

DicomObjects

Easy to use DICOM toolkits for .NET & COM

The DicomObjects toolkits have allowed over a thousand developers and other users around the world to easily incorporate DICOM into their programs since 1999. Versions are available for both the ActiveX/COM environment, and as a native .NET DLL.

DicomObjects is designed to make DICOM development very simple, hiding most of the complexities within the toolkit, giving the developer a simple high-level API which can be used for any application which needs to use DICOM, whether that is a simple viewer, a worklist server, or a full-scale PACS. All have been accomplished many times with DicomObjects, and examples for these, and many more applications are available for download.

DicomObjects can be used with a variety of development tools, such as Visual Studio, Delphi, Access, or even web pages.

Examples of use:

- Viewing applications
- Intelligent Image routing & Teleradiology
- Worklist servers
- Quality assurance
- "On-the-fly" data manipulation
- Image archiving and storage
- Primary image creation
- Zero footprint viewers.

The support staff at Medical Connections are happy to help those "new" to DICOM, and pride themselves on introducing new developers to the subtleties of DICOM.

DicomObjects is licensed on a "royalty-only" basis, so there is no "up-front" fee, and you only need to buy licenses as and when you sell copies of products which use it to your customers. A free 60 day trial is available from: www.medicalconnections.co.uk/DicomObjects.

Several features have recently been added to DicomObjects:

- Intrinsic 3D display (MPR, MIP and VR)
- JPIP (server and client)
- Enhanced Multi-frame image support.

+ Other services:

Support, consultancy and development

We are happy to use our skills to assist anyone else needing help using DICOM in their applications, whether using DicomObjects or not. Commercial consultancy, and custom program development are available – contact us as overleaf for details.

XdsObjects

Following the success of DicomObjects for DICOM, Medical Connections introduced XdsObjects, a similar toolkit to simplify the development of applications which conform to the IHE XDS family of profiles.



DicomObjects technical details

Security

- Transport Layer Security (TLS) for network operations
- File encryption (.NET only)

Extensibility

- Custom codecs for private transfer syntaxes may be integrated
- Newly defined and private elements can be added to the internal dictionary

The .NET Version is available as both CLR 2.0 and CLR 4.0 (client) DLLs, which are architecture neutral, allowing use on both 32 and 64 bit machines.

The COM/ActiveX Version is available as both 32 and 64 bit versions.

General

- High level API which abstracts the DICOM functionality into simple intuitive coding constructs
- Many features, such as association negotiation, have sensible defaults, but allow them to be over-ridden to allow more control when required
- All features are exposed to the API, allowing developers to add custom behaviour
- All standard DICOM operations are supported as both client and server, including modality worklist, MPPS etc.
- Support for all common transfer syntaxes, including JPEG 2000
- Multi-threaded server support, allowing efficient multi-client simultaneous operations.
- Reading and writing of DICOMDIR files
- Creation of new image and non-image objects
- The API is SOP class neutral, supporting creation, reading, writing and transmission of all SOP classes, including structured reports
- Import/Export between external video and multi-frame DICOM
- All display features may be applied equally to other output formats such as bitmaps
- JPIP (server and client - .NET version only)
- Extensive workarounds to cope with the "bad DICOM" commonly found in the real world.

Viewer

- Native display window (custom control)
- Flexible multi-image arrangement
- All common display functions such as windowing, panning, zoom, flip rotate etc.
- Full greyscale display pipeline, including all lookup tables
- Flexible rendering and smoothing options
- 3D Display capability
 - MPR: Multi-planar reconstruction
 - MIP : Maximum Intensity Projection
 - VR: Volume Rendering
- Wide range of annotations, rulers and measurements
- Multi-frame (cine) display
- RAM-efficient display direct from disk, with flexible caching options
- Full set of mask subtraction options (including pixel-shift etc.)
- Supports all defined photometric interpretations for data between 8 and 32 bits
- Direct (single operation) display of Presentation States, and creation of new presentation states to capture current display state
- All SOP classes supported
- Display of encapsulated CDA and PDF (using Adobe Reader).



We have over 10 years of experience working with Medical Connections and have used their DicomObjects toolkit extensively in our PACS solution software. There are few companies that understand DICOM like Medical Connections - not just their expert knowledge of the standard itself but importantly how it can best be integrated - this comes from their unique insight into the medical imaging community; their toolkit is as fresh today as it was when we first partnered with them and their service and support is always outstanding.

Frank Baker – General Manager CoActiv Medical, Connecticut, USA