Defence 24

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DEFENCE24 DAY: AIR FORCE AND GROUND BASED AIR DEFENCE TOGETHER FOR THE AIR SUPERIORITY AT NATO EASTERN FLANK

Effective fight for air superiority is absolutely crucial for a defensive operation carried out on the NATO Eastern Flank. Not only is it required to replace the old post-soviet equipment to do this, as an entirely new approach should be adopted towards joint operations undertaken by different systems. Technological sovereignty and development of own industrial expertise are of key importance in a longer run, as the participants of the "Air Superiority: How one can secure the NATO Eastern Flank?" panel emphasized, during the Defence24 DAY conference.

Air assets have come forward, among the threats that Poland could face during a potential conflict with the aggression coming from the east. The potential adversary has been able to reinforce his capabilities in the conventional domain, also introducing new solutions, on the basis of experience gathered over the course of operations undertaken in Ukraine or Syria.

At the same time, development of the ICT domain allows for a much greater coordination in carrying out an attack with the use of land, sea and air assets. In a situational context as such, creating an effective air defence system (be it allied or Polish) seems to be even a greater challenge.

Brig. general. pil. Ireneusz Starzyński, Deputy Commander at the Polish Air Operations Centre (COP) presented the current status of the Polish air defence system that needs some refinement to say the least. Apart from the F-16s, the remaining systems need to be replaced, as he suggested.

> *We still have some work to do, to integrate our defense systems. Currently the Air Force has 48 F-16 fighters at its disposal, along with MIG-29 jets that recently were causing trouble and the Su-22 platform the career of which is gradually coming to an end. The above is complemented with the ground element, the air defence component and the surface to air systems.*
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> *brig. general. pil. Ireneusz Starzyński, deputy commander at the Polish Air Operations Centre*

The future is a bit more optimistic. The air and land elements of the Polish IAMD system are to be developed in the nearest future. Creating a defensive "shield" should involve both the military as well

as diplomatic assets - Starzyński suggested.

“Presence of the US, Croatian and Romanian forces in Poland is important here. This also acts as a military and political deterrent as the potential adversary must take it into account that not only could a potential aggression hurt the Poles and the Polish infrastructure, but it could also get our allies involved” - the General suggested. Starzyński also added that the US involvement in Poland is on the rise, and that this involvement would become significantly greater, starting from 2020.

Referring to the panel title, the General said that the ability to scatter the air assets and recovery of that ability should become crusial for Poland. The above does not necessarily refer to use of highway strips, but rather to modelling the Polish Air Force after USAF, creating mobile flight groups of 4-6 MRCA, 2 cargo/support aircraft and a tanker. These can, in a relatively short time, gain operational readiness, using any decent piece of concrete. Obviously, gaining capabilities as such would require certain effort to be undertaken.

Panel V. “Air superiority: how can one secure the NATO Eastern Flank?” Image Credit: Mirosław Mróz

Professor Col. Adam Radomyski, PhD Hab, Dean of the Faculty of National Security and Logistics at the Polish Air Force University, said that gaining air superiority is of key relevance for the result of any armed confrontation. “Only in conditions as such can the sea, land or special operations component be introduced. If the potential adversary has no air superiority then he needs to face a prospect of significant losses” - Radomyski said, stating that airbases remain the key and critical facilities that should be defended in case of an attack, being the weak point of the military aviation.

It remains quite difficult to assess the ability that the Polish Air Force has to disperse its assets and thus, Radomyski suggested, land systems should play a key role in carrying out effective air ops. However these systems are obsolete and come in quantities that are limited, the same applies to the capabilities that they offer. The range does not exceed 25 kilometers, apart from a single S-200 system that is tasked with acting against a specific type of threats.

In case of SHORAD systems we are mainly speaking of post-soviet systems dating back to 1960s and 1970s, technology-wise. This is complemented by modern VSHORAD solutions: the domestically

manufactured Grom and Piorun missiles. The whole mix still misses medium and long range systems (as Krug/SA-4 systems have been prematurely withdrawn without any successor) and modern short range solutions.

> *It may be assumed that Russia currently has 1900 combat-ready and capable aircraft, maintained, modernized and new ones.*
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> *Professor Col. Adam Radomyski, PhD Hab, Dean of the Faculty of National Security and Logistics at the Polish Air Force University*

The Polish IAMD system is far from being impressive, considering the capabilities remaining at hand of the potential adversary. Thus, it is very important to take the cost-effect factor into account, especially within the Polish context. Radomyski said that Poland should rather invest in land-based air defence systems without resigning from the combat aircraft though. However, he suggested that land-based assets are usually cheaper and easier to use than the MRCA, also being less prone to weather and easier to hide. This is also because of their mobility.

> *SAM systems are cheaper. Even with a missile price of 4-5 million dollars, nobody is going to launch it against a UAV. Those missiles would be used against aircraft worth several million dollars. The missile has a hit probability of 0.96-0.98. Thus we can say that it is a cost-effective solution. And thus I think there is a lack of a dialogue concerning the proportion in the Polish military.*
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> *Professor Col. Adam Radomyski, PhD Hab, Dean of the Faculty of National Security and Logistics at the Polish Air Force University*

Col. Janusz Kochański, head of the Administration and Development Element of the Air/Missile Defence Management department at the Inspectorate of the Branches of the Military of the General Command of the Armed Forces addressed the dilemmas associated with the Narew SHORAD solution. As we know, Narew is to replace the Newa-SC system used by the missile units, as well as the mobile Osa and Kub SAM systems used by the anti-aircraft regiments of the Polish Army.

