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UAS traffic management (UTM) —

Part 5: UTM functional structure

Gestion du trafic des aéronefs sans pilote (UTM) —
Partie 5: Structure fonctionnelle de l'UTM

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Foreword

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This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 16, *Unmanned aircraft systems*.

A list of all parts in the ISO 23629 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The market expects rapid growth of civil unmanned aircraft system (UAS) operations in the near future. To manage growing operations, several states are making an effort to develop UAS traffic management (UTM). However, this can cause a lack of harmonization among countries and affect safety, security, the environment, system reliability and economic efficiency.

Some organizations have already created models and references of UTM functional structure, for example, existing documents and ongoing discussion in other organizations such as ASTM to create the UTM functional structure. These models are recognised to share a lot of common aspects.

To avoid discordance, the creation of a generic UTM functional structure as a basis of further developments is needed. The reference functional structure can serve as a mechanism to evaluate and compare different UTM systems and can foster adoption of better technologies and solutions.

The UTM structure and core functions are to be harmonized with the following perspectives:

— creating terms and definitions related to core functions of UTM referencing existing international standards;

— listing existing documents and ongoing discussion related to UTM functional structure;

— creating a common UTM structure;

— checking contradiction and inconsistency between terms and definition and UTM structure.

UAS traffic management (UTM) —

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1 Scope

This document is dedicated to establishing a common understanding of UTM core functions and functional structure. It provides a detailed description of the UTM system layer given in the UTM Framework.

This document excludes:

— role-sharing among entities constituting UTM, which is left to implementations;

— technical methodology of communication or data transaction among core functions;

— business model of players engaging in a function of UTM.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21384-4, *Unmanned aircraft systems — Part 4: Vocabulary*

ISO 23629-12, *UAS traffic management (UTM) — Part 12: Requirements for UTM service providers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21384-4, ISO 23629-12 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 UTM constituent related terms

3.1.1
UTM function
function which constitutes UTM and contributes to safe UA operation

3.1.2
UTM functional structure
UTM structure in functional perspective which consists of mutual complementary and interacting *UTM functions* (3.1.1)