DOI: 10.53477/1842-9904-24-11

LEVERAGING EMERGING AND DISRUPTIVE TECHNOLOGIES TO STREAMLINE THE DEPLOYMENT PROCESS AND ENHANCE FORCE PROTECTION IN CURRENT AND FUTURE OPERATING ENVIRONMENT

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The current security environment requires precise and adjusted protection measures provided by security-generating organizations. Protecting the transatlantic area is an international priority, and emerging and disruptive technologies are crucial. However, to secure this area, it is essential to adopt effective force protection measures and credible force projection during deployment. Through specific research practices, such as documentary analysis, the paper intends to address how military leaders organize the rapid movement of forces to potential "hotspots" by planning for force protection and leveraging emerging and disruptive technologies.

***Keywords**: deployment; force protection; emerging and disruptive technologies; security; critical infrastructure; movement.*

Introduction

Multiple threats to international security constitute a challenge to national security, and there are several factors, such as political instability, economic inequities, climate changes, cyber security threats, nuclear proliferation, or the outbreak of conflicts, that facilitate the development of an unsafe, unstable, and vulnerable operating environment.

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In 2024, the conflicts in Ukraine and Gaza Strip could significantly alter the global geopolitical landscape, reconfiguring international and regional dynamics and causing worldwide instability and uncertainty. The costs of these conflicts are staggering. Therefore, the primary objective is to prevent their escalation and expedite the return to peace (Zhang, 2024).

At the national level, it is stipulated in the *National Defence Strategy for 2020-2024,* the idea that "*the security environment is characterized by an extensive reconfiguration of relations between actors with global interests, a fact that can influence the stability and predictability of the international system*". Russian Federation's unjustified and violent actions towards Ukraine and its violation of the norms of international law represent an imminent danger to the security of the transatlantic area (Administrația Prezidențială, 2020). For these reasons, Romania, as well as other EU or NATO Member States, is concerned with streamlining the process of military deployment to the eastern flank of Europe so that these forces are ready to fight the war on short notice and respond effectively against potential hostile Russian actions, underscoring the need for a rapid and efficient response.

The development of emerging and disruptive technologies (EDTs) determines, on the one hand, advantages for the evolution and use of the armed forces. On the other hand, they constitute potential dangers as they can become sources of cyberattacks and imply new data security measures. In other words, the technological advance that is prominent in this era of globalization has facilitated the spread of technologies and information, crossing national borders, but has also determined the emergence of new sources of danger and instability, such as the proliferation of weapons of mass destruction, thus generating significant threats to regional or even global security (Frankova, 2023).

Artificial intelligence, the most widespread form of EDTs, continues to make revolutionary progress. In the future, this technology could surpass human abilities. Multiple domains, such as transportation, research, or education, will evolve based on the premise of the „Internet of Things (IoT). In the military field, if the states continue to prioritize their individual security needs and neglect the demands of joint guarantee, developing intelligent military systems that cannot be used in a transnational framework, the risk of rapid escalation of conflicts and the emergence of crises between major powers could intensify.

Emerging and disruptive technologies can shape the new security environment, from the economic and military balance between states to the future of work, wealth, and inequalities within them (Cîrciumaru et al, 2021). These new technologies will produce significant changes in the evolution of international relations and the security situation. In the future, power and dominance will belong to those states that will obtain supremacy in this field. The impact of these technologies will be decisive for

redefining military strategies and doctrines and adapting the concepts of operations, including the deployment of military troops from one place to another.

This article aims to analyse the implications of new types of EDTs in the deployment process and to also highlight how the movement of military forces from one point to another has improved since these new systems and other technology elements were adopted.

The author intends to offer some suggestions for simplifying the deployment process further and ensuring the protection of forces based on the constant evolution of new technologies that influence all fields, including the military one.

The research analyses an essential number of bibliographic sources in the field, such as articles and scientific publications issued in journals with a high impact factor, books, military documents and regulations, online available information, and communiques of accredited institutions of interest in this topic.

By carrying out this research, the author aims to identify the answers to the following research questions:

1. What emerging and disruptive technologies are used in the deployment process?

2. How has the use of these technologies influenced the deployment process?

3. What are the directions towards which the deployment process is heading by using EDTs?

To identify the answers to these questions, the author will follow a subsequent trajectory: performing a brief analysis of the current and foreseeable operating environment, identifying general and specific information on emerging and disruptive technologies, especially those used in the deployment process, and pinpointing their role in this process. Subsequently, the author will highlight potential courses of action regarding the evolution of the deployment process. The primary research method used to conduct this study is documentary analysis.