Kochański said that, following a heated debate concerning the initial assumptions associated with the Narew programme, it was decided that Narew would not be a direct counterpart to the contemporary SHORAD assets able to directly accompany the land elements. Instead of the above, Narew, a SHORAD system, is to provide effective local area defence, but some requirements have been also set when it comes to the time required by the system to gain combat readiness when on the move. Narew would have a greater range, however, when compared to the existing solutions. “By creating an umbrella offering a greater range, the system in question would be able to do its job”, col. Kochański noted, also stressing the fact that Narew alone would be unable to accomplish all of the tasks.

“Complementary air defense assets form the only true, effective air/missile defence system.

Complementary means that the system would be net-centric and multi-layered, offering an ability to act against the full spectrum of threats" - Kochański said, also adding that acquisition of a net-centric C2 solution has been defined as especially relevant in creating and planning the air defence programmes, meaning that a system as such would be able to control the Narew and Wisła systems and to fuse them together, so that radars of one unit could designate targets for the command stations and effectors embedded within the other system.

"This makes it possible to seal up the cover provided". He also noted that in any other case, considering the Polish landscape, gaps may emerge at low altitudes. Col. Kochański noted that being in possession of missile defence capabilities is also critical, and due to the above Wisła system, offering proper capabilities and being a modern system, plays an important role here.

William Lamb, representing Northrop Grumman, did admit that the NATO Eastern Flank, Poland included, as its key element, could fall a victim to a variety of air assets. Thus, a need emerges to create capabilities and architecture of a system that would integrate all domains of the battlespace, be it land, air, sea, space or cyber, to effectively combat the emerging threats.

Lamb admitted that this is a relevant challenge, in the light of the fact that the existing air defence systems so far had only their own, separate C2 systems. Considering that context, Lamb showcased the capabilities offered by the Northrop Grumman IBCS solution, pointing to its modular and open architecture allowing for integration of a number of sensors and systems within its structure. Thanks to the above, as Lamb added, once IBCS is acquired the user would be able to effectively act against the emerging threats, adopting the philosophy implemented by the US Army: any sensor, the best shooter.

Chaim Moriya representing the IAI company agreed that open architecture is the main feature that an air defence system should have, if it is to face the contemporary and future challenges. Moriya also emphasized the relevance of the ability to track the target, within an integrated solution. The Israeli official also indicated the need to have a capacity to assess the situation and classify threats in real time. Apart from the technology Moriya mentioned that a net-centric setting requires a certain mindset to be adopted, since it changes the force structure and responsibility assigned to the given unit along with its decisionmaking freedom. Moriya added that it is impossible to change a system of independent units into a net-centric concept overnight, since action as such would require training and experiments.

Col. Moriya emphasized the meaning and relevance played by the know-how and industrial expertise, when it comes to the air defence system. Thanks to those elements, should a new type of threat emerge, the user would be able to react quickly, tailoring the defensive assets to act against a new threat over a relatively short period of time, without seeking any external assistance. The Israeli expert also noticed that the command network shall not be considered to be an additional element of the system, but as a part of the system the importance of which would be as high as the one associated with effectors. The network should be secure, penetration-resistant and redundant.

MBDA's Adrian Monks mentioned the interoperability and the requirement to use the latest solutions also stressing the capabilities of the industry. He stressed the fact that all European nations are facing a similar threat and that technologies making it possible to stop that threat have been developed since some time now. Monks recalled the fact that MBDA remains active within numerous Polish programmes as well, and thus it hjas a unique offer making it possible to neutralize the whole spectrum of threats in land, sea and air domains. He exemplified the above with the British military, pointing to Typhoons, F-35A and B jets and CAMM SHORAD system. MBDA also demonstrated the ability to integrate the CAMM missiles within the Northrop Grumman's IBCS solution.

Monks referred to the advantages of potential industrial cooperation should Poland decide to acquire any of the MBDA products, including ASRAAM or CAMM missiles. Both systems share 75% of components when it comes to the missile which means that Poland could become independent in manufacturing a system as such. Monks highlighted the performance that the aforesaid missiles offer, suggesting that there is no point in procuring 3rd generation weapons for 4th and 5th generation fighter aircraft.

Leonardo's Constantino Rosati reminded the audience of the path covered by the Italian aerospace and defence industry over the past several years, stating that Rome was facing a tough choice between procuring a US-made product off-the shelf and getting involved in ambitious, international programmes. The latter path has been chosen, leading to creation of Tornado, AMX and Typhoon combat aircraft and acquisition of major quantities of industrial expertise. Rosati also stressed the fact that foreign partners also benefited from cooperation with Italy, pointing to Embraer that used the opportunity to develop and grow, during the Italian-Brazilian AMX programme. The representative of the Italian company said that technical evolution has made the Italian industry one of the leading players. Rosati said that Poland needs, primarily, specialized air defence assets able to respond to an attack involving numerous missiles and air platforms, e.g. Eurofighter Typhoon. Generation and technological advancement, Rosati suggested, are not always the primary matters of concern, as the job for which the given design has been created is often far more important.

The representative of the Leonardo company was encouraging Poland to get involved in international programmes that would be beneficial for Poland in a longer run, given its major potential. FCAS and Tempest European future MRCA programmes were listed by Rosati as the potential areas where the Polish industry could get actively involved. The aforesaid programmes already involve the Italian Leonardo company. Rosati also encouraged the audience to think about the air defence domain within the scope of quantitative availability of the required assets.