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| From: DTEC committee | ARM19-7.3.10  (DTEC3-11.2.2.4) |
| To: ARM, [ENG] committee | 4 October 2024 |

LIAISON NOTE

Development of guidance on the Use of Drones for AtoN Management

# INTRODUCTION

DTEC reviewed the input from ARM on the developed a draft recommendation and guideline on Use of Drones for Aids to Navigation Management. The guideline considers all scopes of drones including aerial, floating and underwater operation.

# Discussion

DTEC thanks ARM for the opportunity to review the draft recommendation and guideline. The document was reviewed in detail and comments are provided to support further development.

# Draft Recommendation – Use of Drones for AtoN Management

Comments from DTEC:

* The section on ‘*Recalling’* may need to be revised noting the IGO status of IALA.
* Confirm the status of this recommendation, noting it appears to be Informative.

# Draft Guideline

Detailed comments from DTEC are included in the annex to this liaison, in track changes.

**Section 2 - Scope**

This appears to be ambitious in that it encompasses Aerial (UAV – Unmanned Aerial Vehicle), Floating (USV – Unmanned Surface Vehicle) and Underwater (UUV – Unmanned Underwater Vehicle) ‘drones’. Although there are overlapping aspects, there are significant differences for each of the domains. It is proposed that the document be presented with separate sections for each type of drone. In addition, it is noted that there are also unmanned land operated vehicles (ROV – Remotely Operated Vehicles), which are not referenced in the document.

To expand on these comments: the aerial, surface, and underwater domains each present unique challenges and regulatory landscapes that might not be adequately addressed by a universal set of guidelines. For example, aerial (UAV) operations might be heavily influenced by airspace control and safety regulations, whereas floating and underwater (USV and UUV) operations involve maritime condition parameters and technical challenges that are not applicable to UAVs. It is felt that this separation would not only enhance clarity and applicability for AtoN management using these technologies, but also facilitate easier updates and adjustments in response to technological, regulatory and operational changes in each domain.

**Section 2.1 - Designation of Roles**

The using of terminology could be confusing – for example the term ‘Responsible Authority’ may be confusing and could be revised to ‘Designated Operator’. Similarly the Drone Pilot may be referred to for aerial drones, but may not be appropriate for the other domains.

It is proposed to include an additional role ‘Designated Drone Operator’ who would be accountable for the safe conduct of the drone operations, and designate the Drone Pilot.

**Section 3.2 - Training**

This is an element that could be suitable for presentation within each of the three domains (see proposed structure for the document).

**Operations of Drones**

This section should include more detail on theoretical knowledge of drone operations, basics covering the domain in which it is operated (i.e. aerodynamics and airspace; movement of ships and water space management; etc).

**Risk Assessment**

The risk assessment for the specific activity should be highlighted, which could be additional text under the safe and efficient planning of the intended operation.

**Section 5 – Operation of Drone**

Consider revising this section to align with the implementation of a Drone Operations Manual

The drone operations manual is a comprehensive document that outlines all aspects of operating and managing drones for an organization. This manual can be a great facilitating factor for ensuring that all operations are conducted safely, legally, and efficiently. It would therefore be a key component in the regulatory and operational compliance of an organisation’s drone operations.

As an example, a template for a UAV operator’s manual can be found on the EASA website.

<https://www.easa.europa.eu/en/newsroom-and-events/news/easa-publishes-template-operations-manual-specific-category-uas-operation>

**Ongoing development**

Provision should be provided to include a frequent review and update of the guideline, noting drone technology is evolving rapidly in all three domains.

**Summary**

A track changes version with further comments are provided as an Annex to this liaison note.

# ACTION REQUESTED

The ARM committee is requested to:

1. Review the comments on the draft recommendation and guideline and consider proposed amendments and corrections.
2. Forward, as appropriate, a revised version of the draft recommendation and guideline on the use of drones in Marine AtoN to a future meeting of DTEC for further review.
3. Review the use of the term ‘Drone’ noting the three different operational environments referred to in the document, and other operating environments such as land (ROV).