SLOVENSKI STANDARD
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Zdravstvena informatika ï Sporoļ ila za vzdrģevanje informacijske podpore pri sistemih zdravstvenega varstva ï 2. del: Obnavljanje medicinskih laboratorijskih informacij

Health informatics - Messages for maintenance of supporting information in healthcare systems - Part 2: Updating of medical laboratory-specific information

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ICS:

35.240.80	Uporabniške rešitve IT v zdravstveni tehniki	IT applications in health care technology

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English version

Health informatics - Messages for maintenance of supporting information in healthcare systems - Part 2: Updating of medical laboratory-specific information

This European Prestandard (ENV) was approved by CEN on 29 July 1999 as a prospective standard for provisional application.

The period of validity of this ENV 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 ENV can be converted into a European Standard.

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

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Ref. No. ENV 13609-2:2000 E

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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 251 "Health informatics", the secretariat of which is held by SIS.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This is Part 2 of a multipart standard on *Messages for Maintenance of Supporting Information in Healthcare Systems*. The multipart standard consists of the following parts:

- Part 1: Updating of Coding Schemes
- Part 2: Updating of Medical Laboratory-Specific Information

This standard was drafted using the conventions of the ISO/IEC directive part 3.

All Annexes are Informative.

Introduction

This Prestandard covers Messages for Maintenance of Supporting Information in Healthcare Systems and is concerned with the specification of a message that may be used to create or update information that is appended to entries in a coding scheme. In particular, this message is used to provide supporting information that may be used to aid healthcare professionals when they are requesting laboratory investigations.

This message specification has been validated against the requirements identified when users request investigations that are within the domain covered by ENV 1613, *Messages for Request and Report of Laboratory Investigations*. The message is used to provide up-to-date information to persons using computer systems to request laboratory investigations.

This Prestandard defines a syntax independent specification of a message that may be used to provide a means of supplying receiving systems with sufficient information to create or update a database or other information retrieval system with information concerning:
(a) the volume or mass of sample required by the laboratory when carrying out the tests,
(b) the sampling procedure and any procedures to be carried out on the sample or the sample donor,
(c) the identification of the sample container(s) that should be used,
(d) any groups of tests that are carried out concurrently on the same sample at the same time as a matter of routine,
(e) information that should be provided with the sample such as the patient's sex, age, weight, etc.,
(f) information that should be provided to the patient,
(g) information about the service provided by the laboratory vis-à-vis the investigation, e.g. only as routine, only as emergency, not at weekend.

The main normative provisions in this Prestandard are expressed in clauses 4, 5 and 6.
Much, although not all, of the representation used in this Prestandard is drawn from the Unified Modelling Language (UML). The reader shall, however, interpret the representations within this Prestandard according to the provisions laid out in Informative Annex B.

Health informatics - Messages for maintenance of supporting information in healthcare systems - Part 2: Updating of medical laboratory-specific information

1. Scope

1.1 This Prestandard specifies messages for electronic information exchange between computer systems used by healthcare parties for the purposes of updating Supporting information that is attached to code values within a coding scheme. In particular, this message is intended to provide information to clinicians that are requesting tests within the specialties of:

- haematology,
- clinical chemistry,
- cytology,
- biochemistry,
- immunology.

1.2. This Prestandard provides a description of a message which provides sufficient information to allow a receiving system to associate supporting information to code values representing laboratory investigations that may be performed on samples taken from the patient. The requirements for the supporting information have been validated solely against those investigations that are within the scope of ENV 1613, *Messages for Request and Report of Laboratory Investigations.* The supporting information may include any or all of the information items relating to:

(a) the sampling procedure, including volume/mass of sample required, sample container, sample treatment, etc.
(b) any information that should accompany the sample such as age, sex, cycle, height, weight, etc.
(c) any advice to the patient.
(d) any patient preparation procedures, etc

In addition, the supporting information may provide information about the suppliers of the laboratory services.

2. Normative References

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited in the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments and revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment and revision. For undated references the latest edition of the publication referred to applies.