However, it should be borne in mind that the author may encounter difficulties in carrying out the research and may identify certain limitations. The study's novelty may also determine a limited number of scientific sources from which to obtain information. Additionally, the predominantly military nature of the topic may restrict access to classified information, which would have helped conduct a more thorough investigation.

The article is structured in three chapters. In the first one, the author presents the current and foreseeable operating environment from the perspective of the evolution of EDTs. In the second chapter, there are presented conceptual information regarding EDTs and their role in military deployment. The final chapter highlights the answers to the research questions, focusing on the main EDTs and on their use for military transport and mobility.

1. Delimitation of the Current and Foreseeable Operating Environment

The world is facing new challenges and threats. At the European level, tensions are increasing, and globally, national vulnerabilities, whether economic, environmental, or technological, are increasingly turning into threats that quickly spread in the international environment. It has become evident that peace and security are no longer guaranteed de facto, and dangers that can affect Europe transcend national borders.

If not properly used, new technologies can affect the future security environment. Hence, there is a need to secure the data and information from IT systems in public institutions and, more importantly, to ensure security. Hostile entities can exploit potential vulnerabilities, and interdependent infrastructures can be compromised, irreversibly affecting national security (Cîrciumaru et al, 2021).

After almost three decades of neglecting the military situation in Europe, the Russian invasion of Ukraine highlighted the need to modernize and equip the Armed Forces of European states. The conflict, which began on February 24, 2022, emphasized the need for extraordinary efforts to return and revive military forces in the transatlantic area.

There have been signs of military preparations for a potential conflict since 2014, when Russia annexed Crimea and conducted the Hybrid War against Ukraine. Even before that moment, at the NATO level, troops were increasingly involved in military activities conducted in an assembled multinational environment of a lower intensity. Today, it is clear that NATO and the EU can provide Europe with a credible military force to face any strategic competition only through joint efforts.

Throughout this period, European nations had expeditionary forces in theatres of operations in Afghanistan, Iraq, the Western Balkans or states in Africa. Those military structures were better prepared to operate based on an expeditionary model in stability and support operations outside Europe and less ready to defend their own territory (Tenenbaum & Peria-Peigne, 2023). For these reasons, the military leaders were much better prepared to implement the deployment process in the previously mentioned regions according to the expeditionary model. However, they had yet to study the possibility of developing deployment plans in the European space, mainly towards the eastern flank, that could be applied in a far volatile environment if the moment comes.

Considering the challenges of recent years, more and more countries, especially those in Eastern Europe, have made significant efforts and increased the budget from the Gross Domestic Product (GDP) allocated to defence to a minimum of 2%, for investments in new technologies, armaments, and autonomous vehicles. The latest technological breakthroughs in the general field of artificial intelligence (AI) will come with profound changes in all fields, including the military. Thus, emerging and

disruptive technologies could influence how military actions are conducted or even the fate of war.

As previously mentioned, EDTs can revolutionize the nature of conflicts. One by one, European states began recognizing the importance of EDTs and launched various initiatives for development and research. Globally, EDTs for military purposes are being developed, notably by China, Russia, and the USA (Clapp, 2022). Their progress will impact the evolution of interstate relations, lead to changes in geostrategic relations, and alter power dynamics swiftly. Given these transformations, the current environment appears increasingly unpredictable, intensifying the race to modernize forces and develop effective combat equipment and vehicles.

2. Conceptual Description of Emerging and Disruptive Technologies

In this approach, it is necessary to make a reliable delimitation and understand the two concepts, emerging and disruptive technologies, and their implications on the deployment process and military actions in general.

Emerging technologies are broadly considered innovative technologies that have been recently developed, they are being developed or will be developed in the coming years, and their "development, practical applications or both are still largely unrealized, so that they become figuratively standing out from a background of non-existence or obscurity" (Udrescu & Siteanu, 2021). The range of emerging technologies, such as cloud, innovative computing, artificial intelligence, 5G, robotics, and IoT stands out. In this respect, NATO identifies seven critical emerging technologies in its Emerging and Disruptive Technologies Roadmap: Artificial Intelligence (AI), machine learning (ML), big data (BDA), autonomy, hypersonic, space technologies, quantum computing, and biotechnologies (NATO, 2020).

