UAV communications

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EASA Vertiports (March 2022)

PTS VPT-DSN.E.520 Vertiport identification marking

Rationale
1. A vertiport identification marking consisting of a 'V' letter inside a blue circle has been proposed and agreed. See figures. However, the input from pilot view after simulating approach and landing at vertiports will be used for the final decision. Commentators are invited to provide their feedback.
2. The dimensions of all markings will have to be reviewed when input from the manufacturers on the size of the FATOs for VTOL-capable aircraft is received.
3. A provision has been included for the location of the identification marking in the case of a FATO that is elevated.
4. In view of current projects for development of HEMS VTOL aircraft, hospital marking has been included.

(a) **The objective** of a vertiport identification marking is to provide the pilot with an indication of the presence of a vertiport; with its form, likely usage; and, the preferred direction(s) of approach.

Right of way (CAP 722 9th amendment)

There are no right-of-way rules set out in regulation between unmanned aircraft and other airspace users, however **it is likely that the unmanned aircraft remote pilot will identify other airspace users before they identify the unmanned aircraft**, and therefore the **remote pilot will usually be first to manoeuvre away from any conflicting aircraft**. UK Regulation (EU) 2019/947 sets out, in UAS.OPEN.060 (2)(b), that: the **remote pilot shall maintain a thorough visual scan of the airspace surrounding the unmanned aircraft in order to avoid any risk of collision with any manned aircraft**. The remote pilot shall discontinue the flight if the operation poses a risk to other aircraft, people, animals, environment or property

Sensory cues

In addition to operational Human Factors issues, experienced in other parts of the aviation system, the physical separation of the remote pilot introduces several issues that must be considered. These include but are not limited to:

- Degradation of information due to remote operation and associated lack of multi-sensory feedback, which does not allow the remote pilot to correctly understand how the UAS is operating or provides misleading information;
- Temporal degradation resulting from data latency, pilot recognition, pilot response and pilot command latency over the data link requires consideration in the design of controls and displays;
- The remote pilot's risk perception and behaviour may be affected by the absence of sensory/perceptual cues and the sense of a shared fate with the vehicle;
- Bandwidth limitations and reliability of the data link compromising the amount and quality of information available to the remote pilot and thereby limiting his/her awareness of the UAS status and position;
- If the remote pilot swaps with another remote pilot during a long flight, issues around effective hand-over procedures and communication must be mitigated (further details are provided later in this document).

It is therefore important to:

- Avoid presenting misleading cues and to consider alternative methods of representing the UAS data;
- Prioritise relevant data sent over the C2 Link to satisfy the needs for all phases of the operation;

Ensure that data link characteristics and performance (such as latency and bandwidth) are taken account of within the relevant information and status displays in the Command Unit.

Boundery with the specific Category

- UAS operations in the ‘certified’ category include operations with a high risk. Being dependent on the safety risk assessment process, and the nature and risk of the type of operation concerned, the boundary between ‘specific’ and ‘certified’ category cannot be expressed purely in terms of mass of the UA. The combined effect of Article 6 of UK Regulation (EU) 2019/947 Article 40 of UK Regulation (EU) 2019/945 is that UAS operations must be conducted in the ‘certified’ category when they:
- involve a UA with a characteristic dimension of 3m or more being flown over assemblies of people; or,
- involve the transport of people; or,
- involve the carriage of dangerous goods, that may result in high risk for third parties in case of accident

Specific category operations

- Specific Category Operations Controlled airspace requirements are generally not applied to VLOS UAS operations that take place below 400ft. Air Navigation Service Providers (ANSPs) responsible for the management of controlled airspace may request to be notified about UAS operations within their airspace, above 400ft. This will be set out within the AIP (section ENR 2.1). This is not a ‘permission’ request, but a notification. Information provided by the ANSP, following such a notification, must be taken into account by the UAS Operator. Operators and remote pilots must be clear within their procedures on how and when to engage Applicable These are usually applicable to all aircraft, including unmanned aircraft. Full details for restricted and prohibited areas can be found within the SI that sets out the airspace restriction. Some areas are only applicable to unmanned aircraft. CHAPTER 2 | Operational Guidance December 2022 Page 45 with the ANSP, should their flight take place within controlled airspace.