Object Management Group
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Re: Response of the HL7 IMSIG to CORBAmed RFI2: Clinical Observations

This letter conveys the response of the Health Level Seven Image Management Special
Interest Group (IMSIG) to CORBAmed RFI2 (Clinical Observations). The IMSIG is
composed of members who have a material interest in diagnostic imaging, particularly in
the interface between imaging systems and other information systems. The IMSIG wishes
to inform the Object Management Group of two widely-supported message standard
specifications that in its view should be considered in development of a CORBAmed
standard object request broker mechanism for interchange of clinical observations. The
first is the Health Level Seven (HL7) Standard, Version 2.3 (Health Level Seven, Inc, Ann
Arbor, MI). The second is the Digital Imaging and Communications in Medicine
(DICOM) Standard, Version 3.0 (The DICOM Standards Committee, Secretariat:
NEMA, Rosslyn, VA).

HL7 is widely implemented for interchange of explicitly-tagged observations in the form
of text, codes, waveform, and numeric measurements encoded as delimited stream of
ASCII characters. HL7 specifies a mechanism for conveying encapsulated binary data
which internally represents other formats, e.g. TIFF, within ASCII-encoded messages.
This encapsulation mechanism can be used to convey elements formatted according to
other standards. HL7 addresses only level 7 (the application layer) of the ISO
communications interface reference model. HL7 is developing a reference information
model and is using object-oriented analysis methology in the development of its standard.
HL7 is also developing a controlled terminology resource.

DICOM is widely implemented for interchange of digital images and image-related
information. DICOM messages consist of stream of explicitly tagged data elements
represented with a tag-length-value mechanism and encoded as binary data. DICOM
specifies end-to-end communications over a TCP/IP or ISO network; a reference
information model; a query/retrive model; static information object structures; and a set of
commands (services, methods).

In addition to the approved and implemented image-management specifications of
DICOM Version 3.0, a draft DICOM specification for structured clinical observations
(Supplement 23: Structured Reporting) has been released by the DICOM Standards
Committee for public comment. Working Group 8 of the DICOM Committee has
announced that the draft structured reporting supplement will be released as a draft
standard for trial use in fourth quarter 1997. The DICOM Structured Reporting (SR)
supplement is compatible to high degree with the semantics of the HL7 V.2.3 standard. In
addition, the SR specification adds support for functionality that is not available in HL7,
such as the ability to denote regions of interest (significant subsets, such as image features

or specific ranges of time-sequence data). SR also defines the capability to create named relationships between any observations. Therefore, with SR, it is possible to create persistent linkages between abnormalities observed in images or waveforms and the diagnostic observations that are evoked by the observed evidence. This capability may be of great value to enhance the specificity of interpretation reports (results) and to provide the basis for detailed retrospective analysis.

In conjunction with the DICOM and HL7 message standards, the following terminology resources may be used: SNOMED DICOM Microglossary, LOINC, HL7 Vocabulary, and the Terminology Resource for Message Standards.

The IMSIG recommends that the OMG/CORBAmed Clinical Observations task group consider the above specifications as it develops its intended RFP. In the opinion of the IMSIG, it is likely that application objects capable of delivering the functionality implied by the HL7 and DICOM specifications (including Supplement 23) will supply functionality sufficient for clinical observation reporting.

Respectively submitted by the HL7 Image Management SIG by the co-chairs,

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