17035	.08106	.01024	.33046
Sat_rp	Equal variances assumed	.012	.914	3.176	158	.002	.25075	.07894	.09484	.40666
	Equal variances not assumed			3.176	157.681	.002	.25075	.07894	.09483	.40667
Sat_cr	Equal variances assumed	.308	.580	2.467	158	.015	.25363	.10281	.05057	.45668
	Equal variances not assumed			2.467	157.536	.015	.25363	.10281	.05057	.45668
Sat_oc	Equal variances assumed	.723	.397	2.407	158	.017	.25500	.10592	.04579	.46421
	Equal variances not assumed			2.407	155.870	.017	.25500	.10592	.04577	.46423
Sat_ge	Equal variances assumed	1.393	.240	3.103	158	.002	.25775	.08306	.09369	.42181
	Equal variances not assumed			3.103	156.289	.002	.25775	.08306	.09368	.42182

(*Author’s conception*)

Discussions

The interpretation of the results went through two stages: the first stage, aimed at reporting the data obtained from research hypotheses regarding the relations between motivation and professional satisfaction among the military in group G1, and the second stage consisted in analyzing all statistically valid results and extracting all inferences relevant to the research topic.

For the first stage of analysis the following information was retained:

- In group G 1 (military) the conditions under which satisfaction with leadership and interpersonal relationships of the military Sat_cr significantly correlates with the needs of work M_exp ($r = 0.460$; $p < .001$), and satisfaction with work organization and functional communication S_oc significantly correlates with the needs of accomplishment through work M_exp ($r = 0.472$; $p < .001$). Therefore, H 1 hypothesis according to which the more satisfied they are with the management and the interpersonal relationships within the team, respectively of work organization and functional communication, the more the military have a higher motivation to accomplish themselves through work is supported.
- In group G 1 (military) no significant correlation was found ($r = 0.163$) between salary satisfaction, rewards and career advancement opportunities S_rp and the needs of accomplishment through work M_exp. Consequently, the H 2 hypothesis that the military with a high level of satisfaction regarding salaries, rewards and career advancement opportunities presents a high level, directly proportional, of their motivation to accomplish themselves through work M_exp, is not supported.
- In group G 1 (military) a significant correlation was found ($r = 0.437$; $p < .001$) between the general satisfaction S_ge and the needs of accomplishment through work M_exp. As a result, the H 3 hypothesis according to which the military with a level high level of overall satisfaction show a high level, directly proportional, in the motivation of accomplishment through work variable, is supported.
- At the same time, the conditions under which, on the one hand, satisfaction with the work organization and communication S_oc_G 1 ($m = 3.9537$) of the military is higher than that of civilians S_oc_G 2 ($m = 3.6988$), and the difference between the averages of the two groups is statistically significant ($t (158) = 2{,}407$, $p < .017$) and, on the other hand, satisfaction with leadership and interpersonal relations of the military S_rp_G 1 ($m = 4.0406$) is superior to that of the civilians S_rp_G 2 ($m = 3.7870$), and the difference between the averages of the two groups is statistically significant ($t (158) = 2{,}467$, $p < .015$). Thus, H 4 hypothesis, according to which the military have higher levels of job satisfaction and functional communication, respectively towards leadership and interpersonal relationships, compared to employees in civil organizations, is supported.

For the second stage, all valid results were analyzed statistically, and the relevant inferences were extracted. This secondary approach of interpretation led to a number of observations, which are presented below.

As employees of a military organization, G 1 subjects (military) have a higher professional satisfaction than the subjects in the group G 2 (civilians), employed in civil organizations. The observation is noted both in that regarding the general level of satisfaction S_ge ($m = 3.7258$ vs. $m = 3.4680$; $t (158) = 3{,}103$, $p < .002$), as well as in relation to each component, such as satisfaction regarding salary, rewards and career advancement opportunities S_rp ($m = 3.1895$ vs. $m = 2.9388$; $t (158) = 3{,}176$, $p < .002$), satisfaction with driving and interpersonal relations S_cr ($m = 4.0406$ vs. $m = 3.7870$; $t (158) = 2.467$, $p < .015$), respectively satisfaction with work organization and communication S_oc ($m = 3.9537$ vs. $m = 3.6988$; $t (158) = 2.407$, $p < .017$). The differences between the two groups are statistically significant.

As members of a highly hierarchically structured organization, the military have a higher level of power / leadership needs M_ cond ($m = 4.3526$ vs. $m = 3.9306$; $t (158) = 4.130$, $p < .001$) and the needs of accomplishment by work M_ exp ($m = 4.6022$ vs. $m = 4.4319$; $t (158) = 2.101$, $p < .037$) compared to the level of the employees` in civil organizations. The differences between the two groups are statistically significant.

Regarding M_rel affiliation needs as well as basic needs of existence M_under the level of motivation of the two categories is similar in the two groups.

Although superior to civilians ($m = 3.1895$ vs. $m = 2.9388$), satisfaction regarding salaries, rewards, and career advancement opportunities of the military S_rp, is however at a relatively low level, being statistically significantly lower than the satisfaction felt with other sources of satisfaction in their organization, respectively satisfaction with leadership and interpersonal relationships S_cr (m =4,0406), satisfaction with work organization and functional communication S_oc (m = 3.9538), as well as to the general satisfaction S_ge (m = 3.7258).

The military personnel who are satisfied with salaries, rewards, and career advancements opportunities are motivated by the needs of power, manifesting trends towards hierarchical ascension and leadership functions. The observation is supported by the fact that in group G 1, satisfaction regarding payments, rewards and career advancement opportunities S_rp correlates significantly with power needs M_cond ($r = 0.238$; $p <.033$).

The military who are equally satisfied with the way they are led by their superiors and the interpersonal relationships within the groups to which they belong develop a complex, strong motivation for work through activation of their needs for power / leadership, relationships, and subsistence. This one observation is supported by the fact that, in group G1, satisfaction with driving and interpersonal relationships S_cr within the group correlate significantly not only with the realization of needs through work M_exp, according to Hypothesis 1, which was confirmed, but also with the needs for power M_cond ($r = 0.327$; $p <.003$), M_rel affiliation needs ($r = 0.318$; $p <.004$) and basic living needs M_sub ($r = 0.316$; $p <.004$). Also, the same complex and strong motivation for work, is activated and supported in the military by satisfaction felt towards work organization and functional communication within the unit. And this observation too is supported by the fact that in group G1, satisfaction with work organization and functional communication S_oc correlates significantly not only with the needs of accomplishment through work M_exp, according to Hypothesis 1, but also with the needs for power M_cond ($r = 0,373$; $p < .001$), affiliation needs M-rel ($r = 0,329$; $p < .003$) and the basic needs of existence M_sub ($r = 0,313$; $p < .005$).

In the military, unlike civilian employees, job satisfaction is not influenced by age, gender, level of education or adequacy of position / function at instructional level because, in group G 1, none of demographic variables correlate with any of the satisfaction variables work. In comparison, for example, it is observed that civilians in group G 2 are better satisfied by salary, rewards and career advancement opportunities S_rp as they occupy positions in accordance or higher than their level of instruction M_cond ($r = 0.255$; $p <.022$), and women are satisfied, to some extent significantly higher than men, in terms of work organization and functional communication S_oc ($r = -0.271$; $p <.05$).

As members of a relatively closed organization with a homogeneous organizational culture, which sometimes levels out individual attitudes and opinions, the military show a greater homogeneity of motivation (standard deviations smaller) than civilian subjects, the only exception being the basic needs of existence, where the situation is reversed.

The military appear to be more ambitious, more motivated for performance, more eager to achieve from a younger age ($m = 38.07$; $SD = 6.26$), compared to civilians ($m = 41.08$; $SD = 7.74$). This observation is also supported by the fact that in group G1, age correlates inversely with power needs M_cond ($r = -0.352$; $p <.001$), and with the needs of realization through work M_exp ($r = -0.315$; $p <.004$).

As in the civilian environment, the military also find that some of them have a higher level of education, but also that they often occupy positions inferior to their respective training. The statement is supported by the fact that in both groups significant negative correlations were recorded between age and level of education ($r = -0.410$; $p <.001$ in the military, respectively $r = -0.298$; $p <.007$ in civilians) and significantly positive correlations between age and occupation adequacy at education level of ($r = 0.411$; $p <.001$ in the military, respectively $r = 0.321$; $p <.004$ to civilians).

Conclusion

This research aimed to study the relation between motivation and satisfaction of the personnel working in a military organization – in the defence, public order, and national security system.

First, we can confirm that similarly, for the staff of military organizations, if employees are satisfied with the environment and working conditions, then they will also be motivated to work accordingly[58,59,60]. A series of implications follows from here, such as: the need for a rational organization of the military activity; clear definition of tasks; ensuring optimal training and work conditions; achieving a stenic and supportive psychosocial environment; maintaining harmonious interpersonal relationships; building a modern and competent leadership[61,62].

Second, and in the case of military organizations personnel we may find that the overall satisfaction felt by employees leads to a strengthening of the sense of personal competence and self-efficacy, which in turn determines an increase in motivation for work and performance[63,64,65,66]. The satisfaction of successful completion of the mission is the main fulfillment of a military, because it allows them to identify with the goals, values, and the customs of the organization, which guarantees its acceptance and integration in the group. This special satisfaction generates an interdependence between the individual and military organization, which helps activate a higher motivation for successful completion of missions, and subsequently performance will lead to further increase of personal prestige[67,68,69,70].

Third, military personnel, as opposed to civil organizations' personnel, maintain a high motivation for performance even in periods of marked economic imbalances, and the level satisfaction is extracted from the proper perception of the manner of organization and communication, from the coherence of management and the intensity of interpersonal relationships or from military experience that may be valuable in the future[71,72]. Also, the degree of motivation of the military, implicitly the level of satisfaction, emerges from the higher job stability, guaranteeing a relatively secure income, but also from the existence of multiple possibilities for advancement in professional career[73,74,75,76].

Fourth, we found that, for the military, compared to civilians, there is no direct relation between the level of satisfaction and rewards attractiveness, and these do not directly influence the valence and attractiveness of the rewards[77,78]. In the military organizations, though material satisfaction is important, it is not decisive in the intimate economy of the motivation phenomenon at the individual level. Sources of military satisfaction, such as motivational leverage, seem to be related rather to the particular specifics of the managerial act, of the psychosocial environment, of the organizational culture, as well as the system of values and institutional norms[79,80,81].

Fifth, it is easy to see the relevance of the present study for designing human resources policies and specific managerial strategies in the military organization[82,83,84].

Finally, we trust that the present study, with all its limitations related to sampling, representativeness, analyzed dimensions, etc. contains the potential seeds for new research directions in the field of national security, which could support multiple psychological resources for the management of military personnel.

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GUIDELINES FOR IMPROVING THE PREPARATION OF LAND FORCES OFFICERS OF THE BULGARIAN ARMED FORCES

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This article discusses the issues of improving the training process of Land Forces officers of the Bulgarian Armed Forces. Based mostly on the analysis of the current experience of the army leadership, the analysis of modern requirements of the security environment and the need to change the job qualifications to perform specific tasks of Army officers in the full range of missions and operations, some suggestions for improving their training are extracted. An attempt to present the main directions for increasing the efficiency of the officers from the Army preparation on tactical and operational level has been executed. Suggestions have been made for improving the current course model, which is the fundamental element of training these officers and it is associated with the overall vision for their training process. The main conclusions and recommendations of the study are presented at the end of the current scientific work.

Keywords: officers from Land Forces; preparation; guidelines; improvement; course model.

The comprehensiveness of the problems presented to the Land Forces (LF) as the leading type of troops in the Bulgarian Armed Forces, the limitations in the resources provided to it and the huge flow of information require the LF officers to make more concrete and complex decisions, which can happen only in the implementation of the following paradigm: decision-makers should have a high level of education and training, supported by the ability for intensive and alternative perspective way of thinking. The high requirements to command and control in the full spectrum of operations in a complex environment demand continuous training, in the course of which to create emergencies ahead of development. The purpose of the officers' preparation from Army is to work out a mechanism for quick and adequate reaction to the problematic situations, while preserving a certain freedom of action.

The need to provide military activity with trained officers from the LF requires the application of scientifically based methods and organizational forms of education and training. Modern commanders (chiefs) perform many functions as leaders, among which one of the most important is decision-making. From this point of view, the formation and improvement of command (leadership) skills is reduced to obtaining new methods and algorithms for the work of the officer-manager to the existing tools. It should be emphasized that leadership (management) at the operational and tactical level claims much more than acquiring new skills. It requires the use of a qualitatively new style of behavior in the performance of professional duties. It is the change of the style of work, as well as the gradual transition from strictly centralized command to mission command in the formations, units and subdivisions of the LF recent years, that is the essence of the formation of operational and tactical skills. In practice, the change of style and methods of work by the officer is an adaptive change in the ways of thinking and achieving higher levels of efficiency of thought (cognitive) processes.

The above-mentioned considerations on the topic are related to the relevance and importance of this article, which are to define the importance of the LF officers' preparation process to be thoroughly researched and analyzed, giving modern recommendations for improving their training, especially in of the development of the course system. The purpose of the study is to reveal the nature and relationships in the process of LF officers training on the basis of the initial data, which are mainly related to existing national documents and practices in the semantics of the

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research topic, giving some basic directions for improving the quality of LF preparation. All the national standards are put into the framework on NATO officers' requirements related to training and education. The methodological basis is based on the objectivity and reliability of the used sources and facts. The limitations set in the article relate mainly to the study of the training of LF junior and senior officers mainly at the tactical and partly at the operational level.

In the process of analysis of LF officers' training according to the doctrinal framework of the Armed Forces of Bulgaria, it is concluded that comprehensive training of these officers for successful performance of their functional duties should be ensured with the basic idea of appropriate command and control of the headquarters and troops, and should be guided by the basic guidelines, principles, forms and methods laid down in the doctrine. For the training of LF officers, a systematic approach should be used, through which to manage individual and collective training in order to control the quality of the training and the amount of resources.[1]

Analyzing the published material from item 108 to item 112 inclusive from National Publication 7, it becomes clear that the training of the officers is aimed at a constant increase and improvement of their professional qualification. It is carried out mainly through training, self-training and in the course of the daily practical process. Individual training covers the entire period of the officer's service and is mainly related to training and qualification courses, where knowledge and skills are pursued to solve specific tasks. The individual training of officers should be focused on: continuous development of sustainable habits in the management of their subordinate formations; mastering the methods for organizing and conducting combat (combat operations) and the combat use of weapons and technical means; mastering foreign languages according to NATO standards. The opportunity for self-assessment helps to supplement the necessary knowledge and skills and to adequately use the provided opportunities for self-improvement. Thus, the overall system of qualification of officers provides technical, tactical and leadership training, oriented towards building leaders capable of performing their assigned tasks. The individual training of officers is divided into initial and special (subsequent) and is carried out through training for tactical, operational and strategic level, and between each of them they maintain and improve their individual training in the course of daily training, in performing their functional obligations in the military units (headquarters) or participate in courses for acquiring additional qualification and re-qualification depending on the requirements for holding a specific position.[2] Collective (joint) training covers the work at the strategic and operational levels and especially in the presence of common tasks that require a very high level of interaction. Through the system of internships, qualities that are necessary are acquired, for example, for the officer from the LF to work in the headquarters of the Air Force or Navy. Preparation for work in a multinational environment occupies the highest level in the hierarchy of individual training and focuses on skills for work in a multinational environment. It is logical to require not only language skills, but also basic knowledge and skills of individual and collective (joint) training.[3]

On the basis of the national doctrinal and sub-doctrinal documents for the LF officers preparation, it is concluded that they define its content, clearly outlining the tendencies that their training is interrelated with the training of other officers, HQs and troops requirements for the participation of officers in operations and activities under the three types of missions of the armed forces.[4] At the moment, taking into consideration doctrinal and sub-doctrinal documents for the Armed Forces, the legislation regarding the establishment of a system for the LF officers training, in which precise and clear goals, methods, forms, structures are set, is well developed. The legislation should be periodically updated, while at the same time working hard to find new approaches to training LF officers.

In connection with the results thus obtained in the analysis, we should outline the main guidelines for improving the LF officers training in Bulgaria, giving a couple of suggestions for improving their training process. At the beginning we should think that, in training, the main goal should address the fact that the task of the commander is to continuously improve the ability of his/her unit to carry out its peacetime or mobilization mission. He/she will need to guide people and manage time resources and materials to effectively accomplish ordered mission. The success of the unit depends on the commander more than any other single factor. Hence the statement that the training of LF officers should be in constant connection with the formation.[5]

On the second place, in addition to the application of the well-known and vital principles of the LF officers training, such as scientific approach, standardization, adaptability, clarity, systematic and consistent training, etc., the principle of ”Combat Focus” must be applied. The study should stem from the main mission of the armed forces, which is associated with fighting and victory. The goal of education is to create a force trained to mobilize, fight and win anywhere, as well as into the state of Bulgaria and worldwide. Combat focus is crucial throughout the training process and is used by commanders to allocate training resources based on the requirements of the military mission. A critical aspect of the concept of combat focus is to understand the responsibility and the relationship between the main tasks of the collective mission and the individual tasks that support them. The LF officers training programs select the specific individual requirements that contribute to the implementation of each collective task in order to be trained during the same period.[6]

Another aspect related to the process of military education is the improvement of the methodology for conducting the disciplines, through the use of discussions, game methods, situational games and open problem solving. A number of studies are conducted to improve the communication skills of teachers, describing a number of techniques. All these actions are aimed at adapting military training to the new requirements of the security environment. In parallel with the above-mentioned proposals, steps should be taken to improve the ones used and to introduce new methods and forms in the training in order to stimulate the feedback. In this way, interconnections between the trainees and the trainers are built and the processes taking place between them are improved.[7]

The above areas should be linked in such a way so as to achieve optimized effective preparation, which can be reached with sufficiently effective training intensity. It follows that the limited preparation time must be always optimized in order to have better training outcomes.

The application of the guidelines leads to the conclusion that it is appropriate to train the officers of the LF in two phases: the phase of development of basic skills and the advanced phase of development and sustainability. The first phase occurs during the first few months of preparation, ensuring that the new leader achieves a minimum acceptable level of mastery of the critical tasks needed to accomplish his/her mission. The second phase is precisely the advanced phase of development and maintenance. This phase involves maintaining those competencies that have already been mastered and developing skills for new tasks. The system of additional qualification and retraining and the course system of development are used in order to expand the perspective and skills of the leader for current and future obligations. During this phase, the officer launches a self-development program that focuses on those skills that the leader needs or wants to develop.[8]

All the above-mentioned areas for improvement are committed to creating a unified model for the training of LF officers. The training model is a combination of all methods, forms and conditions necessary for implementing the entire training program (education). The training model gives a physical expression of the overall strategy for effective training. In the following lines we will discuss the course model of training of LF officers, which is the most important element of their training, of course, supported by all other methods and forms.

Military education at all levels in the officer education system for LF should be linked to attendance at relevant courses.[9] Such a model has been present in LF for many decades. An example of a more developed scheme for improving the training of LF officers, built on the basis of Bulgarian traditions and modern challenges of the security environment is proposed in Figure 1. The essence of the model is that it implements the basic vision for training of LF officers.

The system of training of officers provides formal military education and training at levels that are linked to goal setting, levels of training (tactical, operational and strategic), time aspects, officer ranks, educational qualification level and phases of intellectual development in the process of the officers’ evolution, each course having its own duration depending on the need for this factor.

Some of the courses currently exist in the country, but are of shorter duration, while others, especially for junior officers, have not been applied till nowadays. The essence lies in the acquisition of knowledge and skills for work at the current and next higher level. The model for professional military training of LF officers presented in the figure emphasizes the course system, which as an option can be applied to the LF officers mainly at the tactical level, covering the initial period of the next operational level. In a few sentences below we have listed the features of the model in the face of the courses offered by it.

1. Basic course for junior officers lasting one month – practically oriented after graduating from military school. Through it, young officers from all specializations consolidate general skills for training and preparation on topics, including the tasks that all officers are expected to perform successfully, regardless of their specializations. The course unifies the general military service of the servicemen at the beginning of their officer field.

2. Specialized course for junior officers with a duration of about two months – for the development of junior officer leaders in a functional direction and elimination of the shortcomings identified by the training of the army. The aim is to develop technically competent and confident platoon commanders, depending on the specialization. Upon successful completion of the course, the serviceman becomes a senior lieutenant rank and position.

3. Course for company commanders / section chiefs in a battalion*– three months. Its essence consists in a system of training of officers at the captain's level in order to acquire training for company-level command (battery) and to acquire the ability to manage sections in battalions' HQs, as staff officers. Upon completion of the course, the serviceman is promoted to the rank of captain and assigned to an appropriate position.[10]

4. Staff course for junior officers – two months. Its main purpose is to prepare the combat officers and staff officers at the tactical level, mainly on a battalion theme, in order to support their combat and staff work, as well as their application for a Joint Staff Colleague at the next stage.

5. Training at the Joint Staff Colleague for the acquisition of a master's degree in military affairs with a duration of 18 months. This type of training is associated with the acquisition of knowledge for

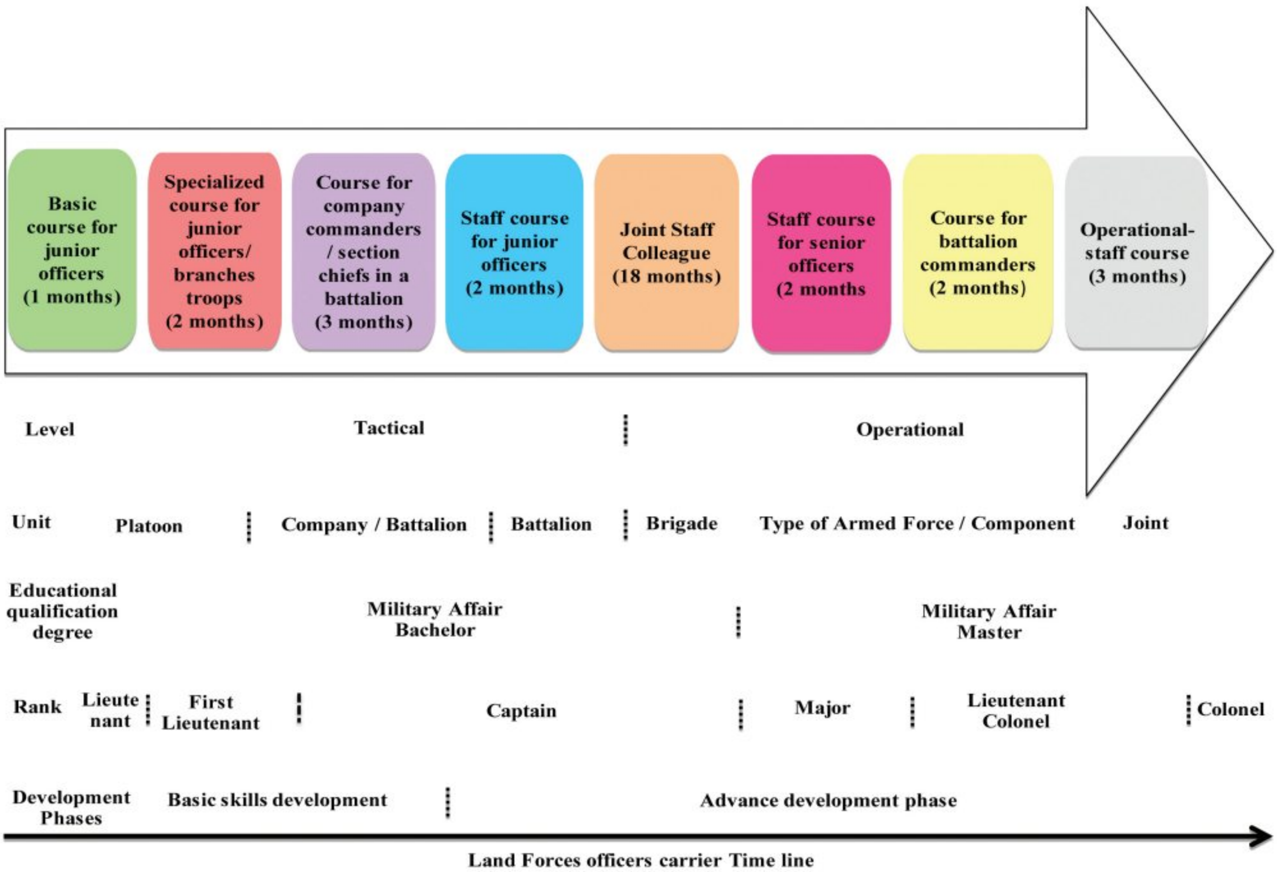

Figure 1 *Course model for training of LF officers*

the work of LF officers at the operational level. The connection is made with the tactical and partly strategic level, emphasizing the operational one. After obtaining a master’s degree, officers are promoted to the rank of majors and hold majors’ positions.

6. Staff course for senior officers – two months. The main purpose of the course is related to increasing the professional competencies of the officers for the performance of their functional duties in the positions held or planned to be held in the headquarters of formations of the Armed Forces. The trainees should expand their knowledge and skills for their construction as specialists with new views on the role and place of the formations of the Armed Forces in the general system of modern operations.

7. Course for battalion commanders* – two months. The aim of the course is related to the theoretical and practical orientation of the training of officers from headquarters of military formations of the Armed Forces, projected to hold the positions of battalion* commanders to perform their functional duties as commanders of battalions* of the Land Forces and to give students complete and in-depth knowledge of modern management processes.[11]

8. Operational-staff course for senior officers with a time potential of three months, associated with increasing the professional competencies of officers to perform their functional duties in positions held in the headquarters of formations of the LF after graduation from the Joint Staff Colleague. The course aims to prepare officers on operational arts in joint and multinational operations, procedures for planning operations and developing documents of different nature in national, multinational and NATO format and the legal aspects of military operations.[12]

The above mentioned courses should be mandatory for developing the training of officers at the tactical level and partly at the operational level. The model thus defined can be supported by various general or specialized courses that officers take on the way of their development.

Based on current scientific work thus proposed, the following several conclusions can be drawn. First of all, it should be noted that the effective and efficient proposals for improving the training of LF officers are associated with the successful combination of goals, principles, methods and forms that build a single comprehensive model for training this category of servicemen. At the same time, due to the dynamically changing security environment, its content is constantly expanding, and its main focus remains directed on its practical and practical-applied orientation. On next place, modern missions and tasks require a transformation of the training process of LF officers, and the main efforts should be focused on multi-functionality in order to increase tactical and operational effects and reduce the cost of infrastructure, combat equipment and training. Last but not least, the paradigm of improving the training of LF officers lies in the skillful combination of extremely good Bulgarian traditions in the process with future expanding the course system, which should be carefully reviewed and developed in the face of more mandatory consecutive courses in military academies in the country and abroad.

Applying the research methods used, several recommendations are made, which are described below:

1. Self-training as a main way to increase the level of knowledge and individual practical skills and habits of LF officers is recommended to be supported by a number of training courses for this type of officers.

2. There is a necessity of deployment of a more developed system of short-term and medium-term specialized courses aimed at forming specific professional competencies to achieve better training of LF officers.

3. It is recommended to have a defter combination of standard and non-standard forms of training of LF officers, which will lead to quality improvement of training and appropriate organization of the military pedagogical process.

4. The focus of the training should be directed towards acquiring leadership, control, managerial and methodological skills and abilities to transform the LF officers more to the control functions in relation to the NCO[13] staff, who should take over the main functions of the training of LF NCOs, soldiers and troops.

Conclusion

A commander, chief, and ultimately leader can increasingly develop his/her skills for effective operational and tactical way of thinking. In fact, all this is necessary in order to perform official duties in complex operational and tactical conditions. The basic idea is that the implementation of operational and tactical leadership requires an effective combination of intellectual abilities, as well as creative and critical thinking from the lowest to the highest levels of mental activity. As the operational and tactical environment changes very quickly nowadays, decision-makers have to learn to think quickly and flexibly, to be energetic and resourceful, and to think more and more creatively. For their part, creative decisions cannot be made without risk-taking and often deviate sharply from the standard way of thinking. As a conclusion on the topic, the opinion can be expressed that the analysis of the training of LF officers proves once again that this training is the center of gravity around which actually can be found the training of other officers, NCOs, soldiers, HQs and units of the Bulgarian Armed Forces. Conducting targeted, constant and as close as possible to the real situation training of LF officers can be supported by the introduction of some changes in the existing course system, which will achieve quality training of officers; that is one of the main imperatives for building, maintaining and improving the defense capabilities of the Armed Forces of the Republic of Bulgaria.

NOTES:

1 (Ministry of Defence of the Republic of Bulgaria), *Doctrine for Training of the Armed Forces of the Republic of Bulgaria,* Edition A, Sofia, 2018, p. 9-16, 21-24.

2 *Ibidem,* p. 29-30.

3 (North Atlantic Treaty Organization), *Bi-SC Education and Training Directive (E&TD) 075-002*, 2016, p. 8.

4 The three types of mission of Bulgarian Armed Forces are as follows: mission defense; mission support for international peace and security; mission contribution to national security in peacetime.

5 (United States Army Reserve Command) *United States Army Reserve Company Commander's Handbook (USARC Pamphlet 350-1)*, Atlanta, Georgia, 1996, p. 1.

6 (Department of the United States Army), *FM 25-100 Training the Force,* Washington, D.C., 1988.

7 Alexina I., *Military Pedagogy*, Yurayt, Moscow, 2018, p. 32-34.

8 (Department of the United States Army), *FM 25-101 Battle Focused Training*, Washington, D.C., 1990, p. 125.

9 (United States Army Reserve Command), *AD-A 236 572 Training and Organization of the US Army Reserve Components,* Virginia, 1991, pp. 38-40.

10 (Ministry of Defence of the Republic of Bulgaria), *Register of Courses in Joint Staff Colleagues and Military Academies in 2022,* Sofia, 2021, p. 138.

* There are different type of battalions in Land Forces structure: tank, mechanized infantry, artillery, air-defence, reconnaissance, alpine, logistic, engineer, etc.

11 (Ministry of Defence of the Republic of Bulgaria), *Register of Courses in Joint Staff Colleagues and Military Academies in 2022,* Sofia, 2021, p. 42.

12 *Ibidem,* p. 331.

13 Non-commissioned officers make up the sergeants' corps in the Armed Forces.

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THE EFFECTS OF COVID-19 PANDEMIC ON THE IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOALS IN THE MILITARY ORGANIZATION

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This article makes a brief analysis of the sustainable development goals that are applicable in the military organization and identifies, through the literature-review method, the main ways in which the military organization was affected by the COVID-19 pandemic, focusing on the evolution of military spending. The ultimate goal is to establish how the pandemic has influenced the implementation of sustainable development goals in the military organization, in order to provide strategic management with recommendations to increase the resilience and sustainability of the military organization. The main conclusion of this research is that the pandemic did not have a significant impact in the short term, but in the medium and long term the situation may change, which calls for adaptation, cooperation, coordination and caution in the configuration of defence spending. As a secondary conclusion, it can be considered that the pandemic can have an accelerating effect on sustainable development policies, the military organization being called to benefit from the identified lessons and new opportunities, in order to increase the response capacity.

Keywords: COVID-19; expenditures; goals; effect; durable development; military organization.

The end of 2019 is associated with the appearance of the first cases of respiratory infections caused by the SARS-CoV-2 virus and, since then, humanity has experienced a new pandemic, with an ongoing unpredictable evolution. Characterized by a global spread and periods of intensity and calmness, the pandemic prompted authorities in each country to take restrictive measures to limit the spread of the virus. Most of the measures have had an impact on the continuation by nations of the trend of economic growth, a prerequisite for achieving the sustainable development goals (SDGs), which aim to achieve long-term positive effects in economic, social and environmental terms and access for future generations to limited resources.

As a part of society that ensures a secure environment, conducive to economic growth and sustainable development, the military organization must constantly adapt to its needs and follow the same guidelines, so as not to become an oasis of regression and be unable to fulfill its missions. In other words, the military organization must be transformed into a sustainable organization, capable of carrying out its missions efficiently.

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However, the difficulty of achieving this goal is underlined by the characteristics of the current security context, marked by unpredictability, attempts to reconfigure the power poles, reactivated conflicts, local conflict situations, false news and hybrid threats. Many of these have been generated or exacerbated by the outbreak of the COVID-19 pandemic, a hybrid threat in itself, that can cause economic, social and military crises at any time, in the increasingly complicated context of extreme climate events. As a result, the orientation towards resilience, minimization and even the rapid elimination of negative effects are expected to ensure the continuation of the path towards a sustainable development society, which can develop sustainably, as a whole, only in terms of progress in each area of activity, including the case of military organization.

Taking into account the ideas mentioned above, the first objective I propose in this article is to analyze how the COVID-19 pandemic has affected the military organization, focusing on the main ways in which this organization has been involved in limiting and stopping the spread of the virus and the related expenses. This analysis will be the basis for the fulfillment of the second objective, namely, the identification of the effects of the COVID-19 pandemic on the implementation of the sustainable development goals into the military organization.

The motivation behind this approach is related to the fact that, so far, a series of writings and studies that focus on the effects of the COVID-19 pandemic on health, education, economy have been developed, but those dedicated to the sustainable development of the military organization are few and do not address the financial side and the possible short-, medium- and long-term effects.

In order to fulfill the proposed objectives, I utilized the literature review method to critically analyze relevant documents available online, the applied reasoning being mostly the deductive one. The limitations are given by the classified character of other sources of information, which could not be used for the realization of this article, but which would have increased the specific character of the approached topic.

The article is organized in three sections. The first section contains a brief analysis of the main SDGs, which could find their applicability in the military organization, emphasizing the need to direct funds in this regard. The second section analyzes the effects of the pandemic on military spending, and the third section is meant to analyze the impact of the COVID-19 pandemic on the sustainable development of the military organization. The last part of the article presents the conclusions, focusing on recommendations addressed to strategic management to increase the resilience and sustainability of the military organization.

The applicability of sustainable development goals into the military organization

Sustainable development aims at implementing economic, social and environmental policies by 2030, through the concerted fulfillment of seventeen objectives[1]. A quick review of these SDGs allowed me to conclude that they could find their applicability in the military organization, in order to ensure its adaptation to the evolution of society. Here are some examples of SDGs that could be implemented into the military organization:

- *SDG 3 – health and well-being*[2], could aim at taking measures to improve the medical services provided to military personnel and military medical infrastructure;
- *SDG 4 – qualitative education*[3], could aim at modernizing military education;
- *SDG 5 – gender equality*[4], is already on an irreversible trend, which still needs improvement in any field of activity;
- *SDG 8 – decent work and economic growth*[5], and *SDG 9 – industry, innovation, infrastructure*[6], could be correlated and analyzed in order to revitalize the defence industry, modernize the defence infrastructure and boost research, development, innovation in this domain;
- *SDG 11 – durable cities and human settlements*[7], could translate into a sustainable military organization, given the presence of military installations in the territorial units in which they operate and the influence that can be generated on the process of sustainable transformation of communities;
- *SDG 16 – peace, justice, effective institutions*[8], could be closely linked to the efficient management of activities and missions carried out by military organizations;
- *SDG 17 – global partnerships for SDGs*[9], stresses the importance of maintaining military alliances and focused efforts on achieving a stable security environment conducive to economic growth and sustainable development.

Of course, there is a need for thorough research and coherent proposals leading to the implementation of these objectives, but also others in the field of sustainable development (those related to environmental protection, responsible consumption, energy efficiency), especially if the financial effect is considerable.

The requirement issued by NATO, regarding the allocation by the Member States of at least 2% of GDP for defence, corroborated with the allocation of 20% and 2% of the defence budget for modern combat equipment, respectively for research, development and innovation[10], put pressure on decision-makers to choose between financing an unproductive, but still useful system, and other systems without which society, as a whole, would not be able to develop.

In this context, military leaders face the challenge to find the common factor that favors the planning and development of endowment and modernization programs beneficial to a sustainable military organization, on the one hand, and alignment with the evolution of the defended society, on the other, the defence budget being directly influenced by economic growth and civil society priorities.

The effects of COVID-19 pandemic on military expenditure

Whether we are talking about national military structures or those from other states, COVID-19 pandemic is expected to have generated both negative and positive effects. What is certain is that these two categories of effects had as a common element the need to respond mainly on the medical side, and attracted unforeseen expenses, distracting, at first sight, attention from meeting the objectives initially set, and generating a sudden reorientation of financial efforts.

Taking into consideration the objective of this research, the main negative effects are represented by the supplementation or reconfiguration of the expenditure. To meet the need to protect military personnel, but also to support civilian authorities, military managers have taken a number of measures, more or less costly, with a potential effect on current military and investment spending, economic growth and sustainable development.

Addressing this issue in retrospect, a study conducted by the Swiss army in April 2020 shows that the logistical management of the situation created by the pandemic inside a military recruit training institution is very demanding, highlighting the importance of drastic early measures[11] taken to avoid the spread of the virus. The study also mentions the difficulty of implementing hygiene and social distancing measures within such a military facility, where efforts have been made to ingeniously arrange tents with low accommodation capacity inside a gym, as well as to provide the feeding service[12], efforts which were not translated into figures, the study focusing more on the clinical side of the research. But the most important aspect shown in this study refers to the low incidence of COVID-19 cases among young recruits, those affected having mild symptoms, which did not require hospitalization. Given this aspect and the fact that, in general, active military personnel are under the age of 60, so with low vulnerability to SARS-CoV-2 infection[13], my opinion is that the hospitalization of infected soldiers did not generate significant costs, but this requires thorough research.

Among the measures observed to have generated expenses at the level of most military structures, there can be listed: providing protective equipment in medical facilities, but also in each military unit, ensuring temperature measuring equipment, providing hygiene and disinfection materials, stockpiling of long-term food items as a measure to protect against disruptions in traditional regional supply chains, and to adapt to the transition to digital ones[14], providing disposable containers for serving food. Besides these, the highly publicized actions related to the deployment of mobile field hospitals have certainly been cost-generating, highlighting the need to make investments in the future, to supplement the availability of such equipment and modernize the existing ones, so that they correspond to infectious threats[15].

The measures to limit the consequences of infection with the new virus have also been taken outside military barracks, whether they consisted of large-scale actions to support the restrictions imposed by the authorities, the effective support of the civilian population, or the steps taken while the military were on missions outside military units.

For example, at the national level, to support the restrictive measures imposed by the authorities, the military were sent to establish medical discipline inside hospitals transformed into outbreaks of infection due to inefficient civil management, and specialized equipment sent for disinfection of spaces and vehicles. Teams of military doctors were also sent on missions outside the territory to increase medical support in other countries.

Another aspect that could have generated expenses was the involvement of the available military in activities that generated overtime working, such as exercises or guarding objectives that would not normally fall within their area of activity, and which, in conjunction with the heavy allocation of the recovery days, may turn into additional expenses.

With the advent and marketing of vaccines, military forces and equipment were involved in air and ground transportation, being a decisive factor for the distribution of vaccines and the conduct of vaccination campaigns at national and local level.

The amount of expenditure generated by these actions, as well as an analysis of how they have influenced defence budgets, are issues which, at least for the time being, have not been published.

Although controversial at times, actions in support of civil society fall within the limits of both the missions set out for the armed forces and the trend at NATO level. An example of less expensive measures, in my opinion, are those taken by the Polish army, which has managed, with the support of cadets from military academies, to make a significant contribution to the support of the civilian population. Among the ones that generate minimum expenses, there can be mentioned: collection and reconditioning of the second-hand calculation technique in order to be donated to the needy children who attended the online courses; donation of staple foods, personal care products and medicines to disadvantaged people and veterans; manufacture, with the help of 3D printers, of the visors necessary for the medical staff; production of disinfectants; construction of protective masks and donation of blood[16]. The latter initiative was also found in the case of the military from other states, the need for blood and derived products being high during the pandemic peak periods.

A concrete way in which NATO intervened to limit the effects of COVID-19 is represented by the scientific research project started in 2020, which refers to creating devices for COVID-19 testing, the results of which should be completed in 2022. Except for the involvement in developing these elements, NATO, through the Science for Peace and Security (SPS) program, is also pursuing the development of other telemedicine, emergency response coordination and biological threat detection equipment[17].

In fact, this new type of threat is expected to significantly redirect the attention of political-military actors and organizations at the global, regional and national levels, and, consequently, to attract spending, at the expense of increasing or redirection of the foreseen ones, and these measures should, in my opinion, be based on comprehensive risk analyzes. For example, at the national level, Romania’s military strategy adopted this year establishes ”the elimination of the effects of the COVID-19 pandemic and strengthened national resilience”[18] as primary national objective for the 2021-2024 period of time.

A special category of actions taken to limit the spread of the virus are represented by military operations such as Operation Kill the Virus, carried out by the US military in South Korea, following the pattern of combat operations. They referred to the virus as an unseen adversary, developing its most likely and most dangerous course of action, cooperating openly with the authorities, engaging in the formulation of prevention policies, and implementing eight principles specific to military rigor, which proved their efficiency, reducing the number of cases throughout the peninsula to twenty-four[19].

Another example of a military operation caused by the SARS-Cov-2 virus is Operation Warp Speed, conducted by the US military in cooperation with national civilian authorities, for the rapid development and distribution of vaccines, based on research in military medicine and rapid contracting In terms of expenditure, this operation had the effect of allocating funds to pharmaceutical companies to support the development of vaccines, but their level has not been published[20].

The examples of involvement of the military structures mentioned above reveal a large participation of the military instrument in solving the crisis generated by the COVID-19 pandemic. A common feature of all the mentioned cases is the unavailability of data on the generated amount of military expenditure. On the other hand, the reduction of deployment, the focus on the organization of meetings and on-line conferences, as well as the cancellation of large-scale exercises that should have taken place in 2020 (Defender-Europe 20)[21], could represent pandemic response measures that have reduced military spending. At least at European level, for 2020, expenditure related to the mobility of military forces has been reconsidered at 1.5 billion euros, a level with 4.4 billion euro lower than originally estimated[22].

At first glance, the volume of military spending caused by involvement in mitigating the pandemic did not significantly exceed the one that would have incurred if the pandemic had not existed. However, available data show a significant increase in defence spending of some nations in the context of COVID-19. Thus, according to data published by the Stockholm International Peace Research Institute (SIPRI), at NATO level, in 2020 there was an increase of 2.6% compared to 2019, twelve NATO countries, including Romania, exceeding the threshold of 2% imposed by the Alliance[23]. This increase is explained by the efforts to keep the pandemic under control, the average share of military spending in the amount of GDP increasing from 2.2% in 2019, to 2.4% in 2020, the highest share recorded since the economic crisis of 2009[24].

However, these data, recorded and interpreted at the Alliance level, were not similarly justified at the level of each nation, as the policies pursued by each government to combat the pandemic were different. For example, data published by the same institute show that the increase in military spending as a result of the pandemic was explicitly achieved in Chile and South Korea, with Brazil and Russia at the opposite pole, which registered a lower level of real military spending than the one forecasted for 2020[25]. Overall, SIPRI researchers concluded that the pandemic did not significantly affect military spending, expressing interest in observing the maintenance of this trend in 2021, the second year of the pandemic[26]. In this regard, NATO's vision is that by 2021, ”two thirds of Member States will not be able to meet their 2% defence target for gross domestic product (GDP)”[27].

Regarding the medium-term evolution of the pandemic, the forecasts are not very encouraging, estimations showing that, at European level, defence budgets will witness reductions of up to 20% in 2025, which would not have been operated if the pandemic had not existed[28], fact easy to understand, given the economic constraints that could be amplified in this period, if the pandemic continues. Therefore, speeding up measures and unifying efforts to stop the pandemic could translate into better defence funding and continued efforts to maintain high response capacity.

The impact of the COVID-19 pandemic on the sustainable development of the military organization

Clearly, military spending in the first year of the pandemic, although not significantly increased as a result of the SARS-CoV-2 virus, has had some influence on global economic growth, with the additional amount being redirected to defence, into the detriment of other economic sectors, considered to have a major role in sustainable development (industry, education, health, etc.). However, two aspects may not be taken into account. The first refers to the involvement of the military organization in completing the efforts made in the medical field. In other words, where there have been increases in military spending, the basis of which is related to the pandemic, it can be considered that these allocations of funds were also of a medical nature, in support of society as a whole. The second aspect refers to the fact that the military instrument contributes decisively to the achievement of economic growth, which would not be possible in an unstable security environment, severely affected by conflicts. For these reasons, in my opinion, the insignificant increase in overall military spending has not yet affected sustainable development as a whole, without minimizing the possibility that some nations might have been affected.

Related to sustainable development, in general, there have been several initiatives aimed at assessing the impact of COVID-19 on the implementation of specific objectives. For instance, the impact of the pandemic on aspects defining people's quality of life, namely: poverty, hunger, health, education and equality of chances, was analyzed through a study performed with the contribution of the United Nations Development Program (UNDP) and the University of Denver[29].

Analyzing four scenarios that progressively take into account the influence of the pandemic over the next decade (non-existence of COVID-19, existence of COVID-19 without major impact, existence of COVID-19 with major impact and intensification of SDGs implementation measures), the study uses as a main tool ”International Futures / Ifs” forecasting system[30]. Beyond the fact that the results signal the need to extend the time horizon for the implementation of a part of the analyzed objectives by 2050, its main conclusion is that ”44 million people could experience extreme poverty by 2030, as a result of COVID-19 effects”[31].

In this context, investments in social protection, good governance, digitalization and green economy programs would not only be the solution that would nullify the effects of the pandemic, but would also contribute to the accelerated poverty alleviation of 146 million people, especially of those affected by conflicts[32]. Among these, digitalization could make a decisive contribution to the efficiency of the military organization and, consequently, to the implementation of SDG 16, with possible positive effects on the implementation of other objectives.

Regarding the progress made in implementing the SDGs, the case of Myanmar clearly shows that the effect of the pandemic, translated into a 5% increase in the poverty rate, is much smaller than the impact of the conflict caused by the coup, estimated to double the percentage of those in need[33], emphasizing the importance of the correct use of the military instrument for long-term economic, social and environmental development. Consequently, the sustainable development of the military organization can make a decisive contribution to the sustainable development of nations.

From my point of view, the sustainable development of the military organization is explained by the existence and uninterrupted growth, in the long run, of the capacity to react to various threats. This responsiveness must be supported by maintaining and even improving the financing policies of the military organization, so it is based on good cooperation with civil authorities, so that the military can equip themselves and prepare in accordance with the increasingly diverse requirements of the environment security, especially in the face of limited resources, environmental issues, biological threats and the emergence of new technologies and artificial intelligence, true vectors of competitiveness.

Beyond the additional costs generated by the outbreak of the COVID-19 pandemic, the military organization itself was positively influenced. Maintaining upward funding for this area is a first sign that the political factor is aware of the need for an adequate response capacity to threats and appreciates the military's involvement in the fight against the pandemic.

Analyzing the documents published up to date, I did not identify the existence of situations in which the military procurement programs were canceled due to pandemic considerations. Similarly, recruitment programs can be considered to have continued in an adaptive manner, so that the organization can ensure long-term access to human resources. Moreover, the professional and mental training of the military have been improved, the pandemic being a real scenario in which a biological threat, not usually taken into account so far, generates a real crisis, which must be comprehensively addressed.

A detailed analysis of how the COVID-19 pandemic has affected security and defence issues at EU level, based on relevant documents, interviews with key leaders in the European institutions and the results of expert working groups, shows that the deficiencies already encountered on the side of the common defence capabilities were accentuated during the resolution of the pandemic crisis. Thus, capabilities in the field of strategic air transport, security of communication and command and control remain on the procurement list of European military forces[34]. In addition, there was a strong need for investment in health intelligence, information technology security, cyber capabilities and the management of biological risks caused by dual-use technologies[35].

Considering the cooperation of military structures with civil authorities to limit the spread of the virus, as well as the models of civil-military cooperation adopted in countries such as Finland (the Minister of Defence organizes a monthly committee on security, bringing to the table secretaries of state, intelligence services, border police and business representatives) and Latvia (promoting close cooperation on security)[36], my view is that the pandemic has provided an opportunity to raise awareness of the need for a preventive approach and to unite the efforts of society as a whole to achieve resilience. In fact, SDG 17 aims to build partnerships to achieve common goals, the pandemic bringing positive results in terms of achieving it. As a result, civil protection cooperation and cooperation between organizations such as the UN, NATO and the EU have never been at this level, ensuring the framework for the sustainable development of the military organization, whose visibility has considerably increased.

Another issue highlighted by the pandemic context concerns the need for EU Member States to invest in ”strategic autonomy”[37].

This matter further encourages the sustainable development of military organizations, which, primarily, at the state level, must be able to conduct operations and missions without the support of other states. The implications relate to strong logistical support, based on a strong defence industry and rapid contracting capabilities (facilitating the implementation of SDGs 8 and 9), which will feed the fighting forces or the ones directly involved in resolving crises with the necessary goods and services, in a timely and complete manner (facilitating the achievement of SDG 16).

In the field of education, the pandemic highlighted the need to improve online platforms and the curriculum managed by military institutions, to ensure the continuity of educational activities and their adaptation to the new context. It has also pointed out the need to develop the digital skills of teachers in all educational institutions, but also the adaptation of school curricula in order to improve the digital skills of pupils and students[38], aspect that will favor the implementation of SDG 4 in military education.

In addition, the exercises, decisive for the full training of the military forces, have already been resumed with adaptive organization, in order to ensure the preventive conditions, especially in the context of the increasing number of vaccinated soldiers (Defender-Europe 20 took place in 2021[39]). In the future, they should take into account the many lessons identified when limiting the effects of the pandemic, including the organization of exercises based on the scenario of a biological attack initiated by non-state actors, conducted in a joint system by NATO, as well as by the EU[40].

Concerning cooperation, support and coordination of financial efforts to counter the effects of the pandemic, the EU has set up an innovative recovery and resilience mechanism to ”accelerate the implementation of sustainable reforms and related public investment in the Member States”[41]. It is the only instrument available at the moment, through which 37% and 20% of the total allocation of the National Recovery and Resilience Plan (NRRP), are funds for expenditures related to the green transition, respectively the digital transformation[42]. In this context, as the plan has an average implementation deadline, August 31, 2026 respectively[43], Member States are expected to register during the recovery and benefit from the allocation of these funds, which may increase the strain on military spending in the absence of such support. Beyond this, the military organization can benefit from the programs developed under this plan, thus increasing its resilience and accelerating its trend of sustainable development.

Conclusions

It is obvious that the COVID-19 pandemic has increased the expectations of civil society towards the support that can be given by the military organization, and its involvement in limiting the effects of the pandemic has generated expenses that need to be carefully analyzed. However, it is premature to conclude that the impact of the COVID-19 pandemic on sustainable development, in general, and the sustainable development of the military organization, in particular, has been negative. The lessons, the shortcomings and the remedial measures identified can have a positive influence on the sustainable transformation of the military organization. Detailed impact studies, carried out on the basis of detailed information, published by the military structures, are badly needed in order to facilitate cooperation with the civil environment, and, as a result, to establish resilience measures, the lack of these data being the biggest limitation of this research approach.

In the short term, the COVID-19 pandemic has not affected the responsiveness of military structures, but in the medium and long term it is possible that governments may not be able to keep spending trends unchanged as the pandemic continues, because they could be forced to reduce defence funding, which would be a real risk to security, but also a setback to the sustainable development of the military organization.

At national level, through the NRRP, military strategic management should adopt, in an accelerated regime (with implementation horizon on 31 August 2026), the following directions of action aimed at facilitating the availability of ”dual-use” capabilities[44], on the one hand, and sustainable development, on the other:

- significant investments in national defence industry, so that it can provide civil society and the military organization with common products to counter pandemic, environmental and other threats;
- establishment of stocks of products intended for civil and military consumption and the rehabilitation and/or construction of adequate storage facilities, enabling them to be kept in optimal conditions and exchanged between the military and civil fields, which have a constant rate of consumption during peacetime;
- reorganization of the military structures, establishing the appropriate legislative framework for the implementation of rapid contracting instruments, allowing adaptation, online procurement and access to the short supply chain;
- enhancement of research, development and cooperation with the civilian environment, for the reconfiguration of procurement programs, so that, until the deadline established in NRRP, the amounts needed to purchase the necessary equipment, primarily for medicine and education, can be planned and allocated by attracting European

non-reimbursable funds, which would contribute to the strategic autonomy of the military organization and to its greater openness to civil society;

- development of multinational training programs for military specialists in the fields of logistics, procurement, medicine, education, information technology and human resources, in order to connect them to the evolution and requirements of civil society and to the possibilities of attracting European funds;
- digitalization of the military organization and its connection to the platforms of other institutions in the field of defence, public order and national security and of civilian bodies in areas of common interest (education, recruitment, medicine, industry, etc.).