ENV 1613: 1995	Messages for Request and Report of Laboratory Investigations
CR 1350: 1993	Investigation of syntaxes for existing interchange formats to be used in Healthcare
ISO 639: 1988	Symbols for languages, geographical areas and authorities
ISO 646: 1991	Information technology - ISO 7-bit coded character set for information interchange
ISO 1087-1.2: 1990	Terminology work – Vocabulary – Part1: Theory and application.
ISO 2382-4: 1987	Information processing – Vocabulary Part 4: Organisation of data
ISO 6523: 1984	Data interchange - Structure for the identification of organisations
ISO/IEC 7826-2IT: 1984	General structure for the interchange of code values
ISO 8601: 1988	Data elements and interchange formats - Information interchange -Representation of dates and times
ISO 8859:1987	Information Processing - Registration of graphics characters subrepertoires - Eight-bit single byte coded graphic character sets - Part 1: Latin No 1

3. Terms and definitions

For the purposes of this standard, the following definitions apply:

3.1
concept
subset of knowledge constructed through combining characteristics

[ISO 2382-1987].

3.2
coded concept
element within a coded set

[ISO 2382-1987].

EXAMPLE: "Paris Charles-De-Gaulle" which is mapped on to the three-letter abbreviation "CDG" by the coding scheme for three-letter abbreviations of airport names

3.3
coded set
set of elements which is mapped onto another set according to a code

[ISO 2382-1987].

EXAMPLE: A list of the names of airports which is mapped on to a set of three-letter abbreviations

3.4
code meaning
Element within a coded set.

EXAMPLE : "Paris Charles-De-Gaulle" which is mapped on to the three-letter abbreviation "CDG" by the coding scheme for three-letter abbreviations of airport names

[ENV1613]

3.5
code value
result of applying a coding scheme to a Coded concept

[ISO 2382-1987]

EXAMPLE: "CDG" as the representation of "Paris Charles-De-Gaulle" in the coding scheme for three-letter representations of airport names

3.6
coding scheme
collection of rules that maps the elements of one set on to the elements of a second set

[ISO 2382-1987]

3.7
domain information model
DIM
conceptual model describing common concepts and their relationships for communication parties required to facilitate exchange of information between these parties within a specific domain of healthcare

[ENV 1613]

3.8
general message description
GMD
subset of a domain information model prescribing the information content and semantic structure of a message used to meet one or more identified information interchange requirements

[ENV 1613]

3.9
healthcare organisation
organisation responsible for the direct or indirect provision of healthcare services

[ENV 1613]

3.10
international coding scheme identifier
ICSI
unique identifier of a coding scheme registered for use in information interchange in accordance with ISO 7826

3.11
message type
identified, named and structured set of functionally related information which fulfils a specific business purpose

[ENV 1613]

3.12
organisation
unique framework of authority within which a person or persons act, or are designated to act towards some purpose

[ISO 6523-1984]

4 Requirements

4.1 A message for transmission of updates to Supporting Information in Healthcare Systems covered by the scope of this section of the Prestandard, shall conform to the provisions defined in the General Message Description in clause 5 and the Domain Information Model in clause 6.

4.2 Implementable message specification (IMS) shall conform to the General Message Description defined in this part of the Prestandard. It shall support both mandatory and optional objects. Where appropriate they shall also support the relationships between objects as defined by the General Message Description.

4.3 Implementable message specifications should be expressed in terms of a syntax which is an International Standard except where the healthcare user requirements cannot be met by using such a Standard syntax.

5 General Message Description

5.1 Introduction

This section provides a description of the message using a hierarchical structure.

This Prestandard does not set limits on the number of repetitions of objects and attributes, but implementations which do set practical limits are not by that reason alone considered to be deviating from the standard.

The General Message Description (GMD) specifies the objects and their relationships within the context of the message.

5.2 The modelling approach

This clause provides a description of the message using a hierarchical structure. The General Message Description is shown in the form of a hierarchical structure indicating the objects (class instances) and their associated multiplicities that are required to implement the message. Many objects within the GMD are shown as optional and for an implementation intended for a given coding scheme these objects may be excluded. Where an object is included in the implementation, the structure of the object and the rules that apply to it shall conform to the appropriate class descriptions shown within the Domain Information Model.

The GMD has appended notes and explanations that supply additional guidance.

5.3 Message to Update Supporting Information

5.3.1 Scope of Message

This message is intended to facilitate the appending to code values representing laboratory investigations the following types of information:

(a) information concerning samples that are required in order that the investigation may be carried out, including:
- the materials that are required,
- the volume or mass of the material,
- other sampling information,

(b) information about the pre-treatment of the patient, sampling, requesting, diagnostic and other groupings to which the code value belongs,

(c) information that is required by the laboratory when carrying out and subsequently reporting on an investigation,

(d) other information that is pertinent to the request for the laboratory investigation,

(e) information about relevant service providers.

