SLOVENSKI STANDARD
SIST-TS CEN/TS 15873:2009

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Poštne storitve - Odprti standardni vmesnik - Datotečni format naslovnih podatkov za generiranje slovarja s pomočjo OCR/VCS (sistem za optično razpoznavanje znakov)

Postal Services - Open Standard Interface - Address Data File Format for OCR/VCS Dictionary Generation

Postalische Dienstleistungen - Offene Normschnittstelle - Adress Datei Format für die Generierung von Wörterbüchern in OCR/Videocodier-Systemen

Services posteaux - Interface de standard ouvert - Format de fichiers de données d'adresses pour la génération du dictionnaire OCR/VCS

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Postal Services - Open Standard Interface - Address Data File Format for OCR/VCS Dictionary Generation

Services postaux - Interface de standard ouvert - Format de fichiers de données d'adresses pour la génération du dictionnaire OCR/VCS

Postalische Dienstleistungen - Offene Normschnittstelle - Adressdateiformat für die Generierung von Wörterbüchern in OCR/Videocodier-Systemen

This Technical Specification (CEN/TS) was approved by CEN on 1 March 2009 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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Foreword

This document (CEN/TS 15873:2009) has been prepared by Technical Committee CEN/TC 331 “Postal Services”, the secretariat of which is held by NEN.

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NOTE This document has been prepared by experts from CEN/TC 331 and UPU, in the framework of the Memorandum of Understanding between UPU and CEN.

1 Introduction

In initial meetings of CEN/TC331/WG3 interfaces which will benefit from standardization have been identified and agreed on. Candidates for Open Interface standardization are:

— interface between the image handler and automatic address readers or video coding places;

— interface from machine control to Barcode Printers;

— interface from machine control to Barcode Reader / Verifier;

— interface between scanner, image handler and machine control;

— file format of Sort Plan;

— MIS Interface (Statistics);

— file format of Address data files.

The new intended standard deals with the file format of Address Data Files.

OCR results and video coder inputs have to be verified against the “real” existing addresses in order to reach high recognition rates combined with low error rates. For that purpose postal operators provide postal address directories to the OCR/VCS suppliers. Usually different postal operators use different file formats for these (source) directories. In typical postal automation systems these files will be processed by directory generation software which creates application specific loadable data. This data – usually referred to as “operational directory” – is heavily compressed and contains access tables tailored for the specific reading software. Usually different OCR/VCS suppliers use different operational directory formats.

This standard shall define a common Address Data File format for postal address directories to be provided from the postal operators to the OCR/VCS suppliers.

This Address Data File format shall be designed to hold all information necessary to support address reading and video coding software including data required for special recognition tasks e.g. forwarding applications.

2 Scope and purpose

2.1 Scope

This document defines a file format for the generation of postal address directories. It is designed to hold all information necessary to support address reading software including data required for forwarding applications. In typical postal automation systems these files will be processed by directory generation software which creates application specific loadable data. This data – usually referred to as operational directory – is heavily compressed and contains access tables tailored for the specific reading software.

Not in the scope of this document are topics external to file like compression, checksums, the interface for transmission to the supplier, modification permissions, error handling on inconsistent data and undo in updates.

2.2 Purpose

The format has been designed with the following requirements in mind:

— must be able to hold the following data:

  — addresses composed of address components (including aliases and range-data);

  — person and organization names;

  — address codes typically used as sort codes;

  — links between addresses e.g. for use in forwarding;

— should not restrict character encoding;

— easily customizable for specific applications;

— should allow complete as well as incremental updates, i.e. change-only data;

— it must be possible to split data in multiple files for better handling.

The ideas behind this format are as follows:

— The format is based on XML.

— The basic XML structure is general. Project (the term project is used throughout this document to describe a specific application such as address data for a specific country or postal organization) specifics are coded as attributes. This should make it easier to build project independent parsers and tools.

— Address data can be structured hierarchically. An address component appearing in a lot of addresses shall be written once as parent node in all addresses it is used in the XML address tree.

— Beyond the pure address data, there are general as well as optional project specific attributes on the level of address components and string parts.

— In favour of faster parser execution and smaller file sizes the names of XML elements appearing very often are short strings.

— Semantics are defined only in a basic manner and have to be completed in the project specific tailoring process. E.g. a street without numbers in the data may be interpreted as a street which has no numbers, or where all numbers are valid. Due to this users must be aware that the interoperability of this Technical Specification may be limited to be applied to the specific project.