Besides the already mentioned aspects, my opinion is that the present research approach has achieved its proposed objectives. In addition, the prospect of extending the time horizon allocated to sustainable development will entail new possibilities for implementing the SDGs in the military organization, which can be a future direction of research.

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EVALUATION OF DIGITAL DIPLOMACY AS A FORM OF SOFT POWER PROJECTION IN EUROPEAN UNION CSDP MISSIONS

Victor Adrian VEVERA*

In this article, we aim to analyze the digital diplomacy of the European Union from the perspective of how it can become a tool of power. The analysis will be made from the perspective of international practice theory, so that the ways of projecting soft power în The Common Security and Defense Policy (CSDP) missions to manage an international environment affected by crises and conflicts can be identified.

Keywords: digital diplomacy; international relations; international practice theory; CSDP.

The study of digital diplomacy, as a modern form of diplomacy, is not done per se, but is subsumed to a very clear objective, namely the delimitation of practical applications of digital diplomacy by identifying ways in which it can be transformed and operationalized as a tool of soft power[1] and can be used as such, in an international environment affected by turbulence.

In the following lines, I will try to achieve this goal by invoking in our analysis the theory of international practice, with the simultaneous study of the possibilities of designing the soft power of state actors through digital diplomacy.

Given the premise that digital diplomacy can be conceptualized as a foreign policy strategy, we this article, we have highlighted in Figure 1 the sequence of ideas and the increasing emphasis on digital diplomacy practices in CSDP missions and operations.

Therefore, this article should answer the following questions:

- Can digital diplomacy be an instrument to design soft power?
- How can the soft power of the European Union be designed to manage changes in the international environment?
- What are the EU's digital diplomacy practices that are representative of its status as a soft power design mechanism in crisis management in the international environment?

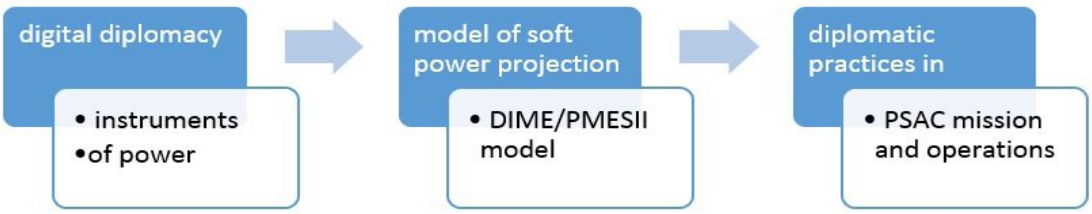

Figure 1 *Digital diplomacy as a power tool in CSDP missions and operations* (Author's conception)

will show that in order to operationalize digital diplomacy, it must be equated with a mechanism for managing change in the international environment. In order to illustrate more suggestively the way we will approach the issue of digital diplomacy in

The interpretation of digital diplomacy from the perspective of international practice theory allows a detailed analysis of diplomatic customs to identify discrete diplomatic practices useful for intervention in the international environment. The theory of international practice was conceptualized by extrapolating concepts specific to social psychology, analyzing the conditions that cause turbulence in the international environment. The resulting conclusions will be applied to the

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specifics of digital diplomacy, in order to highlight the conditions under which diplomacy can be used effectively to manage change at the macro political level.

Interpreting digital diplomacy from the perspective of international practice theory as a mechanism for producing knowledge in the international environment

Traditionally, the study of diplomacy has been approached by reference to the traditional structural theories of international relations, and this theoretical framework has narrowed the research to the dynamics of diplomacy in the distribution of power, seen as a distribution of capabilities[2]. Although not considered an element of power, state diplomacy was heavily dependent on that power. The fact that mostly diplomatic practitioners or historians of diplomatic practice, and less theorists by profession, were mainly involved in the study of diplomacy, was an important reason why the study of the diplomatic field stagnated from the theoretical point of view[3].

The antagonism between the USA and the USSR during the Cold War was mainly aimed at acquiring a position of superior power, especially in terms of military capabilities, because the acquisition of this position would have conditioned the conduct of negotiations. And yet, at the time, diplomacy was considered only an antechamber of power, and was not really taken into account when the situation called for the resolution of significant issues. Corroborated between this premise and the fact that the field of international relations failed to predict the end of the Cold War, determined the orientation of the study of diplomacy towards other theories, despite the fact that structural theories reinterpreted from a neorealist, neoliberalist and constructivist perspective[4] continued to be used.

Understanding how erroneous it was to analyze only structural factors, such as diminished military capabilities or economic performance, in order to anticipate how the international situation would evolve, analysts also turned to the study of practices that accompanied change. Thus, it turned out that there were a number of signals, not included in the specialized analyses that could have foreshadowed the following situation, if they had been considered in time. The fact that Mikhail Gorbachev was meeting with Ronald Reagan and George Bush showed that changing international practices should be among the first elements analyzed in order to understand the international system[5].

Thus, the theorization of diplomacy was grounded and justified with the help of the theory of international practice, respectively the interpretation of social situations and existing habits, a theory that emerged from the interpretation of customs that tried to mediate many of the dualistic positions specific to international relations.

In the spirit of this theory, international practices are understood as routines performed at the level of individuals or groups of individuals[6], highlighting the factors involved in structuring the environment in which they occur. Practices can be both institutional and structural, and intervene in the ideas that the individual or group has about the world[7].

The involvement of the theory of international practice in the theory of diplomacy determines several re-evaluations, because diplomacy is understood as a phenomenon in the service of power policy, with well-highlighted effects in the international system.

The most substantial change produced by this way of understanding refers to the change of approach to diplomacy which is no longer seen as a materialization of power, but as a discreet practice, able to change the environment by itself.

A substantial change in previous approaches produced by the theory of international practice is to relate to the effects of the environment on the functioning of the individual and groups. As neuroscience developed, the customs at work in the international system and the type of internal coherence it presents were examined, a landmark article in this new field belonging to Ted Hopf[8]. Hopf's view based on the elements of social psychology as an argument is that much of the life of the individual and groups is automatic, unconscious, and routinized. These habits guide our lives to a greater extent than what we presume, and the trend is found in all groups, including jobs in the international system. Of course, such an approach is not only difficult to accept, but also contradicts previous theories regarding international relations as processes governed by rationality, logic, consciousness and rules[9]. Moreover, in diplomatic meetings where diplomats meet face to face, the manifestation of these specific human tendencies can lead to unconscious disclosures of important information. Todd Hall[10] and Keren Yarhi-Milo[11] extensively referred to the way emotions are managed in interpersonal relationships, showing that in the absence of extensive use of social and cognitive psychology knowledge, the specific manifestations of diplomacy will be impossible to understand. We dare to say that any field in which an important share is held by interpersonal relationships is impossible to be understood if the specifics of interpersonal relationships are not properly analyzed. Therefore, the investigation of international practices based on methodologies specific to social psychology must become a common tool of diplomatic analysis.

Given the functions of knowledge production and management in the international system, diplomacy can be interpreted more as a discrete practice with observable and measurable effects in the international system. More than other types of diplomacy, digital diplomacy allows for more sophisticated analysis with information technology-specific tools. The most important social networks are used in digital diplomacy with remarkable results, to which the potential addition of specific tools such as Big Data analytic, data mining, computerized generation of scenarios and simulations would exponentially multiply its potential.

The objective of achieving long-term goals through diplomatic strategies requires the development of innovative tools, including on the dimension of digital diplomacy, to facilitate the resolution of crises and conflicts specific to the international environment, but also to identify potential partnerships. The European Union could take advantage of the potential of digital diplomacy as a discreet international practice capable of facilitating the pursuit of its interests in the international environment.

Digital diplomacy therefore has two important and distinct statuses in the international environment: both the knowledge creation mechanism and the knowledge management mechanism. The combination of the two mechanisms and the emphasis given to each can be different depending on the theories invoked for analysis: from a rationalist and structuralist perspective, diplomacy is a zero-sum game, in which one international actor can win only if another loses; from the perspective of international practice, diplomacy is conceptualized in a broader, humanistic vision.

Theorists in the field believe that contemporary diplomatic practice involves the creation of knowledge through the collection, processing, dissemination of information and the transformation of knowledge into a specific institutional resource[12]. The study of the role of technology in the diplomatic field highlighted the importance of disseminating information so that the objectives of diplomacy are achieved quickly. In this context, it matters both how the information is transmitted and what information is shared with the public. The function of strategic information control is more strongly highlighted in this practice, supplementing that of data collection, processing and analysis. Contemporary diplomacy is in a position to manage huge amounts of data, an activity possible only with the help of information technology. The way in which information is produced, identified, disseminated or managed in the international environment benefits from the support of web technologies, so that the best interest of the state is achieved.

In conclusion, the role of digital diplomacy is becoming more prominent in the use of digital technologies, and states have a duty to be aware of the potential of this field. Digital diplomacy therefore involves the dissemination of information through the use of digital technologies to manage change in the international system. In fact, through the function of change management, digital diplomacy expands the scope of public diplomacy.

The role of digital diplomacy in the management of crises and changes in the international environment

Going beyond the restrictive framework of structural theories of international relations, the theory of international practice provides an innovative and much more generous framework of analyzing the habits of individuals and groups in relation to how change occurs. Routines facilitate social life through simplification and lead to constancy and predictability. Although it seems a concept in opposition to stability, change is, in turn, an intrinsic part of the international environment, and the correct understanding of the functioning of social life in all its dimensions is a correct premise to determine the pace and direction of change. It is interesting that the development of activities in the area of competence can at the same time lead to the consolidation or change of the international system[13]. In both cases, with the support of digital technologies, digital diplomacy is in a position to intervene more effectively in their management. The competitive advantage of digital diplomacy, unlike other forms of it, is the ability to analyze significant data sets, the ability to instantly disseminate knowledge over long distances, to simulate certain events using technology. For these reasons, digital diplomacy should be incorporated into the foreign policy strategy that can make it operational as a discreet practice of implementing ways to strengthen national interests, pursuing each of the political, military, economic, social, infrastructure and information dimensions.

By incorporating the tactical, operational and strategic levels, the analytical model DIME / PMESII / ASCOPE / ICR was conceptualized. DIME is the acronym for the main elements of power – diplomatic, informational, military and economic. PMESII considers the political, military, economic, social, informational and infrastructure systems. ASCOPE refers to Area, Structures, Capacities, Organizations, People and Events, and ICR refers to the need for civilian information during an intelligence gathering campaign – *Intelligence Collection Requirements.*

The systemic analysis of a situation based on these models allows the identification of opponents and allies and deciphers their behavior, highlighting the strengths, weaknesses, critical factors, resilience of the actors involved. The importance of using multidimensional models lies in the complexity of conflict situations in the international environment, each crisis having a historic, social, cultural, economic background. Each factor must be identified, analyzed, measured and managed as much as possible[14].

In CSDP missions in the European Union, digital diplomacy can be very useful as a tool of power. Through its knowledge-producing function, digital diplomacy contributes to the functioning of subtle mechanisms that can influence and manage changes in the international environment: practices such as the dissemination of social norms, speech control and information are just a few examples that can help achieving established goals.

Among the models mentioned above, the most frequently used is DIME, which analyzes the diplomatic, informational, military and economic power. Sometimes DIME becomes DIMEL (legal dimension is added), DIMEFIL (with financial, intelligence and law enforcement). In essence, these are the levels of power that a state has, and diplomacy stands out as an essential resource for achieving the strategic objectives of that actor.

Following Nye's theorizing, the power continuum is configured with the two forms of power (hard power and soft power) at the extremities[15]. Steven B. Rothman renames hard power as command power, and soft power is relabelled as co-opting power. Between the two ends of this continuum of power infinite combinations of the two types of power are found, which are manifested through specific tools and behaviors.

From this perspective, the concept of power acquires a dynamic perspective, and the behavior of international actors becomes comparable from the perspective of the form / forms of power they exercise in international relations. If the main form of manifestation of hard power is physical, often accompanied by coercion, soft power is evaluated according to the attractiveness it exerts, most often through rules, ideology, knowledge.

However, the model of the power continuum,

Dihotomy of power	Hard power (command) Force	Stimulation	Soft power (co-opt) Setting international agenda	Attraction
Continuum of power	Hard power			Soft power
Resources of power	Military	Economy	Institutional	Rhetoric

Figure 2 *Concept of power: dihotomy and continuity*
Source: G. Goertz, *Social science concepts: a user's guide*[16]

Power dichotomy	Hard power (command)		Soft power (co-opt)	
	Force	Stimulation	Setting international agenda	Attraction
Power continuum	Robust power power (hard power)		Smart power (hard +soft power)	Soft (soft power)
Power resources	Military	Economy	Intelligence	Diplomacy

Figure 3 *Continuum of powers*
(Author’s conception)

proposed by Steven B. Rothman, is less specific in the middle area of the power characteristics, which are neither soft nor hard, but in which elements specific to both types of power are found. In the context of the continuum of power, diplomacy is becoming an essential element, and in the conditions of this global technological transformation, digital diplomacy is emerging as a prominent element. However, for the gray area, Rotman’s model does not clearly highlight the fact that diplomacy is part of the soft power instrumentation.

Therefore, starting from Rotman’s model, but also considering the limits we have identified, we propose a more complete version of this model, by introducing the form of intelligent power in the gray area of the continuum of soft / hard power and, also by highlighting digital diplomacy as an additional resource, which can be mobilized by political actors in crisis situations.

Conclusion

In this article we started from the premise that digital diplomacy is becoming more and more prominent in the international diplomatic landscape, amid the diversification of technologies and their multiplication of applications in everyday life and we argued that digital diplomacy can turn into an instrument of power. The theory of international practice has been used to highlight ways of projecting soft power in managing an international environment affected by conflict and crisis. In order to operationalize digital diplomacy, it must be equated with a mechanism for managing change in the international environment and conceptualized as a foreign policy strategy specific to soft power.

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THE ADVANTAGES OF USING THE MILITARY PENTATHLON IN PREPARATION FOR MILITARY COMBAT

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The contemporary operational environment in which the military carries out its military actions is a complex one and, therefore, requires the completion of an effective training program, a process of continuous education of the physical qualities and motor skills indispensable to the fighters. Therefore, the use of specific and associated means of sports training, customized according to the specific content of the military pentathlon, becomes extremely useful, because it has the role of improving the skills of the military and achieving maximum performance through them. Since its inception, the military pentathlon has been designed to help increase the level of physical training of the military and to capitalize on their ability to perform, a competition that was specifically related to physical, mental, intellectual, practical, creative abilities and leadership required of the military on the battlefield.

Keywords: military pentathlon; physical training; combat training; emotional behaviors; military physical education; CISM.

In 1946, the French captain Henri Debrus[1] conceived and promoted the idea of organizing a sports competition reserved exclusively for the army. The source of inspiration was when he studied a physical training program practiced by the military of the Dutch Air Force, which included means of action to improve motor skills specific to military activities, such as: parachuting, marching with the subunit, overcoming obstacles in a runway and carrying out operations for firing weapons or throwing hand grenades. Taking the Dutch method as a model, Captain Debrus eliminated the parachute jump and modified the other components, thus forming a perfect physical training system (for those times), designed to promote both specific and general physical condition.

In order to capitalize on the motor skills acquired by the military following this specific training program, Debrus organized the first competition the following year, which took place at the Military Training Center in Freiburg (Germany), in which teams of Belgian, French and Dutch armies participated. The improved regulations, resulting from the competition, were approved by the French military authorities, and the tests included in the competition were widely adopted by all French armed forces under the name of the Military Pentathlon[2]. Since then, the five tests in the military pentathlon (a complex application-military discipline) were:

- *the firing test* which consists in firing with the individual armament from the equipment at a distance of 200 meters, from the reclining position, on a target with circles (the largest circle having a diameter of 50 cm). Two shots will be fired as follows: 10 cartridges in 10 minutes (*Slow Fire*) and 10 cartridges in 1 minute (*Rapid Fire*), with a break between 1 minute shots. In order to simulate the conditions of the battle zone, the test will be carried out with the soldiers equipped in combat uniform, and the maximum score that can be obtained in shooting is 200 points;
- *the obstacle course test* which consists in traversing a route / track with a length of 500 meters on which a number of 20 standardized obstacles (for male soldiers), respectively 16 obstacles (for military of female gender) are arranged in a certain order. It should be noted that each of the obstacles can be related to a specific combat skill required in the operational theater. This is executed dressed in sports attire (in some local competitions combat attire is also used) and is the only and most important tool for developing skills for maneuvering on the battlefield;
- *the obstacle swimming test* which consists in going through a procedure / style of swimming

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at the choice of the distance of 50 meters, in the pool a number of 4 standardized obstacles being mounted in a certain order. This test can be seen as an essential skill for survival, and it must be performed in a bathing suit according to the established regulations, but it can be performed in certain situations and in combat attire (but without boots on);

• *throwing test* consisting of the counter-throwing of standardized hand grenades, to precision (during 3 minutes 16 grenades must be thrown on 4 circles, each with two concentric zones and the center arranged at distances of 20 meters, 25 meters, 30 meters and 35 meters from the throwing alignment) and at a distance (3 grenades in 2 minutes). Precision throws will be executed in a clearly regulated order: four grenades for each circle, from the nearest to the farthest and for female soldiers the distances of the arrangement of the circles from the throwing alignment will be reduced each by 5 meters. In order to simulate the conditions of the battle zone, the test will be carried out with the soldiers equipped in combat uniform, local competitions combat attire is also used).

Starting in 1995, a new additional military competition derived from the military pentathlon was introduced. It is about *the relay with obstacles*, a competition organized in the eliminatory system and held simultaneously between two teams. It consists of an obstacle course (built so that two competitors can compete at the same time) by two teams, each made up of 4 male soldiers (respectively 3 female), whose competitors successively cross the distributed distance (five obstacles each), with the obligation to pass the baton to the next teammate.

International Military Sports Council (known by the acronym CISM) became interested in this project and began to promote this competition by organizing an annual international championship. After a modest start, in 1950, when only three nations entered the competition, the military pentathlon expanded in number of participants and became (especially in the last 20 years) one of the most important military competitions organized by CISM. However, the military pentathlon is not only one of the most remarkable sports competitions that take place in the

Figure 1 *Aspects during the five tests of the military pentathlon, competitions organized at international level in the 50s*[3]

and the maximum score that can be obtained at the precision throw is 136 points;

• *the test of running in various terrain* which consists in covering a route with a length of 8 km (for male soldiers), respectively 4 km (for female soldiers), will be performed in sportswear (at some military system, but also has relations with the world of civil sports. In several countries, especially in the Nordic and Central European countries, civilian sports organizations have adopted the military pentathlon, organizing competitions with the participation of athletes from outside the military system.

The characteristics of the military pentathlon

From the very beginning, the military pentathlon was designed to help train the military based on competition between them and the fight against unfavorable elements in the environment, thus instilling a competitive spirit. Later, competitive participation between countries was moved to encourage cooperation and friendship between nations and to assess competence levels. Military pentathlon aims to train or improve physical skills (conditioned: speed, strength, endurance, flexibility; or coordination: reaction, pace, balance, orientation, adaptation, differentiation, synchronization), psychological (mental endurance, perseverance, confidence) and leadership (leadership, decision making, discipline).

The military pentathlon has its origins in military training, and the priority for specialists in the field of physical education is the challenge to produce effective military fighters, using new training methods. Complements and amendments to the regulations, improvements to sports facilities and equipment that are used in training or competitions have led to the creation of a sport that is no better than a civilian sports competition. Given the complex psycho-physical demands that competitors are subjected to, the military pentathlon is undoubtedly one of the combined poly-athletic competitions, and can be used to train the military around the world.

The characteristics of the military pentathlon are closely related to the role of the military and the essential tasks undertaken by the armed forces, being a combination of the ability to concentrate, physical endurance and psychological challenges. The one who masters all the events within the military pentathlon is the one who will excel both in sports and on the battlefield, predicting the versatility of the future military.

In the shooting test, the conditions of the battlefield are simulated by performing precision and speed shooting, thus testing the military’s skills in knowing and handling the equipment. The obstacle course test tests the ability of the midfielder to perform an organized and fast movement on the field of operations, crossing 20 obstacles that reproduce in similar conditions the factors that prevent or hinder the performance of an action on the battlefield. On the other hand, the obstacle course tests the military’s water survival skills, causing him to swim a distance of 50 meters (a stream) and overcome certain obstacles, using any style of swimming and any crossing technique. The hand grenade launch test (precision and distance) determines the level of consolidation of an important motor skill for the military, and the varied terrain running test determines the military’s aerobic effort capacity, which is necessary in case of sustained efforts and intense that can occur during a military conflict.

Given the skills that the military must have to perform physical activities, the military pentathlon can be attributed the following characteristics:

- the ability to concentrate in stressful situations is necessary during the firing of the individual equipment (especially during the second round, when 10 cartridges must be fired in 1 minute);
- the ability to concentrate completely on the motor gesture specific to the biomechanics of precision throwing and on the explosive power that the military develops when throwing hand grenades at a distance;
- the ability to tolerate some gastrointestinal problems (it is estimated that 30 - 50% of endurance runners have digestive problems with manifestations arising from exertio[4]), corroborated with the ability to develop a motor action in the shortest time, without the appearance of fatigue, dexterity, courage and the desire to take risks, during the obstacle course;
- aerobic exercise capacity at a high level and above-average willpower during the varied running test, which requires high demands on endurance (as well as motor quality), concentration and morale of the military.

In terms of developing the military’s performance capability, the best results achieved in the five tests are continuously improved, with time or score records being broken each year. However, the winner of a military pentathlon competition will not be a specialist in one or two events, but rather a multi-sport military man with a multi-athletic training and a multi-purpose technical training, who will achieve the highest possible performance in all five trials.

The advantages of practicing military pentathlon

The explanation of the importance of the military pentathlon in preparing an army for combat is best illustrated by the statements of Brazilian Colonel Paulo Roberto Ribas, who said that the modern fighter, as well as the elite athlete, depends on adequate psychological training that will allow them to evolve under pressure, to endure the pain, to focus on the tasks and to be persistent. They will participate in missions or competitions displaying a positive attitude and conveying calm and confidence. In this way, we must see in high-performance competitive military sport an economic solution for military training, comparable to the harsh realities of combat, as both require emotional, psychological and physical training. Military athletes can be trained to achieve certain goals, making the most of sports facilities, swimming pools, sports fields or obstacle courses, and emotional behavior can be trained and assessed by participating in competitive sports[5].

It is also extremely important to understand how the activities of the military training program follow one another, in order to ensure that effective training takes place. Usually, any military mission is planned and carried out in three main phases (pre-mission, actual mission and post-mission), and general, specific and specialized physical training programs must be designed in accordance with the essential requirements of the mission to be met. Comprising most of the utilitarian-applied skills, the tests within the military pentathlon represent an admirable way to continue the physical development of the military during all phases of the mission.

Pre-mission training (pre-mission) involves training and maintaining skills, which makes the military pentathlon an excellent way to train, because the military strengthens its skills in a competitive environment, thus raising the level of physical training. On the other hand, post-mission training will be used to maintain / improve skills and level of physical training. During the mission, the motor skills involved in various combat situations (and which are found in military pentathlon tests) can be used to create automatisms and to develop the capacity for physical effort and specific motor qualities.

Structuring the stages of physical training of the military targeting specific events / actions on three training mesocycles and superimposing them on the three phases of the mission, mesocycles which in turn are formed as a guide of a series of different or same type micro cycles (training, regulation of the specific task / role, execution of the exercise / mission in the field, recovery), is a special opportunity for the military pentathlon to be used as a force multiplier in the preparation for combat of the military.

Research done by some specialists in the field[6] clearly shows that the various tests of the military pentathlon can contribute to military instruments, as follows:

• *Shooting*. This ability is essential for the military because, during missions, they are equipped with individual weapons with which they must execute fire quickly and efficiently, to cope with the integrated battlefield or unconventional forms and procedures of the enemy. Precision shooting is essential for survival and to prevent unnecessary injuries, especially in ever-changing environments (for example: military operations in a crowded urban environment);

• *Obstacle running*. This travel process is an excellent one to prepare the military for the more difficult areas that they will sometimes have to go through to get to their destination. It will also improve aerobic and anaerobic exercise capabilities, muscular endurance, muscular strength and agility. All technical procedures for overcoming obstacles are assimilated by a certain specific ability encountered on the battlefield and must be performed against a background of minimum energy consumption and a high degree of concentration;

• *Obstacle swimming.* A very important movement process that allows the military to acquire the basic skills of survival in the water (learning technical swimming procedures) and crossing certain obstacles that they may encounter along the way while swimming. It also improves aerobic exercise capacity, muscular endurance (the ability of the muscle to activate repeatedly over a period of time, at sub-maximum performance) and lung capacity (predictor of health and longevity) and, at most, more important for the military is that they overcome their aqua phobia (fear of water);

• *Throwing.* This ability improves spatial-temporal perceptions and significantly develops general coordination of movements, scapular girdle and arm muscles, speed of execution and reaction and ”muscular sense”, because the military must appreciate the distance to the target, its size and shape. Throwing ability does not only apply to throwing grenades, but other materials can be used (such as: ropes, first aid kits, protective equipment, etc.) that must be handled in a safe and dry area, and this is essential when the military operates in a locality and must identify the targets for aviation or enter / neutralize certain unsafe areas (by using smoke bombs);

• *Running in various terrains.* This type of running is very useful for the military, as it forms a series of skills specific to running on different terrains such as structure, consistency or degrees of difficulty. In addition to the health benefits, running in varied terrain can increase self-confidence, relieve stress and eliminate depression. It will improve the capacity of aerobic effort, forming the basis on which all motor qualities can be developed. The reason why running in various terrains is better for the military than running on asphalt is that it improves proprioception[7], preparing the body for contact with uneven surfaces. When running in varied terrain, the military never has a steady pace, which is why this form of movement is harder than a run on a flat surface, but for the military it is perfect because they will train on terrain similar to the environment in which they will act. At the same time, the military will become stronger, their endurance (physical and mental) will develop and their cardiovascular fitness will be greatly improved.

Given the psychological effect that an activity such as pentathlon has on the military, it has been established that there is a correlation between the emotional behavior of athletes who play sports and the military who participate in military operations[8]. Pentathlon can contribute to both the training of athletes and the training of the military by introducing modern concepts of sports psychology, simulating specific motor skills that are necessary for the successful conduct of military operations. Much emphasis will be placed on cognitive-behavioral interventions, which can be defined as psychological programs that use different techniques to provide learning, training, counseling and psycho-physiological development.

It is important that all physical activities are planned and carried out in close connection with the elements of combat, in order to develop the combat skills of the military. Some emotional behaviors, encountered during a military pentathlon competition, could be developed and correlated with the military's combat environment. These were identified and structured into four broad categories, as follows: *psychological training, importance of motivation, emotional states/reactions, and leadership efficiency*.[9]

Psychological training refers both to the training of mental abilities, mental and concentration skills (improving leadership techniques, concentration, focus, attention development and motor skills), and to the training of self-control (improving emotional balance, motivation, confidence and stress control), all of which are essential skills for the military's survival on the battlefield. Through the cognitive system that promotes the human ability to adapt to the environment (shooting, running or swimming among obstacles, throwing grenades), the military will learn to organize and control their behavior in uncertain and unsafe situations. Therefore, in sports, the military's response to a certain stimulus is strongly influenced by the emotional behavior and the subjective analysis of the situation, and this aspect can directly benefit the military, when he is on the battlefield.

The importance of motivation refers to the fact that the military pentathlon can contribute by the nature of its competitive means, in the sense that athletes who are dedicated and motivated usually form winning teams. Motivation is an active, intentional process, focused on a specific purpose and that satisfies internal psychological needs (autonomy, competence and relationships) and / or depends on external sources (concrete or intangible rewards).

Some research has investigated the positive *emotional states/reactions* that are present among successful military pentathlon players while participating in a sports competition, identifying two characteristic behaviors among them[10]:

• a positive mental state, which involves being completely absorbed, focused and involved in physical activities performed at a certain point in time, as well as obtaining the pleasure of being engaged in that activity ("flow-feeling"). It has been noted that this condition is caused when you engage in physical activity to simply enjoy it (for pleasure and for fun). This helps to achieve success and emphasizes the following: repeated competition and pleasure will lead to the acquisition of basic skills that the military will need;

• a winning mental attitude that gives you the courage and strength not to give up when you set yourself a goal and encounter obstacles. The characteristics of this attitude (personal strength, confidence, courage, intelligence, work and perseverance) can be directly related to that of the military on the battlefield.

Leadership is defined as the ability to act on a person or group to achieve a goal in any circumstance. *Leadership efficiency* in performing tasks refers to the fact that a team leader must have some essential traits (competence, motivation, communication and empathy), which are put into practice in a military pentathlon competition and which can be part of integrated training for fighting. The competence of the formal leader must be recognized by the informal leader of the team, because he is the one who has the recognition, with the help of which he gains influence over the actions of the military in his team. The personal motivation of the leader will influence and inspire the team members, and they will adopt the desired behaviors and will strive to achieve the goal at a higher level. Communication between the leader and the team must be effective and accessible to each other. Out of the need to improve performance, the leader must demonstrate empathy, a deeper understanding of each team member, and its leadership must be based on trust and mutual respect.

The psychological strategy for gaining emotional control during a military pentathlon competition (competing with athletes with multiple abilities) will require:

• the efficient performance of physical, technical and tactical training in order to function optimally and with maximum efficiency in the conditions delimited by the competition regulation;

• obtaining detailed information about the opponent (thus avoiding the fear of the unknown);

• the use of psychological strategies (emotional self-regulation, relaxation, motivation or stress management) to increase the military's self-confidence.

During physical, technical or tactical training, in order to improve the motor skills required in the tests of the military pentathlon, all the aspects described above can be used to differentiate between a winner and a defeated fighter. The best military pentathlon teams currently use strategies that focus on mental training, and their members use their mental strength to increase their potential and always be one step ahead of their opponents. These techniques prepare the military to face challenges with determination, courage and calm and to improve the training of combat skills.

Conclusions

In conclusion, it is important to note that, without a doubt, all components of the military pentathlon could be used in their entirety to measure the level of competence of the military in the military. Ever since sport was considered a form of physical education achieved through competition (gradually delimiting itself as a separate form of motor activity), it has been found that athletes train much easier when they repeat, when they enjoy which they do when they compete against each other in a competition.

Thus, the high physical performance of combatants during a military operation is certainly the result of the integration of several training methods, including all types of military training (physical, technical, tactical, psychological, theoretical) and relevant scientific advances, involving the physiological and biochemical effects in the body, following the practice of specific physical exercises included in the training programs of the military pentathlon.

The use of the military pentathlon as a force multiplier in the preparation of the military for combat will guarantee that, within the armed forces, the military will build their ability to act regardless of their emotional state (self-discipline), will improve their basic motor skills and will be train to fight a diffuse enemy, acting by surprise and using asymmetrical means and procedures.

NOTES:

1 Later promoted to the rank of colonel and elected president of the International Military Sports Council (CISM).

2 https://www.military-pentathlon.info/cms/military-pentathlon.html, accessed on 09.06.2021.

3 https://www.military-pentathlon.org, accessed on 13.06.2021.

4 https://nutritionist.info.ro/2021/06/01/dieta-fodmap-solutia-problemelor-digestive-la-sportivi, accessed on 13.06.2021.

5 P.R. Ribas, *Cognitive Interventions in High Performance Sportive: Can Sport Simulate Combat?*, Brazil Armed Forces, 2004, p. 10.

6 https://sciendo.com/article/10.2478/bsaft-2019-0019, accessed on 14.06.2021.

7 Orientation of the body and movements in space (the ability of muscles to contract and relax to stabilize the body depending on the situation).

8 P.R. Ribas, *op.cit.*, p. 15.

9 https://www.military-pentathlon.org/Download/Military%20Pentathlon%20Training%20Aid%20RSA.pdf, accessed on 18.06.2021.

10 https://www.milsport.one/medias/fdvprfiles.php?d=ZmljaGllcnM=&f=UkVWSVNUQV9TWU1QT1NJVU1fMjAx OV9RVUlUT19FQ1VBRE9SXzEucGRm&s=13ae325ce2a696d8c3158cc02ac139ca, accessed on 19.06.2021.

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POSSIBLE SOLUTIONS FOR MODERNIZATION AND COMPUTERIZATION OF OWN PREVENTIVE FINANCIAL CONTROL IN THE MINISTRY OF NATIONAL DEFENCE IN THE CONTEXT OF THE CORONAVIRUS PANDEMIC

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The own preventive financial control is also carried out in entities of the Ministry of National Defence based on a customized normative framework, starting from the one established for all public institutions. This normative framework that applies in the army must be updated with the new normative acts adopted at national level (we have in mind OMPF no. 103/2019, Law no. 133/2021 and OMF no. 555/2021), which bring important elements of novelty, especially regarding the integrity of the person designated to exercise the activity of preventive financial control and the performance of the own preventive financial control in electronic form. The exercise of preventive financial control in electronic form was introduced this year by a separate normative act (OMF no. 555/2021), following the Coronavirus pandemic's outburst in 2020 (which is carrying on in 2021) and obliges public institutions to adopt specific methodological rules for application, in addition to the general framework configured by this regulation. In order to support these provisions, we have set out in this article certain solutions that can be considered by military entities in the process of setting up the own procedures for conducting preventive financial control in electronic format.

Keywords: control; own preventive financial control; preventive financial control in electronic form; guide for evaluating the internal control system in public entities; project; expert system; DMS (Document Management System).

Defining elements regarding the organization and exercise of the own preventive financial control in entities of the Ministry of National Defence and new updating requirements

The organization of the own preventive financial control in entities of the Ministry of National Defence is not only a very important and vital mission for the protection of material and financial resources allocated and used by these structures, but also a legal obligation, configured by specific regulations.

The normative acts, general and specific, that regulate this activity in the army units are OMPF no. 923/2014[1] for the approval of the General Methodological Norms regarding the exercise of preventive financial control and of the Specific Code of professional norms for the persons carrying out the own preventive financial control activity, OMPF no. 103/2019[2] on amending and supplementing the Order of the Minister of Public Finance no. 923/2014 and Order of the Minister of National Defence (OMND) no. M.19/03.02.2018[3] for the modification of the Order M.120/19.11.2014 for the approval of the specific methodological Norms regarding the organization and exercise of the own preventive financial control in the Ministry of National Defence.

Another normative act that was recently adopted and which also refers to preventive financial control is Law no. 133/2021[4]. The important modifications and completions regarding the own preventive financial control brought by this normative act refer to two aspects: the integrity of the person designated to exercise the activity of preventive financial control; exercising the own preventive financial control in electronic form.

In the same period, another recent regulation that fundamentally changes the philosophy of the own preventive financial control is the Order of the Minister of Finance (OMF) no. 555/2021[5], regulation that is directly related to the issue of our article.

The provisions of this order refer to: a) the exercise of the own preventive financial control in electronic format; b) the possibility to apply the own preventive financial control visa on all copies of the operation; c) completing the Register regarding

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the operations presented at the preventive financial control visa in fully handwritten, fully electronic or combined form and archiving/keeping for a period of 10 years; d) establishing the electronic circuit for signing, endorsement, certification, approval and archiving, approved by an internal procedure, which allows audits/verifications/controls to be performed at any time and contains at least: the transmission methods, the actual circuit of documents, the exact specification of the electronic communication channel, etc.

Returning to the current normative act in the army (OMND no. M.19/03.02.2018) regarding the own preventive financial control, in it we find inserted the following fundamental aspects of this activity: 1) the specific framework of operations subject to the own preventive financial control in the Ministry of National Defence; 2) the operational procedure regarding the circulation schedule of the documents subject to the preventive financial control[6]; 3) the model of the document used for establishing the specialized compartments in which the operations subject to the own preventive financial control are initiated and carried out; 4) the model of the document used for establishing the persons with attributions and responsibilities in initiating and carrying out the operations subject to the own preventive financial control[7]; 5) the procedure for appointing the persons who exercise, by visa, the own preventive financial control at the level of tertiary, secondary and main authorizing officers; 6) the specific methodological norms for the establishment of the central database of the persons appointed to exercise the own preventive financial control in the Ministry of National Defence; 7) specific methodological norms for the suspension, change or dismissal of the persons who exercise, by visa, the own preventive financial control at the level of tertiary, secondary or main authorizing officers; 8) specific methodological norms for updating the central database of persons appointed to exercise the own preventive financial control in the Ministry of National Defence; 9) general methodological norms regarding the exercise of preventive financial control and the specific Code of professional norms for persons carrying out the own preventive financial control activity; 10) specific methodological norms for the ”Record sheet of personal seals for own preventive financial control”; 11) specific methodological norms regarding the register for the operations presented at the own preventive financial control visa; 12) methodological norms that are updated by the General Financial-Accounting Directorate, with the approval of the Ministry of Public Finance for exercising the own preventive financial control visa in electronic system; 13) the procedure for going through the checklist specific to the operations received at the visa; 14) how to resolve visa refusal situations; 15) evaluation of the activity of the persons exercising the own preventive financial control.

In order to evaluate the activity of the persons exercising the own preventive financial control at the level of the main authorizing officer, the General Financial-Accounting Directorate sends to the Ministry of Public Finance – Central Unit for Harmonization of Financial Management and Control Systems (CUHFMCS)[8], in order to issue the agreement, the following documents: a) the proposal of the main authorizing officer regarding the evaluation of the designated person with the exercise the own preventive financial control for the respective year; b) copy of the report/evaluation sheet of the individual professional performances for each person for whom the agreement is requested, for the respective year, from which to result the specific objectives and performance indicators for the own preventive financial control activity; c) the number of verified operations and their value; d) extracts from the reports of the internal public audit and of the Court of Accounts, where applicable, regarding the own preventive financial control activity[9].

The Court of Accounts of Romania has, in turn, a guide for evaluating the internal control system in public entities[10], in which an important place is occupied by the own preventive financial control. In this sense, this supreme audit body, when evaluating the own preventive financial control, uses a checklist regarding the organization and functioning of the own preventive financial control (OPFC), which we present in Table no. 1.

Very important in this normative act is the reporting system regarding the own preventive financial control. All authorizing officers have the obligation to draw up quarterly reports on the own preventive financial control activity, which include the statistical situation of operations subject to preventive financial control and a summary of

Table no. 1
CHECKLIST ON THE ORGANIZATION AND OPERATION OF THE OPFC

No.	Questions	Yes	No	Observations
1	Has the management of the public entity issued the decision/order appointing the persons exercising the OPFC?			
2	The drafting of the order was carried out in accordance with annex no. 2 of OMPF no. 522/2003?			
3.	Has the appointment, change or dismissal of the persons in charge of the exercise of the OPFC been carried out with the consent of the hierarchically superior institution?			
4.	Has the evaluation of the activity of the person exercising the OPFC been carried out with the consent of the public entity that approved the appointment?			
5.	In the case of public entities provided in point 22 of OMPF no. 522/2003, have specific norms been elaborated by OPFC?			
6.	Were these rules targeted by the Ministry of Public Finance?			
7.	Have personal seals been made for persons authorized to exercise the OPFC?			
8.	Is there a Register on the operations provided for in the OPFC visa?			
9.	Are the draft operations submitted under the OPFC visa accompanied by appropriate supporting documents prepared by the specialized departments within the entity?			
10.	Are these documents certified in terms of reality, regularity and legality by the heads of the specialized departments within the entity?			
11.	Is there a document circuit chart?			
12.	Have all the projects of operations to which the OPFC visa was granted been highlighted in the "Register on the operations presented under the OPFC visa"?			
13.	They were drawn up and sent to the higher hierarchical body/M.P.F. the quarterly reports on the activity of OPFC, in accordance with points 12.4 and 12.5 of OMPF no. 522/2003?			
14.	Have checklists drawn up detailing the objectives of the audit for each operation within the specific framework of the entity?			

Source: *Guide for evaluating the internal control system in public entities*, Court of Accounts, Bucharest, 2011, p. 50.

the reasons on which the visa refusals were based, during the reported period, completed according to the model contained in a separate annex to the specific methodological norms.

The General Financial-Accounting Directorate of the Ministry of National Defence prepares reports for its own activity and centralizes the reports received from the secondary and tertiary authorizing officers from direct financing.

The reports are sent to the Ministry of Public Finance – Central Unit for Harmonization of Financial Management and Control Systems (CUHFMCS) within the deadlines set by it for the quarterly and annual financial statements provided by law.

From the comparative analysis between OMND no. M 19/03.02.2018 and the latest normative acts adopted at higher levels of this order in the field of own preventive financial control (we consider OMPF no. 103/2019, Law no. 133/2021 and OMF no. 555/2021) it results that the regulation specific for the army listed above is not updated and does not include the changes brought by the three normative acts, which must be resolved in the next period, as soon as possible.

From the whole current issue of the own preventive financial control in the army, in the second part of this article we focused only on the indication of possible solutions for the implementation in the army entities of a preventive financial control system in electronic system, according to requirements of OMF no. 555/2021.

Possible solutions for carrying out the own preventive financial control in electronic system in the Ministry of National Defence in the context of the new regulations adopted as a result of the Coronavirus pandemic

From the above presented issues on the organization of the own preventive financial control in the Ministry of National Defence and from the strategy of developing public internal financial control configured by recent regulations in force, we detached, as a possible action to be configured in the future to achieve an integrated computer system for the exercise of internal/managerial control and own preventive financial control in electronic system, a system that can be found in the internal procedures that must be established by the army entities.

We will present some essential aspects that computer scientists who would be involved in the development of such an integrated computer system should take into account when designing such a system. We will refer to the proposals that an IT professional should consider when designing an integrated IT system, only for the own preventive financial control.

The expert system that should be introduced for the management of the necessary documents in the process of the own preventive financial control is a traditional one, being able to be based on the internal norms of the military institution, which establishes precise rules for any situation.

In order to achieve such a new integrated computer system, a project competition must be organized and the technical documentation, specifications and the selection competition itself must be carried out.

The proposed IT system must be developed in a modular design, allowing the gradual integration of all IT systems to be developed along the way, using a single database, and component modules will be created at the level of essential activities in the units of the Ministry of Defence involved in preventive financial control activity.

Management information systems are being used more and more widely in Romanian companies. The need to introduce such a system in the units of the Ministry of Defence where preventive financial control is performed, is motivated by the fact that the information must be correct and provided on time, both to management and operational levels, in order to increase the efficiency of the internal financial control activity. In the contemporary world, characterized by dynamism, this is only possible using computational technology.

After finalizing the solution contest, you can actually move on to the design stage. The project will seek to raise the capacity of the Ministry of Defence on two levels: 1) implementation of an innovative solution, with a friendly interface that provides applications for the daily activities of all units involved in the preventive financial control; 2) adequate training of users.

The project could be composed of two parts: telecommunications infrastructure (workstations, servers, fixed and virtual local and territorial network, intranet, internet) and applications: the document management system.

The basic element of the intended document management system is the paper document, which does not allow close monitoring, nor does it allow users to access these documents *online*.

This application should be designed to replace paper by introducing a new basic e-Document. The system can work with different types of documents from different sources and in different formats. DMS (Document Management System) allows the structures of the Ministry of Defence involved in organizing and conducting preventive financial control to define an optimal internal work cycle and to monitor each document on its path to a specific work cycle.

The electronic archive will allow each user to access via the Internet or Intranet all the documents to which he has access.

DMS (Document Management System) can be an application with a web interface built on the IBM Lotus Notes/Domino platform or other types of platforms suitable for such an application. Using an internal email server, the application can coordinate any activity specific to the Ministry of Defence by managing all documents. The system must also include an electronic archiving module that stores and coordinates issues related to the form and structure of decision documents.

Users will have access via the Internet or intranet to the documents stored in this electronic archive, according to the level of security approved and the right to access certain documents.

The experience gained in other applications implemented in the Ministry of Defence must be used, such as the one used for international missions, in which the army of our country has taken and will take part in the future[11].

An additional reason for the design and introduction of such an application is the problems caused by the outburst of CORONAVIRUS pandemic in 2020 (still going on in 2021), which has generated spatial distance between colleagues and the widespread use of work from home or in the online environment, in order to avoid as much as possible, the direct contact in the work activities in public institutions and the private environment. This new situation determined the Romanian legislator to adopt OMF no. 555/2021.

It is known that, so far, the activity of preventive financial control (own and delegated) involves the movement of documents on them of those applying for PFC visas to persons authorized to grant such visas, circumstances that determine direct contact between the two parties in such activities.

To ensure the use of this application at optimal parameters, general presentations, practical and specialized trainings, round tables for questions and comments, online support for operational and updating issues will be organized.

The implementation plan must go through six stages:

1) *Realization of the activity plan*, stage in which: the system requirements and its architectural structure are established; the technical and functional specifications for the Document Management Application for preventive financial control are created; the foundations of the training plan are laid according to the requirements of those involved; the testing methodology is established and the module for extracting information from the old document storage system is provided;

2) *Customization of applications and completion of network infrastructure*, stage in which: applications are customized according to standards and legislative requirements in the field of preventive financial control and particular requirements of structure and operation of the Ministry of National Defence; the local and virtual network is completed by installing workstations, servers and internet and intranet connection; the actual testing is performed according to the standards in the field of preventive financial control;

3) *Implementation, training and testing*, stage in which: for DMS the pilot implementation is carried out in the departments and structures from the upper echelons and from the units where the preventive financial control is requested; support and assistance in use is provided; the results of the use are tested according to the specifications prepared for the acquisition of the company that designs and implements such an application;

4) *Completion of the implementation, integration of the system and training*, stage in which: the extension of the DMS in all the structures of the Ministry of Defence involved in the organization and development of the preventive financial control is carried out; integrates through interoperability all applications provided to all structures involved; the final training is performed for all users;

5) *Monitoring the system and the guarantee offered by the supplier company*, stage in which the system is supervised during the warranty period offered by the software company.

6) *Types of documents involved in the application for preventive financial control* would be the following: A) Accounting and budgetary documents; B) Public procurement documents; C) Expenditure ordering documents; D) Documents for the concession, rental, transmission, sale and exchange of goods from the patrimony of military units; E) Documents of other operations subject to the own preventive financial control; F) Legal documents; G) Functions held by persons, who are involved in applying for and granting the preventive financial control visa; H) The specialized departments in which the operations subject to the own preventive financial control are initiated and carried out; I) Functions held by persons, who are involved in solving the cases of refusal to grant the preventive financial control visa.

A) Accounting and budgetary documents, constantly updated, according to OMF no. 555/2021 and the specific Methodological Norms from the Order of the Minister of National Defence no. M19/03.02.2018 – documents mentioned in operations and checklists (such as: budgets, requests for opening budget appropriations, budgetary provisions, documents for changing the quarterly allocation of budget appropriations, documents for making credit transfers, budgetary provisions on withdrawal of budget appropriations, formats of accounting documents – invoices, receipts, collection/payment provisions, payment orders, payroll statements, etc., management accounting documents: consumption voucher, shipping notice, receipt and finding of differences; etc.; summary accounting documents: accounting registers – journal register; inventory register; general ledger; monthly balance sheets; balance sheet; cash register; bank journals, etc.);

B) Public procurement documents, permanently updated, according to OMF no. 555/2021 and the specific Methodological Norms from the Order of the Minister of National Defence no. M.19/03.02.2018 – documents mentioned in operations and checklists (such as: public procurement contracts; annual public procurement strategy; annual public procurement programs; public procurement program at project level – in case of projects financed from grants and/or research and development projects, complete award documentation, as published in the SEAP, clarifications to the award documentation, winning bids and clarifications related to the bids, if applicable, Contract/Decision/Financing Order; financing application, financing contract, partnership agreement, etc.);

C) Expenditure ordering documents, permanently updated, according to OMF no. 555/2021 and the specific Methodological Norms from the Order of the Minister of National Defence no. M19/03.02.2018 – documents mentioned in operations and checklists (such as: payment orders regarding public procurement, concession of works or services; contract/subsequent public procurement contract, or order, concession contract for works or services; the document establishing the guarantee of good execution, the document constituting the reception commission, the documents regarding the reception, etc.; payment order for advances granted within the contract for public procurement/concession of works or services, etc.);

D) Documents regarding the concession, rental, transmission, sale and exchange of goods from the patrimony of the military units, permanently updated, according to OMF no. 555/2021 and the specific Methodological Norms from the Order of the Minister of National Defence no. M19/03.02.2018 – documents mentioned in operations and checklists (such as: concession contract for public property – the military unit is the grantor, with the supporting documents; contract for renting public property – the military unit is the holder of the right ownership/administration, with the related supporting documents; works or services concession contract – the military unit is the grantor, with the related supporting documents; etc.);

E) Documents of other operations subject to the own preventive financial control, permanently updated, according to OMF no. 555/2021 and the specific Methodological Norms from the Order of the Minister of National Defence no. M.19/03.02.2018 – documents mentioned in operations and checklists (such as: contracting strategy for public procurement, with related supporting documents; contracting strategy for the concession of works or services, with related supporting documents; model framework agreement public procurement included in the award documentation, with the related supporting documents, etc.);

F) Legal documents according to OMF no. 555/2021 and the specific Methodological Norms from the Order of the Minister of National Defence no. M19/03.02.2018 – those from the List of normative acts included in the second column of the Specific Framework of operations subject to own preventive financial control, which must be permanently updated;

G) Functions held by persons, who are involved in applying for and granting the preventive financial control visa: The main, secondary and tertiary authorizing officers of the Ministry of National Defence; The heads of the specialized departments from all the units and echelons in which the operations subject to the own preventive financial control are initiated and carried out, as well as the subordinated personnel, with attributions in the administration of material goods or other values; Head of the General Financial-Accounting Directorate of the Ministry of National Defence; The heads of the financial-accounting departments from the categories of forces, central structures, large units and units; Persons designated to exercise preventive financial control (who meet the express requirements of the Specific Code of Professional Norms for persons carrying out their own preventive financial control activity); Administrators and chief accountants of economic operators under the coordination of the Ministry of National Defence; The heads of the legal/similar departments, for the operations that are approved, according to the law, by the legal, financial departments before being subjected to the own preventive control.

We configured in Figure 1 the mechanism for granting the preventive financial control visa in entities of the Ministry of National Defence in electronic system.

H) The specialized departments in which the operations subject to the own preventive financial

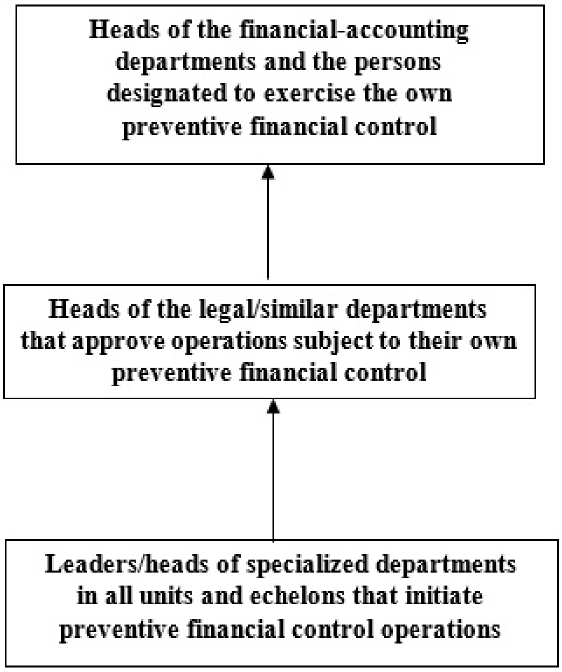

Figure 1 *The mechanism for granting the preventive financial control visa*

Source: Own realization according to the specific *Methodological Norms of the Order of the Minister of National Defence no. M 19/03.02.2018 and OMF no. 555/2021.*

control are initiated and carried out: a) the microstructures of the military unit – compartments, offices, sections, services or other structures with attributions in initiating and carrying out operations subject to the own preventive financial control; b) the microstructures from the military units financially insured by the military unit at the level of which the own preventive financial control is organized; c) the microstructures from the military units with attributions in initiating and carrying out some operations which, according to the law, are approved by the hierarchically superior credit officers and are subject to the own preventive financial control.

I) Functions held by persons, who are involved in solving the cases of refusal to grant the preventive financial control visa: the persons designated to grant the preventive financial control visa who refused to grant the visa; the authorizing officer where the case of refusal to grant the preventive financial control visa appeared; the internal public audit department in charge of which the military unit where the visa refusal case appeared; the delegated controller of the Ministry of Public Finance who is responsible for the Ministry of National Defence; the Court of Accounts of Romania.

