

Lessons Learned from the RPAS Panel

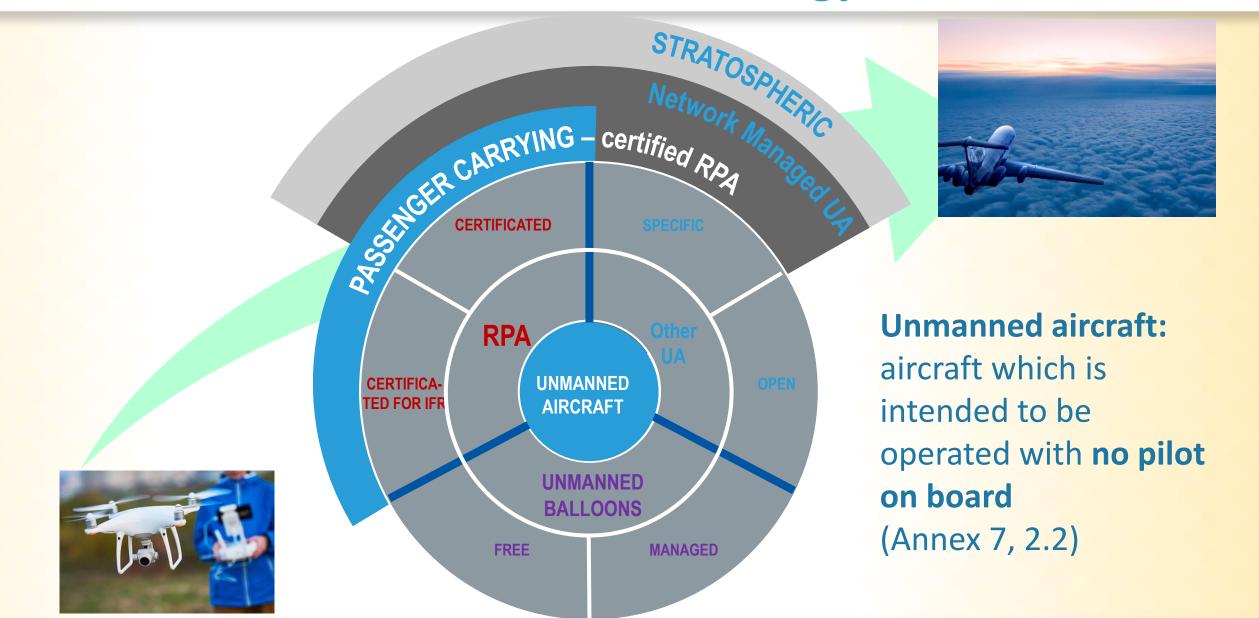
Leslie C, Ron V, Mike B, Frederic M, Zia M, Randy W



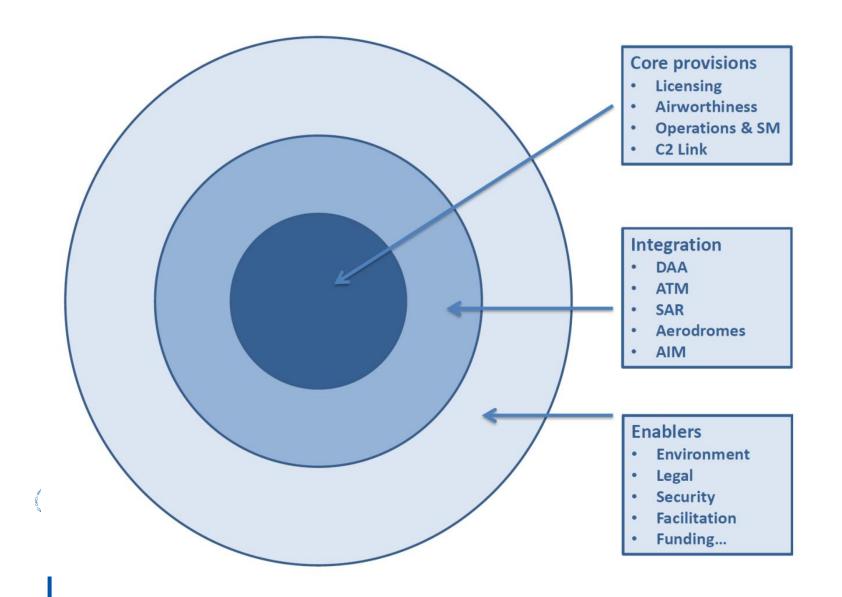








Other ICAO work



- Core provisions for international air navigation
- Additional requisites
 for safe
 international
 navigation
- Other ICAO work to integrate RPAS into int'l aviation

