



**BSI Standards Publication**

## **Vertiports — Infrastructure and equipment for vertical take-off and landing (VTOL) of electrically powered cargo unmanned aircraft systems (UAS)**

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National foreword

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## **Vertiports — Infrastructure and equipment for vertical take-off and landing (VTOL) of electrically powered cargo unmanned aircraft systems (UAS)**

*Vertiports — Infrastructure et équipements pour le décollage et l'atterrissage vertical (VTOL) des aéronefs cargo sans pilote (UAS) à propulsion électrique*



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## Contents

Page

|                                                                                       |           |
|---------------------------------------------------------------------------------------|-----------|
| <b>Foreword</b>                                                                       | <b>iv</b> |
| <b>Introduction</b>                                                                   | <b>v</b>  |
| <b>1 Scope</b>                                                                        | <b>1</b>  |
| <b>2 Normative references</b>                                                         | <b>1</b>  |
| <b>3 Terms and definitions</b>                                                        | <b>1</b>  |
| <b>4 Abbreviated terms</b>                                                            | <b>3</b>  |
| <b>5 Requirements for the vertiport, under the responsibility of the manufacturer</b> | <b>4</b>  |
| 5.1 Design                                                                            | 4         |
| 5.1.1 Functional requirements                                                         | 4         |
| 5.1.2 System reliability and conditions                                               | 5         |
| 5.1.3 Accommodation of the cargo                                                      | 5         |
| 5.2 Ensuring safety                                                                   | 6         |
| 5.2.1 System reliability                                                              | 6         |
| 5.3 Communication                                                                     | 6         |
| 5.4 Log 7                                                                             |           |
| 5.5 Quality control                                                                   | 8         |
| 5.6 Instruction manual                                                                | 8         |
| 5.7 Ensuring safety                                                                   | 9         |
| <b>6 Requirement for the VIS under the responsibility of the VIS SP</b>               | <b>9</b>  |
| 6.1 Design                                                                            | 9         |
| 6.1.1 General                                                                         | 9         |
| 6.1.2 Departure                                                                       | 10        |
| 6.1.3 Approach                                                                        | 10        |
| 6.1.4 Accommodation                                                                   | 10        |
| 6.2 Ensuring safety                                                                   | 10        |
| 6.3 Communication                                                                     | 11        |
| 6.4 Instruction manual                                                                | 11        |

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 17, *Airport infrastructure*.

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](http://www.iso.org/members.html).

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## Introduction

The demand for unmanned aircraft has been increasing in recent years for a variety of applications, including military and civilian [personal (hobby) and commercial] applications.

Particular focus has been placed on the logistics sector. The most difficult part of these operations is the departure and approach of the unmanned aircraft; and a vertiport is a device to support this. This document defines the requirements for constructing a vertiport. The components of the vertiport are assumed to be the following.

A vertiport system consists of two elements: a vertiport and a vertiport information system. The vertiport is connected to the vertiport information system; the vertiport information system is connected to the external system, and external system is connected to the unmanned aircraft system. In some cases, the unmanned aircraft system is directly connected to the vertiport to ensure safety during approach. The vertiport consists of software and hardware. The external system is responsible for assisting the unmanned aircraft system operator in making decisions and communicating with the vertiport information system and the unmanned aircraft system.

The vertiport communicates only with the vertiport information system and does not communicate directly with the external system; but it transmits information via the vertiport information system.

In addition, the use cases covered in this document are assumed to be logistics based on automatic navigation by non-visual flight; and where the cargo is stored at the landing site. However, this does not imply that the document cannot be applied to other use cases. This document does not cover vertiport operations and services covered by ISO 5015-2, developed by ISO/TC 20/SC 16 (UAS), which includes ground handling, interface with external systems, such as unmanned aircraft system traffic management service providers, and safety and quality of vertiport operators.



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# Vertiports — Infrastructure and equipment for vertical take-off and landing (VTOL) of electrically powered cargo unmanned aircraft systems (UAS)

## 1 Scope

This document defines the requirements for constructing a vertiport.

This document applies to vertiports of type A (micro) as defined in ISO 5015-2.

## 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 5015-2, *Unmanned aircraft systems — Part 2: Operation of vertiports for vertical take-off and landing (VTOL) unmanned aircraft (UA)*

ISO 23629-5, *UAS Traffic Management (UTM) — Part 5: UTM functional structure*

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 5015-2 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

#### vertiport information system

##### VIS

system for centralized management of all information necessary for unmanned aircraft system (UAS) operations at the vertiports

Note 1 to entry: It manages the operational status of each vertiport.

Note 2 to entry: It communicates with the vertiport and the *external system (ES)* (3.2), and serves as an intermediary between them, but does not communicate with the UAS. It is assumed that there are cases where vertiport information system functions are included in the ES.

Note 3 to entry: The system composition including the vertiport information system and other systems is shown in [Figure 1](#).