We configured below, in Figure 2 the way of solving the visa refusal according to OMF no. 555/2021 and Order of the Minister of National Defence no. M19/03.02.2018.

Of course, these are part of the opinions

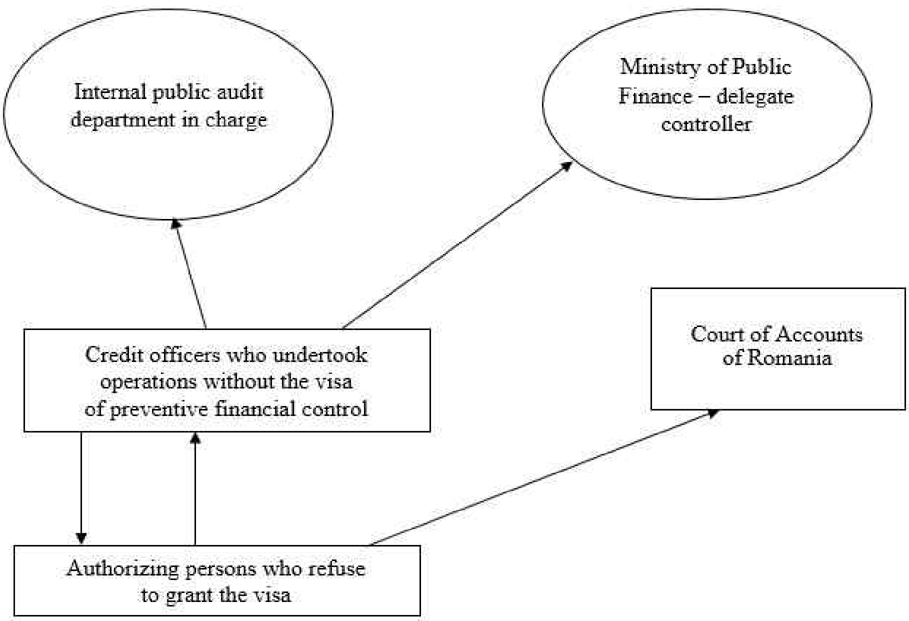

Figure 2 *Resolving the visa refusal*

Source: Own realization according to the specific *Methodological Norms of the Order of the Minister of National Defence no. M 19/03.02.2018 and OMF no. 555/2021.*

expressed by us, from the position of professionals in the financial-accounting field, who will have to perform preventive financial control in electronic system, without claiming that we have exhausted the whole issue and the many particular situations that may appears in the practice of exercising this activity of great responsibility in units of the Ministry of National Defence in the new system imposed by the CORONAVIRUS pandemic through OMF no. 555/2021.

Conclusions

The own preventive financial control is also carried out in entities of the Ministry of National Defence based on a customized normative framework, starting from the one established for all public institutions and includes a set of methods for its implementation.

This set of methods brings together in a logical, coherent manner from the specific framework of the operations subject to the own preventive financial control, continuing with the circulation schedule of the documents verified in this control, the specialized organizational departments/entities in which the operations subject to this control are initiated and carried out and ending with the persons with attributions and responsibilities in carrying out and certifying the operations subject to their own preventive financial control.

Following an analysis of the content of the normative act in force for the army entities (OMND no. M 19/03.02.2018) and the last ones in force for all public institutions in our country (OMPF no. 103/2019, Law no. 133/2021 and OMF No. 555/2021), we concluded that the one specific to the army to be updated quickly with the novelty elements included in these normative acts adopted in 2019 and 2021, especially regarding the issuance of the own financial control visa in electronic system.

The Coronavirus pandemic has determined the Romanian legislator (Ministry of Public Finance) to adopt a special regulation for granting the preventive financial control visa in electronic system, and we suggested some ideas for a such a system, which can be taken over in their own procedures to be adopted by public institutions, according to this new regulation adopted by the Minister of Public Finance.

NOTES:

1 *** *Official Gazette of Romania*, Part I, no. 28/15.01.2016.

2 *** *Official Gazette of Romania*, Part I, no. 87/04.02.2019.

3 *** *Official Gazette of Romania*, Part I, no. 214 bis/09.03.2018.

4It refers to the amendment and completion of Government Ordinance no. 119/1999 on internal/managerial control and preventive financial control, published in the *Official Gazette of Romania*, Part I, no. 501/13.05.2021.

5 It refers to the amendment and completion of Annex no. 1 the O.M.P.F. no. 923/2014 for the approval of the General Methodological Norms regarding the exercise of preventive financial control and of the Specific Code of professional norms for the persons carrying out the own preventive financial control activity, published in the *Official Gazette of Romania*, Part I, no. 515 of 18.05.2021.

6 *Methodological Norms of the Order of the Minister of National Defence no. M 19/03.02.2018*, Subchapter 5.2. – ”Document circulation schedule”, Chapter B – ”Organization of the own preventive financial control”.

7 *Methodological Norms of the Order of the Minister of National Defence no. M 19/03.02.2018*, Subchapter 5.4. – ”Persons with attributions and responsibilities in initiating and carrying out operations subject to the own preventive financial control”, Chapter B – ”Organization of the own preventive financial control”.

8 This structure operates at the level of the directorate-general under the secretary general of the ministry.

9 *Methodological Norms of the Order of the Minister of National Defence no. M 19/03.02.2018*, Chapter D – *”Evaluation of the activity of the person exercising own preventive financial control”*.

10 www.curteadeconturi.ro, accessed on 25.06.2021.

11 Col.Assoc.Prof.Ec.Eng Popa N. Vasile N., PhD, „Realizarea unui sistem informatic integrat pentru gestionarea documentelor unităților ministerului apărării implicate în misiuni internaționale”, Scientific Communication Session, ”Carol I” National Defence University, *Managementul integrat al resurselor de apărare. Necesitate, actualitate, perspective*, Brașov, 14 december 2007.

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*** *Law no. 133/2021 on amending and supplementing Government Ordinance no. 119/1999 on internal/managerial control and preventive financial control*, Official Gazette of Romania, Part I, no. 501/13.05.2021.

*** *O.M.F. no. 555/2021 amendment and completion of Annex no. 1 the O.M. P. F. no. 923/2014 for the approval of the General Methodological Norms regarding the exercise of preventive financial control and of the Specific Code of professional norms for the persons carrying out their own preventive financial control* *activity*, Official Gazette of Romania, Part I, no. 515, of 18.05.2021.

*** *OMPF no. 103/2019 on amending and supplementing the Order of the Minister of Public Finance no. 923/2014 for the approval of the General Methodological Norms regarding the exercise of preventive financial control and of the Specific Code of professional norms for the persons carrying out their own preventive financial control activity,* Official Gazette of Romania, Part I, no. 87/04.02.2019.

*** *Order of the Minister of National Defence no. M 19/03.02.2018* for the modification of the Order M 120/19.11.2014 for the approval of the specific methodological Norms regarding the organization and exercise of its own preventive financial control in the Ministry of National Defence, Official Gazette of Romania, Part I, no. 214 bis/09.03.2018.

*** *OMPF no. 923/2014 for the approval of the General Methodological Norms regarding the exercise of preventive financial control and of the Specific Code of professional norms for the persons carrying out their own preventive financial control activity*, Official Gazette of Romania, Part I, no. 28/15.01.2016.

*** *Ghid de evaluare a sistemului de control intern în entitățile publice,* Romanian Court of Accounts, Bucharest, 2011, www.curteadeconturi.ro

Col.Assoc.Prof.Ec.Eng. Popa N. Vasile N., PhD, „Realizarea unui sistem informatic integrat pentru gestionarea documentelor unităților Ministerului Apărării implicate în misiuni internaționale”, Session of scientific communications *Managementul integrat al resurselor de apărare. Necesitate, actualitate, perspective*, ”Carol I” National Defence University, Brașov, 14 december 2007.

IMPACT OF REGULATION (EC) NO. 1.907/2006 ON PRODUCTS FROM THE ROMANIAN ARMED FORCES ENDOWMENT

Teodora ZECHERU*

The European Union aims to reduce the pressure on the natural resources, to create real economic growth, while preventing losses in the ecosystem, and to achieve climate neutrality targets by 2050. To this end, it will intervene throughout the life cycle of products in terms of design, technological flows and consumption, taking into account also a much stricter kind of waste management. In the military field, workers are constantly exposed to a wide variety of chemicals, and the full impact of this continued exposure is unknown. Following an extensive analysis of the impact of the REACH Regulation on the field of defence in our country, it can be stated that most ammunition, equipment and military vehicles for all categories of forces need a reassessment in order to fulfil our country's obligations at European level. Such a process is extensive, requiring both the understanding of the phenomena and their medium- and long-term impact, the establishment of an action plan on types of military products, and a considerable financial effort.

Keywords: REACH; European Green Deal; military products; chemicals; hazardous substances.

In March 2020, the European Commission adopted a new action plan in the field of the circular economy[1], as an integral part of the European Green Deal for Sustainable Growth[2], the Strategy for Promoting Sustainability in the Field of Chemicals[3] and the Action Plan on Critical Raw Materials[4]. The European Union intends to reduce the pressure on natural resources, to create real economic growth, while preventing losses to the ecosystem, and to achieve climate neutrality targets by 2050. In this regard, interventions will be made throughout the products life cycle, in terms of design, technological flows and consumption, taking into account much stricter waste management, including from the raw materials reuse perspective, where possible.

In order to achieve these goals, additional legislative and technical measures are needed in all areas of interest.

One of the first such areas is the environment, and related European legislation is becoming increasingly restrictive both in terms of the requirements that raw materials must meet and their use throughout their life cycle, from utilization up to waste management and waste treatment.

From the perspective of chemicals, Regulation (EC) 1.907/2006[5] (REACH Regulation)[6] provides for an increasingly rigid European system of registration, authorization and restriction, in order to maintain and improve environmental conditions and to protect the health of workers from the risks which can be induced by chemicals. The REACH Regulation also promotes alternative methods for assessing the risks of substances, ensures the free movement of substances in the internal market of the European Union and supports the strengthening of the competitiveness of the chemical industry of the European Union, as a key sector for the Community economy.

Given that the defence industry relies on a very large number of chemicals vital for superior military capabilities, it is particularly important to emphasize both the implications of the REACH Regulation in this area in general, but also in terms of specific implications for our country.

From the perspective of the REACH Regulation, the use of substances as such, in mixture(s) and/or article(s) has important consequences for all actors in the chains of production and use in terms of their legal obligations. Thus, under the REACH Regulation, the concept applies to ammunition, equipment and vehicles that the defence industry produces, imports, places on the market or uses, but also to the raw materials related.

In the military field, workers are constantly exposed to a wide variety of chemicals, and the full impact of this continued exposure is unknown.

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However, we are becoming increasingly aware of the toxic potential of military products and the risks to which the military personnel are exposed not only in terms of safety, but also in terms of health.

Following an extensive analysis of the impact of the REACH Regulation on the field of defence in our country[7], it can be stated that most military products need a reassessment, in order to fulfil the obligations assumed by our country at European level. Below just a few insights are given on the most relevant substances in the field of defence, along with a discussion on how to approach them at present and in the future from the REACH Regulation viewpoint.

Ammunition and energetic materials

Ammunition includes in its composition various energetic materials: pyrotechnics, propellants, primary and secondary explosives. Of these, in our country, pyrotechnics are in very small quantities and are not subject to the provisions of the REACH Regulation, except for dyes containing chromium and lead and are nominated on the list of Annex XIV. Yet, all the other categories mentioned contain substances with compliance obligations.

Thus, propellants/powders are mixtures of substances consisting of oxidants, fuels, but also of various types of organic additives and solvents, which are added for stabilization, binding and/or modeling of the necessary technical performance. For example, in the case of a double-based propellant, it mainly consists of a mixture of nitrocellulose and nitroglycerin, but may also contain dibutylphthalate, dinitrotoluene, diphenylamine, ethyl-centralite, etc. Unlike the first two substances, the situation of stabilizers is different, given that some of them have characteristics that classify them as substances of particular concern for the health of workers and/or the impact on the environment, being nominated on the lists in Annexes XIV or XVII, which leads to the need for these substances to be authorized for use, once the mass exceeds 0.1% by composition. In addition, the handling of polymers[8] requires economic operators to fulfil certain legal obligations, often different from those for other substances. The REACH Regulation exempts polymers from the application of its provisions on registration and evaluation, but not for authorization and restriction, which requires both the study of the Regulation as such and the manufacturing technology to verify the raw materials needed to obtain those substances, in most cases being necessary to register substances that overweigh 1 ton per year.

Hydrazine is another substance that can be mentioned here, a particularly important additive used as rocket fuel propellants by the Air Forces, a substance which, together with its derivatives, is listed in Annex XVII as a highly toxic substance requiring special handling conditions[9].

As regards primary and secondary explosives, they are not listed in the REACH Regulation, thus the obligation for downstream users being only related to the registration of substances exceeding 1 ton per year. In the case of plastic explosives, however, the situation is different – they contain various additives (phthalates, phenols, etc.) and solvents (methylene chloride, etc.) nominated on the list of Annex XIV, and with obligations to authorize their use.

Diisocyanates are the main components in obtaining various protective films or as binders in various energetic compositions. And they are nominated to be restricted starting from 2023 for use as such or as components for other mixed substances for industrial and professional use.

Ammunition-related items, equipment and military vehicles

If, in the case of energetic materials in ammunition, reference is made to the chemicals needed to meet the performance objectives and it is necessary to know the chemical composition of the mixtures used to meet the requirements of the REACH Regulation, from the perspective of meeting the stability objectives in time and extreme environmental conditions, it is necessary, inter alia, to consider substances used for anti-corrosion coatings, passivation/surface treatments of ammunition elements, subassemblies and casings of land, air and naval vehicles. This material characteristic is particularly important, given, on the one hand, the need to guarantee ammunition in storage for a period of at least 10 years and, on the other hand, the use of military equipment and vehicles in difficult environmental conditions (temperature, humidity, salinity, biological deposits, wind and pressure).

Among the substances with the best results over the years in terms of this desideratum, various chromates and dichromates and their derivatives have proved to meet the performance requirements in aging conditions. Unfortunately, substances such as chromic anhydride (chromic acid), dichromic acid and their salts (better known in the field as Cr(VI)-containing substances) are listed in Annex XIV of the REACH Regulation, with obligations to authorization for use, when exceeding 0.1% by weight in the composition used.

With regard to CBRN equipment, substances containing Cr(VI) cannot, for the time being, be replaced in filters and protective equipment materials, weighing up to 10% in the impregnation composition or material.

Substances used in fire-fighting systems

In the military field, at the level of all categories of armed forces, various fluorine-based fire extinguishing systems have been applied for many years with very good results, more precisely poly- and perfluoroalkylates (PFAS), a group of substances used on a large scale since the 1950s, particularly persistent substances, which are now found in the global environment. It should be noted here that fluorothelomers, a class of substances originally used in aqueous fire-fighting foams (AFFF)[10], are now also found in textiles with a role of protection against penetration, fire-retardant and anti-staining, but also in various lubricants compatible with liquid oxygen by the Air Forces.

The persistence of PFAS in the environment is indefinite throughout the life cycle of products, and the highest concern from the point of view of environmental authorities is the quasi-irreversibility of natural resources contamination. After extensive studies, these types of substances are now considered „ozone-depleting substances”[11], and researchers are focusing on a global plan to phase out the production and consumption of these ozone-depleting substances. The most recent intervention is the gradual reduction of hydrofluorocarbons (HFCs) due to greenhouse effects. They were originally used as a substitute for ozone-depleting substances, and eliminated by the original Montreal Protocol, in an example of what is often referred to as an unfortunate substitution. Without further research, there are significant risks of a scientifically unjustifiable restriction of all PFAS, as a large-scale restriction that is not based on comprehensive studies can lead to serious unintended consequences. It is necessary to collect information on a number of uses and conditions/restrictions, and applying this concept to such a large class of chemicals for the first time is a very ambitious task, which does not exclude the possibility of successful completion of research and the impossibility of a viable application in the military field.

Exemptions from the application of the provisions of the REACH Regulation

At the time of the entry into force of the REACH Regulation, the impossibility for certain military products to be fully compliant was also taken into account, which is precisely why it is stipulated in art. 2 para. (3) the possibility for the European Union’s Member States to grant exemptions, in specific situations, for certain substances in the interests of defence.

Granting exemptions in the interest of defence is primarily a national responsibility, but consistency and coordination are needed for a common approach of Member States, otherwise divergence and inconsistency could conduct to a negative impact on the European defence technological and industrial base (EDTIB), to non-uniformities in production and procurement in the field of defence, as well as in the movement of substances within the European Union.

The main purpose of the exemptions from the application of the provisions of the REACH Regulation is to maintain: unrestricted operability and interoperability of the European armed forces; an EDTIB based on capability, competence and competitiveness; the highest possible safety and traceability standards.

It is important to note here that, from 5 January 2021, economic operators have the duty to also notify all items they place on the European market that contain substances of very high concern in concentrations above 0.1% by weight, from the perspective of hazardous wastes management, and the Ministry of National Defence is not exempted from fulfilling this obligation, but may use the provisions of the REACH Regulation to obtain an exemption. This situation can occur in the case of purchases of ammunition, weapons, equipment from outside the European space (USA, Israel, Great Britain, etc.), because these states do not have the obligation to comply with the provisions of European legislation. On the other hand, the notification can highlight how military products and related substances can contribute to the circular economy, being a rather closed area compared to other industries and economies.

Conclusions

The general purpose of the REACH Regulation is to use hazardous substances only where the risks of use are adequately controlled and/or the benefits to society outweigh those risks. Thus, in most cases, a socio-economic analysis is needed to compare the costs and the benefits of a chemical that is subject to authorization or restriction. These assessments are intended to translate, in fact, fundamental moral and ethical choices into economic figures, what risks are acceptable and what types of industries they target.

Obsolescence is a major and ongoing concern in the field of defence endowment[12], but with a limited vision for upstream chemicals and technological processes in complex supply chains. It can be mentioned that the defence industry has already been significantly affected by the obsolescence related to the REACH Regulation, due to the unavailability or impossibility of supplying substances as such, in mixture(s) and/or in article(s) from upstream suppliers, both from the European and non-EU space. And the transition from the use of new substances from satisfactory results obtained during research for substitution to implementation/endowment can exceed 10 years. Thus, it is necessary to apply in the military field the concept of essential use on the process of restriction of various substances, as a restriction or even sudden elimination is premature and can create a precedent and negative consequences impossible to quantify at present.

That is why discussions on restricting the use of certain substances in the interests of defence are currently focused on the importance of the substance in the assigned field, on its non-essential, substitutable or essential use.

With regard to the substances mentioned above in relation with their military use, it can be stated that:

- certain uses of the substances are considered vital and without alternative;
- it is neither feasible nor reasonable to assess the essentiality of all uses of the substances at a time for different applications;
- phasing-out some substances is possible since functional alternatives exist, but this action has financial and time implications;
- essentiality, as it is considered according to technical performance standards, should not be considered permanent, but involving the constant effort to look for alternatives with a lower level of toxicity and more environmentally friendly.

Although the field of defence can currently be exempted from the application of the provisions of the REACH Regulation, this does not mean that no measures should be taken to phase out the risks to the health of the military and the contamination of the environment. In this regard, we can adopt the model of the Nordic states, which have begun to replace AFFF in training at military bases, or France, which has established a comprehensive program to replace ammunition containing hazardous substances.

Of course, such a process is extensive; it requires both understanding the phenomena and their impact in the medium and long term, the establishment of an action plan on types of military products, but also a financial effort.

Consequently, an up-to-date analysis of these costs is needed, including the development of a counter-scenario for a comprehensive cost-benefit assessment, taking into account the risks associated with the purchase of military products in the current configuration, the limitations of purchase possibilities to the European space, the risk of entering into infringement procedures due to non-compliance with European environmental and occupational health regulations and directives, but also the needs for research, development and innovation to determine and promote safe and sustainable chemicals in terms of toxicity.

NOTES:

1 *** *New Circular Economy Action Plan (CEAP).*

2 https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en, accessed on 12.07.2021.

3 https://www.europarl.europa.eu/doceo/document/TA-9-2020-0201_RO.html, accessed on 01.07.2021.

4 https://ec.europa.eu/docsroom/documents/42849, accessed on 01.08.2021.

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STUDY ON THE POSSIBILITIES OF EXTENDING THE APPLICATION OF INTERNATIONAL STANDARDS FOR THE PUBLIC SECTOR (IPSAS) IN PUBLIC ACCOUNTING IN ROMANIA AND IN THE MINISTRY OF NATIONAL DEFENCE

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Connecting the national public sector accounting legislation to international profile standards (IPSAS) is an effort that started in our country before 2005 and continues today. This approach is part of the concerns of specialists in other countries to make this connection to this global accounting framework. In our country, this approach was carried out by various groups of specialists from the relevant ministry, from universities and from audit or consulting companies, which configured the new form of accounting legislation, continuously subject to the effort of connecting to IPSAS. In this regard, we also initiated a study, based on the application of a questionnaire among the professional accountants in the army, the conclusions of which we presented in this article.

Keywords: International Public Sector Accounting Standards (IPSAS); public sector; financial situations; tangible assets; inventories; cash flows.

Approaches of different specialists regarding the extended implementation of IPSAS in public accounting in Romania

Regarding the possibilities of applying the International Public Sector Accounting Standards (IPSAS) in the profile accounting in Romania, there were concerns and researches were carried out years ago or more recently, by some specialists from the Ministry of Finance, some consulting companies or university teachers, to identify the possibilities of implementing these standards in the accounting activity of public institutions in our country, which resulted in the gradual implementation of some of these standards, an aspect reflected in accounting regulations adopted after 2005.

To begin with, we should pay attention to opinions of two specialists from the Ministry of Public Finance who worked at a certain stage on the implementation of IPSAS in public accounting in Romania. This research carried out by the two specialists can be found in the article *Convergence of accounting of public institutions with International Accounting Standards for the Public Sector (IPSAS)*[1].

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The research was oriented in such a way as to allow the authors to highlight the omissions from the implemented IPSAS, to formulate proposals for adoption and other standards, to propose some conditions to be met that they consider to be absolutely necessary.

In order to achieve these goals, there were analysed the government financial statements of 2009[2], their compliance with national accounting standards for the public sector[3], as well as the convergence of national rules with International Public Sector Accounting Standards (IPSAS)[4].

In the public sector, the IPSAS 1 standard – "Presentation of Financial Statements" includes the following requirement: "Financial statements need not be declared as compliant with IPSAS unless they comply with all the requirements of each of the IPSAS".

Under these conditions in Romania we can talk more about a convergence of national norms with International Public Sector Accounting Standards, than about a harmonization or compliance with them. Some developing countries (for example, Slovakia) have opted for the direct method of implementing IPSAS, respectively have implemented IPSAS in its original form, with some small amendments or even no amendments at all. Other states have opted for the direct method of adopting IPSAS to achieve the highest level of credibility (for example, Switzerland)[5].

The implementation of IPSAS in Romania was *eclectic*, namely a series of requirements were selected from a limited number of these standards. Romania has opted for *the indirect method* of implementing IPSAS, respectively the national accounting standards (the so-called norms) are elaborated based on the IPSAS provisions. One of the consequences of Romania's option for the indirect method of implementing IPSAS is the fact that very few people have studied IPSAS standards, even if they have been translated into Romanian.

Next we will only present the opinions of the first specialist (Alecu Georgeta) from the two listed above, who, in another article, went further with the issue of convergence of public accounting in Romania with IPSAS[6].

Following the analysis performed by this specialist, it was found that although convergence with the most important IPSAS was achieved by selecting some of these requirements, there are still important omissions, which has an impact on the quality of information presented in the financial statements.

Below we present these omissions reported by the author of the analysis:

- *IPSAS 1:* The statement of financial performance is drawn up only at the level of a public institution, comprising *the grouping of revenues and expenditures by nature, not by Government functions*. Also, the information expressing the financial performance at the level of public institution *is not aggregated at the level of the Government.*
- *IPSAS 2:* The statement of cash flows prepared by Romanian public institutions based on the *direct method*, is in fact *a statement of balances of cash and cash accounts* and serves to reconcile with bank and treasury accounts. The standard requirement that cash flows exclude movements between items that constitute cash or cash equivalents is not met because these components are part of an entity's cash management and not of operating, investing and financing activities. This leads to an overestimated presentation of receipts and payments. Regarding the *indirect method*, it has not been taken over so far (at the time of the analysis made by this specialist) by national rules.
- *IPSAS 17:* The reevaluation is performed according to the standard, for *the entire class which the asset that was revalued belongs to*. National rules do not require the revaluation of all items in a class at the same time, but the revaluation is performed on a case-by-case basis, when the carrying amount of the asset differs significantly from its fair value, which has the implications of presenting assets in the balance sheet at different values (acquisition cost, production cost, and fair value).
- For non-depreciable fixed assets, the treatment provided by the standard does not apply, but both increases and decreases in value increase or decrease the value of equity (funds of public or private assets of the state or administrative-territorial units). The national legislation exempts from the calculation of depreciation a series of assets, namely: the goods that belong to the public domain of the state or of the administrative-territorial units, the lands, the goods from the national cultural heritage, the goods of armament and fighting technique etc. For these goods, the expense/cost is fully recognized at the time of purchase (if purchased) or receipt (if built).
- *IPSAS 12:* The version of the standard at the time of analysis refers to the cost of agricultural production harvested from organic assets. In accordance with international accounting standards for agriculture, inventories represent the agricultural output that an entity has harvested from its biological assets, which can initially be measured at fair value less costs estimated to be sold at harvest. In addition, the Standard specifies the distribution of goods at no perceived value or at a nominal price (when a public sector entity may hold inventories whose future economic benefits or service potential are not directly related to their ability to generate net cash inflows).
- *IPSAS 19:* National rules have not taken over some concepts that the standard defines: implicit obligation, contingent asset, contingent liability, legal obligation, onerous contract, restructuring.
- *IPSAS 14:* National rules do not define events after the reporting date, nor do they present events that lead to the adjustment of financial statements, as well as events that do not lead to the adjustment of financial statements.
- *IPSAS 5:* The rules do not explicitly refer to the accounting treatment of the costs of loans, which must highlight whether those costs are

immediately recorded as expenses or whether they are capitalized when the costs of credit contracting can be directly attributed to the acquisition, construction or production of an asset. However, the basic accounting treatment applies whereby costs are immediately recorded as an expense.

Despite the fact that the Romanian Government prepares all the primary financial statements required by IPSAS, they do not represent a comprehensive set of financial statements, as they present some discrepancies in content.

These discrepancies were found by the specialist in the financial statements from 2009 and related to the following aspects: the information presented in the balance sheet is not correlated with the information in the annexes regarding cash, loans, revaluation of assets, surplus or deficit in accrual bases; both the accounting policies and most of the explanatory notes are missing from the government financial statements; transfers between government institutions are not eliminated; state-owned enterprises are included in the Government's statements neither on a consolidated basis, nor in the explanatory notes; there are no debts for pensions; government financial statements are only aggregated and not consolidated.

However, the real problem is the weaknesses and threats resulting from the introduction of IPSAS in public institutions in Romania.

In order to avoid these shortcomings and for the introduction of IPSAS in public institutions in Romania to achieve its proposed purpose, it would be useful to take the following measures[7]:

• *establishment of an interdepartmental organizing committee for the implementation of IPSAS or an independent institution* to be responsible for training economic managers to understand the objectives and the transition process to IPSAS and to obtain broad support from the most important ministries.

• *increasing the number of staff within the General Directorate of Accounting Methodology of public institutions within the Ministry of Public Finance* and increasing the number of staff within the accounting departments of line ministries;

• *development of the material base* by making available to public institutions the standard computer programs by the Ministry of Public Finance;

• *carrying out technical assistance programs* and using the expertise of the private sector in the field of IFRS, given that IPSAS are very similar to IFRS;

• *involvement of the Romanian Court of Accounts in the implementation of IPSAS* and organization of a complex program of professional training in the field of IPSAS for the specialists of this institution;

• *communicating the need to adopt IPSAS to a wider audience*, through all available means of communication (seminars, training courses, articles published in specialized journals, etc.).

A very serious and systematic study was conducted a few years ago by a mixed team of university teachers from the Academy of Economic Studies in Bucharest and specialists from the financial audit and consulting KPMG firm, whose conclusions we refer to below.

The study referred to improving the transparency of reporting in the public sector in Romania[8].

Specifically, the specialists sought to answer the following questions:

• How transparent are the decision-makers and the reporting processes in the town and city halls in Romania?

• What is the level of preparation and understanding of IPSAS by the staff of town and city halls in Romania and how is this level reached?

• What are the possible benefits and challenges of applying IPSAS in town and city halls in Romania?

• What are the implications of a possible application of IPSAS in town and city halls in Romania?

The main results of the study of these specialists were grouped as follows:

• 95% of the entities consider as important or very important to consult the citizens regarding their actions;

• Only 50% of the staff of the town and city halls in Romania is well or very well prepared in terms of IPSAS;

• 84% of respondents consider that IPSAS improve the trust and transparency of public reporting and, at the same time, the responsibility and comparability regarding of the reporting performed by these entities in terms of their costs and financial performance.

• 74% of respondents believe that the application of IPSAS will increase the relevance and transparency of their institutions' reporting.

Following the research carried out in this study, the authors drew a series of remarkable conclusions, from which we point out the following:

• there is a strong support for increasing transparency within the town and city halls in Romania;

• there is a strong support in the town and city halls in Romania regarding the application of IPSAS;

• most respondents are willing to participate in such programs and to seek advice and materials in this endeavor;

• a number of benefits and challenges related to the application of International Public Sector Accounting Standards in our country have been identified.

The respondents of the study consider that a possible application of IPSAS leads (in this order) to increasing the trust and transparency of public entities' reports, to increasing the responsibility for costs and financial performance of those institutions and to increasing the level of comparability of those entities' reports.

The main challenges mentioned (in this order) were: the difficulties in understanding and applying certain concepts within IPSAS, selecting the appropriate IPSAS treatments to reflect certain transactions and events, the differences between IPSAS and national regulations and training costs.

Finally, the study authors present the main conclusions and research directions.

Among the advantages of applying IPSAS, there were the following aspects: that they give an economic and financial vision to governmental and local public entities, that they ensure quality and consistency of public financial reports, that they reflect the transparency and effectiveness of public entities, that they are oriented towards a culture of performance[9] or that they improve the functioning of internal control and transparency in the public sector, which ensures the provision of complete and more coherent information on expenditures and revenues and the presentation of more coherent and comparable financial statements over time and between different entities.

However, the costs generated by the adoption of IPSAS, respectively, training costs, consulting costs or investments in information systems limit their application by entities[10].

From Romania's perspective, the advantages of adopting IPSAS are the following: continuous improvement of the quality of financial statements of public institutions to provide relevant, credible information and, at the same time, to ensure comparability between reporting periods, but also between public entities in our country; ensuring a comparable reporting framework at country level, both for the private environment and for that of public institutions[11].

Although the advantages of adopting IPSAS are known, studies have also shown a high degree of heterogeneity in their application. Thus, in relation to the degree of adoption of IPSAS, specialists Robert and Colibert[12] identify four groups of countries:

• *Group 1* includes countries that have decided to adopt IPSAS and that have developed a public accounting reform program imposed or supported by the International Monetary Fund, the World Bank or the European Commission. Representative countries for this group are Albania, Algeria, Argentina, China, El Salvador, India, Fiji, Morocco, Slovakia, and Uruguay.

• *Group 2* includes countries that have initiated the program for the adoption of IPSAS and rules inspired by these standards. This group includes: Afghanistan, Azerbaijan, Hungary, Lebanon, Maldives, Norway, Cyprus, Cayman Islands, East Timor, Indonesia, Latvia, Mongolia, Pakistan, Vietnam, and the Netherlands.

• *Group 3* is represented by countries such as France, Italy, Japan, Israel, which have adopted since 2006 their new standards inspired by IPSAS.

• *Group 4* includes New Zealand, Australia, the United States, the United Kingdom, countries whose public accounting standards have already been aligned with IPSAS.

Also, among the results of the study carried out by Christiaens and other authors[13] at the level of 17 European Union member countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Lithuania, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom - which is no longer part of the EU) remind us that Lithuania, Sweden and the United Kingdom applies IPSAS in a general way, both at central and local government level; that in Belgium they are applied only at the local level, and France and Switzerland apply the IPSAS only at the central level.

In conclusion, we can say that at the level of the European Union, only 15 of the Member States have correlated their public sector accounting with IPSAS, either by developing national rules based or aligned with IPSAS, or by referring to IPSAS and their use in certain segments of local public administration.

Also, no Member State has fully adopted IPSAS for public sector accounting. The results of the public consultation on the adequacy of IPSAS for Member States, carried out by the European Commission (European Commission, 2012), highlighted the difficulty of applying IPSAS in its current form in the Member States, but also the fact that IPSAS is a relevant reference for preparation of public sector accounts harmonized at European level[14].

In this context, the European Commission is considering the development of its own accounting rules, called European Public Sector Accounting Standards (EPSAS), which address the specific needs of the public sector in the Member States. Inspired by IPSAS, but subject to changes, additions or the elaboration of specific rules, EPSAS would be adopted by European regulations and would become the only accounting rules based on established rights applied by all significant public administration entities in Europe[15].

It can be seen that these concerns exist in all states (world or EU), the approaches are different, the actions will continue, and our country is in line with this trend.

Conclusions from the study on the possibilities of extending the application of International Standards for the Public Sector (IPSAS) in public accounting in Romania and the Ministry of National Defence

We also conducted a study based on a questionnaire among 78 professional accountants who referred in particular to standards more directly related to the preparation of financial statements in public institutions, to identify other possibilities for even more pronounced alignment of national regulations to the requirements of the IPSAS, for the benefit of public institutions and entities from the Ministry of National Defence, where these surveyed specialists were working at the time of conducting the research.

The questionnaire addressed the following standards that are more directly related to financial statements: *IPSAS 1 - Presentation of financial statements; IPSAS 2 - Cash flow statements; IPSAS 12 - Stocks; IPSAS 17 - Property, plant and equipment; IPSAS 24 - Presentation of budget information.*

From *IPSAS 1 - Presentation of financial statements*, the following issues were selected for the questionnaire: a) the composition of a complete set of financial statements for public institutions; b) the components of the statement of financial position of public institutions as part of the financial statements; c) the components of the financial performance statement of public institutions as part of the financial statements; d) the content of the notes to the financial statements of public institutions as part of the financial statements.

From *IPSAS 2 - Cash flow statements*, the following issues were selected for the questionnaire: a) the structure of cash flows for operating activities (or similar); b) the structure of cash flows for investment activities; c) the structure of cash flows for financing activities.

From *IPSAS 12 - Stocks*, the following issue was selected for the questionnaire: a) stock valuation in public institutions.

From *IPSAS 17 - Tangible fixed assets* the following issues were selected for the questionnaire: a) definition of tangible fixed assets; b) defining the patrimony assets; c) recognition and recording of the carrying amount of a fixed asset; d) depreciation methods that can be used for tangible fixed assets in public institutions; e) aspects that must be taken into account in determining the depreciable value of tangible fixed assets; f) the manner of recognition and registration of the life of a tangible fixed asset; g) the ways of reviewing the useful life, the depreciation method and the residual (or remaining) value of a tangible fixed asset in public institutions.

From *IPSAS 24 - Presentation of budget information*, the following issue was selected for the questionnaire: a) the way of presenting the budget of public institutions in the financial statements

The questions and answers offered to the respondents were for each of the issues selected from the above standards, the following: a) whether the current provision (which is concretely extracted from the national regulation and the standards listed above) of OMPF 1917/2005 fully satisfies the requirements of the IPSAS to which reference is made (YES / NO)? b) If it does NOT satisfy all or part of these requirements, which should be amended in OMPF no. 1917/2005 to satisfy the current option in the invoked IPSAS? c) Does not satisfy, must be modified (specify how) or I DO NOT KNOW HOW IT MUST BE MODIFIED.

Following the processing of the answers obtained from the 78 professional accountants, we drew the conclusions that we present below and from which we selected an important part of these questions.

This study was attended by 78 professional accountants from army entities, of which: 75 (which represents 96.15% of the total respondents) are professionals hired by competition and certified by the Ministry of Public Finance; 12 of them (representing 15.38% of the total respondents) are former professional accountants, subsequently employed through competition in internal/managerial control structures or public internal audit; 9 of them (representing 11.54% of the total) are holders of the title of CECCAR certified accountant; 6 of them (7.69%) are holders

	Question 1) Do you currently have the quality of?	TOTAL	Percentages (%)
a)	Professional accountant employed through a competition or hierarchical promotion, but not yet certified by the Ministry of Public Finance	3	3,85%
b)	Professional accountant employed through a competition or hierarchical promotion and certified by the Ministry of Public Finance	75	96,15%
c)	Professional accountant employed through competition or hierarchical promotion, certified by the Ministry of Public Finance and holder of the title of expert accountant	9	11,54%
d)	Professional accountant employed by competition or hierarchical promotion, certified by the Ministry of Public Finance and holder of the title of expert accountant and financial auditor member of CAFR/ASPAAS	6	7,69%
e)	Professional accountant employed through competition or hierarchical promotion, certified by the Ministry of Public Finance and holder of the title of expert accountant, financial auditor member of CAFR/ASPAAS and tax consultant	3	3,85%
f)	Professional accountant employed by competition or hierarchical promotion, certified by the Ministry of Public Finance and holder of at least two or more professional titles (accounting expert, financial auditor member of CAFR/ASPAAS, tax consultant, expert evaluator ANEVAR, insolvency practitioner, other professional qualifications obtained from national or international bodies). Mention those qualifications held	6	7,69%
g)	Former professional accountant currently employed through competition or hierarchical promotion in internal/managerial control structures or internal public audit;	12	15,38%
h)	Specialist in other fields, employed through competition or hierarchical promotion in internal / managerial control structures or internal public audit	0	0,00%
	TOTAL	78	100,00%

(Author’s conception)

of the title and CECCAR certified accountant and CAFR/ASPAAS certified financial auditor; 3 of them (that is, 3.85% of the total) have a triple quality of professionals in the economic-financial field (financial auditor, accounting expert and tax consultant).

It can be seen that currently most are professional accountants certified by the Ministry of Public Finance, according to the rules for accountants in public institutions, quite a few (that is, 15.38% of the total) have passed towards other areas related to accounting (internal/managerial control or internal public audit) and far fewer (between 3.85% and 11.54% of the total) hold one, two or three of the titles of professional accountants (financial auditors, accounting experts or tax consultants certified by professional bodies - CAFR/ASPAAS, CECCAR, CCF), which may carry out such activities independently.

By age, most of the participants in this study (42 out of 78, representing 53.85% of the total respondents) aged between 40 and 49, followed by 36 professionals (representing 46.15% of the total) who are between 30 and 39 years old. It can therefore be seen that those who answered the questionnaire have significant experience in the field of the accounting profession in public institutions, and some even in the private sector for a number of years.

By sex, most women professional accountants participated in this study (45 out of 78, which represents 57.69% of the total respondents), which shows that in the accounting structures of military entities also women are those who embrace this profession more than men.

	Question 2) What is your age?	TOTAL	Percentages (%)
a)	< 30 years;	0	0,00%
b)	30-39 years;	36	46,15%
c)	40-49 years;	42	53,85%
d)	over 50 years;	0	0,00%
	TOTAL	78	100,00%

(Author's conception)

	Question 3) What is your gender?		
a)	Male (M)	33	42,31%
b)	Female (F)	45	57,69%
	TOTAL	78	100,00%

(Author's conception)

Comparing IPSAS 1 - Presentation of financial statements with OMPF 1917/2005, with subsequent amendments and completions, in connection with a complete set of financial statements for public institutions it is found:		TOTAL	Percentages (%)
a)	YES the current option to establish a complete set of financial statements according to OMPF 1917/2005 fully meets the requirements of IPSAS 1;	33	42,31%
b)	DOES NOT fully or partially meet the requirements of IPSAS 1 on a complete set of financial statements for public institutions and an option proposed by it should be adopted;	24	30,77%
c)	It does not satisfy, but I do not know how the OMPF 1917/2005 regulation should be modified;	21	26,92%
	TOTAL	78	100,00%

(Author's conception)

To the question regarding the extent to which the complete set of financial statements in Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds or not to the requirements of IPSAS 1 - Presentation of financial statements, most respondents (33, which represents 42.31% of the total respondents) consider that the current national regulations in the field meet the requirements of IPSAS 1.

It should not be overlooked that there were also 24 professional accountants (representing 30.77% of the total) who said that the current national accounting regulations do not fully or only partially meet the requirements of IPSAS 1 and a fully compliant version should be adopted, and another 21 professional accountants (that is, 26.92% of the total) confirm that the current regulations do not meet the requirements, but they do not know what needs to be changed in our current regulations.

complete set of annual financial statements and see what else should be agreed on even better with the requirements of IPSAS 1 in this regard.

To the question regarding the extent to which the components of the notes to the financial statements for public institutions as part of the financial statements in Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) correspond or not to the requirements of IPSAS 1-Presentation of financial statements, many people (39 out of 78, representing 50% of all respondents) consider that the current national legislation in this field meets the requirements of IPSAS 1.

It should not be overlooked that there were also 21 professional accountants (that is, 26.92%

	Comparing IPSAS 1 - Presentation of financial statements with OMPF 1917/2005, with subsequent amendments and completions, in connection with the notes to the financial statements of public institutions as part of the financial statements is found:	TOTAL	Percentages (%)
a)	YES the current option of establishing the components of the notes as part of the financial statements for public institutions according to OMPF 1917/2005 fully meets the requirements of IPSAS 1;	39	50,00%
b)	DOES NOT fully or partially satisfy the requirements of IPSAS 1 regarding the components of the notes to the financial statements of public institutions and a variant proposed by it must be adopted;	21	26,92%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation;	18	23,08%
	TOTAL	78	100,00%

(Author’s conception)

	Comparing IPSAS 2 - Statements of cash flows with OMPF 1917/2005, with subsequent amendments and completions, in relation to the structure of cash flows as a component of the financial statements, it is found:	TOTAL	Percentages (%)
a)	YES the current option to determine the components of cash flows according to OMPF 1917/2005 fully meets the requirements of IPSAS 2;	27	34,62%
b)	It does NOT fully or partially meet the IPSAS 2 cash flow requirements and a variant proposed by it must be adopted;	33	42,31%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation;	18	23,08%
	TOTAL	78	100,00%

(Author’s conception)

It can be concluded that the Romanian regulatory authority (Ministry of Public Finance) needs to re-examine the composition of the

of the total) who stated that the current national accounting regulations do not fully or partially meet the requirements of IPSAS 1 on the notes to

Comparing IPSAS 12 - Stocks with OMPF 1917/2005, with subsequent amendments and completions, in connection with the valuation of stocks in public institutions, it is found:		TOTAL	Percentages (%)
a)	YES the current option of valuing stocks in public institutions according to OMPF 1917/2005 fully meets the requirements of IPSAS 12;	14	53,85%
b)	DOES NOT fully or partially meet the requirements of IPSAS 12 on stock valuation in public institutions and a variant proposed by it must be adopted;	5	19,23%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation;	7	26,92%
	TOTAL	26	100,00%

(Author's conception)

the financial statements and a variant proposed by IPSAS 1. Another 21 accounting professionals (that is, 26.92% of the total) also confirm that the current regulations related to these components of the financial statements do not meet the requirements of IPSAS 1, but they do not know what needs to be changed in our current regulations regarding the content of these notes.

It can also be concluded for this question that the Romanian regulatory authority (Ministry of Public Finance) must re-examine the components of the notes to the financial statements and see what should be agreed on even better with the requirements of IPSAS 1 regarding this part of the financial statements.

To the question regarding the extent to which the structure of cash flows as a component of the financial statements of public institutions according to Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds or not to the requirements of IPSAS 2 - Cash flow statement, a significant part of the respondents (27 out of 78, which represents 34.62% of the total) consider that the current national regulations in the field meet the requirements of IPSAS 2.

To this question, 33 professional accountants (representing 42.31% of the total) were of the opinion that the current national accounting regulations do not fully or partially meet the requirements of IPSAS 2 and a proposed version of this standard should be adopted, and other 18 professional accountants (that is, 23.08% of the total) confirm that the current regulations related to the components of these flows do not meet the requirements of IPSAS 2, but do not know what needs to be changed in our current regulations.

Comparing IPSAS 17 - Tangible fixed assets with OMPF 1917/2005, with the subsequent modifications and completions, regarding the definition of tangible fixed assets, it is found:		TOTAL	Percentages (%)
a)	The current definition of property, plant and equipment in OMPF 1917/2005 fully meets the requirements of IPSAS 17;	54	69,23%
b)	DOES NOT fully or partially satisfy the requirements of IPSAS 17 regarding the definition of body elements and a variant proposed by it must be adopted;	18	23,08%
c)	It does not satisfy, but I do not know how the OMPF 1917/2005 regulation should be modified;	6	7,69%
	TOTAL	78	100,00%

(Author's conception)

We can draw the even more pressing conclusion from this question that the Romanian regulatory authority (Ministry of Public Finance) must re-examine as soon as possible the components of cash flows from the financial statements of public institutions and see what else needs to be further agreed with the IPSAS 2 requirements for these flows (detailing receipts and payments by major types of flows – operational, investment and

Comparing IPSAS 17 - Property, Plant and Equipment with OMPF 1917/2005, as subsequently amended and supplemented, on how the carrying amount of a fixed asset is recognized and recorded in the accounts shows:		TOTAL	Percentages (%)
a)	YES the current option of recording the value of fixed assets upon entry into the patrimony of public institutions according to OMPF1917/2005 fully meets the requirements of IPSAS 17;	21	26,92%
b)	DOES NOT fully or partially satisfy the requirements of IPSAS 17 regarding the recognition of tangible fixed assets and a variant proposed by it must be adopted;	21	26,92%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation;	36	46,15%
	TOTAL	78	100,00%

(Author's conception)

financing and within them, by types of flows).

To the question regarding the extent to which the valuation of stocks in public institutions according to Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds or not to the requirements of IPSAS 12-Stocks, most of those surveyed (54 out of 78, which represents 69.23% of the total) consider that the current national regulation in the field meets the requirements of IPSAS 2.

However, there were also 18 accounting professionals (representing 23.08% of the total) who considered that the current national accounting regulations do not fully or partially meet the flows do not meet the requirements of the standard we are referring to, but do not know what needs to be changed in our current regulations.

It can be concluded that for the most part our national regulations on stock valuation in the accounting of public institutions correspond to the variants presented in IPSAS 12 and, as a result, our profile authority (Ministry of Public Finance) can review certain nuances of finesse and not fund to better align the requirements of national procedures with the models presented in this standard (such as conversion costs; other costs such as: cost of overheads; costs of product design for certain customers, etc.).

Comparing IPSAS 17 - Tangible fixed assets with OMPF 1917/2005, with subsequent amendments and completions, regarding the depreciation methods that can be used for tangible fixed assets in public institutions, it is found:		TOTAL	Percentages (%)
a)	YES the current option on depreciation methods that can be used for tangible fixed assets in public institutions (actually only the straight-line method) according to OMPF 1917/2005 fully meets the requirements of IPSAS 17;	42	53,85%
b)	DOES NOT fully or partially satisfy the requirements of IPSAS 17 regarding depreciation options and a variant proposed by it must be adopted;	24	30,77%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation;	12	15,38%
	TOTAL	78	100,00%

(Author's conception)

requirements of IPSAS 12 and a proposed version of this standard should be adopted.

Only 6 professional accountants (representing 7.69% of the total) confirm that the current regulations related to the components of these

To the question regarding if the definition of tangible fixed assets (tangible current assets) in public institutions according to Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) correspond or not to the requirements of IPSAS 17 - Tangible fixed assets, most of those surveyed (54 out of 78, which represents 69.23% of the total) consider that the current national regulations in the field meet the requirements of the aforementioned standard.

This question was also addressed to 18 professional accountants (representing 23.08% of the total) who were of the opinion that the current national accounting regulations on the definition of property, plant and equipment do not fully or partially meet the requirements of IPSAS 17 and a proposed version of this standard should be adopted.

and registered at public institutions according to the Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds or not to the requirements of IPSAS 17 - Property, plant and equipment, about one third of respondents (21 out of 78, representing 26.92% of the total) consider that the current national regulations in the field meet the requirements of the aforementioned standard.

This question was also addressed to 21 other professional accountants (representing 26.92% of the total) who were of the opinion that the current

Comparing IPSAS 17 - Tangible fixed assets with OMPF 1917/2005, with subsequent amendments and completions, regarding the determination of the depreciable value of tangible fixed assets, it is found:		TOTAL	Percentages (%)
a)	YES the current option to determine the depreciation of tangible fixed assets according to OMPF 1917/2005 fully meets the requirements of IPSAS 17;	36	46,15%
b)	DOES NOT fully or partially meet the requirements of IPSAS 17 on the option to determine the depreciable amount of tangible fixed assets and a variant proposed by it must be adopted;	12	15,38%
c)	It does not satisfy, but I do not know how the OMPF 1917/2005 regulation should be modified;	30	38,46%
	TOTAL	78	100,00%

(Author's conception)

Only 6 professional accountants (representing 7.69% of the total) confirm that the current regulations related to the definition of property, plant and equipment do not meet the requirements of the standard we refer to, but do not know what needs to be changed in our current regulations.

It can be concluded that for the most part our national regulations on the definition of property, plant and equipment in the accounting of public institutions correspond to the variants presented in IPSAS 17 and, as a result, our profile authority (Ministry of Public Finance) may review the definition of certain components of property, plant and equipment to agree even better on the national definitions with all the models presented in this standard (for example one of the conditions not to refer to the value above a certain threshold of these assets - as is currently the value of 2,500 lei, but according to what they are able to perform: production or supply of goods or services, rental to third parties or for administrative purposes).

To the question regarding whether the book value at which the fixed assets must be recognized

national accounting regulations do not fully or partially meet the requirements of IPSAS 17 and a proposed version of this standard should be adopted.

Many more (36 professional accountants, representing 11.54% of the total) confirm that the current regulations related to the definition of assets do not meet the requirements of the standard we refer to, but do not know what needs to be changed in our current regulations.

It can be concluded that, to a small extent do our national regulations on the carrying amount of fixed assets which must be recognized and recorded in public institutions correspond to the variants presented in IPSAS 17 and, consequently, our profile authority (Ministry of Public Finance) must take over several of the options presented in this standard regarding the issue under question (we believe that the carrying amount at which fixed assets should be recognized and recorded in public institutions should be that of IPSAS 17: the value at which a fixed asset is recognized is that after which it is deducted from the cumulative depreciation and the cumulative impairment losses).

The question regarding if the depreciation methods that can be used for tangible fixed assets used in public institutions according to the Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) correspond or not to the requirements of IPSAS 17 – Tangible fixed assets regarding this aspect, the majority of respondents (42 out of 78, representing 53.85% of the total) consider that the current national regulations in the field meet the requirements of the aforementioned standard regarding depreciation methods.

This question was also addressed to 24 other professional accountants (representing 30.77% of the total) who were of the opinion that the current national accounting regulations do not fully or partially meet the requirements of IPSAS 17 related to depreciation methods and a variant proposed by this standard should be adopted. A smaller number (12 professional accountants, representing 15.38% of the total) confirm that the current regulations related to the depreciation methods used in our country do not meet the requirements of the standard to the aspect we refer to, but do not know what needs to be changed in our current regulations.

It can be concluded that most of our national regulations on the methods of depreciating fixed assets must be recognized and recorded in public institutions, they correspond to the variants presented in IPSAS 17 and, consequently, our profile authority (Ministry of Public Finance) must, however, see whether other methods of depreciation than linear depreciation can no longer be accepted (such as digressive and production unit methods) and it can be accepted to take over more of the options presented in this standard regarding the issue under question.

When asked whether or not the determination of the depreciable values of tangible fixed assets used in public institutions according to Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds to the requirements of IPSAS 17 – Tangible fixed assets related to this aspect, a large part of respondents (36 out of 78, representing 46.15% of the total) consider that the current national regulations in the field meet the requirements of the above-mentioned standard regarding the determination of the depreciable value of tangible fixed assets.

There were 12 other professional accountants (representing 15.38% of the total) who were of the opinion that the current national accounting regulations do not fully or partially meet the IPSAS 17 requirements for determining the depreciable amounts of tangible fixed assets and other options proposed by this standard should be adopted.

Many more (30 professional accountants out of 78 respondents, representing 38.46% of the total) confirm that the current regulations related to the determination of depreciable values of tangible fixed assets do not meet the requirements of the standard to the aspect we refer to, but they do not know what needs to be changed in our current regulations.

