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Nexus Specification

What is Nexus?

A medical imaging and communication routing and processing platform for data archiving, workflow management, information processing and system interconnectivity.

Key Features

Operating system / architecture neutral
DICOM Connectivity
HL7 Connectivity
SQL Connectivity

Multiple DICOM listening port configuration

- *Handles multiple streams of data on user definable range of ports.*
- *AET configuration and promiscuous connectivity*
- *SOP class and transfer syntax configuration*

Simple DICOM proxy

- *Redirect CMOVE / CFIND requests to external system to provide a single point of communication to clients.*
- *Combine modality worklists.*

Multiple HL7 listening port configuration

- *Handle multiple streams of HL7 data on user customisable ports.*

Multi-threaded DICOM file input

- *Read a file source of DICOM data using multiple threads to rapidly read, process and forward files to a DICOM compatible system*

FTP DICOM file input

- *Retrieve data from an FTP file source to process and send to a DICOM system*

HL7 File input

- *Read HL7 V2 formatted files to modify and forward to HL7 compatible systems*

DICOM modality output simulator

- *The DICOM Simulator Node is designed for testing and benchmarking systems. It can be configured to create fictitious DICOM studies to be sent on at a configurable rate and allows the network to be tested before any inbound communications are required.*

Intelligent DICOM / HL7 routing

- *Ability to replicate DICOM streams through multiple processing pipelines.*
- *Routing based on meta data information in the DICOM header or AETs.*
- *Ability to switch on/off pathways.*
- *HL7 filtering based on DICOM queries to only permit known records to be processed.*

Versatile DICOM meta data manipulation

- *DICOM tag editing.*
- *Swap DICOM tags.*
- *Delete DICOM Tags.*
- *Mathematical operations on DICOM values.*

Intelligent DICOM anonymisation

- *User customisable DICOM tag anonymisation.*
- *AET based anonymisation customisation.*
- *Pseudo-anonymisation options for registering trial participants.*
- *Intelligent re-UID options to maintain object references in the meta data*

DICOM Redaction

- *Replaces incorrect or unwanted pixel information with a background colour.*

DICOM image decompression

- *Decompress pixel data in know formats (e.g. JPEG2000) for systems that may not handle this.*

DICOM image transform processing

- *Apply rotational and flip operations on pixel data in the processing pipeline.*

DICOM syntax conversion

- *Convert between transfer syntaxes on the fly in communications between external systems.*

SQL database information recording

- *Record key information in user customisable SQL database connections.*
- *Query on database to query for record in order to audit transferred information.*

DICOM reconciliation

- *Update DICOM meta data with that found in an external database.*

DICOM communications output

- *Communicate with external DICOM archives or worklists.*
- *Retrieve data using CGET or CMOVE.*
- *Proxy query / retrieve / store requests.*
- *Error handling channel for caching data in the event of communications failures.*

HL7 communications output

- *Communicate with external HL7 consumers to pass on routed and modified information.*

DICOM File output

- *Write processed DICOM objects to a file system.*
- *Optionally compress the objects.*
- *Configurable storage hierarchy.*

HL7 File output

- *Write HL7 information to a file system as a .dat file for archiving or caching for delayed processing.*