JARUS - Who We Are & What We Do

JARUS Members

JARUS is a group of experts gathering regulatory expertise from all around the world. At present, 61 countries[1], as well as the European Aviation Safety Agency (EASA) and EUROCONTROL, are contributing to the development of JARUS work products. At the end of 2015, the Stakeholder Consultation Body (SCB)[2], representing all industry communities of interest, was established to allow stakeholders the opportunity to support JARUS activities. SCB members representing aircraft manufacturers (e.g. AIA and ASD), the unmanned system Industry (e.g. AUVSI, UVSI and small UAV Coalition), ANSPs (e.g. CANSO and COCESNA), standardization bodies (e.g. EUROCAE and RTCA), airlines (e.g. IATA), and aviation associations (e.g. IAOPA, IBAC, IFALPA and IFATCA) joined the JARUS Plenary meeting for the first time in April of 2016. Participation in JARUS is open to all regulatory authorities having expertise in unmanned or remotely piloted aircraft systems. Other industry participation in the SCB is also welcome.

JARUS Purpose

The purpose of JARUS, as stated in our Terms of Reference, is "to recommend a single set of technical, safety and operational requirements for all aspects linked to the safe operation of the Remotely Piloted Aircraft Systems (RPAS). This requires review and consideration of existing regulations and other material applicable to

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[1] As of September 2019: Australia, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, China, Colombia, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, India, Indonesia, Ireland, Israel, Italy, Jamaica, Japan, Kenya, Latvia, Luxembourg, Macedonia, Malaysia, Malta, Montenegro, The Netherlands, New Zealand, Nigeria, Norway, Poland, Portugal, Qatar, Republic of Azerbaijan, Republic of Korea, Republic of Moldova, Republic of Serbia, Romania, Russia, Rwanda, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Trinidad and Tobago, Turkey, United Arab Emirates, Ukraine, United Kingdom, United States of America and Uruguay.

[2] More information available at http://jarus-rpas.org/stakeholders-consultation-body

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manned aircraft, the analysis of the specific tasks linked to RPAS and the drafting of material to cover the unique features of RPAS"[3]. The JARUS guidance material aims to facilitate each authority to write their own requirements and to avoid duplicate efforts.

JARUS Working Groups (WG)

The work performed by the JARUS Working Groups represents the driving force toward the success of the JARUS initiative. As of September 2016, there are seven active WGs:

- WG 1 – Flight Crew Licencing
- WG 2 – Operations
- WG 3 – Airworthiness
- WG 4 – Detect and Avoid
- WG 5 – Command and Control
- WG 6 – Safety and Risk Management
- WG 7 – Concepts of Operations

The WG leaders ensure that the group activities are in line with the JARUS Activities Timeline. The documents drafting and review process is described in the JARUS Terms of Reference under "JARUS deliverables development and approval process"[4]. WG leaders may also accept external advisors nominated by the SCB to provide the technical expertise required for the deliverable assigned to a WG.
A detailed overview of the WG activities/tasks is provided in the Appendix, available on the JARUS website

JARUS Plenary Team & Leadership

A representative of each member state contributes to the JARUS strategic decision making process by being part of the Plenary Team. The updated list of focal points for each country is available on the JARUS website.

The global JARUS Community is represented by:

- Chairman - Jukka Hannola, Traficom (Jukka.Hannola@traficom.fi)
- Vice-Chairman – Christopher Swider, FAA (Christopher.Swider@faa.gov)
- Vice-Chairman – Hao Liu, Beihang University (liuhao@buaa.edu.cn)
- Secretary General – Mike Lissone, EUROCONTROL (mike.lissone@eurocontrol.int)

The JARUS Secretariat is responsible for the day-to-day administrative work and supports the JARUS Leadership, as well as the Working Groups. EASA, EUROCONTROL and the FAA provide the resources to run the Secretariat.

Joint Commitment

JARUS is open on a voluntary basis to all civil aviation authorities and industry stakeholders to make recommendations on operational, technical and certification requirements. This is a joint effort to share knowledge and provide harmonised requirements that helps members establish their own regulatory frameworks.

JARUS needs the support of experienced aviation experts and is committed to limiting travel by holding virtual meetings using IT tools such as Webex, teleconferencing, SharePoint, etc. However, the bi-annual JARUS plenary meetings are intended to be face-to-face. Other face-to-face meetings within work groups may occur when the group has agreed it is necessary to make progress in the development of the assigned activity.

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[3] JARUS Terms of Reference, v06.17, page 4, available at http://jarus-rpas.org/terms-reference
[4] JARUS Terms of Reference, v06.17, page 11-128, available at http://jarus-rpas.org/terms-reference

JARUS Achievements & Approach

In the last years, JARUS has published and made available to the RPAS community the following deliverables:

- CS-LURS (Certification Specification for Light Unmanned Rotorcraft Systems) – *October 2013*
- RPAS C2 Link (required Communication Performance concept) – *October 2014*
- FCL (Flight Crew Licensing) Recommendations – *September 2015*
- AMC (Acceptable Means of Compliance) RPAS 1309 – *November 2015*
- RPAS "Required C2 Performance (RLP) concept" – *May 2016*
- Recommendations on the use of Controller Pilot data Link Communications (CPDLC) – *June 2016*
- CS - LUAS (Certification Specification for Light Unmanned Aircraft Systems) – *December 2016*
- Guidance Material to FCL Recommendations – *April 2017*
- Guidelines on Specific Operations Risk Assessment (SORA) – *July 2017*
- Operations Category A – *July 2018*
- JARUS Glossary – *July 2018*
- Guidelines on Specific Operations Risk Assessment (SORA) Issue 2.0 – *March 2019*
- Operations Category B – *May 2019*
- SORA Standard Scenario STS-01 for Aerial Work Operations – *May 2019*
- UAS Operational Categorization – September 2019

JARUS is working to provide further inputs in the development of RPAS and UAS regulatory guidance and recommendations in domains where other organisations (e.g. ICAO) have not been active. By doing so, JARUS is not competing, but promoting a harmonised approach that complements other international efforts.

JARUS Ongoing Activities

JARUS is creating a high level framework which will be at the heart of development efforts. This effort is based on a number of high level "Concepts of Operations" (CONOPS) addressing the key elements of the operation of UAS. These CONOPS set high level assumptions that should guide work activities in the coming years. They are aimed at providing a stable, yet flexible environment, where JARUS work products can be developed and amended as necessary. This will allow innovation to take place with a certain level of certainty. The members of JARUS have agreed to develop these CONOPS for the following subjects:

- Regulatory oversight with three categories - A, B and C or open, specific and certified
- ATM concepts for different operations
- Detect and Avoid concept for visual line of sight, extended, and beyond visual line of sight
- Command and control, from the simplest to the most complex systems

After JARUS reaches consensus on these concepts, other deliverables – such as operational, technical, safety and operational requirements, and certification specifications – will be derived to support them. Current JARUS developments for these deliverables include:

- Flight Crew Licensing (FCL) AMC (Acceptable Means of Compliance)
- Operational requirements
- Organisational requirements
- Re-organisation of CS-LURS & CS-LUAS to CS-UAS