



REMOTELY PILOTED AIRCRAFT SYSTEMS

Remotely Piloted Aircraft Systems (RPAS) have demonstrated their importance in recent military operations, particularly for surveillance and information gathering. RPAS can also offer a wide range of civil applications such as infrastructure surveillance, firefighting, disaster or environmental monitoring, as well as border control and management. Already in 2013, RPAS had been earmarked by EU leaders as a capability development priority.

EDA's work in the field of RPAS is related to the following topics:

Integration of military RPAS in Single European Sky

In order to facilitate EDA Member States' input on RPAS for Air Traffic Management (ATM) issues, the ESMAB (EDA Single European Sky Military Aviation Board) agreed to set up the RPAS ATI SEC (Single European Sky Expert Community) group in 2016. This group has the mandate to develop an ATI roadmap of dual-use strategy on RPAS regulation, in close cooperation with the European Commission, the European Aviation Safety Agency (EASA), EUROCONTROL, the SESAR Joint Undertaking (SJU), NATO, the Joint Authorities for the Rulemaking on unmanned systems (JARUS), the European Organisation for Civil Aviation Equipment (EUROCAE) and other stakeholders involved in RPAS Air Traffic Integration (ATI).

Military RPAS Airworthiness Certification

Throughout Europe, military RPAS are certified by national military airworthiness authorities. Building upon the successes of the Military Airworthiness Authorities Forum, established by EDA in 2008, the Agency is exploring together with these national authorities and EASA ways to streamline the certification process for military RPAS at the European level. Significant time and cost savings, as well as harmonised safety requirements, can be expected from a common approach to airworthiness and certification.

An Unmanned Aircraft System (UAS) Airworthiness Regulatory Framework Working Group was established in EDA with the purpose of developing a harmonised set of airworthiness requirements and common classification and certification processes, in order to ensure that military RPAS can easily integrate into the future European aviation system.

Development of cutting-edge technologies for future European RPAS

EDA supports Member States in their collaborative R&D projects in the RPAS airspace integration area. It also sponsors several R&D activities with its own operational budget.

An important element in EDA's R&D strategy in this domain is the Industry Exchange Platform on RPAS ATI which is an annual meeting gathering Member States, European industry, and other stakeholders to identify and discuss the development of technical enablers for RPAS Air Traffic Integration.

SAFETERM: Safe Autonomous Flight Termination

SAFETERM assesses the different technological and certification approaches to autonomy to ensure a predictable yet adaptive aircraft behaviour in case of an emergency leading to a flight termination. In particular SAFETERM is focused on emergencies involving multiple failures including C2 datalink loss, i.e. without remote pilot's intervention.

SAFETERM uses Artificial Intelligence / Machine Learning to classify the overflowed terrain and provide a list of safe Flight Termination Areas within the flight range. The system has been extensively validated in real time simulations and flight tests using AERTEC TARSIS 75 RPAS.

Visit www.safeterm.eu for more information.

Remote Pilot Stations Standardisation

The Remote Pilot Stations (RPS) Core Layer Standardisation project aims at the development of Minimum Operational Performance Specifications (MOPS) covering all RPS elements and equipment considered essential for the crew to operate the Remotely Piloted Aircraft also known as Core Layer). This standardisation activity is being built upon previous projects, specifications, and standards in both ATM and airworthiness domains, including but not limited to previous activities at EDA.

The standardisation of technical enablers to airspace integration significantly facilitates the regulation in both civil and military domain as industry standards from a recognised body such as EUROCAE can be easily translated into Acceptable Means of Compliance (AMC) by civil or military aviation authorities.

Accommodation Validation

While the final goal for Medium Altitude Long Endurance (MALE) type RPAS is the full integration in ATM, in the meantime, the accommodation of RPAS must, as soon as possible, be facilitated, progressively implemented –and harmonised European-wide.

A 2018 accommodation study delivered an enhanced Aviation Safety Case Assessment Methodology for large RPAS by assimilating and consolidating current best practices, testing this methodology through simulation and developing consolidated scenarios, to allow all aspects of aviation hazard analysis to be exercised for MALE-type RPAS into European skies alongside manned aviation. In order to validate and demonstrate these cross-borders scenarios and their safety cases, **validation flight tests** were performed in 2020/2021 using a MALE-type platform, in the framework of a follow-up project called 'Accommodation Validation'. The EASA/EDA Guidelines for accommodation in non-segregated airspaces class A to C, developed by EDA, EASA, and some representatives from industry and participating Member States, was a baseline for those flight tests.

More information on Accommodation Validation study at: <https://eda.europa.eu/rpas-accommodation-validation>

Military and U-Space

In addition to the mandate regarding large RPAS, EDA is also monitoring the strong increase in numbers of small civilian drones and assessing the implementation of corresponding U-Space. EDA's "Military and U-Space: Guidelines" study covers the drones' 'ecosystem' and its potential impact on military low-level operations.

More information on the Military and U-Space study at: <https://eda.europa.eu/u-space-study>

Future European MALE Capability

Considering the obvious operational added value of MALE type RPAS for armed forces, and that challenges related to their integration into the European airspace will be gradually overcome, there is an opportunity for Member States to prepare the next generation of European MALE RPAS in a cooperative way. Under the framework of the EDA-OCCAR arrangement, EDA provides support to this programme in the field of airspace integration building on the work already achieved and on the institutional framework in place.

Development of synergies among Member States operating large military RPAS

Considering that the number of MALE RPAS operated in Europe is limited but fragmented among several Member States, EDA established a "European MALE RPAS User Community". This forum includes countries which are currently operating or are considering getting this capability in the coming five years.

European Non-Dependence

RPAS offer a wide range of civil and military applications. The market ranges from small tactical mini and micro aircraft to large sophisticated systems. Investment in RPAS at the higher end has the additional benefit of helping to sustain European aeronautic competences in the design and engineering necessary for future manned fixed wing aircraft.

