SLOVENSKI STANDARD
oSIST prEN 18158:2025

01-april-2025

Ravnanje z odpadki - Mobilni informacijski sistemi - Zahteve za vmesnik XML Office-Mobile

Waste management - Mobile IT systems - Requirements for the XML interface Office-Mobile

Abfallwirtschaft - Mobile IT-Systeme - Anforderungen an die XML-Schnittstelle Office-Mobile

Gestion des déchets - Réseaux IT mobiles - Exigences pour l'interface XML Office-Mobile

Ta slovenski standard je istoveten z: **prEN 18158**

ICS:

13.030.40	Naprave in oprema za odstranjevanje in obdelavo odpadkov	Installations and equipment for waste disposal and treatment
35.240.99	Uporabniške rešitve IT na drugih področjih	IT applications in other fields

oSIST prEN 18158:2025 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 18158

February 2025

ICS 13.030.40

English Version

Waste management - Mobile IT systems - Requirements for the XML interface Office-Mobile

Gestion des déchets - Réseaux IT mobiles - Exigences pour l'interface XML Office-Mobile

Abfallwirtschaft - Mobile IT-Systeme - Anforderungen an die XML-Schnittstelle Office-Mobile

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 183.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

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

Ref. No. prEN 18158:2025 E

Contents

Page

European foreword

This document (prEN 18158:2025) has been prepared by Technical Committee CEN/TC 183 “Waste management”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document is read in conjunction with the digital files of the XSD schema as listed in Annex A.

1 Scope

This document specifies the standard for the digital exchange of data between the disposition (i.e. registered Office) and the mobile waste and recycling collection units [revolving emptying system according to EN 840 (all parts) and EN 13071 (all parts) and refuse collection vehicles according to EN 1501 (all parts)].

The technique of data transmission is not part of this document.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
Extensible Markup Language
XML
language not specific to the system and hardware to illustrate data and their structure in a XML document

Note 1 to entry: A XML document is a text object that contains the data and markup and that defines the structure of the data.

Note 2 to entry: For details see XML – eXtensible Markup Language 1.0, Third Edition, 04-Feb-2004.

[SOURCE: IEC 62755:2012[1] (VDE 0493-6-3), 3.1.40]

3.2
Standard Generalized Markup Language
SGML
international standard for the definition of device-independent, system-independent methods of representing texts in electronic form

Note 1 to entry: HTML and XML are derived from SGML.

[SOURCE: EN IEC 61970-302:2024, 3.14]

3.3
World Wide Web Consortium
W3C
for the maintenance of the definitions for XML and associated standards; most important standardisation organisation

[SOURCE: IEC 62755:2012[1] (VDE 0493-6-3), 3.1.39]

[1] As amended by IEC 62755:2012/AMD1:2020.

3.4
job processing software
software that generates jobs for mobile technology on a stationary computer and adopts and further processes the job data processed on the mobile technology

3.5
Mobile technology
MobT
computer technology on board the waste disposal vehicle or handheld device via which data is collected on the execution state of the jobs during a waste collection tour (or job processing tour in the further sense)

3.6
refuse collection vehicle
RCV
vehicle used for the collection and transportation of refuse (e.g. household refuse, bulky refuse, recyclable materials) based on loading via refuse containers or by hand

Note 1 to entry: Most of the time it consists of a chassis or rigid chassis onto which a bodywork is mounted. Sometimes it can also be a truck and trailer combination.

Note 2 to entry: A RCV is a special purpose vehicle according to 2007/46/EC Annex II, Part A, 5.8.

[SOURCE: EN 1501-1:2021, 3.1]

3.7
electronic waste verification procedure
eANV
waste verification procedure for waste that needs to be verified

Note 1 to entry: This is generally hazardous waste.

