

Ritningsregler – Järnvägar –
Del 4: Dataöverföring

Technical drawings – Railway applications –
Part 4: Data exchange

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Technical drawings - Railway applications - Part 4: Data exchange

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Echange des données

Technische Zeichnungen - Bahnanwendungen - Teil 4:
Datenaustausch

This European Standard was approved by CEN on 21 December 2005.

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Foreword

This European Standard (EN 15016-4:2006) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2006, and conflicting national standards shall be withdrawn at the latest by August 2006.

This European Standard has been prepared under a mandate M/024 given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This European Standard has been prepared under Mode 4 co-operation with CENELEC/TC9X. In the event of an amendment being required to this European Standard, the co-op TC shall be consulted before proceeding to amend this European Standard.

Particular considerations were made to standardize the computerised transfer of the content of the documents, its output on conventional information carrier and its reproduction without loss of quality. Remarks in International Standards with regard to document handling are respected and supported by this European Standard and if necessary adopted or completed to the well-established procedures in the European railway business.

This standard "Technical drawings — Railway applications" consists of the following parts:

- EN 15016-1: General principles
- EN 15016-2: Parts lists
- EN 15016-3: Handling of modifications of technical documents
- EN 15016-4: Data exchange

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

In railway business, the customer very often requires, as part of a contract, technical documents in a certain form. In order to support co-operation and effective exchange of information between customers, suppliers and partners, it is necessary to have the document requirements precisely defined.

This European Standard refers to EN, ISO or IEC standards dealing with data fields. In cases where ISO or IEC standards are not sufficiently precise, this European Standard gives specific details. These additions to EN, ISO and IEC standards facilitate the exploitation and the administration of the data exchange.

These requirements have been drawn up in order to accommodate:

- the large variety of users;
- ease of transfer of documents;
- any specific series of documentation related to the railway material they define.

Special consideration has been given to those producing drawings by computer or micro-copying and their reproduction without loss of quality.

NOTE The range of documents covers documents such as specifications, conditions for acceptance or further technical specifications that may not be graphically represented. This is meant to highlight the difference between "graphical representation" and "verbal description".

1 Scope

This European Standard specifies the basis of an administrative process for exchange of data such as technical drawings, design parts lists (see EN 15016-2) and other related technical documents for railway applications.

This European Standard applies to all railway organisations and parties concerned with the exchange of technical documents like drawings, parts lists and related technical documents that are officially numbered. Furthermore, it applies to suppliers preparing these documents on behalf of the railway companies or railway network users.

The basic requirements apply to all drawings, parts lists and related technical documents independently of the type of data e.g. graphical information (images), database types or types of data carriers.

These rules are applied by all railway companies and railway industry in the countries of the European Union (EU). Alternatively, the application of these rules can be agreed between contract partners who are settled in the EU and partners who are not settled in the EU by means of a contract and/or mutual agreement.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15016-2, *Technical drawings — Railway applications — Part 2: Parts lists*

EN 15016-3, *Technical drawings — Railway applications — Part 3: Handling of modifications of technical documents*

EN 61346-1:1996, *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations — Part 1: Basic rules (IEC 61346-1:1996)*

EN 61346-2:2000, *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations — Part 2: Classification of objects and codes for classes (IEC 61346-2:2000)*

EN 61355:1997, *Classification and designation of documents for plants, systems and equipment (IEC 61355:1997)*

EN 82045-2:2005, *Document management — Part 2: Metadata elements and information reference model (IEC 82045-2:2004)*

EN ISO 5457:1999, *Technical product documentation — Sizes and layout of drawing sheets (ISO 5457:1999)*

ISO 639-1, *Codes for the representation of names of languages — Part 1: Alpha-2 code*

ISO/IEC 6523-1:1998, *Information technology — Structure for the identification of organizations and organization parts — Part 1: Identification of organization identification schemes*

ISO/IEC 8859-1:1998, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

ISO 8601:2004, *Data elements and interchange formats – Information interchange – Representation of dates and times*

EN 15016-4:2006 (E)**3 Terms and definitions**

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

3.1**document**

information on a data medium. Normally a document is designated in accordance with the type of information and the form of presentation, for example overview diagram, connection table, function chart

[EN 61082-1:1993]

3.2**drawing list**

list of drawings in no particular order. Possible structural correlations are neither visible nor comprehensible

3.3**table of drawings**

list of drawings to which parts lists are referred to in particular order. The structural correlations among the documents are visible and comprehensible

3.4**technical document (general)**

necessary information, which is as complete as possible, gathered to form a unit for technical purposes. The information is stored on an information medium in a non-volatile memory and is legible directly or by means of optical or electronic aids.

NOTE Technical documents are part of the complete documentation and are necessary e.g. for manufacturing, maintenance, procurement and application of products

3.5**technical document (specific)**

document that contains important and main data of the technical product, which are not included in drawings and parts lists

NOTE 1 This definition is applied in clause 6

NOTE 2 Technical documents are, inter alia, data sheets, descriptions, instructions/directions and manuals.

4 Administration of distributed information

Documents and information in a general sense can be sent in a variety of physical and electronic forms. It shall be indicated in the administrating system in what form the information was sent.

When information is dispatched electronically it shall also be indicated in which format the files are written and which version of the application is used.

To avoid misunderstanding between contract partners, non-contract partners and customers, administrative procedures shall be set in force to keep track of information distributed. Therefore, the following points are to be considered important for storage and maintenance in a company's database or administrative system.

