DICOM Conformance Statement for Implant Studio (1.2.0.1)

1. DICOM Conformance Statement Overview

Implant Studio has support for the reading of DICOM data sets such that CT scan data can be imported and used for implant planning and surgical guide design.

The limitation of only supporting CT scan data is reflected in the table of supported image SOP classes (see Table 1).

Table 1 - Supported Image SOP Classes

Name	UID
Computed Tomography (CT) Image Storage	1.2.840.10008.5.1.4.1.1.2
Enhanced Computed Tomography (CT) Image Storage	1.2.840.10008.5.1.4.1.1.2.1

Implant Studio has support for single-slice and multi-slice DICOM files, but does not currently support DICOMDIR files. Table 2 lists the currently supported transfer syntaxes. This means that if compression is used for transferring image data, it has to be JPEG Lossless, otherwise only uncompressed image data is supported.

Table 2 - Supported Transfer Syntaxes

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70

Current DICOM data set restrictions in Implant Studio (some implied by the supported SOP classes and transfer syntaxes):

- Only CT/CBCT scan data.
- Patient Name (0010, 0010) must be present in DICOM file – but can be an empty string.
- Image data have to be 16 bit (for both compressed and non-compressed images).
- JPEG Lossless is only supported for single slice DICOM files.
- Slice Spacing cannot be larger than Slice Thickness.
- When a DICOM data set is spread across multiple DICOM files, Implant Studio will refuse to import the CT scan if the distances between- or the orientation of individual slices are inconsistent. In the case of a CT scan stored as individual slice files, one missing file would result in an import failure.