

DICOM Correction Item

Correction Number	CP-631
Log Summary: Define Universal Type Identifier for DICOM files	
Type of Modification	Name of Standard
Addition	PS 3.12 2006
Rationale for Correction	
<p>PS 3.12 describes aspects of naming and identification of DICOM file on interchange media, and in addition references the corresponding RFC that defines an appropriate MIME Media Type.</p> <p>The RFC also mentions the use of the extension '.dcm' for files extracted from MIME attachments and saved to disk, and the use of the Macintosh File Type Code of 'DICM', though the latter is not mentioned in the corresponding DICOM MIME Media Annex.</p> <p>Recently, Apple has introduced Universal Type Identifiers (UTIs) for the purpose of consolidating file meta data, and in particular harmonizing the use of file extensions and MIME Media Types. Accordingly, there is a need for a standard UTI to identify DICOM files saved to disk on Macintosh systems, so that all Macintosh applications can recognize DICOM files, and one is defined here.</p> <p>In future, a corresponding update to RFC 3240 is probably also appropriate.</p>	
Sections of documents affected	
PS 3.12 Annex K	
Correction Wording:	

K.1.2 DICOM file

Each generic DICOM file shall be encoded as a MIME `Application/dicom` Media Type, called "DICOM File" MIME Part, with the following parameters:

- "id" is constructed from the DICOM File ID. The total length is limited to 71 characters (to avoid that the e-mail application splits the id string). Each component is limited to 8 characters. The delimiter is a forward slash "/". There is never a leading delimiter (i.e. this is not a traditional path from a root directory).

For example:

"ROOTDIR/SUBDIR1/MRSCAN/A789FD07/19991024/ST00234/S00003/I00023"

- "name" is constructed from the last DICOM File ID component (that means the "file name" without "path" information) and the extension ".dcm" (except for the DICOMDIR).

For example: "I00023.dcm"

- Note:
1. Email clients typically use this parameter as the default name with which to save the file. If used for only one "DICOM File" Part (versus one DICOM File set), the length of this parameter is not restricted (unlike the "id" parameter).
 2. This name can not be the same as the name inside the DICOMDIR where the file extension is forbidden.

The other fields of the header of this "DICOM File" MIME Part are respecting the general rules of MIME.

Notes: 1. RFC 3240 describes under the heading of additional information that a Macintosh File Type Code of "DICM" be used for DICOM files.

2. Where Universal Type Identifiers (UTIs) are in use, it is recommended that a UTI of `org.nema.dicom` be used for DICOM files, which is defined here as conforming to `public.data` (not `public.image`, since not all DICOM files are images), and is defined to correspond to the tags 'DICM', `.dcm` and `Application/dicom`. See also ["http://developer.apple.com/documentation/Carbon/Conceptual/understanding_utis/ind ex.html"](http://developer.apple.com/documentation/Carbon/Conceptual/understanding_utis/ind ex.html).

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ANNEX L (Informative) RFC 3240 – Digital Imaging and Communications in Medicine (DICOM) – Application/dicom MIME Sub-type Registration

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Additional information:

1. Magic number(s): "DICM" after 128 byte preamble indicates DICOM PS 3.10 file
2. File extension(s): ".dcm" is recommended for files saved to disk (other than DICOMDIR)
3. Macintosh file type code: Macintosh File Type "DICM" is recommended
4. Object Identifiers: none