



# Challenging transition from RPAS regulatory development to national implementation

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# Presentation overview



- ✓ RPAS: a radically new aviation domain
- ✓ National Implementation will be challenging
- ✓ More details: *ICAO scope, timeline, RP training*
- ✓ Planned implementation in France
- ✓ Conclusions and orientations



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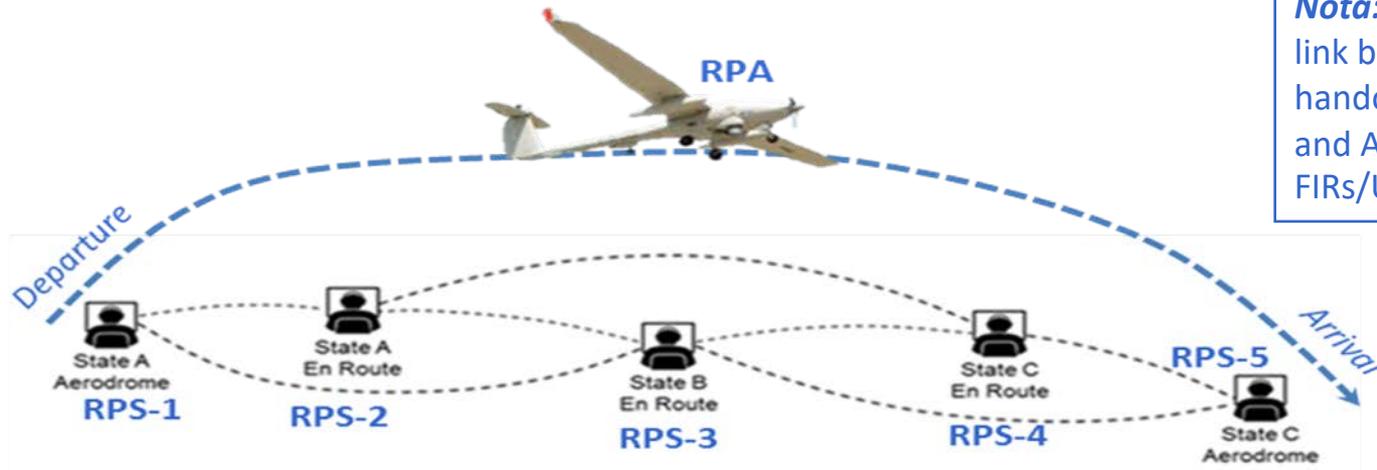
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# RPAS : a radically new aviation domain

NEW for ICAO and its Contracting States : RPAS (*Remotely Piloted Aircraft Systems*) is a very new, innovative and radically different domain from today's manned aviation.

This would be the first time in Aviation history that commercial aircraft will be flown with no pilots onboard, amongst other IFR manned aircraft : The RPAS pilot(s) will no longer be in the cockpit, but instead, will sit within RPS (*Remote Pilot Station(s)*).



**Nota:** there is no direct link between RPSs' handover boundaries and ATC control areas or FIRs/UIRs.

**Fig.** Handovers between RPSs (and RPs) will be possible during a given flight.

# The novelty and rapidly evolving nature of RPAS makes Nat'l implementation challenging

RPAS is emerging and rapidly evolving : for Contracting States, it requires a new way of thinking international aviation, and it should take some time to allow an evolution of the mindsets from manned to unmanned aviation

It is likely that a longer time than usual will be needed at national and regional levels in order to be able to successfully and safely implement :

- the new RPAS regulatory framework
- new procedures
- new competency-based RP training & licensing
- new standards for systems' airworthiness, safe Ops ..



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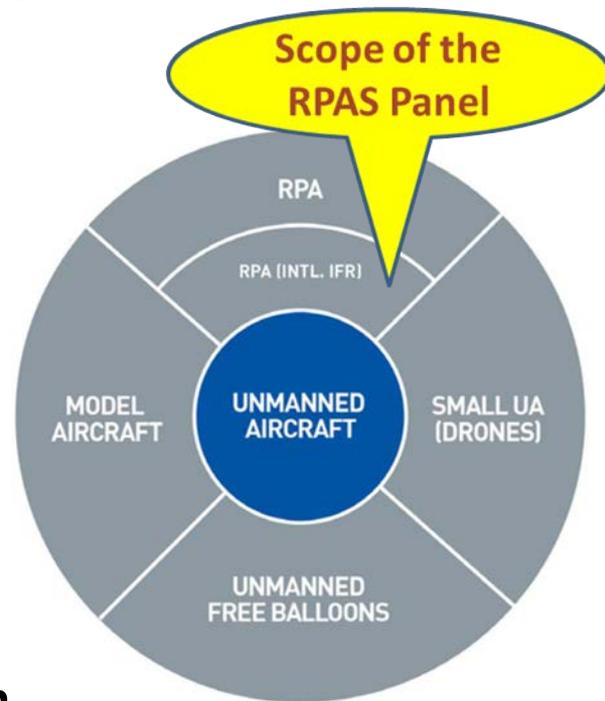
# More details : within ICAO RPAS' scope

