INTERNATIONAL STANDARD

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Health informatics — Patient healthcard data —

Part 5: Identification data

Informatique de santé — Données relatives aux cartes de santé des patients —

Partie 5: Données d'identification

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Foreword

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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 21549-5 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

ISO 21549 consists of the following parts, under the general title *Health informatics — Patient healthcard data*:

— *Part 1: General structure*

— *Part 2: Common objects*

— *Part 3: Limited clinical data*

— *Part 4: Extended clinical data*

— *Part 5: Identification data*

— *Part 6: Administrative data*

— *Part 7: Medication data*

Introduction

With a more mobile population, greater healthcare delivery in the community and at patients' homes, together with a growing demand for improved quality of ambulatory care, portable information systems and stores have increasingly been developed and used. Such devices are used for tasks ranging from identification, through portable medical record files, and on to patient-transportable monitoring systems.

The functions of such devices are to carry and to transmit person-identifiable information between themselves and other systems; therefore, during their operational lifetime they may share information with many technologically different systems which differ greatly in their functions and capabilities.

Healthcare administration increasingly relies upon similar automated identification systems. For instance prescriptions may be automated and data exchange carried out at a number of sites using patient transportable computer readable devices. Healthcare funding institutions and providers are increasingly involved in cross-region care, where reimbursement may require automated data exchange between dissimilar healthcare systems. Administrative data objects may require linkage to external parties responsible for their own domains which are not within the scope of this part of ISO 21549. For instance, cross-border reimbursement of healthcare services are usually regulated by law and intergovernmental agreements which are not subject to standardization.

The advent of remotely accessible data bases and support systems has led to the development and use of "Healthcare Person" identification devices that are also able to perform security functions and transmit digital signatures to remote systems via networks.

With the growing use of data cards for practical everyday healthcare delivery, the need has arisen for a standardized data format for interchange.

The person-related data carried by a data card can be categorised in three broad types: identification (of the device itself and the individual to whom the data it carries relates), administrative and clinical. It is important to realise that a given healthcare data card "de facto"has to contain device data and identification data and may in addition contain administrative, clinical, medication and linkage data.

Device data are defined to include:

— identification of the device itself;

— identification of the functions and functioning capabilities of the device.

Identification data can include:

— unique identification of the device holder (and not information of other persons!).

Administrative data can include:

— complementary person(s) related data;

— identification of the funding of healthcare, whether public or private, and their relationships, i.e. insurer(s), contract(s) and policy(ies) or types of benefits;

— identification of other persons as a part of the insurance contract (e.g. a family contract);

— other data (distinguishable from clinical data) that are necessary for the purpose of healthcare delivery.

Clinical data may include:

— items that provide information about health and health events;

— their appraisal and labelling by a healthcare provider;

— related actions planned requested or performed.

Medication data may include:

— a record of medications received or taken by the patient;

— copies of prescriptions including the authority to dispense records of dispensed medication;

— records of medication bought by the patient;

— pointers to other systems that contain information that makes up an electronic prescription and the authority to dispense.

Because a data card essentially provides specific answers to definite queries whilst having at the same time a need to optimize the use of memory by avoiding redundancies “high level” Object Modelling Technique (OMT) has been applied with respect to the definition of healthcare data card data structures.

This part of ISO 21549 describes and defines the Identification Data objects used within or referenced by patient-held health data cards using UML, plain text and Abstract Syntax Notation (ASN.1).

This part of ISO 21549 does not describe and define the common objects defined within ISO 21549-2 even though they are referenced and utilized within this document.

Health informatics — Patient healthcard data —

Part 5:
Identification data

1 Scope

This part of ISO 21549 establishes a common framework for the content and the structure of identification data held on healthcare data cards. This part of ISO 21549 specifies the basic structure of the data, but does not specify particular data-sets for storage on devices.

The detailed functions and mechanisms of the following services are not within the scope of this part of ISO 21549 (although its structures can accommodate suitable data objects elsewhere specified):

— security functions and related services that are likely to be specified by users for data cards depending on their specific application, e.g. confidentiality protection, data integrity protection and authentication of persons and devices related to these functions;

— access control services that may depend on active use of some data card classes such as microprocessor cards;

— the initialization and issuing process (which begins the operating lifetime of an individual data card, and by which the data card is prepared for the data to be subsequently communicated to it according to this part of ISO 21549).

The following topics are therefore beyond the scope of this part of ISO 21549:

— physical or logical solutions for the practical functioning of particular types of data card;

— the form that data take for use outside the data card, or the way in which such data are visibly represented on the data card or elsewhere.

