



DGP-WG/18-IP/11
1/10/18

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/18)**

Montréal, 1 to 5 October 2018

**Agenda Item 8: Coordination with other panels
8.4: Remotely Piloted Aircraft Systems Panel (RPASP)**

**PRESENTATION ON REMOTELY PILOTED AIRCRAFT SYSTEMS PANEL (RPASP)
ACTIVITIES**

(Presented by the Secretary of the Remotely Piloted Aircraft Systems Panel
(RPASP))



| ICAO SAFETY

DGP Update

Remotely Piloted Aircraft Systems Panel

Frédéric Malaud

Technical Officer, Remotely Piloted Aircraft Systems
(RPAS), ICAO





UA versus RPA

Unmanned aircraft include:

- Free balloons
- Model aircraft
- Remotely piloted aircraft
 - airspace/aerodrome integration requires control
 - control, in real time, provided by a licensed remote pilot
 - certificated aircraft / system
- Drones





Two Approaches / Two Streams of Work

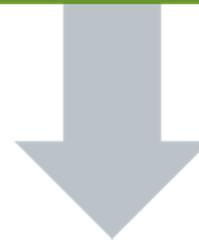
RPAS

Full regulatory
approach



Other UAS

'Tool Kit' to enable
domestic operations





RPASP Focus



- International IFR operations
- Controlled airspace and aerodromes
- Global interoperability
 - RPA operate alongside manned aircraft, as a predictable, cooperative airspace user: All **19 Annexes** affected
 - Priority is fundamentals to initiate international operations
 - » **Remote pilot licence** – adopted March 2018
 - » **Certificate of airworthiness** – endorsed March 2018
 - » **RPAS operator certificate** – delivery Q1 2020



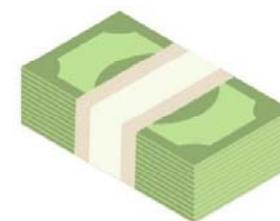
RPAS Panel Organization

- **Panel Leadership**
 - Chairman: **Randy Willis**
 - Vice-Chairman: **Mike Lissone**
- **Working Groups and Rapporteurs**
 - WG 1 – Airworthiness: **James D. Foltz & Ailton Jose de Oliveira Jr.**
 - WG 2 – C2 Link: **Dominique Colin & Michael Neale**
 - WG 3 – Detect and Avoid: **Hans Böhlin & Catherine Ronfle-Nadaud**
 - WG 4 – Remote Pilot Licence: **Henri Rodenburg**
 - WG 5 – RPAS Operations: **Gerry Corbett & Ron van de Leijgraaf**
 - WG 6 – ATM Integration: **John Walker & Brian Guimond**
 - WG 7 – Human in the System: **Jay Shively & Fiona Cayzer**
 - RPASP/SMP Joint TF: **Andrew Ward & Raimund Kamp**



Work underway...

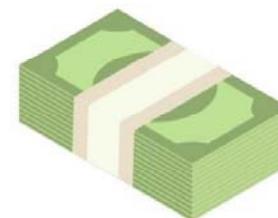
- **Annex 6 – Operation of Aircraft**
 - Will contain a new *Part IV – International Operations – Remotely Piloted Aircraft Systems*, covering all types of RPA as well as requirements for the RPAS operator certificate
- **Annex 8 – Airworthiness of Aircraft**
 - Being expanded to cover RPS and C2 Link for control and management
- **Annex 10 – Aeronautical Telecommunications**
 - New provisions for C2 Link, frequency spectrum, as well as detect and avoid capability
- **Annex 11 – Air Traffic Services**
 - Integration of RPAS into the air traffic management (ATM) system





Work underway...

- **Annex 17 – Security**
 - New provisions to prevent unlawful interference, particularly related to physical security of RPA and RPS
- **Annex 18 – *The Safe Transport of Dangerous Goods by Air***
 - To be amended to address RPA employed to carry dangerous goods
- **Annex 19 – *Safety Management***
 - Being extended to certified categories of RPAS operators





RPAS: Other work within ICAO

- Legal Committee
- Committee on Aviation Environmental Protection (CAEP)
- Aviation Security Panel (AVSECP)
- Airport Economics Panel (AEP) and ANS Economics Panel (ANSEP)





