

DICOMReader

ADMINISTRATION GUIDE

Version 4.0 Release INT EN - 005R

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2009-11-20



TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
1 CE CONFORMANCE STATEMENT	4
2 INTRODUCTION	5
2.1 System Requirements	5
2.2 DICOMReader features	5
2.2.1 BASIC features	5
2.2.2 Pro features:	Error! Bookmark not defined.
3 INSTALLATION AND LICENSING.....	7
3.1 Installation.....	7
3.2 Licensing	7
3.2.1 Getting your hardware fingerprint	8
3.2.2 Installing a license	8
3.2.3 Uninstalling the license	8
4 OPTION SETTINGS.....	10
4.1 "General" Configuration	10
4.2 „Media“	11
4.3 "Workflow"	14
4.4 "DICOM"	15
4.5 "Licensing"	18
4.6 "Advanced"	18
4.7 DICOM Tags	19
5 FAQ (Frequently Asked Questions)	21
5.1 The DICOMReader is unable to send DICOM data to your viewer.	21
5.2 The DICOMReader does not recognize TIFF, JPEG or BMP images.	21
5.3 There are DICOM files on the CD / DVD but the viewer is unable to convert them.	21
5.4 You have problems reading STENTOR files.	21
5.5 The viewing application hangs / crashes when opening images converted by the DICOMReader.....	22
6 LIST OF ABBREVIATIONS.....	23
7 INDEX	24

0 REVISION HISTORY

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001D	2009-10-28	Sönke Stropahl	Initial document draft
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1 CE CONFORMANCE STATEMENT

IMAGE Information Systems Ltd. does not accept liability for the wrong or unprofessional use of the described software (see the End User License Agreement).

DICOMReader is certified as a medical device according to Council Directive 93/42/EEC concerning medical devices.



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All patient names used in this manual are completely fictitious.

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Throughout this booklet trademark names are used. Rather than adding a trademark symbol each time a trademark name is used, we state that we are using the names only in an editorial fashion and to the benefit of the trademark owner with no intention of infringing of the trademark.

We assume no responsibility for information and description as far as third-party products are concerned.

We are dedicated to improving and enhancing this software. Consequently, the information in this manual is subject to change without notice. Current information about product improvement can be received from the DICOMReader homepage <http://www.dicomreader.com> or IMAGE Information Systems homepage <http://www.image-systems.biz>.

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2 INTRODUCTION

The DICOMReader is a software tool that automatically scans any removable data carrier (e.g. DVD) inserted into your computer for images.

All contained files will be checked; DICOM images will be analyzed and converted if necessary. Afterwards, valid DICOM images will be transmitted via DICOM STORE to your viewer or PACS.

The DICOMReader allows parallel processing (multi-threading) of multiple media at a time as well as adaptation of external data to your local range of patient IDs and accession numbers.

The DICOMReader is available in two different versions, which you will find explained in chapter 3 "INSTALLATION AND LICENSING". It will run as a **PRO** version for **15 days** after the installation and **15 days** thereafter as a basic version. After these 30 days the application stops working unless a full license is obtained and the software is activated with a specially created activation key.

2.1 System Requirements

DICOMReader Software is running on Intel-compatible computers and runs at least on a Microsoft Windows 2000 Operating System (or higher versions). A network device has to be configured for the usage of the TCP/IP network protocol.

Minimal system requirements are:

- Windows XP
- Pentium III 1GHz
- minimum 512 MB main memory
- minimum 5 GB hard disk (for program files and the volume of the data to be saved temporarily)

2.2 DICOMReader features

2.2.1 BASIC features

- Easy import of external patient CD/DVD/USB media by:
 - CD/DVD media detection
 - USB media detection
 - Completely automatic media scan or manual scan of directories
- Optimized use of screen display by minimization of the icon to the system tray bar
- Support of lossy and lossless JPEG and JPEG 2000 as well as lossless RLE compressed encoding and fully automatic compression
- Manual assignment of own accession numbers and IDs to read-in exams for reliable retrieval
- Acceleration of the HIS/RIS workflow by:
 - Configuration of an unlimited number of DICOM destinations, also by defining rules
 - Automatic sending of images to a standard destination (automatic creation of accession numbers)
 - Database to store media imports/exports
 - User-defined status monitor

- Enhanced workflow windows:
 - Different modification levels (patient or study level)
 - Possible assignment of same accession number to all studies of a particular patient on a medium
- Comprehensive, configurable log system with flexible password protection(Enhanced logging features for all actions)
- Optional anonymization of DICOM patient data for usage in multi-center studies

2.2.2 Pro features

- Easy import of external patient CD/DVD media by:
 - Intuitive tree-based selection process of studies, series or images
 - More compatibility by automatic exclusion of defined DICOM objects
- Acceleration of the HIS/RIS workflow by:
 - Assignment of exam and patient data by Worklist and PACS query
 - Automatic matching of patient data between PACS or Modality Worklist server and the data carrier according to demographic data
 - Rule-based automatic modification of DICOM tags
- Verification of demographic data with existing PACS data while reading
- Consistent documentation of all applied changes in DICOM tags
- Legal disclaimer for external data optionally burned onto each image or added as first image of a series

3 INSTALLATION AND LICENSING

3.1 Installation

The DICOMReader software download includes all installation files.

