

DICOMReader

ADMINISTRATION GUIDE

Version 5.0.0 INT EN – 001D

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0 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 5.x 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 fictitious.

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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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1 INTRODUCTION

The DICOMReader is a software tool that automatically scans any removable data carrier (e.g. DVD or USB storage device) 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 2 "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.

1.1 SYSTEM REQUIREMENTS

The 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)

1.2 DICOMREADER FEATURES

1.2.1 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
- Multilingual user interface, currently available languages are:
 - English
 - German
 - Spanish
 - Japanese

1.2.2 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

2 INSTALLATION AND LICENSING

2.1 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 "DICOMReader500_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.

2.2 LICENSING

There are two different licenses available for DICOMReader V5.0.0: "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 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.

2.2.1 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.

2.2.2 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"
- A message will prompt 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 5; right-click the entry and choose 'Run as administrator'. After installing the license, you can run the software normally.

2.2.3 UNINSTALL 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_key20110605200313.txt")
- Send the **text file** and your **new fingerprint** to your local distributor to obtain a **new serial key**.

3 OPTION SETTINGS

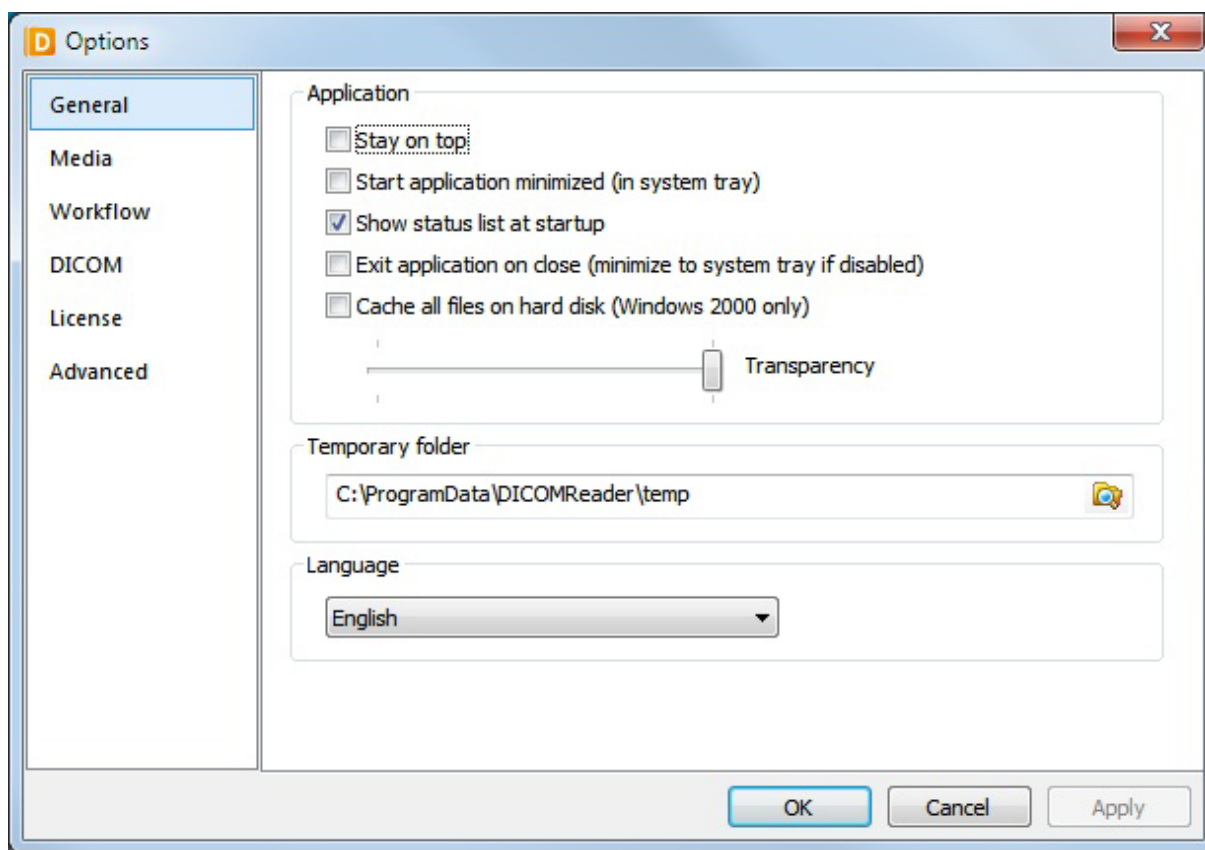
Open the “Options” dialog by clicking on the  icon in the DICOMReader’s main window or by right clicking on the DICOMReader’s system tray icon and select “Options”.

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\”.

