INTERNATIONAL STANDARD

ISO/IEC 4005-2

First edition
2023-03

Telecommunications and information exchange between systems — Unmanned aircraft area network (UAAN) —

Part 2: Physical and data link protocols for shared communication

Télécommunications et échange d'information entre systèmes — Réseau de zone de drones (Unmanned aircraft area network - UAAN) —

Partie 2: Protocoles de liaison de données et physiques pour la communication partagée

Reference number
ISO/IEC 4005-2:2023(E)

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Published in Switzerland

Contents

Page

Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

A list of all parts in the ISO/IEC 4005 series can be found on the ISO and IEC websites.

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 and www.iec.ch/national-committees.

Introduction

Unmanned aircrafts (UAs) operating at low altitude will provide a variety of commercial services in the near future. UAs that provide these services are distributed in the airspace. In level II, many people operate their own UAs without the assignment of communication channels from a central control centre.

This document describes shared communication, which is a wireless distributed communication. Shared communication allows all units related with UAs to communicate with UAs when necessary. Shared communication can support communication between UAs, UAs and controllers, UAs and ground equipment, UAs and landing devices, and UAs and obstacle devices. A wireless distributed communication described by this document is intended to be used in licensed frequency bands.

The ISO/IEC 4005 series consists of the following four parts:

— ISO/IEC 4005-1: To support various services for UAs, it describes a wireless distributed communication model and the requirements that this model shall satisfy.

— ISO/IEC 4005-2 (this document): It describes communication in which all units involved in UA operations can broadcast or exchange information by sharing communication resources with each other.

— ISO/IEC 4005-3: It describes the control communication for the controller to control the UA.

— ISO/IEC 4005-4: It describes video communication for UAs to send video to a controller.

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Telecommunications and information exchange between systems — Unmanned aircraft area network (UAAN) —

Part 2:
Physical and data link protocols for shared communication

1 Scope

This document describes communication protocols for the physical and data link layer of shared communication, which is a wireless distributed communication network for units related with UAs in level II.

Physical layer includes frame structure, encoding procedure, physical layer procedure and coexistence operations. Data link layer includes channel and slot, resource management, broadcast and exchange of data, synchronization, security, and interface with upper layer and other communication layers.

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/IEC 4005-1, *Telecommunications and information exchange between systems — Unmanned aircraft area network (UAAN) — Part 1: Communication model and requirements*

ISO/IEC 4005-3:2023, *Telecommunications and information exchange between systems — Unmanned aircraft area network (UAAN) — Part 3: Physical and data link protocols for control communication*

ISO/IEC 4005-4:2023, *Telecommunications and information exchange between systems — Unmanned aircraft area network (UAAN) — Part 4: Physical and data link protocols for video communication*

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