



SLOVENSKI STANDARD
oSIST prEN 15969-2:2021
01-junij-2021

Cisterne za prevoz nevarnega blaga - Digitalni vmesnik za prenos podatkov med cisterno in stacionarnimi napravami - 2. del: Komerčni in logistični podatki

Tanks for transport of dangerous goods - Digital interface for the data transfer between tank vehicle and with stationary facilities - Part 2: Commercial and logistic data

Tanks für die Beförderung gefährlicher Güter - Digitale Schnittstelle für den Datenaustausch zwischen Tankfahrzeugen und stationären Einrichtungen - Teil 2: Kommerzielle und logistische Daten

Citernes destinées au transport de matières dangereuses - Interface numérique pour le transfert de données entre des véhicules-citernes et des installations fixes - Partie 2: Données commerciales et logistiques

Ta slovenski standard je istoveten z: prEN 15969-2

ICS:

13.300	Varstvo pred nevarnimi izdelki	Protection against dangerous goods
23.020.10	Nepremične posode in rezervoarji	Stationary containers and tanks
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 15969-2

June 2021

ICS 13.300; 23.020.10; 35.240.60

Will supersede EN 15969-2:2017

English Version

Tanks for transport of dangerous goods - Digital interface for the data transfer between tank vehicle and with stationary facilities - Part 2: Commercial and logistic data

Citernes destinées au transport de matières
dangereuses - Interface numérique pour le transfert de
données entre des véhicules-citernes et des
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logistiques

Tanks für die Beförderung gefährlicher Güter - Digitale
Schnittstelle für den Datenaustausch zwischen
Tankfahrzeugen und stationären Einrichtungen - Teil
2: Kommerzielle und logistische Daten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 296.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3
Introduction	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Files	7
4.1 Format identifiers.....	7
4.2 Relations.....	8
4.3 File naming conventions.....	9
5 Fields of special types	10
5.1 Text module reference.....	10
5.2 Geo-Coordinates	10
5.3 UTF-8 strings.....	10
6 Price calculation rules	11
6.1 General.....	11
6.2 Low volume (surcharge).....	11
6.3 Pricing of packed products, container, pieces.....	11
6.4 Taxes.....	12
7 Description of tour management	12
7.1 Handling of several tours.....	12
7.2 Handling of a pseudo-tour with a pool of orders.....	12
7.3 Handling of orders	13
7.4 Handling of products	13
8 Fields and records of RC_File	13
9 Multi-Order Data (Subnode RC_FILE)	39
9.1 General.....	39
9.2 Node RC_File.....	39
9.3 Information concerning application.....	40

European foreword

This document (prEN 15969-2:2021) has been prepared by Technical Committee CEN/TC 296 “Tanks for the transport of dangerous goods”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document supersedes EN 15969-2:2017.

With regard to EN 15969-2:2017 the following fundamental changes are given:

- fields for air craft refilling added.
- Index C09 “process identification” included;
- Index O32 “process identification” amended;
- Index P42 “delivery path” included.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

EN 15969, *Tanks for transport of dangerous goods — Digital interface for the data transfer between tank vehicle and with stationary facilities*, consists of 2 parts:

- *Part 1: Protocol specification — Control, measurement and event data;*
- *Part 2: Commercial and logistic data.*

This European Standard forms part of a coherent standards programme comprising the following standards:

- EN 13616-1, *Overfill prevention devices for static tanks for liquid fuels — Part 1: Overfill prevention devices with closure device;*
- EN 13616-2, *Overfill prevention devices for static tanks for liquid fuels — Part 2: Overfill prevention devices without a closure device;*
- EN 13922, *Tanks for transport of dangerous goods — Service equipment for tanks — Overfill prevention systems for liquid fuels;*
- EN 14116, *Tanks for transport of dangerous goods — Digital interface for product recognition devices for liquid fuels;*
- EN 15207, *Tanks for the transport of dangerous goods — Plug/socket connection and supply characteristics for service equipment in hazardous areas with 24 V nominal supply voltage;*
- EN 15208, *Tanks for transport of dangerous goods — Sealed parcel delivery systems — Working principles and interface specifications;*
- EN 15969-1, *Tanks for transport of dangerous goods — Digital interface for the data transfer between tank vehicle and with stationary facilities — Part 1: Protocol specification - Control, measurement and event data.*

