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Standard Recommendation
S.R. CR 12161:1995

A method for defining profiles for healthcare

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This document replaces:

This document is based on:
CR 12161:1995

Published:
27 September, 1995

This document was published under the authority of the NSAI and comes into effect on:
24 September, 2011

ICS number:
11.020
35.240.60

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Údarás um Chaighdeáin Náisiúnta na hÉireann

REPORT

RAPPORT

BERICHT

CR 12161:1995

September 1995
Septembre 1995

September 1995

English version

A method for defining profiles for healthcare

This CEN REPORT has been adopted by Technical Committee CEN/TC 251 "Medical informatics" and has been approved by CEN on 1995-08-17.

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1. INTRODUCTION

This is the second edition of EWOS Technical Guide ETG 021. The first edition was produced by EWOS/EG MED as the first step in fulfilling a number of Mandates issued by the Commission of the European Communities. The Mandates concerned the production of profiles in the healthcare field. This Technical Guide defines a method for identifying such profiles. This second edition is a revision of the first, incorporating changes to the method which were identified by EWOS/PT N024 on medical image interchange, the first time the method had been used fully in one application area.

There are a number of audiences for this document. The principal one is practitioners in the field of IT in healthcare (e.g. the IT manager at a hospital). Others include suppliers of IT products and, to a lesser extent, OSI experts assisting in healthcare procurement etc.

1.1 BACKGROUND

In 1989, SOGITS issued Mandate BC-IT-SI-05. This Mandate was split into two parts, one being the responsibility of CEN and the other of EWOS. Both organisations set up Project Teams and both teams reported in early 1991. The report of EWOS PT 007[1] provides useful background to this Technical Guide. EWOS/TA 13 agreed that a new Expert Group (EG MED) should be set up in order to undertake work within the field of healthcare that falls within the remit of EWOS. The Work Programmes proposed by both PTs have been incorporated into a single document which has been approved by the CEN BT[2]. All aspects of this Work Programme that are concerned with Open Systems are the responsibility of EWOS/EG MED. Specifically, five items of the Work Programme have been so identified at the present time:

3.1	OSI Application Profiles for Health Care
3.2	OSI Transport Profiles for Health Care
3.3	OSI Management Profiles for Health Care
3.4	Multimedia Medical Data Interchange
4.1	Functional Profiles for Medical Image Interchange
4.7	Medical Image Interchange: Conformance Testing of Standards Implementations

The CEC has issued mandates in respect of work items 3.1 and 4.1. The first five work items are concerned with profiles, the last with conformance testing (and hence will be handled separately at a later date).

This document provides a description of the method for mapping user requirements into open systems (principally OSI) profiles.

1.2 OBJECTIVES

The principal objective of this document is to define a method whereby "real world" user requirements for communication between healthcare systems can be mapped on to open systems profiles.

There is a myriad of requirements for information interchange and processing in healthcare and these requirements may be satisfied by many different combinations of profiles. Current OSI profiles are well defined and categorised[3,4]; user requirements are neither well defined nor categorised, although work is being undertaken within CEN which will assist in this respect.

Most OSI profiles have been defined to support a specific interworking requirement and have not been used to satisfy the needs of any particular domain. When the user requirements are mapped onto existing profiles, there are three possibilities:

the user requirements are met fully by current profiles;

while the user requirements are broadly met, the particular requirements impose constraints on existing profiles; therefore, new profiles and/or combinations of existing profiles are required, albeit similar to current profiles but with additional constraints;

the requirements are not met by existing profiles and new profiles need to be developed.

Therefore, this document is intended to specify a method for:

identifying which of the above situations applies to a given user requirement;

indicating whether a particular profile can be used for a given user requirement; and

indicating where additional profiling work needs to be undertaken.

It is impractical to map every user requirement on to the appropriate profiles, as the set of user requirements is potentially extremely large. Instead, the document defines a method of specifying user requirements in a systematic manner so that classes of functionally similar user requirements can be mapped onto the same profiles.

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In addition, at present there are no healthcare specific OSI base standards (as exist in other application areas such as manufacturing and inter-library loans). When such standards are developed (through bodies such as CEN), then profiles may also be required.

This document does not undertake the required profiling work. However, it does define a general method which will allow the profiling work to be undertaken (and thus fulfils the initial part of the first four work items specified above).

Further work will be required in future, particularly to relate user requirements to OSE profiles when these are developed.

1.3 DEFINITIONS

In this document, it is hoped that the meaning of the terms used are intuitively obvious. However, it is necessary to use terms precisely and so some formal definitions are given here. A list of acronyms is given in the Glossary.

Attribute: A property of a real-world object which can be characterised by a set of values. A set of attributes is selected in order to enable the characteristics of a particular domain to be enumerated. The particular domain of interest in this report is that of information interchange. Other domains (for future study) include Security, Information Structure, etc.

Attribute Value: A set of possible values which is assigned to a given attribute (e.g. attribute "Volume" may take the value "Small"). Attributes and their values are selected to be meaningful to non-IT specialists, and intuitive to apply.

Set of Attribute Values (SAV): For a defined set of attributes corresponding to a particular domain of interest (e.g. medical imaging), a Set of Attribute Values consists of an (ordered) list of values for each attribute.

"Goodness of Fit Factor"(GOFF): This defines how well a particular profile (or set of PFCs) matches a particular Set of Attribute Values.

Profile Functional Characteristics (PFCs): These characterise, in user-orientated terms, the functionality supported by a profile (or base standard). In many cases, PFCs will correspond to optional profile features which may need to be made mandatory in order to satisfy a particular user requirement (e.g. body part in MHS, document type in FTAM).

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