3.8
Office
registered office for the waste management company that exchanges information with the vehicles

3.9
mobile devices
all of the on board computers and handheld devices (handhelds) used for providing disposal services

3.10
Office-Mobile interface
uniform interface for the computer-assisted exchange of information between the Office and the disposal vehicles/mobile devices

3.11
data transmission
transfer of data from one point to one or more other points over telecommunication facilities

[SOURCE: EN ISO/IEC 19762-1:2012, 01.02.16]

3.12
OrderPlan
all of the orders that are processed for a defined period of time

Note 1 to entry: The OrderPlan is used to transfer job data to the mobile device and data to the organization. The OrderPlan contains all of the information required on the mobile device to process jobs.

Note 2 to entry: The job data are subdivided into Tours, Jobs and Services.

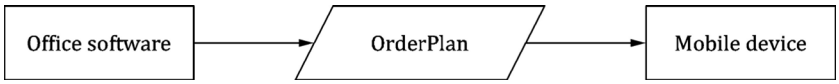


Figure 1 — Linking the OrderPlan into the information structure

3.13
MasterData
organisational information that is required on the mobile device to process jobs as part of the OrderPlan

Note 1 to entry: See Figure 2. It can be transmitted to the mobile device with every OrderPlan or in separate files. It contains:

— personnel lists;

— unloading points;

— transponder lists for black/white list;

— messages.

Figure 2 — Integration of the MasterData into the information structure

3.14
OrderReport
report which contains all of the data that is documented as part of job processing and provides confirmation from the vehicle about the OrderPlan

Note 1 to entry: It is generated by the mobile device during the provision of services. The data in the OrderReport provides the Office software with a usage-based invoice of the processed jobs.

Figure 3 — Integration of the OrderReport into the information structure

3.15
StatusReport
transmits short status messages and/or status requirements from the Office to the mobile device and vice versa

Note 1 to entry: The StatusReport can be used to exchange requirements or information on the job processing procedure, the position of the mobile device and job-independent status information (see Figure 4).

Note 2 to entry: No performance data are transmitted with the StatusReport.

Figure 4 — Integration of the StatusReport into the information structure

3.16
tour
sequencing of individual services and jobs

Note 1 to entry: To cover the event that a RCV/mobile device processes several disposal areas, several tours can be transmitted at the same time. They are summarized in a TourList.

A tour primarily includes:

— description and identification of the tour using a name;

— all job data;

— amendment information, validity;

— references to “Black list”/”White list” (TransponderLists) and unloading points, which have been transmitted in MasterData;

— applicable documents (e.g. from EANV – electronic waste verification procedure);

— tour profile for activating/deactivating certain functions of the RCV.

3.17
job
individual work order from the tour

Note 1 to entry: A job contains the necessary information to process jobs at a site (a place of performance). Essentially, this includes:

— site where a job is to be executed;

— customer for whom a job is to be executed (generator);

— services to be provided;

— additional information;

— information about a route (tour specification).

Note 2 to entry: All of the jobs in a tour are summarized in a JobList.

EXAMPLE Handling the vessel.

3.18
service
activities for the individual work order

Note 1 to entry: A service contains the information on the services that are to be provided at the place of performance. Essentially, this includes:

— planned time of the service provision;

— quantity specification regarding the service to be provided;

— container data;

— material data;

— activities (work process);

— processing status.

Note 2 to entry: All services of a job are summarized in a ServiceList.

EXAMPLE positioning, emptying and replacing a container.

3.19
disposal XML Schema
information to be exchanged in a structure which is normal for XML

Note 1 to entry: XML and XML Schema are recommendations of the World Wide Web Consortium (W3C).