To install the DICOMReader software on your hard disk, please follow the instructions given below:

1. Download the DICOMReader from the web page www.image-systems.biz into a directory of your choice.
2. Locate the directory using Windows Explorer and double-click on "DICOMReader4_setup.exe".
3. Follow the instructions of the installation wizard to finish the installation of the DICOMReader software on your hard disk.

After finishing the installation process, you should see the following file structure in the installation folder:

```
\
    DICOMReader.exe (the application)
\lang (language files)
    en.txt
    de.txt
    es.txt
    jp.txt
    ...
\doc (user documentation)
    Administration Guide.pdf
    DICOM Conformance Statement.pdf
    User manual.pdf
```

To reinstall or uninstall the DICOMReader software, use the software manager of your operating system.

3.2 Licensing

There are two different licenses available for DICOMReader V4.0: "DICOMReader BASIC" and "DICOMReader PRO".

The DICOMReader will run in the PRO demo mode for 15 days after installation and will run in the basic demo mode for an additional 15 days. The evaluation period will finish after 30 days and the software will stop working unless the DICOMReader is licensed by purchasing a software license.

One license has to be purchased for each DICOMReader client. This license is machine-based and therefore comes with a mechanism to identify the current computer hardware. The software will create a hardware fingerprint the first time it is installed on the computer. In order to obtain the activation code, please send your **hardware fingerprint** and the software **version number** to your local distributor. After the purchase, you will receive an activation code by email for a permanent activation of the DICOMReader. Please note that too many changes of your hardware will lead to non-recognition by the software and will turn the license invalid.

3.2.1 Getting your hardware fingerprint

Open the "options" dialog and select "license".

The respective window will display information about the current license (certificate) and the current hardware fingerprint.

3.2.2 Installing a license

After purchasing a DICOMReader BASIC or PRO license and sending the hardware fingerprint to your distributor, you will receive the license data including a **registration name** and **serial key**. Follow the instructions mentioned below to apply the license data and activate it.

- Open the license dialog
- Click on "install license"
- Enter the data received (name and key)
- Finish with "OK"
- You will be prompted with a message if the installation succeeds.

NOTE:

If you are running Microsoft Vista or Windows 7, you will need to run the application "as administrator" in order to permanently store the license information. Click on the Windows Start button and find the entry for DICOMReader 4; right-click the entry and choose 'Run as administrator'. After the license has been accepted, you can run the software normally.

3.2.3 Uninstalling the license

In case you want to use your DICOMReader license on another computer, you can transfer the license. To do so, please follow the steps given below.

NOTE:

The hardware fingerprint will change during the uninstalling procedure.

- Open the license dialog
- Click on "Uninstall license"
- Confirm the uninstalling process
- A dialog will inform you about the uninstalling process
- A text file with uninstalling information will be created in your DICOMReader installation folder with the format:

"uninstallkey_" + date + time + ".txt" (e.g. "uninstall_key20091105200313.txt)

- Send the **text file** and your **new fingerprint** to your local distributor to obtain a **new serial key**.

4 OPTION SETTINGS

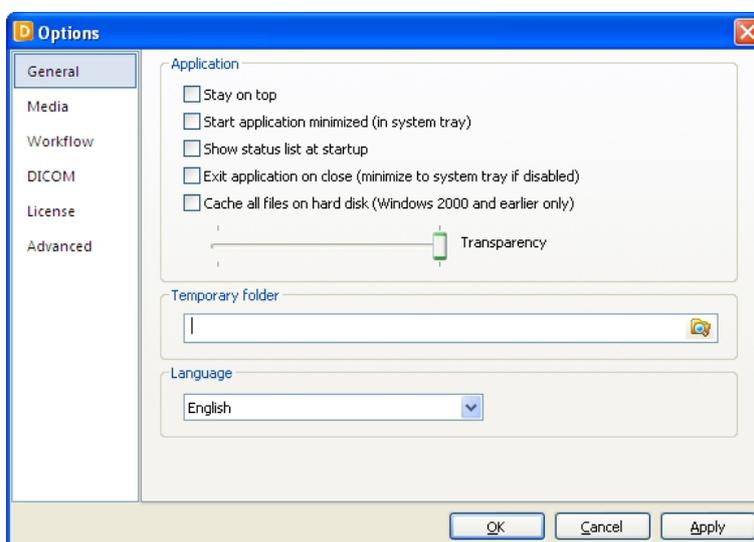
Open the “Options” dialog by clicking on the  icon in the DICOMReader’s main window or by right-clicking on the DICOMReader’s system tray icon and select “Options”.

The “Options” dialog allows the definition and modification of the following features:

NOTE:

The configuration is stored as “dicomreader.xml” in the XML format. The location of the configuration file depends on the user’s operation system. Systems running on Windows XP or a previous version will store the data under “Documents and Settings\All Users\DICOMReader\conf\” while systems running on Vista or Windows 7 will store it under “Program Data\DICOMReader\conf\”.

