TECHNICAL
SPECIFICATION

ISO/TS
17262

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Automatic vehicle and equipment identification — Intermodal goods transport — Numbering and data structures

Identification automatique des véhicules et des équipements — Transport intermodal de marchandises — Structures de données et numérotation

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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO/TS 17262 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 204, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this European pre-Standard..." to mean "...this Technical Specification...".

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Foreword

This document (CEN ISO/TS 17262:2003) has been prepared by Technical Committee CEN/TC 278, "Road Transport and Traffic Telematics", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204, "Intelligent transport systems".

This is the second part of a series of Technical Specifications defining Intermodal Goods Transport for AVI/AEI, and is the result from CEN/TC278 Work Item 00278088. The following parts form a series of Standards for AVI/AEI in intermodal goods transport AVI/AEI:

CEN ISO/TS 17261	Architecture and terminology (under preparation)
CEN ISO/TS 17262	Numbering and data structures
CEN ISO/TS 17263	System parameters
CEN ISO/TS 17264	AVI/AEI interfaces (under preparation)

Annex A forms normative part of this Technical Specification. Annexes B and C are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

Within the context of RTTT/TICS, intermodal goods transport AVI/AEI systems have the specific objective of achieving a unique or unambiguous positive identification of equipment, and to make that identification automatically. This Technical Specification defines data to achieve this particular objective.

This Technical Specification specifies data that enable future upward integration and expansion for intermodal goods transport AVI/AEI systems. The standard is thus designed to be flexible and enabling rather than prescriptive.

For the definition of data, Abstract Syntax Notation One (ASN.1) is applied. This usage provides maximum interoperability and conformance to existing Standards within the RTTT/TICS sector.

Readers who want to familiarise themselves with ASN.1 are advised to read ANNEX C before reading the main body of this Standard. Readers may also read ISO/IEC 8824, ISO/IEC 8825 and other publications on ASN.1.

NOTE: A normative annex on data modelling may be added in the final version.

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1 Scope

This Technical Specification defines generic numbering and data structures for unambiguous identification of equipment used for Intermodal goods transport. These data are known as Intermodal Goods Transport Numbering and Data Structures.

This Technical Specification defines data independently of the data carrier. The modelling of data is based on Abstract Syntax Notation One (ASN.1) as defined in ISO/IEC 8824. This Technical Specification excludes any physical aspects such as interfaces, dimensions etc. Data that form part of transmission or storage protocols (headers, frame markers and checksums) are excluded.

Data defined in this Technical Specification require a system for control and distribution of number series independent of the different AVI/AEI systems. This is required in order to avoid ambiguity and to provide the necessary level of security where appropriate. For this reason the registration authority defined in ENV ISO 14816 applies for this Technical Specification.

This Technical Specification enables the use of optimised encoding schemes such as ASN.1 Basic Packed Encoding Rules (PER).

This Technical Specification provides interoperability, not only between simple AVI/AEI and more complex RTTT/TICS functions, but also with pre-existing Standards such as container (ISO 10374). Specifications for protecting against changes, classifying and qualifying security aspects of the data are out of scope of this Technical Specification.

This Technical Specification relates to AVI/AEI units, but not to smaller containers and units being transported. For smaller units (pallet loads, trays, parcels etc.) please refer to ISO/IEC SC31 standards, ISO 18000 series. The Numbering Structure defined in this Standard is designed to enable combinations with the data definitions from ISO 18000 series. This combination will be covered in CEN ISO/TS 17264 (under preparation).

This Technical Specification provides the capability to carry application data, associated with the identification, to be carried as part of the AVI/AEI message. Within this Technical Specification this is provided as a "black box" facility. The definition of the structure and contents of such messages are outside the scope of this Technical Specification (examples will be shown in CEN ISO/TS 17264).

2   Normative references

This Technical Specification incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Technical Specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13044		Swap Bodies - Coding, Identification and Marking
ISO/IEC 8824-1		Information processing systems - Open Systems Interconnection - Specification of abstract syntax notation one (ASN.1) - Part 1: Specification of the Basic Notation
ISO/IEC 8824-2		Information processing systems - Open Systems Interconnection - Specification of abstract syntax notation one (ASN.1) - Part 2: Information Object Specification
ISO/IEC 8824-3		Information processing systems - Open Systems Interconnection - Specification of abstract syntax notation one (ASN.1) - Part 3: Constraint Specification
ISO/IEC 8824-4		Information processing systems - Open Systems Interconnection - Specification of abstract syntax notation one (ASN.1) - Part 4: Parameterisation of the ASN.1 Specifications
ISO 10374		Freight containers - Coding, identification and marking
ENV ISO 14816	2000	Road Traffic and Transport Telematics - Automatic Vehicle and Equipment Identification - Numbering and Data Structures (ISO/TR 14816:2000)
ENV ISO 14906	1998	Road Traffic and Transport Telematics - Electronic Fee Collection - Application Interface Definition Using DSRC (ISO/TR 14906:1998)

3 Terms and definitions

For the purposes of this Technical Specification, the following terms and definitions apply:

3.1
AEI Manager
component, which receives data from AEI Readers and compares it with information in a data base. An ok or error message is generated and transferred to the Message Display component.

