



SLOVENSKI STANDARD
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Železniške naprave - Komunikacijske naprave za mestno železnico - Systemske zahteve

Railway applications - Communication device for urban rail - System requirements

Bahnanwendungen - Kommunikationseinrichtung für Fahrgäste für Schienennahverkehrsnetze - Systemanforderungen

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13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
45.140	Oprema za podzemne vlake, tramvaje in lahka tirna vozila	Metro, tram and light rail equipment

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Railway applications - Communication device for urban rail - System requirements

Bahnanwendungen - Kommunikationseinrichtung für
Fahrgäste für Schienennahverkehrsnetze -
Systemanforderungen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (prEN 17355:2019) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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prEN 17355:2019 (E)**1 Scope**

This document defines the following elements for urban rail rolling stock:

- the functional requirements for a communication device between passengers and driver or Operations Control Centre (OCC);
- the dynamic behaviour of the Communication device.

This document is applicable to the categories I to III of Urban Rail rolling stock defined in CEN/CLC Guide 26:

- (I) Metros;
- (II) Trams;
- (III) Light Rail.

NOTE 1 CEN/CLC Guide 26 defines Metro, Tram and Light Rail as public transport systems permanently guided at least by one rail, intended for the operation of local, urban and suburban passenger services with self-propelled vehicles and operated either segregated or not from general road and pedestrian traffic.

This document applies to rolling stock both with and without driver.

NOTE 2 The communication device is different from the PAS, but it can share some parts of the PAS to achieve its functionalities.

NOTE 3 The PAS is regarded as a safety relevant system whereas communication device is non-safety relevant aid to passengers.

2 Normative references

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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.

prEN 16334-2, *Railway applications — Passenger alarm system — Part 2: System requirements for urban rail*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 16334-2 and the following 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**authorized person**

people involved in operational activities and who are authorized to deal with the situation following communication device operation

Note 1 to entry: An authorized person could be, for example, either staff on the train or at an OCC, as defined by operational rules.

3.2**communication device**

system used to enable passengers to speak with authorized persons

3.3**communication device interface**

interface used by passengers to communication with authorized persons

3.4**driver only operation****DOO**

train without authorized persons on board, excluding the driver

3.5**public address****PA**

system used by authorized persons to broadcast to the passenger areas

Note 1 to entry: This is also know as “audible communication system”.

3.6**staff on board operation****SOO**

train with authorized persons on board, excluding the driver

4 Symbols and abbreviations

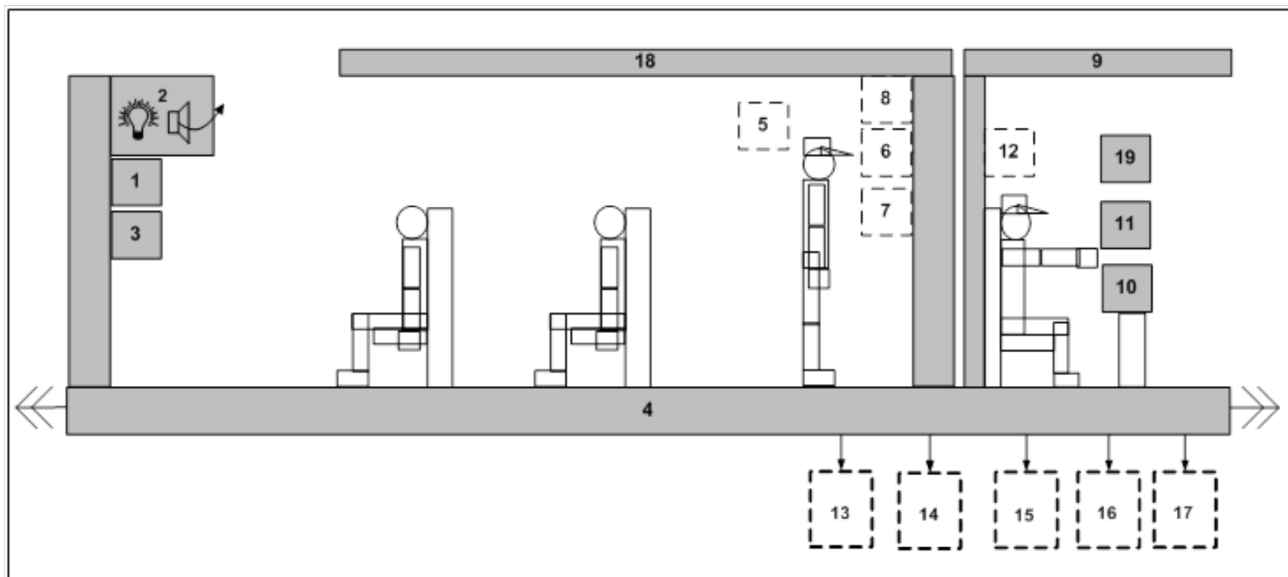
For the purposes of this document, the following abbreviated terms apply.