3.1 GENERAL CONFIGURATION



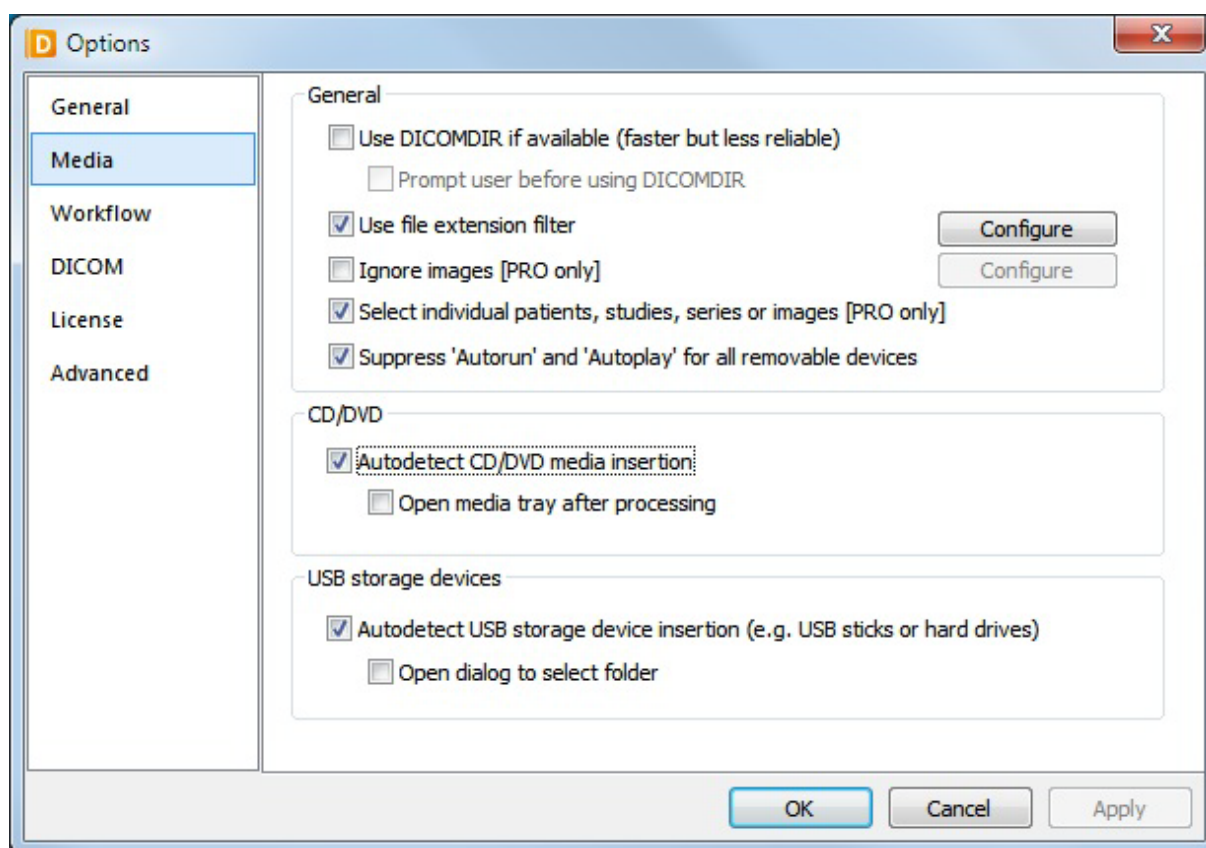
Options dialog – “General” tab

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.
Show status list at startup	If enabled, the application will display the status list containing information of all active jobs upon startup.



Exit application on close (minimize to system tray if disable)	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	This controller will regulate the transparency level of the users interface.
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.

3.2 MEDIA CONFIGURATION



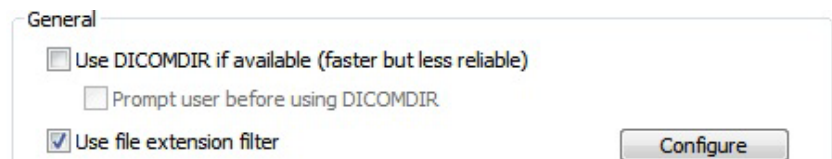
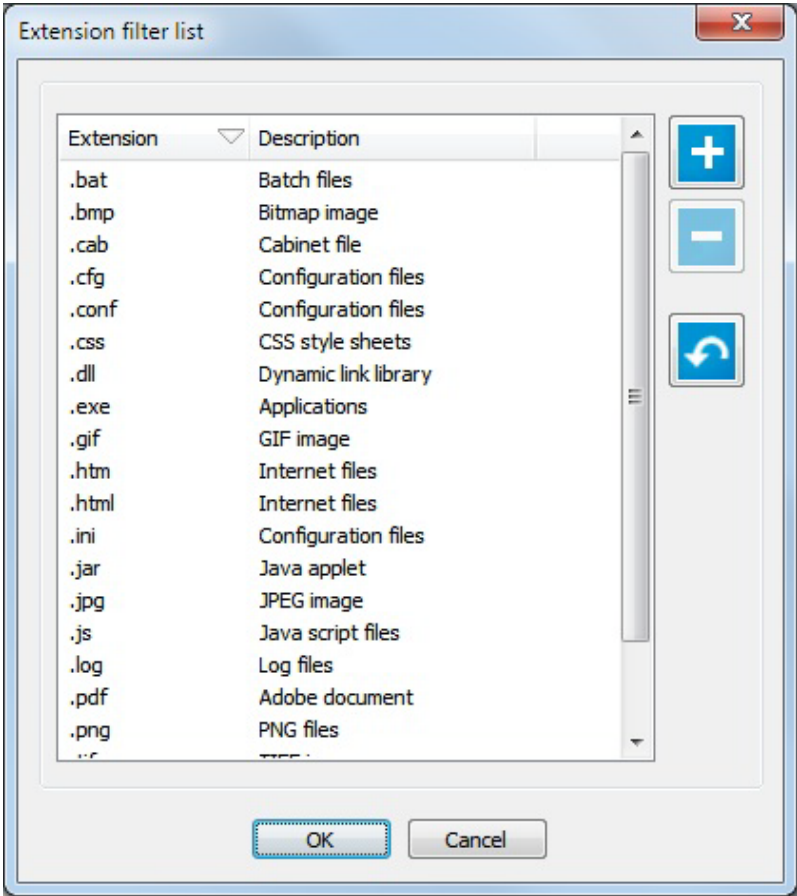

Options dialog – “Media” tab

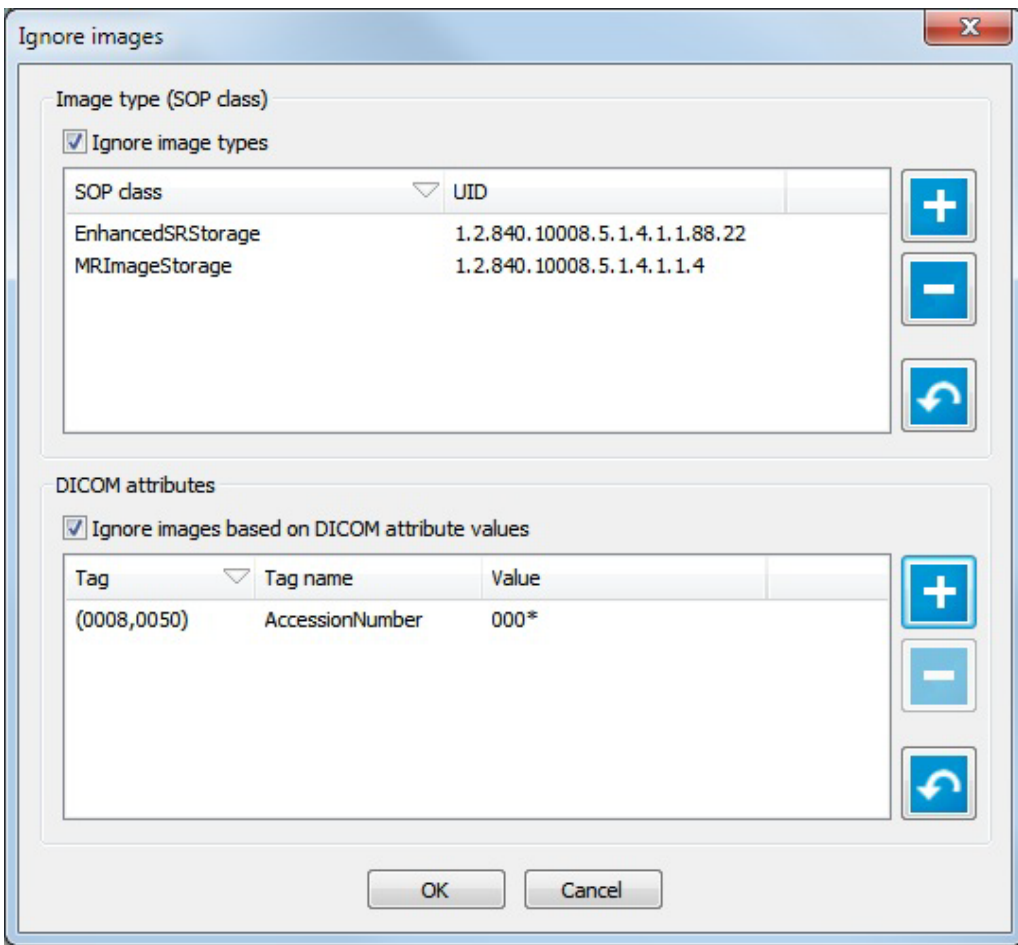
NOTE:

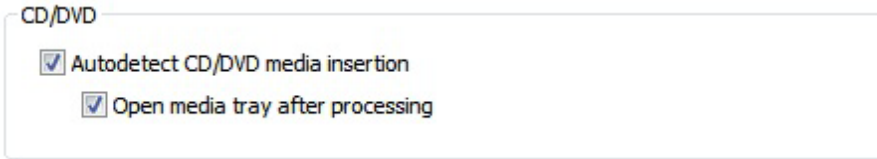

DICOMReader can either use or ignore a DICOMDIR file if present in the root directory of a media or folder. A DICOMDIR file is often included in the root folder of patient CDs. It works like an index for the image files on the media.

