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(Application object updated with new property and new methods on January 10, 2007)

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Automation Controls Introduction

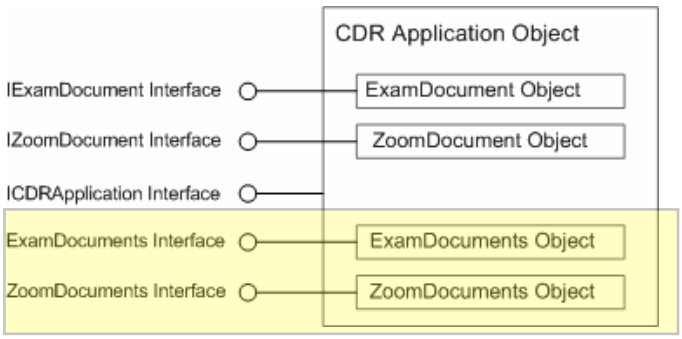
Automation is one of four modules in CDR DICOM for Windows software. CDR DICOM Automation classes provide the means for controlling the CDR DICOM client application from a third-party integration. Collectively, these classes replace the DDE interface, which was the principal method for integration with previous, non-DICOM versions of CDR software. The five classes include: an Application class (the top-level instance that exposes methods for the document level classes), an ExamDocument class (that loads and displays patient exams), an ExamDocuments class (that holds references to all open ExamDocument objects), a ZoomDocument class (that loads and displays images), and a ZoomDocuments class (that holds references to all open ZoomDocument objects).

Automation SDK Version	Release Date	Current with . . .	Release Date
4.1	November 2005	CDR DICOM 3.5 Service Release 1 (v4.1.1 Build 101)	July 2005
3.5	January 2004	CDR DICOM 3.5 General Release (Build 1136)	January 2004
3.0.1	May 2003	CDR DICOM 3.0 Service Pack 1 (Build 1046)	January 2003
		CDR DICOM 3.0 General Release (Build 1025)	August 2002

The following items were added to the latest version of this SDK.

Application Version Property
Application Exam Documents Method
Application Zoom Documents Method
Exam Documents Count Property
Exam Documents Current Exam Property
Exam Documents Item Property
Zoom Documents Count Property
Zoom Documents Current Exam Property
Zoom Documents Item Property

Object Hierarchy (Automation)



Automation Figure 1. Automation Object Hierarchy

Application Object Overview

Class GUID: {E7D0A248-0C4C-11D6-8294-00B0D0403E92}
Program ID: "CDR.Application"

The CDR Application object is the top level automation object and represents a running instance of the CDR DICOM for Windows Client application. This is the primary automation object that is instantiated by an automation client. Using this object, the ExamDocument and ZoomDocument objects can be created and manipulated.

To instantiate the CDR Application object in Visual Basic or Scripting use the CreateObject function passing in the program ID, "CDR.Application".

```
Dim cdr
Set cdr = CreateObject("CDR.Application")
MsgBox cdr.FullName
cdr.Quit
```

To retrieve a current exam:

```
' Create a CDR object
Dim app, docs
Set app = CreateObject("CDR.Application")

'' Get the current exam from the collection of exam docs
Set docs = app.ExamDocuments
Set curExam = docs.CurrentExam
```

Application Object Properties

Application.Application Property

Member of the Application object of the CDRDicom library.

DATA TYPE
Object

ACCESS
Read-Only

DESCRIPTION
Returns a reference to the Application object itself

Application.FullName Property

Member of the Application object of the CDRDicom library.

DATA TYPE
String

ACCESS
Read-Only

DESCRIPTION
Returns the fully qualified path to the location where the CDR DICOM Application server is running

Application.Name Property

Member of the Application object of the CDRDicom library.

DATA TYPE
String

ACCESS
Read-Only

DESCRIPTION
Returns the name of the Application server - "CDR Dicom for Windows"

Application.Parent Property

Member of the Application object of the CDRDicom library.

DATA TYPE
Object

ACCESS
Read-Only

DESCRIPTION
Returns a reference to the parent (Application) object, which in this case is the application object itself. It is the same as the Application property.

Application.SecurityFlag Property

Member of the Application object of the CDRDicom library.

