JOINT AUTHORITIES FOR RULEMAKING OF UNMANNED SYSTEMS
WORKING GROUPS STRUCTURE

- CONOPS
- OPS + FCL
- AMC UAS. 1309
- ORG
- AIRWORTHINESS
- COMMAND CONTROL & COMM
- DETECT & AVOID
WORK GROUP 1- FCL & OPS UPDATE

1. FCL – First draft of JARUS FCL is on external consulting phase

2. OPS – First Draft of JARUS OPS is in editing before internal JARUS consultation
The overall scope is based on the FCL chapter 7 in ICAO Cir 328, Unmanned Aircraft Systems (UAS). This circular states in chapter 7.9:

- "Licensing and training requirements will be developed similar to those for manned aviation and will include both the aeronautical knowledge and operational components. Specific adjustments may be needed considering the particular and unique nature and characteristics of the remote pilot station environment and RPA applications (from both a technical and flight operations perspective, e.g. VLOS or beyond VLOS) as well as aircraft type (e.g. aeroplane, helicopter). In that context, qualifications for certain categories of remote crew (e.g. VLOS helicopter) may be significantly different from those pertaining to the traditional qualifications pertaining to manned aviation."
The overall scope is also based on the FCL chapter 8 ‘Licensing and Competencies’ of the ICAO Manual on Remotely Piloted Aircraft Systems (RPAS) (Doc 10019 AN/507).

The FAA model civil aviation regulations (MCARS) and EASA Part-FCL, as published on the respective websites, were used as the basis for this document. The text from both regulations was combined and amended in order to make it suitable for remote pilot licencing and competencies.
• Out of scope of this JARUS-FCL are:

  – Model aircraft exclusively used for air display, recreational, sport or competition activity;
  – Toy aircraft (suited to be used by a child of less than 14 years) falling under the definition of aircraft;
  – Indoor operations;
  – State flights (military or governmental non-military);
  – Optionally piloted aircraft; and
  – Aircraft with no pilot on-board, but carrying passengers.
Remote Pilot Licences. The competent authority should issue the following remote pilot licences to an applicant who satisfactorily accomplishes the requirements in JARUS-FCL for the licence sought:

- (a) Remote pilot licence (RPL);
- (b) VLOS Remote pilot licence (VLOS RPL).
Ratings. The competent authority should issue type ratings to place on a remote pilot licence when an applicant satisfactorily accomplishes the requirements in JARUS-FCL for the rating sought.

- (a) The following categories of RPA are applicable:
  - (i) aeroplane;
  - (ii) helicopter;
  - (iii) glider;
  - (iv) airship;
  - (v) powered-lift;
  - (vi) balloon;
  - (vii) **multi-rotor**;
  - (viii) special class.

‘multi-rotor’ means a heavier-than-air aircraft that has two or more usually symmetrically placed rotors and whose control of pitch, roll, yaw, and lift are achieved solely through the variation of the speed (rpm) of each rotor and whose flight stabilization is through a combination of electro/mechanical sensors and computing devices.
The WG decided to use this categorization in order to make different requirements in training. This categorization is already in use in some countries and based on experience.

- Specific requirements for the RPA category aeroplanes - RPL(A) greater than 25 kg
- Specific requirements for the RPA category aeroplanes - RPL(A) 25 kg or less
- The following ratings should be established for RPA greater than 25 kg:
  - (i) Type ratings in the following RPA:
    - (A) Each type of RPA certificated for operation with a minimum crew of at least two remote pilots;
    - (B) Any RPA considered necessary by the competent authority.
• We need expert information, some of the topics are still to be defined (TBD):

• **JARUS-FCL.125.B RPL(B) Experience**
  
  – (a) The applicant for a RPL(B) should have completed not less than xx hours of RPAS flight time, as a remote pilot of RPA(B), of which xx hours should have been completed in a FSTD.
  
  – (b) The applicant should have completed in RPA(B) not less than:
    
    – (1) **xx** hours as RPIC;
    
    – (2) **xx** hours of cross-country flight time as RPIC;
    
    – (3) **xx** take-offs and landings;
    
    – (4) If the privileges of the RPL(B) are to be exercised at night, xx hours of night flight time including xx take-offs and xx landings as RPIC.
Next Steps

1. JARUS FCL – External consultation – until 31/12/14

2. JARUS FCL AMC – External consultation April 2015
ICAO Cir 328, Unmanned RPA Systems (UAS) states on chapter 3.1:

"UAS will operate in accordance with ICAO Standards that exist for manned RPA as well as any special and specific standards that address the operational, legal and safety differences between manned and unmanned RPA operations. In order for UAS to integrate into non-segregated airspace and at non-segregated aerodromes, there shall be a pilot responsible for the UAS operation. Pilots may utilize equipment such as an autopilot to assist in the performance of their duties; however, under no circumstances will the pilot responsibility be replaced by technologies in the foreseeable future."
JARUS - OPS

JARUS workgroup in the shadow of this statement used as the basis for this document the model civil aviation regulations (MCARS) as published on the FAA website.

"The Model Regulations present ICAO standards as regulatory requirements for aircraft expected to operate internationally. Where applicable, ICAO recommended standards are included for completeness. Each model regulation presents the standards and recommended practices in the appropriate ICAO Annex supplemented by sections from the United States Federal Aviation Regulations (14 CFR) and/or the European Joint Aviation Requirements (JAR)".
JARUS OPS – New Subjects

• Very low level flight rules
  – Weather minimums for take off and landing
  – VLOS operation
  – Extended VLOS operation
  – Approval for BVLOS operation
  – Minimum Safe Altitudes for VLOS operation

• RPAS automatic takeoff and landing systems — General Operating Rules

• Command and control Communication Failure in IFR/VFR/VLL

• Flight plan, RH (Radio Height), Emergency landing site updates

• RPAS emergency site requirements
Next Steps
Questions

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