Introduction

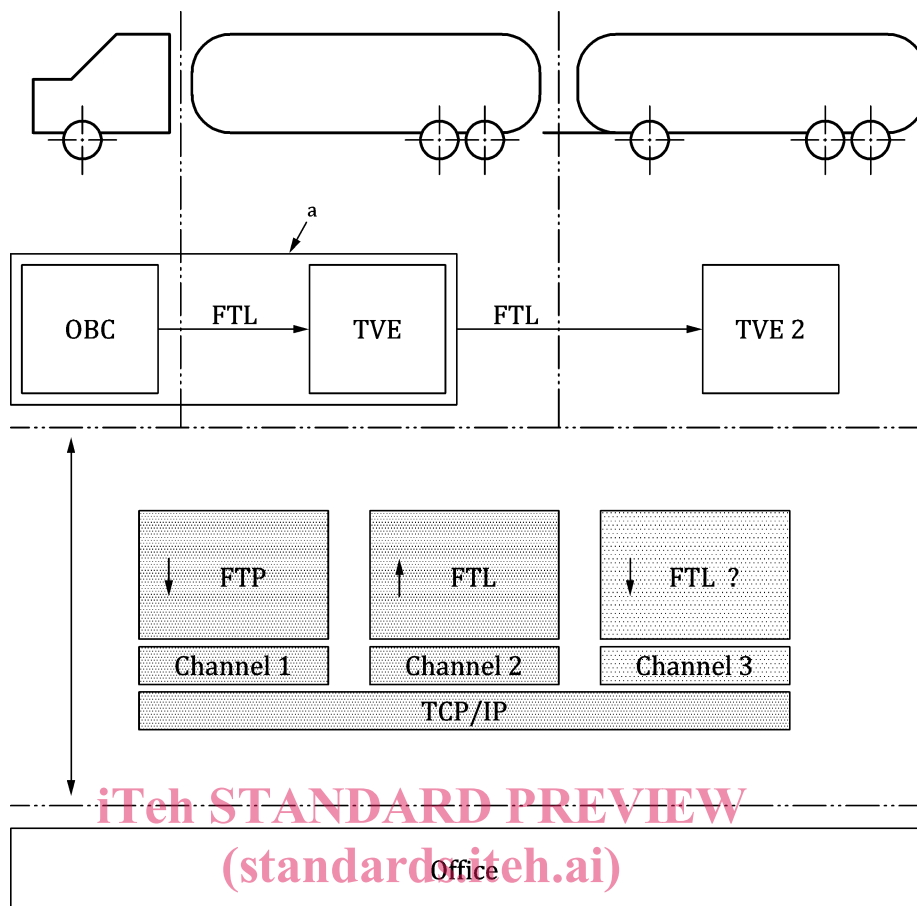
FTL is an acronym for **Fuel Truck Link**, the interface between electronic system(s) on board of a tank truck (Tank-Vehicle-Equipment) and any external computer, Part 2 mainly for a host installed in the office and connected via Internet (TCP/IP); for illustration, see Figure 1.

This document specifies data format for all interconnecting communication paths for commercial issues.

This document offers the user following features:

- multiple orders (batch processing);
- pricing;
- master data (e.g. products, customers, drivers, taxes);
- additional texts for the printout;
- information for the drivers;
- tour management;
- data for invoicing with surcharge;
- data for delivery packaged goods;
- handle planned and unplanned deliveries.

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Key

→ direction of communication (client → server)

a may be either two independent units or one single unit which incorporates both functions OBC and TVE

Figure 1 — Communication structure

prEN 15969-2:2021 (E)

1 Scope

This document specifies the data structure needed for tour management, scheduling orders of measured and unmeasured products online to the truck. Processed orders are transferred back to the host in the office at once or later every time the truck is online.

It specifies the transfer of commercial and logistic data between transport vehicle equipment, on board computer of the tank vehicle and stationary facilities for all communication channels between these parties.

This document is used in conjunction with EN 15969-1 and does not modify or override any of the requirements of EN 15969-1.

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.