Comparing IPSAS 17 - Tangible Assets with OMPF 1917/2005, with subsequent amendments and completions, regarding the revision of the useful life, depreciation method and residual (or remaining) value of a tangible fixed asset in public institutions is found:		TOTAL	Percentages (%)
a)	YES the current option to revise the useful life, depreciation method and residual (or remaining) value of a tangible fixed asset in public institutions under OMPF 1917/2005 fully meets the requirements of IPSAS 17	36	46,15%
b)	DOES NOT fully or partially meet the requirements of IPSAS 17 on the option to revise the life, depreciation method and residual (or remaining) value of a tangible fixed asset in public institutions and a variant proposed by it must be adopted	24	30,77%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation	18	23,08%
	TOTAL	78	100,00%

(Author’s conception)

It can be concluded that most of our national regulations on the determination of depreciable amounts of tangible fixed assets correspond to the variants presented in IPSAS 17 and, as a result, our profile authority (Ministry of Public Finance) should still examine whether they can no longer find other methods of determining the depreciable amount of these types of assets (such as the one in used for tangible fixed assets, as permitted by this standard.

A little less (18 professional accountants out of 78 respondents, representing 23.08% of the total) confirm that the current regulations do not meet the requirements of the standard on the issue we are referring to, but do not know what needs to be changed in our current regulations.

Comparing IPSAS 24 - Presentation of budget information in the financial statements with OMPF 1917/2005, with subsequent amendments and completions, in connection with the presentation of the budget of public institutions in the financial statements is found:		TOTAL	Percentages (%)
a)	YES the current option of presenting the budget of public institutions in the financial statements according to OMPF 1917/2005 fully meets the requirements of IPSAS 24	36	46,15%
b)	DOES NOT fully or partially meet the requirements of IPSAS 24 on the current option of presenting the budget of public institutions in the financial statements and a variant proposed by it must be adopted	24	30,77%
c)	It does not satisfy, but I do not know how to amend the OMPF 1917/2005 regulation	18	23,08%
	TOTAL	78	100,00%

(Author’s conception)

which the residual value of such assets is taken into account) that are also accepted, in order to achieve a closer approximation to the requirements of this standard at this issue.

The question regarding the possibility of revising the useful life, the depreciation method and the use of the residual (or remaining) value for tangible fixed assets used in public institutions according to Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds to or not the requirements of IPSAS 17 – Property, plant and equipment in this respect, a large proportion of those surveyed (36 out of 78, representing 46.15% of the total respondents) considers that the current national legislation in this field meets the requirements of the above-mentioned standard on these issues.

To this question there were 24 other professional accountants (representing 30.77% of the total) who stated that the current national accounting regulations do not fully nor partially meet the requirements of IPSAS 17 related to the options for determining the life, depreciation method and whether or not the residual (or remaining) value is

It can be concluded that most of our national regulations on life, depreciation methods and the possibility of using the residual (or remaining) value for tangible fixed assets correspond to the variants presented in IPSAS 17, but it is still required that our profile authority (Ministry Public Finance) to examine whether other options for carrying out these operations can no longer be accepted; in order to achieve a closer approach to the requirements of this standard to this issue (a possible option would be to take into account the residual value of these assets provided in IPSAS 17 when determining their useful life and not a catalogue issued by the administrative authority with these durations, which is rarely reviewed and not based on scientific studies on the duration of use of such assets).

When asked whether or not the presentation of the budget of public institutions (in the sense of projection and execution) according to Romanian legislation (OMPF no. 1917/2005, with subsequent amendments and completions) corresponds to the requirements of IPSAS 24 – Presentation of budget information in financial statements, a large part of those surveyed (36 out of 78, representing 46.15% of the total) consider that the current national regulation meets the requirements of the above-mentioned standard on these issues.

This question was also addressed by 24 other accounting professionals (representing 30.77% of the total) who were of the opinion that the current national accounting regulations do neither fully nor partially meet the IPSAS 24 requirements related to the presentation of the budget of public institutions (in terms of design and execution), as this standard admits.

A little fewer (18 professional accountants out of 78 respondents, representing 23.08% of the total) confirm that the current regulations do not meet the requirements of the standard on the issue we are referring to, but do not know what needs to be changed in our current regulations.

It can be concluded that most of our national regulations on the presentation of the budget of public institutions (in terms of projection and execution) correspond to the variants presented in IPSAS 24, but it is still necessary for our profile authority (Ministry of Public Finance) to examine whether other options for carrying out these operations may be accepted, in order to achieve a more pronounced approach to the requirements of this standard to this issue.

Conclusions

The research we conducted was part of the approach taken by various teams of professionals from the Ministry of Public Finance and researchers in our country to identify new possibilities for implementation and other provisions of IPSAS in public accounting in Romania, to shorten as much as possible the time needed to complete such a process in our country.

The implementation process of IPSAS and EPSAS must be a constant and sustained concern of the relevant public authorities in Romania (Ministry of Public Finance) and beyond, capitalizing in the most appropriate way the research results of various groups of specialists in our country and taking into account all aspects related to costs and managerial aspects of ensuring the success of such an action;

The suggestions and proposals resulting from the application of the questionnaire proposed by us among the professional accountants in the army, in the area of implementation of various new aspects related to certain IPSAS, may be useful and worth considering, to give a configuration more appropriate to accounting regulations for public institutions in line with these relevant international and European standards;

We consider that certain simulations should be performed on a sample of public institutions with the new elements to be implemented by the Ministry of Public Finance, based on various research conducted in recent years on the implementation of new elements in IPSAS, in addition to already accepted, as was done in the period preceding the adoption of the current accounting regulations used in public institutions (we consider OMPF no. 1917/2005, with subsequent amendments and completions).

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RADIO SPECTRUM MANAGEMENT IN MODERN MILITARY ACTIONS

Daniel DOICARIU*

Due to the continuous development of civil and military communications and information technology services, in an era of digitalization in which the need to allocate, allot or assign a much larger number of frequency bands is essential, it is necessary to adopt national and international rules and guidelines for sharing and efficiently managing the radio spectrum. The use of modern and / or emerging technologies involved in current or future military actions is dependent on the use of radio spectrum in an increasingly congested, contested and constrained electromagnetic operational environment.

Keywords: radio spectrum management; UAS; radio communications; spatial frequency spectrum; 5G; CEMA.

The fact that radio spectrum is a valuable, necessary but limited resource must be effectively managed and capitalized by each responsible structure.

Due to the peculiarities of radio wave propagation, they can go beyond the borders of a state and can interfere with those of neighboring states, which is why it is necessary to ensure proper management and strict compliance with common standards and regulations at national and international level.

From a military perspective, land, naval, air, cybernetic and cosmic operations are based on technological capabilities that use and consume radio spectrum resources. In order to successfully complete the missions, it is necessary to optimize the way in which the own equipment benefits from the radio spectrum, but at the same time limits the access of the enemy in the own radio networks.

Starting from the desideratum presented above, through this article I set out to analyze the importance of radio spectrum management beginning with the national and international organizations that regulate it and to clarify its implications in current and future military actions.

National and international organizations

The International Telecommunication Union – ITU is a UN agency that aims to regulate radio spectrum worldwide. ITU organizes world conferences to update Radio Regulations and Regional Conventions on the use of radio spectrum, ensures cooperation in the field of telecommunications to eliminate interference between communications of different states, approves technical characteristics and operational procedures of radio communication services and systems, promotes international cooperation with on the allocation of satellite frequencies, advocates for the improvement of the global communications infrastructure, etc.

ITU divided the world into 3 regions according to Figure 1, Romania being in region 1, along with most NATO member states (except Canada and the USA).

The allotment of frequency bands in each region is not similar, which raises a number of issues that require regional discussion forums and world radio communication conferences to find solutions. From the perspective of coalition forces, ITU maintains good cooperation among international frequency band allotments, the host country and the area of interest.

At European level, the intergovernmental organization *European Conference of Postal and Telecommunications Administrations* (CEPT) brings together the administrations and regulators in the field. Its main duties are to establish scenarios on the electromagnetic spectrum, taking into account the development of technology and the market, the adoption and promotion of joint European proposals in the ITU, the harmonization of regulations in the field of telecommunications and postal services, etc.

In NATO, the structure that has authority in the field of radio management is *NATO's Spectrum*

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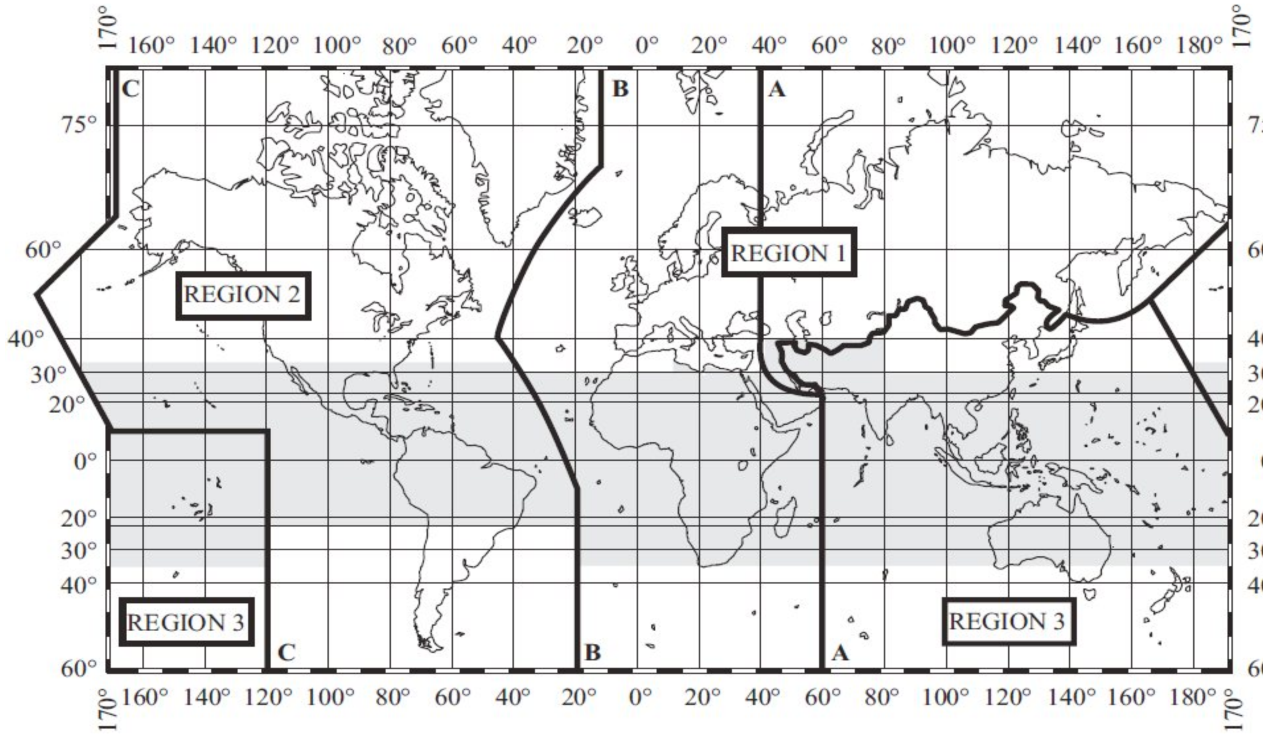

Figure 1 *Harmonization of frequency bands worldwide*[1]

and C3 Infrastructure Branch (SC3IB). The NATO Joint Civil / Military Frequency Agreement (NJFA)[2] regulates NATO's access to the spectral resource, establishes and allocates the necessary frequency bands to military equipment, which member countries include in their national allocation tables. As an observation, NATO is not a member of the ITU and cannot send representatives to decision-making forums, but its interests are represented by the member states of the Alliance.

NATO structures are not allowed to use the radio spectrum allocated for the territory of a state, even if it is a member of the alliance, without requesting Radio Frequency Support. This is a mandatory step for NATO in authorizing and allocating frequencies on the territory of a state.

The NATO doctrine clearly specifies the difference between the responsibilities of radio spectrum management and radio frequency management. In the *ACP-190 NATO Supp-1*, spectrum management (SM) represents the totality of "process of identification and efficient use of the available RF electromagnetic spectrum for military purposes"[3], and frequency management (FM) is "a sub-process of SM to provide coordinated frequency assignments & allotments to military users and to resolve interference"[4]. Radio spectrum management ensures the planning, coordination and management of the use of electromagnetic spectrum, allowing military radio equipment to operate without limitations or to be affected by the interference from the radio systems of its own or partner forces. Radio frequency management aims to streamline frequencies in the *Area of Responsibility* (AOR).

According to ITU regulations, each Member State has national radio frequency management agencies intended to manage the electromagnetic spectrum within its borders and to cooperate with international organization in the field. In Romania, the National Authority for Management and Regulation in Communications (ANCOM) ensures electromagnetic compatibility, manages the radio spectrum specific to electronic communications and controls the radio equipment on the market. As the radio spectrum is considered a sovereign good, each state has a National Table for Frequencies Allocation (TNABF) through which it efficiently manages its frequency bands in the national interest, but without contradicting regulations of the organizations to which it belongs.

The Military Agency for Radio Frequency Management (AMMFR) is the structure of the Romanian Army having as field of responsibility the management of radio spectrum resources by the armed forces on the national territory, of cooperation with similar structures for participation in joint actions outside the country, which establishes the principles and general rules in the field of electromagnetic compatibility.

Implications of radio spectrum management in military actions

Radio spectrum management is an analytical, procedural and political challenge to plan and use frequency bands. The military has become increasingly dependent on wireless communications, navigation and surveillance systems, long-distance connections, cyber and electronic actions, to support a wide variety of operational missions. The most important resource that any wireless system needs is the radio frequency through which to communicate. The unallocated radio spectrum has become very limited and as a result its commercial value has continuously increased. Government agencies competing with private companies are finding it increasingly difficult to purchase new frequency bands for modern systems and equipment and even retain those they have used for years.

When we talk about military actions in AOR we agree that the Electromagnetic Spectrum (EMS) makes the connection for all 5 domains, which must ensure the efficient and timely command and control process. For NATO, the electromagnetic spectrum is an essential part of military operations and is seen as an operational environment in which alliance forces benefit from its effects to support the commander's intention. Electromagnetic Battle Management ensures dynamic monitoring, plans and coordinates joint operations in the electromagnetic spectrum, integrates data and information from sensors, technology and fighters to ensure a Recognised Electromagnetic Picture of the battlefield. Spectrum needs result in an increasingly *congested, contested and constrained*[5] electromagnetic operating environment, generically called *complex*. According to the *Electromagnetic Spectrum Superiority Strategy*, the electromagnetic operating environment is:

- *congested* because military and civilian EMS-dependent systems continue to crowd the spectrum and increase the amount of unintentional interference;
- *contested* because enemy activities detect, disrupt, exploit, degrade, deny, deceive or destroy friendly EMS capabilities for military gain;
- *constrained* due to domestic and international regulations that reduce the spectrum available for military access.

Radio frequency spectrum refers to electromagnetic radiation which, depending on the frequency or wavelength, can be used in different

Frequency (Hz.)	Abbreviation	Band
3 kHz – 30 kHz	VLF	Very Low Frequency
30 kHz – 300 kHz	LF	Low Frequency
300 kHz – 3000 kHz (3 MHz)	MF	Medium Frequency
3 MHz – 30 MHz	HF	High Frequency
30 MHz – 300 MHz	VHF	Very High Frequency
300 MHz – 3000 MHz (3 GHz)	UHF	Ultra High Frequency
3 GHz – 30 GHz	SHF	Super High Frequency
30 GHz – 300 GHz	EHF	Extremely High Frequency
300 GHz – 3000 GHz	THF[6]	Tremendously High Frequency

Figure 2 *Radio frequency spectrum[7] – adaptation*

civilian or military fields (Figure 2). The radio frequency spectrum comprises 9 frequency ranges between 3 kHz and 3000 GHz.

Radio spectrum management in Romania is based on TNABF which contains information about: allocation of radio frequency bands on radio communication services at ITU, CEPT and national level, their uses at European and national level, regulations applicable in CEPT and Romania for different bands of frequencies and usage status.

Aiming to maximize radio spectrum resources and minimize overlaps, but also to prevent unauthorized or improper use, radio spectrum management is ”the combination of administrative, scientific and technical procedures necessary to ensure the efficient operation of radio communication equipment and services without causing prejudicial interference”[8]. The objective of the frequency manager is to adopt optimal decisions for the operation of communication networks in concrete conditions, sometimes uncertain in the electromagnetic environment. It ensures compliance with military policies, rules and procedures for regulating local radio, and the application of effective *Electronic Counter Measure* (ECM) practices.

In modern combat actions, the commander is supported in making the decision by a large number of systems/equipment that mostly use radio spectrum. Without proper management of radio frequencies, saturation will soon be reached which will lead to compromises in the full exploitation of resources and will affect the performance of the mission. The commander and staff must also understand that the spectrum allotted to a mission is limited and must be used effectively to multiply combat power, without interfering with their own equipment and to conduct command and control during military operations.

Communications and IT systems planners design and implement the communications networks needed to conduct an operation, and the frequency manager uses this design to determine the frequency requirements, to provide operational support by deconflicting and resolving interference.

Radio spectrum management is responsible for the development and maintenance of radio communications infrastructure, as well as the introduction and development of new C2 defence capabilities in an environment where the density of equipment and systems is constantly increasing. Along with traditional radio communications, current and future challenges come from the area of 5G technology, satellite links, UAS, cyber and electromagnetic activities, etc. Next I will present four pillars of the field of communications from the perspective of radio spectrum management, in optimizing the access of own systems / equipment to radio bands, in the conditions of the presence of the enemy in electromagnetic environment.

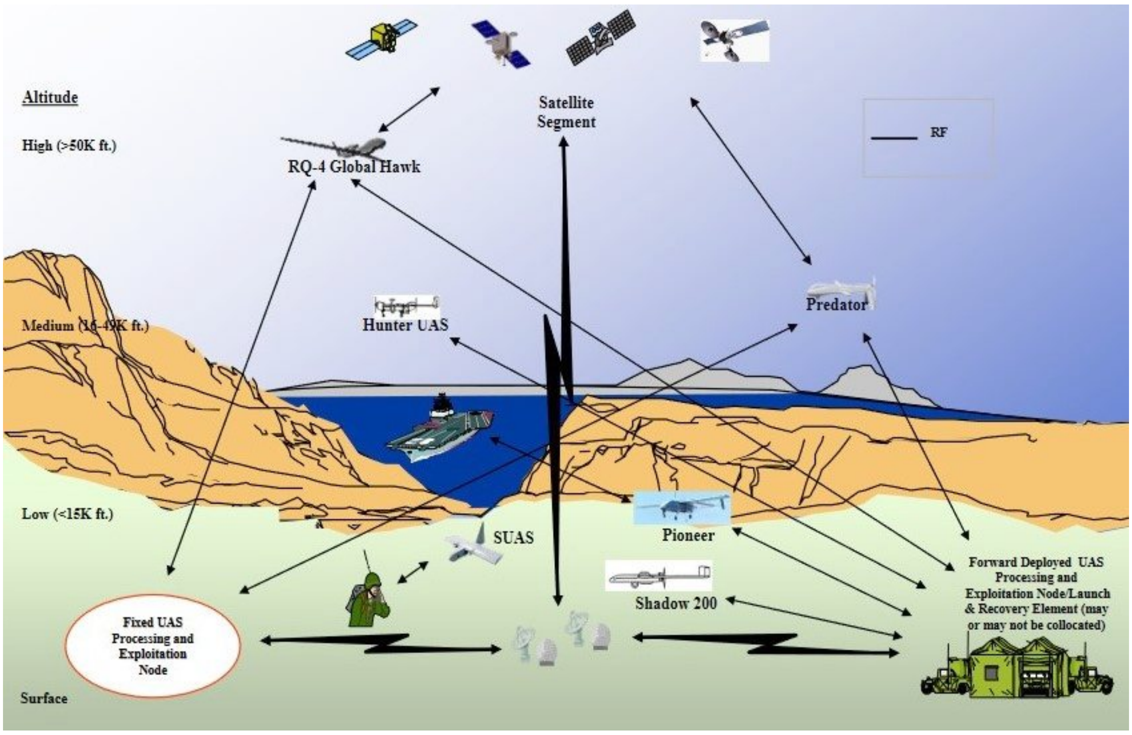

Figure 3 *UAS Architecture*[10]

Satellite frequency band	Frequency band (GHz)	Satellite services
L	1-2	Mobile Satellite Service (MSS), Radionavigation Satellite Service.
S	2-4	Radars, MSS, Broadcasting Satellite, Space Research.
C	3,4-7	Fixed Satellite Service (FSS), VSATs, Direct-To-Home (DTH).
X	7-10	Radars, Satellite Imaging, Space Research.
Ku	10-15	FSS, VSAT, MSS, Broadcasting Satellite.
Ka	17,7 -21,2 27,5-31	FSS broadband, inter-satellite link, MSS, military/commercial FSS.
Q şi V	42,5-52,4 37,5-50,2	FSS broadband, inter-satellite link, MSS, military/commercial FSS.

Figure 4 *Satellite frequency bands*[11]

UAS – Unmanned Aircraft Systems

Unmanned Aircraft Systems need secure and interference-free communications because they are in a network that also includes ground control stations, air traffic control systems, satellite systems, other UAS, etc.

NATO categorizes UAS into 3 dedicated classes[9]: Class I for micro, mini and small ones, Class II for medium-sized tactical systems, and Class III for those flying at Medium and High Altitude, but also with Long Endurance. Depending on the size, the altitude at which it flies, the duration of operation, etc. it requires different approaches to using the radio spectrum in which it works. In the UAS architecture model presented in the US Army, the spectrum needs represent a challenge for a frequency manager in a joint operation like the one in Figure 3.

UAS can be used in gathering information from the electromagnetic spectrum, performing SIGINT – Signal Intelligence services, artillery guidance, with the role of radio relay, jamming of enemy communications, etc. The sensors are installed on UAS platforms for locating, identifying and intercepting radio transmitters.

The electromagnetic environment ensures the realization of specific UAS communications, using radio frequencies, both on direct wave (Line Of Sight – LOS) migrating to the 14/15 GHz band for some of the medium or large systems, and on indirect wave (Beyond Line Of Sight – BLOS) – mainly military satellite links (SATCOM) in the 20/30 GHz band, being considered the best solution. The most used radio frequency bands for UAS communications are: L, C, X, K_u, K.

From the point of view of radio spectrum, the UAS problem is related to the absence of international dedication and protection of frequencies against harmful interference, so that they are able to maintain a high level of integrity and availability.

Spatial frequency spectrum

Due to the increase in the number, use and size of satellites, congestion of lower frequency bands has become a problem. A real challenge is the discovery of new technologies through which satellite links can be made through higher frequency bands. Figure 4 shows the frequency bands and satellite services that are generally used for satellite links.

The frequency bands are indicative, they are adjusted according to each region according to the division of ITU-RR, but also by the allocation of the frequency bands according to the relevant

TNABF at the level of each state. For example, the transmission frequency for the X-band is the reception frequency for the neighboring K_u-band, which may cause interference to certain satellite services. European states for military satellite services ”have employed more secure frequency bands such as S, X and K_a to isolate such commercial applications”[12].

5G technology

5G technology is also a challenge in the field of radio spectrum management. At the 2019 World Radiocommunication Conference (WRC-19), additional radio frequency bands needed for the IMT-2020 (IMT – International Mobile Telecommunications) standard were identified, which will facilitate the development of 5G mobile networks. Thus at WRC-19 they were identified ”frequency bands 24,25-27,5 GHz, 37-43,5 GHz, 45,5-47 GHz, 47,2-48,2 and 66-71 GHz. In total 17,25 GHz of spectrum have been identified for IMT by the Conference, in comparison whit 1.9 GHz of bandwidth available before WRC-19”[13].

High frequency bands higher than 6 GHz allow information transfer speeds of up to 10 Gbps and an almost instantaneous response time. The band of high waves is subject to rain attenuation, causing large losses during radio propagation and requires conditions of direct visibility.

Medium frequency bands between 1.5 and 6 GHz provide protection against rain attenuation, ensure information transfer speeds of up to 490 Mbps and allow the installation of 5G equipment in the same locations as previous 4G LTE equipment.

Low frequency bands below 1 GHz provide extensive coverage and long propagation distances, but do not ensure the same information transfer speeds as above, reaching 100 Mbps (about 20% higher than 4G anyway).

The 5G Strategy for Romania states that ”the 700 MHz, 3.4-3.8 GHz and 24.25-27.5 GHz bands (26 GHz band) are key bands for the implementation of 5G in Romania, similar to the other Member States of the European Union”[14]. 5G technology offers a number of opportunities in the military field such as: Virtual Reality / Augmented Reality facilities - in training, cloud computing and edge computing – in CIS (Communications and Information Systems), the decision-making process through Situational Awareness – in C2, autonomous remote-controlled cars – at a tactical level.

Starting from the question of what frequencies would be useful to cover 5G an area of operations at the level of a tactical unit, but also the fact that ANCOM is preparing to auction[15] the 800 MHz, 2600 MHz and 3400-3600 MHz frequency bands, I consider that the Romanian army should ensure its spectral resource in time.

Electromagnetic and cybernetic actions

Some NATO member countries have adopted at the national level the integration of cyber and electronic warfare actions and have assimilated them under the concept of *Cyber and Electromagnetic Activities* (CEMA).

Having as a starting point the fact that CEMA are ”activities leveraged to seize, retain, and exploit an advantage over adversaries and enemies in both cyberspace and the electromagnetic spectrum, while simultaneously denying and compromising them, at the same time protecting the mission command system”[16]; they are integrated and synchronized through cyber operations, electronic warfare and spectrum management actions. ”The continuous planning, integration, and synchronization of cyberspace and EW operations, enabled by spectrum management operations, can produce singular, reinforcing, and complementary effects”[17], in support of the kinetic effort of the operation.

Radio spectrum management is a pillar of integrated cyber and electronic warfare actions. Drawing attention to the importance of using electromagnetic spectrum in different fields (SIGINT, ISR, ISTAR, BSM), LTC Panagiotis Stathopoulos stated that ”there is a need to integrate and unify all the EMS capabilities, entities and disciplines under a single domain of operations, the EMS including Cyberspace”[18].

One direction of future development is tactical operations in cyberspace, which are dependent on the spectrum. In the future, the military will fight in an area of cyber spectrum operations, which is currently another space in the process of being known. To prevent this problem, the structures of communications and informatics, electronic warfare and radio spectrum management must collaborate and integrate actions to achieve these objectives and present them to decision makers.

The management of the frequency spectrum of this new combat space could be the key to success in future military actions.

Conclusions

Freedom of action in the electromagnetic spectrum, at the place, time and parameters we choose, is a necessary precursor for the successful conduct of operations in all areas. The electromagnetic spectrum is a fundamental component of the natural environment, and the Electromagnetic Spectrum Operations is the framework in which military actions take place. The Electromagnetic Spectrum Operations is an area of maneuver, combat, but also a competition between the military and non-military activities. In modern warfare, the advantage of efficient EMS management is a key indicator in ensuring superiority in the air, on land, at sea, in space, or in cyberspace.

As radio spectrum is a limited resource, poor management will often not be able to meet the requirements of all spectrum users. Complex exercises such as joint or multinational ones are the best opportunity to become aware of this reality and identify solutions.

A radio spectrum manager is and will continue to be essential in the conduct of military operations, and for this the use of updated software tools and a good training of human resources are mandatory. The radio spectrum manager must be proactive in enabling decision-makers to maintain initiative and continuity in conducting military operations.

NOTES:

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4 *Ibidem*.

5 [Department of Defense], *Electromagnetic Spectrum Superiority Strategy*, october 2020, p. 4.

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13 https://www.itu.int/en/myitu/News/2020/01/24/14/40/WRC19-identifies-additional-frequency-bands-for-5G, accessed on 05.07.2021.

14 *** *Hotărârea de Guvern nr. 429*, of 20 June 2019, for aproval of *5G Strategy for Romania*, Anex, p. 39.

15 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwje2Z743ZzyAhXagP0HHd7rCiMQFnoECBQQAw&url=https%3A%2F%2Fwww.ancom.ro%2Fuploads%2Fforms_files%2FCaiet_de_sarcini_procedura_01_07_20211625147871.pdf&usg=AOvVaw3d2FZFEgTGgkdcRmy1pFUX, accessed on 10.07.2021.

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ANALYSIS OF THE CONCEPTS OF THREAT TO NATIONAL DEFENCE AND NATIONAL SECURITY

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This approach compares the concept of threat used in the field of national defence and national security by investigating legal and politico-administrative institutions and terminology, in order to clarify its content. In this regard, a number of sources are examined that benefit from universality, legitimacy and opposability to support the following arguments: the concept of threat in the field of national defence and national security has distinct meanings which determine different social and institutional responses.

Keywords: threat; country’s defence; national security.

In 1995, Kate Storey stated that threats cannot be defined outside their context; they are created and located in the socio-historical period in which they are composed[1]. As such we can say that threat from a logical point of view is a category whose ramifications are determined by the context in which the concept appears. The chosen study methodology is the conceptual analysis based on the rules of formal logic.

In general, the universal meaning accepted in language for threat is that of action to threaten and its result. The action itself refers to manifesting the intention to harm someone in order to intimidate him or to get something from him[2].

The concept of threat benefits from studies in many fields, from history to mathematics and beyond, but for the economics of this article the fields of reference are country defence and national security. Therefore, the context in which the negative manifestation aimed at intimidating or gaining an advantage takes place is described by the boundaries of the two areas. This consequence should be visible in the special characteristics that the concept of threat acquires in relation to the hypostases of the country’s defence and national security. Therefore, the classical criteria for classifying concepts will be applied, namely the scope and content of the country’s defence and national security, in order to observe them in relation to the concept of threat.

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Explanatory dictionaries, normative acts and opposable invested documents were used to identify the content and scope of the terms or concepts ”defence”, ”security”, ”country” and ”national”. The selection criteria of these materials were: universality, legitimacy and general opposability. Thus, according to social conventions, explanatory dictionaries comprise the universally accepted meaning of terms in a language; the legal norms provided in normative acts adopted by expressing the agreement of the parliamentary majority were retained precisely because of the legitimacy given to the meaning and practical attributes given to the concepts they describe, and the documents invested with general opposability were selected due to the extra interpretation and nuance they add to the properties and elements of the sphere of the above-mentioned concepts.

Once the uses of the above concepts are identified, the coding is performed, consisting in the categorization of the definitions, the use of the attributes of the concepts, as well as the antecedents and consequences. The last two aspects are important for revealing the context in which the relationship between the concepts of threat and defence of the country on the one hand and national security on the other can be achieved, the antecedents being defined as ”events or incidents that may occur before the concept”. and the consequences as ”events or incidents that occur as a result of ensuring the concept”[3].

Content and scope of the concepts of country defence and national security

According to the Explanatory Dictionary of the Romanian language[4] (marked with 1 in Table No. 1) and the Small Academic Dictionary[5] (marked with 2 in Table No. 1), the terms "defence", "security", "country" and "national" have the following content and sphere/ meaning:

Taking into consideration the fact that the analysis takes into account the concepts of national defence and national security, as they are perceived in our country, we will further investigate the legal texts of law level that refer to the four concepts/ terms ("Defence", "security", "country" and "national") which are: the Romanian Constitution[6] (marked with 1 in Table 2), the defence law[7] (marked with 2 in Table No. 2) and the national security law[8] (marked with 3 in Table No. 2). According to these three normative acts, there is an ordering relationship among these concepts and

Table no. 1
UNIVERSAL MEANING OF THE CONCEPTS OF NATIONAL DEFENCE AND SECURITY

Term	Content / Sens	Sphere / meaning
Defence	1. „ to intervene to help someone or something to support him against a hostile action; to guard a territory, a city, etc.; to maintain a fighting position and the reflexive to oppose an attack, a hostile action" 2. „hindrance protection, in which case, being attacked, you have the right to attack those who attack you, fighting as offensive aimed at stopping the enemy, all the measures taken to stop the enemy offensive or struggle to guard a territory"	All actions to repel an attack on an entity or territory
Country	1. „territory inhabited by a people organized administratively and politically in a state" 2. „relatively homogeneous part of the geographical area, to which certain characteristics are specific (ethnic, ethnographic, landform, climate, water, economic resources, etc.); area of land (delimited) on which a certain authority is exercised; territory inhabited by a people organized administratively and politically in a state"	All features of a nation
Security	1. „being safe from any danger; a feeling of confidence and peace that the absence of any danger gives to someone" 2. „shelter from any danger; feeling of confidence, peace due to the belief that there is no danger; no risk of accidents; (often with determinations indicating the field) complex of material, economic, political conditions that ensure security"	Condition maintained by hazard elimination actions
National	1. „shelter from any danger; feeling of confidence, peace due to the belief that there is no danger; no risk of accidents; (often with determinations indicating the field) complex of material, economic, political conditions that ensure security" 2. „belonging to a nation or a state"	All features of a nation

Table no. 2
MEANING GIVEN BY LAW TO THE CONCEPTS OF NATIONAL DEFENCE AND SECURITY

Term	Content / Sens	Sphere / meaning
Country defence	1. citizens have the right and obligation to defend Romania which is a national state, sovereign and independent, unitary and indivisible with the form of republican government, Romania is a rule of law, democratic and social state. The conditions regarding the fulfillment of military (defence) duties are established by organic law. Loyalty to the country is sacred.	• right and legal and moral obligation • profession • defence occurs only when Romania is attacked
	2. the set of measures and activities adopted and carried out by the Romanian state in order to guarantee the national sovereignty, independence and unity of the state, the territorial integrity of the country and the constitutional democracy.	• activity organized for a specific purpose; • maintaining the Romanian state
National Security	3. the state of legality, balance and social, economic and political stability necessary for the existence and development of the Romanian national state as a sovereign, unitary, independent and indivisible state, maintaining the rule of law, as well as the climate of unrestricted exercise of fundamental rights, freedoms and duties of citizens, according to the democratic principles and norms established by the Constitution.	• maintained by hazard elimination actions

Table no. 3
MEANING GIVEN BY OPPOSABLE DOCUMENTS OF THE CONCEPTS OF NATIONAL DEFENCE AND SECURITY

Term	Content / Sens	Sphere / meaning
Country Defence	• implies the possibility of an active, dynamic intervention in case of attacks or hostile actions from the outside;[10]	• a plurivalent state that reflects the needs of society
National security	• pre-existing state of peace and internal security of Romania;[11]	• continuous existence in accordance with the values of the Romanian state
	• involves more than military security, so the military field, but also other aspects of state life – such as economic, financial, social – which could affect the very state of the state by the magnitude and severity of the phenomenon.[12]	• a plurivalent state that reflects the needs of society

Table no. 4
THREAT ANTECEDENTS AND CONSEQUENCES

Concept	Critical Attributes	Antecedents	Consequences
Defence	Imminent Vitale negative effects Probability	Certainty Attack Enemy	Competence Monovalence Violence
Country/ National	Territory People Sovereignty	Political Relations Community Stability	Permanence Self-determination
Security	Potentiality condition State Balance Permanence	Positive cognitive perception	Progress Stability Multivalent
Country/ National Defence	Probability Oriented on a certain moment Vital effects Continuity Romania Capacity	Hostile interests Military attack	Involuntary change of the nation Extinction War Monovalent Violence Counteracting action
Country/ National Security	State Need Potentiality Balance Permanence Romania	Positive cognitive perception at the level of the whole community	Progress Stability Multivalent

therefore they are subject to the law of inverse variation[9] due to the evolution of knowledge about the country's defence and national security. The content and scope of the country's defence and national security are:

The generally opposable documents – decisions or judgments of the courts – develop the content of the concepts analyzed as follows (Table No. 3):

Regarding this category, a series of clarifications are required regarding the concept of attack or hostile actions. Thus, respecting the criteria of universality, legitimacy and opposability, the content of these concepts in the field of defence and security is given by the provisions of international law on armed conflicts[13] customary international law, UN resolutions[14] and the jurisprudence of the International Court of Justice on military or quasi-military

Also, the Constitutional Court of Romania finds that the terms country and national are equivalent and have the same scope related to defence and security[15].

Therefore, it follows from the content and scope of the above concepts that their antecedents and consequences are (Table No. 4):

From the above it results that the country's defence represents the capacity of the Romanian nation to resist an armed / military attack and national security represents a state of permanent stability of the Romanian state that allows the development of social life in accordance with the will of the Romanian nation and its interests.

Another conclusion is that national defence and national security are distinct concepts between which there is no logical subordination relationship. At the same time, it appears that defence depends on the occurrence of a certain circumstance whose description is universally accepted, namely the armed / military attack and the military aggression. On the one hand, national security is a state of society that must be permanently maintained and whose disruption can be caused by various events, which gives the concept of national security a multivalent character and whose definition cannot be achieved because it depends on the circumstances of the context.

Threat from the perspective of the country's defence and that of national security

Threat, in general, is the object of the intention to harm someone in order to intimidate him or to obtain something from him, in other words it represents the deeds meant to produce intimidation or to obtain an advantage from a certain subject. The facts themselves have negative effects, exclusively for their subject. The concept of threat has the following content (Table No. 5):

Regarding legal sources, the threat in the field of defence is described by the provisions of international law that Romania has ratified. Thus, the threat is described in relation to the military attack, as well as to other situations of a military nature that are correlated to the military aspects. The content and scope of defence, from the perspective of international law, are determined by the prohibition of the threat / use of military force by nations in their international relations[16], the consequence being the activation of the right to self-defence of the state targeted by military attack (military response to aggression). as well as the intervention of the international community to restore peace.

From this point of view, the concept of the threat in the field of national defence becomes clear as the military response is excluded in the absence of an imminent military attack. In accordance with this observation, the normative acts provide that the national defence is made exclusively for defensive reasons, and Romania permanently maintains its defence capacity[17].

Unlike the threat to the country's defence, the one in the field of national security can take various forms, their source not having a certain quality, but only a determined purpose, namely the disturbance of Romania's balance, stability and legality. The Constitutional Court of Romania noted that ”threats to national security are viewed either from the perspective of concrete acts committed by a person, or from the perspective of the subject who may suffer injury/harm as a result of an act. Thus, it can be stated that threats to national security are objectified, on the one hand, in those actions / facts which, regardless of the perpetrator, by their effect are absolutely presumed to have a direct impact on society as a whole, and, on the other hand, in those actions/facts which by their effect have a direct impact on certain determined persons and a mediated impact on society as a whole”[18].

Another interesting fact for clarifying the concept of threat to the country's defence is that, since one of the critical attributes of the concept of the country's defence is the defence capability, it turns out that it requires a continuous effort to build this capability, which affects both the defence of the country and the following elements: leadership, forces, resources and territorial infrastructure[19], elements of national security, as they are constituted, exist, and are used peacefully when they perform secondary functions assigned by law to support the state of equilibrium, stability and legality of the country, but fulfill their main purpose in case of manifestation of hostile military or military actions.

In conclusion, we are in the presence of a threat to the country's defence when there is an implicit or explicit declaration of future and illegitimate use of armed force against the state, the execution of which depends entirely on the will of the state making the declaration. On the other hand, we are

Table no. 5
THREAT CONTENT

Critical Attributes	Potential Upcoming Negative perceptions
Antecedents	Uncertainty
Consequences	Anxiety Fear Stress

in the presence of a threat to national security when acts are committed that are likely to adversely affect or disturb the state's balance, stability and legality, and in the military, we are in the presence of a threat to national security when the country's defence capacity is affected.

Conclusions

This article argues that the threat from the point of view of defending the country and national security are concepts with different spheres and content, which cannot be confused in order to avoid affecting the Romanian society as a whole. This is also the reason why the two hypostases of the concept of threat deserve a separate analysis. In the field of defence, the threat takes the form of an explicit or implicit declaration of use of force against Romania, while the threat to national security can be defined as an intention, plan, action affecting national values and interests.

The demarcation line between the two concepts, although difficult to specify explicitly, can be drawn if the circumstances of manifestation are taken into account: the threatened subject and the author of the threat; the value / interest targeted by the situation / act that causes fear, anxiety and the state instruments used to remove the effects of the threat.

The consequences of manifesting situations that can be assessed as threats to the country's defence differ from those that are determined as acts considered as threats to national security. Also, the subject of the two types of threats is different. Thus, in the case of a threat to national defence the subject is the State, while in the case of a threat to national security the subject may be society or certain individuals plus a mediated impact on society.

NOTES:

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6 *Constituția României*, republished, art. 1, 53, 54.

7 *Legea no. 45/1994 privind apărarea națională a României, cu modificările și completările ulterioare*, art. 1.

8 *Legea no. 51/1991 privind securitatea națională a României, cu modificările și completările ulterioare*, art. 1.

9 In a series of ordered notions, the ascending order of the content corresponds to the descending order of the sphere and vice versa. This law applies in any field where we have ordering relationships (subordination, overordering) or hierarchical. Subordinate is the notion that is in a connection, which comes from the one with richer content, narrower sphere.

10 *** *Decizia Curții Constituționale no. 80/2014 asupra propunerii legislative privind revizuirea Constituției României*, para. 343.

11 *Ibidem.*

12 *** *Decizia Curții Constituționale no. 872, din 25 iunie 2010 referitoare la obiecția de neconstituționalitate a dispozițiilor Legii privind unele măsuri necesare în vederea restabilirii echilibrului bugetar*, para. II.

13 The Geneva Conventions and the Additional Protocols that Romania has ratified.

14 *** *Rezoluția ONU no. 3314/1974 privind definiția agresiunii*.

15 *** *Decizia Curții Constituționale no. 802/2018* regarding the exception of unconstitutionality of the phrase “or other such interests of the country”, contained in the provisions of art. 3 lit. f) of Law no. 51/1991 on the national security of Romania, and the provisions of art. 4 para. (2) of Law no. 255/2013 for the implementation of Law no. 135/2010 on the Code of Criminal Procedure and for amending and supplementing normative acts containing criminal procedural provisions.

16 *** *Carta ONU*, Art. 3.

17 *** *Legea no. 45/1994 privind apărarea națională a României, cu modificările și completările ulterioare*.

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ASPECTS REGARDING THE DEFENSIVE OPERATIONS OF THE MECHANIZED (INFANTRY) BRIGADE IN THE JOINT CONTEXT

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Throughout history, military action has undergone a permanent process of evolution and diversification, both in terms of scope and with respect to spatial, temporal and material dimensions. The trend that is becoming more and more pronounced is that all operations, including defence, will have a common goal, because they can no longer be carried out in a single environment, but both in the physical environment (land, air, naval, cosmic), as well as in the virtual environment (electromagnetic - cybernetic). At the same time, the need for flexibility in preparing and conducting operations against an opponent with fluctuating combat potential highlights the need to form joint task forces. Flexibility implies that this force, adopting a certain modular organization, be able to carry out operations specific to armed struggle, when such operations are required and also the same force, but in another modular organization, to be able to, in an optimal time, to perform stability and support operations.

Keywords: defensive; joint operations; multinational; maneuver; command and control.

At the very beginning the weapons systems were located on large areas, and the victory was decided in just a few hours and in broad daylight, in recent wars, the maneuver to hit the enemy is executed from thousands of miles away, and the blows have devastating effects. This stage has been reached due to the evolution of military equipment, the possibility of concentrating the firing power, from and in all operational environments, ensuring a vulnerability and losses as low as possible among the own forces and the civilian population, as well as the almost unlimited expansion of the battle space.

The analysis of the military conflicts carried out in the last century highlighted the fact that there were no operations of a single category of forces, but only joint operations. Thus, starting with the invasion of Poland, continuing with the landing in Normandy (Operation ”OVERLORD” - 1944), which revealed, for the first time, the typical characteristics of a combined operation, until the Gulf Wars (Operation ”DESERT STORM” - 1991 and Operation ”IRAQI FREEDOM” - 2003) or from Afghanistan (Operation ENDURING FREEDOM - 2001), in which an integrated ”system of systems” was used, using aviation or naval support elements. We believe that the modern aspect of the combined operations was best highlighted in the Gulf and Afghanistan wars, when forces and means from all categories of forces were used, based on a single plan.

The military conflicts of the last two decades have highlighted new guidelines and concepts regarding the conduct of military operations, characterized by rigorous planning, complexity, dynamism, rapid concentration of forces and means, integrated logistical support, use of high technologies and combined actions of all categories of forces. At the same time, practice showed that military operations no longer have a strict geographical delimitation, being able to be carried out over long distances and having a very short reaction time, largely determined by the mobility factor.

The goal of this paper is to emphasize the importance of conducting a joint operation, especially defence, in the overall preparation and conduct, in a timely manner, in a dynamic and complex operational environment.

Conceptual delimitations regarding the joint operations

The concept of the *joint operations* entered the universal military scientific circuit in the first half of the last century, with most military theorists

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agreeing that the initiator of the concept of airborne operation is V.K. Triandafillov who, in 1926, formulated, for the first time in military art, the theory of the development of the military operation in the depths of the enemy territory - the theory of operation and deep combat, using aviation and air landing troops.[1]

In the currently known and accepted sense, the terms *integrated operation and joint military action* were first used in military theory in the late twentieth century, with military experts considering that there were two significant events that preceded their official discussion, namely: The Falklands / Falkland War in 1982 and the American action in Grenada (Operation "URGENT FURY") in 1983. The Americans were the first to draw the appropriate conclusions from these confrontations, fully understanding that new technologies offer the possibility of hitting at a great distance, which led to the configuration of new ways of engaging forces and, implicitly, the emergence of new doctrinal concepts: "the air battle - 2000 and the deep battle."[2]

The concept of *joint operations* has been continuously improved and developed, based on the lessons learned from the main conflicts in recent decades, which show the evolution of military operations, both conceptually and as actions. These conflicts, in which both ground, air and naval forces were involved, in all areas of confrontation, provided the right ground for the conduct of complex joint operations (aero-terrestrial, aero-naval, aero-terrestrial-naval), but each with their own peculiarities. The typology of these military conflicts has demonstrated the inefficiency of the unilateral conceptions of the domination of a certain category of forces, demonstrating that only through their cooperation and, especially, through the capitalization of resources, the desired final state can be reached.

The emergence of the concept of joint operations marked the beginning of a revaluation process and the limitation of the use of the concept of independent operations (land, air, naval). The new concept synthesizes an already existing reality in the modern combat space, as operations of a single category of forces can no longer be carried out, but at the same time, the operations carried out by the categories of forces, in their entirety or through components, represent joint operations fundamentals.

Next, I will present the concept of joint operation as highlighted in military theory. In the Romanian Army, joint operations are defined as ”the totality of land, air and maritime actions carried out by a group consisting of forces or elements and means belonging to several categories of army forces, in the appropriate environment specific to each of them, in a geographical area determined, in a unitary conception and under a single command, exercised by a joint operational command, in order to achieve strategic objectives."[3]

Although it seems to be a comprehensive definition, it is still limited to the physical nature of the action, not taking into account other components of the operation, such as information or social, and regarding the purposes of the operation together, I appreciate that there is no clear difference between the strategic, operational and tactical levels, because by the action of a small forces, operational or strategic level effects can be obtained.

The American literature defines joint operations as "military actions performed by joint forces and, if necessary, supported by other structures in the force categories, based on clearly specified command relations, without necessarily being constituted as a joint force."[4]

Opposed to previous definition, this is a synthetic and comprehensive one, which extends, compared to what we have presented so far, the structure of the forces performing the joint operation, including forces that are not actually part of the joint force, but which support it in certain stages of the operation to facilitate its fulfillment of the ultimate goal. One such example is the deployment of the combined force or components thereof, by sea or air, from one area of operations to another with non-combined naval or air transport.

Some military analysts consider that, no matter how current the operational importance of a category of forces, the future belongs to the joint operations, carried out in a multidimensional combat space and in a multinational framework. In the Romanian Army, the multinational concepts involve ”conducting joint multinational operations, together with forces belonging to NATO member states or partners, but also with forces belonging to other states, within coalitions."[5]

NATO's doctrine defines multinational operations as ”operations involving armed forces from two or more states acting together"[6], and the

US Army as ”military action by forces of two or more nations in a coalition or alliance.” [7] In order to be able to operate in a coherent and efficient way in joint multinational operations, conditions for interoperability and a common operational image must be ensured at the level of the joint force.

Therefore, the preparation and conduct of such operations requires the formation of joint forces. It is estimated that the joint force capable of conducting the joint operations will aim to achieve domination across the spectrum, on the one hand, through the integrated use of dominant maneuvering, precise enemy engagement, logistical concentration and complete force protection, and on the other hand, by achieving information superiority and a unique and integrated command and control system.

I believe that the analysis of the joint operation can be done only in the context of understanding the new feature of military operations, which involves their development in a large space, where the societal environment is an essential component, which includes an extremely active information component. Under these conditions, the operations imply the integrated and united involvement of all the categories of forces that intersect, complement each other and are inter-conditioned dimensionally, informally and actionably with the other societal fields.

The joint operation must be planned, carried out and conducted to achieve the ultimate goal set by the upper echelon, which becomes an essential part of the operations.

When we refer to the purposes of the joint operations, I consider that the issue must be viewed from two perspectives, political and military. The politico-military aims, the results and the finalities of the assembled operation clarify its role in the armed struggle and, as a whole, in the war. The success of the joint operations is based on the joint effort of the components of the force under a single command which will execute the actions based on a unitary conception. The simultaneity of the actions of the components offers the possibility to selectively hit the main power poles in the opponent's device, simultaneously from the ground, water and air, as well as from the electromagnetic environment, in order to isolate them.

Cooperation and coordination are important features of joint operations, which contribute significantly to success. Thus, different types of relationships are established between structures and categories of forces, through which support is received or provided, based on the principle of ensuring the action complementarity of forces throughout the structure, in order to synchronize efforts and achieve maximum efficiency of actions.

Another important feature concerns the manner of command and control (C2) occurrence. In joint operations, command is centralized at the Joint Forces Command, being executed by the commander of the joint forces group, and operational control is executed by its commander, directly, or through component commanders, to whom different levels of authority will be delegated, clearly indicated by the order of operations. Within the action structure of the joint operations, I consider that military ground, air and naval actions will be carried out, supported, depending on the context and possibilities, by actions in cyberspace, based on a single plan of operations. These actions are performed by groups of assembled forces that may have different values, depending on the goal set, the forces, means and time available to carry out the mission.

Considerations regarding the place and destination of the mechanized brigade (infantry) in defensive operations

In the joint operations, the mechanized brigade (infantry), part of the land component of the group of combined forces, is intended, in cooperation with elements from other categories of forces, to perform the full range of ground and airborne operations, independently, jointly or combined, within or outside the national territory. The land component of a joint operation is configured by the predominant nature of the terrestrial environment and the obvious share of ground forces in the whole operative device.

Based on the main elements of the joint operations, we can consider that the mechanized brigade (infantry) participates in such an action within a group of forces led by the Joint Forces Command, national or multinational (when the operation is multinational).

Thus, when the operation takes place on the national territory, the brigade can be in the following situations:

- within a group of forces consisting only of national forces, throughout the conflict, in this case the leadership being the exclusive attribute of the commander of the Joint Forces Command, and the logistics are ensured by national effort;

- in a group of forces consisting only of national forces, until the deployment of NATO forces, then joining another group of allied forces, in which case the leadership is provided by the Allied Command, which will include modules of national staff, and logistics will be ensured by applying the concept of Host Nation Support.

When the joint operation takes place outside the national territory, under Article 5 of the North Atlantic Treaty, the mechanized brigade (infantry) conducts joint operations in a group of multinational or allied joint forces, under the command of a NATO Joint Command.

Regarding the destination of the mechanized brigade (infantry) in the combined operations, I consider that this structure must be able to respond to any military and non-military threats, to be able to carry out dynamic actions and maneuvering at a fast pace, in all environments and conditions. These conditionings are determined by the characteristics of the type of military action which, according to current trends, may be conventional or hybrid.

In this context, I believe that the brigade is intended to ensure, together with the other components of the joint forces and, in particular, the air component, control of the spaces necessary for operations, to protect its own centers of gravity, to fix the opponent's forces and to participate in the execution of decisive operations. The analysis of the dimensions of the aero-ground operation demonstrates that there is a convergence of the actions of the land and air forces to fulfill the unique purpose of the operation.

