CONTRIBUTING STAKEHOLDERS

EUROCAE WG-73 on Unmanned Aircraft Systems

By Gilbert Amato, Secretary General

This report provides the background to the setting up of EUROCAE Working Group 73 (WG-73), its organisation and a summary of its required tasks and deliverables regarding airworthiness certification and operational approval of Unmanned Aircraft Systems (UAS) in order to permit operations in non-segregated airspace.

The European Organisation for Civil Aviation Equipment provides since 45 years a forum where European administrations, airlines and industry can discuss technical problems in order to achieve an effective standardisation framework for the civil aviation community. Nowadays, EUROCAE deals with airborne and ground systems in cooperation with the major aviation industries, administrations (ICAO, EASA, EUROCONTROL, FAA, European CAAs), with its US equivalents (RTCA, SAE, ARINC) and/or other organizations (IATA, CANSO, ASD…).

Recognized by the European Commission as the competent technical body to address Single European Sky standardization work, EUROCAE is also involved in the development of Community Specifications (CS) in support of the European Standardisation Organizations (ESO) and of the SESAR JU.

In 1999 EUROCONTROL approached the Joint Aviation Authorities (JAA) to consider certification and operational issues for civil unmanned aircrafts. Then, a JAA CNS/ATM Steering Group issued a first recommendation paper (JAA CNS/ATM pp026) subsequently followed by a report published in May 2004 by a Joint JAA/EUROCONTROL initiative providing technical & strategic recommendations to the UAS community.
Finally, encouraged by the JAA and the EASA, EUROCAE conducted a feasibility study on unmanned aircraft standardizations which resulted in the WG-73 creation (first meeting in April 2006 at EUROCONTROL).
An early decision of the group was to take into consideration the control station and other «external» system elements. Consequently, WG-73 became the «Unmanned Aircraft Systems (UAS)» group.

The group comprises three subgroups:
- UAS Operations and Sense and Avoid (chaired by Gérard Mardiné, Sagem Défense Sécurité, France))
- Airworthiness and Continued Airworthiness (chaired by Michael Allouche, IAI-Malat, Israel)
- Command & Control, Communication and Spectrum, and Security (chaired by Norbert Tränapp, IABG, Germany)
and a specific Focus Group dealing with Small UAS < 150Kg (chaired by Joseph Barnard from Barnard Microsystems, UK). These operate under the guidance of a leadership team chaired by the WG-73 Chairman Daniel Hawkes (EUROCONTROL) and Secretary Dewar Donnithorne-Tait (AUVSI).
To also be noted:
- the close collaboration with the FAA represented by Kenneth (Doug) Davis, FAA Manager of the Unmanned Aircraft Program Office, who is also Vice Chairman of WG-73;
- the harmonization with RTCA SC-203, represented by its Chairman John Walker;

- the EUROCONTROL liaison through Holger Matthiesen;
- the permanent link of the EUROCAE General Secretariat with ICAO;
- the participation of Peter Van Blyenburgh (UVS International) as advisor.

Main objective is to deliver standards and guidance that will ensure the safety and regularity of unmanned aircraft missions operating in non-segregated airspace. The following six deliverables are expected:
1 «UAS related elements regarding the Operational Concept» a preliminary inventory of airworthiness certification & operational approval items to be addressed.
2 «Work Plan» identifying work packages and timescales to guide the future WG-73 activities.
3 «Concept for UAS Airworthiness Certification and Operational Approval in the Context of Non-segregated Airspace» allowing development of recommendations & requirements framework for civil UAS to operate safely within non-segregated airspace taking account existing ATM regulatory framework, infrastructures & existing procedures.
4 «UAS Command, Control and Communication Systems» defining the requirements for command, control and communication systems including autonomous operation.
5 «UAS Sense & Avoid Systems» defining concerned requirements.
6 «Catalogue of UAS ATM Incompatibility Issues» considering those aspects of UAS normal and abnormal operations that would require special ATM consideration.

The progress achieved by WG-73 is illustrated by the following:
Deliverable 1: Work package is defined. It covers UAS operations, airworthiness and certification, radio spectrum requirements, command and control, and security.
Deliverable 2: The Work Plan is now in place.
Deliverable 3: The document is in production. It is addressing general aspects, UAS operations including sense and avoid, airworthiness certification, and small UAS< 150kgs.

WG-73 has ongoing discussions with RTCA:
- to develop harmonized positions for airworthiness safety targets;
- to define functionality, safety, performance, and interoperability requirements for detect, sense and avoid systems;
- to support the bid for UAS radio spectrum at the 2011 World Radio Conference.

EUROCONTROL is providing a strong support including the WG Chairman together with number of specialists.

The European Aviation Safety Agency provides consequent support thanks to the involvement of Yves Morier, Head of Product Safety.

WG-73, as recognised European UAS expert group, proposes technical inputs to EASA for additional airworthiness criteria and/or Special Conditions that have not been detailed in the earlier rule-making proposals (A-NPA 16/2005).