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.

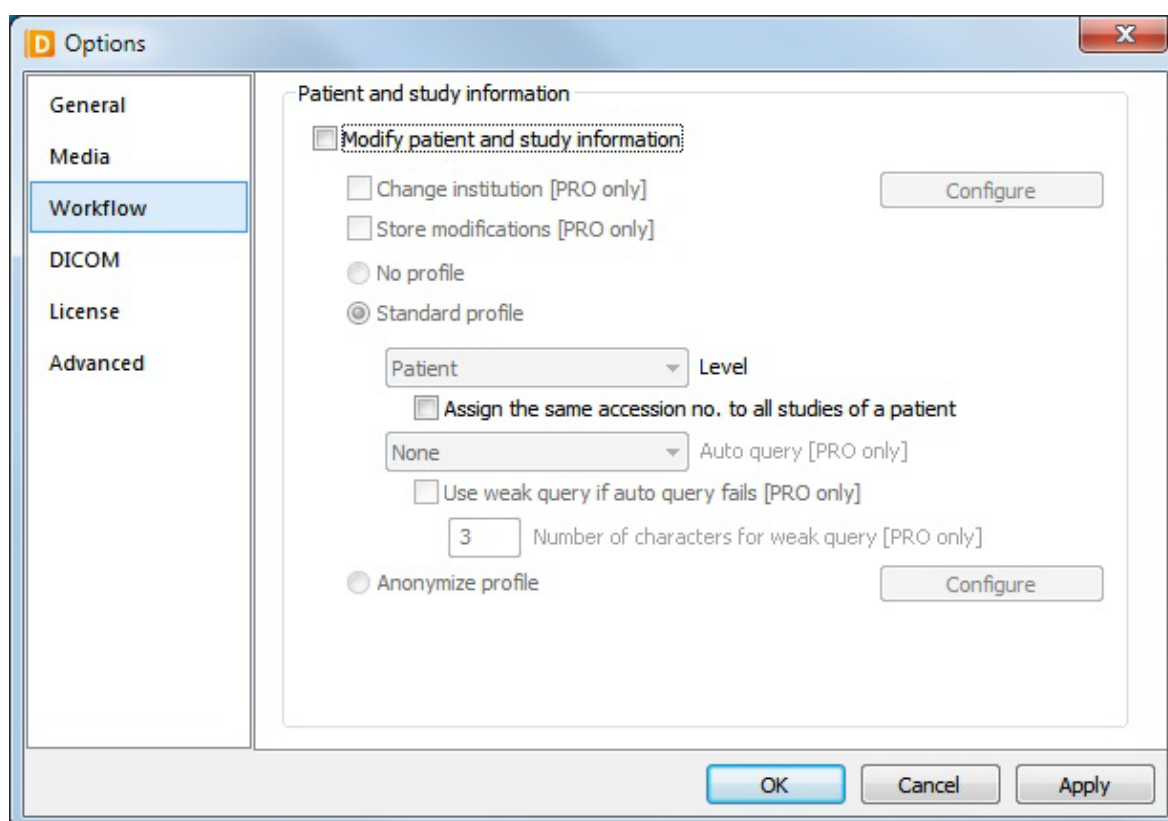
OPTION	DESCRIPTION
Use DICOMDIR if available (faster but less reliable)	<p>If disabled, the DICOMDIR file (if present) is ignored and all information is gathered from the DICOM files itself. This option is not as fast but safe.</p> <p>If enabled, DICOMReader will use the DICOMDIR file. This option is faster than a media scan but not as reliable.</p>
Prompt user before using DICOMDIR	<p>If enabled, the user will be prompted to either use or ignore the DICOMDIR file.</p> <div> <p>General</p> <p><input checked="" type="checkbox"/> Use DICOMDIR if available (faster but less reliable)</p> <p><input checked="" type="checkbox"/> Prompt user before using DICOMDIR</p> </div>

Use file extension filter	<p>If enabled, files with extensions matching those in the extension list will be excluded from media scanning.</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 "+" button and add the new file extension together with an optional description. To edit an already existing entry simply double-click on it and modify the existing entries. You also have the possibility to remove selected entries or reset all changes that you have made to the respective buttons.</p> 
Ignore images (PRO only)	<p>If enabled, DICOMReader will disable defined images in the "Select studies and series" dialog.</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 "+" button to add a new filter or double-click on an existing filter to modify it. In</p>

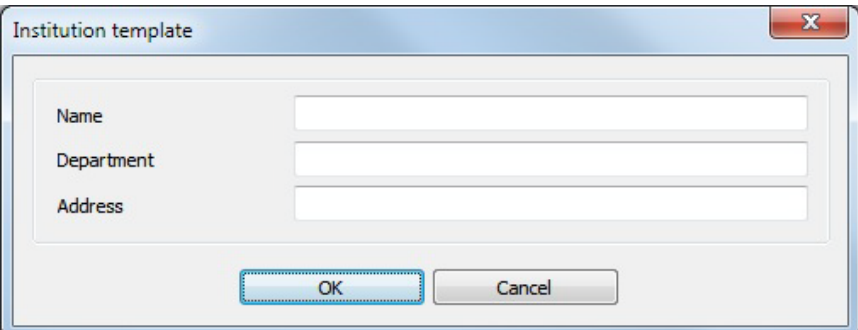
	<p>the following dialog you can choose to add/edit the filter by class name, Unique Identifier (UID) or a user defined UID. For the first two options, you can select the appropriate filter values from a drop down list included in the DICOMReader. The last option has to be entered manually.</p> <p>In 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 "+" button to add a new filter or double-click on an existing filter to modify 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. You also have the possibility to remove selected entries or to reset all changes that you have made to the respective buttons.</p> 
Select individual patients, studies, series or images (PRO only)	If enabled, the user will be asked to manually select studies, series or images in the workflow dialog.
Suppress 'Autorun' and 'Autoplay' for all removable devices	If enabled, the automatic start of software or files stored on the medium will be suppressed.