The air component supports the brigade's defence operation by performing air operations against opposing forces, the main form of support being Close Air Support, as well as by performing air transport operations. An example of an indirect effect due to air force action is gaining control of the airspace that helps shape the area of operations in which brigade forces can act at the right time and place, without prohibitive air interference and to ensure the protection of forces. Indirectly, the possibility of designing military power, when and where it is needed, is ensured, creating an indispensable premise for gaining and maintaining freedom of action at the level of the entire assembled force, but certainly at the level of the mechanized brigade (infantry). [8]

The air component can provide air close support to the mechanized brigade (infantry) during the movement, to ensure security, especially when this movement is performed in the area of combat actions. In the mechanized brigade (infantry)'s defensive operations, close air support can be executed, both with fighter jets and helicopters, being used to hit enemy targets in the immediate vicinity of their own forces. Thus, close air support provides the commander with extremely mobile firepower during the counterattack and can be executed anywhere in the area of operations. At the same time, aircraft can support the forces in the depth of the enemy's device, in the contact area or in the rear, depending on the type of defence, to support the maneuver (they can complete the maneuvering forces, integrating the fire executed by surface means); movement support (can support the movement of their own forces between positions); the attack of the penetrated enemy (they can engage the enemy who has exceeded the forces in the area of the main battle or who have penetrated the positions of their own forces) and for the support of the reserve.

I believe that firepower and aircraft mobility can make an immediate, direct and decisive contribution to the operation, helping the brigade to fulfill its mission, in particular by hitting inaccessible or difficult-to-employ targets.

The second type of support by the air component is the air transport of personnel, equipment, equipment and materials, as well as resupply in the area of operations (logistics transport), airborne forces and aircraft (vertical maneuver), medical and technical evacuation. It can be performed with a variety of aerial means, from light helicopters to jets. Helicopters must be an integral part of the brigade's scheme of maneuver, and an irreplaceable element of the design of the operation. Unlike airplanes, they can only carry light cargo over short distances, but can be used anywhere due to their flexibility.

Therefore, in the joint operations, I believe that the maneuvering of the mechanized brigade forces, combined with the support of the air component, is a key component of the operations, aspects that converge towards achieving success and reaching the desired final state.

Regarding the cooperation of the mechanized brigade (infantry) with the naval component of the group of assembled forces, this has been a basic element of the recent military conflicts, consisting of fire and movement support.

Fire support is the main means of supporting the brigade's operations. In the case of actions along or in the vicinity of a river, when the front line intersects perpendicularly or at a certain angle the watercourse, the river navy may carry out actions in support of the brigade. Thus, during the defence operation, when the brigade is supported with a flank on the river, the navy can secure the flank by naval fire, mining and actions to prohibit the maneuver of forces and means of the enemy on the flank of the brigade.

Also, another way of supporting the brigade by the naval component is the transport. The maneuver of forces and means performed by the brigade can be performed by transporting personnel, equipment, equipment and materials, as well as transporting and disembarking the river and sea landing.

The operation carried out jointly by the forces of the mechanized brigade (infantry) and units of the navy are coordinated and synchronized by the command of the assembled force. Also, at the level of the brigade and the naval unit with which it cooperates, liaison officers must be appointed through whom the exchange of information and the harmonization of the concept of operations must be carried out on a permanent basis.

Thus, I think that the joint operations have demonstrated their efficiency, compared to the operations carried out by a single category of forces, and the ability of the categories of forces to support each other, as well as the sum of their firepower have had the effect of increasing the probability of successful, but required a higher level of coordination and control.

As for the defence operation, it is carried out by the mechanized brigade (infantry) if it is no longer able to continue the offensive, which would lead to blocking, counterattacking and defeating the force. Defence is a specific form of armed struggle that does not directly lead to decisive victory, but must nevertheless be vigorously prepared and executed while maintaining initiative and exploiting success to continually counter the enemy's initiative, which can be achieved by combining actions, defensive with the offensive. Therefore, when there is no real reason to remain in defence and the optimal conditions have been created, in order, the offensive resumes. By virtue of this desideratum, the defence operation comprises a fight or a succession of actions carried out in time, the final intention being to achieve the favorable conditions for winning and maintaining the initiative in order to subsequently launch decisive offensive actions.

As a rule, the mechanized brigade (infantry) defends itself in the upper echelon, this being the reason why the brigade commander respects the intention and falls within the actions of the large tactical unit of weapons assembled for the division or grouping of forces. In the space of responsibility of the upper echelon, the brigade can receive defence missions with different aspects, on more or less wide fronts, with exposed flanks, with large intervals between units or even subunits, depending on its place and role in the design. defence operation. The mechanized brigade (infantry) can carry out defence operations within the division or group of forces gathered as: cover force; within the forces of the 1st echelon; within the forces of the 2nd echelon or as a reserve.

Thus, a well-prepared defence involves a ”combination of active and passive components that use the fighting and support units efficiently and skillfully to repel the decisive actions of the enemy”[9] in order to neutralize or annihilate its center of gravity in a relatively short time and with minimal losses.

Due to the considerations concerning the defensive operations carried out along continuous fronts, I consider that modern combat actions no longer allow the creation of such combat spaces and non-linear areas of operations will be chosen.

On the other hand, the discontinuity of the battle edge determines the isolated actions, in noncontiguous areas. At the brigade level, these actions can be prepared and carried out by battalion level forces (task forces) articulated by purposes, spatially and temporally, within the entire defence operation. Such actions take different forms and procedures of combat, in varying proportions and intensities, depending on the moments of their development, the action characteristics of the enemy, the area of operations and the objectives within it, as well as the nature and combat power.

Following the analysis, I think that, although the defence does not lead directly to the final victory, it must be taken decisively to create the conditions to the offensive.

In order to achieve this desideratum, a favorable front line will be considered in conducting the defence operation, which can be established even with the deliberate surrender of a piece of land to allow the forces to occupy a strong alignment with possibilities of offensive retaliation. On the other hand, the support of aviation and, in specific situations, of the naval forces in the decisive moments of the defence operation is indispensable, because the integration of the action of all available forces and obtaining the synergistic effect leads to a significant increase of the defence effort.

Conclusions

The concept of joint operations is one of the greatest challenges of contemporary military art. I believe that the analysis of the defence operation can be done only in the context of understanding the new physiognomy of military operations, which involves their development in a large space, which also includes an extremely active information component. Under these conditions, the defensive operations involve all categories of forces in an integrated manner, complementing each other.

As a result of my own analysis, I consider that, no matter how current the operational importance of a category of forces, the present and, especially, the future belong to the joint operations, carried out in a multidimensional combat space and in a multinational framework.

In order to be able to participate in joint multinational operations, in which defence operations constitute a definite chapter (Article 5 of the North Atlantic Treaty), the mechanized brigade must have operational capabilities to achieve interoperability with the other components of such a force.

Thus, the mechanized brigade must have the ability to position or redeploy its structures in various areas of operations, quickly and decisively, be able to make the connection between sensors, engagement systems and effects, be able to cover, in optimal time and wherever it is needed, logistical needs, as well as to ensure the protection of staff and own resources. Therefore, it is obvious that, in the current conditions and in the near future, in case of a military aggression on Romania, its defence is not possible only with the forces deployed in peacetime in the area of aggression of the opponent, requiring the execution of combined armed forces, including mechanized brigades (infantry) from other peacekeeping garrisons in the area, where the aggression occurred.

In conclusion, the achievement of these objectives can be based on the application of common training doctrines, accompanied by the standardization of equipment and procedures, validated by joint training and participation in joint and multinational exercises.

NOTES:

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2 Marian Stancu, *Operaţiile militare ale viitorului* (The military operations of the future), "Carol I" National Defence University Publishing House, Bucharest, 2007, p. 58.

3 *** *Doctrina Armatei României* (The doctrine of the Romanian Army), Defence Staff, Bucharest, 2012, p. 136.

4 *** JP 3-0, *Joint Operations*, USA Department of Defence, 2011, p. GL-11.

5 *** *Doctrina Armatei României* (The doctrine of the Romanian Army), Defence Staff, Bucharest, 2012, p. 70.

6 ***AJP-01(E), *Allied Joint Doctrine*, USA Department of Defence, 2017, LEX-6.

7 *** *DOD, Dictionary of Military and Associated Terms,* USA Department of Defence, 2021, p. 147.

8 *** AJP-3(B), *Allied Joint Doctrine for the conduct of operations*, USA Department of Defence, 2011, p. 1-9.

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ENGINEERING ACTIVITIES OF THE MECHANIZED BRIGADE IN OFFENSIVE OPERATIONS

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In the current context, when the dynamics of defensive and offensive operations is pronounced, which involves numerous and frequent movements and maneuvers of forces and means, modern armies attribute the primary role in ensuring their own mobility and countermobility of adversary forces which demonstrates the pronounced dynamic character of military actions. Due to the conditions and volatility of the operational environment in which the military forces must act, the engineering support is an important factor in the preparation and conduct of operations, but also in achieving the desired end state. In offensive operations, which are executed jointly, the engineer's missions support the development of the combat environment for the maneuvering forces in contact, accelerate through mobility, tactical movement and provide the necessary infrastructure to protect their own forces.

Keywords: engineering support; mobility; offensive operations; countermobility; protection.

Due to the current security environment characterized by relative complexity and instability, when military actions can be both violent and nonviolent (cyber or electromagnetic actions), engineering support must acquire an increased and modern dimension to facilitate and streamline its own actions, while counteracting the actions of the enemy, especially through countermobility and maneuvering missions.

The modernization and reorganization of the land forces, in most modern NATO partner armies, required the construction of new military expeditionary structures suitable for this process, high mobility, speed, and flexibility, equipped with military equipment and modern weapons.

The disappearance of mastodon armies, cumbersome and unable to cope with hybrid or conventional risks and threats, has led to the design of especially organized structures, trained on the principle of professionalization of force and equipped with combat equipment and materials with high performance characteristics, able to intervene quickly in resolving conflict situations, for defending one's own interests or for managing crises in different areas of interest and influence. In today's confrontations, regardless of their intensity, military structures are often forced to perform large and rapid maneuvers, at distances and with high consumption of resources, in a battlefield characterized by the existence of increasingly sophisticated weapons.

According to NATO, the technology of the current century offers commanders the opportunity to collect, store and distribute information, starting from the tactical level and only the intelligent, physically fit, highly motivated, trained and well trained will be able to exploit this technology to its full potential. Digital interconnection, at all levels, will result in precise, fast and secure communication in all situations, communication that will go beyond the existing one and will offer the possibility of integrating engineer structures within the support forces of combined armed forces.

The scientific approach aims at knowing the essential issues specific to the engineering support, sizing and leadership, at the level of combined armed forces, in accordance with the new provisions of the main doctrines, regulations, manuals, instructions and normative acts developed at the Romanian military structures.

Perspectives on the engineering support of the mechanized brigade in offensive operations

Modern military operations are increasingly dominated by the use of unmanned aerial vehicles, which forces military structures to perform multiple maneuvers and movements in the area of operations, hence the need for high mobility,

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mainly with the support of engineers.

In the Romanian military sense, engineering support represents ”the totality of engineer tasks that are planned, organized and executed by specialized engineer forces in support of all forces participating in combat.”[1] Within the land forces, the place of the engineer structures depends on the echelon in which they act, on their missions, as well as on the engineering tasks entrusted to them. From an action point of view, engineer structures are positioned within the fighting support forces.

The brigade's engineering company performs specific tasks, both in the main operations – offensive and defense, as well as in stability and support operations or intermediate ones.

A particularly important role is assigned to the engineer forces in actions to help the civilian population, in crisis situations, by involving them in the search-rescue-evacuation, in case of floods or snow. The offensive actions are part of the main operations carried out by the mechanized brigade, and the engineering activities and, the engineering support too are important elements that can ensure success and victory.

Therefore, the engineering support, together with the other components of combat support, among which we mention artillery fire support, anti-aircraft or logistical support, becomes decisive in the successful conduct of operations at the tactical level.

Offensive, as a decisive kind of operations, is considered the way in which the commander imposes his own will on the opponent. In the sense that strategic, operational or tactical decisions require the defeat of an opposing force, at any level, then it goes on the offensive. Even during the actual defense, we consider that taking over and maintaining the initiative requires offensive actions aimed at the rapid and decisive conquest of objectives, with minimal personnel losses and means of combat.

From another point of view, the commanders of the combat armed forces, carry out offensive actions in order to deprive the opponent of resources or limit his access to them, occupy key points in the field, collect data and information or to keep the opponent in defensive positions, unable to fight back. To achieve these goals, engineer forces make estimates and assessments that are essential in developing the design of the operation, because accurately identifying the opponent's obstacle system facilitates avoiding the strong elements of the opponent and hitting him on the flanks or at intervals.

The manual of engineering support in tactical operations defines the purpose of the offensive operation as „imposing one's own will on the enemy or creating the conditions for the success of subsequent operations, for the cessation of hostilities and the transition to post-conflict operations, using force or threat.”[2] The advantages of conducting an offensive operation depends, first of all, on the commander's ability to impose his will, by having the initiative, choosing the decisive moment to attack, as well as by setting the pace of the offensive, and the engineer forces supports the offensive actions of the mechanized brigade within area of operations. We can admit that the engineering support of the offensive operation aims at: ”creating favorable conditions for the timely, safe and covert realization of the offensive formations; ensuring the protection of forces during the preparation and conduct of the operation, ensuring the mobility of own forces; achieving the countermobility of the opponent's forces, etc.”[3] and is found in both methods of the offensive – from movement and direct contact with the opponent.

When analyzing the engineering support of the attack we can say that it aims to create optimal conditions for breaking the opponent's defense, destroying and capturing it, and in antithesis, the offensive is adopted from a defensive position, after regrouping forces. The base of the offensive is a portion of terrain, where engineering activities have been made, and has an area corresponding to the combat formations that must provide mass killing, protection against enemy fire systems, especially chemical, biological, radiological and nuclear, the basis from which the attack can be triggered. The preparation of the base for the offensive will be carried out, mandatorily, during the night or in secret, using the engineering activities or the natural shelters existing in the brigade area of operations.

The offensive operations (attack) is adopted when there has been enough time to organize the defensive system, including engineering activities, but also if the area of operations does not have practicable roads for quick deployments.

The offensive operations (movement to contact and attack) is the procedure adopted, as a rule, when the opponent had time to organize a deep staggered defensive system, and its penetration requires the synchronized use of the entire offensive potential of the attacker.

The offensive operations (movement to contact and attack) is adopted against a chaotic or hastily prepared defense of the opponent, in which the secondary goal is to gain time, and the main one is represented by exploiting a vulnerability and taking the initiative, following the successful conduct of a defensive operation.

The forces used to launch the attack by this process are those available at the time of the decision or are brought from behind, and the preparation time is reduced to a minimum to move to destroy the opponent before he concentrates or improves his defensive system. For the successful development of offensive operations (movement to contact and attack), it is necessary to have a network developed of routes for the execution of the movements and of sufficient means of fire to neutralize the opponent. In this situation, the fire preparation of the attack starts from the moment of entering one’s own forces in the opponent’s artillery battle and can be executed, both by one’s own means and by those of the forces in contact.

For the preparation of the offensive operations (movement to contact and attack) the following are established: concentration areas, approach routes, starting points, coordination points, phase lines, directions, coordination of fire support coordination and the final objective.

During the offensive operations, the maneuvering forces reports to the command points all the data from the field to support the effort of the upper echelon in avoiding or removing all natural obstacles or arrangements encountered on the offensive direction, and when detours are identified, it is preferable to have them used. In our opinion, the engineering support in offensive operations has the role of ”paving the way” and facilitating the movement, maneuvering, hitting the opponent and the successful exploitation of combat armed forces.

Engineering activities and the main areas of engineering support – current concepts

The adjustment of the physical environment (terrain) of violent battles, in relation to the operational requirements, contributes to the firmness and suppleness of the combat formations, but also to the protection of the forces against the actions and effects of the opponent’s strikes.

The engineering activities of the terrain represents ”the totality of the adjustment actions, from the engineers point of view of the terrestrial physical space – including the inland waters, the ports and the coast – of carrying out the operations, both in terms of changing the characteristics of the natural terrain and the military action.”[4]

The definition of engineering activities has a general character, this being applicable to all military actions, which gives it a comprehensive area, missions and engineers work having the degree of selection, depending on the characteristics and size of the opponent, form and type of military actions, operation concept and other factors that influence the operational environment.

The engineering activities of the terrain remain a basic component of the structure of the offensive operation, alongside, and in full accordance with, the combat formations and the striking system. Thus, in its own perspective, the concept of engineering activities of the terrain should not be reduced to the works and engineering protection measures, its goal being much wider, aiming, in essence, at the important functions of engineering support.

Regarding the engineering activities of the mechanized brigade during the conduct of offensive operations, we consider that it can be achieved through specific actions and works, both in force protection and in engineering support, following the conception and approval of the upper echelon.[5] Of course, the engineering activities, in the offensive action, definitely contributes to the achievement of an increased pace of actions and to overcoming the opponent who defends himself, depending on the forces, means and time available and under the direct coordination of a structure specialized in engineering support.

NATO’s approach to offensive engineering support is clear and involves ”maintaining the continuity of the attack of its own forces”[6] so that the conquest of objectives can be achieved. Regardless of the offensive procedure adopted, engineering support is the essential element and manifests itself in four main areas, as follows: ”mobility, countermobility, maintaining operational capacity and general engineering support.”[7]

The concept of mobility is vital in the activity of preparation and deployment of offensive military actions. The engineering forces from the staff of the mechanized brigade bring an essential contribution to the achievement of the main elements specific to the mobility of the forces. We consider that the combat actions carried out by the engineering forces during the offensive operation are organically integrated in their joint character and are acutely manifested in the field of engineering support.

Mobility is a quality or capability of military forces that allows them to move from one place to another, while maintaining the ability to fulfill their main mission.[8] Mobility tasks are those activities of combat armed forces that mitigate the effects of obstacles to allow freedom of movement and the execution of the maneuver of their own forces.

I believe that mobility plays an important role in the rapid deployments of the elements of the mechanized brigade staff in order to achieve the concentration of effort in order to engage the opponent and having the initiative.

Countermobility involves the construction of obstacles and the location of minefields to delay, limit and destroy the opponent by arranging the terrain.[9]

A similar definition of countermobility is found in the military literature and represents ”the totality of actions and measures that contribute to slowing down the maneuver or movement of the enemy and prevent the use of terrain by him.”[10]

Analyzing both definitions, we believe that countermobility actions must be weighed in order to interrupt the opponent's mobility, but without restricting or limiting the execution of their own maneuvers in the area of operations.

The engineering support required to maintain operational capability includes physical aspects of the protection of personnel and means of combating the effects of adverse weapons or various striking systems, as well as ”participation in actions to mislead the adversary.”[11] During offensive operations, the design, provision of resources and protection of force, as well as the provision of utilities and infrastructure, become the responsibility of engineering structures. This task involves the existence of a wide range of specific means and equipment for maintaining operational capacity through concrete land use measures.

General engineering support ”consists of measures and actions to ensure and provide by the engineering forces specific resources and a specialized workforce for their own forces or for the population in the area of operations.”[12] The Romanian Armed Forces, by deploying the maneuvering structures in the theaters of operations like Afghanistan or Iraq, carried out specific actions of general engineering support, executing, in partnership with the coalition forces, activities to support the local population, as well as the development of infrastructure projects.

Due to the fact that general engineering support covers a wide range of very diverse activities, it becomes mandatory to establish links with other categories of forces and services to compete and support specialized engineering forces in carrying out missions and tasks. US military experts believe that general engineering support is applicable, by performing tasks of engineering forces before, during or after hostile actions or natural or man-made disasters to reduce their adverse effects.

Therefore, engineering support is the basic concept, encountered in modern military operations, compatible with the doctrines of allied armies through purpose, tasks, forces and means available. We consider that there is a need to ensure the compatibility and interoperability, from the point of view of endowing with engineering technique, materials and high-performance ammunition, the Romanian engineers structures with the similar ones from NATO, considering the development of multinational exercises, on the Romanian territory, and to be executed in the training centers in Cincu, Smârdan or Babadag, under the name of Resolute Castle Exercises.

Conclusions

The issue of military actions carried out by Romanian military structures must be rethought and dimensioned accordingly, given that they will usually act on the national territory in crisis situations, at the beginning of a conflict, for a limited period of time, until the intervention of the Alliance and it implies the integration of the actions carried out by them in the structure of collective defense, through the NATO structures on the Romanian territory.

In the context of the above issues, the engineer forces will have the mission to analyze and provide the virtual three-dimensional image of the battlefield and its characteristics for all categories of forces, and the role of engineering structures will become decisive.

In this scientific approach, we considered it necessary to know the principles and main requirements of Romanian doctrine and manuals, but also the terminology used by the American engineer forces, in partnership with which missions have been performed in theaters of operations in the last nineteen years.

In conclusion, the engineering activities organized in the area of operations of the mechanized brigade that performs offensive actions is a topical and highly complex issue that requires a special study and analysis by the factors involved in designing strategic scenarios and joint operations, and engineering structures must develop more effective techniques, tactics and procedures for the protection of forces against multiple and various threats.

NOTES:

1 *** F.T./G.-2.1, *Manualul pentru luptă al batalionului de geniu* (Field Manual – Engineer Battalion), Bucharest, 2019, pp. I-2 – I-3.

2 *** F.T.9, *Manualul sprijinului de geniu în operațiile de nivel tactic* (Field Manual – Engineer Support), Bucharest, 2017, p. VII-3.

3 *** F.T./G.-1, *Manualul pentru luptă al brigăzii de geniu* (Field Manual – Engineer Brigade), Bucharest, 2018, p. IV-1.

4 *** G.-1, *Doctrina sprijinului de geniu în operațiile întrunite* (The doctrine of engineering support in joint operations), Bucharest, 2016, p. 14.

5 *** *Manualul pentru luptă al brigăzii mecanizate (infanterie, infanterie uşoară)* (Field Manual – Mechanized Brigade), Bucharest, 2004, p. 43.

6 *** NATO- ATP – 52 (B), *Land forces military engineer doctrine*, revision, 2008, p. 20.

7 *** G.-1, *Doctrina sprijinului de geniu în operațiile întrunite* (The doctrine of engineering support in joint operations), Bucharest, 2016, pp. 14-15.

8 *** FM 3-34, *Engineer operations*, Department of the Army, Washington, D.C., 2020, p. 2-2.

9 *** ATP 3-34.40, General *engineering*, Department of the Army, Washington, D.C., 2015, p. 1-4.

10 Petre Grecu, *Amenajarea genistică în acţiunile militare* (Engineering activities in military actions), Bucharest, Ars Docendi Publishing House, 2003, p. 103.

11 *** F.T./G.-2.1, *Manualul pentru luptă al batalionului de geniu* (Field Manual – Engineer Battalion), Bucharest, 2019, p. I-3.

12 *** G.-1, *Doctrina sprijinului de geniu în operațiile întrunite* (The doctrine of engineering support in joint operations), Bucharest, 2016, p. 15.

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STRATCOM PREDICTIVE DATA ANALYSIS FOR STRATEGIC PLAN FORECASTING

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The idea of gathering intelligence from open source, human or social media as regular practice for structures in the field has been a frequently debated topic for specialized literature. Unlike this, gathering intelligence from corroborated Strategic Communication (StratCom) sources and instruments so that the information extracted that way be later on stored in databases and sieved through predictive analytics software to then reveal state or non-state actors’ measures and behaviors has recently been shared as a novel thesis of the present author and recently taken over by doctoral schools in the field. The current paper provides an extended insight into the topic, to consolidate the construct.

Keywords: strategic communication; interoperability; predictive analytics; data; intelligence.

Motto: ”The essence of the independent mind lies not in what it thinks, but in how it thinks.”
Christopher Hitchens

Information abundance and data explosion, more and more acute polarization and the ever changing power status globally due to vanishing values, uncertainties connected to identity and status bring to the forefront more and more security of the individual and of the world. The technological progress that is more and more rapid triggers enhanced productivity in automation while artificial intelligence records and replicates human reactions, generating a war of influence and perception, with implicit impact on security, generating threats to democracy and to the state per se. Among the objectives that are under threat one finds social cohesion, one’s identity simultaneously altered with psychological processes, the frailty of trust in authorities and the amplitude of disinformation, of propaganda with major effects on human behavior.[1] In this context, new media as well as a continuous development of the variety of instruments in social media, entertainment or information environments bring simplification but also a diversification of the interaction manners, ubiquity and responsivity they bring the virtual space in a tacit coexistence and complicity with individuals in a society, a replica of reality, close to a perfect copy. The attacks now develop through image, symbolic communication, common lexis and they target public perception but also the image of the actors that share the balance of power. Translating these interactions in the online environment generate the change in the way things are expressed, uttered, with success on the versatile and fluid receptors. State level and society level security is thus accomplished with new, interdisciplinary approaches from the intelligence services where the connection with individuals, with public institutions and with mass communication ones (mainstream media and new media) is based on a variety of products among which we mention the cultural ones, open sources (OSINT), human sources (HUMINT), the communication ones (COMINT), those connected to social media ones (SOCMINT), that bear, today, chameleonic shapes, adapted for the targeted threat, but all appealing to words, to perception and identity, to image. At the same time, automated character, information recurrence, sense permutation through user generated content, anonymity, impersonal character and meaning distortion up to a totally different representation, augmentation of hostile uses and of phishing attacks, transforming products into manipulation instruments through generating disinformation content for any of the media, mainstream or new media, for the social media as well, *deepfake* and *fake news,* disseminate narratives that influence governments, individuals , placing those involved

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in communication on different levels of power.

The pandemic and the related *infodemy* demonstrate that wars of the world can now be led without conventional ammunition, just based on the power of word and perception, wakening individuals' trust in state institutions, which leads to weakening internal and national security. At the same time, a lack of training in managing, decoding and management of information at society, nation and state level augments vulnerability in front of all these attacks.

In this context, security of a state and security at international level within the current coordinates, can be recovered and maintained through a constant knowledge of the evolution in communication means, in ways of expression that become more and more versatile, in senders and receivers that are ever changing and generate more and more changing broadcasting environments. Uncertainties that come from permanent changes find answers at *interoperable* level, through accessing the extended knowledge pool and common capabilities, through correlating instruments and messages that generate narratives, saving collected data and placing them, afterwards, in a *probabilistic analysis* process that can generate models of action and behavior to anticipate and counteract some unwanted dynamics.

Extracting data that would later undergo specific analysis is a process that is most wanted to areas fed with strategic messages, areas that engage global community: public relations, journalism, propaganda, public and cultural diplomacy and all that is an endeavor for defining a country's image by promoting certain models in an attempt to redefine as many perceptions as possible to aid own interests, to meet very clearly defined objectives internally and internationally[2], according to NATO military concept for *Strategic Communication (StratCom):*

In NATO, *strategic communication* entails narrative strategies that bear messages destined to internal and external publics, while in the European Union, the strategic communication department focuses on public diplomacy for actions oriented mainly to promote values and policies of the union but also to counteract information threats that come from the eastern neighbors. The process of counteracting disinformation (…) includes detection and debunking, combatting and raised awareness of the instruments that support this phenomenon, which leads to a better social resilience, customized for the new types of threats and for raising trust in state institutions. Nationally, the 2020-2024 Country Defence Strategy highlights the importance of identification strategic narratives and underlines the development of digital competences for individuals in society, along with a training of critical thinking skills to lower the percentage of vulnerability in front of hostile messages produced by state and non-state actors equally, since ensuring a new security involves its diplomatic approach, the intelligence and counterintelligence ones, along with educational, health, cultural, demographic, economic, cybernetic ones, mainly all that defines life and safety of an individual at any level, through *soft power.* All these components, placed in cross-functional relationships, can augment resilience in front of the multifaceted, plurivalent and polyphonic threats, which are syntactically interoperable, only by a cross referential action, by transforming culture, values, education and language elements in a predictive modeling, to be organized in data pipelines, subdued to a probabilistic analysis, to generate models that contribute to understanding foreign actors' strategic plans and consequently to building counteracting patterns for unwanted effects.

In this sense, strategic communication instruments' syntactic and semantic interoperability facilitate intelligence gathering based on media, culture, diplomatic, economic and social representations that build the narrative arcade in security plans, therefore debunking discrete means of expression of the narrative structures which great powers issue can, through a form and content coordination and through feeding data pools especially built for this goal, to render with predictive analytics, the general image of strategic plans which great powers use internationally, fact that brings awareness and raising resilience as well as forecasting a neutralizing reaction in due time.

Syntactic and semantic interoperability in generating models of action

Generically, interoperability has been defined as the ability of two or more systems or components to exchange information for the benefit of using it[3]. Initially, interoperability has been seen in its technical understanding, with appeal to numerous hardware, software and data base systems. Open sources like Wikipedia or Google provide good examples for interoperability, through the systems' or software's capacity to exchange information and through the capacity groups have to cooperate, through the interaction and information exchange among automated systems, artificial intelligence and human operators, considering both friendly and hostile approaches. Once this concept has been transferred from IT area to communication processes supported by the communications systems, there is a transfer between system interoperability (interactions between hardware and operating systems) and the structural one (interactions between data models, data structures and schemata) on the one hand, to the syntactic one (the forms of the messages, their representations) and semantics (meanings provided by decoding messages). Syntactic interoperability allows information and intelligence in general to be properly used and disseminated while semantic interoperability allows the meaning of communication and metadata to be properly understood[4]. In other words, semantic interoperability is the capacity various agents, services and instruments have to communicate through information transfer, exchange, dissemination, while the genuine information, the basic one maintains its core.[5] Interoperability improves the process of sharing information, enhances awareness for each situation and facilitates the decision making process, as a benchmark element in problem analysis within any organization. Interoperability seen at this level is communicating with others, relying heavily on information digitization and on an identity that can be held responsible for any assumed status in various contexts.

In its turn, *interoperability* seen from a strategic perspective is activated through political, social, military, organizational factors and allows, through trans-disciplinarity, cooperation of all entities with common goal in solving each type of disequilibrium[6]. On the one hand, *syntactic interoperability,* found at the level of forms which the content gets, is accomplished once the systems found in this relationship use a communication and dissemination protocol, while on the other hand, *semantic interoperability* – found at content level, at the level of messages that have to be shared, is reflected in a simultaneous broadcast of meaning and its application in contingent reality. In other words, syntactic interoperability gathers various capabilities in the same pool while semantic interoperability connects these ones generating effects on the intended targets.

From this angle, *interoperability* becomes a solution for the new, unconventional, asymmetric, informational threats, when it is activated through *strategic communication (StratCom*) discourse and narratives, seen at political, military, economic, social and cultural level, to act through word and image, the new weapons of digital era conflicts. This is active and effective at the level of correlating strategic messages sent through the needed narratives on various dissemination channels, of intersecting diplomatic and strategic relationships internationally, through mainstream media and social media, both for positive narratives, that appeal and support, with content that are issued through public and cultural diplomacy, through *soft, smart* and *sharp power,* and for the negative, hostile narratives.

Connected to those previously presented, the diagram in *Figure 1* displays the relationship developed between *StratCom* instruments and its subcomponents. Semantic interoperability manifested at the level of this network provides synergetic content through key words and images that are recurrent thematically, while syntactic interoperability, highlights, through forms, the connections between the types of StratCom actions and representations that are compatible with media and social media, with cultural, artistic and educational products. To exemplify, a

Figure 1 *Universul comunicării strategice (StratCom)*
Sursa: L. Haiden, 2017.

data base made with information extracted from correlating narratives disseminated via public relations, *smart power,* cultural, entertainment and educational products, public diplomacy and international relations measures will reveal, after predictive analytics, the strategic intentions on the international actors' map. These intentions can be constructed from recurring key words or messages, from a sentiment analysis based on communities' behavior and reactions within social media, all related to an analysis of the targeted public's geolocation, considering the targeted field in the strategic narratives, shared as a result of economic or social impact measures, through cultural or educational exchanges, through support measures for carefully determined goals. With this data one can anticipate, in a probabilistic manner, models of action useful in counteracting hostile plans or in tailoring diplomatic decisions. Thus, strategic or operational plans can be forecasted for state or non-state actors. With *data-mining* and later on with data analysis one can show the most frequent dissemination channels, the most used apps for this, the sharing pattern for the targeted publics and the effects produced over society. Based on this analysis, used cultural stereotypes can be underlined along with the operating values. All can help configure the map of risks, vulnerabilities and security threats at state, organization and individual level.

Data predictive analysis based on strategic intelligence pools' sources

In a generic approach we can state that strategic communication instruments, as they are represented graphically in Figure 1, placed in an interoperability relationship, represent an analysis lab for OSINT *(open source),* HUMINT (*human intelligence)* and SOCMINT (s*ocial media intelligence),* once they become interoperable. After extracting data, *predictive analysis* is applied. The method is already applied in gathering intelligence that is to become, through data pools, subject to artificial intelligence software for the probabilistic analysis that generates models to counteract terrorism, a method effective in understanding the modus operandi of hostile actors, an effective instrument to locate threats in due time[7]. On the other hand, conceptually defined, *predictive analysis* involves *predictive modeling* which covers issues connected to the actors of the event, to its moment and to the reason of the performed endeavor, in other words- a concentration on the questions who? when? and why? connected to the individuals' behavior pattern, involving the phenomenon of *forecasting* that is responsible for the potential of the behavior pattern in the future. It is through predictive analytics that one shapes models on non- processed data, coordinated with the already recorded ones for the topic history and extracted through processing the previous events, with a view to generate forecasts of potential risks. Literature in the field explains the event processing and identification of relevant elements through continuous monitoring, as well as through coordination with other elements, already registered in previous monitoring, from social media, from mainstream media, from organizations, manifestations, cultural and educational products, all placed in geospatial coordinates to trace the dynamics of the action, based on the structure or on the semantic messages already projected[8]. After data has been collected, trends, patterns and relationships among selected components are identified, characterized and modeled. Concrete uses of these methods and techniques have already been applied on sets of Twitter, messages, with a view to developing a model of crime and its frequency in a given timeframe, on a certain geographical area.[9] The correlations have evidenced possible connections[10] and have shaped common characteristics by resorting to key words that have generated the forecasting of similar events in the future based on recurrence and probabilistic methods. Same method has proved efficient in election sessions, financial markets events or natural disasters ones,[11] being in a direct proportion ratio with the data gathered – the more collected data and the bigger the intelligence pool, the higher is the probability to generate predictive patterns of potential risks.

Practical evidence of collecting and correlating data – China and StratCom actions

For a practical use of the theoretical aspects already presented, we shall display features from the current situation internationally, in pre- and post- pandemic coordinates. Considering the fact that individuals' confidence has greatly lowered with respect to the political representatives, to media, participatory political attitude and religion, and based on the controversial and contradictory information wave on current problems on health, economy, individual's and nation's safety, one can understand the attitude members of the society have to look for alternative sources of information and thus to unwillingly become subject to disinformation, considering valid all the rumors and non-scientific sources, as well as the measures some states (like China, for example) take to penetrate the public space of the targeted society (information in social media about COVID-19, alternative therapies to fight the virus as well as different explanations for the origin of the virus) On the other hand, beyond the information trend that analysts have been focusing on, there are silent signals coming from many other instruments that communicate, in their turn, intentions reaching out from actors with certain interests in foreign publics.

The analysis of information flow or the one of the narratives war that tend to kneel down societies at large, one by one, call attention to more and more surprising strategies of those responsible for these things. Analysts have recently stated that Russia and China may cooperate in an exchange of experience- Chinese learn all that is connected to *trolls* while the Russians take up elements of Chinese *public diplomacy,* to recover Russia's foreign policy image. Moreover, in the same context, China is fighting a digital battle that is extremely difficult to confirm, based on influencing the perceptions of the neighboring countries' citizens, with lessons learned from the social media Russian trolls campaigns, a fight based on psychological operations, media and law operations to influence public opinion internally and externally, a fight that has been identified as more cunning than the Russian one, as stated by specialists, with an invasive diplomacy, that is totally different from the one used so far.[12]

Analyses published in the press[13] show that the pandemic has been the great opportunity for China to show the world that nothing can defeat an autocratic, solid and strong system, fact that has been proven through an intensified activity in the digital area, measured in an average of 300% raise on customized Twitter accounts aimed at foreign embassies, consulates, diplomatic personnel and public diplomacy related individuals meant to appeal through economy, infrastructure and all triggering the emotional side types of projects for the public at large.

What is interesting to be noticed is the multi-directional approach China has been using, and this may be considered as an integrating exercise for all those previously expressed in this paper so far.

On the one hand, if we speak about cultural diplomacy, one can see messages that China is trying to send to the world through video games, just like other countries, in strategically planned contexts. There are, for example, games whose topic of interest is a setting for cultural products output that advance beliefs, customs and ceremonies. Such a game can be considered *China Quest Adventure* which, based on Chinese history narratives, advances information on Chinese cultural values, through interactive collaboration-clothing, figureheads, weaponry, usual and daily expressions and topical vocabulary that urges, through key words, to approach the roles of the characters presented in the story and thus internalize each role's features, during the flow in the game. *Heart of China* and *The China Game* are other examples of games advanced and played in the international arena to promote cultural values. General cultural knowledge games make the gamers reach documentation and seek for knowledge before being able to answer and proceed to the next step, which is a proactive manner to share the intended information to the targeted audience.

To continue, any search engine access returns approximately two hundred video games whose action context is China, many of them produced by companies outside this country. Their topics are mainly kinetic, offensive and highlight the importance of gamer's decision, training the individuals for a mindset planned to win. Apart from promoting history, cultural values and important events, video games are designed as soft power diplomacy instruments, to appeal to support and sympathy from the intended audience in future projects.

As kinetic measures that accompany the non-kinetic cultural diplomacy measures, China has been manifesting itself since 2013, with the commercial plan to extend the historical *Silk Road* through the infrastructure projects *Belt and Road Initiative (BRI)* or *One Belt One Road (OBOR),* a measure that is relatively mild and open and which does not impose strict measures, allowing enough freedom to move for the political plans, an extension of soft power which tries to connect Asia to Africa, Russia and Europe, through a network of terrestrial infrastructure, while connecting the coastal area of China to South Pacific, Middle East and east of Africa, all the way to Europe, on a maritime route. Both strategies are meant to encourage the development of economic relationships. In this sense, a document issued by the European Bank for Reconstruction and Development[14] stated that the priorities these strategies aim at count, among others, on free trade, financial integrity, quality investment, social connection, goals that are effective in all the 14o states that have signed the memorandum of cooperation with China in this respect. The opening of a *Bank of China* branch in Bucharest confirms once again China's interest for the projects related to economy and infrastructure in public-private partnerships. Together with this commercial plan, China manifests a silent innuendo, trying to develop its projects on infrastructure, investing in economy and promoting its values.

Through student exchanges, Chinese language courses and medical prevention programs, through fund donations meant to help research and through opening new Confucius Institutes coordinated by the ministry of education to run culture and language programs, China advances silently and tries to win as many segments of population from the targeted audience. Diplomatically speaking-while a cohort of analysts focused their attention towards Russia and its soft and smart moves, China is meticulously following its plans. Another example in this respect is the promotion of 5G implementation process, an extremely vocal step shaped in all kinds of advertising products until last April, which was re-initiated once the advertising campaigns were fueled again. In Romania Huawei was extremely aggressive in the pro-5G campaign: advertising videos, flyers and banners, online press conference, all these while China embassy was lobbying to the Romanian society for the need of an own, independent Romanian specific 5G network. However, not all the measures can be put into practice, and this was one of them, similar to the trial of investing eight billion euro in Cernavodă Nuclear Plant that ended in a complete failure in July 2020. Conversely, one cannot ignore that Lenovo has the highest computer trade market quota while Huawei comes in second for the smartphone trade market. This status is strengthened by cultural institutes, as mentioned before (Romanian Cultural Institute, in Beijing, Nicolae Milescu Chinese Cultural Center in Iași), the four Confucius Institutes and the video conferences organized by China, during the pandemic, to share information useful in prevention and control of the pandemic as well as in providing medical supply support.

We have presented here a new approach for smart power, that involves the strategic use of diplomacy through soft power, along with persuasion, with a development of new capabilities and with a projection of power and influence through alliances and partnerships, with or without military involvement.

In the context of these multi-directional evolutions, with versatile and covered attack coming from more adversaries, sharper analyses are mandatory, aided by a strategic intelligence gathering corroborated with the international politics' interests and events and with measures to counteract based on specifically tailored anti-narratives.

Syntactically, the forms that carry all the kinetic and non-kinetic plans hostile actors generate and semantically, the meanings that any of these plans can share and send, need to be synergetic, they need to be congruent to generate data for analysis and to thus be able to debunk the meanings intended through each and every action, if danger is imminent, because semantics restricts meaning to action.[15] We thus use language to generate action and that is why a discrete analysis of the meanings each event or word bears, generates major implications in intelligence, security and defence, depending on the context in which the meaning was sent and on the representation it had on the outside. Graphically represented, syntactic and semantic interoperability through strategic communication instruments can be presented as seen in Figure 2.

That is why, intelligence gathered from digital sources, be they 2D or human, sending messages shaped in various forms, all bearing narratives generated by state or non-state actors, can help in building counter narratives, in a post analysis stage. Once the source, content, circumstances and the impact are evaluated, counter-narratives can be generated based on the forecasting issued

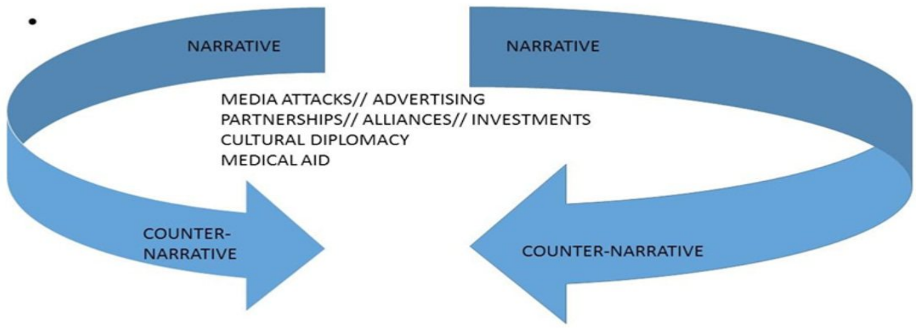

Figure 2 *Syntactic and Semantic Interoperability graphic presentation* (author’s view)

subsequently. This method is already in use in DebunkEU.org.

Conclusions

The central element of those presented so far is the interpretation of information collected from the contingent reality to uncover deep structures that lead to the accomplishment of the communication goal. Intelligence analysis is based on interpretation, intertextuality, to penetrate the discrete structures of the communication products, to understand persuasion or its lack among the targeted audience. Thus, analysis of discourse, of images, of cultural products – films, music, of the educational ones- courses and their lessons can highlight what cannot be seen with a naked eye – i.e. the way symbols serve as means to generate meaning and the way power can be seized through daily conversations and interactions. Discourse and its narrative are constitutive elements that debunk the game between information and power and it is the first mechanism that creates knowledge, built on language, which gives meaning to things and social practices. The critical analysis presented in this paper states the importance of stressing on the linguistic mechanisms and their importance for strategic communication in a state security, since linguistic mechanisms allow individuals to be friendly or hostile and convince any audience about building a reality congruent to their interests, subduing others by using symbols, by persuasion.[16]

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THE IMPACT OF TECHNOLOGY ON THE PROCESS OF PLANNING AND DECISION MAKING

Lieutenant-colonel Silviu-Iulian GIMIGA*

Planning or forecasting, as a function of management, has a special role in the military field, in conjunction with the development of new technologies, because it offers the possibility of exposing possible courses of action and helps the military leader in decision making. Judicious planning, a correct presentation of resources and how to use them, setting goals and opportunities to achieve them are aspects that contribute to the completion of the decision-making process and involve the need for modern technologies applied. In the current context, the possibility offered by the modeling and simulation of military actions has also developed ways to obtain an effective decision, by using calculation systems and identifying different courses of action, knowing all the risk factors. All the changes suffered by the military equipment and technological systems have forced the emergence of new doctrines, restructurings and acquisitions absolutely essential to ensure the purpose of the military organization, national security and international alliances based on peacekeeping. Regarding the military system, the development of new technologies and the attribution of the decision-making process contribute to the emergence and use of ”smart ammunition”, which is mainly based on the efficient flow of information, systematized operation and resource management in a timely manner.

Keywords: technology; decizion; planning; artificial intelligence; smart ammunition.

The technological context and its importance in the development of processes in the military system

Complex, unpredictable and dynamic are terms that define the current security environment. The changes suffered by the armed conflict throughout history have involuntarily led to the modernization of military strategies and the implementation of new concepts with the role of emphasizing the military power of a state. Through the efficient management of all types of resources, the application of the principles of lessons learned, the implementation of new types of techniques and technologies and the design of the purpose of the goal, the leaders of military structures develop skills necessary to achieve objectives and missions.

The war has taken various forms throughout history, from classical battles, trenches fighting wars gunpowder, war tanks, aviation and machine guns on the water, to information, psychological and even nuclear warfare. Military actions developed to ensure a stable security environment, whether for international missions or for the national defence require continuous development of rapid response capacity, of using converging forces, adapted to modern technologies.[1] In order to ensure their military power, most developed states or multinational alliances have allocated considerable resources for the involvement of technologies in the processes of training and development of forces, but also for streamlining the specific processes of leadership and operation.

The accelerated process of technology development and the emergence of the concept of artificial intelligence, have involuntarily led to the urgent need to adapt and improve the military organization, in order to increase performance. The global operational environment is characterized by the impossibility of delimiting between new, asymmetric or hybrid threats and classic threats. Global security is threatened by the continuous development of technology and information, correlated with increasing tensions at the ideological, ethnic or political level.

The risks, threats and vulnerabilities to which the components of the military system are exposed, whether we refer to the structure of forces, to doctrines, or to the resources necessary to achieve the goals, are unpredictable and continue to produce dysfunctions. As a result, the need to identify risk limitation procedures, or to identify and evaluate them, is a problem often analyzed by military specialists.

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Knowing that any military action is based on a decision-making process, designed to establish different courses of action and opt for the optimal option, based on principles such as cost-effectiveness, cause-effect or design of the final goal, the need to exercise decision-making, adaptation to changes in the environment, mainly in current and future technologies, are an essential step in maintaining military performance standards. The trend of endowment has been and is constantly growing, which is also evident in the emergence of new military equipment, in order to support the conduct of military operations and the successful completion of military training. Confronting the military with high-risk, dynamic missions, when their physical and moral integrity is affected, required the identification of automated systems, with the role of reducing the risks to which they are exposed.

Battlefield robotization has gradually become a necessity both for the military technology revolution and strategic thinking. The capabilities of smart system architectures are usually based on the ability to react quickly and efficiently to different types of critical infrastructure attacks. Also, the use of advanced technologies to facilitate human efforts and to ensure the protection of forces is constantly increasing, which impresses the urgent need to allocate the necessary resources for their development.

Technological implications are found in many areas specific to the military system, whether we are talking about performance in the field of logistics, operations or information. An extremely debated topic by specialists, it draws attention to the use of technology in streamlining the planning and decision-making process. Starting from the classic theories of war games, meant to offer optimal solutions in choosing a course of action, currently, intelligent integrated decision-making systems are being developed, with the role of offering multiple perspectives on the possibilities, risks and resource management for making the right decision. All these systems are based on classical theories, adapted and transposed into intelligent software or autonomous equipment.

The planning and decision-making process in the military system

Generally, the notions of management and leadership risk being used with the same meaning. These terms and their meanings are not mutually exclusive, but it must be borne in mind that management is represented by speed, while leadership is characterized by targeting. That said, leadership becomes the highest component of management.[2]

The applicability of management and leadership in the military field led to the emergence of two basic components, namely the theory of military leadership and the applicative component.[3] The theory of leadership provides ways to lead in peacetime and in crisis situations, while the application component includes the actual management process, responsible for the effective coordination of the military system and for the successful fulfillment of assigned tasks.

Among the management functions we mention forecasting or planning. This function involves a set of processes through which the objectives and components of the military organization are determined, the modalities of action are established and the necessary resources are allocated. The special role of this function is to ensure a link between what is (present) and what is wanted (future), and by exercising it one can anticipate the evolution of the conditions of management of the military system and its functioning. Important for this characteristic of the management process exercised in the military system is the fact that it estimates the influences of uncertainties and the risks specific to the environment in which the military action will take place.[4] Often, planning or forecasting involves establishing a strategy to achieve the objectives.

Decision making is a dynamic, rational process, through which a course of action is chosen, from a greater number of possibilities, in order to reach the desired result.[5] In the process of military management or military leadership, the decision follows the diagnosis and prognosis and precedes the realization or implementation. That said, the decision becomes the most representative product of the leadership and the most effective, becoming an essential process for any military action.

The planning and decision-making process must first and foremost adapt to the environment in which it is embodied, otherwise it offers the possibility of solving problems late, without providing efficiency. The decision-making process starts from the receipt of the mission, which can come in a hierarchical way or can be anticipated by the commanders of the structures, knowing the possibilities of hiring the enemy, or solving problems. The complex circumstances in which decision-makers find themselves do not fully offer the possibility to wait for orders, which is why they have to establish possible courses of action, efficiently managing resources and identifying risks. Therefore, the planning and decision-making process is continuously manifested. Stressful situations can lead to hasty decisions or without first establishing risks, threats and vulnerabilities, which is why the use of integrated procedures in intelligent systems provides support for decision-making by commanders.

Decision-makers or commanders are responsible for analyzing and synthesizing information in order to focus on the current conditions of the operational environment, and in their support is always the staff, responsible for various categories and areas.

Soldiers, like all other people, are constantly making decisions. This can involve both routine and unexpected, challenging situations. Judgment and human decision making is the result of a complex interaction of many simultaneous factors, such as sensations, feelings, memory, emotions and thoughts. In reality, these interconnected processes develop in a mixed way, producing mainly two types of thinking, the intuitive and the one based on complex analysis. A biased judgment or decision systematically deviates from logic or utility.

In some cases, prejudice can have serious consequences, especially when the stakes are high, as is often the case in military action. Another factor that makes human decisions difficult is uncertainty, and uncertainty characterizes military situations. Modern military missions take place in a dynamic and highly interactive way. Assessing a tactical situation requires taking into account a large number of variables (e.g., strength of own forces, estimated force and enemy intentions, weather and terrain conditions, population behavior, communications, etc.), which are often uncertain. However, it is the responsibility of the military commander to understand the conflict, to use the available resources to control it, taking into account the orders received and the constraints. In order to act effectively in decision making, the commander must make various assumptions, which can often be difficult to manage by human analysis and reasoning.

The military sees decision-making as a continuous and cyclical process, as it is constantly fed by up-to-date information. In order to create structure and unity, the military has developed dedicated methods for conducting decision-making processes (for example, the doctrine of operational planning, according to NATO standards).

Every commander at every level goes through such a decision-making process. However, depending on the level of the structure and the complexity of the environment, or the final purpose, the process is more extensive and complicated. What methods at all levels have in common is that they use formalized and standardized procedures and analyses. The decision-making methods reflect the analytical approach of commanders in solving problems. They help commanders and staff to examine a situation and make logical decisions, to apply soundness, clarity, sound judgment, logic and professional knowledge to make a decision. Completing the decision-making process is detailed, deliberate, sequential and time-consuming, especially when there is adequate planning time and sufficient staff support needed to set courses of action.

A quality management decision must meet certain requirements of rationality according to scheme no. 1.

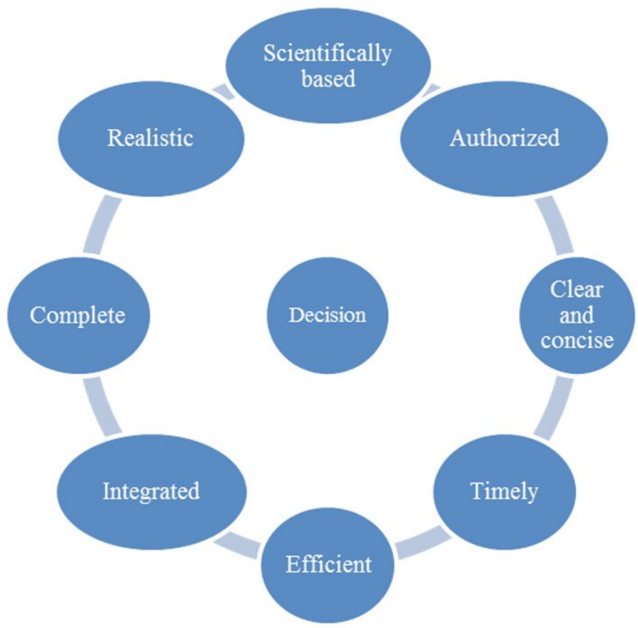

Figure 1 *Rationality requirements*
(Author’s view)

In the literature in the field, the decision-making process includes the following stages:[6]

- identifying and defining the problem;
- establishing decision criteria and objectives;
- establishing possible variants / courses of action;
- choosing the optimal option;
- application and implementation of the chosen optimal variant;
- evaluation of results based on total / partial control.