4.1 “General” Configuration

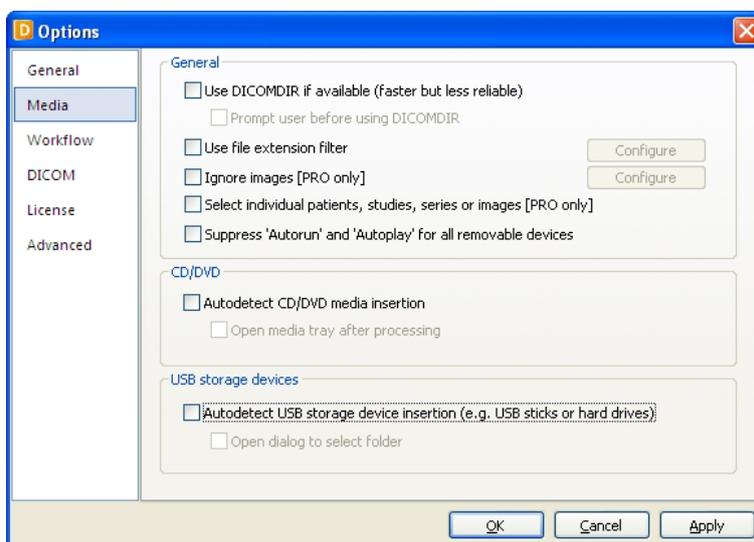


“Options” dialog – “General” tab

OPTION	DESCRIPTION
Stay on top	If enabled, the application window is always shown in the foreground, even if minimized and if you are working with other applications.
Start application minimized (in system tray)	If enabled, the application will start without opening the main window and will show an icon in the system tray only. 
Show status list at startup	If enabled, the application will display the current status list containing information of all active jobs upon startup.
Exit application on close (minimize to system tray if disabled)	If enabled, the application will shut down completely by closing the main window.
Cache all files on hard disk (Windows 2000 only)	If enabled, all files will be cached using the memory capacity of the hard disk.
Transparency	Using this controller, the transparency level of the user interface can be regulated.

Temporary Folder	This box defines the cache directory. You may either type the path manually or choose it from the explorer by clicking the folder icon.
Language	This drop down menu defines the language of the user interface.

4.2 „Media“

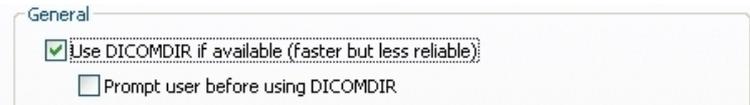


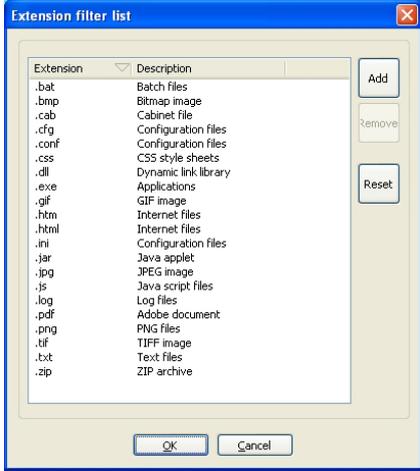
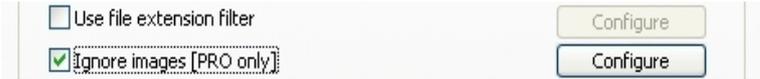
“Options” dialog – “Media” tab

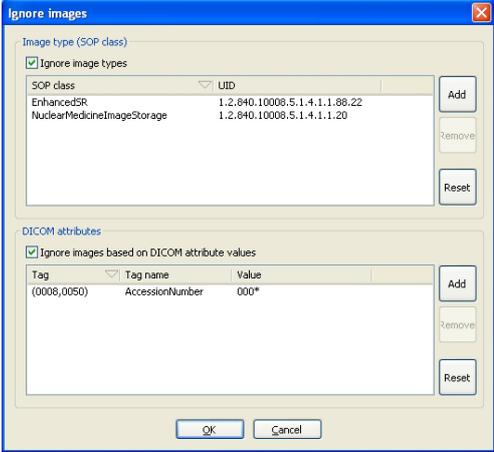
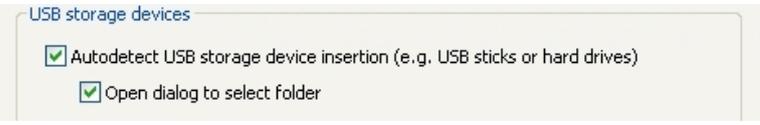
NOTE:

DICOMReader can either use or ignore a DICOMDIR file if present in the root directory of a media or folder. A DICOMDIR file is often included in the root folder of patient CDs. It works like an index for the image files on the media.