Although both are part of the new technologies category and have common elements, the emerging ones differ from **the disruptive** in the sense that the second category constitutes "those innovations that create a new market and new financial value, replacing consecrated firms, products, and alliances" (Tăbleț, 2021). The European Defense Fund defines disruptive technologies as "an enhanced or completely new technology that brings about a radical change, including a paradigm shift in the concept and conduct of defence affairs such as by replacing existing defence technologies or rendering them obsolete". (Clapp, 2022).

For a better understanding of these concepts, from a military perspective, in *Emerging Technology Trends for Defense and Security,* emerging technologies are defined as "technologies with low maturity or technology readiness level, currently in development." On the other hand, in the same report, disruptive technologies are considered as "technology convergence that involves merging of existing technologies in order to create new and better possibilities and allows development

and maturation" (Andas, 2020). Regarding this type of technologies, in the same NATO's *Emerging and Disruptive Technologies Roadmap,* we identify the following classification: Big Data, Artificial Intelligence, Robotics, space and bio technology, and hypersonic weapons (NATO, 2020)

Technologies based on artificial intelligence are rapidly evolving worldwide and are used, for example, to optimize some analytical processes or, in the field of transport, to monitor traffic jams. The advance of AI has been driven by the increase of informational capabilities and new algorithms, but also by the availability of data obtained from accessible sources (Academia Națională de Informații "Mihai Viteazul", 2022).

The world is continuously developing, and so is the military environment. To continue this process, advancing military deployment and mobility is necessary. Emerging and disruptive technologies are being integrated to enhance force deployment capability and have become game-changers in the force sustainability, agility, mobility and protection.

3. The Role of Emerging and Disruptive Technologies in the Military Deployment Process

The deployment process is closely related to force protection and military mobility. The latter is an element that analyzes the optimization of route planning and the movement of personnel and materials in much more detail. When military movement is organized, several factors are considered, such as port analysis, position of bridges along routes, tunnels, weather conditions, force protection, or cyber considerations. At the European level, the military transport infrastructure is related to the civil network – Trans-European Transport Network (TEN-T), which provides the needs for the movement of military equipment, vehicles, and personnel on its corridors, in a percentage of 94%, anywhere in Europe. However, considering that this transport infrastructure is civilian, used both in peacetime and in times of conflict, there are risks that it will be exposed to hostile actions. Critical infrastructure depends on new technologies that control and monitor transportation through devices and processes (Administrația Prezidențială, 2020). With these aspects in mind, cyber security is integral to the deployment planning process. Digital systems for military mobility, such as Logistics Functional Area Service (LOGFAS) and automated control systems for aircraft, ships, or trains, are essential for the protection of military transports and for maintaining their records.

The EU has foreseen the need to use EDTs in the process of developing military mobility, including in the *Action Plan on military mobility 2.0*, adopted in 2022 for a period of 4 years. The organization tries, through this plan, to stimulate the development of technologies that improve the field of military mobility. For

example, it advances measures to digitize military transport activities, through the development of secure and quick digital systems through which to ensure the exchange of information, based on AI-type ETDs. Also, it follows the implementation of space-based navigation (Galileo/ EGNOS) secured communication and Earth Observation (Copernicus) that have the potential to significantly benefit military mobility (European Commission, 2022).

The dependence of the deployment process on EDTs refers not only to the development of means of transport and their adaptation to current conditions but also to the securing of transports, monitoring of convoys, transport infrastructure, and digitization of the field. For the deployment process to be effective, the states involved must improve their infrastructure and joint capabilities and use new digital technologies for infrastructure monitoring and logistics planning (European Parliament, 2020). Through the new tool based on EDTs – Information Sharing and Analysis Centers (ISACs), civil-military structures can preserve and subsequently promote information on transports, and critical infrastructure operators can protect their facilities, personnel, and users from physical security and cyber threats (Uniunea Europeană, 2019).