Regarding the decision-making process, there is a preliminary algorithm for decision-making, which includes the following steps:[7]

- preparatory stage (identifying the problem, formulating the final goal, gathering information);
- establishing the decision variant (establishing the decision criteria and objectives, establishing the possible decision variants, comparative analysis of the variants, choosing the variant that offers the best results);
- application of the decision;
- evaluation of the obtained results.

Adherence to the established algorithm for decision making is extremely important, as it provides the efficient and necessary decision to achieve objectives, but the use of theories and the use of technologies to streamline the decision-making process can often reduce the time required, an extremely important factor in the military system. Reducing the time needed to make a decision helps both strategically and morally, by relieving the stress of commanders and the possibility of solving several requirements. As a result, the emergence of technological or automated systems, essential for the decision-making process offers the possibility to streamline military actions, speed and minimize human stress.

Military decision-making takes place in various areas (defence, security, cybernetics, change of doctrines or strategies, legislative changes), not only in terms of conducting a military action. Artificial intelligence not only allows the reduction and synthesis of data, the development of predictions about the information taken into account. Most of the time, the collaboration between artificial intelligence and human resources is the best solution to solve a problem. These studies in the field were easily adapted in the military field, later being implemented to provide support in decision-making processes. A software can present several data and possibilities, and the decision maker can compare these variables, giving him the possibility to choose an optimal solution.

Aspects regarding the impact of technology in the military field

Starting from the words of the great military strategist, Napoleon Bonaparte, according to whom “the more sweat on the training field, the less blood on the battlefield”, the role of training and training of troops, regardless of the form on which the battlefield acquired it in the contemporary era, is to train skills and increase the performance of the military. Training is a premeditated process for progression to the level of knowledge or skills, which adjusts the attitudes of the individual, with the ultimate goal of gaining performance in the defined sphere. In order to gain performance in the force training process, the simulation of military actions has become an essential vector.

Currently, the training of military combat skills is closely related to training and exercises that simulate the reality of the battlefield, which is why the concept of modeling and simulation has become common in the process of planning and organizing a military action.[8]

With the rapid evolution of technology, new systems and equipment have emerged designed to support the training of military structures. The use of modeling and simulation in troop training is an advantage in training skills and developing their capabilities.[9]

By simulating military actions and framing them in the process of training the forces, the perception of the real battlefield and the employment possibilities of the enemy are exposed in a realistic way, but which protects the human resource. At the same time, through the use of simulation training exercises or war games, military structures achieve the performance needed to solve real problems and provide a vision of how to solve them.

The war game is actually a simulation game, in which participants try to achieve a specified military objective, using predetermined resources and restrictions.[10] The general objectives of the war games are to support the activities of the General Staff in terms of training the military[11] in command by designing possible scenarios, contributing to the process of planning and making strategic decisions.

The simulation of military actions has different valences, being used for the design of war games and the testing of war theory, for assistance in decision making, defence planning or procurement.[12] The central point in creating a scenario for war games or training exercises is the relationship between the physical world and the use of a virtual world based on the conduct of human operational training. Implementing a versatile program that allows for the rapid simulation of a wide range of scenarios to predict the extent to which a structure's resources are available to meet requirements has been an advantage in the concept of modeling and simulating force readiness.[13]

The MARS simulator (The Managed Readiness Simulator) is an example in this regard and has a role in the dynamics of staff promotion and certification and in the acquisition, maintenance or disposal of equipment. Its software provides a graphical user interface for creating and executing simulation scenarios, based on inputs and final analysis, concluded in outputs. The concept of the MARS simulator is to design a given, established scenario, in which the capacity of a structure is found, including the staffing with the military, technique and equipment, to perform a number of tasks specific to military actions.

The physiognomy of military actions is determined by the most important factors, namely military equipment and weapons systems. The technological systems that initially appeared were later adapted to their applicability in the military field, but the needs imposed specific requirements for these intelligent systems over time. That said, at present, military strategies require new technologies to achieve objectives, which requires the adaptability of the technological field to the requirements of the military system. All these intelligent systems, necessary for the military environment, have contributed both to the modification of combat strategies and to the restructuring and organization under other principles or skills.

Among the great weapon systems of the future we find mainly systems such as remote controlled, unmanned (UAV), or the involvement of robots in armed conflicts, but also the prospects of conducting conflicts at the cosmic level. An extremely important feature of artificial intelligence or modern technology systems is accuracy, both in time and space. Accuracy is an absolutely necessary component for the efficient conduct of a military action, which is why the use of technologies that provide precision, accuracy and low time, contribute to the successful achievement of military goals. Theorists in the analysis of current conflicts highlight a comparison between the way of practicing the art of war in the past and in the present, without omitting the aspects of the future. Thus, the destabilization and misleading of the enemy currently competes with the precise jamming of certain actions taken by the enemy. As for the war of the future, it will generally involve the imposition of new types of confrontations such as cyber warfare, information warfare, network-based warfare, economic warfare or any other type that will affect sensitive areas, capable of destabilizing and destroying the most important opponent's abilities. Mainly, the modification of all the constructive and basic elements of a military conflict will be transposed in another vision or form, difficult to identify and assimilate, but the rules and principles are still preserved and adapted to the existing context.

It is imperative to clarify some aspects related to network-based warfare, as it has become highly discussed in the specialty literature and comes in close conjunction with the rapid development of information technologies and systems. Network-based warfare occurs through the implementation of modern military systems and technologies, consisting of a network of sensors, a network of central command and a network of combat platforms.[14] In principle, the rules of a classical war are followed, but they are adapted to their design in contrast to artificial intelligence.

The three components of network-based warfare are interdependent and contribute to the efficient transmission of information in real time, in order to maintain the advantage. These issues facilitate both effective governance and decision-making, as well as the action itself and the protection of stakeholders. Thus, the possibility of using an information shield, offers staff protection and real-time logistical support, thus ensuring a confrontation carried out only in the technological space, where equipment and intelligent systems take over the most difficult attributes. In other words, information systems and technological achievements, combined with intelligent software, which involve human resources only at the decision-making level, will be capable of conducting military conflicts.

Conflicts based on the lack of physical contact of the military have quickly gained particular importance through the use of all types of computer and technological systems designed to continue tense relations and destabilize state powers. However, in order to perpetuate this type of conflict, an essential basis or logistical support is also needed, starting mainly from the economy of each state or based on alliances. In order to continue the development of technologies and bring them to the battlefield, it is essential to keep in focus both the allocation of considerable financial resources and the training of staff as well as their training in the efficient operation of all equipment. Small dysfunctions may occur here, because a military power is based on considerable financial capital, while some states become vulnerable precisely because of these shortcomings. In order to ensure effective financial and logistic support, alliances and non-governmental organizations have emerged, designed to use resources from all states involved, to achieve the common goal, mutual defence and military support.

The technological impact on the military field is also reflected in the urgent need to develop the adaptation and processing capabilities of the new systems, as well as the obligation to provide considerable resources in order to maintain an operational level of combat.[15] Thus, whether we are talking about the use of simulations designed to provide safety or effective training for conducting military operations, or we are talking about the use of equipment that provides more protection to personnel, all these are found at an absolutely imperative level of being implemented, both in the context of preparation for war and in the context of maintaining a combat capability for a particular military power.

Peculiarities regarding the planning and decision-making process based on the use of technology

Relating to the past helps to have a good understanding of the present and to design a predictable future. This is a great advantage of planning, which provides an overview of the three benchmarks and contributes to the efficient conduct of the decision-making process. In the military field, planning allows dealing with uncertainty, the security environment and constraints related to defence resources, helping to identify specific procedures and tools to ensure the ultimate goal, the successful fulfillment of the mission.[16] Being embodied in a complex process, involving interdependent activities, planning is considered the key element of resource management that ensures the necessary conditions for the efficient fulfillment of specific missions.

Management provides techniques, tactics and procedures that facilitate decision-making and resource management in order to develop military capabilities. The essential functions of management are integrated to achieve the finished product, the effective achievement of objectives. These functions are found in all areas where management has a special role and are assimilated under various names. For the military system, forecasting or planning are basic elements in the conduct of military actions; organization, coordination and training are also often found, as well as evaluation and verification. All these functions play an important role in increasing performance and implicitly in streamlining the decision-making process.

Ensuring a solid system for defending and maintaining the security of society, involves the development of the four areas that define a military capability (force structure, promptness, sustainability and modernization). In the process of developing the military organization and adapting to new technologies, planning and decision-making must include a plan based on military capabilities, which supports the provision of necessary equipment, training of human resources according to requirements and the use of processes to capitalize capabilities.

Planning, as a vital function of management is a precursor to decision, which in turn has a special role in the management process of an organization or system. The decision is practically an instrument through which the military leader manifests the leadership process, through which a solution chosen from a number of possibilities is obtained, based on different variants of action.[17] In order to be considered optimal in solving the problem, the decision must be qualitative and efficient, avoid the appearance of unfavorable reactions and combine the factors involved, without creating dysfunctions. Mandatory, a decision must offer as little uncertainty as possible and provide security for the achievement of goals.

The decision-making process is based on one or more previous models, on the resources available, whether human, informational, material or financial, on the time required, as well as the level of substantiation. The use of artificial intelligence in the decision-making process brings a great advantage by reducing factors that affect the responsiveness of human resources, such as: stress, fatigue, inattention, poor concentration, subjectivism, routine, intrapersonal feelings and interpersonal relationships.

Commanders and decision-makers in general often face various complex problems, in unusual situations, for which no automated or rule-based solutions can be identified. The military decision-maker and the team involved in the planning and decision-making process are the ones who collect, analyze and synthesize the information necessary to understand the context of the military action, and then develop the possible options and courses of action. In order to provide certainty or at least to limit the risks, the information underlying the decisions must be updated in a timely manner and be relevant.

The emergence of sensors and analysis software, specific to technological development, has contributed to the support of decision makers by implementing systems with a high flow of information needed for rapid decision making. The flow of information can increase the workload of the decision maker, through the need to process them, the result sometimes becoming a danger to the correct understanding of the situation and the quality of human decision. Given this, the need for decision support systems to merge, process and interpret information quickly is evident in the military field.

Recent technological advances in information technology and artificial intelligence contribute to the coordinated and integrated functioning of human resources and technology, for a common understanding of the task and to enable an objective and rapid decision to be made, based on the possibilities of achieving the goal.

Given the dynamics of the current security environment, time is an essential variable in gaining the advantage in critical situations. Thus, the need to obtain information in real time, timely communication, as well as effective action, are correlated with the decision-making process, with the planning of a military action and with the excessive use of technologies and artificial intelligence in the military field. Noting these aspects, the influence of technology and artificial intelligence in any activity specific to the military environment is obvious and capitalized by the development of performance and timely fulfillment of goals.

The characteristics of the technology and artificial intelligence used in the field of planning and decision-making are materialized in maximum efficiency or maximum performance, relatively short time solution, rigidity, logical coherence, verifiability (using scenarios or simulations) and extensive possibilities for repetition. The use of military technologies inevitably contributes to reducing the risks for engaged human resources, shortening lead times and increasing the intensity or complexity of action. At the same time, the involvement of technology and artificial intelligence in the decision-making process leads to the efficiency of the entire algorithm and obtaining the optimal solution in relation with time and other predetermined factors.

The automation of the systems necessary for the military field determines a continuous and unpredictable change of the character of the war, contributing implicitly also to the necessity of modifying the classic concept of decisional process, based most of the times on a single variant of action.[18]

It can be appreciated that the capitalization of technology in the military field is an essential activity for increasing performance and involves the implementation of concepts and adaptation to the requirements of the global security environment. Considering artificial intelligence as an essential factor in developing and obtaining military capabilities necessary to maintain the role of the military organization, it can be concluded that the entire management process specific to the military field is influenced by its existence.

Conclusions

Current technology offers possibilities for modeling and simulation of military actions, in accordance with the purpose of the mission, starting from the level of the independent fighter and reaching the level of large units and structures of assembled forces. Regarding the modeling of equipment, weapons systems or military equipment, this process is simplified by the possibility of making replicas, with low costs. Also, given the technologies developed by modern equipment currently used, their acquisition following a test of the characteristics in the construction or virtual environment is an advantage, given their high cost.

In the past, military strategies have equated success with achieving strategic goals, such as losses to enemy troops and forcing the adversary to cease its actions. The war of the future presupposes another type of success, the success of asymmetric and network-type conflicts, which collaborate intensely with artificial intelligence and modern technologies. All these technologies have the role of supporting and providing a different perspective for the military decision. All three levels of the military field, namely strategic, operational and tactical, are based on the existence of clear and concise decisions, which help to establish the necessary elements for strengthening the military system.

The impact on the decision-making process is seen in the possibility of establishing several possible courses of action in a timely manner and verifying all implicit causes and effects. As a result, it is imperative that the military environment be constantly in tandem with technology and the implementation of a decision-making process based on artificial intelligence is stringent.

Given that the decision-making process involuntarily requires the establishment of necessary resources, mode of action, destabilizing factors or other variables, the use of systems capable of exposing the possibilities and effects of military action, is a support for commanders of any level, be it tactical, operative or strategic.

In conclusion, both its technology and its linear evolution, as well as the emergence of the concept of artificial intelligence and their use in the military, contribute to effective planning and optimal decision-making for military missions. The influences of technology and artificial intelligence on decision-making and planning are implicit in the advantages of these factors, which inevitably contribute to the constant improvement of military capabilities. Benefits such as reduced execution time, security of human resources, elimination of subjectivism and cognitive errors, analysis and verification of all possibilities are among the best arguments to support the particularly important role of technology in decision-making and military action planning.

The military strategy aims to achieve a victory, and this victory often depends on the decisions of the commanders and the level of training of the forces, combined with the equipment and technology used by them. As a result, in order to successfully fulfill the ultimate goals of a military organization, it is necessary to correlate military doctrines, decision-making and training of forces with the capitalization of technological and informational advantage.

The decision often has the role of ensuring the continuity of military actions, and in order to choose from the multiple possibilities of courses of action, the commanders are the ones responsible and depend mainly on the employment possibilities and the allocated resources. Thus, in order to obtain a decision that is as efficient as possible and related to the final goal, the use of possibilities to verify causes and effects through information technologies becomes the key to success. In most cases, the modeling and simulation of military actions has helped to establish opportunities to engage in combat effectively. Considering the modern war as another dimension than the classical one, the implementation of technological methods for decision-making comes in support of the commanders, providing precision and timing.

In conclusion, technology (especially stroke speed and accuracy, driving automation, modeling and simulation concepts, etc.), together with the correct and judicious application of viable doctrines and structures become a sensitive and essential point, which will allow for smarter, faster and more efficient conflict management.

I believe that both the ability of the military system to adapt to new technologies and automated systems, and the possibility of using them in real time and in a timely manner are essential issues that underlie the decision-making process for military action. The correspondence between the military decision and the existing technology emerges from the possibilities of determining the possible effects, eliminating uncertainties and allocating concrete resources, without considerable losses. I also believe that over the years, technology, whether we relate to rudimentary systems or automated ones, has played an extremely important role, both in leading a military action and in achieving victories. As a result, I conclude by arguing that the technological impact influences both the decision-maker and the military decision, giving him timely support on the “battlefield” and the entire military system or military organization through its contribution to personnel protection and efficient use of necessary resources. It is also important to specify that, following in the perspective of the evolution of military conflicts, they will be constantly related to technological development, as a result of which the interdependence between the military field and technology is obvious and constantly developing.

The development of technologies is a broad and continuous process, which influences not only the planning and decision-making process, but the entire modern society. The processes and tools used in the planning and decision-making system are regularly modified and adapted due to frequent changes in technology and the environment. But modern technological equipment has the role of reducing the identified risks and improving the planning and decision-making process by implementing modern systems based on modern scientific tools and adapted to the contemporary security environment.

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COMPARATIVE ALALYSIS OF ISR DOCTRINES IN SOME NATO MEMBER STATES

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Through comparative analysis we can identify certain similarities and differences between certain allied states from a doctrinal point of view, based on certain established criteria. The concept of ISR is for the states of modern armies a continuous topic of debate, aiming to develop and implement at all levels, to streamline the planning and execution of operations and to ensure real support as soon as possible to decision makers at all levels. The doctrines of NATO member states represent the common starting point in legislative and procedural harmonization, so that, in the modern operational environment, a common allied language can be used effectively.

Keywords: Intelligence; reconnaissance; surveillance; comparative analysis; NATO.

In order to carry out the study, we started from the premise of identifying similarities and differences from a doctrinal point of view, regarding the concept of ISR in certain allied states (Romania, United States, Great Britain, Canada) on the one hand and the NATO doctrine, on the other hand, based on the analysis of the following benchmarks: definition of the ISR concept, ISR process, ISR principles, intelligence disciplines, ISR systems.

According to the Explanatory Dictionary of the Romanian Language, the analysis represents ”the examination of a whole, decomposing it into its component parts”, and the comparison establishes ”the similarities between things, beings, ideas”[1].

Through the comparative analysis of the stated parameters, we will try to identify and highlight certain common and distinctive doctrinal features of some NATO member states, in order to improve the framework of the Romanian concept from the perspective of ISR.

ISR concept definition

According to Romanian doctrine, ISR is ”a set of information and operations capabilities that synchronize and integrate the planning and operations of all collection capabilities, with the processing, exploitation and dissemination of resulting information, in direct support of planning, preparation and execution of operations”[2].

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The US Department of Defence defines the concept of ISR as ”an activity that synchronizes and integrates the planning and operations of sensors, assets, processing, exploitation and dissemination in direct support of current and future operations”[3].

For the British doctrine, the acronym ISR is ”activities that synchronize and integrate the planning and operations of collection capabilities, including processing and dissemination of the resulting product”[4].

In the Canadian doctrine, ISR is ”an activity that synchronizes and integrates the planning and operation of all collection capabilities with exploitation and processing to disseminate the resulting information to the right person, at the right time, in the right format, in direct support of current and future operations”[5]. Allied doctrine uses the ISTAR concept, defined as a process that combines surveillance, research, target acquisition systems and sensors to guide maneuver and means of striking. It includes the collection and management of information in order to know the operational situation by commanders and staffs in conducting operations and to ensure support in the process of acquiring targets[6].

We can observe a number of similarities between the existing definitions and we can distinguish some common features, namely:

- the concept of ISR is defined as a process, activity or set of capabilities;
- there is a synchronization, integration and coordination of collection capabilities;

• ISR provides direct support to current and future operations.

In the allied doctrine, the concept also includes the acronym TA (target acquisition) which represents the identification, location and hitting of targets.

We can conclude that, from the perspective of the first established criterion, namely ”defining the concept of ISR”, a doctrinal harmonization can be found between the analyzed states.

ISR process

The ISR process coordinates all specific activities through which ISR elements respond to a request for information with the support of all collection capabilities to provide information support in operations.

From the table presented (Figure 1) we can see a similarity between the British doctrinal process (called ”Intelligence core functions”) and the Canadian one (called the ISR process). The Romanian doctrinal ISR process is very similar to that of the Allied doctrine. The only difference is given by the collection stage, a stage which in NATO doctrine is divided into two sub-stages: planning and execution. We can also identify the stage ”analysis and production” specific only to the American doctrine.

If in certain allied doctrines (see Canadian and British doctrine) there is a possible similarity between the ISR process and the Intelligence cycle, in the Romanian doctrine we can identify a differentiation between the two processes.

On the one hand, the ISR process – which includes the stages: task distribution, collection, processing, exploitation and dissemination – represents the framework through which ”a single collection requirement is met by an ISR means” (IA-1.5 Joint Doctrine for Intelligence, Surveillance and Reconnaissance)[7].

On the other hand, both in ”IA-1.1 Doctrine of Intelligence for Defence” and in ”IA-1.6 Doctrine for Intelligence Procedures”, the intelligence cycle comprises four stages (directing, collecting, processing and disseminating) and constitutes ”the set of activities through which the information is obtained, processed, transformed into informative products and disseminated to the beneficiaries”[8].

In the allied doctrine[9], the intelligence cycle includes: directing and planning, collection, processing/exploitation, dissemination and evaluation, differing not much from the ISR cycle which includes: task distribution, planning, execution, processing/exploitation, dissemination.

Romania	**USA**	**Great Britain** (*Intelligence core functions)	**Canada**	**NATO**
				

Figure 1 *Doctrinal harmonization between the analyzed states*
(Author’s conception)

ISR principles

There are, in the analyzed doctrines, a series of principles (Figure 2) specific to the field of ISR, which have the role of harmonizing all functions of operations and information and to increase the efficiency of using ISR capabilities. Except for some common principles (security, opportunity, accuracy), specific to the USA, Great Britain and Canada, we can identify a great diversity in terms of ISR principles specific to the analyzed countries. Moreover, the need for doctrinal harmonization is obvious regarding the ISR principles of the Romanian Army with the ISR principles from the doctrines of certain NATO states. If in the allied doctrine the principles of ISR are not approached, and we meet the phrase ”required capabilities”, in the British doctrine, we meet the name ”principles of intelligence”.

Intelligence disciplines

From the presented graph (Figure 3), we can observe four existing collection disciplines in all the doctrines of the analyzed states: HUMINT, SIGINT, MASINT, GEOINT.

and biometric intelligence), Chemex (chemical exploitation), Finint (financial intelligence), Sma (seized media intelligence), Medint (medical intelligence), Weapons intelligence.

Our study is based on the analysis and comparison of some doctrinal reference documents from the armies of established states, the development and implementation of these disciplines as well as their classification, being processes that take place continuously, and are based on lessons learned and operational needs. We can conclude that, following the analysis of this criterion, the Romanian doctrine covers very

Romania	USA	Great Britain (The principles of intelligence)	Canada	NATO* (Capability requirements)
1.Centralized command and decentralized execution; 2.Responsive; 3. Layered; 4. Sustainability; 5. Trust 6. Accuracy	1. Integration; 2. Accuracy; 3. Relevance; 4. Timely; 5. Accessibility; 6. Security; 7. Redundancy; 8. Sustainability; 9.Deployability; 10. Network centricity	1. Command led; 2. Objectivity; 3. Perspective; 4. Agility (resilience, adaptation, flexibility); 5. Timeliness; 6. Collaboration 7. Continuity 8. Security	1. Priority; 2. Integration; 3.Accuracy/relevance 4. Timeliness; 5. Fusion; 6. Persistence; 7. Pervasiveness; 8. Layered; 9. Accessibility; 10. Security.	1. Timeliness; 2. Accuracy; 3. Survivability; 4. Reliability; 5. Suitability; 6. Standardization; 7. Continuous coverage.

Figure 2 *ISR Principles*
(Author’s conception)

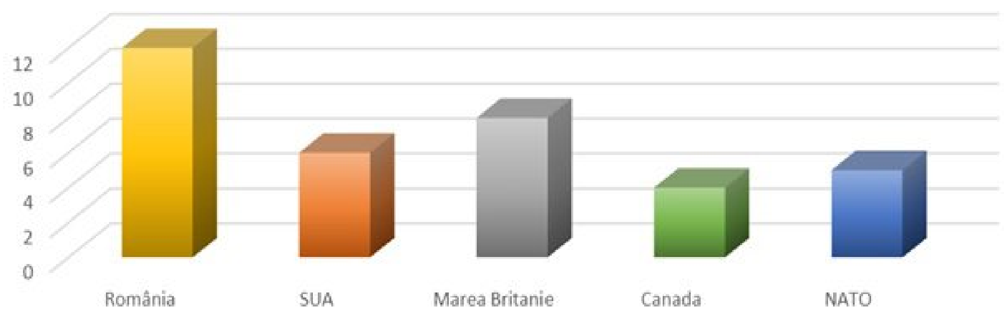
In American doctrine, the HUMINT discipline comprises several components, namely: specially designed operators, forces for special operations, air and ground structures, exploitation of documents and media. At the same time, in the British doctrine, the informative exploitation of materials and people (MEPs) includes existing elements in other doctrines such as Techint, but also novelty elements such as: Fabint (forensic

well the spectrum of ISR collection disciplines, there being, as it can be seen, a harmonization with the other NATO armies analyzed.

ISR collection systems depending on the carrier platforms

All the analyzed states have collection systems on air, space, land and sea platforms, at least from a doctrinal point of view (Fgure 4). Our approach did not aim to analyze the degree of endowment of these platforms nor the level of ambition desired by the analyzed states in terms of developing their technological capabilities.

From the study of already established works such as "Bridging the Gap. European C4ISR Capabilities and Transatlantic Interoperability"[10], "The next 100 years. Forecasts for the 21st century"[11] and the report "European Defence Agency – Defence Data 2010"[12] can draw some conclusions that highlight major discrepancies between the US and European countries regarding the defence expenses, the employment capacities, the level of ambition, the possibilities of endowment in general as well as regarding the development and implementation of the ISR field.



Romania	USA	Great Britain	Canada	NATO
1. Geoint 2. Humint 3. Imint 4. Osint 5. Acint 6. Masint 7. Sigint 8. Cyberint 9. Radint 10. Electronic warfare 11. Techint 12.Information exploitation of materials and persons (MEPs)	1. Geoint 2. Imint 3. Sigint (Comint, Elint, Fisint) 4. Masint 5. Humint (special purpose operators, special operations forces, air and ground structures, exploitation of documents and media) 6. Osint	1. Geoint 2. Acoustint 3. Imint 4. Humint 5. Masint 6. Osint 7. Sigint (Comint, Elint) 8. Information exploitation of materials and persons (MEPs): Techint, Fabint, Chemex, Finint, Sma, Medint, Weapons intelligence	1. Geoint 2. Sigint 3. Masint 4. Humint	1. Imint 2. Sigint (Comint, Elint) 3. Humint 4. Masint 5. Acoustint

Figure 3 *The spectre of the collecting ISR disciplines*
(Author's conception)

Conclusions

Following the analysis of the established criteria, we can conclude that – beyond certain nuanced language barriers – in the Romanian Army the ISR doctrine is largely harmonized with the NATO doctrine, on the one hand, and with the doctrines of certain allied states, on the other.

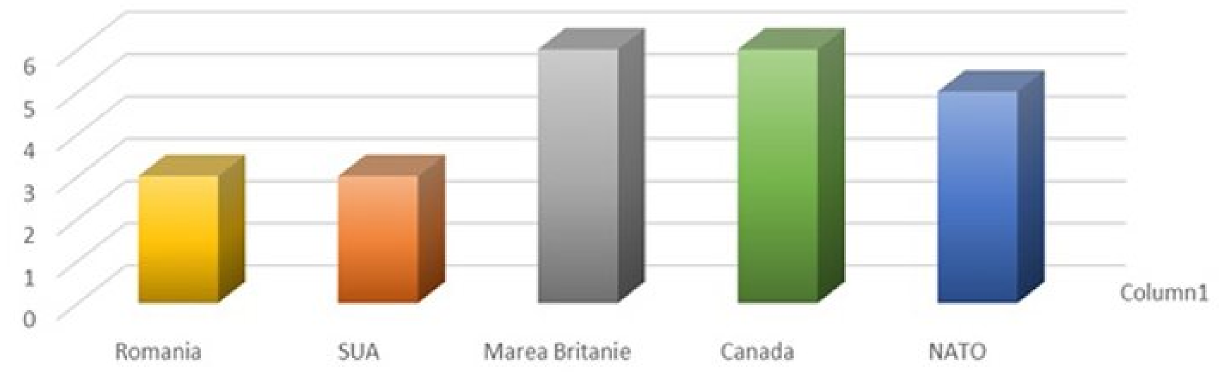
I believe that this direction of research must be continued in particular with regard to the analysis of technological ISR capabilities within the alliance. The doctrinal correspondence must be made in accordance with the endowment of the ISR structures in the Romanian Army, so that the efficiency of the informative support in operations is maximum.

So far, important steps have been taken in the Romanian Army in the development and doctrinal harmonization with the allied doctrine and with other NATO member states. The issue of endowment and correlation of the doctrine with the development of ISR systems in terms of performance means, remains open and may be the subject of another comparative study.

Doctrinal harmonization is not enough without a correlation with the acquisition of state-of-the-art equipment that generates a higher degree of interoperability between all NATO member states.

NOTES:

1 http//dexoline.ro, accessed on 27.07.2021.



Romania	USA	Great Britain	Canada	NATO
1.air/space systems; 2.grounding systems; 3.maritime systems;	1. airborne systems; 2. space-based systems (military and non-military, national satellite systems, ground-based systems, air surveillance and acquisition radar, missile warning, space surveillance) 3. cyberspace-based systems	1.space-based systems; 2.airborne systems; 3.ground-based systems; 4.surface systems and subsurface systems; 5.forces for special operations; 6.covered passive surveillance systems	1.space-based systems; 2.unmanned aircraft systems; 3. inhabited air systems; 4.ground-based systems; 5.surface systems; 6.subsurface systems	1. aerial systems; a. unmanned aerial vehicles; b. aerial platforms with crew on board; 2.surface systems; a. land b. sea; c. air control; d. forces for special operations; 3.subsurface systems; 4. space systems (military and non-military) 5.other capabilities.

Figure 4 *Systems of collecting of the analized states*
(Author's conception)

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http//dexoline.ro

ACTIVITY MANAGEMENT OF THE OF ROMANIAN ARMY STAFF PARTICIPATING IN MULTINATIONAL OPERATIONS

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The changes that have occurred lately in the geopolitical and geostrategic environment highlighted the use of armed forces as a strong argument for solving international crisis situations. In this regard, planning, organization and conduct of military actions in the international context have become a reality of our times, respectively an efficient solution in many of the conflicts from the last period of time.

Keywords: multinational operations; personal management; human resources; command and control; military actions.

The participation of the Romanian Army in multinational operations in an allied context, beyond the national borders, under the leadership and command of the North Atlantic Treaty Organization/NATO, in military actions carried out under the leadership and command of European Union/EU, United Nations Organization/ ONU or the Organization for Security and Co-operation in Europe/OSCE, respectively in the context of a force coalition, under the leadership and command of one of the NATO members, SUA, has led lately to the elaboration of a normative framework, much more detailed, allowing the Romanian military and civilian personnel to act at a great distance from the country, often in conditions of danger and stress.

This complex and often long process that ensures the participation of the military in the Romanian Army in this type of military actions always begins and ends, under the coordination of personnel structures, regardless their level. Benefiting from ever-improving legislation, the process of selecting all categories of staff wishing to take part in such missions becomes more efficient from one stage to another and allows all participants to take part in the verification tests set by the legislator.

In our opinion, the management of the personnel selection process to participate in multinational operations is part of the range of support actions and thus should be addressed in this regard.

In this sense, in accordance with the doctrinal provisions in force, in the Romanian army, personnel support represent ”... the whole amount of planned activities, organized and carried out in order to provide human resources necessary for commands, major units and units participating in operations”[1].

In the sense of those presented above, we would like to highlight the fact that the process of ensuring personnel for participation in multinational operations is based on a number of principles, as follows[2]: continuity, permanent knowledge, authority, efficiency and selection.

By implementing these principles, a continuous process is ensured, through which human resources are generated; it provides the commanders with a secure mechanism to obtain a common operational image on the staff line and, regarding the support request, it respectively allows the establishment certainly of the moment when the resources necessary for the operation are to be put on disposal.

Last but not the least important, we consider that the compliance with these principles provides staff structures with the necessary tools to identify and establish the criteria on the basis of which staff selection is carried out both in terms of staff skills and competences and the type and complexity of operations, respectively of the function performed.

Considering the presented aspects, we believe that that assuring an efficient management of

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the personnel participating in the multinational operations, regards, first of all, the development of human resources, based on the specific functions of this process (forecasting, organization, coordination, training, control), and secondly, the identification of those commanders who are able to use efficiently all available resources, including human resources.

In accordance with the legal provisions in force, within the Ministry of National Defence, the personnel to participate in missions and operations beyond the national territory must go through a series of selection stages that will finally allow them to fulfill their missions and tasks by the job established by the participation agreements, respectively by the job description. The participation of the staff and of the force structures in such missions and operations is planned and organized, annually, for the next year, by the categories of forces of the army and the support commands.

I would like to mention that the participation of the Romanian Army personnel in this type of military actions is established at the level of Defence Staff (SMAp), through the subordinated structures.

Like any such process, the selection of personnel to participate in missions and operations beyond the Romanian territory is triggered on the basis of operational plans and orders developed by specialized personnel at the level of force categories' staffs and service commands. Through these plans and orders, the personnel designated to participate in such activities, beyond the country borders, follows a rigorous selection process, and subsequently, a training one for the conditions of the area of operations and job description of each of those to be appointed to the structures of forces nominated for this action.

Last but not the least, we would like to mention that this process takes place even at the level of major units, units and subunits to be deployed outside the national territory. As a specific aspect of this selection process we would like to point out that the personnel proposed by the force categories' staffs and by the support commands that are not part of the staffs of the nominated units to take part in missions and operations outside the national territory must go through the selection stages for the mission.

For the staff personnel that is going to take part in such missions and operations, regardless whether they are carried out under the auspices of the ONU and the leadership of ONU, NATO, EU, OSCE or within coalitions of forces, respectively for fulfilling Romania's commitments, in some international regional security organizations, the selection takes place within the personnel structures subordinated to the Defence Staff (SMAp)[3].

After completing the selection stages, the staff personnel that will carry out individual missions[4] is deployed for a period up one year within the designated structures.

The minimum conditions (selection criteria) that must be met by the personnel that will take part in missions and operations outside the Romanian territory, regardless the structures they belong to, must ensure the fulfillment of the mission both individually and at the level of the personnel's structure[5]. Thus, in order to participate in the mission/operation, the personnel that is to go through the selection stages must be assigned to a similar position, as an initial condition.

Subsequently, the respective personnel must go through the selection stages to verify the physical and moral conditions (to correspond from a mental point of view), respectively from a medical point of view (medical conditions). At the same time, they are tested for the language skills required for the mission/ operation in which they are to take part (English, French, etc.), usually called language skills certification on four skills (listening, reading, speaking and writing).

A very important aspect for this stage is that the personnel taking part in missions/ operations outside the national territory must declare that they do not have personal problems that would affect their participation in the military action or a possible return to the country before the end of the mission, they have no legal problems that can affect their participation in mission and they have not participated in such missions in the last 12 months.

Regulations concerning the management of personnel participation in multinational operations have been amended and supplemented several times in recent years by the order of the Minister of National Defence or the Chief of Defence Staff, as follows: M.101/2011, for approving the criteria and methodology regarding the selection of personnel in order to participate in missions and operations outside the national territory; M.59/2015, for organization and development of the contest/exam in order for the staff of the Ministry of Defence to occupy permanent positions abroad; M.6/2018 for the organization and development of the contest/ exam in order to occupy permanent positions abroad; M.4/2015, M.71/2017, respectively SMG-74/2016, for establishing the responsibilities regarding planning, training, participation, leadership and support of the military structures an personnel in missions and operations outside the national territory, or SMAp/S-96/2018, for establishing the operational responsibilities regarding training and management of the military structures and personnel participating in missions and operations outside the national territory, in order to present the most representative of them.

A particularity of this selection process concerns the personnel that are to assign unique positions (financial, medical, public relations, information protection, air transport, etc.) and who, because of that, with the approval of legal personnel (chiefs of staffs of the forces categories, respectively the commanders of the support commands) are exempted from the provision of not having participated in other missions in the last year.

For individual missions, the selection of staffs is carried out on the basis of elimination and ranking criteria. Thus, after the elimination of candidates who do not meet the elimination criteria, those remaining in the selection process are ranked based on the result obtained in other selection tests. The function with the rank of colonel/ general considered as visibility functions, within the external missions, includes as a selection test, the interview, which aims to obtain a more eloquent image on the potential of candidates to participate in such external missions.

After the review of the main legal provisions governing the participation of the Ministry of National Defence personnel in multinational operations outside the national territory, it can be concluded that the selection process of military and civilians for such military missions and actions is well structured and with a known ending.

The realities of the repeated selection process, organized at the level of the structures that are nominated to make fully operational those units and subunits of forces to participate in such missions, also incur a series of difficulties for those who organize this type of personnel selection, including:

- insufficient unique personnel that can assign specific functions from various fields of activity;
- difficulties, sometimes impossible to overcome, in terms of filling the positions of officer specialized in financial-accounting procedures, legal advisor, health insurance, air transport, communication and IT;
- the medical situation of some participants, which does not allow them to carry out the full range of responsibilities, according to the designated position;
- the decision made by some of the selected participants to give up participating in the respective mission.

As a rule, as it is well-known, the selections organized for the participating in operations outside the national territory can be attended by military and, in some cases, civilians from MOD of different ages. Usually, older military and civilians have more experience in terms of functional knowledge, specific to their position.

The results of the selection process often highlight the formation of some structures, especially when we take into consideration subunits such as National Support Element (ENS), as heterogeneous and without much experience. The examples can continue also in the case of counseling and assistance structures, with various specializations where we encounter similar situations, which require from the commanders sustained efforts to overcome various shortcomings.

Conclusions

The conclusions converge towards the selection process, especially for the units participating in multinational operations, which would allow them to ensure team units both during the preparation for the mission and especially during its execution.

The management of the personnel assurance process for participation in multinational missions is not only a set of specific principles, rules or procedures that ensure the participation of human resources in such military actions, but rather a mechanism for regulating the connections between specific regulations approached with those particular to the organization, planning and exercise the act of command and control of these operations.

NOTES:

1 *** *SMG-P.F.-1, Doctrine on personnel support in operations*, Bucharest, 2011, p. 9.

2 *Ibidem*, pp. 9-10.

3 *** *M.101/2011, Order for the approval of the criteria and methodology regarding the personnel selection in order to participate in missions and operations beyond the national territory*, Bucharest, 2011, art. 3.

4 *Law no 121, on the participation of the armed forces in missions and operations beyond the national territory*, published in the Official Gazette of Romania No. 427, part I, March 17, 2017, art. 2.

5 *M 101/2011, Order for the approval of the criteria and methodology regarding the personnel selection in order to participate in missions and operations beyond the national territory*, Bucharest, 24.11.2011, art. 3.

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*** *Law no 80, on the Statute of military personnel*, published in the Official Gazette of Romania, no 155/1995, with the subsequent amendments and completions.

*** *Law no 346, on the organization and functioning of Ministry of National Defence*, published in the Official Gazette no 867, November 2, 2017.

*** *Law no 121, on the participation of the armed forces in missions and operations beyond the national territory*, published in the Official Gazette of Romania No. 427, part I, March 17, 2017

*** *M.101/2011, Order for the approval of the criteria and methodology regarding the personnel selection in order to participate in missions and operations beyond the national territory*, Bucharest, 2011.

*** *M.59/2015, Order for the approval of the Norms regarding the organization and development of the contest/exam for permanent positions that would be occupied by Ministry of National Defence personnel in the national representation structures abroad, as well as those in the structures where Romania is part*, with the subsequent amendments and completions.

*** *SMG-P.F.-1, Doctrine on personnel support in operations*, Bucharest, 2011.

*** *SMG 34/ 2013, Doctrine on the participation in crisis response operations non-article 5*, Bucharest, 2013.

*** *SMG/Ctrr.1, Instructions regarding the evaluation of the capacity of units/ detachments from the ground forces participating in missions outside the national territory*, Bucharest, 2008.

*** *SMAp-S-96, Provision for establishing operational responsibilities for training and management of military structures and personnel participating in missions and operations beyond the national territory*, Bucharest, 2018.

POSSIBILITIES TO EVALUATE THE PERFORMANCE OF REGULARITY/COMPLIANCE AUDIT USING THE BALANCED SCORECARD METHOD (BSC)

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The regularity/compliance audit is a specific type of internal audit meant to examine the processes, activities and actions carried out in public or private entities, on the basis of a frame of reference designed in such a way as to allow at the level of these structures an assurance on the effectiveness of risk management, control and governance processes. This activity needs to be continuously refined and modernized in order to be closely connected to the requirements and needs in continuous dynamics of those audited, and the Balanced Scorecard model (BSC) offers such a possibility. In the final part we identified, according to the requirements of this model, a set of questionnaires for auditors and audited, performance indicators, elements of innovation, connection and strategies, which applied or investigated in military entities, will allow highlighting the possibilities to increase the performance of internal audit through regularity / compliance missions.

Keywords: regularity/compliance audit; mission preparation; on-site intervention; reporting the results of the mission; Balanced Scorecard Model (BSC).

Defining characteristics of the regularity/ compliance audit as a specific type of internal audit

The regularity or compliance audit corresponds to the first stage of development in the evolution of the internal audit function. It is the fundamental anchoring point of subsequent and successive stratifications[1]. In essence, the regularity/compliance audit consists of verifying how certain procedures, rules or regulations defined by a competent authority are followed[2]. That said, it will have to check the established rules with the actual reality. However, for the internal auditor's approach to the regularity audit to be successful, it is necessary to determine a well-established reference system, to which the internal auditor will refer in the course of the audit mission. In this way, the internal auditor will be informed about the system of rules, procedures and methods that should be observed, will find out what the actual reality is in the field, and will report inconsistencies, imbalances, rules that have not been observed, misinterpretations of procedures, making an analysis of the causes, consequences and issuing recommendations for these rules to be followed.

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If we consider the main objective of the regularity or compliance audit, some authors[3] claim that a distinction could be made between the *”regularity”* audit and the *”compliance”* audit, arguing that in the case of the regularity audit the main objective is to follow the regularity in relation to the internal rules and procedures of the organization, while in the case of the ”compliance” audit the compliance with the legal provisions is pursued (such as tax regulations or other legal regulations).

But in both cases the aim is to compare the existing reality on the ground with a well-established reference system. If we consider the establishment of a reference system composed of rules, internal procedures, organizational charts, information systems, but also of general legal provisions and regulations as well as specific to the field of activity in which the organization operates, pursuing regularity and compliance with this system, we can admit the connection between the two types of audit (”regularity” and ”compliance”) and talk about a single type of audit, namely *regularity or compliance audit.*

The regularity/compliance audit represents the examination of the processes, activities and actions carried out within the public entity, based on a frame of reference (regulations, rules, procedures, instructions, etc.), and so designed as to allow assurance on the effectiveness of risk management, control and governance processes[4].

The planning and implementation of public regularity/compliance internal audit missions aims at *“examining actions on financial effects on public funds or public assets, in terms of compliance with all principles, procedural and methodological rules applied to them”*[5], respectively the internal auditor verifies if the rules and procedures are well applied (regularity) and if the relevant regulations are followed (compliance).

This type of audit aims at examining the proper application of rules, regulations and procedures, reporting imbalances, malfunctions or irregularities, analysing the causes and consequences and formulating recommendations for improving the audited activities.

The planning of the public internal audit missions of regularity/compliance is performed by the head of the public internal audit department and is approved by the management of the entity. The regular internal regularity/compliance audit missions are included in the Multiannual Plan and the Annual Internal Audit Plan, depending on the result of the risk assessment and the other elements specified in point 2.4.1.3 of the *General Norms regarding the exercise of the public internal audit activity, approved by the Government Decision no. 1086/2013*[6].

According to point 2.4.1.3 of GD no. 1086/2013 stipulates that the selection of public internal audit missions in order to be included in the plans is made according to the following elements: a) risk assessment associated with different structures, processes, activities, programs/projects or operations; b) the signal criteria and the suggestions of the head of the public entity, the deficiencies previously found in the audit reports; c) the deficiencies found in the minutes concluded following the inspections; d) the deficiencies recorded in the reports of the Court of Accounts; e) the assessments of some specialists, experts, etc. on the structure and dynamics of internal risks; f) evaluating the impact of some changes in the environment in which the audited system evolves; g) other information and indications regarding malfunctions or deviations; h) the missions recommended by UCAAPI / the public internal audit department at the higher hierarchical level, fact for which the heads of public entities have the task to take all organizational measures so that they are introduced in the annual internal public audit plan of the public entity, to be carried out in good conditions and reported within the set deadline; i) the number of public entities subordinated/coordinated/under the authority of another public entity; j) periodicity in audit, at least once every 3 years; k) periodicity in evaluation, at least once every 5 years; l) types of audit; m) the recommendations of the Court of Accounts; n) available audit resources.

The head of the public internal audit department is responsible for planning and carrying out regularity/compliance public internal audit missions and ensuring the necessary resources for their performance. At the same time, it aims for the activity of internal auditors to be carried out in accordance with the methodological norms specific to the internal public audit department and with the principles of the Code on the ethical conduct of the internal auditor.

The methodology for carrying out the regular public audit missions of regularity/compliance supposes the completion of the following stages: *a) The preparation of the mission; b) On-site intervention; c) Reporting the results of the mission; d) Following the recommendations.*

The preparation of the mission requires the following procedures: *1) Initiation of the regular public regularity/compliance audit mission (elaboration of the Service Order; elaboration of the Declaration of Independence; elaboration of the Notification regarding the initiation of the public regularity/compliance internal audit mission); 2) Opening meeting; 3) Collection and processing of information (establishment/updating of the permanent file; processing and documentation of information); 4) Risk analysis and evaluation of internal control (risk assessment; evaluation of internal control); 5) Elaboration of the Program of the public internal audit mission of regularity/compliance.*

The intervention on the spot requires the development of the following procedures: *1) Collection and analysis of audit evidence (testing and formulation of findings; analysis of problems and formulation of recommendations; analysis and reporting of irregularities).*

Reporting the results of the mission

means completing *the following procedures*: *1) Preparation of the draft Public Internal Audit Report (preparation of the draft Public Internal Audit Report; submission of the draft Public Internal Audit Report; conciliation meeting); 2) Elaboration of the internal public audit report (internal public audit report; dissemination of the internal public audit report).*

Following the recommendations requires the preparation of a file for this purpose[7].

It can be concluded that this type of audit is a substantial one, which takes place after a very well-regulated procedure, but which can be subjected to modernization processes to increase its performance.

Possibilities to use the Balanced Scorecard method in the field of internal audit, including for regularity/compliance missions

Increasing the performance of internal audit and especially of regularity/compliance audit is a growing concern of decision makers and professionals working in this field. This possibility as a research tool is offered by Balance Scorecard (BSC). This is a tool for measuring and evaluating the performance of internal audit, which includes both qualitative and quantitative elements. The importance and frequency of using this tool has become increasingly evident, a fact confirmed by specialists in the international literature[8].

Considering that it would be relevant to identify which are the most used methods for measuring the performance of internal audit in international practice, very interesting are the conclusions resulting from the study conducted by one of the major audit firms Ernest&Young in 2007 – *”Global Internal Audit Survey”*. Internal auditors from 138 organizations participated in this study, most of them being multinationals from 24 countries. One of the aspects of this study was to identify the techniques used by respondents to measure the performance of internal audit and to improve its quality.

The conclusions obtained from this study revealed that: *1) 80% of respondents seek feedback on the performance achieved during the closing meeting of the mission, while 48% of them also use studies after the end of the mission; 2) 52% of the respondents are strictly limited to maintaining a compliance with the provisions of the internal audit standards issued by the IIA; 3) 48% of the respondents had until the time of the study external evaluations of the performances achieved following the audit work.*

In approaching the methods of measuring the performance of internal audit, we appreciate that the most relevant would be that of their structured research from two major perspectives: quantitative and qualitative.

A. Quantitative methods for measuring the performance of the internal audit: *1) Determining the degree of accomplishment of the internal audit plan; 2) Identifying the time required to issue the final audit report; 3) Monitoring the time period for resolving the audit findings (we consider relevant the creation of a statistical database in which to follow elements such as the number of deficiencies made within the set deadline, the number of deficiencies made late and the number of unresolved deficiencies); 4) Evaluation of staff qualification; 5) Determining the ratio between the time dedicated to the actual internal audit activities and the time dedicated to administrative activities.*

B. Qualitative methods for evaluating the performance of internal audit: *1) Carrying out studies (questionnaires or interviews) subsequent to the audit mission in which the interviewees are the managers of the organization; 2) Carrying out further studies (questionnaires or interviews) of the audit mission at which the interviewees should be the ones audited.*

The component elements of these questionnaires may differ from one organization to another, being influenced by the vision of each manager, as well as those audited on how the internal audit can provide added value.

C. Methods for measuring and evaluating the performance of internal audit, which combines both quantitative and qualitative elements.

A method of measuring and evaluating the performance of internal audit, which includes both qualitative and quantitative elements is the one that consists in using a *”Balanced scorecard”* type tool.

In a Balanced Scorecard approach, the performance of the internal audit activity can be analysed in a balanced way, using a multiple perspective: A) Financial (Added value): l) Savings achieved following the proposals in the internal audit reports; 2) Activity costs; B) Regarding the Client (board of directors, audit committee, management, audit client): 1) Questionnaires regarding customer satisfaction; 2) Complaints from customers; 3) Risks that were not taken into account; 4) Perspective on the role of the internal audit function; C) Regarding the Internal Process: 1) Improvements to the internal audit process; 2) Quality evaluations; D) Regarding Innovation, learning and development: l) Vocational training programs; 2) Education of the members of the internal audit department; 3) Practical experience of internal auditors.

These elements can be integrated into an entity's strategic plan. The elements that are listed as sub-criteria and that have the quality of being measurable can be transformed into objectives of the internal audit department and of course into sub-objectives of the general strategy of the entity.

Each measured objective can be associated in the application process of the BSC model with measures to achieve each objective, which can be monitored on the principle of feedback (Table no.1).

The terms in the table above have the following meanings:

- *the initiative* represents the action taken to improve current performance;
- *the target* is the level of performance required to successfully achieve the strategic objectives;
- *performance measurement* means how to monitor the achievement of strategic objectives (key performance indicators);

Table no. 1

BSC APPLICATION MODEL FOR THE INTERNAL AUDIT DEPARTMENT

Strategic objective	Performance measurement	Initiative	Target	Responsibility
Financial				
Optimization of the primed value for the investment made in the internal audit activity	Improving the received value indicator	Comparison of the investment with similar benchmarks and quantification of the primed value.		
Internal/external client				
• **Audit Committee** Intensify communication with the audit committee and ensure that the performance of the internal audit is in line with its expectations	Degree of implementation of the risk-oriented audit plan and status of ongoing recommendations (%)	Development of a reporting system that communicates the analysed risks and the situation of the findings.		
Internal processes				
• Implementation of professional norms and standards, as well as the Code of Ethics	Degree of implementation of best practices (%).	Analyse the current state of implementation, identify standards that are not implemented, and design a plan for resolving the situation.		
• Improving the effectiveness of audit procedures for identified significant risks.	Number of optimized audit processes	Examine the possibilities of implementing new software or statistical technologies to optimize audit methods.		
• Improving the quality of internal audit processes.	The degree of optimization of process quality perceived by significant users (%), through the questionnaire.	Identify the main criteria of a quality internal audit (International Standards) to achieve objectives, manage risks, collect and report information. Constantly review the quality of the activity. Perform regular evaluations and report results.		
Learning and development				
• The compatibility and internal structure of the internal audit function support the entity's mission as well as the needs of the clients.	Number of auditors included in training programs. Number of auditors who have obtained a professional certification of internal auditor.	Identify the most important compatibilities and determine the current state of staff training, focusing on the development of communication, negotiation or management skills		

Source: Coracioni Alexandru, "Balanced Scorecard" and financial audit, article published in the "Audit Practices" Journal no.3/2013, pp. 21-22.

- *strategic objectives* represent the transposition of the entity's vision and strategy into concrete elements;
- *responsibility*: means the assignment of specific tasks to staff.

The Balanced Scorecard model can be used to evaluate the performance of an external auditor. Because this tool was originally developed for business entities, the model can be successfully used in an audit firm or department to evaluate, monitor, and develop its own managerial performance. Within the management process of an audit firm, the "Balanced scorecard" model can be applied pragmatically, using a tabular structure similar to the one presented in Table no. 2.