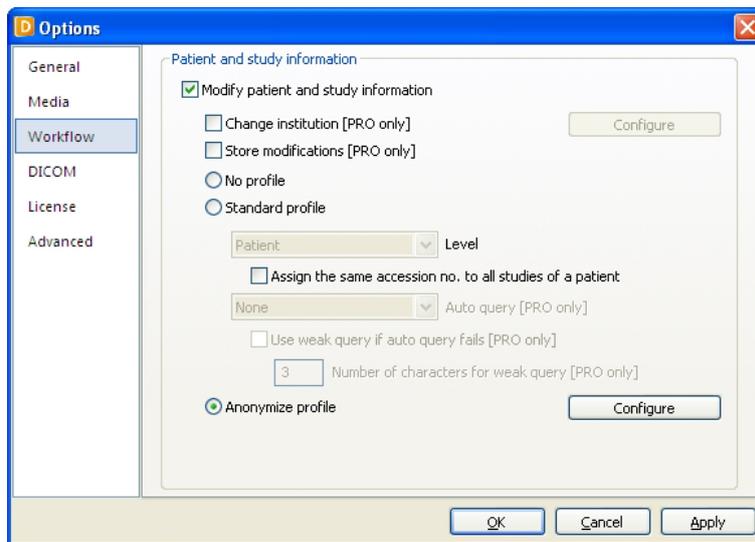
DICOMDIR file usage is faster than a complete scan of all files but may contain incorrect or missing information. A file scan is the safer but slower procedure.

OPTION	DESCRIPTION
Use DICOMDIR if available (faster but less reliable)	If disabled, the DICOMDIR file (if present) is ignored and all information is gathered from the DICOM files itself. This option is the slowest but safest one. If enabled, DICOMReader will use the DICOMDIR file. This option is faster than a media scan but not as reliable.
Prompt user before using DICOMDIR	If enabled, the user will be prompted to either use or ignore the DICOMDIR file. 
Use file extension filter	If enabled, files with extensions matching those in the extension list will be excluded from media scanning.

	 <p>General</p> <p><input type="checkbox"/> Use DICOMDIR if available (faster but less reliable)</p> <p><input type="checkbox"/> Prompt user before using DICOMDIR</p> <p><input checked="" type="checkbox"/> Use file extension filter</p> <p>Configure</p>																																												
Configure	<p>By default, DICOMReader already comes with a list of file extensions as shown in the screenshot below. To add a new file extension to the list simply click on the "Add" button and add the new file extension together with an optional description. To edit an already existing entry simply double-click on it and edit it.</p> <p>You also have the possibility to remove selected entries or reset all changes that you have made to the respective buttons.</p>  <table border="1"> <thead> <tr> <th>Extension</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>.bat</td><td>Batch files</td></tr> <tr><td>.bmp</td><td>Bitmap image</td></tr> <tr><td>.cab</td><td>Cabinet file</td></tr> <tr><td>.cfg</td><td>Configuration files</td></tr> <tr><td>.conf</td><td>Configuration files</td></tr> <tr><td>.css</td><td>CSS style sheets</td></tr> <tr><td>.dll</td><td>Dynamic link library</td></tr> <tr><td>.exe</td><td>Applications</td></tr> <tr><td>.gif</td><td>GIF image</td></tr> <tr><td>.htm</td><td>Internet files</td></tr> <tr><td>.html</td><td>Internet files</td></tr> <tr><td>.ini</td><td>Configuration files</td></tr> <tr><td>.jar</td><td>Java applet</td></tr> <tr><td>.jpg</td><td>JPEG image</td></tr> <tr><td>.js</td><td>Java script files</td></tr> <tr><td>.log</td><td>Log files</td></tr> <tr><td>.pdf</td><td>Adobe document</td></tr> <tr><td>.png</td><td>PNG files</td></tr> <tr><td>.tif</td><td>TIFF image</td></tr> <tr><td>.txt</td><td>Text files</td></tr> <tr><td>.zip</td><td>ZIP archive</td></tr> </tbody> </table>	Extension	Description	.bat	Batch files	.bmp	Bitmap image	.cab	Cabinet file	.cfg	Configuration files	.conf	Configuration files	.css	CSS style sheets	.dll	Dynamic link library	.exe	Applications	.gif	GIF image	.htm	Internet files	.html	Internet files	.ini	Configuration files	.jar	Java applet	.jpg	JPEG image	.js	Java script files	.log	Log files	.pdf	Adobe document	.png	PNG files	.tif	TIFF image	.txt	Text files	.zip	ZIP archive
Extension	Description																																												
.bat	Batch files																																												
.bmp	Bitmap image																																												
.cab	Cabinet file																																												
.cfg	Configuration files																																												
.conf	Configuration files																																												
.css	CSS style sheets																																												
.dll	Dynamic link library																																												
.exe	Applications																																												
.gif	GIF image																																												
.htm	Internet files																																												
.html	Internet files																																												
.ini	Configuration files																																												
.jar	Java applet																																												
.jpg	JPEG image																																												
.js	Java script files																																												
.log	Log files																																												
.pdf	Adobe document																																												
.png	PNG files																																												
.tif	TIFF image																																												
.txt	Text files																																												
.zip	ZIP archive																																												
Ignore images (PRO only)	<p>If enabled, DICOMReader will disable defined images in the "Select studies and series" dialog.</p>  <p><input type="checkbox"/> Use file extension filter</p> <p><input checked="" type="checkbox"/> Ignore images [PRO only]</p> <p>Configure</p>																																												
Configure	<p>In the upper part of the configuration dialog, you can add filters based on the SOP class. To add or edit a filter, simply check the "Ignore image types" checkbox and click on the "Add" button to add a new filter or double-click on an existing filter to edit it. In the following dialog you can choose to add/edit the filter by class name, Unique Identifier (UID) or a user defined UID. For the first two options, you can select the appropriate filter values from a list included in the DICOMReader. The last option has to be entered manually.</p> <p>In the lower part you can add filters based on DICOM attribute values. Similar to the upper part, simply check the "Ignore images based on DICOM attribute values" checkbox and click on the "Add" button to add a new filter or double-click on an existing filter to edit it. In the following dialog, you first have to select the attribute from a list of Common tags or enter the respective Group and Element values manually. Then you can assign a value to this attribute in the lower part. It is allowed to use wildcards here.</p>																																												