Force protection during the deployment operation is an essential element to be considered, and the new emerging and disruptive technologies bring new solutions for better conditions for an integrated equipment, vehicles, and personnel protection while on the move. Adversaries may employ cyberspace attacks to inflict power outages at home stations, sabotage and target transportation networks to delay shipment of unit equipment, conduct social media attacks, or instigate protests that lower popular support for the Armed Forces (Headquarters, Department of the Army, 2022). Most force protection measures developed recently due to the unprecedented evolution of the concept of EDTs and used during the deployment process are physical measures. In the Romanian Armed Forces Doctrine for Operations, there are 19 measures for force protection, including physical measures (such as security, engineering, EOD, camouflage, Air Defence, CBRN, fire fight, medical, health and environmental), as well as psychological (countering PsyOps, PR, judicial and religious assistance) and electronic (INFOSEC, electromagnetic) ones. Some of the most important measures of force protection regarding the mobility are sensors, automatic barriers, and other remote-control devices to observe enemy activity and prevent possible problems during transportation. These systems can identify dangerous areas and safe transport routes, and the convoy will benefit from the necessary protection. Moreover, new EDTs used in this sense can be operated from a distance, supplementing the level of protection (Ministry of Defence, 2015).

During deployment, several force protection measures must be taken to avoid potential cyber-attacks on convoys or hubs where troops store their equipment, weapons, or ammunition. To achieve this, automating systems and digitizing force

deployment processes are necessary. The new technologies also used in the military field produce a quick reaction in case of an incident by installing programmable logic controllers (PLC) (Stanciu & Gimiga, 2023).

The Ukrainian conflict just highlighted the increasing use of Unmanned Aerial and Undersea Systems (UAVs and UUSs) which poses real threats to force deployments, especially the use of Maritime ships and infrastructure. These systems cause material damage, by destroying infrastructure and military equipment, but they also lead to human losses. From these considerations, in future military operations it is necessary to equip the means of transportation, regardless of their type, with sensors or special systems that provide early warning of the approach of these dangers or additional physical protection measures, such as the use of thicker armour, camouflage, etc. (Samus, 2024).

In recent years, several systems and programs based on EDTs have been developed to ensure the interconnection, security, and digitization of military transport, regardless of the type of transport. In terms of rail transport, used both for civilian passengers, cargo, and for military transport to secure them and to ensure rapid deployments, technologies such as the Internet of Things or the European Rail Traffic Management System (ERTMS) are currently being used - aiming to establish a standard for communications, signaling, management, and control of rail transport at the European level (European Commission, 2022).

Road transport is indispensable for moving military forces from one point to another. Emerging and disruptive technologies present an opportunity to secure the deployment of troops. For example, they are successfully used to monitor and manage traffic lights and traffic control through sensors so that when a military convoy approaches, they allow it to pass under the best conditions (Beckvard & Zotz, 2021). Regarding the development of sensors, new technologies such as LiDAR, which uses laser pulses to omnidirectional measure distances to objects of any size and successfully navigate on land and in airspace, or *dart-shooting* systems for mounting sensors using arrows or other adherent supports placed by drone (Cîrciumaru et al, 2021) are already implemented or in the testing stage.

EDTs based on radio frequency identification (RFID) are also successfully used to monitor the transport of military equipment, materials, or vehicles (Merluşcă, 2024). Thus, the supply process will be improved, with confirmation that all materials have been delivered and arrived safely at their destination. Most importantly – they were received at the right time. Through RFID technology, information indicating the location and delivery time of materials is updated so that military leaders have a clear and complete idea of the stocks of materials they will receive.

Regarding the development of the navigation systems expanded through EDTs designed to ensure the safety of military transports, we can identify what is included in the Action Plan 2.0 on military mobility as information related to

the secure navigation systems used by the military forces of the European states, Galileo/EGNOS, and Copernicus. The Public Regulated Service (PRS) is the most secure Galileo navigation service suitable for governmental applications. It must be reliable even under crisis circumstances, equivalent to the GPS M-Code. Galileo PRS could benefit military mobility by providing uninterrupted, secure, and accurate Position Navigation and Timing information in contested environments, fulfilling critical operational needs in the theatre of operations, and contributing to informed decision-making and command and control. The European Geostationary Navigation Overlay Service (EGNOS), although not designed to operate in a conflict zone, can offer critical operational benefits for logistics and transport operations. In adverse weather conditions, it can enable secure access to air bases and regional airports that do not have other means (European Commission, 2022).

EDTs also play a crucial role in advancing autonomous systems, which are set to revolutionize the military transport sector. This includes trajectory planning, collision avoidance, assisted assistance, dynamic mission planning (navigation, data collection, adaptive detection environment characterization), and extending the operational duration of unmanned underwater vehicles (Ioniță 2022).