3.2
AEI reader
complete equipment even if it consists of more than one components required to interrogate, receive and interpret the data in the TAG in order to present the identification.

3.3
AEI System
AEI application in a RTTT/TICS system either as a stand-alone system or as part of a RTTT/TICS application.

3.4
Component
type, class or any other work-product that has been specifically engineered to be reusable. (TAG, Reader, AEI Manager)

3.5
Intermodal Transport
movement of goods in one and the same loading unit or vehicle that uses successively several modes of transport without handling of the goods them-selves when changing modes.

3.6
Load Unit
cargo transportation unit, which may be loaded on a transport means.
Synonym: Package, Container

3.7
Message Display
receives data from AEI Manager, and display the data on a variable message sign to the driver.

3.8
TAG
equipment fitted to the unit, vehicle or item to be identified and containing the unambiguous identification, and if required some further data. For special purposes the TAG can be installed in a fixed position with a mobile reader.

3.9
Terminal Monitoring Point
point administered by the AEI Manager where the monitoring of transport objects is performed. Synonym: Terminal Access Control Point.

3.10
Transport Means
vehicle used for the transport of goods, e.g. vessel, train, truck.

3.11
Transport Object
transport means, load unit or goods item.

4 Symbols and abbreviations

The following abbreviations are used in this Technical Specification:

4.1
AEI
Automatic Equipment Identification

4.2
ASN.1
Abstract Syntax Notation number One

4.3
DSRC
Dedicated Short Range Communication

4.4
RTTT
Road Transport and Traffic Telematics (CEN/TC 278)

4.5
TICS
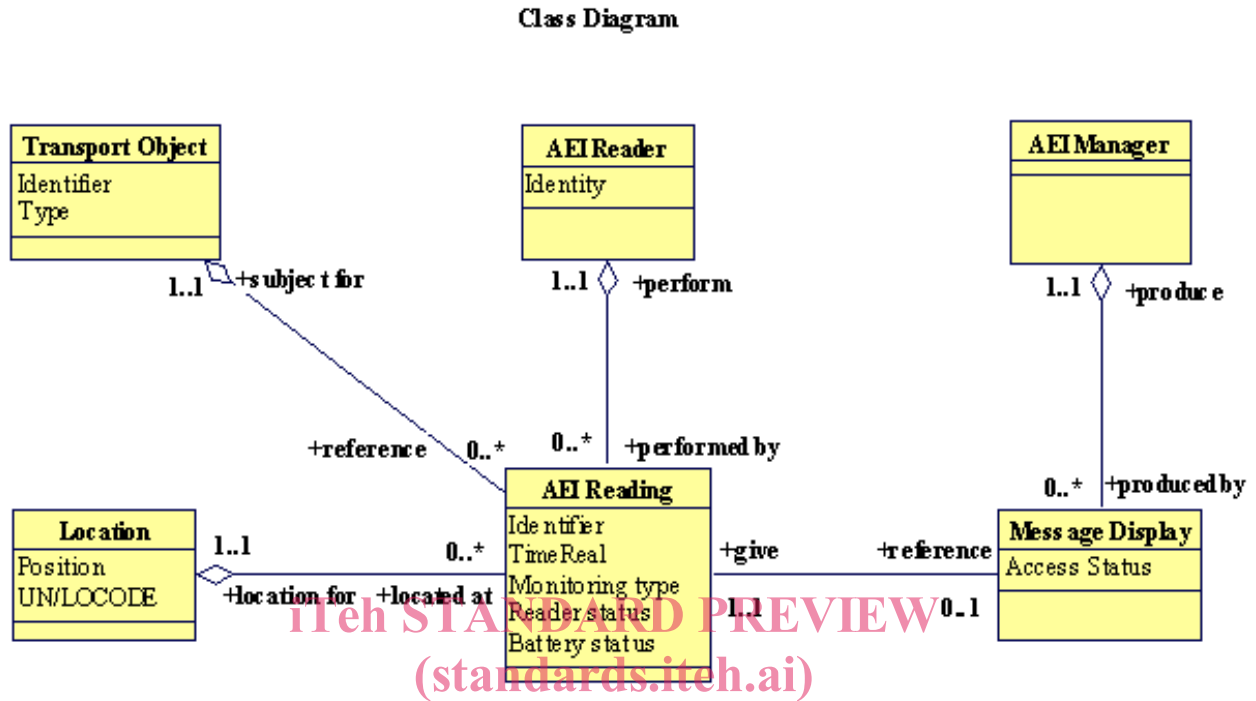Transport Information and Control Systems (ISO/TC 204)

5 Components of AVI/AEI for intermodal goods transport

The components, which are involved in the AVI/AEI Intermodal goods transport are the AEI manager, AEI reader, Message Display, Transport Object/TAG. The overview of components are illustrated in figure 1:

Figure 1 — Components of AVI/AEI for intermodal goods transport