3.20
EventLog
central point for collecting all of the data accumulated for a job

3.21
ComplexType
description of the enumeration types divided into their elements and attributes

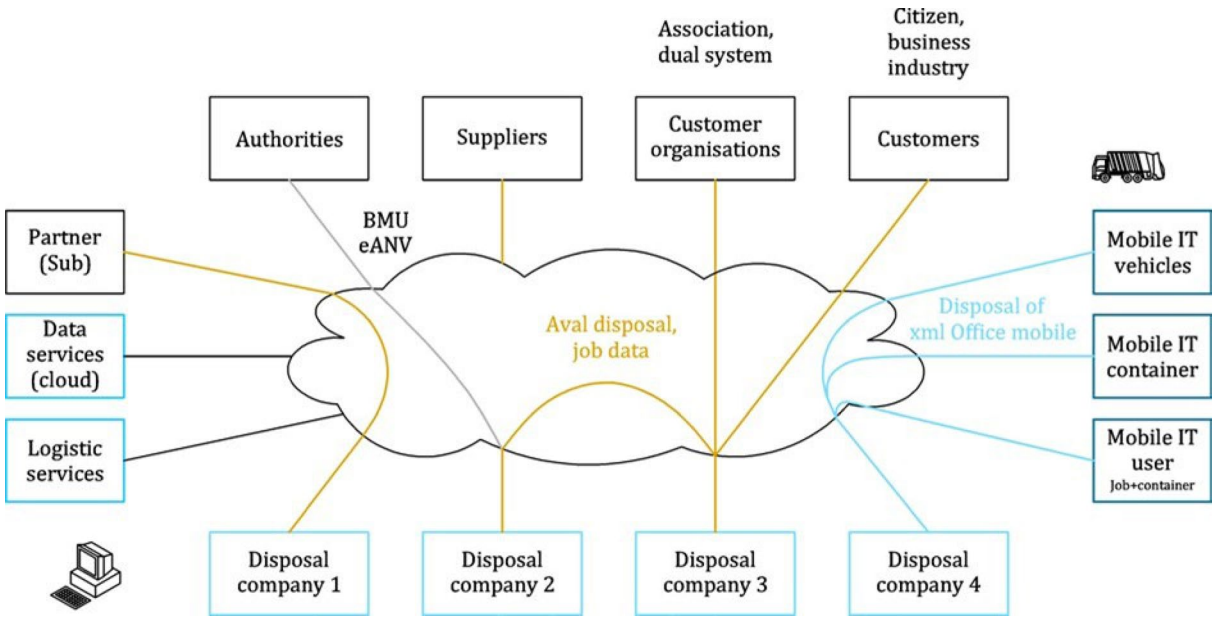
4 Objective of the Office-Mobile interface

The interface enables data to be exchanged between components (Office and the waste disposal vehicles/mobile devices) including ones from different manufacturers. In this way, the waste disposal companies are more flexible, when it comes to the selection of components to support the disposal process.

5 Interfaces

5.1 Classification of the interface

Figure 5 shows an overview of the interfaces in the waste management industry and the classification of the Office-Mobile waste interface described here.



Key

BMU Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

eANV Electronic waste verification procedure

AvaL Exchange of job-specific performance data

Figure 5 — Classification of the interface

5.2 Interface — Exchange of information in files

The interface between the mobile technology for job processing on disposal vehicles and mobile devices shall be realized by data in XML format. See Figure 6.

This data are exchanged in the form of files. The following file names are used within this document for the purpose of uniform naming. In this specific case, the file names may deviate and contain a date stamp, mobile device ID etc.:

— The file *Einsatzplan.xml* contains all of the information transmitted from the Office to the mobile device (see Figure 1).

— The file *Stammdaten.xml* contains organisational data and is transmitted from the Office to the mobile device where necessary (initial preparation, amendment of MasterData) (see Figure 2).

— The file *Einsatzbericht.xml* contains all of the information transmitted from the mobile device to Office (see Figure 3).

— The file *Statusreport.xml* contains current status messages on the job processing and is used to update the Office software.

All of the information for processing the job is included in the files.

Generally, jobs are generated by an Office software. The job data are made available to the mobile technology. The execution of the jobs is documented using the mobile technology. The jobs processed there are also transferred to the post-processing software via this XML interface.

