



SLOVENSKI STANDARD

SIST-TS CEN/TS 16919:2016

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Poštne storitve - Vmesnik in oblika prenosa podatkov za zajem avtomatiziranih poštnih dogodkov

Postal services - Interface and data transfer format for capturing postal automation events IDT-PAE

Schnittstelle und Datentransfer für die Erfassung von postalischen Automatisierungsereignissen

Services postaux - Format d'interface et de transfert des données relatives à la capture des évènements sur des équipements postaux automatisés

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**Postal services - Interface and data transfer format for
capturing postal automation events IDT-PAE**

Services postaux - Format d'interface et de transfert
des données relatives à la capture des événements sur
des équipements postaux automatisés

This Technical Specification (CEN/TS) was approved by CEN on 11 February 2016 for provisional application.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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CEN/TS 16919:2016 (E)**European foreword**

This document (CEN/TS 16919:2016) has been prepared by Technical Committee CEN/TC 331 “Postal services”, the secretariat of which is held by NEN.

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Introduction

This Technical Specification will be in the series of the Open Standard Interfaces defining manufacturer independent interface definitions where needed. All Sorting equipment of the different manufacturers in a sorting centre produce data which are relevant for service planning, machine and staff planning, optimization of machine utilization and other sorting centre management relevant data. On the other hand the major suppliers for postal IT systems have developed MIS systems for these or other purposes. In sorting centres with mixed machinery and one or more MIS systems, data need to be converted for integration. This Technical Specification will allow to define a common interface to avoid these multiple conversions and by this save costs in the postal business. See Figure 1.

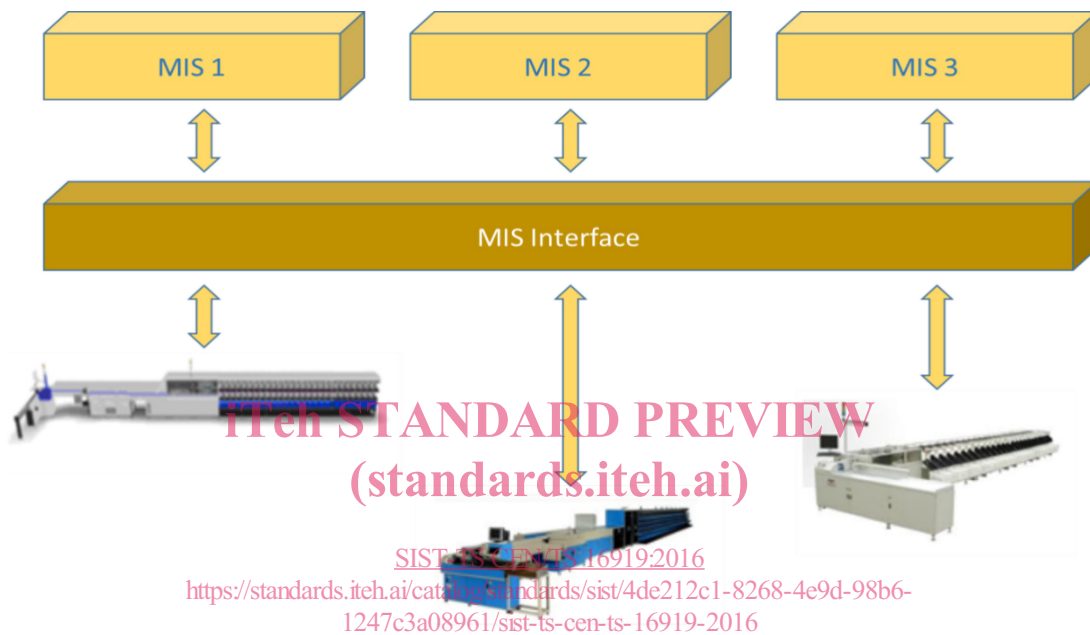


Figure 1 — Open Interface Illustration

As a conscious decision of the Project Team work it is assumed MIS standard will be an instance of EPCIS standard with specific application of this Technical Specification to the Postal Process that will be modelled in the chapters. The Technical Specification will then go through a number of significant events of the process that an MIS interface should contain in order to guarantee the interoperability of different proprietary MIS systems and different Postal Sorting equipment.

Focus of the development is:

- The specification will allow interfacing postal processes in order to gather information which shall be prepared for presentation/aggregation to higher-level systems;
- The specification will not be in favour of one vendor over another;
- The specification will not be specific to a programming language, operating system or hardware;
- The specification will be specific enough, to allow any standards-compliant equipment to be connected to standards-compliant higher level systems and get at least basic functionality without any customization;
- The Data Model will use well-established terms, e.g. taken from the UPU data model, which are suitable to describe postal processes accurately;

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- The Data Model will categorize the information sent and received (e.g. into status, event, control-message) and define standards for each of these categories;
- The specification will allow for vendor-specific or equipment-specific variations. The scope of these variations will be limited (otherwise we would not have a standard at all);
- The specification will provide for future extensions and modifications, such that future versions do not break existing installations;
- It will have to be easy to implement an interface which is compliant with this standard;
- The specification will define how to prevent unauthorized access, preferably by referring to an existing security standard;
- The specification will use well-established technologies for Data Transport;
- The specification will use established standard for Data Format;
- The specification needs to state minimal requirements for data volume and frequency as well as the permissible latency which an implementation needs to comply to.