EN 14116, *Tanks for transport of dangerous goods — Digital interface for product recognition devices for liquid fuels*

prEN 15969-1:2021, *Tanks for transport of dangerous goods — Digital interface for the data transfer between tank vehicle and with stationary facilities — Part 1: Protocol specification — Control, measurement and event data*

EN ISO 3166-1, *Codes for the representation of names of countries and their subdivisions - Part 1: Country code (ISO 3166-1)*

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

ISO 4217, *Codes for the representation of currencies*

ISO/IEC 10646:2020, *Information technology — Universal coded character set (UCS)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 15969-1:2021 and the following apply.

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

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

3.1

dispatcher

person who planes tour at the host system

3.2

operator

driver

person who operates the truck and the truck management computer

3.3 tour

set of at least one 'Order Record' and related records, which describes a collection of stops at different customers and the ordered products, so that the driver knows where to go and what to deliver

3.4 article

goods and/or services provided

4 Files

4.1 Format identifiers

According to EN 15969-1.

If the tank vehicle accepts LC-files for backwards compatibility it shall also treat L-files from the office as LC-files. Record identifier and file type according to Table 1.

NOTE The change from L-files to LC-files in this edition of this standard was required because EN 15969-1 and EN 15969-2 used the same name (L) for different types of files.

Table 1 — Record identifier and file type

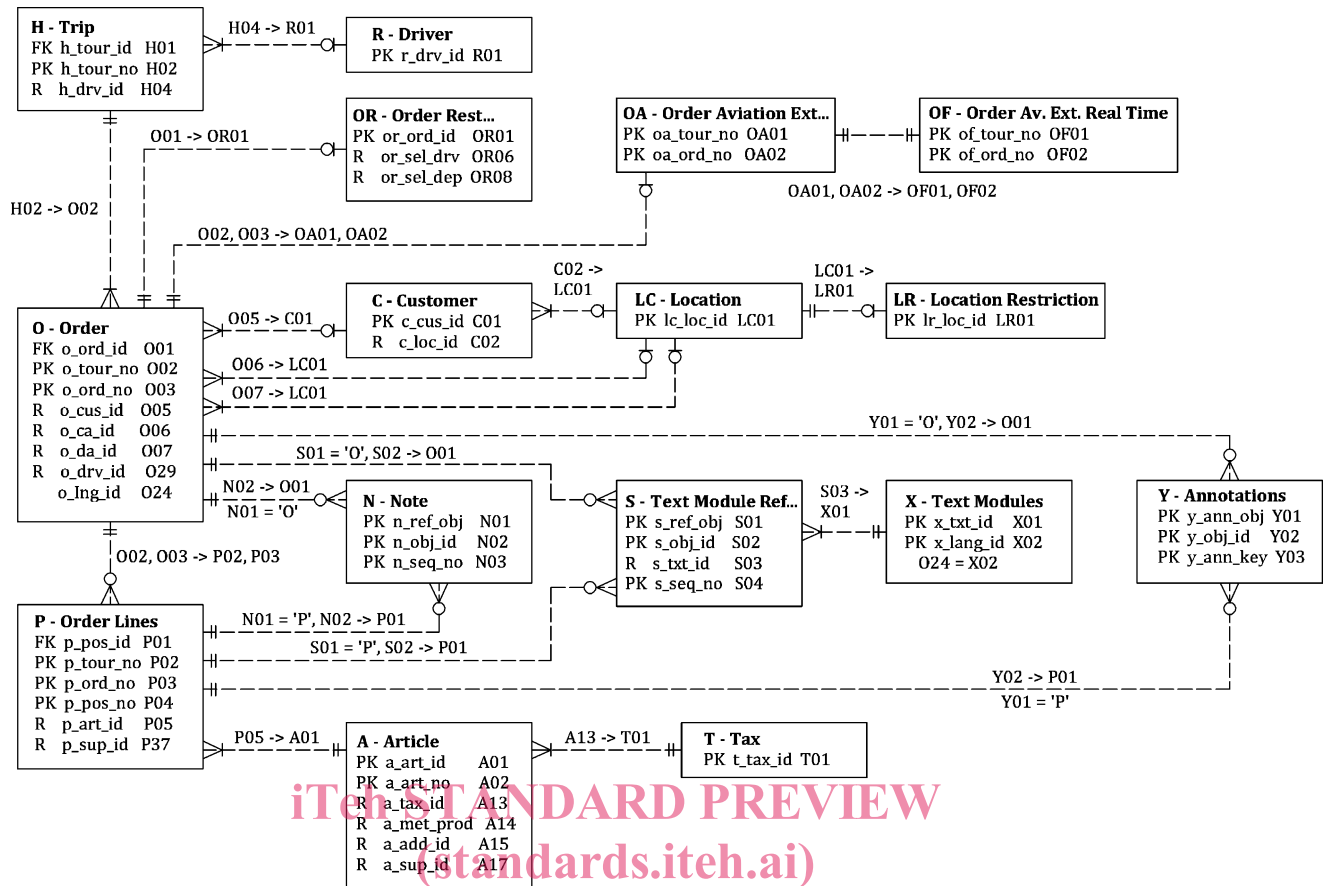
Record identifier	Short description	Description of file contents and possible destinations of the file	Primary Key	Deletion Identifier
A	Article	List of all goods and/or services provided	a_art_id	a_deleted
C	Customer	Customer database	c_cus_id	c_deleted
FB	FTL batch	Record type used to mark batch commands inside RC_file; see Table 11.	—	—
H	Tour	A tour consists of a list of tour stops, which could be stops at customers (typ. unloading) or depots (typ. loading).	h_tour_no	h_deleted
LC	Location	All locations (depots, customers, etc)	lc_loc_id	lc_deleted
LR	Location restriction	Restrictions for a location (time windows, vehicle accessibility, permitted actions)	lr_loc_id	lr_deleted
N	Notes	Notes that can be specified for any object.	n_ref_obj n_obj_id n_seq_no	n_deleted
O	Order	Represents a stop in a tour. This could be both a loadstop and an orderstop. per stop, several actions can be performed. These are specified in the p-records of this o-record. If field o_ord_id is 0, the order is unplanned	o_tour_no o_ord_no	o_deleted