Autodetect CD/DVD media insertion	If enabled, the inserted CD/DVD medium will be detected automatically.
Open media tray after processing	<p>If enabled, the CD/DVD drive will be ejecting automatically after the scanning process.</p> 
Autodetect USB storage device insertion (e.g. USB medium or hard drives)	If enabled, inserted USB storage devices will be detected automatically.
Open dialog to select folder	 <p>If enabled, the user is automatically prompted to select a folder.</p>

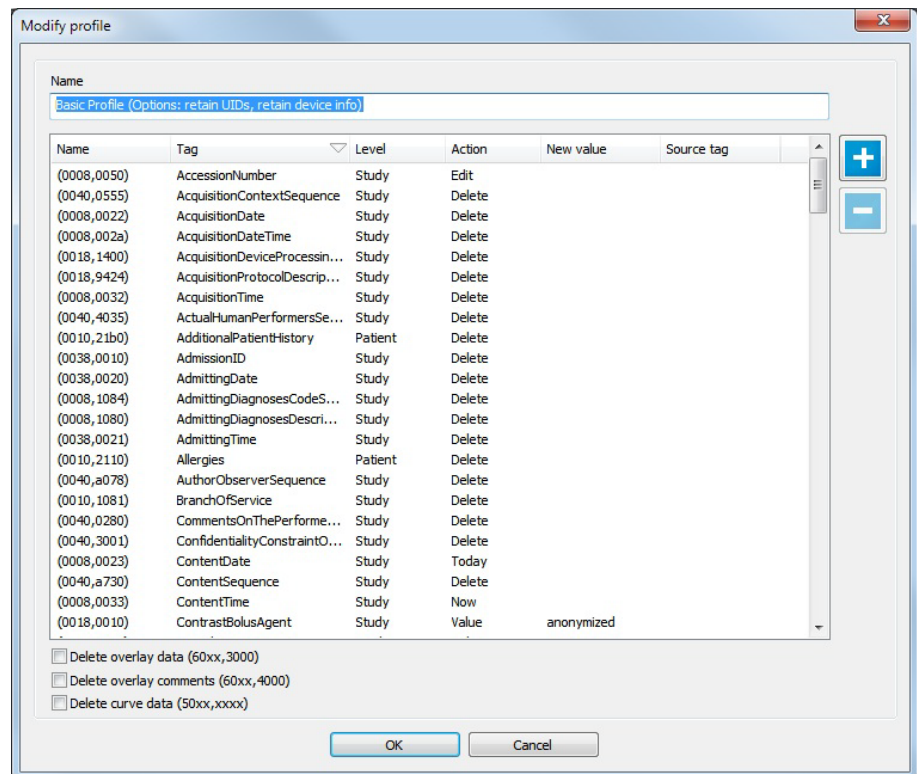
3.3 WORKFLOW CONFIGURATION



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.
	Configure	<p>Here you can enter the institution name, department and address. The program will overwrite the data of other institutions.</p> 

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 the possibility to change 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		<p>Anonymization profiles to automatically or manually edit, delete or change personal data from datasets. Refer to the "DICOM Conformance Statement" to read information about which DICOM attributes will be altered by the anonymization profile "Basic Profile".</p> <p>The "Basic Profile" represents a subset of attributes defined in Sup 142 (<i>Clinical Trial De-identification Profiles</i>) of the DICOM Standard with the following options:</p> <ul style="list-style-type: none"> • Retain UIDs • Retain Device Info
	Configure	Possibility to create anonymization profiles. Simply click on the "+" button to create a new profile and double click on an existing profile to modify it. You can also delete single profiles or reset the list with the respective buttons.
	Modify profile	<p>You have different possibilities to set up the anonymization profile. Simply add a new DICOM key with the "+" button. Then you can decide if the modification is applied on study or patient level by clicking on the respective entry in the "Level" column and decide which action should be done by clicking on the entry in the "Action" column.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE:</p> <p><i>All actions, except the DELETE action, will also appear in the workflow dialog when processing the media showing the attribute's value and allow altering data and, therefore, override automatic settings, e.g. date and time actions.</i></p> </div>



None - No action will be done.

Edit - the DICOM tag and its value will be shown in the "Anonymization" part of the "Workflow" dialog and can be modified manually there.

Copy - the value of this DICOM attribute will be replaced by the value of another attribute, which you have to specify in the "Source tag" row.

Value - the value of this DICOM attribute will be replaced by the value you have entered in the "New value" row.

Delete - deletes this DICOM attribute completely.

January 1st - sets the date to 01.01.

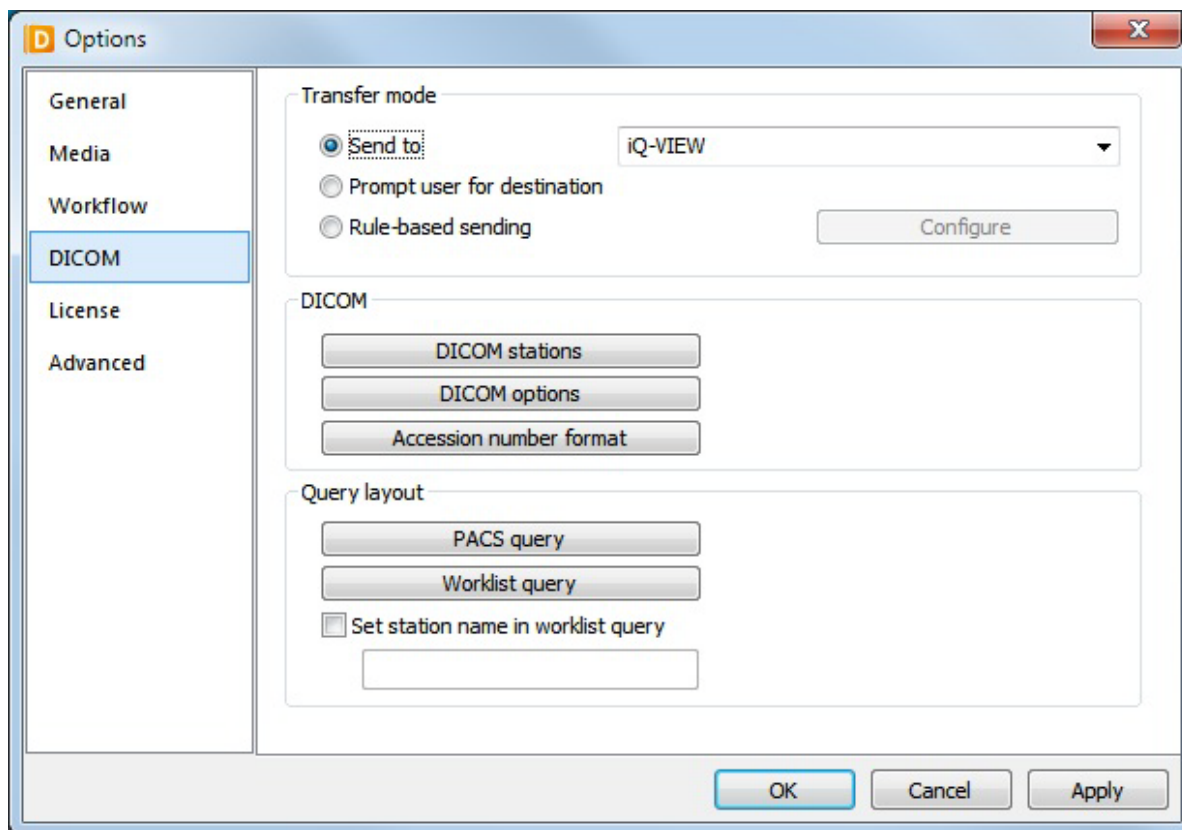
Today - sets the date to the current date.

