

# WAYS OF EMPLOYING ISR STRUCTURES FROM LAND FORCES IN EXERCISES CONDUCTED ON NATIONAL TERRITORY

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*The ISR structures (Intelligence, Surveillance, Reconnaissance) of the Land Forces participate constantly in exercises on national territory, bringing a substantial contribution to intelligence support of decision-makers in all operation stages.*

*Through their specific capabilities, ISR structures will cooperate uninterruptedly both horizontally and vertically in information gathering. Digitalising, applying information technology on ISR capabilities will provide the commander and his staff with multiple levers that will enable him to make decisions much quicker and to exploit the resulting plan much more efficiently, thus reducing the duration of operations.*

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## INTRODUCTION

The world is constantly changing, on the one side, as a result of the continuous development of technology, and on the other, due to the impressive findings resulting from ample research being done, as well as from the desire to optimise the processes of gathering information in all fields of combat.

Starting from the nation's security objectives referring to *“developing the national capacity of a state to defend itself”* and *“increasing the efficiency of national systems for prevention and management of crisis situations”* (*Strategia Națională de Apărare a Țării/The National Defence Strategy, 2020, p. 14*), we consider it necessary to address the possibilities of supporting ISR structures in Land Forces in the combined effort of the information architecture gathered during national exercises. Thus, at national level, the combined intelligence, surveillance and research system is essential for all military operations, as it provides intelligence to decision-makers and staff, thus creating the necessary conditions, on the one hand, for the adoption of correct and timely decisions, and on the other hand, for the successful accomplishment of military actions and operations.

## THE OPERATIONAL ENVIRONMENT OF THE FUTURE

From a doctrinal point of view, the concept of ISR is *“a set of intelligence and operations capabilities that synchronise and integrate the planning and operations of all collection capabilities with the processing, exploitation and dissemination of resulting intelligence, in direct support of planning, preparation and execution of operations”* (*Doctrina pentru proceduri de informații/Doctrine for Intelligence Procedures, 2018, p. 10*).

At the same time, the Joint Intelligence Surveillance and Reconnaissance (JISR) initiative was launched by NATO at the 2012 Chicago Summit as a complex, extensive and significant area of capabilities. The allies also intend to work together to promote the exchange of information, using NATO platforms and networks and optimising their use to develop the joint effort in the field of JISR (Warsaw Summit Communiqué, Art. 75).

JISR is a multidisciplinary approach, containing four distinct elements: joint, intelligence, research and surveillance. The joint concept represents the integration of activities, operations and organisations in which at least two participating elements take part (AJP-3.3, p. 15).

During the joint exercises carried out on national territory, based on the documents received at the strategic level, the commander of the Joint Forces Group identifies the intelligence and training requirements specific to the ISR structures of the Land Forces. These structures participate in the full spectrum of ISR operations that are defined in the literature as *“operations performed by forces that have the main mission of collecting data and information, as well as other forces that have the ability to perform such a mission as a secondary mission”* (IA-1.5, p. 9).

ISR operations aim to gather intelligence on the enemy, terrain, weather and other relevant aspects of the area of operations, aspects that can influence the actions of their own forces. Approaching the perspective of carrying out actions at operational level in the national ISR spectrum, we are aware that they take place in a fluid, multidimensional environment, characterised by asymmetric types of actions, mobility, decentralisation, manoeuvrability, flexibility and using a very wide range of combined actions such as air, land, naval, information, psychological carried out simultaneously, at a very sustained pace.

During the exercises, ISR structures of the Land Forces will train in carrying out missions specific to the ISR domain, which represent, from a doctrinal point of view: *finding clues and early warnings, preparing joint intelligence on the operational field, identifying the combat organisation and disposition of enemy combat forces, estimating and monitoring the situation, support for force protection and help for the process of target management* (I.A-1.5, p. 10).

The future operation environment will be characterised by *“constant and essential changes”* (Air Force Doctrine Document, 2007, p. 15). The digitalisation of the modern battlefield, the dominance in information and psychological confrontations, the shaping and simulation of battle actions, the modularity are all aspects that, through a permanent improvement, have considerably changed the physiognomy of combat. Therefore, it can be stated that the war of the future will take place mainly in the information field: *“Know your enemy and know yourself; out of a hundred battles, you will not expose yourself to any danger!”* (Sun Tzu, 2009, p. 24). Current trends reveal that new types of wars are gradually required, such as: information warfare, cyber warfare, network-based warfare, electronic warfare, psychological warfare, media warfare etc. (Paul, 2005, p. 13).

