

A suite of standalone utilities that support testing, troubleshooting, or debugging of applications that use DICOM and HL7 communications. With PowerTools you can view, repair, or create DICOM datasets, plus support, manage, and diagnose medical imaging communications. PowerTools also allows sending and receiving of HL7 v2.x messages.

### **PowerTools belongs in your toolbox.**

Tools for PACS administrators, integration engineers, system testers, software developers, field service technicians, and others who work with DICOM and HL7.

#### **Do you need to manipulate DICOM files?**

- View, edit, or print the contents of a DICOM dataset (file)
- Apply filters to a DICOM file or collection of DICOM files
- De-identify (anonymize) a DICOM file to remove PHI
- Create a sample DICOM file in a particular transfer syntax
- Convert a DICOM dataset to a new transfer syntax
- Convert a DICOM image to another image format: JPEG, PNG, BMP, GIF, TIFF...
- Convert a PDF file to a DICOM encapsulated PDF file
- Diagnose problems with a DICOM dataset
- Extract DICOM SR tags for use in dictation reporting templates
- Lookup tag, element, and UID values in a DICOM dictionary
- Create an index for a collection of DICOM datasets

#### **Do you need to manage DICOM communications?**

- C-Store a DICOM dataset to a DICOM store server
- Log the DICOM communication between a client and server
- Stress-test a DICOM store server by sending it auto-generated study data
- Query a PACS for particular DICOM data or query a worklist server for today's scheduled patients
- Send a DICOM C-Move request or DICOM Verification (Echo/Ping) message
- Run a DICOM client or server (echo, store, query, MWL, etc.)  
to test your own application or device for connectivity or functionality

#### **Do you need to send or receive HL7 messages?**

- Produce, send, and receive HL7 messages (v2.x)
- Log HL7 communication
- Send or receive HL7 ACKs

Includes both GUI and command-line utilities that may be used independently or scripted for testing.



## PowerTools DICOM Utilities

- DICOM File Editor**
  - View, edit, and modify the contents of a DICOM dataset/file
  - Visualize the patient, study, series and instance hierarchy
  - View DICOM images for testing and development purposes; supports drag-and-drop
  - Extract image and header data to JPEG, PNG, BMP, GIF, TIFF, Animated GIF, plain text and more
  - View and save encapsulated PDF elements, if present
  - Apply filters (tag morphing) to a DICOM dataset
  - View dataset/file contents in ASCII and in hexadecimal formats
  - Search the contents of a DICOM dataset; synchronize viewing of header tags between datasets
- DICOMDIR Creator**
  - Create DICOM media from a directory of DICOM datasets on disk
- DICOM Filter**
  - Create, store, or retrieve complex user-defined filters for modifying DICOM datasets
  - Apply filters to one or more studies, series, or datasets in an automated way
  - Anonymize (de-identify) DICOM datasets, series, or studies. Conforms to the DICOM Attribute Confidentiality Profile (DICOM PS 3.15: Appendix E, formerly Supplement 142)
  - Apply pixel blanking or blinding to anonymize PHI burned into images
- Dictionary Finder**
  - Look up information from the DICOM data dictionary
  - See values and meanings for tags, elements, and UIDs
- Study Generator**
  - Generate studies automatically; a configurable delay may be added between generated studies
  - Send studies, series, and images to the console, file system, or a DICOM store server, using single or multiple associations, sequentially or in parallel, with your preferred transfer syntax
  - Customize images with study information, file size, background image, and burned-in overlay
  - Create and store configuration profiles for flexible and efficient testing
- PDF To DICOM**
  - Choose one or more PDF files and enter header data from a configurable, pre-populated template
  - Save as a DICOM Encapsulated PDF dataset to the file system or store directly to a DICOM store server
- DICOM Indexer**
  - Categorize your repository of test data
  - Create a spreadsheet of selected DICOM elements found in datasets saved in the filesystem
- Structured Report Extractor**
  - Extract tag data from DICOM Structured Reports (SRs)
  - Generate dictation report field mappings for the Compass router dictation integration option
  - View and verify extracted SR data
  - Confirm mapping names and units; summarize auto-text data generated
- App Launcher**
  - Convenient application for launching PowerTools GUI utility programs

## DICOM Clients (SCUs) and Servers (SCPs)

Separate DICOM client and server applications that may be used for standalone testing purposes. Includes both GUI and console versions.

- Store
- Verification (Echo/Ping)
- Modality Worklist
- Query

## HL7 Message Sender and Receiver

- HL7 Sender**
  - Produce and send HL7 v2.x messages over MLLP (Minimal Lower Layer Protocol)
  - Define messages using an editable template
  - Log HL7 communication traffic
  - Wait for ACKs and communicate via TLS/SSL
  - Apply mapping rules to generate dynamic content in messages with customized values
- HL7 Receiver**
  - Receive and display HL7 v2.x messages
  - Log HL7 communication traffic
  - Send ACKs and simulate communication delays
  - Communicate via TLS/SSL