JOINT AUTHORITIES FOR RULEMAKING OF UNMANNED SYSTEMS

Mike Lissone
Secretary General JARUS
• JARUS Purpose
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JARUS PURPOSE

JARUS is a group of experts from 52 countries, representing NAAs, regional authorities, as well EASA and EUROCONTROL.

*JARUS members collaborate to recommend a single set of technical, safety and operational requirements for the certification and safe integration of UAS into airspace and at aerodromes.*

The Industry is represented through the Stakeholder Consultation Body (SCB).
JARUS MEMBERS

1. Australia
2. Austria
3. Belgium
4. Brazil
5. Canada
6. China
7. Colombia
8. Croatia
9. Czech Republic
10. Denmark
11. EASA
12. Eurocontrol
13. Estonia
14. Finland
15. France
16. Georgia
17. Germany
18. Greece
19. Ireland
20. India
21. Israel
22. Italy
23. Jamaica
24. Japan
25. Kenya
26. Latvia
27. Luxembourg
28. Malaysia
29. Malta
30. Montenegro
31. Netherlands
32. New Zealand
33. Norway
34. Poland
35. Portugal
36. Qatar
37. Republic of Korea
38. Republic of Macedonia
39. Republic of Serbia
40. Romania
41. Russia
42. Singapore
43. Slovakia
44. Slovenia
45. South Africa
46. Spain
47. Sweden
48. Switzerland
49. Thailand
50. Trinidad & Tobago
51. Turkey
52. United Arab Emirates
53. United Kingdom
54. United States of America
At the end of 2015, the SCB was established representing the Industry

- Aircraft Manufacturers (AIA and ASD)
- Unmanned System Industry (AUVSI, UVSI and small UAV Coalition)
- ANSPs (CANSO and COCESNA)
- Standardization Bodies (EUROCAE and RTCA)
- Operators and Pilots (IAOPA, IBAC, IFALPA, IFATCA, IATA)

Since 2016 representatives from these organisations join the JARUS Plenary Meetings.

Experts from the SCB have been contributing to the JARUS Working Groups efforts.
WORKING GROUPS STRUCTURE

CONOPS

SAFETY AND RISK MANAGEMENT

COMMAND CONTROL & COMM

FLIGHT CREW LICENSING

OPERATIONS

AIRWORTHINESS

DETECT & AVOID

Joint Authorities for Rulemaking of Unmanned Systems
WG 1 – Flight Crew Licensing (FCL)
  o Requirements for licensing and competencies in RPAS activities
  o Pilot licensing and training

WG 2 – Operations
  o Operational requirements for access to airspace
  o Organizational requirements for RPAS operations

WG 3 – Airworthiness
  o UAS certification & airworthiness provisions/specifications for:
    ✓ Rotary wing, Light Unmanned Rotocraft System (CS-LURS)
    ✓ Fixed wing, Light Unmanned Aeroplane System (CS-LUAS)
    ✓ Very light UAS (VLUAS)
    ✓ Airships, free/tethered balloons

WG 4 – Detect and Avoid
  o Define performance provisions (operational/technical)
  o Establish safety objectives for the risk of collisions
WG 5 – Command, Control & Communications
  o Establish performance provisions (operational & technical) for C2

WG 6 – Safety and Risk Management
  o Create a methodology to assess the risks of «specific» RPAS operations and evaluate relevant mitigations
  o Define top level RPAS airworthiness, system safety objectives and guidance material (known as AMC RPAS.1309)
  o Establish UAS recommendations & conclusions on UAS failure classifications in terms of severity definition and probability requirements.

WG 7 – Concept of Operations (CONOPS)
  o Develop a classification scheme for RPAS
  o Considerations for RPS Certification, C2 & signal relay and launch and recovery equipment
JARUS DELIVERABLES

• JARUS deliverables/products are recommended certification specifications and operational provisions made available to interested parties such as ICAO, NAAs and regional authorities for their consideration and use.

• JARUS does NOT develop law or mandatory standards.

• NAAs and regional authorities decide how to use the harmonized provisions from JARUS.

• Before publication the recommendations are also undergoing external consultation.

• JARUS Deliverables are available at http://jarus-rpas.org
JARUS DELIVERABLES – OVERVIEW 2013-2017

- 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


- Guidance Material to FCL Recommendations – April 2017

- SORA (specific Operational Risk Assessment) – July 2017

http://jarus-rpas.org/publications
UPCOMING ACTIVITIES

SORA - Specific Operations Risk Assessment
A risk assessment methodology to establish a sufficient level of confidence that a specific operation can be conducted safely (WG-6)
• Published
• Annex under development (Scenarios)

Currently under development

• OPS Cat A & B (WG-2)
• Design Objectives for Cat C Operations (WG-4)
• RPAS C2 Link CONOPS (WG-5)
• RPAS Operational Categorization (WG-7)
More information at:
http://www.jarus-rpas.org/who-we-are

Questions

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