In the present approach, respectively that of the possibilities of using ISR structures in exercises on the national territory, we consider that we have to take into account several aspects. Throughout the national territory, we have a multitude of specific capabilities. All these, used in an optimised framework, can generate multiple ways of developing high-performance skills in carrying out actions

at an operational, combined level. Therefore, the ISR structures of the Land Forces apply their principles, which, regardless of the echelon, consist of: *centralised targeting and decentralised execution, responsiveness, sharing, sustainability, trust and accuracy* (I.A-1.5, 2017, p. 17).

In order to highlight possible exercises, we need to consider all the environments in which state actors can participate, especially the capabilities of all services. Referring to Joint – type exercises, in which there will be a cooperation between the ISR availabilities of all spectra, the type of JISR system is the integrator of terrestrial, aerial and naval images (Land Recognised Picture-LRP, Aerial Recognised Picture-ARP, Naval Recognised Picture-NRP) and, at the same time, the element that meets the information requirements necessary for the conduct of military actions.

Specific to their activity is the creation and dissemination of images through specific systems, such as: Land Forces IRS Capabilities Integrated Command and Control System/SIC2SR; National Air Command and Control System/SCCAN; Integrated System for Observation, Surveillance and Control of the Traffic at the Black Sea/SCOMAR. To achieve joint interoperability, ISR systems will be structured on three components:

- a command and control component;
- a data and information merging component;
- a data and information collection component (Delivering Actionable Intelligence, 2011).

The operational ISR support network is, in fact, a “*system of systems*”, multiple networks interconnected at different levels of classification, connecting different structures. In this context, the information must be accessible to all beneficiaries, regardless of their position and field of activity, through network access and security policies, so that both their levels of access to classified information and the principle of “*the need to know*” are respected. By networking all available sensors and sources, the capabilities can now merge data with other sources, add details to the COP (Common Operational Picture) and support a wide range of beneficiaries.

In contemporary and future military actions, land forces groups will be reduced in number, but at the same time will benefit from the support of high-tech combat and ISR structures. All operational structures will be of the combined weapons type, with a special independence of action, and will be set up on the principle of combat groups, for complex actions in any range of terrain, regardless of its degree of accessibility (Udeanu, 2006, p. 64). This aspect of military action highlights the fact that, “*regardless of the level of modernisation of air or naval military structures, in the contemporary stage and in the immediate perspective, the conquest and control*

*of ground space remain a priority and final objective of any strategic operation” (Ibid, p. 63).*

According to some specialists in the field, the battlespace represents *“the environment, factors and conditions that must be understood for successfully applying the combat power, providing force protection and fulfilling the mission. It includes air, land, sea, space and the elements existing in them: own and enemy forces; disposition; weather conditions; land; electromagnetic spectrum; the information space in the area and the area of interest” (Mathews, 1997, p. 71).*

If we analyse the way in which ISR structures perform in exercises, from the perspective of work environment, we can apply a high rate of presence in all spaces where battle can take place: land, air, extra -atmospheric, cosmic and geophysical spaces.

At the same time, in most of these cases, *“the area meant for military actions is not identified only with the land, air and maritime space necessary for this purpose, but rather with the conditions of time, season and weather” (Pantazi, 2007, p. 79).*

In addition, we are witnessing the emergence of new combat spaces, generated by the military technological revolution, specific to modern warfare, that are improper to physical (natural) space. We can recognise, in this case, the following types of spaces, with their own dimensions and characteristics, in which the ISR structures also carry out their specific activities: the information space; computer space; virtual space (cyberspace); electromagnetic space; CBRN – meteorological – ecological space; psychological space; parapsychological space.

The optimisation of processes designed to create performance for operational cooperation between services can be achieved by involving and integrating, in various exercises, all ISR capabilities available at the national level, exercises which, through customised scenarios, train aspects related to the command-control, data and information fusion subsystem, obtaining results that will meet the following hypothetical requirements:

- it will ensure the command and control of the execution subsystem;
- it will direct and integrate ISR and target location system, in support of the level of operations command;
- it will plan and manage the collection process carried out by the execution subsystem in order to collect data, information, images from the area of intelligence responsibility or informational interest, depending on the scope of the exercise;
- it will integrate the execution subsystem into the ISR system, facilitating its coordination with other means of information collection;

- it will process, filter, integrate and exploit images, data, information and products resulting from their processing, from multiple sources, in order to meet information needs (including optical, infrared, multi-/hyperspectral images, images captured by the radar system with synthetic aperture, images recorded by terrestrial target motion sensors, as well as data and information provided by IMINT, SIGINT, HUMINT, OSINT sources or by independent sensors, CIMIC reports and other national sources);
- it will transmit raw/processed information to users (including for upper and subordinate command levels, air and naval forces), on time, in a secure and efficient manner, not only in visibility parameters, but also beyond them;
- it will put together and display the current situation of the information on the battlefield, with permanent and timely updates.