DATA TYPE
Long

ACCESS
Read / Write

DESCRIPTION
Turns on / off HIPAA security features. This allows the client automation program to control whether or not certain features in CDR should be enabled. Each feature is identified by a bit-flag. Setting the bit-flag to 1 causes the feature to be disabled; setting it to 0 enables it. In other words, if the SecurityFlag property is set to 0, all features are enabled; if it is set to -1 (0xFFFFFFFF), all security features are disabled. Below is a list of the features and bit masks:

```
typedef enum     _SECURITY_FLAGS {
        SECURITY_NO_SECURITY = 0x0000,
        SECURITY_DISABLE_OPEN = 0x0001,
        SECURITY_DISABLE_NEW = 0x0002,
        SECURITY_DISABLE_EMAIL = 0x0004,
        SECURITY_DISABLE_WEBVIEW = 0x0008
} SECURITY_FLAGS;
```

For example, to disable the Open and New functions in CDR, set this property to 3 (SECURITY_DISABLE_OPEN \ SECURITY_DISABLE_NEW).

Application.Version Property

Member of the Application object of the CDRDicom library.

DATA TYPE
Object

ACCESS
Read-Only

DESCRIPTION
Returns CDR version with Major number in upper word and Minor number in lower word.

Application Object Methods

Method Application.CreateDataQuery

Member of the Application object of the CDRDicom library.

SYNTAX
Method Application.CreateDataQuery( )

RETURNS
Object

PARAMETERS
Null

DESCRIPTION
Creates a CDR data query control. Please refer to the CDR Data Controls SDK for additional help on using the CDR Data Query control.

Method Application.CreateExamDocument

Member of the Application object of the CDRDicom library.

SYNTAX
Method Application.CreateExam Document()

RETURNS
ExamDocument object

PARAMETERS
Null

DESCRIPTION
Creates a new Exam Document object. This object represents the primary Exam / Patient window in CDR

Method Application.CreateZoomDocument

Member of the Application object of the CDRDicom library.

SYNTAX
Method Application.CreateZoomDocument( )

RETURNS
Object

PARAMETERS
Null

DESCRIPTION
Creates a new Zoom Document (Zoom Window)

Method Application.ExamDocuments

Member of the Application object of the CDRDicom library.

SYNTAX
Method ExamDocuments( )

RETURNS
Object

PARAMETERS
Null

DESCRIPTION
Returns a collection of Exam Documents

Method Application.Quit

Member of the Application object of the CDRDicom library.

SYNTAX
Method Application.Quit( )

PARAMETERS
Null

DESCRIPTION
Call this function to close all windows in CDR and quit the application

Method Application.SetUserCtrl

Member of the Application object of the CDRDicom library.

SYNTAX
Method Application.SetUserCtrl( )

PARAMETERS
Null

DESCRIPTION
Call this function to give control of the CDR application lifetime to the user. Normally, if the Application object goes out of scope, then the object will be destroyed and the CDR Application will be terminated. In some cases, however, it may be desirable to launch the application and give the user control so that it does not quit when the automation client program has finished executing its code. This function need only be called once and it is not reversible. Once the user has been given control, the CDR application can only be terminated by the user.

There are certain circumstances in which CDR will automatically assign the user control, even if the automation client has not called this function. For example, if an ExamDocument is shown and the user elects to create a new ExamDocument

window by using the New Patient Window command from the main menu, then the user is given control. This is because a new instance of an ExamDocument was created by the user, not by the automation client.

Method Application.ZoomDocuments

Member of the Application object of the CDRDicom library.

SYNTAX
Method ZoomDocuments( )

RETURNS
Object

PARAMETERS
Null

DESCRIPTION
Returns a collection of Zoom Documents

Application Events

Event Application.OnAcquireImage

Member of the Application object of the CDRDicom library.

SYNTAX
Event Application.OnAcquireImage(image As Object)

PARAMETERS
Image -- Reference to the CDRImage that was just acquired

DESCRIPTION
This event is fired when a new image is acquired in CDR. The client application may use the CDRImage (see CDR Data Controls SDK) to inspect, display, export, or otherwise process the image. Caution should be used when writing code for this event as the event is fired after acquisition, but prior to displaying the image to the user.

Event Application.OnQuit

Member of the Application object of the CDRDicom library.

SYNTAX
Event Application.OnQuit( )

PARAMETERS
Null

DESCRIPTION
This event is fired when the application is quitting

ExamDocument Object Overview

This is a list of all members of the ExamDocument object.The ExamDocument object represents the main patient / exam frame window in CDR. It is used to display all the exams for a patient in tabbed windows. The main toolbar, menu bar, status bar, and Exam Information window are all shown in this frame. This object may be used to load existing patient exams or to initiate the creation of new exams.

The ExamDocument contains many of the functions that were traditionally used by integrators implementing the DDE interface. These include the DDE ReadExam function (which is replaced by the ExamDocument.LoadExam() method) and the DDE NewExam function (which is replaced by the ExamDocument.NewExam() method).

ExamDocument Object Properties

ExamDocument.Height Property

Member of the ExamDocument object of the CDRDicom library.