prEN 15969-2:2021 (E)

Record identifier	Short description	Description of file contents and possible destinations of the file	Primary Key	Deletion Identifier
OA	Order Aviation Extension	Extension to O-File for aviation specific delivery and scheduling data	oa_tour_no oa_ord_no	oa_deleted
OF	Order Aviation Extension for real time data	Extension to OA-File for aviation specific frequently changed order and scheduling information data	of_tour_no of_ord_no	of_deleted
OR	Order restrictions	Order restrictions, used for scheduling and routing.	or_ord_id	or_deleted
P	Order lines	Specifies the goods and services to be delivered at this stop (o-record).	p_tour_no p_ord_no p_pos_no	p_deleted
R	Driver	List of all drivers	r_drv_id	r_deleted
S	Text-module reference	Static texts for any object. Provides text module references, to add a variable number of static texts to an object for printout.	s_ref_obj s_obj_id s_seq_no	s_deleted
T	Tax	Different applicable VAT rates, used for invoice calculation.	t_tax_id	t_deleted
X	Text modules	Texts which are repetitively used may be stored in this database and referred to by a three-digit numeric code in the S-record.	x_blk_id x_lang_id	x_deleted
Y	Annotations	Optional annotations to any other type, these annotations are used to add manufacturer specific fields to any record, which trigger an action on the truck and are not only used for printout. It is not allowed to define fields of type y within this standard.	y_ann_obj y_obj_id y_ann_key	y_deleted

4.2 Relations

Figure 2 shows the relations between the different record types and contains only the fields relevant for these relations.



Key

PK

FK

R

≡-----≡

≡-----○

≡-----≡>

≡-----○>

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Primary key

Foreign key

Reference

One-to-one relationship, both objects shall exist

One-to-one relationship, the object on the right side is optional (zero or one)

One-to-many relationship, both objects shall exist

One-to-many relationship, the object on the right side is optional (zero, one or many)

Figure 2 — Work data and master data

4.3 File naming conventions

When files are being transferred using FTP connection, the file(s) shall be named RC_CCYYMMDDhhmmss.FTL. CCYYMMDDhhmmss is the timestamp according to prEN 15969-1:2021, Table 3.