In addition, in any type of exercise, aspects of the execution subsystems related to the operation of each capability may be involved, in such a way as:

- to integrate capabilities into a wider system (JISR), taking into account the broad range generated by the media approach with the help of all services;
- to easily locate and identify targets in daytime, at night and in favourable or unfavourable weather conditions and to send the information in a timely manner to all branches (thus ensuring the coherent establishment of easy and efficient communication links);
- to use appropriate terminological skills to process and exploit intercepted communications;
- to cooperate with other means of collecting information (including components of the Romanian Intelligence Community, namely the Romanian Intelligence Service, the Foreign Intelligence Service, the General Directorate of Defence Intelligence and the General Directorate of Intelligence and Internal Protection of the Ministry of Administration and Interior);
- to disseminate information to beneficiaries in a timely and secure manner;
- to exploit shaping and simulation capabilities and their related systems in order to familiarise all participants with the modus operandi and the process of collecting, processing and providing data and information.

In our opinion, the participation of ISR structures in national exercises must necessarily include specific training regarding survival, avoidance of capture, resistance in conditions of isolation, capture or detention and escape-extraction-recovery. Survival, Evasion, Resistance and Extraction/SERE is *“a set of tactics, techniques and procedures designed to provide isolated personnel with the skills necessary for survival in a hostile environment and resistance in captivity”*

(SMAp.-61, 2020, p. 10). When captured by the enemy, the isolated personnel (ISOP) must face the physical and mental pressure exerted on them, and when the situation calls for it, to escape, either through support received from the recovery forces or by their own forces, by identifying ways back.

During the joint exercises, the ISR bodies must be ready for the risk of isolation. The risk of isolation can be added to the following categories: low risk of isolation or exploitation; medium risk of isolation or exploitation; or high risk of isolation or exploitation (Ibid, p. 19).

The ISR bodies prepare their teams for any mode of acting in case of isolation in a hostile environment. At the same time, the participating military personnel will be trained to limit the risk of exposure to isolation, through current plans as well as through specific operating procedures.

We also consider it necessary to intensify training, at joint level, of the ISR bodies of Land Forces for the collection of data and information from open sources (OSINT), which are explicitly focused on the intentions of opponents and operations carried out by potential opponents or even partners. Through open sources, ISR structures can support missions at operational level, such as: contributing to the identification of clues and issuing early warning; contribution with information to the targeting process: identification, location, prioritisation, loss assessment; evaluating efficiency from an operational point of view (I.A.-1.7, p. 16).

In order to participate in joint exercises, ISR structures are preparing information documents through a very good knowledge of the operational environment. The training, from the perspective of providing information from open sources, may include training and development of skills in: searching, identifying and accessing information in an optimal time; identifying the information needed to support operations and skills in identifying and processing relevant, timely and credible information; evaluating the information objectively; understanding the nuances of legality in the use of information from open sources (Ibid, p. 20).

Cyber Intelligence (CYBERINT) structures obtain information by intercepting data transmitted in the cyber environment, other than those obtained from open sources. CYBERINT operations are represented by *“intrusive or non-intrusive activities carried out in order to collect data and information necessary for the operational preparation of cyberspace”* (S.M.Ap.-74, p. 23). Intrusive activities are those carried out by exploiting enemy and private networks, while non-intrusive actions are the result of exploiting information from public and own networks.

Therefore, we can reckon that the ISR structures of the Land Forces, through the CYBERINT structures, can participate in the intelligence preparation

of the operational environment of the cyberspace by developing intelligence products to support the process of planning and conducting operations and decision-making by the commander. The main lines of effort in the field of CYBERINT focus on: convergence towards common, clear and concise objectives and goals; streamlining the allocation of available resources; concentration of joint effort through cooperation and coordination (Ibid, p. 25).

Contemporary conflicts have shown that no land or naval operation can be carried out without air support. High impact strength, accuracy of air strikes and missiles, speed of reaction (moving by air is the fastest, of all other means of movement) gives this service a special importance in the planning, organisation and conduct of any military operation.

