



IEC PAS 63256

Edition 1.0 2020-01

# PUBLICLY AVAILABLE SPECIFICATION

## PRE-STANDARD

Industrial communication networks – Broadband fieldbus specification – Autbus  
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INTERNATIONAL  
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Draft PAS	Report on voting
65C/973/DPAS	65C/983/RVDPAS

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned may transform it into an International Standard.

This PAS shall remain valid for an initial maximum period of 2 years starting from the publication date. The validity may be extended for a single period up to a maximum of 2 years, at the end of which it shall be published as another type of normative document, or shall be withdrawn.

# INDUSTRIAL COMMUNICATION NETWORKS – BROADBAND FIELDBUS SPECIFICATION – AUTBUS

## 1 Scope

This document defines the broadband fieldbus specification AUTBUS. AUTBUS implements real-time, high reliability and deterministic transmission and application for both industrial fieldbus data and ISO/IEC/IEEE 8802-3 Ethernet data by shared medium bus.

This document explains the structure and content of AUTBUS, and describes the definition and specification of Physical Layer (PhL) protocol / service, Data-link Layer (DLL) protocol / service and Application Layer (AL) protocol / service of AUTBUS.

## 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.

**iTeh STANDARD PREVIEW**  
ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model* ([standards.iteh.ai](https://standards.iteh.ai/))

ISO/IEC 7498-3:1997, *Information technology – Open Systems Interconnection – Basic Reference Model: Naming and addressing* (<https://standards.iteh.ai/catalog/standards/sist/c29a7048-be46-402e-a9ad-dd744e2876b6/iec-pas-63256-2020>)

ISO/IEC/IEEE 8802-3:2017, *Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements – Part 3: Standard for Ethernet*

## 3 Terms and definitions, abbreviated terms and symbols

### 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1.1 **cyclic**

a term used to describe recurring events in a regular manner

#### 3.1.2

##### **control device**

refers to the physical entity with logical operation, timing, calculation and other functions to control all kinds of field device

**3.1.3****field device**

a physical entity connected to a process or factory device, and at least one signal element communicates with other device over cable

**3.1.4****management node**

a device that allocates and manages AUTBUS PhL communication resources

**3.1.5****terminal node**

a device that receives the AUTBUS PhL communication resources allocated by the management node and communicates through the allocated resources

**3.1.6****clock synchronization**

clock calibration of the Terminal Node device

**3.1.7****clock query**

Get clock information from the Management Node or Terminal Node device

**3.1.8****cyclic time**

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**(standards.iteh.ai)**

**3.1.9****RT data**

data sensitive to time deterministic requirements

<https://standards.iteh.ai/catalog/standards/sist/c29a7048-be46-402e-a9ad-dd744e2876b6/iec-pas-63256-2020>

**3.1.10****non-RT data**

Data insensitive to time deterministic requirements

**3.1.11****OFDM Symbol**

a symbol contains all subcarriers in the frequency domain, the minimum data transmission unit in time domain in Orthogonal Frequency Division Multiplexing (OFDM) technology

**3.1.12****upper-side band**

a set of subcarriers with a frequency of 16,896 ~ 32,256 MHz on an OFDM symbol

**3.1.13****lower-side band**

a set of subcarriers with a frequency of 1,536 ~ 16,896 MHz on an OFDM symbol

**3.1.14****half-side band**

the upper-side band or lower-side band of an OFDM symbol

**3.1.15****carrier mode**

data transfer mode over data subframe made up of OFDM symbols