Midnight - sets the time to midnight.


Now - sets the time to the current time.

Besides that, you also have the possibility to delete potential overlay data, overlay comments and curve data embedded into the files you want to send by checking the respective checkboxes underneath the table.

3.4 DICOM CONFIGURATION



Options dialog – “DICOM” tab

OPTION	DESCRIPTION
Send to	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.
Rule-based sending	<p>If enabled, the DICOM header will be checked for predefined rule-based destinations. Use 'Configure' to define the rules.</p> <div> <input checked="" type="radio"/> Rule-based sending  <input type="button" value="Configure"/> </div>
Configure	<p>When defining send rules, you have to add a rule first. You can do this with the “+” button in the first group box. Here you can choose a destination and a “Condition logic”. Select “AND” if your files should be sent to this destination only when all of the conditions defined in the lower group box are true or select “OR” if it is enough that one of the conditions is true.</p> <p>Now select the added rule and add a condition in the lower group box with the “+” button. You can choose between four different kind of “Types”:</p>

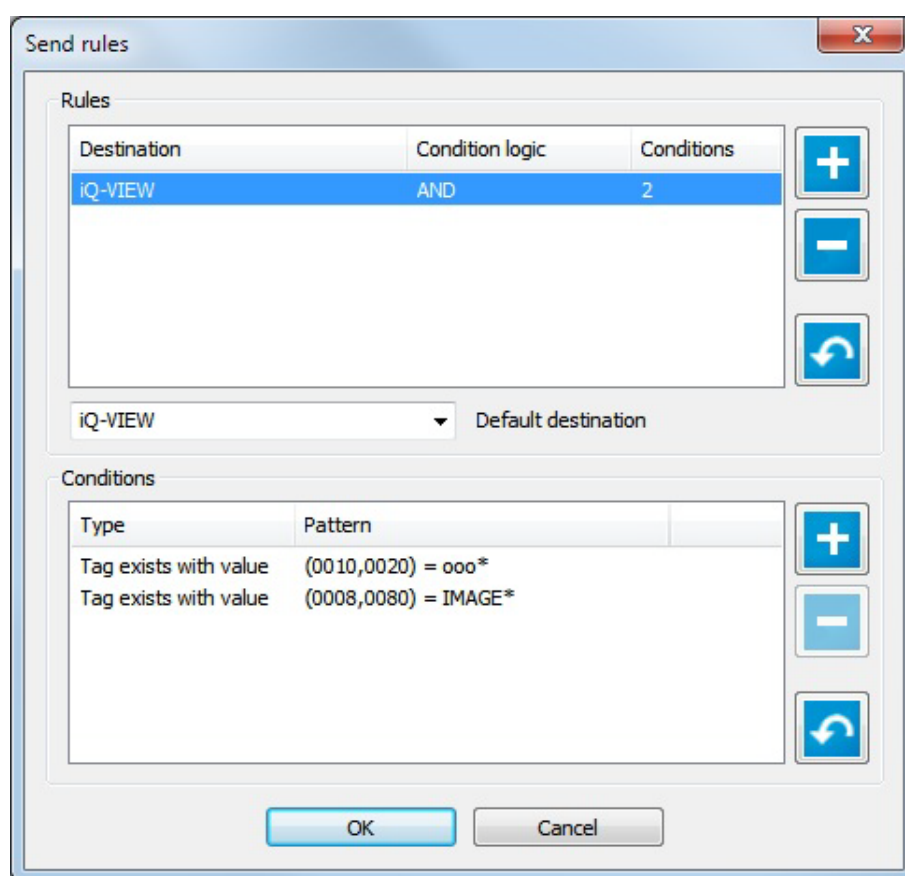
Time span – allows you to select a specific time span in which you want files to be sent to this destination.

Day(s) of the week – allows you to select a range of days in which you want the files to be sent to this destination.

Tag exists – allows you to select a DICOM attribute from a list of common tags or to enter a tag manually. If this tag exists in the study, the files will be sent to this destination.

Tag exists with value – allows you to select a DICOM attribute from a list of common tags or to enter a tag manually. Afterwards you can enter the attribute value. If this value exists in the chosen DICOM tag, the files will be sent to this destination.

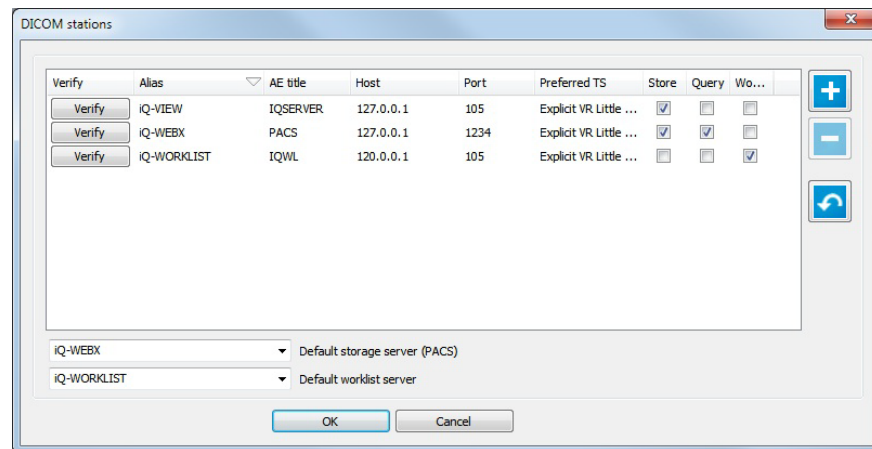
Finally you have to select a default destination in the drop-down box. This will be the destination that retrieves the images that don't match with the send rules.



For more information about rule-base sending refer to the [chapter "DICOM Tags"](#).