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 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

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

ISO 21549-1, *Health informatics — Patient healthcard data — Part 1: General structure*

ISO 21549-2, *Health informatics — Patient healthcard data — Part 2: Common objects*

ISO 21549-6, *Health informatics — Patient healthcard data — Part 6: Administrative data*

ISO/IEC 5218, *Information technology — Codes for the representation of human sexes*

ISO/IEC 7816-6, *Identification cards — Integrated circuit cards — Part 6: Interindustry data elements for interchange*

ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation — Part 1*

ISO/IEC 8825-1, *Information technology — ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER) — Part 1*

ISO/IEC 10646, *Information technology — Universal Multiple-Octet Coded Character Set (UCS)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21549-1 apply.

4 Symbols and abbreviated terms

ASN.1	Abstract Syntax Notation One
CRT	Cardholder Related Template
L	Length (ASN.1)
LDS	Logical Data Structure of machine-readable travel documents
N	Numeric
NET	National Extensions Template
UCS	Universal Multiple-Octet Coded Character Set
UML	Unified Modelling Language
UTF8	UCS Transformation Format 8

5 Identification objects

5.1 Introduction objects and data structure

For identification of the cardholder, information about the following objects is needed:

— person;

— address;

— telecom;

— miscellaneous.

The structure of the identification information is derived from the LDS set used for machine-readable travel documents (LDS document of ICAO). No separate objects are introduced for healthcare. The following paragraph contains the table with the definitions of the identification data set.

5.2 Definition of the identification data set

Table 1 shows the definition of identification data according to the ASN.1 basic notation and basic encoding described in ISO/IEC 8824-1 and ISO/IEC 8825-1, respectively. The corresponding ASN.1 definition is given at the end of this document. In the ASN.1 definition the ASN.1 data type UTF8String (see ISO/IEC 10646) is used for the coding of alphanumeric data elements. Since the UTF8 encoding uses 1 to 6 bytes for each character, the number of storage bytes which should be provided by the card may be greater than the denoted length in characters. The use of UTF8 should be restricted to a limited international character set, since it does not make sense to provide each country with any unfamiliar character set of another country. The formation of this international character set as a subset of the UCS has to be discussed. Figure 1 shows the UML class diagram. Figure 2 shows the CRT Template of Identification data with embedded NET.

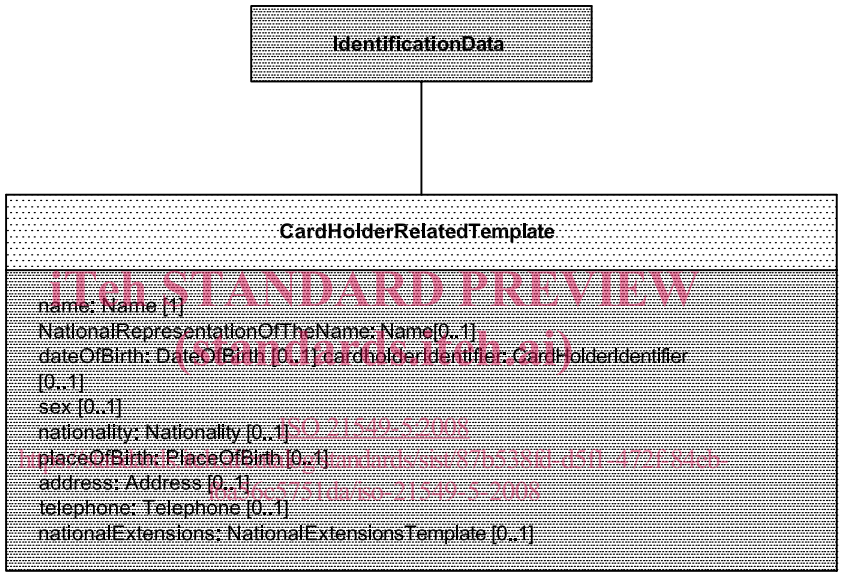

Figure 1 — UML class diagram

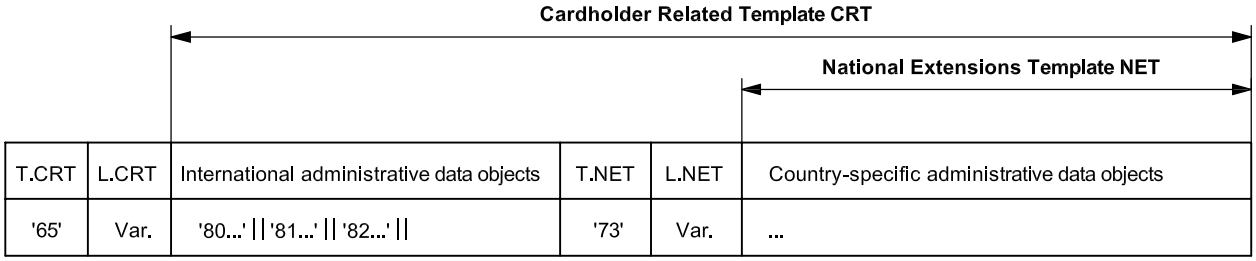

Figure 2 — CRT Template of Identification data with embedded NET