CIVIL AVIATION AUTHORITY OF NEW ZEALAND

Certification of Unmanned Aircraft Systems Within New Zealand

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What is a UAS?

CAR Part 1: UAS means **an aircraft and its associated elements** which are operated with no pilot on board

- Aircraft
- Ground Control Station
- Command / Control / Communications

  - A System – and must always be thought of as such!

NZ UAS Certification Rules

- Part 101
  - <25 kg
  - <400ft
  - >4km from aerodrome
  - Visual Line of Sight operations
- Part 102
  - Provides for variations to Part 101

Part 102 – Unmanned Aircraft Operator Certification

- Rule is focussed on certification of an Operator
  - But addresses Initial and Continued Airworthiness
- Risk based – non prescriptive
  - It doesn't prescribe specific technical requirements that an applicant has to meet
  - Nature and degree of risk posed by the operation
    - Certification inherently linked to Operator's Concept of Operations
- Part 102 has been typically applied to operators of small RPAS wanting to go beyond the bounds of Part 101

Part 102 - Unmanned Aircraft Operator Certification

- CAA beginning to engage with future operators of much larger UAS wanting to conduct specific operations such as:
    - Agricultural spraying
    - Carriage of passengers

- So how to apply Part 102 in these instances?

Part 102 – Unmanned Aircraft Operator Certification

- Application of Part 102:
  - UAS Operational Concept / Use Case is paramount
    - Nature and degree of risk
      - Establish level of airworthiness
- What rules apply?
  - Part 102.17: UAS Operators are not required to comply with: CAR Parts 12, 19, 21, 26, 39, 43, 47, 61, 63, 66, 67, 91, 92, 93, 95, 115, 119, 129, 133, and 137
  - Unless your company exposition specifies otherwise.

Part 102 – Unmanned Aircraft Operator Certification

- UAS Operator's Expositions:
  - Must be acceptable to the Director
  - Must address a range of issues, having regard to the nature and degree of risk of the intended operation
  - May adopt any requirement in existing Civil Aviation Rules for the purpose of mitigating or managing a risk.
  - Must address any other approvals that are required to conduct the proposed operation.

- 102.11(d): *The Director may require only those matters that are considered to be appropriate in the particular circumstances*…(Nature and degree of risk)

International Situation

- General lack of international standardisation
- To resolve this CAA is primarily engaged with:
  - ICAO
  - JARUS (Non-regulatory body)
  - Asia-Pacific UAS Working Group
- Output from these FORA influencing CAA's approach to certification of UAS
  - E.g. JARUS SORA (Specific Operator Risk Analysis)
    - Still in draft but used to verify robustness of CAA's approach
- CAA's Part 102 is unique in the international regulatory arena

Challenges Ahead

- Regulatory
  - Lack of UAS certification standards
  - Consistent application of CAR Part 102
- Technical
  - Detect and Avoid
  - Automation, etc
- Social
  - Public acceptance
- Cultural
  - New participants it the aviation arena

Current Example:
Zephyr Airworks “Cora”

- Large Remotely Piloted Electric VTOL Aircraft
- Certified under Part 102 for R&D flying in Canterbury region

- Future “Air Taxi” service mentioned in press releases - Long term objective
- Many challenges remain in order to achieve this objective
- CAA NZ’s work with Zephyr is focused on achievable steps working towards that vision

QUESTIONS ?