COMMISSION EXPERT GROUP ON AVIATION SAFETY (E03604)

Standard scenarios for UAS operations in the ‘Specific’ category (Opinion 05/2019) by the European Aviation Safety Agency — Orientation discussion

10 December 2019
CE marks for standard scenario

- New CE class(es) mark for UAS used for standard scenarios
- Standard scenario envisaged for low risk operations (i.e. SAIL I and II) where, according to SORA a declaration by the UAS operator is sufficient.
- Normally a UAS operator does not have the competency to assess compliance of the technical requirements of the UAS -> responsibility to be discharged to manufacturer
- According to the basic regulation a “certificate” to the manufacturer may be provided through “aviation regulation” or “CE” mark.
- “CE” mark is considered the most proportionate approach for the risk of such operations.
- For similar operations with UAS without CE class mark, dedicated PDRA will be developed
Verification of technical requirements for UAS

SPECIFIC CATEGORY

Risk assessment (SORA)

Low risk
(SAIL I and II)

- CE class mark in case of STS
- UAS design may be covered by the operational authorisation provided to the UAS operator
- Manufacturer may apply for (R)TC

Medium risk
(SAIL III and IV)

- UAS design may be covered by the operational authorisation provided to the UAS operator
- Manufacturer may apply for (R)TC

High risk
(SAIL V and VI)

- (R)TC mandatory, as per (EU) 2019/945 article 40

CERTIFIED CATEGORY

No mitigations possible in the specific category
-> Certified category

- (R)TC mandatory
- Approval of the operator
- License of the RP
## EU Regulation - Opinion on Standard Scenarios

### STS-01
- No fixed wings
- Means to reduce the effect of the UA dynamics (e.g. parachute)
- Low speed mode selectable up to 5 m/s
- Accessories kit to transform a class C3 UAS

### STS-02
- Provide information on UA position
- Maximum ground speed < 50m/s
- Geo-caging
- Automatic modes

### Technical requirements as class C3 UAS with addition of:
- Health monitor of the C2 link
- Provide information on UA speed and height
- Flight Termination system
- Optional geo-awareness

New mandate for standardisation expected to be issued by DG Grow
CE marks for standard scenario

- Number of CE classes will be kept as low as possible
  - Some STS may require use of the same CE Class drone
- Manufacturers may mark the UAS with multiple CE class mark if the UAS complies with all the requirements in the relevant part.
  - For example a UAS with a MTOM <4kg may be marked C2 and C6, then it may be operated according to the A2 subcategory and STS 02.
EU Regulation - Opinion on Standard Scenarios

Other main changes Delegated Regulation (EU) 2019/945

- Remote identification:
  - UAS covered by CE class mark
    - Direct + optional network remote identification.
  - Other UAS in the specific category operated in VLL
    - Direct or network remote identification.
  - UA shall check validity of UAS operator registration number

Direct remote identification

Network remote identification
EU Regulation - Opinion on Standard Scenarios

Other main changes Delegated Regulation (EU) 2019/945

- Unique S/N according to ANSI/CTA 2063-A also for all UAS not subject to registration

- Green flashing light to be used for night operations for UAS covered by CE class mark

Controllability

Conspicuity (needs to know if it is a UAS or manned aircraft)
CE marks for standard scenario

- Delay applicability of remote identification and green flashing lights for specific category
Development of standards
ASD-STAN D5-WG8 activities

Work methods and organization:

- D5WG8 asked the national work groups to contribute on the Norms projects related to the delegated act EASA (text + annex).
- Each state-member contribute to D5WG8 performing its own meetings and brings the result at the ASD-STAN level.
- D5WG8 manage webex series on specific topics in between progress meetings.
- Creation of ad-hoc technical Sub-Groups:
  - SubGroup 1: Design and safety
  - SubGroup 2: System and Performances
  - SubGroup 3: Drone effect and Energy
  - SubGroup 4: Ergonomy and documentation
  - SubGroup 5: Direct Remote Identification
  - SubGroup 6: GeoAwareness
Normalisation Program EN 4709 series

- **Product and verification requirements**
  - Part 001

- **Direct Remote identification requirements**
  - Part 002

- **Geo-awareness requirements**
  - Part 003

- **Lighting requirements**
  - Part 004
D5WG8 Work Program – Short timeline

The work program comprises **4 European standards** and **2 CEN Technical Reports**:

<table>
<thead>
<tr>
<th>Type of deliverable</th>
<th>Topic covered</th>
<th>Foreseen date of publication of the ASD-STAN publication</th>
<th>Foreseen date of publication of the CEN deliverable</th>
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<tr>
<td>EN</td>
<td>Product and verification requirements for UAS in the open category</td>
<td>June-2020</td>
<td>2021</td>
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<tr>
<td>EN</td>
<td>Remote identification requirements for UAS in the open category</td>
<td>June-2020</td>
<td>2021</td>
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<td>EN</td>
<td>Geo-awareness requirements for UAS in the open category</td>
<td>June-2020</td>
<td>2021</td>
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<tr>
<td>EN</td>
<td>Lighting requirements for UAS in the open category</td>
<td>June-2020</td>
<td>2021</td>
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<tr>
<td>CEN TR</td>
<td>Evaluation of noise nuisance for UAS in the open category</td>
<td>June-2020</td>
<td>2021</td>
</tr>
<tr>
<td>CEN TR</td>
<td>Ground collision severity evaluation for UAS in the open category</td>
<td>June-2020</td>
<td>2021</td>
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Timeline for CE marking standards in OPEN category

Entry into force EU regulation
- 1Q 2019

Applicability date regulation
- 1Q 2020

End of transitional period
- 1Q 2022

Standards development
- prEN publication
- EN transformation
- CEN publication

Ballots
- Comments resolution
Standardisation activity: specific category

- Standard scenario
  - Mandate from DG Grow for new requirements defined in CE Class 5 and 6
Standardisation activity: specific category

- Operations not covered by standard scenarios
- AW-Drone project
  - January 2020: presentation to EASA and to standardisation bodies (SB)
    - Proposed standard applicable to OSO and mitigations to SORA
    - Identification of gaps
- EASA will review AW-Drone proposal and develop AMC
- EASA will monitor plan and activities of SBs via EUSCG and participation to meeting of SBs
Questions?

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