

New generation of aircraft requires new training



Major General Karsten Stoye believes collaboration is the answer

The current geopolitical situation requires the members of the European Union to change and improve their defence and deterrence policies. The alliance of European armed forces operates an advanced fleet of modern manned/unmanned aerial vehicles and weapons platforms, which require a new approach to the design and use of military training areas facilitating their combat capabilities.

The new generation of manned/unmanned aerial vehicles and weapons platforms have integrated technological improvements and associated weapon systems, which have a direct impact on military tactics and consequently on training requirements.

Growing need for availability of sufficient airspace

New training requirements are dictated by the need to accommodate long range capabilities of modern sensors and weapons systems while considering enlarged volumes of airspace. For the military, the availability of sufficient airspace limits the rate at which exercises can be conducted and is therefore of strategic importance. This need will grow as the

numbers of modern aircraft, also known as 4th+ and 5th generation aircraft increase. In Europe there are plans to station upwards of 750+ F35s by 2035, including US Air Force squadrons.

Member States deploying or planning to deploy these aircraft and weapon platforms must ensure that new training requirements are seamlessly and consistently integrated into the congested European airspace and have the least possible impact on the performance of the Air Traffic Management (ATM) network. States must cooperate with each other and EUROCONTROL Network Manager (NM) to implement these requirements not only at the national level but also at the multi-national level, thereby allowing the use of cross-border airspace resources.

New paradigm needed

Taking the increasing demand for airspace and its finite quantity into consideration, greater efficiencies must be found in how it is used. What is needed is a new paradigm for how to design and manage airspace. Counter-intuitively, airspace used for training needs should be made larger, but more finely structured.

Given the complexity of organising and managing European airspace and taking the increased demand as a requirement, new solutions must be more flexible and dynamic, in the best case based on modular design principles. This will allow military airspace users to choose the configuration of the required airspace volumes by selecting and combining elementary 3D modules within a predefined geographic perimeter.

The modular design allows distributed allocation of the selected airspace volumes between civil and military airspace users thus mitigating adverse impacts on major traffic flows and providing better re-routing options. Civil aircraft operators, together with NM, can use military advanced planning, optimising their preferred routes around selected training areas, and negotiating more efficient trajectories through the civil-military collaborative decision-making (CDM) process.

North Sea Area Initiative showcases innovative approach

The North Sea Area (NSA) Initiative was promoted by the EUROCONTROL Civil Military Cooperation Division (CMC) as a solution to demonstrate the potential for

development and use of new training areas according to the new operational requirements. The initiative facilitates combined and joined training within a predefined geographic region over the high seas connected to existing training areas.

EUROCONTROL CMC actively facilitates the NSA initiative and has launched several activities to address the military's current and future airspace needs and to seek the support of Member States and potentially interested stakeholders: Belgium, Denmark, Germany, Norway, The Netherlands and The United Kingdom.

Collaboration is key

The Air Chiefs of 12 NATO countries have supported the initiative and the investigation into the requirements of the user community. They also support the development of a proposal to integrate high-end, large force element training safely and effectively into the European ATM Network. Preconditions of this recommendation are that the NSA project does not conflict with ongoing airspace changes serving a similar purpose, and that the NSA project should attempt to minimise the potential impact of changes in military training airspace on the traffic flows in European airspace.

The CMC Division promoted the NSA Initiative, delivering a strategic vision to the CEOs of affected Air Navigation Service Providers (ANSPs) and the Airlines organised through Airlines for Europe (A4E) and received full support to continue the Initiative.

Implementation ahead

Improved military access to European airspace is required to test and train new tactics for 4th+ and 5th generation aircraft, unmanned systems and long-range weapons platforms. This includes ensuring larger volumes of airspace are available, which should be designed and managed in a dynamic and flexible manner. This should be in accordance with the modular and Variable Profile Area (VPA) design principles of the Flexible Use of Airspace (FUA) concept, all while supported by state-of-the-art airspace management systems.

Following the publication of a scoping study, a concept of operations, a roadmap and various implementation scenarios, the seeds have now been sown for further implementation steps that will be facilitated by EUROCONTROL's CMC and NM under the leadership of the Member States.



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