5.3.2 General Message Description

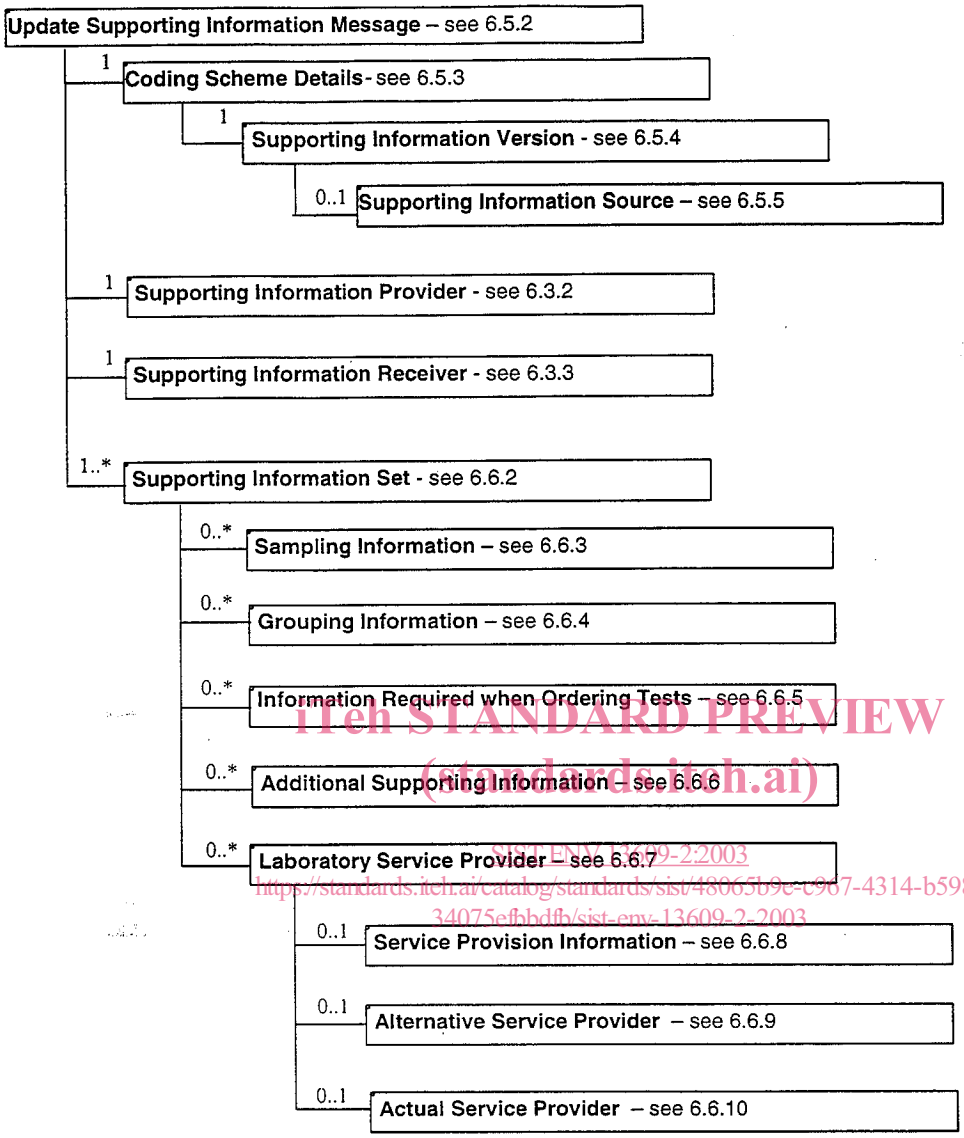

Figure 1 Update Supporting Information General Message Description

6 Domain Information Model

6.1 Introduction

This clause contains formal textual specifications of the classes used in the messages in Clause 5. These specifications form part of the normative elements of this Prestandard. However, the diagrams that accompany them are for illustrative purposes only. While conformance with the entire DIM may facilitate implementation of the messages, this is not a requirement for conformance.

The Domain Information Model is presented initially as top level representation of the whole domain, showing the various subsystems that constitute this message domain and the nature of the relationships between them. This is followed by detailed descriptions of each of the subsystems which define the constituent classes, their attributes and the relationships. Conformance to the standard necessitates conformance to the requirements laid out within these normative subsystem descriptions.