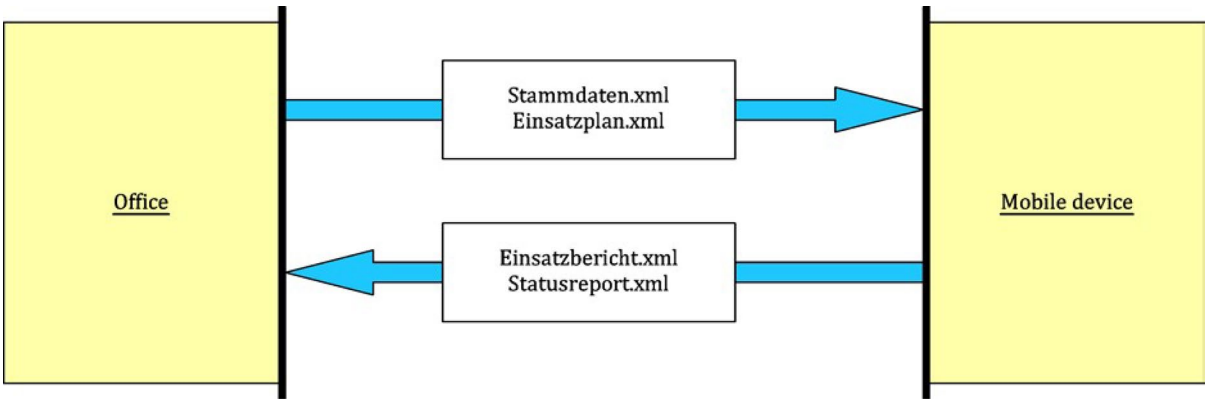


Figure 6 — Structure of the file-based exchange of data

5.3 Basic structure

5.3.1 General

The data exchange between Office and the mobile device takes place by transmitting the data elements.

5.3.2 MasterData, OrderPlan, OrderReport, StatusReport

The interface is split into mobile jobs, which are then divided into the OrderPlan, OrderReport and StatusReport (see Terms and definitions in Clause 3). The organisational information in the MasterData are referenced by the mobile jobs.

5.4 Data transmission

The wireless data transmission with or without a provider is usually implemented via standard such as WLAN, GSM/GPRS, UMTS.

6 Disposal XML Schema

6.1 Specifications for creating the Schema

6.1.1 Example for naming job designations

The companies use different designations to name and invoice the disposal services, including:

— Job;

— Tour;

— Service certificate.

6.1.2 Tour, Job, Service

Every BaseType of the job interface (Tour, Job, Service) contains further elements (not mentioned here) that serve for more detailed specification of the jobs. Their meaning, format and contents are described in Clause 3. For these BaseTypes, the term service elements is also used in the documentation. For the relationship between the job elements, refer to the following Table 1.

Table 1 — Relationships between Tour, Job, Service job elements to actual jobs

Designation	Time period	Vehicle mobile device	Place of performance	Services	Container
Tour	1–*n* days (shift) (holiday pre-/post-runs)	1 vehicle	*n* sites	1-*n*	1-*n*
Job	1 day (shift)	1 vehicle	1 site	1-*n* of a waste category	1-*n*
Service	1 day (shift)	1 vehicle	1 site	1	1-*n*