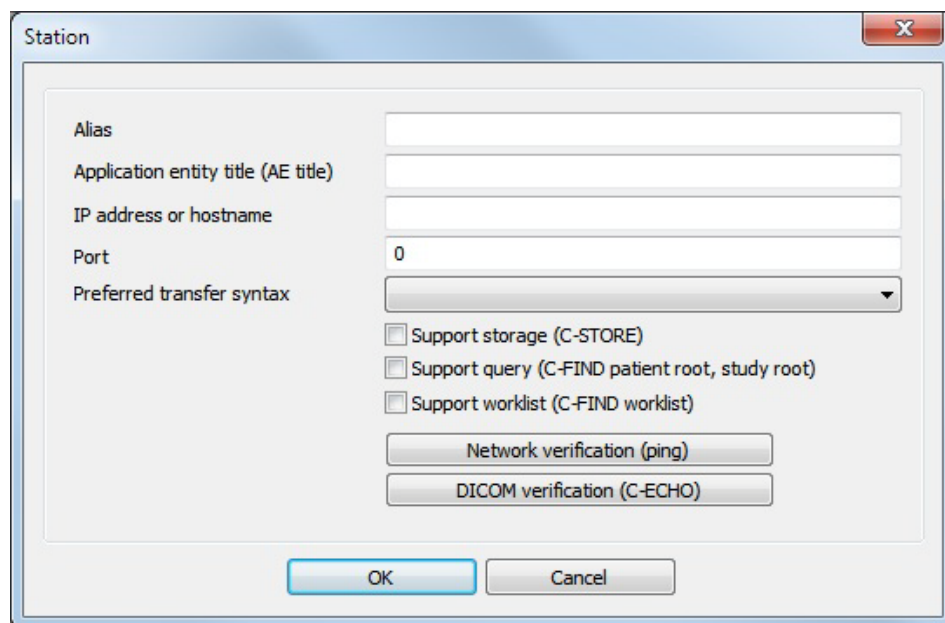
DICOM stations

The configuration dialog opens, in which DICOM destinations can be added, modified or deleted.



Add

Allows adding a DICOM stations.

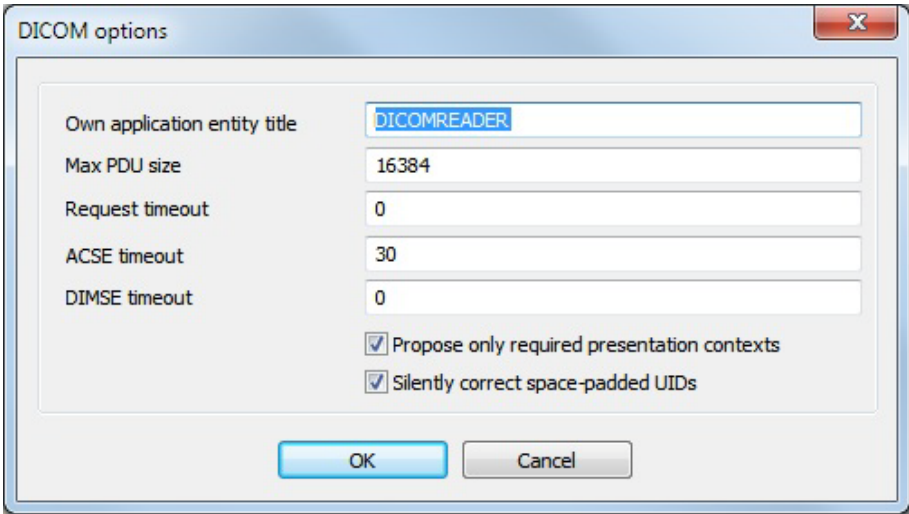


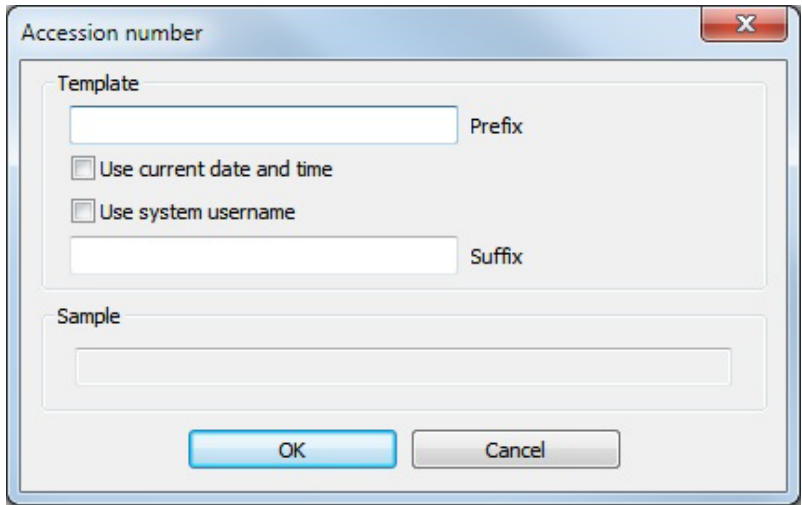
Alias - A freely chosen name for the station entry. The name can be e.g. the AE title (see below) and the DICOMReader only uses it internally.

Application entity title (AE title) - 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.

IP address or hostname - 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.

Port - The TCP network port of the host.

	<p>Preferred transfer syntax - Choose the preferred syntax for the transfer progress from the drop-down menu. 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>Support storage (C-STORE) - The DICOM station provides the C-STORE service as SCP.</p> <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”.</p> <p>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”.</p> <p>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.</p> <p>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)”). 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).</p>
DICOM options	 <p>Allows adding a different DICOM options.</p>

	<p>Own application entity title - The application entity title of the DICOMReader. 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> <p>Max. pdu size – Maximum packet size (protocol data unit) supported for DICOM transfer. Possible values are between 4096 (4KB) and 131072 (128KB).</p> <p>Request timeout – Timeout for association requests in seconds.</p> <p>ACSE timeout – timeout for network operations in seconds.</p> <p>DIMSE timeout – timeout for network responses from peer in seconds.</p> <p>Propose only required presentation contexts – If enabled; only presentation contexts (SOP class – Tansfersyntax pairs) found on the media will be proposed in association requests. If disabled, all supported presentation contexts (SOP classed and configured transfer syntaxes) will be offered to the SCP.</p> <p>Silently correct space-padded UIDs – If enabled, space padded UIDs will be corrected automatically.</p>
Accession number format	<p>In the Accession number dialog you can configure a template for the accession number that you can then use for any patient that you want to send by clicking on the “Generate accession number” button in the “Reconciliation” dialog. You can set a prefix and a suffix and/or use the current date and time and/or the system username by checking the respective checkboxes.</p> <p>In the lower part, you will get a preview of the configured accession number.</p> 
PACS query	Query layout for C-FIND requests to PACS stations.

PACS query layout

DICOM Tag	Tag name	Enabled	Apply	Comment
(0008,0020)	StudyDate		<input type="checkbox"/>	
(0008,0030)	StudyTime		<input type="checkbox"/>	
(0008,0050)	AccessionNumber		<input checked="" type="checkbox"/>	
(0010,0020)	PatientID		<input checked="" type="checkbox"/>	
(0010,0010)	PatientName		<input checked="" type="checkbox"/>	
(0010,0030)	PatientBirthDate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(0010,0040)	PatientSex	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

OK Cancel

All enabled tags will be requested from the PACS. All applied tags will be applied during the reconciliation process.