From the perspective of military transports, AI has made an exceptional contribution to simplifying the deployment process and reducing material damages or human losses. Several studies have highlighted that more than 50% of casualties among combatants in contemporary conflicts occur while transporting materials, equipment, fuel, or techniques in operational areas (Cîrciumaru et al, 2021). The emergence of remote control vehicles has led to a reduction in the number of victims. In 2019, at the Fort Bliss military base in Texas, the US military presented the first ten trucks capable of moving in the absence of drivers in a convoy. The new transport method involved a driver for the first truck and driverless trucks for the rest (Lee, 2019). Future deployment plans in all operational environments are varied. The goal is to develop a transport system comprising autonomous land, air, and naval vehicles that operate within the operational area under the control of an optimized, automated command centre.

The US is supported through the Tank Automotive Command (TACOM), which manages the Armed Forces's ground equipment supply chain, in developing vehicles that require low maintenance, have a smaller footprint, are lighter, and can self-diagnose potential failure. The new vehicles that the US Army will use will be lighter, have stronger armour, and consume less fuel, thus reducing fuel needs (Sikes, 2023).

The need to ensure a future military transport has become apparent based on the new EDTs, as their specifications will allow better planning and execution of the deployment process. The use of wireless communications, radar, sophisticated computer-aided video detectors, on-board computers, and navigation systems

to ensure a multimodal and integrated transport concept based on technology are measures based on modern technologies, which will ensure interoperability between services and compatibility with civil traffic management and vehicle dispatch system (Brown, Bennett, & Honea, 2020).

Also, emerging and disruptive technologies help to streamline the field of transport and the movement of military forces across European borders over long distances by launching projects such as TRAWA (for the standardization of the drone detection and avoidance system) or ARTURO advanced radar technology (Rodrigues, 2023). In the same vein, the EU has developed the Secure Digital Military Mobility System (SDMMS), which has an implementation deadline of May 31, 2025, and aims to facilitate and secure the exchange of information between states requesting and approving military transports (ASSETS, 2022).

Also related to the field of EDTs and its influence on deployments is the replacement of military vehicles that use conventional fuel sources with new models that use electric or hybrid technologies. Their role is to streamline and lighten the burden from a logistics perspective but also to reduce the adverse effects on the environment. Considering the need for a more sustainable environment, the military field is forced to adapt, and the idea of using new types of transport vehicles is becoming a reality (NSTXL, 2023).

Comparing civilian and military transportation methods, we see the breadth of innovative solutions adopted by private sector companies to simplify the transportation process based on artificial intelligence, robotic technologies, or other EDT-based systems. In the military field, these robotic systems, which in some places are already implemented and yielding results, would streamline the logistics part of the deployment operation. In this sense, the US, for example, promotes using robots for autonomous transport vehicles, such as the THEMIS (Tracked Hybrid Modular Infrastructure System). The US also imports the idea of technological development by using drones to supply and resupply troops or to monitor military transports (Merlușcă, 2024).

Currently, the US Army uses the Joint Flow Analysis System for Transportation (JFAST) model, which can operate in the joint area, determine transportation requirements, provide analysis on courses of action, and design routes for troops and equipment transportation by sea, land, or air. JFAST is a modern multimodal system capable of rapid no-plan development and plan refinement. Through EDTs, the deployment process has been simplified by implementing identification barcodes, microchips, systems that can provide real-time information about transport, and automated systems to support rapid deployment and movement of cargo by air, sea, or land (Brown, Bennett, & Honea, 2020).

Although the US holds supremacy in the technological field among the NATO Member States, one by one, all the Allies began to be concerned by the development

of this field. Romania, in the *National Strategy in the field of Artificial Intelligence 2024-2027,* highlighted the role of artificial intelligence development in optimal transport evolution. The document aims at "the digitization of road infrastructure, by installing sensors for autonomous vehicles that are guided by communication with these sensors and vehicular ad-hoc networks (VANETs), the digitization of documents used in transport and the promotion of intelligent transport systems" (Ministerul Digitalizării, 2024).

Currently, EDTs are essential tools for force projection and force protection, having a special role in the deployment process, by ensuring the physical protection of the personnel and equipment, the development of faster and quicker transport vehicles, and at the same time, simplifying the process itself, by eliminating bureaucratic barriers, digitizing transport forms, satellite monitoring of convoys or automatic planning of transport routes, depending on certain parameters, through digital applications.

Conclusions

New technologies, especially artificial intelligence, are already producing changes in the security environment, as states are concerned with consolidating technological advances simultaneously with the evolution of current threats.