From Inception to Present





UAS Study Group

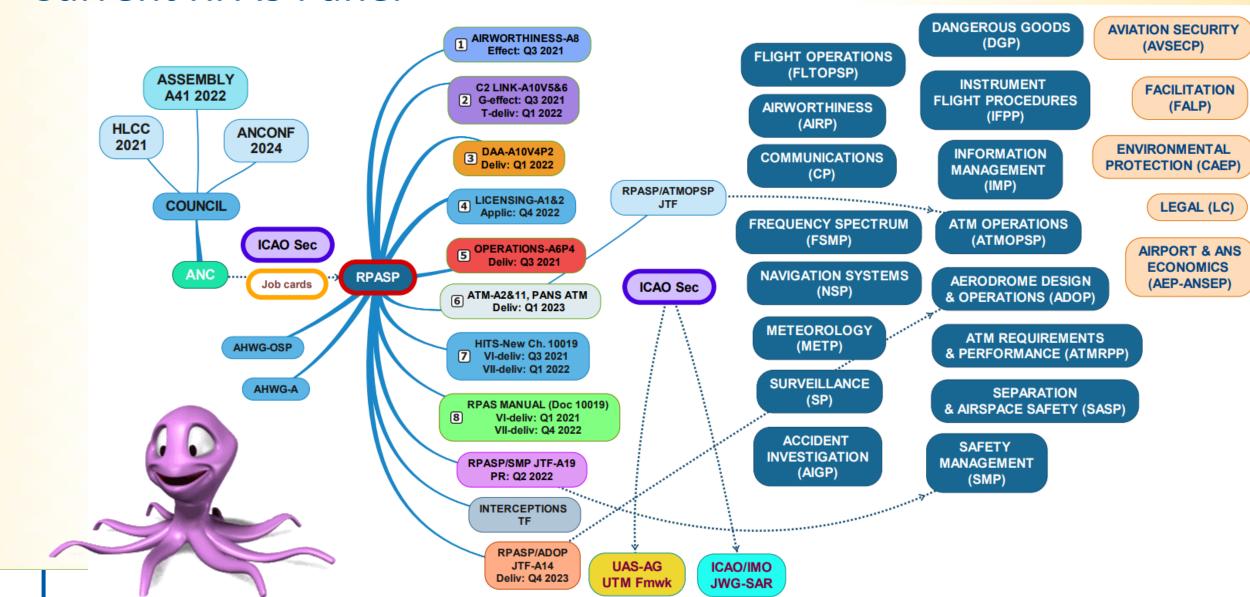


Evolution of RPAS Panel

RPASP Activities Deliverables ICAO Expert Groups Products Working Papers Airworthiness 2018 WG 1 10 work programme items **Flight Operations Communications 2020** Aerodromes 10 work programme items WG 2 **ATM Operations** Annexes 1, 2, 7, 8, Coordination **Separation & Airspace Safety** 10, 11, 12 & 14 Search and Rescue (SAR) **Detect and Avoid 2020** WG3 **Personnel Competency** Collaboration **Amendment Proposals** 12 work programme items **Human Performance Airworthiness Licensing 2018** WG 4 Legal 2 work programme items Communications **Environmental Operations 2018 & 2020** Surveillance WG 5 11 work programme items Annex 6, Part IV **RPAS Manual Updates Aviation Security Flight Recorders** WG 6 **ATM 2020** Safety Management 9 work programme items Frequency Spectrum ATM Req. & Performance **HITS 2020 PANS ATM** WG 7 4 work programme items



Current RPAS Panel







Job Card Status

Job Cards for:

- Licensing
- Airworthiness
- Communications
- DAA
- ATM
- RPAS Operations
- Aerodromes

| RPASP.002.06 | RPASP Communications 2022 | |
|------------------------------|-----------------------------------|---|
| Source | RPASP/10 | |
| Problem Statement | | or RPAS operators to be able to operate in non-segregated airspace and at aerodromes. Provisions of the Chicago Convention apply, however written for manned aviation. States, industry and operators need SARPs and related guidance on how to safely and efficiently address RPAS. |
| Specific Details | | unications, including command and control, for adoption in 2020 and related guidance. Significant changes to the existing communications perate RPA in non-segregated airspace. |
| Needs Analysis | | |
| Expected Benefits | Provide States with a global fram | nework for regulation of RPAS communication requirements for command and control (C2), ATC and other necessary communications. |
| Proposed Metric | | |
| Reference Documents | | nex 6 — Operation of Aircraft, Annex 8 — Airworthiness of Aircraft, Annex 10 — Aeronautical Telecommunications, Annex 17 — Security, Doc illoted Aircraft Systems and Doc 9750 — Global Air Navigation Plan. |
| Initial Impact Assessment | Impact to States | |
| Assessment | Impact to Industry | |
| | Additional Info. | |
| | Other | |
| Primary Expert Group: | Remotely Piloted Aircraft System | is Panel (RPASP) |
| | Project Manager | |
| Project Team | Project Team Members | |
| | I | |

Problem Statement

There is an increasing demand for RPAS operators to be able to operate in non-segregated airspace and at aerodromes. Provisions of the Chicago Convention apply, however they cannot be implemented as written for manned aviation. States, industry and operators need SARPs and related guidance material on how to safely and efficiently address RPAS.