Worklist query

Query layout for C-FIND requests to Modality Worklist server.

Worklist query layout

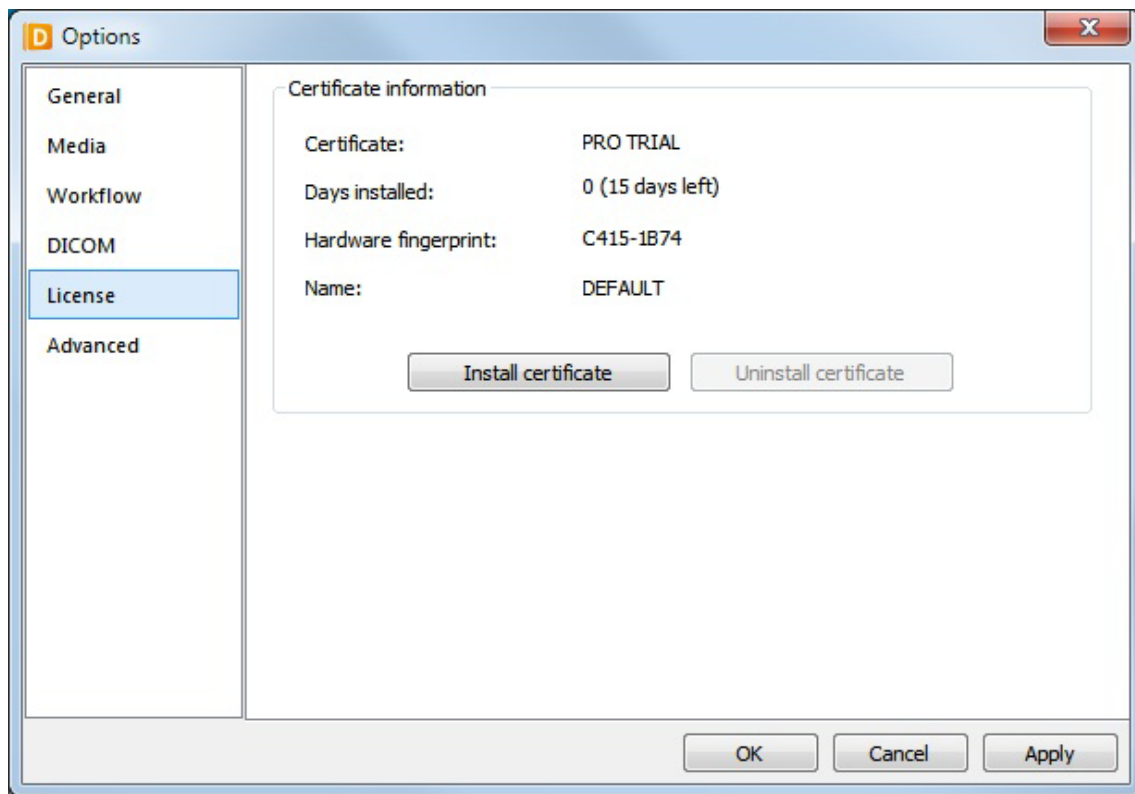
DICOM Tag	Tag name	Enabled	Apply	Comment
(0008,0050)	AccessionNumber		<input checked="" type="checkbox"/>	
(0010,0020)	PatientID		<input checked="" type="checkbox"/>	
(0010,0010)	PatientName		<input checked="" type="checkbox"/>	
(0040,0002)	ScheduledProcedureStepStartDate		<input type="checkbox"/>	-> StudyDate (0008,0020)
(0040,0003)	ScheduledProcedureStepStartTime		<input type="checkbox"/>	-> StudyTime (0008,0030)
(0010,0030)	PatientBirthDate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(0010,0040)	PatientSex	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

OK Cancel

All enabled tags will be requested from the Modality Worklist server. All applied tags will be applied during the reconciliation process.

	<div><p>WARNING:</p><p><i>'ScheduledProcedureStepStartDate' (0040, 0002) will be applied to 'StudyDate' (0008, 0020) when activated.</i></p><p><i>'ScheduledProcedureStepStartTime' (0040, 0003) will be applied to 'StudyTime' (0008, 0030) when activated.</i></p></div>
Set station name in worklist query	<p>If enabled the DICOM attribute "Scheduled Procedure Station Name" (0040, 0010) will preset for worklist queries, e.g. for the Auto-Query feature.</p> <p>The station name can be set:</p> <div><input checked="" type="checkbox"/> Set station name in worklist query</div> <div><input type="text" value="PACS"/></div>