	<p>You also have the possibility to remove selected entries or to reset all changes that you have made to the respective buttons.</p> 
<p>Select individual patients, studies, series or images (PRO only)</p>	<p>If enabled, the user will be asked to manually select studies, series or images.</p>
<p>Suppress 'Autorun' and 'Autoplay' for all removable devices</p>	<p>If enabled, the automatic start of software or files stored on the medium will be suppressed.</p>
<p>Autodetect CD/DVD media insertion</p>	<p>If enabled, the inserted CD/DVD medium will be detected automatically.</p>
<p>Open media tray after processing</p>	<p>If enabled, the CD/DVD drive will be ejecting automatically after the scanning process.</p> 
<p>Autodetect USB storage device insertion (e.g. USB medium or hard drives)</p>	<p>If enabled, inserted USB storage devices will be detected automatically.</p>
<p>Open dialog to select folder</p>	 <p>If enabled, the user is automatically prompted to select a folder.</p>

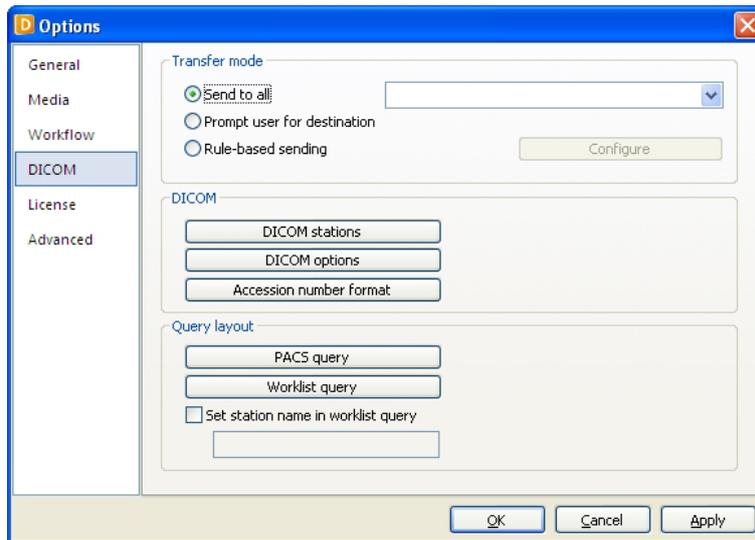
4.3 "Workflow"



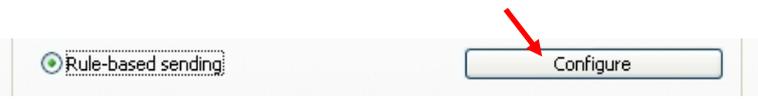
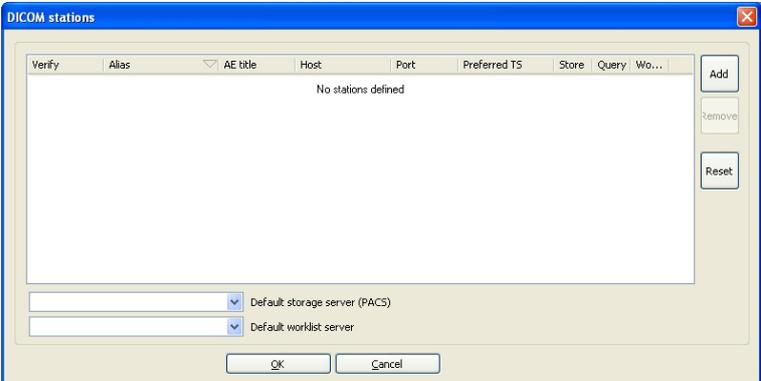
"Options" dialog - "Workflow" tab