7 Variables and structure of the Schema

7.1 Format

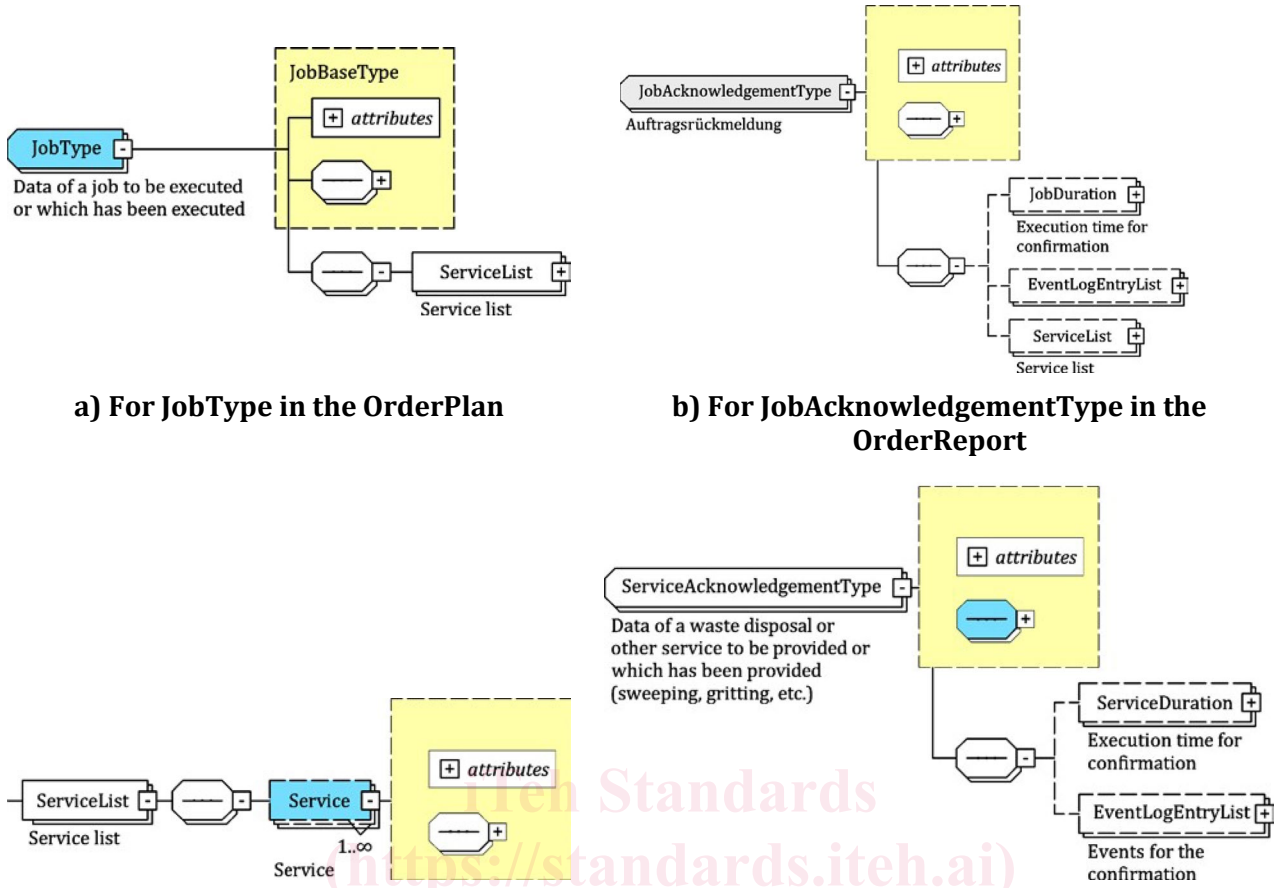
The meaning, validity periods of the contents of the XML tags as well as the additional information are described in this document and potential usage scenarios are explained using examples. The following clauses only consider those elements for which explanations are required beyond this document.

The elements necessary for job processing are mandatory elements. They shall therefore be completed.

7.2 Object-based layout of the elements

In order to illustrate common and different data in the OrderPlan and OrderReport in the XML Schema, an “item-orientated” layout of the data structures is used.

For Job and Service, there is a BaseType (JobBaseType, ServiceType), which contains the common data and any diverted types for OrderPlan (JobType, ServiceType shall be used without an amendment in the OrderPlan and shall hence not be diverted) and OrderReport (JobAcknowledgementType, ServiceAcknowledgementType), which contain additional data elements according to the respective requirements. The JobBaseType is thus a BaseType. See Figure 7.



a) For JobType in the OrderPlan

b) For JobAcknowledgementType in the OrderReport

c) ServiceType in the OrderPlan

d) ServiceAcknowledgementType in the OrderReport

Figure 7 — Example of BaseTypes of the JobBaseType

Since the elements TourType in the OrderPlan and TourAcknowledgementType in the OrderReport are very different (the TourAcknowledgementType contains only the essential TourNumber and Status, as well as the Duration, JobList and EventList), a common BaseType has not been used.

7.3 Attributes of elements

Attributes are permitted for some elements, see Table 2. The use of attributes is optional.