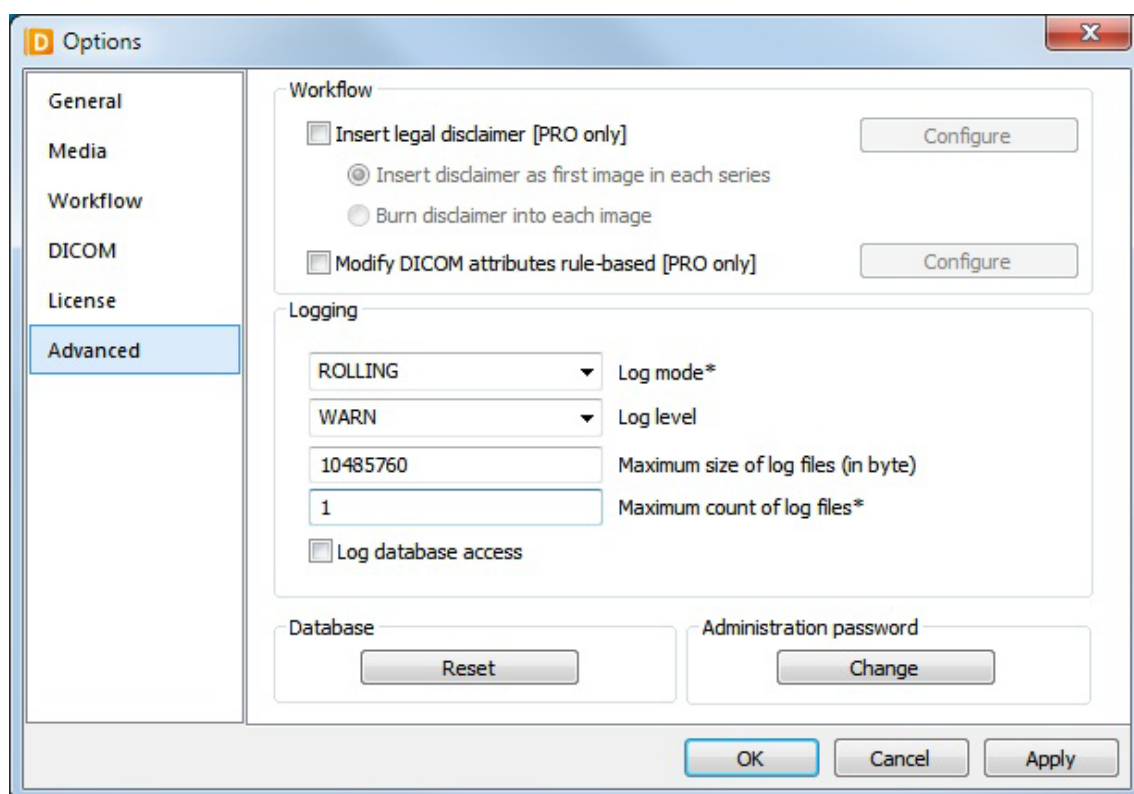
3.5 LICENSING CONFIGURATION



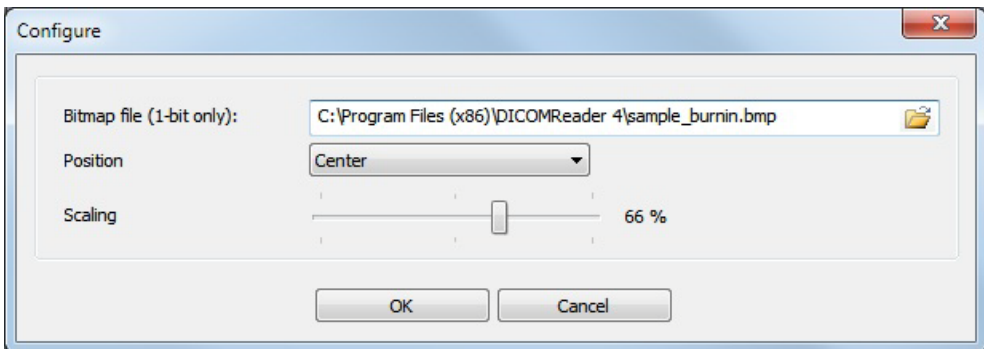
Options dialog – "Licensing" tab

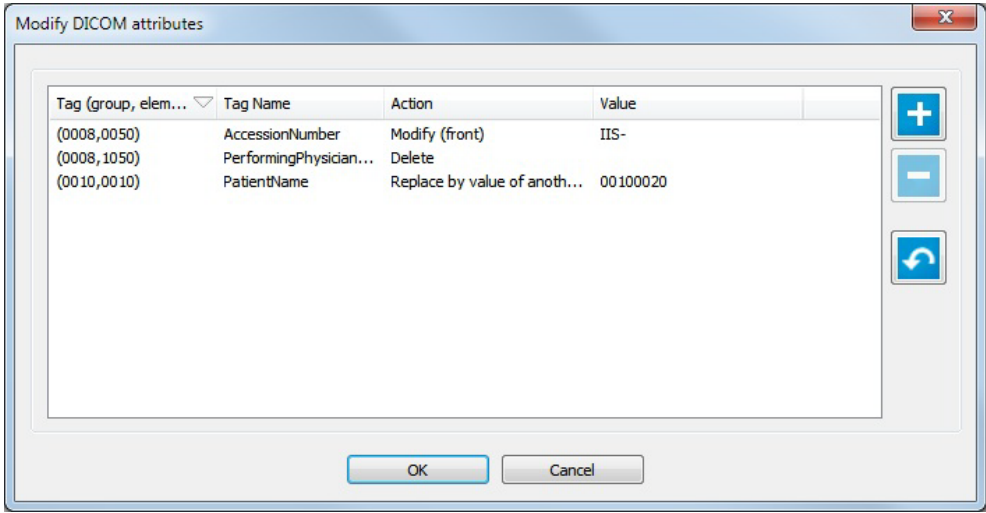
OPTION	DESCRIPTION
Certificate information	Shows what type of license actual is active.
Days installed	Shows the amount of days the license is active on the current machine and the time left for evaluation versions.
Hardware fingerprint	Displays the 8-digit hex machine-based fingerprint.
Name	Shows the name of the current license.
Install certificate	Opens the dialog to install a new license.
Uninstall certificate	Uninstalls the current certificate and produces an uninstallkey.txt with information about the uninstalled certificate and an uninstall code that can be send to license@image-systems.biz , when you want to retrieve a new license.

3.6 ADVANCED CONFIGURATION



Options dialog – “Advanced” tab

OPTION	DESCRIPTION
Insert legal disclaimer	If you wish to insert a legal disclaimer, you can add the disclaimer as the first image to each series or you can brand each image in your study. The disclaimer has to be a “1-bit bitmap” file.
Configure	<p>In this window, it is possible to configure the position and scaling of a bitmap file.</p> 
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

		and will therefore not be shown in the "Workflow" dialog (additionally may overwrite made changes).
	Configure	<p>You can add a new action with the "+" button. Next, you can choose a common DICOM tag from a list or manually enter a tag. Then you can choose which of the actions in the drop-down box should be applied to these DICOM tags. You can chose between:</p> <p>Add (only if not existing) – adds the entered value to the chosen DICOM attribute. If it already has a value, nothing happens.</p> <p>Modify (front) – adds the entered value to the front of the value of the chosen DICOM attribute.</p> <p>Modify (end) – adds the entered value to the end of the value of the chosen DICOM attribute.</p> <p>Replace (Add if not existing) – adds the entered value to the chosen DICOM attribute. If it already has a value, the entered one will replace it.</p> <p>Replace by value of another attribute – replaces the value of the chosen DICOM attribute with the value of the DICOM attribute with the entered key.</p> <p>Delete – deletes the chosen DICOM attribute.</p> <p>Add username – adds the username of the currently logged in user of the system as value of the chosen DICOM attribute. If it already has a value, it will be replaced by the username.</p> <p>Add hostname – adds the hostname of the system as value of the chosen DICOM attribute. If it already has a value, it will be replaced by the hostname.</p> 
	Log mode	<p>Set the log mode to either "Rolling" or "Daily".</p> <p>Rolling: backup the log files when they reach a certain size. The size is determined by the settings of „Maximum size of log files (in byte) ". The number of backup files kept is set to „Maximum count of log files" .</p>

	Daily: backup the log files on a daily basis. The number of backup files kept is set by „Maximum count of log files“.
Log level	<p>Choose your log level in TRACE (most information), DEBUG, INFO, WARN (default log level), ERROR, FATAL (least information) and OFF (no logging).</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">NOTE:</p> <p>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\”.</p> </div>
Maximum size of log files	Select the maximum size of the log files.
Delete old log files	<p>If enabled, the old log files will be deleted.</p> <p>If disabled, log files will be stored using a timestamp when the “maximum file size” has been reached.</p>
Log database access	Any access to the internal database will be logged.
Reset	Resets the complete database.
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 the entry of a password.

3.7 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 for 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 “Default destination” will be used. If no “Default 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

4 FAQ (FREQUENTLY ASKED QUESTIONS)

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

NOTE:

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 3 and 3.6 to get more information where the information is stored.

4.1 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.
- 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.

4.2 THE DICOMREADER DOES NOT RECOGNIZE TIFF, JPEG PR BMP

Images in the TIFF, JPEG or BMP format are not DICOM images. Therefore, they are not 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.

4.3 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.

4.4 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.

4.5 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".

5 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

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