



STANDARDISATION OF REMOTE PILOT STATIONS OF RPAS

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RPS STANDARDISATION PROJECT

The **Remote Pilot Station (RPS)** standardisation project, an European Defence Agency (EDA) project carried out by an industrial consortium composed by Airbus and GMV, aims at **launching and supporting the standardisation activities** at the European Civil Aviation Equipment standardisation body (**EUROCAE**). The development of European standards is a necessary step to ensure the certification of this technology by European authorities and allow the full integration of RPAS in European airspace.

Airbus Defence and Space is Europe's largest and most innovative defence and space company, with 32,200 people working around the world at almost 100 locations.

GMV is a multinational technology group engaged in multiple domains, including Space and Aeronautics, with subsidiaries in 10 countries and employing over 1,700 people.

THE NEED

Currently, operations of large RPAS (Remotely Piloted Aircraft Systems), such as the Medium-Altitude Long-Endurance (MALE) type, are mainly performed in reserved airspace. This has a strong operational impact on Military missions and the **full integration of Military RPAS in non-segregated airspace** is a clear objective for EDA and its participating Member States.

The **standardisation and subsequent certification of all RPAS subsystems**, including the Remote Pilot Station, is a necessary step to achieve this goal in EASA's certified operations category¹.

[1] See EASA's Operations Centric Approach for more information about RPAS operations categories

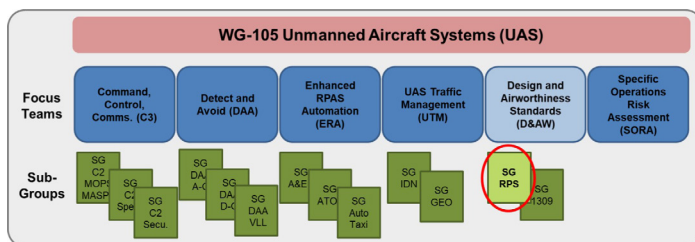
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THE PROJECT

This project is part of a concerted effort targeting the integration of IFR RPAS traffic in non-segregated controlled airspace. The project's focus is the standardisation of the required RPAS Air Traffic Integration (ATI) enabling elements common to any kind of RPS in EASA's certified operations category.

THE STANDARD

Besides the development and validation activities, the project's call included the creation of a new working group within EUROCAE WG-105. The consortium achieved this ambition with the **creation of the RPS Sub-Group**, led by Airbus and GMV and with the participation of 55 members from 38 different organisations. The consortium will keep supporting this Sub-Group after the project completion, with the aim of achieving an important milestone in the standardisation process by June 2019: the **distribution of Minimum Aviation System Performance Specification (MASPS) for external consultation** at EUROCAE.



As of January 2019 (EDA project's end date), 3 draft versions of the **Safety and Performance Requirements Document for Remote Pilot Stations Supporting IFR Operations in Controlled Airspace** have been released for internal review within EUROCAE WG-105. This document contains 3 main contents: OSED (Operational Services and Environment Definition), SPR (Safety and Performance Requirements), and INTEROP (Interoperability Requirements).

VALIDATION AND CONCLUSIONS

EDA's project call also included a **validation campaign** to validate the requirements defined in the RPS standard. The campaign was carried out at Airbus in Getafe and consisted of performing a set of scenarios representative

of real world operations envisaged for large RPAS, with the enhancements to the ground segment proposed in the standard. This campaign was executed in a simulated environment with the participation of **two active Remote Pilots (RPs)** from Airbus and **two active Air Traffic Controllers** from NAV Portugal.



The main **outcomes** of the validation campaign were:

- Validation of main displays and commands required for ATI in all flight phases
- Validation of RPS handover capabilities
- RPS handovers are indeed transparent to ATC
- Identification and validation of main interfaces and data exchanges with ATM systems
- Identification of future interfaces with ATM systems via SWIM
- Validation of general HMI guidelines
- Strong concerns about the suitability of RPA-relay-based voice communications
- Support for a direct RPS-ATC interface
- Support for enhanced capabilities for common RP/ATC situational awareness
- Support for automatic selection of semi-automatic commands coming from a CPDLC message
- RPS handovers cannot be transparent to ATC if the RPS is only equipped with one voice communication channel