3 Related Standards

3.1 UPU S42

1) UPU S42 is beginning with version -5 a two part standard. Part a contains concepts and the theoretical language description. Part b contains practical examples from different countries and may be supplemented with new examples in some future.

2) UPU S42a defines components an address is composed of as well as postal entities which can be "described" using these address components. The standard goes into great detail in defining a globally usable set of specific address components such as "postcode", "door", ...

3) UPU S42b describes how to write an address given its constituting address components. It uses templates to describe the order, line-breaks, etc. The templates are country specific (US, Brazil, England, ...) and also uses an country specific subset of the globally defined types.

4) UPU S42 address components are assumed to have a type and a string. They do not have additional attributes and do not have aliases.

5) UPU S42 does not define a format for an individual address == address-component collection and does not define a format for an address directory == set of addresses.

6) UPU S42 has no concept of sort codes or forwarding information.

UPU S42 will not conflict with the format defined in this document as it targets at a completely different application and type of information described. The only thing in common with address data are the address-component definitions themselves. These could be used in customizing the ADF for a specific project. UPU S42's excellent glossary should be reused where applicable.

4 Symbols and Abbreviations

XML eXtended Markup Language

ADF Address Data File

5 XML Schema adressTree

The syntax is described as an XML schema, divided into a general and a project specific part. The general part of the XML Schema defines the basic structures. It uses some types and attribute groups to be defined in the project specific part. Basically the structure spans a tree of address components represented by XML elements <e>.

The general part of the schema is listed in section A.1A.1. The project specific part is explained in section 5.9.

This document contains also another XML Schema addressDeltaTree explained in chapter 6.

The following Figure 1 shows the general structure of the XML schema. Since the project specific part does not change the general structure the diagram is independent from any project specifics.