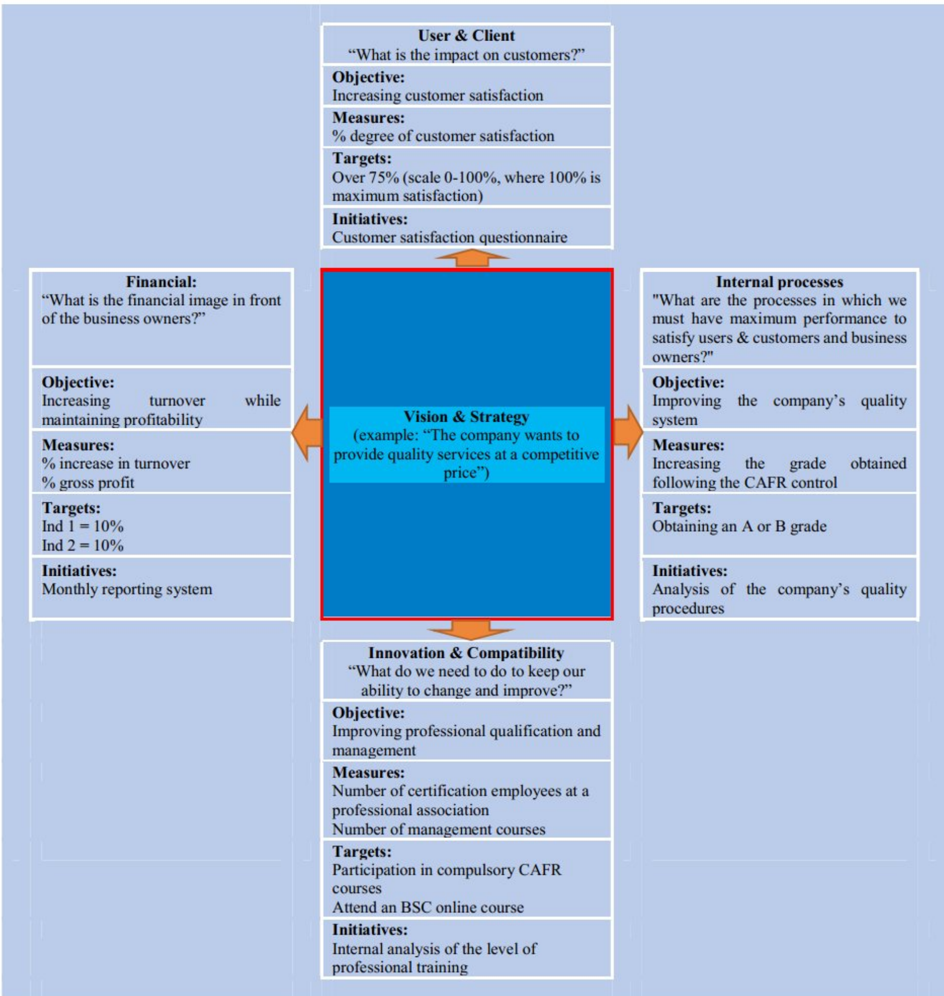
The way of implementing a BSC type performance management system should go through several steps, structured as follows:

- defining a strategic vision of the organization (what it wants to become);
- identifying the critical success factors that constitute the strategic support of the company's vision;
- analysis of the strategic objectives that can be quantified and on which action can be taken;
- monitoring the achievement of strategic objectives (key performance indicators);
- defining the level of performance necessary to achieve the strategic objectives;
- implementation of action initiatives that will lead to improved performance. The model presented above is intuitive and can be developed depending on the specifics of the company[9].

According to a study by Frigo M.L. and Krumwiede K.R[10] the instrument of "Balanced Scorecard" type is used by at least 40% of the

Table no. 2

BSC APPLICATION MODEL FOR AN AUDIT FIRM



Source: Coracioni Alexandru, "Balanced Scorecard" and financial audit, article published in the "Audit Practices" Journal no. 3/2013, p. 23.

organizations participating in the study conducted by these specialists. Many organizations have used the Balanced Scorecard to measure the organization's performance at all levels and at the level of all departments (including the internal audit department). Moreover, some internal audit departments have shown a pro-active attitude by implementing Balanced Scorecard to measure the performance of internal audit, in the context in which such an instrument had not yet been used at the organizational level.

Frigo M.L.[11] highlights the benefits that using the Balanced Scorecard within the audit department would bring to the internal audit director of an organization, helping him to:

- describe and clarify the strategy of the audit department;
- to communicate the strategies and priorities within the audit department;
- to align the performance measures of the audit department with those of the organization at global level;
- to identify the main factors that would determine an increase in the performance of the internal audit;
- to identify the cause-effect relationships between the different factors that influence the audit performance;
- to determine a focus of the activity on the internal audit services that add value, as well as on other strategies and priorities from the level of the entire organization;
- to use the results of measuring the performance of the internal audit as a tool for continuous improvement.

The Balanced Scorecard model presented by Frigo M.L[12] is approached from the perspective of the following key elements:

- internal audit clients (audit committee, management, audited);
- the internal audit process;
- internal audit skills.

In the construction of this model of Balanced Scorecard for the internal audit department, the author starts from the premise that there are several concepts of this tool, approached in general, which can be applied to the internal audit department:

- measuring performance from the perspective of customers;
- determining a set of indicators for quantifying performance;
- the connection between the internal audit and the clients' expectations;
- focusing on the strategies of the department and the organization at the central level;
- innovation and internal audit skills.

In the area of internal audit, various researches were carried out and various questionnaires were applied on aspects related to this activity, in order to see the quality and performance of both internal and audited auditors.

Such research was carried out by a specialist in the field[13], on aspects related to university studies completed by internal auditing, other specializations acquired by them and the types of organizations in which professionals in this field work (both in Romania and in Europe and on the world map), from which we selected the conclusions reached as a result of such research.

Of the various studies conducted, one of the most comprehensive and the results of which were also summarized in a report is the CBOK study (2010), conducted on the basis of responses received from 13,582 people in 107 countries (22 languages), with the mention that the response rates varied from one question to another. In 2015, a larger study was conducted, the final results of which were not published in full (at the time of writing the article). From this study we selected only 3 questions with related answers.

Question Q7 in the questionnaire: *What is the most recent level of education completed (except for professional certifications)?* We extracted from the answers only the part that refers to Romania. From the centralization of the answers it resulted that in Romania the internal auditors had at least higher education, because they are mandatory for the position of internal auditor. Consequently, it was found that in Romania the share of licensed internal auditors in the economy (38.46%) was higher than at the global level (29.40%) and at the European level (16.17%). Also, as a result of a possible prejudice related to the concentration of the internal audit activity on the financial-accounting aspects, compared to the world average (10.71%) and the European average (7.46%), in Romania they were the fewest internal auditors (5.77%) who graduated higher education in another field than economics.

Question Q8 of the questionnaire: *What were your specializations in undergraduate studies or the most significant fields of study?* Regarding the specializations completed by the internal auditors, the answers given show that worldwide those who had accounting as the main field of training dominated (50.36%); in Romania, the percentage of accounting graduates was 35.58%, and in Europe 30.66%.

In Romania, the situation of the graduated specializations was surprising, in the sense that a high percentage of internal auditors (34.62%) stated that they graduated higher education in the field of Internal Audit, compared to significantly lower percentages worldwide (23.62%) and European (27.79%).

Also, the important share of finance graduates (38.46%) working in the field of internal audit, compared to the global situation (24.93%) and the European level (28.22%). There are also significant differences in the case of technical studies, 13.46% of internal auditors in Romania participating in the study having technical studies, compared to only 5.84% at European level and 4.23% globally.

Question Q24 in the questionnaire: *What is the type of organization you currently work for?* Unlike the situation at global and European level, where most auditors worked for listed companies or private non-listed companies, in Romania, most auditors worked in the public sector, where the rules of organization and activity were more rigid and they had many peculiarities compared to the private environment.

Even if the internal audit function is an integral part of an organization’s control framework, it is obvious that it must also have its own control, in order to be able to monitor whether its performance is in line with its role and objectives. The International Standards for the Professional Practice of Internal Audit state: „The Chief Audit Officer shall develop and update a quality assurance and improvement program that covers all aspects of the internal audit activity”[14].

The Chief Audit Officer should develop and update a quality assurance and improvement program that covers all aspects of the internal audit activity.

This program must monitor the internal audit from at least two points of view: 1) to help the internal audit in increasing the added value and improving the operations; 2) to assist the internal audit in ensuring compliance with the internal audit standards.

The internal audit standard on this issue states that ”The quality assurance and improvement program must include both internal and external evaluations”[15].

Configuration of a model based on Balanced Scorecard (BSC) for the public audit activity of the Ministry of National Defence, with particularization on regularity/compliance audit missions

In the final part of this article, we propose, on the structure of the components of the Balanced Scorecard (BSC) method, to develop, first, a set of questionnaires on the evaluation of internal audit performance from the perspective of both internal auditors performing such missions and to those audited from entities of the Ministry of National Defence, without claiming that this set is exhaustive, covering the entire activity, being convinced that it can be improved, taking into account the specifics of the structures in this ministry.

Starting from this set of questionnaires, we might configure some performance indicators, quantitative and qualitative, both for internal auditors and for audited entities.

At the same time, we will point out how the connection between the internal audit and the expectations of the entities subject to this type of activity can be achieved.

A very important step in our research that we will carry out in the next period is to reveal the strategies of the internal audit department and the territorial structures in the army.

Last but not least, we will seek to highlight the elements of innovation and internal audit skills in this security and defines structure of the country.

To begin with, we present a questionnaire on the performance of internal audit from the perspective of commanders and other key positions in military entities, but taking into account the criteria followed by them in assessing the added value that internal audit can bring to auditors.

Study model on the evaluation of internal audit performance from the perspective of those audited, due to the internal audit concerns to permanently improve the quality of audit services provided and to help us respond as effectively as possible to your expectations, please complete this questionnaire taking into account of the last internal audit missions in which you participated.

The internal audit department and the territorial structures of the Ministry of National Defence will use the information provided by you to significantly improve the internal audit services offered by this specialized structure.

Audit mission(s) in which you participated as an auditor and year(s) in which they took place: ....

The position(s) held by you within the audited organization at the time of these audits: ....

Please tick only one answer, from the options offered to choose from:

General expectations from the internal audit					
1. At what level do you consider that the internal regularity/compliance audit adds value to your activity?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
2. At what level do you consider that the internal regularity/compliance audit has streamlined the activity within the structure in which you operate?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
3. At what level do you consider that the internal regularity/compliance audit helped you in ensuring the premises for the realization of future projects?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
4. What is your overall level of appreciation of the effectiveness of internal regularity/compliance audit of the entire organization you belong to?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
Appreciation of the work of the audit team					
1. What is your level of appreciation of the degree of achievement of the objectives set by the audit team at the beginning of the regularity / compliance audit?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
2. What is your level of appreciation on the effectiveness of communication between the regularity / compliance internal audit team and you as auditors?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
3. What is your level of appreciation of the efficiency and effectiveness of the work of the regularity / compliance audit team, according to the established time period?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
4. What is your level of appreciation of the responsibility and seriousness of the work performed by the regularity / compliance audit team?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
5. Do you consider that the deficiencies found by the internal regularity / compliance audit are properly argued and substantiated?	**To a very large extent**	**To a large extent**	**To a medium extent**	**To a small extent**	**To a very small extent**
6. Do you consider that the regularity / compliance audit recommendations are significant and relevant?	**To a very large extent**	**To a large extent**	**To a medium extent**	**To a small extent**	**To a very small extent**
7. Do you consider that the regularity / compliance audit report was issued in a timely manner?	**To a very large extent**	**To a large extent**	**To a medium extent**	**To a small extent**	**To a very small extent**
8. Do you think that the regularity / compliance audit report is characterized by clarity and logic?	**To a very large extent**	**To a large extent**	**To a medium extent**	**To a small extent**	**To a very small extent**
9. How do you assess whether the regularity / compliance audit team performed the evaluation of the internal managerial control at your unit?	**At a higher level of objectivity**	**At the medium level of objectivity**	**Low level of objectivity**	**At a very low level of objectivity**	**I can't appreciate it**
10. Did the questionnaires that were addressed to you in the regularity / compliance audit missions for the prior evaluation of the internal managerial control seem relevant to you through the questions that were addressed to you?	**At a higher level of relevance**	**At the medium level of relevance**	**Low level of relevance**	**At a very low level of o relevance**	**I can't appreciate it**
11. At what level do you consider that the regularity / compliance internal audit team has demonstrated that it has the necessary knowledge in the audited field?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
12. At what level do you consider that the regular / compliance internal auditors have shown professionalism?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
13. At what level do you think the regularity / compliance audit team was proactive (full of initiative)?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
14. At what level do you consider that the regularity / compliance audit team focused on essential aspects of the audited activity?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
15. At what level do you consider that the regularity / compliance audit team favoured a climate of collaboration between the auditors and those audited?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
16. How do you assess the findings of the internal audit team of regularity / compliance on the area of non-conformities detected in the activity of internal managerial control at the entity you belong to?	**At a higher level of objectivity**	**At the medium level of objectivity**	**Low level of objectivity**	**At a very low level of objectivity**	**I can't appreciate it**
17. How do you assess the recommendations of the internal audit team of regularity / compliance for the elimination of non-conformities detected in the activity of internal managerial control at the entity you belong to?	**At the highest level of adequacy**	**At the medium level of adequacy**	**Low level of adequacy**	**At a very low level of adequacy**	**I can't appreciate it**
18. How do you assess the degree of implementation of the recommendations of the regularity / compliance audit team as conformance and compliance with the deadlines established according to the recommendation sheet, for the entity you are part of?	**At the higher level of implementation**	**At the medium level of implementation**	**Low level of implementation**	**At a very low level of implementation**	**I can't appreciate it**

19. Were there certain aspects that you particularly appreciated as a result of the internal audit work? ……………..
20. Were there certain aspects that you particularly disapproved of in the internal audit work? ....
21. Other comments ………………………….................

Thank you in advance for your time and sincerity of answers

Study model on evaluating the performance of internal audit from the perspective of internal auditors, due to the concerns of the Profile Department of the Ministry of National Defence and professionals within this structure, to permanently improve the quality of services provided, please auditors to complete this questionnaire taking into account the problems you have encountered in the last internal audit missions you have participated in.

The internal audit department and the territorial structures of the Ministry of National Defence will use the information provided by you to significantly improve its work as a whole.

Audit mission(s) in which you participated as an auditor and year(s) in which they took place:

The position(s) held by you within the audit team at the time of these audits: ....

Please tick only one answer, using one of the following:

General expectations from those audited					
1. At what level do you appreciate the overall collaboration with the management teams at the regular / compliance internal audit missions carried out in the last 5 years?	**At a higher level**	**At a medium level**	**At a low level**	**At a very low level**	**I can't appreciate it**
2. Have the auditors reported any elements of incompatibility among the members of the audit team in the regularity / compliance missions carried out in the last 5 years?	**YES**		**NO**	**I DO NOT KNOW**	
3. If there were any objections from those audited regarding the way in which the members of the audit team assessed the risks in the regularity / compliance missions performed in the last 5 years?	**YES**		**NO**	**I DO NOT KNOW**	
4. Were there any objections from the auditors regarding the assessment of internal control by the members of the audit team in the regularity / compliance missions carried out in the last 5 years?	**YES**		**NO**	**I DO NOT KNOW**	
Assessment of the behaviour of the management teams in the audited units					
1. At what level do you appreciate the answers of the managerial teams in the internal audit missions of regularity / compliance performed in the last 5 years to the questionnaires for the evaluation of the internal managerial control?	**Very objective**	**Relatively objective**	**Objectives**	**Low level of objectivity**	**Very low level of objectivity**
2. At what level do you assess the behaviour of the management teams in the regular / compliance internal audit missions carried out in the last 5 years regarding the provision of all the requested information?	**At a very high level**	**At a high level**	**At a medium level**	**At a low level**	**At a very low level**
3. At what level do you assess the behaviour of the management teams in the regular / compliance internal audit missions performed in the last 5 years regarding the performance of the necessary tests in such missions?	**At a very high level**	**At a high level**	**At a medium level**	**At a low level**	**At a very low level**
4. How do you assess the reaction of the management teams in the internal audit missions of regularity / compliance performed in the last 5 years regarding the finding and reporting of irregularities by the audit team?	**Normal acceptance of irregularities**	**Normal but partial acceptance of irregularities**	**Unnatural to contest majority of irregularities**	**Unnatural to reject all irregularities**	**I cannot comment**
5. How do you assess the reaction of the management team to the draft regularity / compliance audit reports carried out in the last 5 years in terms of the findings and recommendations made?	**Normal acceptance of the findings and recommendations**	**Normal but partial acceptance of the findings and recommendations**	**Unnatural to challenge the majority of the findings and recommendations**	**Unnatural to reject all findings and recommendations**	**I cannot comment**
6. How do you assess the results of the reconciliation between the management teams and the audit teams regarding the finalization of the draft regularity / compliance audit reports carried out in the last 5 years?	**Favourable results with a balanced report format**	**Favourable results with a format of the report mainly in favour of the auditors**	**Favourable results with a pre-weighted report format in favour of those audited**	**Unfavourable resulting in the failure of reconciliation and recourse to other legal solutions**	

7. Were there any aspects that you particularly appreciated as a result of the internal audit work of those audited? ....

8. Were there any aspects that you particularly disapproved of in the internal audit work by those audited? ....

8. Other comments ……………..

Thank you in advance for your time and sincerity of answers.

Performance indicators, both quantitative and qualitative, for both internal auditors and audited entities.

Quantitative performance indicators for internal auditors						
1) Number of compliance / regularity audit missions in which an auditor has been involved in the last 5 years (example: 4 missions in the last 5 years of activity);	*1 mission*	*2 mission*	*3 mission*	*4 mission*	*5 mission*	*A higher number 5 (specify how many)*
2) Position held in the internal public audit team in compliance / regularity audit missions performed in the last 5 years (example: in 3 missions - team leader and in 2 missions - team member in the last 5 years of activity);	**Team Leader**			**Team Member**		
3) Number of recommendations made by audit teams in compliance / regularity audit missions performed in the last 5 years (example: 2 recommendations in 3 missions; 4 recommendations in 2 missions performed in total in the last 5 years of activity; etc.);	**1 recommen-dation /.... missions**	**2 recommen-dations /..... missions**	**3 recommen-dations / ...... missions**	**4 recommen-dations / .... missions**	**5 recommen-dations/.... missions**	**A larger number of 5 recommen-dations (specify how many) /.... missions**
4) Number and share of recommendations not approved / not adopted by the heads of the audited entities at the regularity / compliance missions carried out in the last 5 years (example: 2 recommendations in 3 missions carried out in the last 5 years of activity, representing 10% of the total recommendations in these missions; recommendations in 2 missions carried out in the last 5 years of activity, representing 20% of the total recommendations in these missions; etc.)	**1 recommen-dation (... %)**	**2 recommen-dations (... %)**	**3 recommen-dations (... %)**	**4 recommen-dations (... %)**	**5 recommen-dations (... %)**	**A larger number of 5 recommen-dations (specify how many) /.... missions**
Qualitative performance indicators for internal auditors						
1) Qualifications obtained in the service assessments in the last 5 years of activity as an internal public auditor (example: very good in the last 3 years; good in the last 2 years; etc.);	**Very good**	**Good**	**Satisfactory**		**Unsatisfactory**	
2) The nature of undergraduate studies held or acquired by internal public auditors in the last 5 years (example: 1 bachelor's degree in economics and 1 bachelor's degree in law; 1 bachelor's degree in technical field and 1 bachelor's degree in human resources; etc.);	**Economic**	**Legal**	**Technical**	**Informatics**	**Human resources**	**Other fields**
3) The nature of higher master's degree studies held or acquired by internal public auditors in the last 5 years (example: 1 master's degree in economics and 1 master's degree in law; 1 master's degree in technical field; etc.);	**Economic**	**Legal**	**Technical**	**Informatics**	**Human resources**	**Other fields**
4) The nature of the doctoral studies held or acquired by the internal public auditors in the last 5 years (example: 1 doctorate in the economic field; 1 doctorate in the legal field; 1 doctorate in the technical field; etc.);	**Economic**	**Legal**	**Technical**	**Informatics**	**Human resources**	**Other domains (of the domain that is not part of those listed)**
5) Professional qualifications acquired by the internal auditor in the last 5 years related to the profession of public internal auditor (example: chartered accountant and mediator; financial auditor, chartered accountant and evaluator ANEVAR; lawyer and mediator; etc.)	**Financial Officer; Expert accountant; tax consultant; evaluator ANEVAR; insolvency practitioner**	**Notary public; lawyer; Legal Adviser; mediator; bailiff; and so on**	**Technical expert; architect; energy auditor, site manager; geodesy; and so on**	**Certified computer scientist**	**Human resources inspector**	**Other fields (specify the liberal profession in other fields than those listed)**
6) Percentage of recommendations implemented by audited entities out of the total recommendations made by audit teams in compliance / regularity missions performed in the last 5 years (example: in 3 missions below 50%; in 4 missions between 81% and 90%; etc.)	**Under 50%**	**Between 51% and 60%**	**Between 61 and 70%**	**Between 71 and 80%**	**Between 81% and 90%**	**Between 91% and 100%**
Quantitative performance indicators for audited entities communicated by authorizing officers						
1) Number of regular public regularity / compliance audit missions to which the entity has undergone in the last 5 years (example: 1 mission; 2 missions; 3 missions; etc.)	**1 mission**		**2 mission**		**3 mission**	
2) Number of recommendations made by audit teams in compliance / regularity audit missions carried out in the last 5 years and accepted by authorizing officers (example: 2 recommendations in 3 missions; 4 recommendations in 2 missions in total in the last 5 years of activity etc.)	**1 recommen-dation /.... missions**	**2 recommen-dations / ..... missions**	**3 recommen-dations / ... missions**	**4 recommen-dations / ... missions**	**5 recommen-dations/.... missions**	**A larger number of 5 recommen-dations (specify how many) /.... missions**
3) Number of actions foreseen in the risk register by types of risks compared to the number of risks manifested and resulting in measurable negative consequences (example: 20 risk prevention actions / 2 manifested risks);	**Between 1-20 shares /… .represented risks**	**Between 21-40 shares //….represented risks**	**Between 41-60 shares /… represented risks**	**Between 61-80 shares /… represented risks**	**Between 81-100 shares /… represented risks**	**Over 100 actions /….represented risks**
Qualitative performance indicators for audited entities communicated by authorizing officers						
1) Ratings obtained from inspections, controls or other forms of verification (or other specific performance parameters used to assess military organizations) by the audited entity, after the last regularity / compliance internal audit mission or the last such mission performed in the last 5 years (example: very good in the last 3 years; good in the last 2 years);	**Very good (similar indicator)**	**Good (similar indicator)**		**Satisfactory (similar indicator)**		**Unsatisfactory (similar indicator)**
2) Number and weight of recommendations applied by the heads of audited entities to regularity / compliance missions carried out in the last 5 years (example: 8 recommendations in 3 missions carried out in the last 5 years of activity, representing 90% of the total recommendations in these missions; 15 recommendations in 2 missions carried out in the last 5 years of activity, representing 90% of the total recommendations from these missions; etc.)	**Up to 10 recommen-dations in.... missions (... %)**	**Between 11 and 20 recommendations in ... missions (... %)**		**Between 21 and 30 recommendations in ... missions (... %)**		**Over 30 recommendations in… missions (… %)**
3) Number and share of recommendations not applied by the heads of audited entities to regular / compliance internal audit missions performed in the last 5 years (example: 2 recommendations in 3 missions performed in the last 5 years of activity, representing 5% of the total recommendations in these missions; 1 recommendation in 2 missions carried out in the last 5 years of activity, representing 10% of the total recommendations in these missions; etc.)	**1 recommen-dation (... %)**	**2 recommen-dations (... %)**	**3 recommen-dations (... %)**	**4 recommen-dations (... %)**	**5 recommen-dations (... %)**	**A larger number of 5 recommen-dations (... %)**

These indicators will be supplemented by studying the audit reports in exclusive regularity/compliance or assurance missions, complex, which also included elements of regularity/compliance performed in the last 5 years by teams of internal auditors from the management and territorial structures.

How to make the connection between the internal audit and the expectations of the entities subject to this type of activity

Elements of connectivity between internal auditors and audited entities					
1. Correlation between the degree of risk of the audited entity and the number of regularity / compliance audit missions performed at a military organization in the last 5 years (high risk / 2 missions; low risk / 1 mission; etc.)	**High risk /… audit missions**	**Medium risk /… audit missions**		**Low risk /… audit missions**	
2) Correlation between regularity / compliance audit missions and the results obtained by the audited units after the last mission performed on them in the last 5 years (example: 1 mission / positive ascending results after mission; 2 missions / descending results after first mission and positive ascending after two missions; etc.)	**1 mission / ascending positive results (from good to very good)**	**1 mission / consistently positive results (from very good to good)**	**1 mission/ positive descending results (from very good to good or from good to satisfactory)**	**2 missions / ascending positive results (from good to very good)**	**2 missions / results constantly positive (from good to very good) or decreasing (from very good to good or from good to satisfactory)**
3) Correlation between the level of implementation of the measures and the measures established by the audit reports following the regularity / compliance missions in the missions of the last 5 years (percentage between 80% and 99%)	**100%**	**Between 80% and 99%**	**Between 60% and 79%**	**Between 50% and 59%**	**Under 50%**

These elements will be complemented by studying the audit reports in exclusive regularity/compliance or assurance missions, complex or including elements of regularity/compliance, prepared by teams of internal auditors from the management and from territorial structures and from the performances of the entities audited by these teams of auditors and obtained in the last 5 years.

Strategies of the internal audit department and territorial structures in the army

Elements of the strategy **of the internal audit department and the territorial structures of the army for the next period**
1) Continuous improvement of the professional training of internal auditors in accordance with the requirements of international standards and with the trends manifested at international, European and national level in this field
2) Making persistent efforts to obtain the certification of internal public auditors of as many professionals who work in the internal audit structures of the Ministry of National Defence
3) Recruitment in the activity of public internal audit from the army of as many professionals who have qualifications in professions that have close connections with the internal audit activity (financial auditors, accounting experts, tax consultants, ANEVAR certified evaluators, lawyers with legal qualifications, notary, legal advisor, bailiff, mediator, certified IT professionals, certified human resources specialists, certified public procurement specialists, certified engineers in logistics and maintenance, etc.)
4) Improving the planning process of internal audit missions by moving from a planning based on periodicity to one focused on major risks, threats and vulnerabilities in the military field;
5) Supporting the army leadership in the decision-making process, by conducting relevant and systemic audits, focused on the areas considered priority in the military organization;
6) Improving and adapting the organizational structure of the Internal Audit Department to changes in the military or outside the entity to ensure the relevance and efficiency of the audit;
7) Development of clear and applicable methodologies, representing "audit manuals" and including case studies and practical examples on the approach to types of audits in areas specific to the military organization;
8) Dissemination in the army, with a preventive role, on auditable areas, of the main dysfunctions identified by the internal audit teams, in the form of a Preventive Bulletin of the military internal audit;
9) Improving the flow of information in the field of audit within the Internal Audit Department by implementing an audio-video communication system with the territorial sections;
10) Increasing the degree of automation of the internal audit activity, reducing the period of internal audit missions by using IT means;
11) Increasing the value brought by the activities of the Internal Audit Department, so that the audit becomes a function of strategic importance in the army;
12) Carrying out activities without the existence of events related to possible acts of corruption or violations of the Code of Ethical Conduct

This part of the research record the actions planned and executed by the management and the territorial internal audit structures in the army to achieve the strategic objectives of these audit structures.

The elements of innovation and the skills of the professionals from the internal audit department and from the territorial structures

Elements of innovation and the skills of professionals from the internal audit department and from territorial structures
1) Appropriate use of the full range of internal audit methods and techniques, depending on the specificity of the audited entity or the evolution of each audit mission.
2) Making the most of the possibilities for large-scale digitization of the internal audit activity.
3) Reviewing the ways of determining risks in the internal audit activity in order to objectively identify the entities and activities in the army that need to be audited with priority according to the level of risks.
4) Reviewing the evaluation modalities of the internal managerial control in the internal audit activity in order to identify the weaknesses of this activity and the adequate reconfiguration of the entire managerial activity at the army entities.
5) More appropriate correlation of internal audit actions with the actions of other control filters (internal managerial control; public external audit) to ensure complementarity of actions, avoid duplication and increase the efficiency of the actions of the 3 types of filters.
6) Systematic evaluation of the efficiency and quality of internal audit missions in the army by carrying out separate missions to evaluate public internal audit activity, in parallel with the application of questionnaires adapted for this purpose on audit teams, but also on those audited for the most accurate self-assessment the activity of each auditor and audit team.

In this last part of the research there are extracted from the internal audit reports that run until the end of this activity, the elements of innovation and professional skills that were used, and if this did not happen, it is recommended elements, based on the situations encountered in the audits carried out in recent years, to be used in future missions, in order to increase the quality and efficiency of such activities.

Conclusions

The regularity/compliance audit represents a specific type of internal audit meant to offer to the public and private entities an assurance regarding the effectiveness of the risk management, control and governance processes performed at their level.

The Balanced Scorecard (BSC) model, by the quality of harmoniously combining the quantitative and qualitative aspects of research, offers the possibility to the responsible factors in the area of internal audit to look for solutions to improve and modernize it, especially in the regularity/compliance missions, so that the internal audit is connected as closely as possible to the requirements and needs in continuous dynamics of those audited.

The set of questionnaires, performance indicators, elements of innovation, connection and strategies that we have configured according to the requirements of BCS, for a research that we will perform among auditors and those audited in military structures, we hope to help us identify solutions to enhance the contribution of regularity/compliance internal audit missions to improving management activity in military entities.

NOTES:

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ASPECTS OF ROMANIA’S MARITIME STRATEGY – PAST AND PRESENT

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The historical research through the study of documents allows us an analysis of the evolution and maturation of strategies in general, and maritime and naval strategies in particular, on both a global and national scale, the objective of this study being knowledge and understanding of strategies over the ages. This study is relevant both for the military environment in terms of direct threats to territorial integrity and for the private sector, taking into account the economic importance of maritime and river borders.

Keywords: naval power; naval strategy; maritime strategy; maritime power.

The evolution of warfare, especially naval warfare today poses countless challenges, and deciphering and solving them by empirical methods has become insufficient. Increasingly complicated and sophisticated means integrating advanced technologies increase the need for abstraction and modelling of strategic reasoning.

The epistemology of warfare and therefore of the work of the military body will enable commanders and, in general, the personnel of defence staffs to respond effectively to threats through rigorous planning combining cognitive tools to create bridges between theory and practice. The rationale for a strategy is that it can be put into practice, i.e., the epistemic foundation of the object of military science, i.e., armed combat, is translated into the successful implementation of a military strategy. At the same time, it must be borne in mind that strategic action can be confronted with totally unforeseen and un-researched circumstances for which doctrine or strategy offers no solutions.

Classical military theory considers strategy as the exclusive domain of leadership, meaning the art of conducting warfare, obviously to achieve political goals. Strategy elaborates the logic and perspective of military combat, and tactics are mainly concerned with the effective use of means in combat. The relationship between politics, strategy, and tactics was clear, with each level dealing exclusively with the role of its domain, in the broader practical action.

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However, as strategic armaments developed in the second half of the 20th century, e.g., strategic aviation, strategic missiles, nuclear submarines carrying nuclear weapons, etc., the evolution of technical military means out of the tactical sphere was seen to play a decisive role in the conduct of conflicts and, at the same time, determined the evolution of all components of military art. The decisive role of strategic weapons in international relations also determined relations between the major powers, giving rise to a strategy of means, with the whole military strategy focused on an arms race competition arm with advanced technical means.

Nowadays, the word strategy is ubiquitous in all activities of social life, businesses, institutions, and corporations; also, the adoption of this word, as a process or concept, in many fields and disciplines is extremely generalized, to the extent that ”no human activity, however simple, banal or intimate, can now be reasonable without a strategy”[1].

Whether we refer to strategy as the process of the authorities emitting it, or to strategy as the cognitive function of an individual, the proliferation of this word has attracted countless meanings, definitions, and understandings, but the one constant throughout its journey has remained its importance.

For a comprehensive understanding of the term, we will analyze the theoretical evolution of strategy, thus in the pre-Napoleonic period, the *stratagemata* (*stratagema*) of the ancient Greeks in the 4th century BC implied the use of deception or trickery to gain either military or political advantage, and the term *strategika*, emphasized art, intuition, and intelligence, in a nutshell, the genius of the commander (general)[2].

At the same time, Chinese generals and philosophers in Asia were also taking a theoretical approach to strategy, notably through the voice of Sun Tzu (544 BC - 496 BC), whose writings are studied and applied today in almost every military and civilian domain. In the contemporary translation of The Art of War, the word strategy appears several times, and essentially similar to the Greeks, the strategy indicates the art, the general’s skill in gaining an advantage over the adversary, but, unlike the Greek view, it is not necessarily represented as the manner of organization or deception but rather as the general’s adaptability and flexibility with regard to the enemy and circumstances[3].

Regarding maritime strategy, the concept did not exist, but looking back to ancient Greece, Thucydides (460-400 BC), a Greek historian and politician, mention maritime power as the condition of well-being. He also dictated the ”naval policy” of Athens, making it the first city-state to gain advantages by using its military and commercial fleets, and in his writings, he notes, ”There was no warfare on land that resulted in the acquisition of an empire”[4]

The first step towards the abstraction of the term strategy was accomplished in 1770 by Jacques Antoine Hippolyte, Comte de Guibert (1743 - 1790), a French intellectual and military practitioner, who, at the age of 27, having already accumulated sufficient military experience, published the work ”Essai général de tactique”, in which military science is treated systematically, acquiring a major influence. He differentiated between elementary tactics, which were extracted from ”grand tactics”, which in turn would become the strategy known at the time as ”the art of the general”[5].

The proper introduction of the word strategy (strategique) was attributed to Paul Gedeon Joly de Maizeroy (1719-1780) in 1771, who described the term as sublime, representing ”the art of the commander, to wield and employ appropriately and with adroitness all the means of the general in his hand, to move all the parts that are subordinate to him, and to apply them successfully”[6].

Summing up the writings up to that time, the lower aspects of war were those aspects that concerned rules, principles, aspects that concerned tactics in general, and the higher aspects of war concerned situations ”which were never the same, which are entirely the domain of genius”, ”knowledge of the command of armies”, ”the art of drawing up plans for a campaign and directing its operations”[7].

A further idea that emerged was that strategy could be described and understood in terms of geography, based on physical and mathematical considerations, and Heinrich von Bülow (1792-1846) was the man behind this theory.

The holistic understanding and approach to warfare had its starting point in Napoleon’s conquests that changed the character of European conflicts. Wars were no longer fought by small professional armies led by an aristocratic elite, but by armies of nationalist recruits led by professional personnel and supported by society.

The new paradigm of war, namely the engagement of the whole of society, i.e., the popular masses in war, generated the writings of Baron Antione Jomini, General Carl von Clausewitz, and General Helmuth von Moltke, all of whom developed strategy and established its role in the war equation.

For Jomini (1779 - 1869), for example, strategy existed as an integral part of the art of war defined as ”the art of conducting the war on the map” and the main purpose was to mass forces at the decisive point of a campaign[8]. There is some resemblance to Bülow’s theory, outlined above, and that is the focus on answering the ‘where’ rather than the ‘why’ question. Jominian strategy, although attributed to the commander is stated to be constant, whereas tactics were dynamic thus ”Strategy alone will remain unaltered, with its principles the same… since they are independent of the nature of the arms and the organization of the troops”[9].

Carl von Clausewitz’s (1780 - 1831) perspective on strategy provides us with a deeper understanding that was to become the foundation of today’s philosophies on approaching war. Clausewitz’s definition of strategy is both simple and comprehensive: ”Strategy is the use of engagements for the object of war”, and furthermore ”strategy must study combat in relation to its possible results”. Simply put, the art of war is in tactics and strategy. Tactics refers to the form of individual engagement, and strategy regards the use of tactics. Tracing Clausewitz’s writings, it becomes obvious that it is not the action itself that is to be classified as tactical or strategic, but the consequences, the effects of that action which determine its tactical and/or strategic nature[10].

For Clausewitz, Sun Tzu’s ideal of achieving victory without fighting becomes an exception or even an impossibility, admitting that such a case could only occur in theory[11].

The German General Helmond von Moltke (1800 - 1891) offers a new perspective, although influenced by Clausewitz, developed his own theories of warfare so he defines strategy as ”Strategy is a system of makeshifts. It is more than a science. It is bringing knowledge to bear on practical life, the further elaboration of an original guiding idea under constantly changing circumstances. It is the art of acting under the pressure of the most demanding conditions...That is why general principles, rules derived from them, and systems based on these rules cannot possibly have any value for strategy”[12].

The introduction in 1890 of the sea power theory by the American Admiral Alfred T. Mahan (1840 - 1914) in his well-known work ”The Influence of Sea Power upon History 1660- 1783” has changed the course of history thus revolutionizing military thinking in general. Mahan identifies three elements that are essential for the development of sea power: the creation of forwarding points of support: ports, military bases, etc.; strong, powerful positions in straits and on the main trade routes; and the availability of a globally present maritime fleet capable of transporting goods and men rapidly to strategic points. It conceptually delineates maritime power in two ways: a functional one through geographical aspects, population size, mentality, the form of government, and an institutional one through the state’s interest in the planetary ocean, in other words, the naval policies by that state[13].

Mahan managed through his work to anchor maritime concepts in the strategic perspective, enabling maritime power to permeate the highest spheres of military thinking, introducing naval strategy into military strategy.

A new vision of maritime strategy was introduced with the publication in 1911 of Sir Julian Corbett’s (1854 - 1922) ”Principles of Naval Strategy”. He conceptualized maritime strategy as part of foreign policy, thus laying the foundations for naval diplomacy. Corbett states that maritime power would have a political side thus placing maritime strategy in the hands of the politicians and it should reflect the will of the state and serve its naval interests.

Compared to Mahan, Corbett’s main emphasis is on controlling sea lines of communication, leaving naval combat itself in the background. In his view, the success of a naval combat does not necessarily represent a victory at a strategic level, alternatively maintaining control of own maritime communication lines and blocking the enemy ones can have a strategic purpose[14].

For Julian Corbett, command of the sea, or control of the sea in time and space, should be a primary objective of naval forces.

I believe that the theories formulated by Corbett are applicable to the Romanian naval forces, especially as he has established generally valid concepts that can be applied without advanced technological development.

The French Admiral Raul Castex (1878 - 1968) in his five-volume work ”Theorie Strategiques” of 1929-1939, the most extensive treatise on maritime strategy in existence, proposed an analytical method of approaching it, thus borrowing Mahan’s historical method, focusing more on strategy as a whole and not only on naval strategy. He wrote that in addition to land or naval strategy there is an overall strategy (what might today be translated as national security strategy) that transcends and coordinates the others. He regarded strategy as an art rather than a science, asserting that the simple principles governing strategy cannot be considered as rigid, mathematical formulas but flexible guidelines leaving room for creative imagination and military genius[15].

German Vice-Admiral Wegener (1875 - 1956), a leading German naval strategist of the interwar years, published in 1929 his major work ”Naval Strategy of World War”. He strongly argued that Germany’s policy of building a large battle fleet without securing free access to the open waters of the Atlantic was essentially futile. Wegener was influenced by Mahan and Clausewitz, however, pointing out that Germany had built a fleet without considering geographical conditions.

Furthermore, Wegener also argued that a decisive naval battle was only significant to the warfare if it removed the obstacles that block the achievement of the strategic objective in a war at sea. He explained that war at sea consists of a tactical and a strategic part. The tactical part is the action, while the strategic side is the effect. If the strategic side is missing, as it was in the North Sea during the First World War, then the effect is missing and only the tactical part remains. If the strategic objective is missing, then the battle ceases to be a means. The battle becomes aimless, and therefore an end in itself. For Wegener, a naval battle was a means to an end, not an end in itself[16].

Wegener, systematically concluded that maritime power is a product of the following factors: fleets (war, merchant, fishing along with human resource), bases (ports, shipyards, naval infrastructure, geostrategic position), and maritime consciousness or thinking (the culture and attitude of the state-society towards its maritime i.e., the state’s naval policy)[17].

Although Russia is eminently a tellurocracy, it also contributed to the maritime strategy theory through Admiral Gorshkov (1910 - 1988), whose series of 11 articles published between 1972 and 1973 introduced new elements in the calculation of maritime power, namely the maritime concern of the state to exploit the Planetary Ocean for its own benefit[18].

As military technological breakthroughs changed the character of warfare (railways, telegraph, etc.), along with mass recruitment, military thinking once again changed its vision of strategy, so that it would no longer take particular account of the expansion of the battlefield, and could no longer be applied to a single battle, but was aimed at a much-expanded context which would have to take into account social, economic, and political aspects. Although it will continue to be associated with the military, separated from politics, strategy is beginning to take on new dimensions of subordination concerning politics.

The influences of Clausewitz and Moltke, as well as participation in the First World War, left their mark on the writings of B.H. Liddell Hart (1895-1970). Thus, the 20th century is dominated by his conceps launched in 1954, being the first theorist to introduce politics into the definition of strategy, stating that, (as Clausewitz and Moltke also asserted) since war is governed by politics, strategy must take it into account in its formulation and implementation, further claiming that strategy remains the responsibility of the commander, seen as ”the art of the general”[19]. The simple definition he implements is ”the art of distributing and applying military means to fulfill the ends of policy”[20].

Liddell Hart also felt the need to improve the military lexicon of his time by introducing the term Grand Strategy, which was responsible for setting objectives, calculating and developing the economic and human resources of a state to support the war services (army), and providing the basis for the actions of military commanders[21].

Although the newly introduced definition changed the course of strategic theory, the nature of strategy could not be fully understood until Liddell Hart spoke of the ”indirect approach”.

The introduction of the indirect approach to strategy was the spark of genius in his work, which involved more of a way of thinking, an attitude, and a way of approaching the problem, rather than studying the map.

Based on Liddell Hart’s writings, in 1980, Edward Luttwak (born in 1942 in Arad County, Romania) created the levels of war from the two strategic levels and thus introduced five levels of warfare: technical, tactical, operational, theatre strategy, and grand strategy. All these levels are not separate but rather interconnected. In the same paper, Luttwak stated that although the definitions of the levels are arbitrary, the natural delineation between them is provided by the scale of action and the variety of means employed[22].

The introduction of the term operational art into military terminology came as a natural consequence of the thinking of Clausewitz and Liddell Hart set out in words by Luttwak in his studies[23], and although he did not arrogate the term to himself, he was among the first Western theorists to mention it and required its integration into military doctrine. The term was first coined by the Russian Aleksandr A. Svechin in 1927[24]. By introducing the operational level, the military was empowered with operational art, while at the same time transferring strategy to the higher (politico-military) leaders[25].

In 1989, Colonel Arthur Lykke, simplistically defined strategy by an equation as follows: Strategy (S) = Scopes (ENDS-E) + Ways (WAYS-W) + Means (MEANS-M)[26].

Lykke’s article focused primarily on military strategy, which he separated into ”operational” and ”force development”. For Lykke, the operational strategy was synonymous with operational art and dealt directly with plans of action, while force development resided in civilian-military discourse and ensured that the military had resources commensurate with expectations[27]. The success of this theory was resounding with adherents, including those from the present day.

In terms of contemporary theory, Hew Strachan establishes a new definition of strategy as ”it is about doing things, about applying means to ends” acting ”at the interface between operational capabilities and political objectives”[28]. Colin Gray, on the other hand, has provided a different definition of strategy, describing it as “direction and use made of means by chosen ways in order to achieve desired ends”[29].

As far as theories on maritime strategies of today are concerned Geoffrey Till synthesizes all prior theories on maritime power, concluding that it stems from sources such as: *maritime community, national resources, appropriate forms of government, geographical conditions* that will determine its constituent elements such as: *commercial navy, port infrastructure, bases, harbours*, etc. and last but not least *forces and means of warfare*[30].

Romanian maritime military strategy

The foundations of the Romanian Naval Forces originated in the Flotilla Corps established by the High Order 174 of 22 October 1860 by the ruler Alexandru Ioan Cuza[31].

Recorded as the first writing regarding the maritime domain in the Romanian military literature, in the volume ”War on the Danube” published in 1905, belonging to officers Eugeniu Botez (1877-1933) and Nicolae Kirițescu, valuable conclusions, lessons identified and learned are specified, as well as details on the strategic importance of the Danube River[32].

A second work appeared in 1909, written by Constantin Nic Păun, called ”The mission of our navy”, in which he discussed both the importance of the maritime domain for the states from an economic and political point of view and the missions of the navy for the protection of the country’s maritime and river borders[33].

Romanian military specialists in the maritime domain, dating back to the beginning of the 20th century, tried through various studies and writings to convince the political class and public opinion of the need to exploit the maritime and river borders in order to develop the maritime economy by creating both a commercial and a military fleet.

In his participation at the Conference ”Maritime Power as a factor of civilization and national defence” held at the Romanian Naval League headquarters, in 1928 in Bucharest, Commander Ioan Bălănescu (1878-1946), defines maritime power as ”the totality of the means by which a country exercises its rights in the exploitation of the maritime domain, in order to obtain all the economic, political and military benefits, is called maritime power”[34], adding that maritime power is based mainly on three elements: the merchant navy with its ships and commercial ports, the military fleet with its ships and military ports and, of course, on the wealth created by the maritime realm. Also, in the author’s stand view, the state’s naval policy dictates its maritime power through the development of naval programs or plans concerning the growth of the commercial and military fleets, the advancement of specific maritime education, practically the development of the Romanian maritime society.

In addition to many other specific articles such as ”Naval Offensive and Defensive” (Revista Marinei Române, 1929, no. 4), in 1929 in the 3rd issue of the Revista Marinei Române, he published the article ”The Sea Fleet, Duty of our Nation”[35] in which he highlighted aspects regarding the need for the development of the Black Sea Navy.

Analyzing the paper ”We need a Military Navy”[36], the authors, commanders Eugeniu Rosca (1884-1950) and Emanoil Koslinski (1889-1951) noted that ”it is of paramount importance for a state that has an open sea route to create a national merchant fleet and ... it is inconceivable to develop the merchant navy without creating and developing in parallel the Military Navy, designed to defend it. Both navies are indissolubly connected: together they constitute the maritime power of the country”[37]. Also, an important point covered in the paper is the definition of maritime power in close connection with economic, political, social and military factors. The ”naval plan” presented in this scientific work establishes the type, characteristics, and the number of ships, the composition of the air fleet, the organization of the naval base, the equipment needed to defend the coasts, the resources needed to train personnel, etc.

In his work ”Naval Strategy”[38] published in the publication ”Marina Română” in 1930, Lieutenant Commander Horia Macellariu (1894-1989), quoting from the treatise ”Strategic Theories” belonging to his professor of naval strategy, the French Admiral Castex, introduced new terms and concepts into the Romanian maritime military thinking, presenting generalities of strategy, but also specific notions of naval strategy by naming the missions of the naval forces regarding maritime communications, with their evolution and their influence on the development of the state, as well as analyzing the notion of command of the sea.

As a result of the Romanian Navy's participation in the First World War, practically the second war it took part in, the first being the War of Independence in 1877 (this being mainly on the Danube River), a young navy, at the beginning of its path, Captain Eugen Săvulescu (1901-1964) published the article ”The aspirations of modern Romania and our naval policy” in the magazine of the Romanian Naval League, *Marea Noastră*, which represented the first analysis of our own missions in the First World War.

The interwar period was a period of growth for Romania's maritime power, therefore, the military and commercial navy developed through the acquisition of naval platforms (ships, seaplanes, submarines), the augmentation of personnel, and the development of institutions with a specific naval profile.

From its foundation until the outbreak of the Second World War, the Romanian Navy went through a long series of naval development programs/plans, which originated in 1881, when the first naval program was sent to King Carol I for approval, followed by one in 1888, and then in 1906, when the Navy received a substantial fund. Later, in 1921, a fourth modernization program appeared, followed by the 1924 program, which was largely completed even though the funds had been halved. The sixth naval program in 1929 was called the Romanian Naval Program, drawn up in two versions, maximally and minimally. The year 1938 brought a new naval program, followed by that of 1939, which also included studies on Romania's naval situation concerning possible adversaries, and the ninth program, elaborated in 1940, was a programmatic document also called the Naval Endowment Plan ”Hypothesis 15”[39].

The upsurge in development was halted by Romania's entry into the Second World War, and the consequences of this war were disastrous for both the military and merchant navies. However, from 1960 onwards, when the Communist Party came to power, Romania experienced its most prosperous period in terms of maritime activity. The Second World War, with its naval campaigns, highlighted the importance of maritime power. Romania's military and merchant navy began its rise with an extensive naval build-up program.

Although Romania was under the influence of the Soviet Union, military specialists also analyzed the works of Western authors, and one of the great theoreticians of the communist period was Major General Corneliu Soare, under whose editorship several books were published, including ”Contemporary Military Theories”, ”History of Romanian Military Thought”, etc.

The conclusion of Romanian military specialists regarding strategy was that ”the subordination of military strategy to state policy was and remains an objective necessity determined by the essence of war as a social phenomenon”[40].

The use of technologies as force multipliers since the 1991 Gulf War has highlighted the fact that technology can no longer be entirely excluded from the strategic equation.

Today, the level of development of science and technology and their use in warfare have the power to influence both state policy and military art. Moreover, the military field of innovation is starting to be overtaken by the civilian one, the conquest of space by commercial enterprises raises serious questions about the military approach concerning threats from the cosmos, and by this, I refer to military systems and equipment using satellite signals (positioning systems, navigation systems, communication systems, etc.).

As far as the maritime domain is concerned, today's military specialists consider that a ”strategy must be defined by the following characteristics: it must be proactive and anticipatory; it must be hierarchical, i.e., it must clearly define the objectives, define and identify the ways to achieve them, identify and provide the possibility of developing the means to achieve the objectives”[41], and the absence of a maritime strategy for Romania creates a void for economic and national security.

Conclusions

We can assert that the defining elements of a strategy are based on a pertinent analysis of the current situation, followed by the most realistic identification of the critical aspects requiring improvement, which will be translated into policies aimed at solving them and ending with a coherent and coordinated action towards the implementation of the guiding policies.

The essence of a strategy is not just about giving guidance for implementation, but most importantly, about orientation based on the resources available, which, in most cases, are intended to constrain the area of action. Thus, constraints and restrictions also apply in the case of strategy development. Another very important aspect is that the proposed objectives must be measurable and achievable.

Most often mistakes made in adopting a strategy are as follows: failure to correctly diagnose the problem, inadequate planning of resources, setting objectives that are too ambitious or too easily achievable, and last, but not least, false presumptions about own competence.

Strategy should not be seen as a product of political or politico-military entities, but rather as a process, one that evolves as circumstances change.

I believe that the development of a strategic culture based on our own, historically acquired, but also borrowed, assets could guide us towards the adoption and implementation of a coherent and realistic maritime strategy, and that this process will increase Romania's maritime power.

I believe that it is necessary to distinguish between the national maritime strategy and the naval strategy, the former concerning the acceleration and enhancement of the state's maritime power, and the latter basing its courses of action on naval power, i.e., naval forces, but not limiting itself to using them exclusively, but rather involving all categories of forces, one of its objectives being the security of its own sea lines of communication. The launching of a maritime strategy integrating aspects of maritime legislation review, reform of maritime and port administrations, building a merchant fleet (the strategic component of state security), financing projects and participation in international maritime projects will enable the development and exploitation of the sea for the benefit of the state.

The overview of the path followed by Romanian maritime philosophy up to the present is a natural condition for understanding the progress made throughout the years of its existence, and the periodical elaboration of syntheses will highlight both the particularities and the originality of the autochthonous military specialists.

As a result of this analysis, a very important aspect to point out is that in order to theorize the content of military science, both theoreticians and practitioners are needed.

The maritime feature of Romania is the state's gateway to a better future. The power of a coastal state is conditioned by the maritime development of the state, i.e., the maritime industry with all that it implies, ports and port terminals, shipyards, exploration and exploitation of the marine environment, including tourism, are strategic objectives, and protecting them requires a strong naval force, not necessarily numerous, but sufficiently equipped and very well trained.

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ENSURING LEGAL SECURITY IN THE CONTEXT OF THE EVOLUTION OF CYBER THREATS

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Ensuring legal security, a primary condition of the rule of law, is nowadays enhanced by the dynamics and complexity of the impact of cyberspace. Although in general, when discussing cyber threats, the issue is approached from the perspective of attacks on network systems and information systems, complex cyber threats can also be generated by the legal system. The collection and processing of personal data is carried out through a process we call Big data, which ensures the conversion of everyday life into a data stream. The result is a new way of social life, based on continuous follow-up and offering unprecedented opportunities for social discrimination and behavioral influence. With this approach we are trying to submit to the debate the guarantee of a climate of stability created by the legal system in the context of cyber threats.

Keywords: legal security; cyber security; defence and national security.

The rule of law is enshrined in Article 1 (5) of the Constitution[1]. The significance of this fundamental concept in practice is that, in addition to the observance of the law by the entire population, state institutions also have the obligation to comply with the law and, of all state institutions, the legislature has the most stringent need to fulfill this obligation in the sense that the legislative activity must be carried out within the limits and in accordance with the fundamental law.