ComDev	Communication device
PAS	Passenger alarm system (defined in prEN 16334-2)
PRM	Persons with disabilities and persons with reduced mobility
TCMS	Train control and monitoring system

5 Communication device interfaces overview

The communication device overview is summarized in Figure 1 in order to show an example of who is involved in the communication device operation. Figure 1 represents the different functions in interaction with the communication device and other train systems, as well as showing mandatory and optional functions.

The different elements are more precisely described in subsequent clauses of this document.



Key

— — —	Optional system	10	Acknowledgement for the driver
————	Mandatory system	11	Microphone / loudspeaker for the driver
1	Microphone / loudspeaker for the passenger	12	Driver / OCC switch
2	Visual and acoustic feedback	13	Recorder
3	Communication device interface (e.g. push button)	14	TCMS
4	Communication device function	15	Audio / intercom communication
5	Member of staff	16	Link with the OCC
6	Microphone / loudspeaker of the staff	17	Others
7	Acknowledgement button for the staff	18	Passengers' area
8	Communication request to the staff	19	Communication request to the driver
9	Driver's cab		

Figure 1 — Example of communication device general overview with driver's desk

6 Communication device function

6.1 General

For communication devices in urban rail rolling stock, the requirements set out in Subclauses 6.2 to 6.4 shall apply.

6.2 Requirements

This section defines the communication device requirements:

- the communication device shall have no interaction with the brake system;
- the communication device shall not adversely interfere with the operation of the PAS;

- the communication device shall enable the authorized person to talk to the location where a communication device interface has been operated;
- operation of the communication device interface by a passenger shall:
 - 1) initiate a communication request with an authorized person;
 - 2) generate a signal to activate an alert at the location of the authorized person;

NOTE To initiate a communication is to start the functionality to open the communication channel.

- the maximum permitted technical delay from the communication device interface operated and the alert of the authorized person shall be 2 s. If the optional link to the OCC is used, the maximum permitted technical delay to trigger the train based subsystem that transmits the information to the OCC shall be 2 s. The same requirements apply to the technical delay in the return communication;
- the communication device shall require an action by the authorized person before the communication channel is opened between the passenger and the authorized person;
- it is permitted to use acknowledgement to indicate to the passenger that authorized persons are aware of their request before the communication channel is opened;
- it is permitted to use the PAS “staff aware” light to indicate to the passenger that authorized persons are aware of their request before the communication channel is opened;
- after the communication channel has been opened, the communication device shall not require any further action by the passenger. In case of repetitive action by a passenger on the same communication device interface, only the first action is taken into consideration. The repeated actions on the same communication device interface are ignored until the communication is closed;
- the communication device shall permit the passengers to communicate to the authorized person only;
- all the changes of state of the communication device should be recorded;
- the communication channel shall only be available where a communication device interface has been operated;
- an action is required by the authorized person to close the communication channel;
- in the even of the operation of another communication device interface, the communication device:
 - 1) shall activate an additional alert for the authorized person;
 - 2) should permit the authorized persons to communicate by broadcast to all the communication device interface operated locations;
- for SOO or for DOO designed to be operated with an OCC, a device may be provided to suspend the driver functionality when authorized persons are on board or when the OCC functionality is used;
- local feedback: within a minimum of 1 s after the communication device interface has been operated, there shall be a local visual and audible indication that it has been operated.

prEN 17355:2019 (E)**6.3 Communication device interface design requirements**

An example of the communication device interface is set out in the informative Annex B.

The device used to activate the communication request shall be different from that used to activate the PAS. It is permitted to share the passenger communication interface and the passenger feedback associated with the PAS as defined in prEN 16334-2.

6.4 Communication priority requirements

Activated communication devices shall not inhibit PAS or PA communications.

NOTE PAS and PAs from the driver are regarded as safety related systems and have priority.

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