NOTE Documents can be sent for a variety of reasons and purposes e.g. just for information, to get a feedback of the status, to get an approval, to inform the client/customer etc.

The status of the information sent shall be administrated to ensure that in case of a disagreement or evaluation of the data etc., both partners shall discuss the same issues and subject(s). It shall be clearly indicated, e.g. by a contract, if data may be modified, changed or distributed to third parties by the receiver (not owner of the intellectual property rights).

5 Exchange of parts lists data

5.1 General

To exchange (electronic) parts list data between various companies, partners, clients and customers, it shall be ensured that the data sent are also received by the other party. All data should be structured in a form agreed by both parties without being bound to computer system related formats. Therefore, it is recommended to send the data in a standardised ASCII format. Tables 1 to 6 describe the parts list database fields accordingly to the fields defined in the Parts 1, 2 and 3 of this standard.

Table 1 — Shipment statistic

Field no.	Metadata identifier according to EN 82045-2	EN 82045-2 No ^d	Field identifier	Field name	Data type ^b	Data length	Value space / pattern	Value source	Language dependent	Importance ^c	Remark
1	OrganizationIdISO6523Owner	[29]		Organization identification according to ISO/IEC 6523 of legal owner ^a	C	78	4 "/" 35 ["/" 35 "/" 1]	ISO/IEC 6523-1	No	C	The 2 elements ICD and OI with together 40 characters are obligatory.
2	DistributionDate	113		Shipment date	D	17	YYYYMMDDThhmmss	ISO 8601	No	C	
3			NUPLIT	Number of structural items	N	6			No	C	
4			NUPLH	Number of structure headings	N	6			No	C	
5			NUMOD	Number of main object data	N	6			No	C	
6			NUDOC	Number of documents	N	6			No	C	
7			NUTXT	Number of text records	N	6			No	C	
8	RepresentationCharacterSet	102		Character set	C	25		IEC 82045-2	No	C	concerns Tables 1 to 6 Example: "ISO/IEC 8859-1"

^a primary key of the table
^b C=alphanumeric, D=date and/or time, N=numerical
^c C=compulsory, R=recommended, I=informative
^d [xx] means that the metadata identifier was composed of the basic element with the number xx in Clause 8 and applying the formation rule in subclause 4.4 of EN 82045-2

Table 2 — Parts list structural items

Field no.	Metadata identifier according to EN 82045-2	EN 82045-2 No ^d	Field identifier	Field name	Data type ^b	Data length	Value space / pattern	Value source	Language dependent ^c	Importance ^c	Remark
1	OrganizationIdISO6523Owner	[29]		Organization identification acc. ISO/IEC 6523 of legal owner ^a	C	78	4 "/" 35 ["/" 35 "/" 1]	ISO/IEC 6523-1	No	C	The 2 elements ICD and OI with together 40 characters are obligatory.
2	Document Id Parts List Manufacturer	[2]		Identification number parts list ^a	C	20			No	C	
3			ITNO	parts list item number ^a	C	6			No	C	
4			QNOP	Quantity, number of pieces	N	10	6 "." 3		No	C	
5	LanguageCode1	[5]		Language code 1	C	2	"aa"- "zu"	ISO 639-1	No	C	
6			UNIT1	unit quantity of item language 1	C	3		ISO 2955	Yes	C	basic quantity unit in language 1
7	LanguageCode2	[5]		Language code 2	C	2	"aa"- "zu"	ISO 639-1	No	I	
8			UNIT2	unit quantity of item language 2	C	3		ISO 2955	Yes	I	basic quantity unit in language 2
9			INPLC_OrganizationalISO6523Owner	Organization identification acc. ISO/IEC 6523 of legal owner for identification number parts list component	C	78	4 "/" 35 ["/" 35 "/" 1]	ISO/IEC 6523-1	No		The 2 elements ICD and OI with together 40 characters are obligatory.
10			INPLC	identification number parts list component	C	20			No	C	

^a primary compound key of the table
^b C=alphanumeric, D=date and/or time, N=numerical
^c C=compulsory, R=recommended, I=informative
^d [xx] means that the metadata identifier was composed of the basic element with the number xx in Clause 8 and applying the formation rule in subclause 4.4 of EN 82045-2

Table 3 — Parts list headings

Field no.	Metadata identifier according to EN 82045-2	EN 82045-2 No ^d	Field identifier	Field name	Data type ^b	Data length	Value space / pattern	Value source	Language dependent	Importance ^c	Remark
1	OrganizationIdISO6523Owner	[29]		Organization identification acc. ISO/IEC 6523 of legal owner ^a	C	78	4 "/" 35 ["/" 35 "/" 1]	ISO/IEC 6523-1	No	C	The 2 elements ICD and OI with together 40 characters are obligatory.
2	Document Id Parts List Manufacturer	[2]		Identification number parts list ^a	C	20			No	C	
3	Document Version Id Parts List Manufacturer	[3]		Revision index parts list	C	3	A-"Z", "0"- "9" w/o "I", "O"	EN 15016-3	No	C	
4			RNON	Revision notification number parts list	C	20		EN 15016-3	No	R	of the legal owner
5	Document Version Id Drawing Manufacturer	[3]		Revision index drawing	C	3	A-"Z", "0"- "9" w/o "I", "O"	EN 15016-3	No	C	

^a primary compound key of the table

^b C=alphanumeric, D=date and/or time, N=numerical

^c C=compulsory, R=recommended, I=informative

^d [xx] means that the metadata identifier was composed of the basic element with the number xx in Clause 8 and applying the formation rule in subclause 4.4 of EN 82045-2