The main component of emerging and disruptive technologies, namely artificial intelligence, impacts the development of critical infrastructure and defence capabilities. The new systems, applications, programs, and projects based on EDTs support the development of modern capabilities to ensure the control, protection, and connectivity of military transports at the national level and within the security framework of the Alliance in the transatlantic space.

The need for society to rapidly adapt to the new models offered by emerging and disruptive technologies is evident. The rapid evolution of technology strongly impacts both social and military environments. Given the concern for ensuring security, states must first ensure the ability to deploy forces in their areas of operations rapidly.

The emerging and disruptive technologies used in the deployment process refer, on the one hand, to the monitoring of transport through digital networks, intelligent and interconnected systems, applications, or programs, and on the other hand, to the modernization of the vehicles and the transport technique used, through the development autonomous systems, which ensure additional protection for military personnel or transported materials and equipment, as well as environmental sustainability.

By using EDTs, the deployment process is noticeably improved. By replacing outdated vehicles with modern and autonomous ones, travel speeds have increased

considerably, and reaction times have improved. Thus, logistics were provided more quickly, and the operation speeded up. On the other hand, the digitization of systems has reduced bureaucracy and connected all transatlantic states to a shared network of military transports in the operations environment. These advantages of EDTs cannot be contested, and their constant evolution requires the permanent adaptation of the armies to the new requirements through significant investments in the development of modern systems.

Among other things, the benefits of these new technologies include eliminating human losses, as soldiers are less exposed to the actions of the adversary, providing accessibility in different locations positioned in a complex operational environment, and reducing bureaucracy and unnecessary waiting times.

Scrutinizing the deployment process's horizon reveals an increasing reliance on digital networks and intelligent, interconnected systems. If the investments in EDTs continue, the deployment process will be completed in a considerably shorter time. This is a minimum cost that a state can assume to ensure the security of its citizens in times when security is increasingly challenging to achieve and maintain.

EDTs intervene in developing measures regarding the deployment process by implementing specific programs and applications, which ensure the protection and securing of military transports, aspects that could not be regulated before. To improve this process in the future, the author considers the following proposals as being relevant:

- implementation, as fast as possible, of a common database at the transatlantic level for real-time monitoring of all types of military transport, such as the RFID automatic identification method;

- the allocation of considerably larger budgets by NATO Member States for the development of modern military transport capabilities based on new emerging and disruptive technologies;

- the identification, promotion, and transfer of cutting-edge technologies from the civilian sector to the military organization to facilitate and boost the operationalization of the multi-domain operations concept. By identifying, in our case, the leading players in the development of intelligent transport systems or software and, subsequently, achieving cooperation and shared interests for the transfer, adaption, and implementation of these technologies in the military organization, the deployment process and force protection during the movement of forces may have been considerable;

- at national level, for the transport of troops, standard software can be used, e.g. LOGFAS, that is accessible to all military units, to monitor transports, verify the tasks of each structure, and reduce waiting times by eliminating bureaucracy;

- developing protocols or procedures to ensure a whole-of-government approach to the military deployment process between ministries with specific attributions, such

as the Ministry of Digitization, the Ministry of Transport, and the Ministry of Finance, to ensure the rapid development of EDTs that could support the targeted field;

- development by the Ministry of Defense of specific programs aimed at ensuring cyber protection of the databases that contain all the information related to the deployed equipment, materials, and personnel to provide force protection and to eradicate the existing virulent informational, hybrid, or cyber vulnerabilities.

The realm of emerging and disruptive technologies is constantly changing and evolving. More and more modern systems are improving the current activity in civil and military fields. In order to ensure the security and deterrence of the European territory, the military must quickly and optimally implement the new EDTs and adapt to all the changes that may occur. Good cooperation at national and international levels can sustain the development of military mobility and ensure prompt deterrence and defence of the eastern flank. Only by understanding the role of new technologies and adapting the military process to the digital evolution will the deployment process be facilitated, and by using robots, drones, or other military systems for dangerous activities performed during the deployment, the number of potential casualties will be reduced. The force protection will be achieved in better ways than before the EDTs.

There is a substantial interest in developing emerging and disruptive technologies to expand future deterrence and defence capabilities, where technological superiority will matter enormously. This dominance will also reduce the quantitative gap between the opponents' armed forces and the human factor invested on the battlefield. In the matter of force deployment, prototypes of autonomous vehicles, new guiding, monitoring, and validation systems, and digital databases that gauge military transports are part of this technological expansion, which influences all domains.

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