Space actions exceed the limit of human conditionality, taking place in outer space, in the immediate vicinity of the Earth's atmosphere, through the presence and action of artificial satellites, the main responsible for collecting information about space combat, in general, transmitting data and information in real time, as well as directing certain high-precision shots. The space environment does not involve a direct confrontation between conflicting parties, but it supports their actions and, in most cases, they become decisive in winning the war: *"Action in outer space is not the same as the battle to conquer the Cosmos. This type of conflict implies an unlimited, vertical expansion in the outer space of the theatres and the means of confrontation at the information, media, economic and military level"* (Mureşan et al, 2006, p. 56). ISR systems, location systems and other means can be placed in the space, thus facilitating the unlimited use of this environment in military confrontations.

The entire process of air operation planning and air defence is supported by the ISR process, enabling the continuous development of current and future operations. This process is closely aligned with the information requirements and needs to be coordinated to achieve mutual support between commands and to maximise the efficiency of collection and exploitation capabilities.

The ISR structures from Land Forces support the development of the JIPOE process (joint intelligence preparation of the operational environment) through information on: identifying the threats posed by risk factors, as well as assessing their evolutionary trends; the opponent's organisation: composition, identity, disposition, military equipment, possibilities of action, logistical support, particularities; possible enemy directions of action; possible intensity of military operations; possible time of air action; districts, targets and alignments that can be hit by enemy air means (FA-1.2, p. 32).

By supporting the joint intelligence preparation of the operational environment, ISR structures in the Land Forces can contribute intelligence related to the air threat, but also to the enemy air infrastructure, as follows:

- identification of airbases as well as temporary aerodromes;
- location of missile systems and infrastructure elements: supply, transport, storage, launch;
- identification of organisation of integrated air defence system (IAMDS Integrated Air and Missile Defence);
- environment and climate in the combined area of operations, as well as their effects on both own and adverse forces;
- identification of electronic warfare capabilities, location and how to use them;
- assessment of the strengths and weaknesses of the enemy, its vulnerabilities in different phases of the operation;
- observation, identification and analysis of the enemy measures of deception, masking and camouflage (Ibid, p. 34).

Naval military actions take place in rivers, seas and oceans both at the surface and in immersion. Due to the economic interests of the great powers in the maritime space, a source of raw materials, especially energy resources, the importance of confrontations on the seas and oceans of the world has increased dramatically. Thus, naval power has become an element of discouragement, intimidation or threat of the first rank, *“decisive in the design of the geopolitics of states and in their geostrategy”* (Udeanu, p. 67).

ISR structures in the Land Forces support naval structures through surveillance missions by surveillance of the maritime space. The viability of surveillance by observation is determined by the existence of networks of observation posts, links to high-performance communications, specific observation equipment, training of personnel regarding the maritime adversary. At the same time, the structures carry out the observation constantly and continuously, through a judicious organisation and distribution of forces and means, in a unitary conception, ensuring the transmission of data and information in a timely and efficient manner.

Maritime surveillance ensures: observation of own and enemy ships; identification of the characteristics of the main naval and air platforms; identification, warning and reporting of imminent attacks; reporting of data on weather changes.

Modern wars have demonstrated the interdependence between the services during the fulfilment of assigned missions and the need for a three-dimensional planning of actions. With the advent of the concept of *deep shot*, military theory

and tactics have undergone a new evolution, imposed by the high technology of the military environment, the emergence of weapons and high-precision shots, which have demonstrated the need to improve planning and organisation of joint operations.

## CONCLUSIONS

The impact of the unprecedented evolution of technology has generated a revolution on the battlefield, whether we are talking about real situations or referring to training environments, continuing to exert a considerable influence on the conduct of military operations, exercises and other training taking place in the national environment.

Digitisation, application of information technology on ISR capabilities will provide a commander and his staff with multiple levers that will enable him to make decisions much faster than before and exploit the resulting plan more efficiently, with the effect of increasing the rhythm of operations.

The exercises planned and carried out together, using all available capabilities, will provide coherence, generate skills and align the services with the use of all tools in order to obtain complex details about the operational environment.

Through the common exercises on national territory, the sensors of the Land Forces must be constantly connected to the sensors of Air and Naval forces, through a common network of information and communication, in order to create a fusion of information and avoiding duplication, congestions and redundancy, while at the same time respecting the principle of “operating on the same map” (IGEO-1 2020, p. 8), so as to provide a complete and objective image of the operational environment for the Joint Task Force.

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