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1 Scope

An IDT-PAE interface enables interoperability among several systems and processes by providing specifications to the following requirements:

- a) **Data Collection and Transfer:** Specification of data transported from the devices to higher level systems. There may be more than one permissible protocol referring to different OSI layers. The standard will define where the communication requires polling and where asynchronous messages are used.

The basis is messages triggered by events.

- b) **Data Storage and Format:** Specification how data is formatted and structured. This concerns the choice between XML, CSV, EDI, JSON and other formats including possible binary representations.
- c) **Data Model:** Specification of the semantics (meanings) behind the data. This is the most important part and the one of the most important objectives for the specification. This means that conceptual data model and its mapping to the Data Format will be developed. Major focus on specifications level of detail will be placed in order to provide a document that will provide detailed specification information without being too general or too specific.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply¹⁾.

2.1

acceptance

process of examining a mail induction unit at the acceptance location, to ensure that the mail is acceptable for postal processing and that the postal operator may take responsibility for it

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2.2

acceptance location

location at which responsibility for a mail induction unit is handed over from the mail submitter to the mail service contractor

2.3

acceptance of postal processing

completion of the process of ensuring that mail can legally be conveyed by post, fulfils postal system requirements, regarding size, addressing, etc. and that correct postage has been paid or is chargeable under normal contractual arrangements

2.4

activity

work performed by people, equipment, technologies or facilities

2.5

addressee

party that is the intended ultimate recipient of a postal item

¹⁾ The terms and definition in this document are defined in the UPU Standard glossary, Date of approval 26 February 2014, in the bibliography and in this document.

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2.6

aggregate assignment (packaging)

assignment of an item or (lower-level) aggregate to a (higher-level) aggregate of mail which is to be handled as a unit during the next processing or transportation step(s)

2.7

aggregate break-up (unpacking)

decomposition of an aggregate into its component mail items and/or lower-level aggregates

2.8

application identifier

numeric prefix to a data structure that defines the content, format and intended interpretation of the data

2.9

attribute

named characteristic of an entity which can be expressed by a data value

2.10

bar code

symbol consisting of a series of printed bars representing values

2.11

business information system

business information systems represent a system of controls and processes which a business uses to analyze information needed to effectively manage their business

2.12

bundle

mail unit whose physical constraint is a band or wrapper

2.13

clearance

operation of collecting postal items deposited at access points

2.14

control protocols

provides reliable, ordered, error-checked delivery of a stream of octets between programs running on computers connected to a local area network, intranet or the public Internet

2.15

code

value, taken from a particular code list, which is used in messages to represent one of the possible data values forth data element covered by the code list

2.16

collection

method of mail induction in which customers deposit mail in unmanned depositories (posting boxes) which are periodically emptied by the mail service contractor or its agent

2.17**consignment**

set of one or more receptacles of a particular mail category, using a common transport on a particular occasion, from a specific place of loading to a specific place of final destination

2.18**containerization**

process or act of packaging one or more mail units into a receptacle to simplify handling and transportation

2.19**data element**

smallest logical unit of data, about a postal item, aggregate or receptacle, which might need to be communicated between postal applications

2.20**data captured**

automatically identifying objects, collecting data about them, and entering that data directly into computer systems

2.21**data collection and transport**

collection and distribution of information to virtually any device or system

2.22**data format**

standard way that information is encoded for storage in a computer file

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2.23**data model**

used in two related senses. In first sense it is a description of the objects represented by a computer system together with their properties and relationships; these are typically "real world" objects such as products, suppliers, customers, and orders. In the second sense, it means a collection of concepts and rules used in defining data models: for example the relational model uses relations and rules, while the network model uses records, sets, and fields

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2.24**data storage**

technology consisting of computer components and recording media used to retain digital data

2.25**data transfer**

physical transfer of data (a digital bit stream) over a point-to-point or point-to-multipoint communication channel

2.26**delivery operators**

postal enterprise which delivery the postal items on addressee of recipient

2.27**distribution**

process from sorting at the distribution centre to delivery of postal items to their addressees

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2.28**data identifier (DI)**

smallest logical unit of data, about a postal item, aggregate or receptacle, which might need to be communicated between postal applications

2.29**data identifier category**

grouping of related data identifiers

2.30**date**

characteristic of an event which defines, to an appropriate level of accuracy, the point in time at which it occurred or is or was forecast to occur