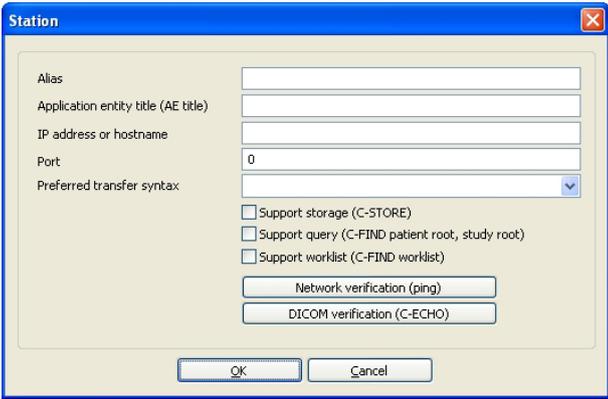
OPTION	DESCRIPTION
Modify patient and study information	If enabled, DICOMReader offers functionalities to modify scanned patient and study information.
Change institution (PRO only)	If enabled, the institution data embedded in each image will be changed automatically according to the data configured. Use the 'Configure' button to configure the respective institution values. Just enter your institution data and the program will overwrite the data of other institutions. <div data-bbox="794 1272 1209 1435" data-label="Image"> </div>
Store modifications (PRO only)	If enabled, changes will be stored in each DICOM image. The data will be stored in the "Original Attributes Sequence" (0400,0561).
No profile	Disables all profiles. The functions "change institution" and "store modifications" are still available.
Standard profile	Enables the standard profile for the workflow which offers changing demographic and study information. Several tools are available to request information from a PACS (PRO version only), a Modality Worklist Server (PRO version only) or to modify the data manually.
Anonymize profile	Anonymization profile to automatically delete personal data from datasets. Refer to the "DICOM Conformance Statement" to read information about which DICOM attributes will be altered by the anonymization profile.

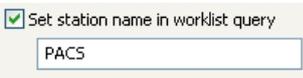
4.4 "DICOM"



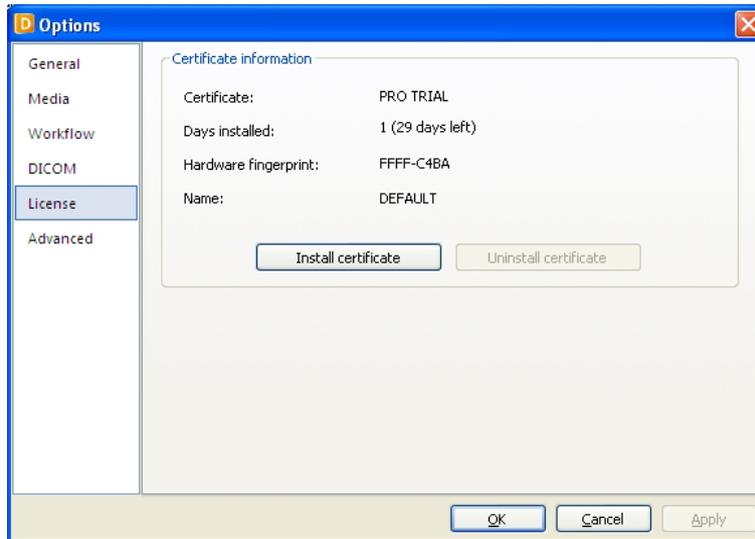
"Options" dialog – "DICOM" tab

OPTION	DESCRIPTION
Send to all	If enabled, all data (images) will be sent to the chosen DICOM station. Select the DICOM station from the drop-down menu.
Prompt user for destination	If enabled, the user will be asked to select a destination to send the data to. Click on "DICOM stations" in order to configure the available destinations.
Rule-based sending	<p>If enabled, the DICOM header will be checked for predefined rule-based destinations. Use 'Configure' to define the rules. Refer to chapter 4.2 for more information about how to configure transfer rules.</p> 
DICOM stations	<p>Opens the configuration dialog in which DICOM destinations can be added, modified or deleted.</p> 

Add	<p>Allows adding DICOM stations.</p> 
Alias	<p>A freely chosen name for the station entry. The name can be e.g. the AE title (see below) and it is only used internally by the DICOMReader.</p>
Application entity title (AE title)	<p>The application entity title of the DICOM application entity. It is a unique identifier for a DICOM device. Multiple usage of the same AE title within the same configuration file will result in a non-working environment.</p>
IP address or hostname	<p>The hostname or IP network address is used to address the DICOM device in the used network. If a hostname is used, be sure that the local DNS service in the network is able to translate this hostname.</p>
Port	<p>The TCP network port of the host.</p>
Preferred transfer syntax	<p>Choose the preferred syntax for the transfer progress from the drop-down menu.</p> <p>The following transfer syntaxes are available:</p> <ul style="list-style-type: none"> • Implicit VR Little Endian (uncompressed) • Explicit VR Little Endian (uncompressed) • Explicit VR Big Endian (uncompressed) • JPEG (lossy) • JPEG (lossless) • RLE (lossless) • JPEG 2000 (lossless) • JPEG 2000 (lossy or lossless) <p>Depending on the selected syntax, an automatic compression or decompression will be applied to all data before sending it. Information about supported transfer syntaxes of the receiving stations (destinations) can be obtained from the station's DICOM Conformance Statement.</p>
Support storage (C-STORE)	<p>The DICOM station provides the C-STORE service as SCP.</p>