The models shall be interpreted in accordance with the provisions laid out in Annex B, "Unified Modelling Language notation used within this document".

6.2 Top Level Model

Figure 2 provides a diagrammatic representation of the main information objects that occur within Updating Medical Laboratory-Specific Supporting Information in Healthcare Systems domain. The remainder of this section provides descriptions, presented both diagrammatically and textually, of the composition and associations of the classes that populate the subsystems.

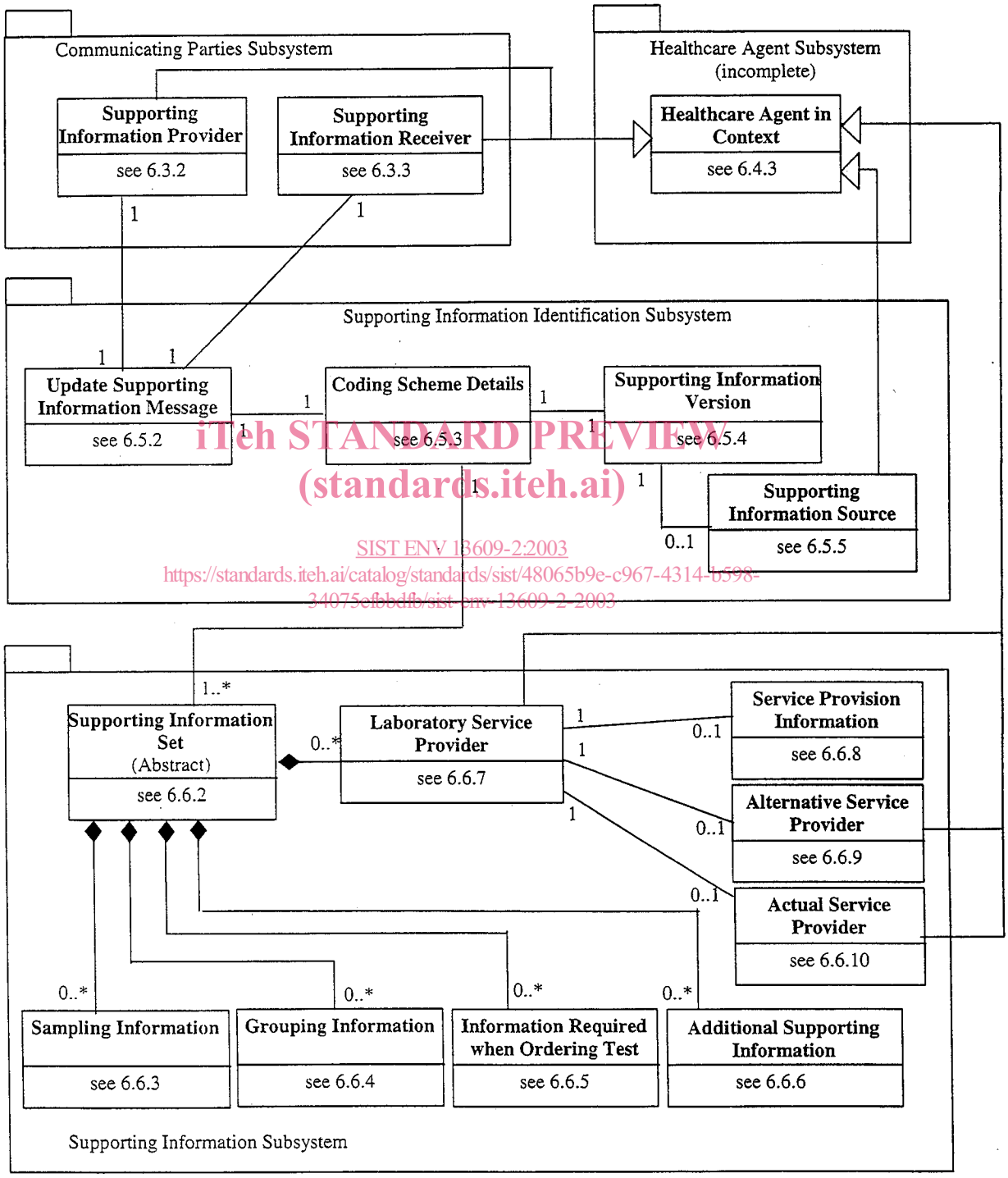

Figure 2 Domain Information Model – Update Supporting Information