2.31**delivery**

postal process in which a postal item leaves the responsibility of the postal operator through being handed over to, or left for collection by, the addressee, the mailed or an authorized representative, or deposited in a private letter-box accessible to one or other of these

2.32**delivery address**

postal address specified by the mailer to which the postal operator is requested to deliver the postal item

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2.33**delivery attempt**

(so far) unsuccessful attempt to deliver an item or entity

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2.34**delivery failure**

event corresponding to conclusion, by a postal handling organisation, that it is definitely unable to deliver the entity concerned and (if the entity is still available to it) intends to dispose of it in accordance with its contractual obligations

2.35**delivery completion**

successful delivery of an item, including the obtaining of proof of delivery where this is required

2.36**delivery events**

cover events related to the final delivery of mail

2.37**delivery point**

physical location recognized by a postal operator as a valid location at which delivery of a postal item may occur

2.38**delivery post**

postal operator, or other postal handling organisation, entrusted with delivery of a postal item

2.39**delivery routes**

route followed by a delivery postman

2.40**despatch**

mail aggregate for which, under the terms of a single despatch agreement, responsibility is (to be) handed over from one mail processing centre to another and which is accounted for as a unit between the operators involved

2.41**despatch agreement**

agreement under which mail is exchanged between mail processing centres operated by different postal handling organizations

2.42**distribution**

delivery of postal items to the home or business address of the final recipient

2.43**entity**

distinct physical or logical object of interest in the context of a postal application

2.44**event; postal handling event**

occurrence of a significant change in the actual or predicted values of one or more attributes of an entity

2.45**flat**

letter-post item which is too large, too thick or too stiff to qualify as a small letter, but which has a size of 229 mm by 324 mm or less; a maximum thickness of 20 mm and a maximum weight of 500 g or can otherwise be automatically processed on the flat sorters used by the delivery post

2.46**flat sorter**

sorter which is designed for and capable of processing items of size up to at least C4 (229 mm by 324 mm) with a thickness of up to at least 20 mm and weight of at least 500 g

2.47**forming**

process by which individual postal items, bundles and/or postal receptacles are assembled into mail aggregates

2.48**handover events**

events associated with the transferor responsibility of mail between parties

2.49**holding start**

commencement of a (temporary) suspension in the processing of an entity

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2.50**holding continuation**

continuation of a (temporary) suspension in the processing of an entity

2.51**holding end**

resumption of processing of an entity after a period of suspension

2.52**identifier**

attribute of an entity that distinguishes that entity from any and all other entities existing, within a specified domain, during a specified time

2.53**ID-tag**

globally unique postal item identifier allocated in accordance with UPU standard S18, a machine readable encoded representation of which is placed on the item concerned by, or on behalf of, a mail service contractor

2.54**ID-assignment**

allocation of an identifier to an entity

2.55**image controller**

system designed to handle the flow of images and data issued by the Image Supplies and sent to the Enrichment Devices

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2.56**internet protocol**

set of rules to send and receive messages at the Internet address level

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2.57**interoperable**

ability of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable the sharing of information and knowledge

2.58**induction**

process whereby mail is handed over to a postal operator by a mail submitter and which culminates in the postal operator taking responsibility for the induction unit concerned

2.59**interchange**

single instance of electronic data involving the sending from one party (the interchange sender) to another party (the receiver) of an identified set of one or more messages

2.60**inward processing facility**

postal processing facility in which mail is sorted by delivery office or route

2.61**item identifier**

unique feature of a postal item that distinguishes that item from any and all other items handled within the postal system during a period of time that is long in comparison with the normal period of time spent by an item within the system

2.62**layers**

way of hiding the implementation details of a particular set of functionality

2.63**loading (containerisation)**

placement of mail items, aggregates or lower-level containers into a (higher-level) container or into the conveyance (aircraft, ship, train, truck, ...) to be used for (one of the legs of) a journey the mail concerned is to undergo

2.64**mail aggregate**

set of mail units that satisfy specific criteria defined in the context of a particular application

2.65**mail category**

specification of the traffic class and handling priority of a consignment or despatch of mail, expressed as a UP code list 115 value

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2.66**mail processing**

event corresponding to the undergoing, by an entity, of processing

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2.67**mail class**

indication of the class or type of mail, expressed as a UPU code list 116 value

2.68**mail processing centre; international mail processing centre (IMPC)**

mail processing facility, identified in accordance with UPU standard S34 [15], in which inter-administration mail is processed

2.69**mail recipient**

individual who actually receives a postal item at delivery, or who first accesses the postal item if it is left for collection

2.70**message**

collection of data communicated as a single unit, between a sender and a recipient, using a single **specific means of communication**

2.71**network protocols**

system of digital rules for message exchange within or between computers