As Parliament is the sole authority with the power to legislate, as a result of the exercise of legislative power, it also has an additional obligation, namely to ensure the quality of the law, as it must be known and understood by its subjects. The need to know and understand the law as a result of its formulation in a clear, precise and predictable manner is the way to comply with the principle of legal certainty from the perspective of its addressees.

Legal certainty as a principle is enshrined in international law, but also in the case of jurisprudence and implies the obligation for the law to ensure its recipients the ability to adapt their behavior with certainty[2] and also to protect legal subjects against arbitrary use of state power[3]. In that regard, the Court of Justice of the European Communities has held that “It must be borne in mind that the principle of the protection of legitimate expectations and the principle of legal certainty form part of the Community legal order and must be respected by the Member States”.[4]

The principle of legal security expresses the fact that citizens must be protected against uncertainty and insecurity generated by legal norms and their non-unitary interpretation ”against a danger that comes from the law itself, against an insecurity created by law or that it risks creating”[5].

The European Court of Human Rights has emphasized the importance of ensuring the accessibility and predictability of the law, ”ruling that ”a law” can only be considered a sufficiently precise rule to enable an individual to regulate his or her conduct. The individual must be able to foresee the consequences that may arise from a given act”[6]; ”a rule is foreseeable only when it is drafted with sufficient precision, in such a way as to allow any person – who may, if necessary, to seek specialist advice – to correct his conduct”[7]; ”in particular, a rule is foreseeable when it offers a certain guarantee against arbitrary infringements of public power.”[8]

As a result of enshrining the principle of accessibility and predictability in Community law, and implicitly pursuant to art. 11 of the Constitution, the principle of legitimate expectations was also developed. According to the case law of the Court of Justice of the European Union[9], the principle of the protection of legitimate expectations requires that the legislation be clear and predictable, uniform and coherent and requires that the possibilities for amending legal rules be limited[10].

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Among other things, the principle of legal certainty is closely linked to ensuring the uniform interpretation of the law. In this regard, in the case of Păduraru v. Romania 2005, the European Court of Human Rights ruled that “in the absence of a mechanism to ensure the coherence of the practice of national courts, such profound divergences of jurisprudence, which persist over time and belong to an area great social interest, are likely to give rise to permanent uncertainty (mutatis mutandis, Sovtransav to Holding, cited above, § 97) and to diminish public confidence in the judiciary, which is one of the fundamental components of the rule of law.”[11]

Maintaining legal certainty and the trust of the recipients of the law in the legal system is also achieved by establishing guarantees against harm caused by the arbitrary use of public power, such a guarantee being democratic control over the executive authority exercised by the Parliament.

The relevance of the principle of legal certainty as well as of the correlative principles[12] becomes even more evident in the context in which the cyber field is today a vital component of society. So far, Romania does not have a systematic legislation in the field of cybersecurity, which is properly correlated with the legislation in the field of national defense and national security, although the Romanian Constitutional Court has held that cyber security is intrinsically linked to national defense and national security.[13]

Although currently, from the perspective of protecting the infrastructure of information systems, as well as public or private law institutions competent to implement security policies, in the sense of IT protocols to maintain the security of networks and information systems the provisions of Law no. 362/2018 are applicable on ensuring a high common level of security of networks and information systems that fully transposes Directive (EU) 2016/1.148[14] the guarantees offered to citizens against the arbitrary use of state power are difficult to identify.

Thus, the control of the activity of the national authority in the field of security of networks and information systems is performed by the Supreme Council of National Defense[15], in its capacity as organizer and coordinator of activities related to the defense of the country and national security. However, given the constitutional nature of the field of national security, as well as the impact that a possible failure to ensure cyber security may have on national security, the possibility of democratic control through the legislature seems more appropriate.

In the same manner, the Romanian Constitutional Court[16] noted that the European Parliament stated in Amendment 10a) that “taking into account the differences between national governance structures and to maintain existing sectoral mechanisms or Union supervisory and regulatory bodies, Member States should have the power to designate several competent national authorities responsible for carrying out the tasks related to the security of the network and computer systems of the market operators covered by this Directive. However, in order to ensure good cross-border cooperation and communication, it is necessary for each Member State to designate a single point of single contact responsible for cross-border cooperation at Union level, without prejudice to sectoral regulatory mechanisms. Where its constitutional structures or other provisions so require, a Member State should be able to designate a single authority to perform the tasks of the competent authority and the single point of contact. Competent authorities and points of single contact should be civilian bodies, fully functioning on the basis of democratic control, and should not be engaged in intelligence, law enforcement or defense activities, nor should they be organizationally linked in any way with bodies active in these fields. [17]

The European Parliament’s comments on the separation of the competent authorities in the field of cyber security and those in the field of information, law enforcement or defense are especially significant in the current context of the debate on the violation of fundamental freedoms by restrictive measures under unequivocal legal rules. In this sense, it is found that, in the last seven years, the Constitutional Court has developed a rich jurisprudence on access, processing and storage by state law enforcement structures to data and information protected by art. 26 and 53 of the Romanian Constitution. This intense process of constitutional control has generated significant changes in the legislation in the field of national defense and national security, which indicates that the legislator did not pay due attention to the quality of normative acts and therefore we can say that it generated inconsistencies in following the principle of legal security, and especially the principle of legitimate expectations.

Also related to compliance with the principle of legal security are issues related to the processing and storage of traffic data relating to subscribers and users by the provider of a public electronic communications network or by the provider of an electronic communications service intended for the public. Thus, on 6 October 2020, the Court of Justice of the European Union ("CJEU") ruled that the ePrivacy Directive[18] does not allow EU Member States to adopt legislation aimed at restricting the scope of its confidentiality obligations, except if the general principles of EU law, in particular the principle of proportionality, and the fundamental rights enshrined in the Charter of Fundamental Rights of the European Union[19] are respected. The cases before the Court concern the United Kingdom, France and Belgium, whose legislation provided for the obligation for providers of electronic communications services to transmit to public authorities data on the traffic and location of individuals or to keep such data in a general and non-discriminatory manner, such as and storing this data for different time intervals. The reason for such a provision in the legislation of those States was the protection of national security. However, the CJEU has established that such laws fall within the scope of the above-mentioned Directive, noting that: "Although it is up to the Member States to define their essential security interests and the fact that a national measure has been taken to protect national security cannot make EU law ineffective and exempt Member States from their obligation to comply with that law.*"*[20]

The CJEU has set limitations on the ability of Member States to restrict the scope of the Directive, stating: "it must be borne in mind that the protection of the fundamental right to privacy requires […] that derogations and limitations on the protection of personal data must be applied only in so far as they are strictly necessary"[21], the Directive excluding national provisions requiring providers to keep general and non-discriminatory data on trafficking and location as a preventive measure to protect national security and combat crime.

However, the CJEU has also provided for several situations in which Member States may derogate from the general confidentiality requirements of the Directive in order to protect national security, combat serious crime and prevent serious threats to public security, on condition that: it provides for these derogations clearly and precisely; material and procedural requirements are implemented; and the persons concerned have effective safeguards against any abuse. In particular, the CJEU has authorized orders requiring providers to maintain the general and non-discriminatory retention of traffic and location data, as well as targeted storage if a Member State faces a serious threat to national security which proves to be genuine, present or foreseeable, as long as the measure is subject to effective control by an independent court or administrative body disposed of for a period of time deemed strictly necessary.

In Romania, the law stipulates that traffic data relating to subscribers and users stored by the provider of a public electronic communications network or by the provider of an electronic communications service intended for the public, must be deleted or transformed into anonymous data, when they not are still required for the transmission of a communication, but not later than 3 years from the date of the communication[22].

Conclusions

Therefore, the elements on which the principle of legal certainty is based are the certainty and predictability of the law. They are necessary in order to maintain the legitimate confidence of citizens in the legal system and, in the alternative, in the state authorities, whether they are representatives of the legislative, the executive or the judiciary bodies. We consider that the observance of the principle of legal security is a requirement for the protection of social security, a component of national security.

NOTES:

1 *Constitution of Romania*, Monitorul Oficial no. 767 din 31 October 2003.

2 The European Court of Human Rights ruled in the Judgment of 26 April 1979 in the Sunday Times v. The United Kingdom of Great Britain and Northern Ireland, para. 49 that "can be considered as "law" only a norm stated with sufficient precision, to allow the individual to regulate his conduct. The individual must be able to foresee the consequences that may arise from a given act ", meaning that" a rule is foreseeable only when it is drafted with sufficient precision, in such a way as to allow any person – who, if necessary, can resort to specialized advice – to correct their conduct" and when

“it offers a certain guarantee against arbitrary violations of public power.” The principle of legal certainty correlates with the principle of legitimate expectations (Cases *Facini Dori v. Recreb Srl*, 1994, available at http: //ier.gov.ro/wp-content/uploads/rezumate-cjue/61992J0091.pdf, last accessed September 2021 and Foto-Frost v. Hauptzollamt Lübeck-Ost, 1987, available at https: //curia.europa. eu / jcms / upload / docs / application / pdf / 2009-05 / tra-doc-ro-arret-c-0314-1985-200802165-05_00.pdf, last accessed September 2021), which requires that the legislation be clear and predictable, unitary and coherent, limiting the possibilities to change the rules raises the stability of the rules established by them.

3 Article 21 of the *Treaty on European Union and Communication from the Commission to the European Parliament, the European Council and the Council COM (2019) 163 final* of 03.03.2019, Further strengthening the rule of law within the Union, Introduction, para. 2, https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:52019DC0163&from=EN, last accessed on September 2021.

4 *Case C-381/97*, Belgocodex, para. 26 available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:61997CJ0381&from=EN, last accessed on September 2021.

5 Artin Sarchizian, *Principiul securității juridice,* 14.04.2019, available at http://www.drepturile-omului.eu/jurnalul/jurnalul-drepturilor-omului-nr-12019/params/post/1768664/principiul-securitatii-juridice, last accessed on September 2021.

6 *Judgment of the European Court of Human Rights Sunday Times v United Kingdom of Great Britain and Northern Ireland*, 1979, http://hudoc.echr.coe.int/eng?i=001-57584, last accessed on September 2021.

7 *Judgment of the European Court of Human Rights Rotaru v. Romania*, 2000, available at. http://hudoc.echr.coe.int/eng?i=001-58586, last accessed on September 2021.

8 *Judgment of the European Court of Human Rights in Damman v. Switzerland*, 2005, available at http://hudoc.echr.coe.int/eng?i=001-75174, last accessed on 2021.

9 *Judgment of the Court of Justice of the European Union in the case of Faccini Dori v Recreb Srl*, 1994, paragraph 21 et seq., Available at https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri= CELEX: 61992CJ0091 & from = EN # Footnote *, last accessed September 2021; *Foto-Frost v Hauptzollant Lübeck.Ost*, 198722, paragraph 9, available at https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:61985CJ0314&from=EN, last accessed on September 2021.

10 *Judgment of the Court of Justice of the European Union of 24.03.2011*, ISD Polska sp. z o.o. and Others v European Commission, Case C-369/09 P. ”Every individual has the right to rely on the principle of the protection of legitimate expectations if he finds himself in a situation where the Community administration, by providing precise assurances, determined it to have good hopes (Case 16/86 Delauche v Commission [1987] ECR I-0000, paragraph 24, Kögler v Court of Justice, Case C-82/98 P . pI-3855, paragraph 33, and Case C-182/03 and C-217/03 Belgium and Forum 187 v Commission [2006] ECR 5479, paragraph 147. In addition, the assurances given must comply with the applicable rules (see, to that effect, Case 228/84 Pauvert v Court of Auditors [1985] ECR I-0000, paragraphs 14 and 15, and Case of 6 February 1986, Vlachou v Court of Auditors, 162/84, Rec., p.481, paragraph 6)”, available at https://eur-lex.europa.eu/legal-content/RO/TXT/? uri = CELEX: 62009CJ0369, last accessed on September 2021.

11 *Judgment of the European Court of Human Rights Păduraru v. Romania 2005*, paragraph 99 et seq., Available at http://legislatie.just.ro/Public/DetaliiDocumentAfis/72598, last accessed on September 2021.

12 Supra footnote 2.

13 Decision of the Constitutional Court no. 455/2018 regarding the admission of the objection of unconstitutionality of the provisions of the Law on ensuring a high common level of security of computer networks and systems and the Decision of the Constitutional Court no. 17/2015 on the admission of the objection of unconstitutionality of the provisions of the Law on cyber security of Romania.

14 *Directive (EU) of the European Parliament and of the Council 2016 / 1.148 of 6 July 2016 on measures for a high common level of security of networks and information systems in the Union*, published in the Official Journal of the European Union, L series, no. 194 of July 19, 2016.

15 *Government Decision no. 494 of May 11, 2011 on the establishment of the National Cyber Security Incident Response Center - CERT-RO*.

16 *Decision of the Constitutional Court no. 17/2015 on the admission of the objection of unconstitutionality of the provisions of the Law on cyber security of Romania*.

17 *Report: PE 514.882v02-00 of 12.02.2014 on the proposal for a directive of the European Parliament and of the Council on measures to ensure a high common level of network and information security in the Union (COM (2013) 0048 - C7-0035 / 2013 - 2013/0027 (COD)* available at https://www.europarl.europa.eu/doceo/document/A-7-2014-0103_EN.html?redirect, last accessed on 02.02.2021

18 *Article 15 (1) of Directive 2002/58 / EC of the European Parliament and of the Council of 12 July 2002 on the processing of personal data and the protection of privacy in the public communications sector (Directive on confidentiality and electronic communications), as amended by Directive 2009/136 / EC of the European Parliament and of the Council of 25 November 2009*, available at https://www.dataprotection.ro/servlet/ViewDocument?id=201, last accessed September 2021.

19 https://eur-lex.europa.eu/legal-content/RO/TXT/PDF/?uri=CELEX:12012P/TXT&from=DE, last accessed on September 2021.

20 Available at http://curia.europa.eu/juris/document/document_print.jsf?docid=232084&text=&dir=&doclang=RO&part=1&occ=first&mode=DOC&pageIndex=0&cid=5875047#Footnote*, accessed on 03.02.2021.

21 *Judgment of the Court of Justice of the EU (Second Chamber), 14 February 2019 on the processing of personal data* - Directive 95/46 / EC - Article 3 - Scope - Video recording of police officers inside a police station during performance of procedural acts - Publication of video recordings on a website - Article 9 - Processing of personal data only for journalistic purposes - Notion - Freedom of expression - Protection of privacy, para.64, available at https:

// curia .europa.eu / juris / document / document_print.jsf? docid = 210766 & text = & dir = & doclang = RO & part = 1 & occ = first & mode = req & pageIndex = 0 & cid = 14089710, last accessed on 03.02.2021.

22 Art. 5 of *Law no. 506/2004 on the processing of personal data and the protection of privacy in the electronic communications sector, as subsequently amended and supplemented*.

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SOMALIA – CASE STUDY ON THE FRAGMENTATION OF AN ETHNICALLY AND CIVILIZATIONALLY HOMOGENEOUS STATE

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Any lecture in geopolitics begins by stating that internal stability and territorial integrity of the state are the result of the interaction between secessionist, centrifugal forces, and unifying, centripetal forces. The same lecture in geopolitics also says that ethnic and confessional homogeneity falls into the category of the strongest centripetal forces, along with a round shape of the state territory, the centrality of the capital, a uniform distribution of transport and communications infrastructure, an equitable (as possible) distribution of wealth, of a strong national idea and will.

Ethnically and religiously, Somalia is a homogeneous state. Moreover, all these ethnics do not boast of an identity other than Somali, and they all speak Somali - the official language of the state, along with Arabic – the language of the Koran. Somalia does not have the huge linguistic diversity specific to other post-colonial African states, there are no cultural-civilizational differences, there are no major discrepancies in terms of regional development and distribution of communications and transport infrastructure in the territory. And yet, the Somali state is the expression of the notion of a failed state, ravaged by civil war, secessionism, maritime piracy, terrorism, organized crime and insecurity. In recent years, Somalia has been consistently ranked among the most dangerous destinations in the world. In the first half of 2021, it ranked sixth in the top of the riskiest tourist destinations, after Afghanistan, Syria, Iraq, South Sudan and Yemen[1].

What are the causes of Somali secessionism and the collapse of the state? And, if we were to rank, according to the intensity of the effect, the secessionist factors acting on the territory of Somalia, what would be their order?

Keywords: Somalia; Horn of Africa; Gulf of Aden; Somaliland; Puntland; maritime piracy; terrorism; secessionism.

1. Short geographical description

Somalia is located in the Horn of Africa, on the Southern coast of the Gulf of Aden, in the immediate vicinity of the strategic chokepoint Bab el Mandeb, and the Western Indian Ocean, on the transport corridor linking Europe and the Middle East to Asia. To the North, it borders Djibouti. To the West, it borders Ethiopia and Kenya. In the South, it is crossed by the Equator and, also in the South, are the hydrographic basins of the Jubba and Shebelle rivers (see the map in Fig.1). It has a wide seafront, of 3025 km, and a total area of 637,657 sqkm. There are deep natural harbors in Mogadishu, Berbera and Kismaayo, but dangerous coral reefs keep coastal traffic to a minimum[2].

It is a continental state, with an elongated shape along the coast, without islands, with no enclaves and no exclaves on the territories of other states. The colonial-style state capital, Mogadishu, is located eccentrically, in the South, on the shores of the Indian Ocean, far-away from the Northern regions of the country.

Figure 1 *Physical-geographical map of Somalia*[3]

With the exception of a secluded mountainous area on the Northern coast, the relief of Somalia is

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flat, with no natural barriers restricting the mobility of humans and animals. In general, the climate is dry and warm, with irregular rainfall. There are also warm, humid, monsoon periods in the Northeast, from December to February, and in the Southwest, from May to October[4]. The vegetation is savannah and semi-desert[5].

It is rich in uranium and has reserves, largely unexploited, of iron ore, tin, gypsum, bauxite, copper, sea salt, coal, natural gas and, most likely, oil[6]. Mineral sepiolite (sea foam) deposits in Central and Southern Somalia are among the largest known reserves in the world[7]. Terrestrial fauna has been largely decimated by hunting. Elephants in particular have been killed, causing major imbalances in the ecosystem, knowing that these mammals have the ability to find groundwater and to access it, preventing desertification[8]. The aquatic fauna was also destroyed by chemical pollution. Arable land represents only 1.75% of the territory’s surface[9]. Agricultural land represents 70.3% of the territory, of which 68.5% is permanent pasture[10].

2. Brief demographic description

In 2021, the total population of the African state was 12,094,640. According to data provided by the CIA WorldFactbook, in 2021 the ethnic structure of Somalia was overwhelmingly dominated by 85% of ethnic Somalis, and the religious structure was perfectly homogeneous, with 100% Sunni Muslims[11] from Shāfiʿī law school[12].

Somali ethnic groups are divided into clans and sub-clans. The largest are: Darod, Dir, Hawiye, Isaaq, Rahanweyn (Digil and Mirifle).

Somalia’s population is unevenly distributed. The Northeastern and Central, semi-desert regions, as well as the areas along the border with Kenya, are less populated, while the areas around the cities of Mogadishu, Marka, Boorama, Hargeysa and Baidoa have a dense population.

Like other African states, Somalia has the demographic profile of a state dominated by underdevelopment and poverty, characterized by:

- the age-based pyramid with a large base, as a result of the majority percentage, of 60%, of the young population, up to 25 years old;
- increased value of the gross birth rate, which in 2020 was 38.25 births / 1000 inhabitants (9th place in the world);
- increased fertility rate of 5.41 births / woman of childbearing age (9th place overall);
- increased value of the gross mortality rate of 11.82 deaths / 1000 inhabitants;
- low life expectancy at birth, of only 55.32 years (57.7 years women, 53.02 years men) – compared to 81.3 years in the European Union (EU) [13];
- huge infant mortality, of 88.03 deaths / 1000 live births (2nd place overall) – compared to 3.4 ‰ in the EU[14];
- huge maternal mortality, of 829 deaths / 100,000 live births (6th place overall);
- increased mortality from infectious-contagious diseases, which can be prevented by proper sanitation and hygiene[15].

These statistical-demographic aspects are added the social ones, just as gloomy. The enrollment rate in primary education exceeds just 40%, there are only 0.02 doctors per 1,000 inhabitants and 0.9 hospital beds per 1,000 inhabitants, urbanization covers only 46.7% of the population and 27.5% of the population rural area does not have access to drinking water sources[16]. The median prevalence of malnutrition for the last three years among the Somali population was between 10-14.9%[17].

3. Political-administrative data

The Federal Republic of Somalia became an independent state on July 1st, 1960. It is a presidential republic, divided into thirteen administrative regions and five other regions claimed but not controlled by the central government in Somaliland.

These regions are represented by: Awdal, Bakool, Banaadir, Bari, Bay, Galguduud, Gedo, Hiiraan, Jubbada Dhexe (Middle Jubba), Jubbada Hoose (Lower Jubba), Mudug, Nugaal, Sanaag, Shabeellaha Dhexe (Shabeelle Middle), Hoose (Lower Shabeelle), Sool, Togdheer, Woqooyi Galbeed.

In turn, the regions are divided into seventy-two districts and eighteen other claimed but uncontrolled districts in Somaliland[18].

Somalia is a failed state, whose central government no longer administers its entire national territory and no longer has a monopoly on the exercise of force at national level (SEE MAP IN Fig.2). Currently, within the Somali state there are separatist and / or self-declared autonomous territories such as:

- Somaliland, located in the North, self-declared sovereign state;
- Puntland, located in the Northeast, self-

declared autonomous state with publicly stated secessionist intentions[19];

- Khatumo, located in Southern Somaliland, self-declared autonomous but not recognized by the central government;
- Galmudug, located in the Central area, South of Puntland, self-declared autonomous;
- Jubaland, located in the Southeast, on the border with Kenya, self-declared autonomous[20].

As can be seen in the map in Fig. 2, the decentralization and dissolution of the Somali state is amplified by the existence of spaces controlled by Islamist authorities, governed by Islamic law and the ultra-conservative legal school, Ṭabaqāt al-Ḥanābilah. Existing mainly in the Central-Southern regions, towards the Aden coast, these areas develop secessionist potential through the dogmatic and ideological conflict between the Shāfiʿī moderate, traditional, legal school, and the Ḥanābilah ultraconservative legal school, imported from the Arabian Peninsula and Egypt. A legal school that considers as apostasy any faith and dogma that does not belong to Ḥanābilah Sunni Islam[22].

4. Economic data

With a GDP (PPP) estimated in 2021 of $ 5.37 billion[23] and a GDP / Capita in 2020 of $ 309.41[24], Somalia is one of the poorest countries in the world. Its main sources of income come from foreign aid, remittances and informal trade. About three-fifths of Somalia's economy is made up of agriculture. Agricultural income comes from three sub-sectors: nomadic pastoralism, focused on raising goats, sheep, camels and cattle; traditional, subsistence farming, practiced by small farmers; intensive agriculture, with irrigated plantations along the lower Jubba and Shabeelle rivers. The

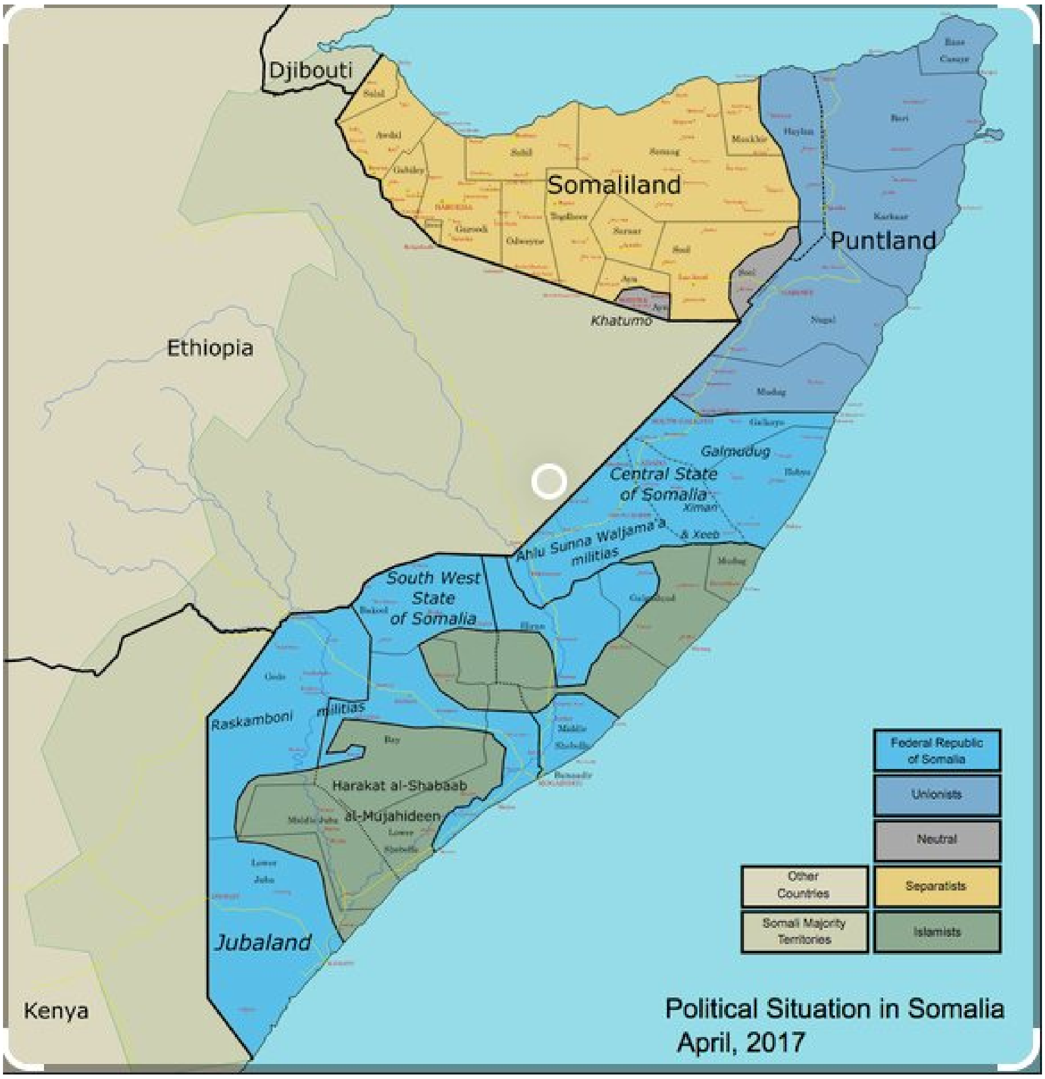

Figure 2 *The political situation in Somalia in 2017*[21]

main crops and agricultural products are sugar cane, rice, cotton, vegetables, bananas, grapefruit, mango and papaya. Incense and myrrh are also harvested in the South, and savanna acacia forests provide timber. There is also an income from fishing, which is declining due to marine pollution and overfishing[25].

Since after 1991 the construction of the hydroelectric dam on the Jubba River was stopped and the few power plants in Mogadishu, Hargeysa (Hargeisa) and Kismaayo, still defective, do not cover the energy needs of a modern production activity, the industrial sector is reduced to small craftsmen workshops belonging to the informal sector[26].

The banking sector is controlled by the Central Bank of Somalia. The country’s currency, the Somali shilling, is in constant decline. The self-declared Republic of Somaliland issues its own currency, the Somaliland Shilling[27].

There are no railways. The road network is only 2,900 km. In the rainy season, most rural settlements are not accessible to vehicles. In rural areas, the main means of transport remain camels, cattle and donkeys[28].

5. The geopolitical premises of current secessionism

The exceptional geopolitical and geostrategic value of the Horn of Africa began to assert itself in 1497, with the discovery of the road to the Indies by the Portuguese navigator Vasco da Gama (1460 / 1469-1524). The European colonization of Asia and the development of trade in timber and precious stones, spices and oriental silks, transformed the ports on both banks of the Gulf of Aden into mandatory destinations for ships carrying goods from the Orient and Africa to European countries (see map in Fig.3).

Later, in the contemporary period, the construction of the Suez Canal exponentially increased the geostrategic and geo-economic importance of the region, through the oil and natural gas transit from the Arabian Peninsula to European consumers and by intensifying maritime traffic generated by the Chinese and Indian economic recovery. The geostrategic importance of the region is also amplified by the presence of the Bab el-Mandeb maritime chokepoint, which separates the Gulf of Aden and the Indian Ocean from the Red Sea and, further, from the Suez Canal and the Mediterranean Sea. Closing this strategic strait would disconnect the Mediterranean Sea from the Indian Ocean, forcing carriers to bypass Africa through the Cape of Good Hope (with serious economic and military consequences). In 2018, approximately 6.2 million barrels per day of crude oil and refined petroleum products circulated through the Bab el-Mandeb chokepoint to Europe, the United States and Asia. In 2017, total oil flows through the Bab el-Mandeb Strait accounted for about 9% of the volume of oil globally traded at sea (crude oil and refined petroleum products)[29].

The region has a pivotal character and a potential bridgehead character. Its domination facilitates the geostrategic control of Africa, the Middle East, South Asia and the Indian Ocean, which is why, since the post-war bipolarity of the international system, it has been the subject of intense dispute between the hegemonic powers. The geopolitical, geostrategic and geo-economic

Figure 3 *Gulf of Aden*[30]

stakes for the control of the region and, in extenso, for the control of North and East Africa and of the Arabian Peninsula, transformed this area of geopolitical compression between the maritime and the continental world, and between Christianity and Islam, in a ”shatterbelt”. An area subjected to fragmentation, conflict, underdevelopment and state failure.

In addition, deposits of hydrocarbons, uranium, strategic ores of bauxite, tin, copper, other non-ferrous and ferrous ores have been discovered in the basement of the countries of the region and

Islamic fundamentalism completes the already loaded political picture of this part of the world.

In the case of Somalia, from a geopolitical point of view, the elongated shape of the country and the eccentric capital predispose to secessionism, through the unequal distribution of the Mittelpunckt's force of attraction over borders. On the other hand, the relief dominated by the plateau and the savannah vegetation favor the migrations and the mixture of the population, aspect that can potentiate the centripetal, unifying forces. Unsuccessful, however, as the population is strongly divided on clanocratic regional criteria, which significantly exceed the common ethnic origin, language and Islamic Shāfiʿī denomination, division favored by the uneven distribution of the population in the territory, conditioned by the presence of semi-desert relief.

The destruction of the environment, by marine pollution and excessive hunting, and the extremely low percentage of arable land, coupled with climate change that has increased the incidence of drought episodes followed by locust infestations, especially in the Northern regions of the country, create food crisis of famine[31], with destabilizing internal and regional consequences, which can accelerate internal secessionist processes.

These internal challenges are added poverty, underdevelopment, clanocratic neopatriarchy that have undermined the idea of central administration, of identity and national idea, of state authority, favoring secessionism and state dissolution.

6. The historical premises of the current secessionism

6.1. *The period preceding the unification of the two Somalis, British and Italian*

Local legends say that Islam entered Somalia in the eighth century, when a Yemeni imam, Mohamed Abdurahman Hambali, along with several followers, took refuge in the Galla tribe and started the process of converting the locals[32]. The current capital, Mogadishu, was founded in 900 AD by Arab merchants and locals converted to Islam.

Certainly, this time, as evidenced by historical sources, in the thirteenth century Islam was present in Somalia. The first regional state cores coagulated around its system of beliefs and values. In the Northwest of the country the Sultanate of Adal was born. Later it entered into a bloody war of independence against Portuguese rule. The Ajuuraan Sultanate was formed in the Center and South of the country. Due to the animosities between the clans, nomadic attacks and Portuguese interference in local politics, in the 17th century, the territories ruled by the Warsangeli, Sanaag, Bari, Mogadishu, Benadir clans were conquered by the Arabs and, later, by the Ottomans. A century later, they would end up being colonized by Europeans. Local monarchies remained, with British support, until the twentieth century. A pragmatic support, in exchange for the protection provided by the sultans for the British merchant ships that transported goods from Indies[33].

In the second half of the nineteenth century, however, the ”race for Africa” started to disturb the British rule in the Horn of Africa. France and, later, Italy tried to gain territories in the region and to limit British control over the Red Sea and the Gulf of Aden – where the Empire ruled the entire Nile Valley and the strategic port of Aden in Yemen – and over East Africa, where Kenya and Tanzania had become British colonies. As a result, the French, interested in Somali non-ferrous ore deposits, focused their interest on the Northeast of the country (present-day Djibouti), while the Italians, in full colonial expansion, took control of Southern Somalia.

Against this background of geopolitical competition between the colonial powers, in the first months of the twentieth century, the troops of Emperor Menelik II of Ethiopia (1844-1913), supported by the British Empire, occupied the Ogaden region in Western Somalia. The Ethiopian occupation of Ogaden was interrupted by the rebellion of the Northern ”dervishes”, led by the French-backed sub-clan Darod (Dulbahante). The two-decade-old War between Somalis and Ethiopians, between 1900 and 1920, killed more than a third of Northern Somalia's population[34]. Although the population of Ogaden and Haud was predominantly Somali, following the agreement imposed by the British on July 24, 1948, the two regions returned to Ethiopia[35]. The arbitrary transfer of territories between the two states has become a permanent source of conflict and regional destabilization. The same agreement established that the territories of Southern Somalia should return to Kenya, under the name of the North-East District, and the territory of the North, near the Bab el-Mandeb Strait, populated by Afar and ruled by France, to become independent, under the name of Djibouti. The years of ”dervish” rebellion and regional instability have been paid by the economic and regional development, so that on July 1, 1960, there was a huge discrepancy between the two reunified independent Somalias, the British and the Italian one. An economic and social rift that fueled secessionism and the future civil war. In addition, in the South there was a strong Italian diaspora, which built colonial-type cities with extensive, prosperous and well-organized plantations. The Southern population, more easily colonized, benefited from the economic and cultural advantages of the colonizers. This aspect generated a fracture between the underdeveloped, anarchic North, crushed by clan fighting, and the peaceful and prosperous South. A hiatus amplified by cultural, linguistic and even by currency differences between the two Somalias. Consequently, at the Potsdam Conference of 1945, while Somalis in the Northern and Western regions advocated independence, those in the South wanted to remain under colonial rule[36].

On the other hand, during the Second World War, the conflict between the Brits and the Italians was transferred to the territory of Somalia. The North of Somalia, dominated by the Brits, started to fight with the South of the country, incorporated by the regime of the fascist dictator Benito Mussolini (1883-1945) in the New Italian Empire of East Africa, along with Ethiopia and Eritrea. The victory of the British Empire was followed by the establishment of the Italian resistance in the South. Militarily supported by the Benito Mussolini regime, the resistance movement of the Italian colonists and the affiliated population of the South started a guerrilla war, which ended in 1943[37]. After the war, the geopolitical competition between geostrategic players active in the region generated new rifts, by attracting Somali clans into different spheres of power and by using them as proxy-war vectors, so that, by the end of 1960s, the Somali clans had already their own paramilitary forces.

Against this background of intense fractionalization, the unification desired only by the North and the declaration of independence were overlapped, an aspect that brought with it the problem of the distribution of power between the Somali clans and sub-clans.

From the sequence of events presented above, the following sources of conflict and fragmentation can be distinguished:

- the discrepancy between the aspirations for self-determination and national liberation, shared by the British-dominated population in the North, and the desire to maintain the colonial *status quo*, of the Italian-dominated Somali population in the South;
- economic and development gap between the North and the South of the country,
- rivalries between clans over the distribution of power and wealth;
- the interference of the great powers interested in the local geopolitical game.

6.2. *The Communist experiment*

The *de jure* unification of the two Somalias was followed by administrative, legislative and, implicitly, military unification. But the military unification involved the dismemberment of paramilitary units and their transformation into troops of the new national army, subject to a single command, an issue that triggered the dissatisfaction of some of the Northern clans, increasingly vocal in the direction of separation from the rest of the country. On the other hand, the supporters of Somali unity pressed the pedal of pan-Somalism[38] and the rebuilding of the ”Greater Somalia”. Matters that brought to the forefront the issue of Ogaden, reheated the Ethiopian-Somali conflict, and internationalized it in the spirit of the geopolitical game of the Cold War (1947-1991). Re-erupted in 1964, the armed conflict between the two countries was followed by a ceasefire agreement. While the US focused its aid on Ethiopia and pushed for the signing of a mutual defense pact against Somali revisionism between Kenya and Ethiopia[39], the Soviet Union, in exchange for the right to use Somali naval bases, developed a program to equip and train Somali troops. In this way, an entire generation of officers was influenced by Communist ideology, and from here to a military coup to replace democratic administration there was only a step[40]. The assassination of President Abdirashid Ali Shermarke (1919-1969) on October 15, 1969, by one of his bodyguards[41] was the catalyst for the events that ended with:

- the takeover of power by Generals Salad Gabeire Kediye (1933-1972) and Mohammad Syiad Barre (1910-1995);

- the establishment of the Supreme Revolutionary Council;
- the appointment of General Siad Barre as president of the country.

On October 21, 1969, the state was renamed the Democratic Republic of Somalia[42] and became a Soviet satellite.

In the following years, the civil servants were replaced by the military[43], the civil courts were closed, the religious ones lost their importance, the law being applied by the military courts. Also, a new secret service was set up, called National Security Service, charged with identifying and counteracting any ”counter-revolutionary” movement.

Like other African leaders of his generation, Barre became an autocrat. Self-entitled ”Victorious Leader”, Barre was the author of a unique Islamic-Communist doctrine that combined the principles of Marxist-Leninist-Maoist ”scientific socialism” with Islamic teachings and was one of the founders of the Somali Socialist Revolutionary Party, affiliated to Moscow. Over time, although tribalism was considered a crime against national security, the political leadership of the state became the prerogative of three large clans, all from the North: Marehan (of Barre), Ogaden (of Barre's mother) and Daarood-Dulbahante (of Barre's son-in-law)[44].

Relying on Soviet support, but without prior consultation with the Kremlin, on July 13, 1977, Siad Barre ordered the Somali army to attack Ethiopia and to occupy the Ogaden region. But the regional geopolitical game of 1977 no longer resembled that of 1969. In 1974, following the coup orchestrated by the Military Council, led by Lt. Col. Atnafu Abate (1930-1977), Emperor of Ethiopia, Haile Selassie I (1892-1975), abdicated. In 1975, Mengistu Haile Mariam came to the forefront of Ethiopian politics and, with Soviet support, imposed the Communist dictatorship. A brutal dictatorship, whose victims included the former Emperor, the nobility, the clergy and political opponents, such as the Patriarch of the Ethiopian Orthodox Church, Abuna Theophilos (1910-1979), and Atnafu Abate himself, accused of counter-revolutionary activities[45].

Behind these geopolitical events were the Soviets, interested in consolidating their dominance in the Red Sea and Eritrea (which at that time was incorporated into Ethiopia), given that Southern Yemen was already under their influence, and in creating a ”corridor” to Central Africa, in order to boost future “democratic” movements on the continent. As a result, the Kremlin sided with Ethiopia in the war ignited by Siad Barre. Ethiopia ended diplomatic relations with the United States[46], and a year later, in 1978, it recaptured the Ogaden. Under these conditions, Somalia denounced the Treaty of Friendship and Cooperation with the USSR, expelled Soviet diplomatic personnel and military attachés, severed diplomatic relations with Cuba, and Siad Barre faced a serious internal and image crisis. Although initially seemed to want to help Somalia, President Jimmy Carter's administration, unwilling a new Vietnam, gave up the US involvement in the Ogaden affair. The Somali army has been decimated by Communist Ethiopia, Cuba and other fraternal countries. The war ended on March 23, 1978. In 1982, a new conflict broke out between Ethiopians and Somalis, with no major consequences.

The loss of Ogaden weakened the authority of the Siad Barre regime and allowed the clans to be re-armed. The decline of the Barre regime became apparent in 1986, when Siad Barre himself was targeted by an assassination attempt. Also, the Somali army was facing an accelerated process of fractionalization. On one side were positioned the constitutionalists, loyal to the regime, and on the other hand, the tribalists. The Barre regime lasted until 1991, when the collapse of the Soviet Empire and the change in the global geopolitical game led to the fall of totalitarian regimes, including the one in Somalia.

6.3. *The Civil War*

Somalia is divided into four large rival clans with a lot of subclans, covering about 85% of the population:

- Darod, which rules Puntland and the Northern region on the border with Kenya;
- Hawiye, which controls the territory along the coast, located North of Mogadishu;
- Isaaq, which dominates Somaliland;
- Rahanwein, who rules in the North, towards the border with Ethiopia[47].

In 1991, Northern Somalia, dominated by the Isaaq clan, declared independence as Somaliland[48], with its capital at Hargiesa, while the Southern Somalia was crushed by clan fighting. In the same year, several clans, reunited in the Somali Democratic Movement and the Somali Alliance, elected Ali Mahdi Muhammad (1939-2021) as President of Somalia. Their decision was challenged by other players on the political spectrum, represented by the Somali Unity Congress, led by General Mohamed Farrah Aidid (1934-1996), Somali National Movement, led by Abdirahman Ahmed Ali Tuur (1931-2003), and the Somali Patriotic Movement, led by Colonel Ahmed Omar Jess. On the other hand, Barre’s followers in the Center and South of the country continued to fight for the “victorious leader” to return to power. Thus, were created the premises for the future civil war that would devastate the once stable and prosperous South.

Clan fighting and the drought, which affected the Horn of Africa in the 1980s, destroyed the infrastructure, the farms and the plantations in the fertile regions of Southern Somalia, causing famine and humanitarian disaster. UN intervened through the UNOSOM I mission, approved by the UN Security Council in 1992. The prerogatives of the UN military sent to Somalia were limited to defensive actions, which is why the United States formed a military coalition called UNITAF - Unified Task Force which, in December 1992, descended into Southern Somalia and restored order. In 1993, most UNITAF troops were replaced by UN forces in the UNOSOM II mission, which became the protagonists of an open conflict with General Aidid’s rebels, in which 80 Pakistani soldiers and 19 American soldiers were killed in the battle of Mogadishu[49]. In 1995, the UN decided to withdraw its troops, although the mission was not fully accomplished. In 1996, General Aidid was killed, the bloodiest local militia being “beheaded”.

In 1998, the Northeast region declared itself autonomous under the name of Puntland. It was followed by Jubaland in the Southwest. In 1999, a fourth region, located in the Central-Southern area, declared itself autonomous under the leadership of the Rahaweyn Resistance Army (RRA). Later, it remained under the jurisdiction of the Transitional Federal Government with the capital at Baidoa, the only internationally recognized government. But rivalries between the clans continued. The Northern provinces did not accept the legitimacy of the transitional government in Baidoa or that of President Abdullahi Yusuf Ahmed[50], elected by lawmakers in the new capital. As a result, the country’s internal situation continued to deteriorate, with the government failing in its mission to ensure internal security, prosperity and stability. Somalia became a poor state, crushed by armed conflict between clans and subjugated by organized crime networks, piracy and terrorism.

6.4. *The Islamist solution*

Amid the collapse of the state and the food crisis (transformed into the greatest humanitarian crisis of all time[51]), the population turned to clanocracy and Islam. Gradually, Islamic courts replaced secular courts, restoring order in the coastal territories. If, traditionally, Somali Islam of the Shāfiʿī law school, was a moderated one, in the 1990s it began to be infiltrated by the ultra-conservative Ḥanābilah ideology brought by the petrodollars of the Arabian Peninsula. In 2000, the ultra-conservative Islamist forces behind these courts formed the Islamic Courts Union (ICU), which enjoyed widespread acceptance among the population. Six years later, an armed conflict broke out between the ICU and the ”warlords” gathered in the Alliance for the Restoration of Peace and Counter-Terrorism (ARPCT). At the end of the conflict, the Islamists took over control of the Central region. The transitional government, backed by Ethiopia and the United States, called on African Union aid, to send troops to restore “order”. Africans avoided getting involved. Instead, Ethiopia acted by launching an air offensive on Somalia, followed by armored and artillery attacks[52]. The Islamists were rejected beyond Mogadishu and the Americans and the Ethiopians restored the so-called transitional government, with Ali Mohammed Gedi as prime minister[53].

On January 9, 2007, the United States intervened directly in the Somali conflict by bombing Islamist positions in the Ras Kamboni region. However, Islamist militias continued to attack Ethiopian troops and the transitional government. In December 2008, Abdullahi Yusuf Ahmed announced his resignation as President of Somalia, accusing the international community of not being involved in supporting the Baidoa government[54]. Also, in Djibouti, under the auspices of the UN, the Cooperation Agreement between the transitional government and the Alliance for the Liberation of Somalia (ARS) was signed.

Ethiopian troops were withdrawn, Islamist leader, Sharif Sheikh Ahmed, was elected president, Omar Abdirashid Ali Sharmarke, the son of the first Somali president, was designated prime minister.

And, last but not least, we have to mention the Islamists in *Harakat al-Shabaab al-Mujahideen – The Mujahideen Youth Movement*, a terrorist organization founded in 2006[55], affiliated with *Al Qa'ida in the Arabian Peninsula* and the *Global Islamist Network*[56]. Most likely detached from the ranks of UTI followers, Al-Shaabab defined himself as the main opponent of any Western and international support given to the famine-stricken population and of any Western presence in the region. In August 2014, the US-backed Somali transitional federal government launched Operation "Indian Ocean" to eliminate the Al Shabaab insurgency in the Southern and Central coastal regions of the country. On September 1, 2014, Ahmed Abdi Godane (1977-2014), the (official) leader and founder of the organization, was killed[57]. Since 2015, Al-Shabaab has withdrawn from major cities, focusing on rural areas, where it has continued to operate.

6.5. *Oil, pirates and geopolitics*

Crude oil must not be left out of the picture. Though Somalia is not registered as an oil-exporting state, after new oil-fields were discovered by Australians in Puntland, large companies such as CONOCO, AGIP and AMOCO invested huge sums in leasing hydrocarbon reserves on Somali territory[58]. Consequently, the American presence behind the scenes of the Somali civil war followed an obvious geopolitical logic and geostrategic logic. And equally logical were the attitudes of France, Russian Federation, China and Arab states, to reject American involvement in the ”Somali problem”.

The dissolution of the Somali state has paved the way for illicit activities and abuses, in which some local leaders and some companies and organized crime networks have been involved. The 2004 tsunami revealed a shocking event. In Somali waters, in the last decade of the last century, cans containing radioactive material and chemical waste, had been dumped. This highly toxic waste has been responsible for the occurrence, since the 1990s, of a significant number of congenital malformations, cancers and degenerative diseases among locals[59].

At the same time, fishermen under various flags poached and fished without restrictions, commercial vessels dumped waste in Somali waters, leading to the destruction of the aquatic ecosystem, declining fish production and sentencing the population to starvation. From here, the emergence of piracy was only a step away. Originally appearing as a defensive reaction to ships violating the state's maritime territory, piracy has become a social phenomenon, with wide popular acceptance, an important source of income for clans that controlled coastal areas[60].

Piracy became so common in the region, that the Gulf of Aden was nicknamed the ”pirate alley”, with pirates becoming, willingly or unwillingly, actors in the regional geopolitical game. An incident in 2008 publicly showed practices that, until then, at least officially, had been classified as speculation. Somali pirates captured the Ukrainian cargo ship ”Faina”, which was carrying 33 American tanks destined for the Darfur rebels[61], revealing the less visible facets of US-China competition in East Africa and confirming Somalia's geostrategic importance.

According to the report prepared by the ICC International Maritime Bureau, in the first 6 months of 2012, 44 pirate attacks were reported in the Somali maritime space, 12 in the Red Sea and another 13 in the Gulf of Aden, resulting in the detention of 11 ships, 174 hostages, 2 sailors killed and one wounded and another 44 sailors abducted and held hostage for ransom[62]. According to the same document, the area of action of the Somali pirates stretched from the Gulf of Aden and the Southern Red Sea, to the Indian Ocean, off the Western coast of the Maldives archipelago. In return, the United States, the European Union, the Russian Federation, India, China and other states mobilized naval forces to protect maritime trade routes.

Moreover, China has justified its ”String of Pearls” strategy, of militarizing the Indian Ocean through a ”string” of naval bases located along the coast of Eurasia and Africa, by the need to secure the sea routes of the ”Silk Belt” in front of the attacks of the Somali pirates[63]. Turkey has built a military base in Mogadishu[64], justifying its presence by the need to fight Al Shabaab terrorism and the maritime piracy. And the United States, Japan, France, Italy, Spain and, most recently, China and Saudi Arabia, have increased their military presence in the neighboring state of Djibouti, which controls the Western shore of the Bab el-Mandeb Strait, due to the need to secure the region against the attacks of the Somali pirates[65].

Although much diminished, the phenomenon of piracy in the Gulf of Aden is not fully eradicated. At present, piracy attacks are taking place along the Western coast of Africa, which tends to become the second pole of African piracy[66].

Conclusions

Somalia is a classic case of fragmentation of an ethnically, linguistically, denominationally and civilizationally homogeneous state, beneficiary of a flat relief, which favors migration and population mixing and, consequently, national unity.

Somali secessionism is generated by the convergent action of a combination of factors that potentiate the intrastate centrifugal forces, represented by:

- **Social factors**: neo-patriarchal society, clanocratic, tribal type; reduced access to education and healthcare; demographic profile specific to states dominated by underdevelopment and poverty; slipping into ultra-conservative Islam at the expense of moderate, traditional Islam, and replacing the secular Constitution with Islamic law, Shariah;
- **Economic factors**: poverty, underdevelopment, hunger, generated by the preponderance in the GDP structure of income from subsistence agriculture and informal trade; the precariousness of the road, data and energy transport infrastructure; conflicts and internal instability, which alienate potential investors; unskilled labor market, etc.;
- **Ecological factors**: massive coastal water pollution; the destruction of the hunting and fishing fund, which amplifies the effects of food crises and separatism;
- **Historical factors**: the historical conflict with Ethiopia over sovereignty over the Ogaden and Haud regions; the division of the national territory during the colonial period and the creation of the "Two Somalias", British and Italian; the interference of the two former metropolises in the internal affairs of the independent and reunified Somali state by supporting some clans against others; the transformation of the national territory into a theater of competition and confrontation between the two political blocs during the Cold War and between the main regional players in the period after the dismantling of the Soviet Empire; the state failure followed by its transformation into a safe haven for radical Islamists from the Arabian Peninsula and a center of maritime piracy in the Indian Ocean and Red Sea;
- **Geopolitical and geostrategic factors**: the elongated shape of the country and the eccentrically located capital, which predispose to secessionism, through the unequal distribution of the Mittelpunckt's force of attraction over the borders; the unequal distribution of the population that enhances the grouping on the structure of clans and separatism; the exceptional geostrategic value of pivot and potential bridgehead of the geographical position in the Horn of Africa, in the immediate vicinity of the Bab el-Mandeb strategic maritime chokepoint, which exponentially amplifies the geopolitical stake of control and domination of the country; belonging to the sub-Saharan "shatterbelt", the area of geopolitical compression between the maritime, insular world and the continental world and of civilizational compression, between Christianity and Islam; the internal fracture line, between the majority Sunni Shāfiʿī population and the minority, but compact, Sunni Ḥanābilah, in the Central-Southern regions of the country.

If we were to prioritize the importance of these factors, the "time axis" indicates, at the origin and, later, throughout the geo-historical dynamics, the interference of **external factors**, in this case the colonial and neo-colonial powers, in the local geopolitical balance. Through *divide et impera* policies, these powers stimulated the fractionalization of the homogeneous ethnic, linguistic, confessional population, by exacerbating the clan identity at the expense of national identity, by undermining the national idea, generating regional partition and developing local "patriotism", tribalism, to the detriment of the national one.

The decline to extinction of the national identity, externally fed, favored the ground for conflicts. Conflicts triggered by competition between clans, for power and wealth, and amplified by external interference. Armed conflict has destroyed the economy and turned Somalia into a failed state. The government's inability to ensure the security and prosperity of its people has amplified tribalism and secessionism. This way a vicious circle was created, in which tribalism generated the conflicts that threw the country into poverty, underdevelopment, famine, conflicts, that end up fueling tribalism. The piracy, initially generated by poverty, was exploited by the clans that control the coastal regions, in accordance with the geopolitical interests of some geostrategic players active in the region. The ultra-conservative Islamist network has found in Somalia the ideal ground for recruitment and safe-haven, with the terrorist organization Al-Shabaab being the local exponent of its armed branch.

In conclusion, Somalia is the classic example of atomizing a nation under the concentrated and concerted action of some dominant powers competing for control of the national territory, extremely valuable geopolitical and geostrategic, an action enhanced by internal collaborationism and civilizational features that predispose to secessionism through neo-patriarchy, tribalism, underdevelopment, poverty and dependence.

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