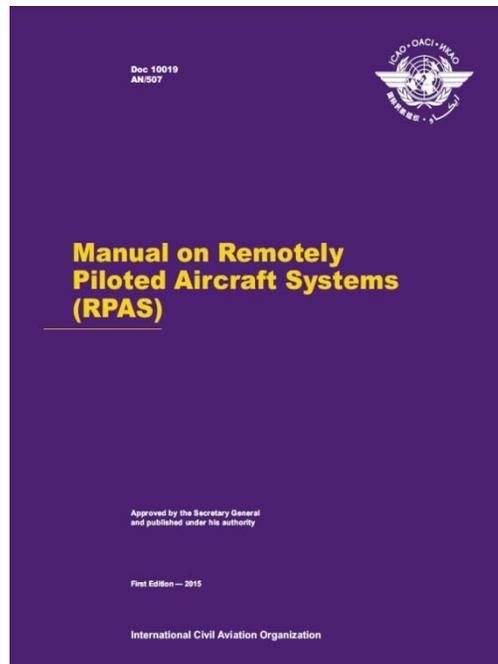
Categorization

- RPASP/10 (March 2018) agreed on **3-tier, risk-based categorization approach**, in line with Joint Authorities on Rulemaking for Unmanned Systems (JARUS):
 - **Manned aviation approach**: traditional method of regulating manned aviation; Operator certification, Flight Crew licensing and remotely piloted aircraft (RPA) certification.
 - **Medium risk**: operational authorization from CAA; limitations restrictions; safety risk assessment.
 - **Low risk**: no authorization needed (subject to limitations, e.g. VLOS, distances from aerodromes and people; max. height AGL...
- **Foreword of Annex 6, Part IV** as **explanatory** material regarding **categorization** of unmanned aircraft (UA)

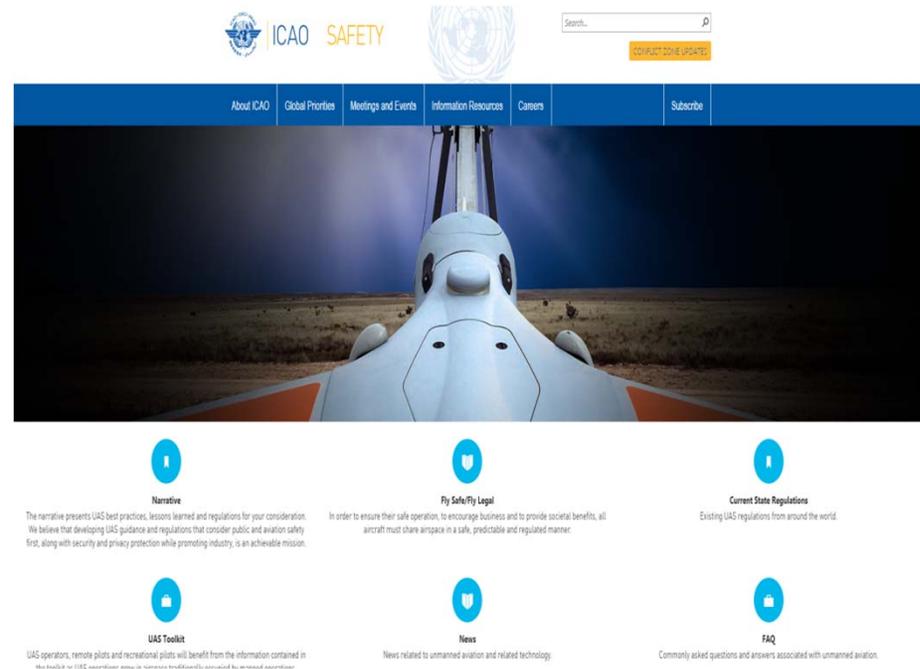


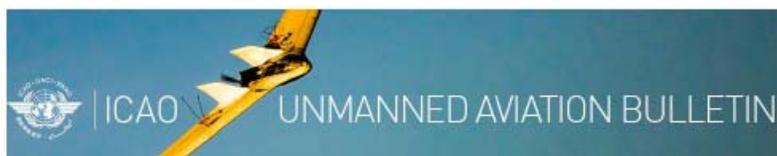
Guidance material and resources

Doc 10019



ICAO UAS ToolKit





2018/2

AUSTRALIA – Drone saves two Australian swimmers

In Australia, a drone was used to save swimmers off the coast of New South Wales. Lifesavers sent a drone to drop a flotation device which the swimmers used to swim safely to shore. The drone, whose camera recorded the rescue, can also be designed to spot sharks, sound alarms or act as a loudspeaker.

Source:

<https://www.bbc.com/cdn.ampproject.org/c/s/www.bbc.com/news/amp/world-australia-42731112>

CHINA – Ehang's unmanned aircraft

Ehang released the following information on its prototype passenger unmanned aircraft, the Ehang 184. The all-electric aircraft can carry passengers 10 miles or for up to 23 minutes of flight. A human pilot stands ready to take control remotely from a command centre if necessary.

Source:

<https://www.techspot.com/news/73135-watch-ehang-drone-carrying-passengers-new-flight-video.html>

GERMANY – Police begin using drones

The State of Hesse has decided to implement the use of drones in police work, including at accident sites and crimes scenes. The unmanned aircraft will be used to provide images of accidents and help secure evidence. To ensure safety, the drones will be flown by line of sight at 50 metres, never at night or above large crowds of people.

Source:

http://www.internationalawoffice.com/Newsletters/Aviation/Germany/Arnecke-Sibeth/Police-begin-using-drones?utm_source=ILO+Newsletter&utm_medium=email&utm_content=Newsletters+2018-02-14&utm_campaign=Aviation+Newsletter

- *Unmanned Aviation Bulletin*
- A39 (awareness and educational campaigns)
- Exchange of information amongst States
- Reports on operational and regulatory developments
- Encourages use of consistent terms for unmanned aviation
- Disseminated as RPASP IPs and electronically



ICAO SAFETY



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THANK YOU