## REMOTELY PILOTED AIRCRAFT (RPA), INT'L, IFR

RPA are a subset of UA (Unmanned aircraft)

Some RPA are expected to be accommodated and ultimately **integrated into non-segregated airspace** for **international, instrument flight rules (IFR)** operations  
→ **certification** required for aircraft/system, operator, **Licensing** of remote pilots

ICAO RPAS Panel approach, as directed by the ANC (*Air Navigation Commission*), follows traditional method of **maneuver**  
**aviation regulation and certification**



# NOT in the ICAO RPAS' scope

Today's ICAO RPAS Panel's scope excludes:

- Carriage of persons
- 'Fully autonomous' unmanned aircraft and their operations
- Very Low Level (VLL) airspace operations (e.g. below 500 ft AGL)
- Very High Level (VHL) ops (e.g. above FL660 or FL600)
- Domestic operations
- Model aircraft
- ... and obviously (Art 3 Conv.) **State aircraft**





# Involvement of France

W.r.t. regulating drones, UAS, RPAS, France participates to all relevant organisations, in particular to:

- 
- ICAO RPAS Panel activities (only one category: *'Certified Int'l IFR RPAS'*)
  - JARUS activities (3 UAS op. categories : *'Open', 'Specific', 'Certified'* )
  - Europe : EASA activities on drones (3 UAS categories : *'Open', 'Specific', 'Certified'* ), similar 3 categories as JARUS

With its new Basic Regulation adopted in Feb. 2018, EASA presently works on a regulatory framework for the various categories of drones.

In particular, EASA will propose to the Member States some regulatory amendment (NPA) for drones in 2019 (in line with the new EASA Basic Regulation).

Both ICAO and EASA Regulatory timelines for RPAS are aligned in the field

# Focus on the Remote Pilot training - CBT

The RPAS amendments to ICAO Annex 1 (RP Licensing) and PANS-TRG have been approved and will be applicable by Contracting States at the end of 2022.

**Competency Based Training (CBT)** approach considered / Remote Pilots' required competencies:

- ✓ Situational awareness
- ✓ Application of Procedures
- ✓ Communication
- ✓ RPA flight path management, automation
- ✓ Leadership, teamwork, self- management
- ✓ Problem solving and decision-making
- ✓ Workload management
- ✓ Coordination and handover
- ✓ Management of non-normal situations



# Implementation in France (1/2)

In France, the implementation will take into account the regulatory frameworks and guidance developed by EASA and by ICAO.

Prepare towards the implementation in France of the RPAS-RPL PANS-TRG guidance by Q3-2022 

In the coming years, a gated process is likely to be defined in order to adapt to the Q3-2022 implementation objective of EASA and ICAO aligned regulatory frameworks for RPL CBT Training



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# Implementation in France (2/2)

A Remote Pilot training framework already exist in France for Military RPAS and for smaller civil UAS, but training for the future certified civil IFR RPAS is NEW

For RPAS RPL TRG new adapted courses, inspectors and instructors will be needed.

Relevant oversight personnel will need to be familiarized to the new TRG provisions  
A 1<sup>st</sup> phase of training of relevant oversight personnel will have to be done, prior to implementation of the new provisions

Also, The expertise from the Military in the RPAS field is likely to be very useful for the implementation of the civil RP training process



Participation recommended to the ICAO new RPLI-AG  
*(RPL Implementation Advisory Group)*



# Conclusions and orientations



- ❖ The novelty and rapidly evolving nature of ‘Certified IFR Int’l RPAS’ makes ICAO Regulatory and implementation processes quite challenging, given the industry innovation pace, the diversity of projects, technology readiness levels, systems architectures and concept of operations
- ❖ Some REG provisions will be applicable earlier than others (e.g. Training & licensing : Q3-2022) in order to leave enough time to operators, States/ authorities, training organizations, remote pilots and manufacturers to get prepared by the end of 2024 (which is RPAS ICAO targeted applicability date)
- ❖ The timely preparation of a well coordinated and coherent package of ICAO Standards & recommended practices (SARPs) + guidance material, will be critical for successful future implementation by States
- ❖ France will continue to contribute actively to all the activities within ICAO (incl. the ICAO RPLI-AG, *RPL Implementation Advis. Group*), JARUS & EASA in order to succeed in implementing at national level the TRG Competency-based regulation and guidance



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