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Health informatics — Functional and structural roles

Informatique de santé — Rôles fonctionnel et structurel

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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.

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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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

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An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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/TS 21298 was prepared by Technical Committee ISO/TC 215, *Health informatics*.

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Introduction

This Technical Specification contains a specification for encoding information related to roles for health professionals and consumers. At least four areas have been identified where a model for encoding role information is needed.

a) **Privilege management and access control**: role-based access control is not possible without an effective means of recording role information for healthcare actors.

b) **Directory services**: structural roles are usefully recorded within directories of health care providers (see, for example, ISO/TS 21091).

c) **Audit trails**: functional roles are usefully recorded within audit trails for health information applications.

d) **Public key infrastructure (PKI)**: The three-part International Standard ISO 17090[9], [10] allows for the encoding of healthcare roles in certificate extensions, but no structured vocabulary for such roles is specified. This Technical Specification identifies such a coded vocabulary.

In addition to these security related applications there are several other possible applications of this Technical Specification, such as:

e) **Search and retrieval**: finding and identifying the right professional for a health service.

f) **Administration**: billing of health care services.

g) **Messaging**: directing healthcare related messages by means of a specific role.

This Technical Specification is complemetary to other relevant standards that also describe and define roles for the purpose of access control. Backward compatibility with ANSI INCITS and HL7 RBAC is provided through simplification by combining the policy and role into a single construct. This Technical Specification extends the model through the separation of the role and policy. This separation allows for a richer and more flexible capability to instantiate business rules across multiple domains and jurisdictions.

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Health informatics — Functional and structural roles

1 Scope

This Technical Specification defines a model for expressing functional and structural roles and populates it with a basic set of roles for international use in health applications. Roles are generally assigned to entities that are actors. This will focus on roles of persons (e.g. the roles of health professionals) and their roles in the context of the provision of care (e.g. subject of care).

Roles can be structural (e.g. licensed general practitioner, non-licensed transcriptionist) or functional (e.g. a provider who is a member of a therapeutic team, an attending physician, etc). Structural roles are relatively static, often lasting for many years. They deal with relationships between entities expressed at a level of complex concepts. Functional roles are bound to the realization of actions and are highly dynamic. They are normally expressed at a decomposed level of fine-grained concepts.

Roles addressed in this Technical Specification are not restricted to privilege management purposes, though privilege management is one of the applications of this Technical Specification as well as access control. This Technical Specification does not address specifications related to permissions. This Technical Specification treats the role and the permission as separate constructs. Further details regarding the relationship with permissions, policy and access control are provided in ISO/TS 22600-1.

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 17090-2, *Health informatics — Public key infrastructure — Part 2: Certificate profile*

ISO/HL7 21731, *Health informatics — HL7 version 3 — Reference information model — Release 1*

ISO 22600-1, *Health informatics — Privilege management and access control — Part 1: Overview and policy management*

International Labour Organization: *International Standard Classification of Occupations 2008* (ISCO-08)

3 Terms and definitions

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

3.1
access control
means of ensuring that the resources of a data processing system can be accessed only by authorized entities in authorized ways

[ISO/IEC 2382-8, definition 08.04]

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