2021

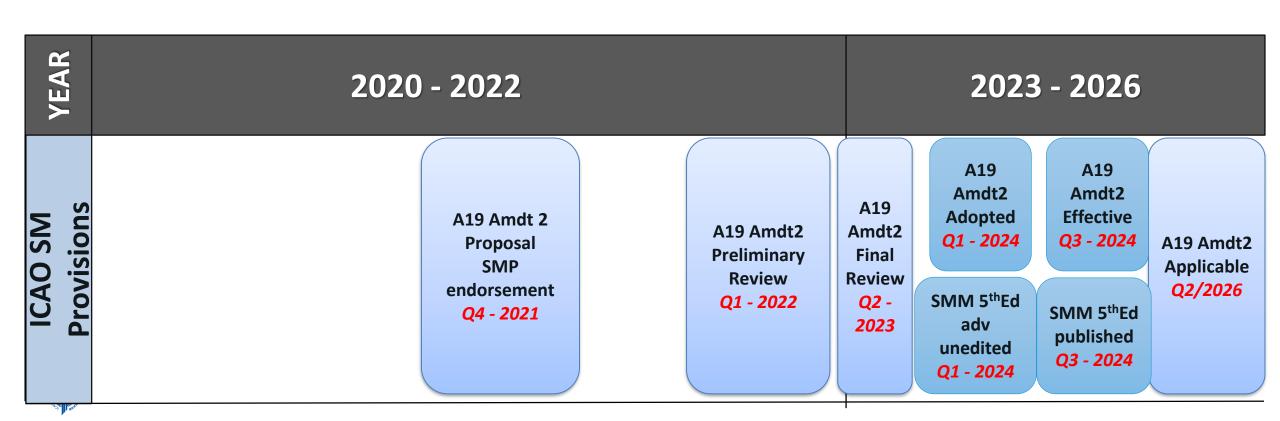
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|-----|-----|------|------------------------------|--|---|--------------|-------------------|--------------------|----------|
| | ~ | 9908 | New ICAO Manual (###) | Develop technical manual related to C2 link including RLP concept (Manual on C2 Link) | | On-schedule | Q4 2023 | Dec 2023 | Dec 2023 |
| | V 1 | 1498 | Annex 6 - Part IV | Develop a process to allow communication service providers (CSPs) to support the C2 link This could include approval / acceptance of, and ongoing oversight of C2 link service providers | · | Re-scheduled | Q1 202 <u>1</u> 0 | Jul 202 <u>4</u> 1 | Nov 2026 |
| | | | Annex 10, Volume VI, Part II | Develop SARP amendment proposals for Annex 10, Volume VI, Part II that cover the RLP and C2CSP concepts as well as the C2 Link technical solutions. | | | Q1 2022 | Nov 2025 | Nov 2026 |

| | | QI | a 1 | G3 | Q4 | Q1 | Q2 | Q3 | Q4 | Qi | 92 | | 4.4 | QI | 0.2 | | | | Q2 | Q3 | Q4 | Q1 | Q2 | | | Q1 | | Q3 | Q4 | CLL | Q2 | da. | Q |
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| ANC session | | 216 | 247 | | 2 18 | 219 | 220 | | 221 | 222 | 228 | | 224 | 225 | 226 | | 227 | 222 | 229 | | 280 | 221 | 282 | | 288 | 24 | 285 | | 286 | 227 | 288 | 72 | |
| Annex 7 and Annex 2 Appendix 4 | A posice tale 2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| Annex 1 and PANS-TRG | trective 2011 | | | | | | | | Applicability | | | | | | | | | | | | | | Z | | | | _ | | | | | | |
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Annex 19 Amendment 2 & SMM 5th Ed Timeline









Where are we headed







Long-term strategic planning

- gradual introduction
- scalability
- State readiness
- technological readiness
- public acceptance



Phase 4

phase 3 + network/automation management

Phase 3

phase 2 + people + network/automation management

Phase 2

phase 1 + technologydependent (RLP, DAA) + increasing automation + Aw lite

Phase 1 certified (intl) 2024

Considerations for the future

Everyone wants more!

Consider:

- Time,
- Resources,
- Money...
- Smaller UAS < 25KG
- Non-IFR
- Harmonizing cross border operations
- High seas
- Advanced Air Mobility





The Summary of Lessons

Divide the work...

International IFR RPAS

etc

Talk to EVERYONE

ICAO Panels

Implementing States

Industry

Stay in our lane...

Guard against scope creep

...And then divide it again

Annexes / PANS docs

Establish Trust

Asking is not getting

Past performance is proof

But keep an eye on other aspects.

Like cute kittens ©











Thank You!