

IVW - CAA The Netherlands

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The co-ordinated European certification approach for Light UAS

This paper describes the efforts of European National Aviation Authorities on the definition of a common and harmonised set of airworthiness, operational and airspace requirements for Light UAS. The international co-ordination group, initiated by CAA The Netherlands (CAA-NL), was christened the 'Joint Authorities for Rulemaking on Unmanned Systems' (JARUS).

The reason for this harmonisation is twofold. First, harmonisation will eliminate the need for each country (and EASA) to write their own requirements and prevent unnecessary extra work and effort spent on this. Second, when all authorities involved agree on the requirements, both technical and operational, it would allow easy acceptance by a National Aviation Authority (NAA) of the export of a UAS, which is produced and certificated under the authority of another NAA.

Background

CAA-NL is currently in the process of certification of a rotary unmanned aerial system (RUAS) with a weight of 80 kg. As specified in the EASA basic regulation (article 4.4 of EC Regulation 216/2008), the certification and operational requirements for UAS with a MTOM below 150 kg are the responsibility of the European NAAs and EASA is responsible for UAS with a MTOM larger than 150kg. In theory, this split responsibility could lead to the development of different requirements for Light UAS by each individual NAA and EASA.

JARUS' final goal is to harmonize the requirements and limitations for Light UAS certification and operation across the EU. The output of JARUS consists of a single set of draft airworthiness, operational and airspace requirements, accepted by participating countries. JARUS will make these draft requirements available for consultation by industry and other stakeholders involved in UAS.

Method of working

Due to the certification projects currently running at the NAAs, which primarily involve rotorcraft UAS, JARUS starts with rulemaking for these first. In preparation for the first meeting, CAA-NL drafted certification requirements for Light Rotorcraft UAS. These requirements were based on the EASA draft policy on UAS. The certification specification for *manne*d very light rotorcraft (CS-VLR) has been used as a basis for the *unmanned* rotorcraft system (URS) requirements.

These adaptations cannot be performed without developing a view on operational requirements for the UAS/URS. Therefore, JARUS will not only focus on technical requirements, but also develop draft operational requirements. These will include requirements associated with ATM regarding operational limitations, airspace, flight rules and ATC requirements, among others.

During discussions at the first JARUS meeting, a classification of Light UAS has been defined and a high level set of requirements has been determined. Basic agreement on these requirements has been reached and in principle, the

NAAs, present at this first meeting, all agreed to the approach. It was concluded from that meeting that specialised subgroups on system safety requirements and operational requirements are necessary to work on these specific and important issues.

The JARUS project will finish with the delivery of the draft documents to EUROCAE WG 73 and RTCA SC 203 and the initiation of the consultation phase with industry and other stakeholders. JARUS expects the Light URS certification specification to be available at December 31st 2008, while the remaining deliverables are expected in the first half of 2009. From that moment on, the responsibility of finalising the documents is with EUROCAE and RTCA.

The end result of this whole process will be publicly available certification specifications and operational and airspace requirements, which can be generically used for applicants who desire to have their small RUAS certificated.

Since a significant amount of the tailoring work that is currently being performed for RUAS is equally applicable to Light UAS, JARUS currently researches the possibilities of the adaptation of CS-VLA, resulting in draft certification requirements for Light UAS as well.

Participants

JARUS currently consists of the Civil Aviation Authorities of the following European countries: Austria, Belgium, Czech Republic, France, Germany, Italy, the Netherlands, Spain and the United Kingdom. At a European level EASA and Eurocontrol are also active members of this group. Furthermore, an effort is made to harmonise the requirements with a number of non-EU NAAs such as the FAA, Transport Canada and CASA, Australia.

Join JARUS!

JARUS is open to participation from other national authorities. Interested?

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