



# SLOVENSKI STANDARD SIST EN ISO 21090:2011

01-april-2011

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## Zdravstvena informatika - Vrste harmoniziranih podatkov za izmenjavo informacij (ISO 21090:2011)

Health Informatics - Harmonized data types for information interchange (ISO 21090:2011)

Medizinische Informatik - Harmonisierte Datentypen für den Datenaustausch im Gesundheitswesen (ISO 21090:2011)

Informatique de santé - Types de données harmonisées pour une interchangeabilité d'informations (ISO 21090:2011)

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**Ta slovenski standard je istoveten z: EN ISO 21090:2011**

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### **ICS:**

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

EN ISO 21090

NORME EUROPÉENNE

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## Health Informatics - Harmonized data types for information interchange (ISO 21090:2011)

Informatique de santé - Types de données harmonisées pour une interchangeabilité d'informations (ISO 21090:2011)

Medizinische Informatik - Harmonisierte Datentypen für den Datenaustausch im Gesundheitswesen (ISO 21090:2011)

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## Foreword

This document (EN ISO 21090:2011) has been prepared by Technical Committee ISO/TC 215 "Health informatics" in collaboration with Technical Committee CEN/TC 251 "Health informatics" the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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# INTERNATIONAL STANDARD

**ISO**  
**21090**

First edition  
2011-02-15

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## Health informatics — Harmonized data types for information interchange

*Informatique de santé — Types de données harmonisées pour une  
interchangeabilité d'informations*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21090 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

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## Introduction

Assistance from the Infrastructure and Messaging Committee in HL7 and the support of Connecting for Health have been instrumental in the preparation of this International Standard, which is a shared document between Health Level Seven (HL7) and ISO, and has been produced according to the terms of the agreement between HL7, CEN and ISO (JIC, see <http://www.global-e-health-standards.org/>), which ensures that the content is fully available through ISO, CEN and HL7 publication channels.

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# Health informatics — Harmonized data types for information interchange

## 1 Scope

This International Standard

- provides a set of datatype definitions for representing and exchanging basic concepts that are commonly encountered in healthcare environments in support of information exchange in the healthcare environment;
- specifies a collection of healthcare-related datatypes suitable for use in a number of health-related information environments;
- declares the semantics of these datatypes using the terminology, notations and datatypes defined in ISO/IEC 11404, thus extending the set of datatypes defined in that standard;
- provides UML definitions of the same datatypes using the terminology, notation and types defined in Unified Modelling Language (UML) version 2.0;
- specifies an XML (Extensible Mark-up Language) based representation of the datatypes.

The requirements which underpin the scope reflect a mix of requirements gathered primarily from HL7 Version 3 and ISO/IEC 11404, and also from CEN/TS 14796, ISO 13606 (all parts) and past ISO work on healthcare datatypes.

This International Standard can offer a practical and useful contribution to the internal design of health information systems, but is primarily intended to be used when defining external interfaces or messages to support communication between them.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

ISO/IEC 4217, *Codes for the representation of currencies and funds*

ISO/IEC 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO/IEC 8824 (all parts), *Information technology — Abstract Syntax Notation One (ASN.1)*

ISO/IEC 11404:2007, *Information technology — General-Purpose Datatypes (GPD)*

ISO/TS 22220, *Health Informatics — Identification of subjects of health care*

IETF RFC 1738, *Uniform Resource Locators (URL)*

**ISO 21090:2011(E)**

IETF RFC 1950, *ZLIB Compressed Data Format Specification version 3.3*

IETF RFC 1951, *DEFLATE Compressed Data Format Specification version 1.3*

IETF RFC 1952, *GZIP file format specification version 4.3*

IETF RFC 2045, *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies*

IETF RFC 2046, *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*

IETF RFC 2396, *Uniform Resource Identifiers (URI): Generic Syntax*

IETF RFC 3066, *Tags for the Identification of Languages*

IETF RFC 3966, *The tel URI for Telephone Numbers*<sup>1)</sup>

FIPS PUB 180-1, *Secure Hash Standard*

FIPS PUB 180-2, *Secure Hash Standard*<sup>2)</sup>

Open Group, CDE 1.1, *Remote Procedure Call specification, Appendix A*

HL7 V3 Standard, *Data Types — Abstract Specification (R2)*

Regenstrief Institute, Inc. and the UCUM Organization, *The Unified Code for Units of Measure*<sup>3)</sup>

W3C Recommendation, *XML Signature Syntax and Processing*<sup>4)</sup>

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**3 Terms and definitions**

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

**3.1****attribute**

characteristic of an object that is assigned a name and a type

NOTE The value of an attribute can change during the lifetime of the object.

**3.2****class**

descriptor for a set of objects with similar structure, behaviour and relationships

**3.3****code**

concept representation published by the author of a code system as part of the code system, being an entity of that code system

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1) Revision of IETF RFC 2806.

2) Revision of FIPS PUB 180-1.

3) Regenstrief Institute, Inc. and the UCUM Organization, Indianapolis, Indiana, USA [viewed 2010-08-23]. Available from: <http://aurora.regenstrief.org/ucum>.

4) World Wide Web Consortium (W3C) [viewed 2010-08-23]. Available from: <http://www.w3.org/TR/xmlsig-core/>.

**3.4****code system**

managed collection of concept identifiers, usually codes, but sometimes more complex sets of rules and references

NOTE They are often described as collections of uniquely identifiable concepts with associated representations, designations, associations and meanings.

EXAMPLES ICD-9, LOINC and SNOMED

**3.5****concept**

unitary mental representation of a real or abstract thing; an atomic unit of thought

NOTE 1 It should be unique in a given code system.

NOTE 2 A concept can have synonyms in terms of representation and it can be a primitive or compositional term.

**3.6****conformance**

fulfillment of a specified requirement; adherence of an information processing entity to the requirements of one or more specific specifications or standards

**3.7****datatype**

set of distinct values, characterized by properties of those values, and by operations on those values

**3.8****enumeration**

datatype whose instances are a set of user-specified named enumeration literals

NOTE The literals have a relative order, but no algebra is defined on them.

**3.9****generalization**

taxonomic relationship between a more general class, interface or concept and a more specific class, interface or concept

NOTE 1 Each instance of the specific element is also an instance of the general element. Thus, the specific element has all the features of the more general element.

NOTE 2 The more specific element is fully consistent with the more general element and contains additional information.

NOTE 3 An instance of the more specific element can be used where the more general element is allowed.

**3.10****information processing entity**

anything that processes information and contains the concept of datatype, including other standards, specifications, data handling facilities and services

**3.11****inheritance**

mechanism by which more specific elements incorporate structure and behaviour of more general elements

**3.12****interface**

specifier for the externally-visible operations of class, without specification of internal structure