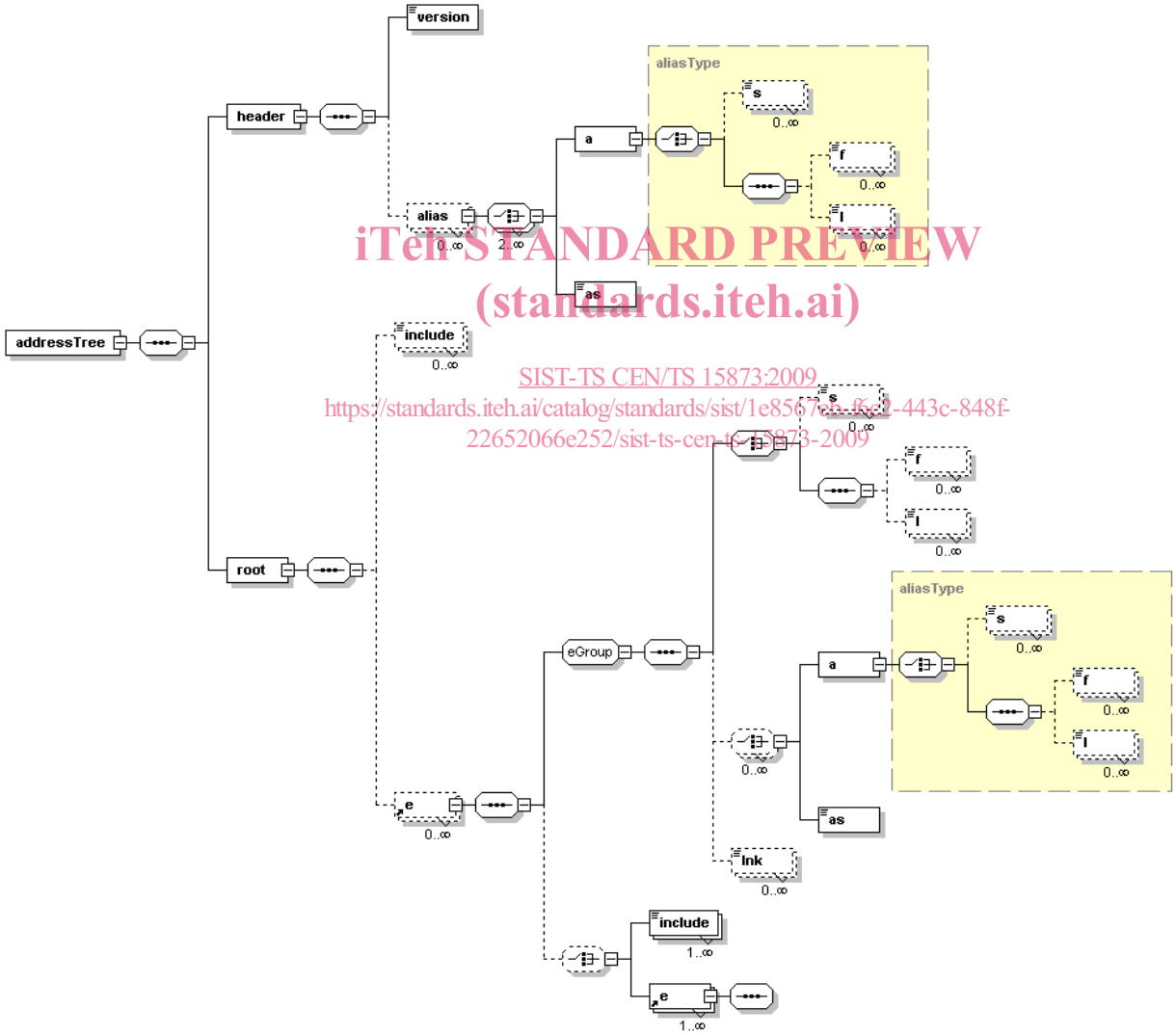

Figure 1 — General data structure of the XML schema

5.1 <adressTree>, <header> and <version>

Below the XML root element <adressTree> is one <header> and one <root> section. The <header> stores a <version> string and optionally a list of global aliases. Aliases are described in section 5.6. A version string of the data contained in the file is stored in the <version> element.

5.2 Address Tree in <root>, <e> and <lnk>

Addresses are stored in an address tree corresponding to the XML elements <root>, <e> and <lnk>. <root> is the root node of this tree, address components stored in <e> are the nodes and <lnk> may be additional leafs. Explanation on the <lnk> element follows in section 5.8. One complete address corresponds to one leafs root path. Each nodes root path identifies a partial address. Other XML elements and attributes carry additional information for the address tree node. <include> allows to split data into multiple files.

One address component in XML element <e> holds a type mentioned in attribute tp and a string in child elements <s> or <f> and <l>. Attribute tp and other optional attributes for <e> are described in section 5.3. Other optional child elements are described in the following sections.

In this context one address component holds just a name with a type and does not necessarily describe a real thing or place. Also abstract data like delivery point codes, sort codes or else may be stored in address components represented as XML elements <e>.

Example: Some addresses in various formats:

In a table:

Country	City	Street	HNr
GERMANY	BERLIN		
GERMANY	KONSTANZ	BUECKLESTR	1
GERMANY	KONSTANZ	BUECKLESTR	2
GERMANY	KONSTANZ	BUECKLESTR	3
GERMANY	KONSTANZ	BUECKLESTR	4

As address tree:

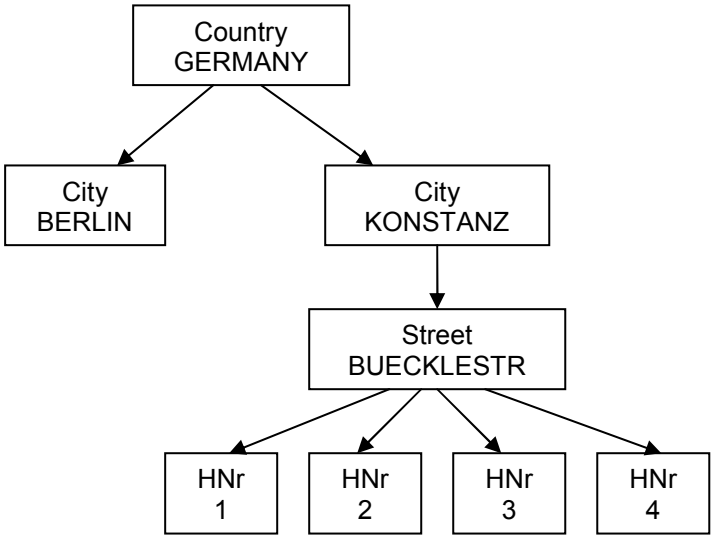

Figure 2 — Addresses formatted as an address tree