Support query (C-FIND patient root, study root)	Patient Root Query/Retrieve Information Model – FIND” and the “Study Root Query/Retrieve Information Model – FIND”.
Support worklist (C-FIND worklist)	The DICOM station provides the C-FIND service as SCP for the SOP class “Patient Root Query/Retrieve Information Model – FIND”.
Network verification (ping)	Sends a network ping request to the defined IP address or hostname. Note that an enabled firewall on the station may block those requests.
DICOM verification (C-ECHO)	Sends a DICOM C-ECHO request to the defined station. The request will be sent using the defined application entity title, the IP address or hostname and the port. Note that the request also uses the defined application entity title for the DICOMReader (see “Application entity title (AE title)” above). The request may fail if either the defined values are incorrect or the DICOMReader’s application entity title is not defined at the destination (if applicable; refer to the user documentation of the destination).
PACS query	Query layout for C-FIND requests to PACS stations. {Reserved for future profiles and currently not used}
Worklist query	Query layout for C-FIND requests to Modality Worklist server. {Reserved for future profiles and currently not used}
Set station name in worklist query	If enabled the DICOM attribute “Scheduled Procedure Station Name” (0040,0010) will preset for worklist queries, e.g. for the Auto-Query feature. The station name can be set: 

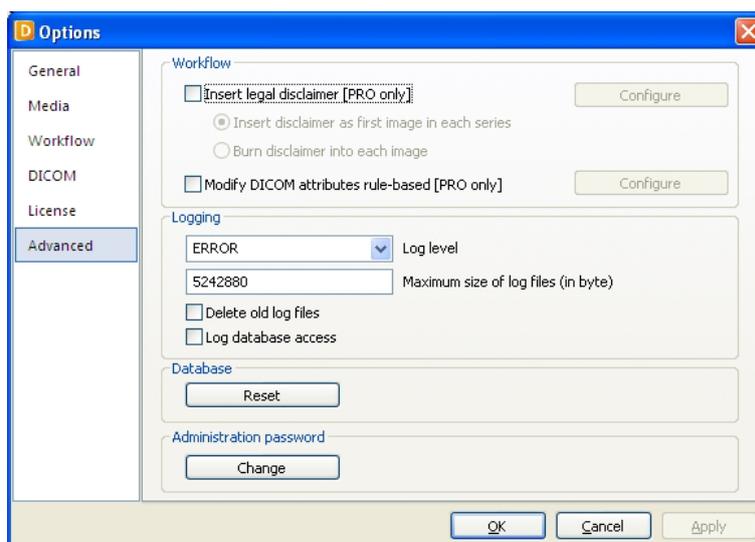
4.5 "Licensing"



"Options" dialog - "Licensing" tab

OPTION	DESCRIPTION
Certificate information	Provides information about the type of license installed.
Days installed	Shows the time the license is installed on the current machine and the time left for evaluation versions.
Hardware fingerprint	Displays the 8-digit hex machine-based fingerprint.
Name	Shows the name of the current license.

4.6 "Advanced"



"Options" dialog - "Advanced" tab

OPTION	DESCRIPTION
Insert legal disclaimer	If you wish to insert a legal disclaimer, you can either add the disclaimer as the first image to each series ("insert disclaimer as first image in each series") or you can brand each image in your study ("burn disclaimer into each image"). The disclaimer has to a "1-bit bitmap" file (mask).
Configure	Offers the possibility to configure a bitmap file, its position and the scale.
Modify DICOM attributes rule-based	You can change certain data automatically by inserting the respective rule. Note that applied changes by these rules will go into effect AFTER any workflow profile (any may overwrite made changes. Refer to chapter 4.1.3 for profile options.
Log level	Choose your log level in DEBUG (most information), VERBOSE, INFO, WARNING, ERROR and NONE (less information). Note that the location of the log file(s) depends on the user's operation system. Systems running on Windows XP or a previous version will store the data under "Documents and Settings\All Users\DICOMReader\log" while systems running on Vista or Windows 7 will store it under "Program Data\DICOMReader\log".
Maximum size of log files	Select the maximum size of the log files.
Delete old log files	The old log files will be deleted. If disabled, log files will be stored using a timestamp when the "maximum file size" has been reached.
Log database access	Any access to the internal database will be logged.
Change	The option dialog can be locked with a password. After the installation, no password is defined. After defining a password, any access to the configuration will require entry of a password.

4.7 DICOM Tags

A rule consists of three parts, namely a "group-element" pair of hexadecimal numbers to point to a DICOM tag, a value that is compared to the value found and a destination the image will be sent to if the rule matches.

Multiple rules can be defined, either for the same DICOM header entry or the same comparative value. The rule-based sending mode of the DICOMReader works on a series level. This means the rules are checked for the first image of a series and the matching rules will be used for all images of a series. There can be multiple destinations for each series.

If no rule matches a series, the defined "standard destination" will be used. If no "standard destination" is defined, the first DICOM station will be used.