If more than one file is transferred, they shall be processed in ascending order of file names.

5 Fields of special types

5.1 Text module reference

Table 2 — Text module reference

Type	Size	Explanation
R	N4.1	Text module reference

Text module fields according to Table 2 have the special functionality described below.

The text module selection will be done by a key number. Each record of type X can be used as a single line or as a set of lines. To differentiate between single line and set, the pointer has a special structure.

The text module reference `s_txt_id` is defined as a numeric value with the size: 4.1.

The text module reference `s_txt_id`, is defined as a numeric value with the size: 4.1. The leading 4 digit number is the key-field of the record of type X (field `x_txt_id`). The 1 digit number behind the decimal point counts the number of records following the first record, i.e. this number is used to increment the pointer.

EXAMPLE

Value	Explanation
99.0	Only record no. 99 is printed.
99.2	Record no. 99, 100, 101 are printed.

5.2 Geo-Coordinates

Geo-coordinate fields shall be according to Table 3.

Table 3 — Geo-coordinate field

Type	Size	Explanation
G	N4.6	<p>Longitude and latitude values shall be in degrees and decimal fractions of degree:</p> <ul style="list-style-type: none"> — negative value of longitude is west of Greenwich; positive value is east of Greenwich; — positive value of latitude is north of equator; negative value is south of equator. <p>Examples for longitude GPS:</p> <p>+007.512500 = 7,512500° E = 7° 30' 45" E = 7° 0,750' E</p> <p>7.5125 = 7,512500° E = 7° 30' 45" E</p> <p>-007.512500 = 7,512500° W = 7° 30' 45" W</p> <p>Examples for latitude GPS:</p> <p>+07.512500 = 7,512500° N = 7° 30' 45" N</p>

5.3 UTF-8 strings

UTF-8 strings according to Table 4.

Table 4 — UTF-8 string field

Type	Explanation
Ux	Text with maximum length of x printable characters coded in UTF-8 according to ISO/IEC 10646:2020. At most, x-times four bytes are required for storage.

6 Price calculation rules

6.1 General

All prices shall be net prices.

6.2 Low volume (surcharge)

In the event of the actual delivered volume being less than the planned delivered volume, negative price discounts (surcharges) may be applied.

These fields are used to calculate the applicable surcharges. Two surcharge levels are allowed, depending on the difference between the actual delivered volume and the planned delivered volume. For example, if this difference is between “p_low_vol1” and “p_low_vol2” then surcharge “p_sur_vol1” shall be used, and if between “p_low_vol2” and “p_low_vol3” then surcharge “p_sur_vol2” shall be used.

In any of these cases the driver has the possibility to change from invoice to delivery note.

Where the actual delivered volume is so small that it is less than “p_low_vol3”, (the limit of prior agreed surcharges) then no price calculation shall be made and only a delivery ticket issued.

Formula:

$$\text{Price} = p_del_qty \cdot p_unit_price / a_prc_fac$$

$$\text{Surcharge} = p_del_qty \cdot p_sur_voln / a_prc_fac$$

6.3 Pricing of packed products, container, pieces

6.3.1 Article records

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Packed goods can also be delivered, packed goods have no a_met_prod, a_met_prod is the reference to the metered product on the truck.

6.3.2 Low volume (surcharge)

For this type of product there are also quantity limits available. The conditions are the same as for liquid products.

6.3.3 Price calculation methods

— by piece ('a_prc_code' = 0)

If a_pck_cnt = 0 the driver inputs the number of pieces, which is stored in p_del_qty. If a_pck_cnt > 0, the driver inputs the number of packings, the quantity is calculated by a multiplication of the number of packings and a_pck_cnt is stored in the data field p_del_qty. The price will be the unit price p_unit_prc. The a_prc_fac shall be taken into consideration. The text for unit of measure is given in a_unit_txt, e.g. can.

Price-Formula:

$$\text{price} = p_del_qty \cdot p_unit_prc / a_prc_fac$$

— by quantity ('a_prc_code' = 1)

If a_case_cnt > 0, a special calculation shall be made to get the delivered quantity 'p_del_qty'. The text for unit of measure is given in 'p_unit_msr'. If a_case_cnt = 0, the driver inputs the quantity directly.