Common DICOM Tags:

<i>Tag (Group, Element)</i>	<i>Description</i>	<i>Sample value(s)</i>
(0008,0020)	Study date	20040404
(0008,0022)	Acquisition date	20040404
(0008,0030)	Study time	110622.000
(0008,0032)	Acquisition time	110740.850
(0008,0050)	Accession number	1234
(0008,0060)	Modality	CT, MR, US, SC, OT
(0008,0070)	Manufacturer	TOSHIBA
(0008,0080)	Institution name	Hospital XYZ
(0008,0090)	Referring physician's name	Dr. Newman
(0008,1010)	Station name	INT3
(0008,1040)	Institutional Depart. name	DN1
(0010,0010)	Patient name	John Doe, 1332
(0010,0020)	Patient ID	80126679
(0010,0030)	Patient's birth date	19770415
(0010,0040)	Patient's sex	M,F,U
(0010,4000)	Patient comments	Any comment
(0020,0010)	Study ID	4245
(0020,4000)	Image comments	Any comment

5 FAQ (Frequently Asked Questions)

This section will give answers to some frequently asked questions and provide trouble-shooting.

NOTE:

Basically, if an error occurs, you should send an email including the log file and the configuration file to support@image-systems.biz. This will help us reconstructing the error. Refer to chapter 4 and 4.6 to get more information where the information is stored.

5.1 The DICOMReader is unable to send DICOM data to your viewer.

This can be due to several reasons:

- No destination is selected or configured where to send the data to.
- The destination is not reachable- → The SPC of the target destination (e.g. a viewing station) must be active; you may also check whether the AE Title, hostname / IP address and Port number are valid for the respective destination. Therefore, click on the "DICOM stations" button in the "options" dialog to open the "DICOM station list".
- It was caused by routing problems within a network.
- A firewall disables access to the destination.

5.2 The DICOMReader does not recognize TIFF, JPEG or BMP images.

Images in the TIFF, JPEG or BMP format are not DICOM images. Therefore, they cannot be read-in by the DICOMReader. Please use the import function for your iQ-VIEW / iQ-VIEW PRO viewing station to import JPEG or BMP images. The import of TIFF images will be integrated soon.

5.3 There are DICOM files on the CD / DVD but the viewer is unable to convert them.

First make sure that the "Preferred transfer" syntax of the DICOM destination is set to an uncompressed syntax in the "options" dialog. DICOMReader will then perform an automatic decompression of all supported compressed syntaxes before transferring the data to the destination.

If you still have problems to view the images, send the name and version of your viewer including some anonymized sample files to your local distributor.

5.4 You have problems reading STENTOR files.

There is currently no way of reading STENTOR files created with iSite, using an older version than V4 with the DICOMReader. STENTOR unfortunately does not publish its iSite data structure.

5.5 The viewing application hangs / crashes when opening images converted by the DICOMReader.

In this case, please send anonymized sample images (those who caused the hang-up / crash) to your local distributor.

Please also provide your distributor with information about which version of the DICOMReader and viewer (incl. version number) you are using.

To find out the version number of your DICOMReader, simply right-click on the icon in the system tray bar and choose "about".

6 LIST OF ABBREVIATIONS

AET	– Application Entity Title
C-Find	– DICOM command for search of studies
C-Move	– DICOM command for move of studies
CR	– Computed Radiography
CT	– Computed Tomography
DICOM	– Digital Imaging and Communication in Medicine
DNS	– Domain Name System
DR	– Direct Radiography X-Ray Systems
DX	– Direct X-Ray Systems, e.g. Angiography or Fluoroscopy
GUI	– Graphical User Interface
IP	– Internet Protocol
Move SCU	– C-Move as service class User
MR	– Magnetic Resonance Imaging
NM	– Nuclear Medicine
OT	– other title (other DICOM storage class)
Q/R SCU	– Query/Retrieve as service class User
RF	– Radiographic Fluoroscopy
SC	– Secondary Capture
SCP	– Service Class Provider
SCU	– Service Class User
STORE SCP	– DICOM store as service class Provider
STORE SCU	– DICOM store as service class User
US	– Ultrasound
VR	– Volume Rendered, Volume Rendering

7 INDEX

A

AE-Title.....	14, 15
Alias	14
Anonymize profile.....	12

C

Common DICOM Tags.....	17
------------------------	----

D

DICOM stations.....	13, 19
DICOM STORE	5
DNS	14, 21

E

Edit rules.....	5, 13
Eject medium.....	11

F

File extension filter	9
File structure.....	6
Frequently Asked Questions.....	19

H

Hostname	14, 19
----------------	--------

I

Installation	6, 7
Installation file	6
Installation wizard	6
IP network.....	5, 14

M

Maximum size of log files	17
Multiple DICOM destinations	5

Multi-threading.....	5
----------------------	---

N

No recognition of TIFF, JPEG or BMP	19
---	----

O

Open options dialog.....	8
--------------------------	---

P

Parallel processing	5
Port	14
Prompt user for destination.....	13

R

Reading STENTOR files.....	19
RLE compressed files.....	5

S

Select DICOM station	13
Send to all	13
Send to standard destination.....	5, 17
Setup.exe	6
Start application minimized	8
System Requirements	5
System tray icon.....	8

T

TCP network.....	14
Temporary folder	8
Tray icon.....	8

U

Unable to convert DICOM files	19
Unable to send DICOM data	19

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