If you have system administrative rights, you may choose whether to see all the projects in the system or only the ones you have membership in, by clicking the checkbox to the left of *Show all*. When you have clicked on the project of your choice, you will be presented with the project's *directory tree* to the left. If there are subdirectories belonging to a directory, it will be displayed as a plus sign to the left of the directory name. By clicking the plus sign, you expand the directory structure one level for that directory (Figure 6).
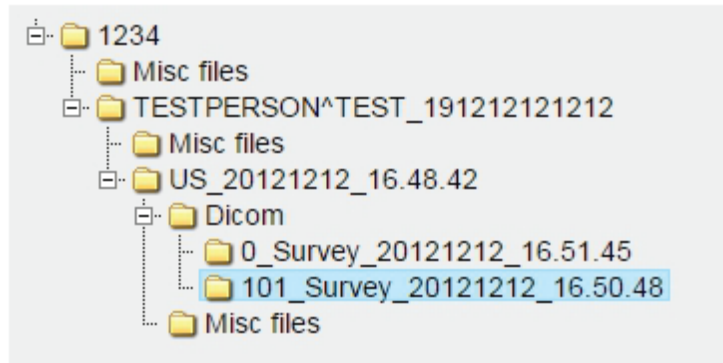

Figure 6: Directory tree, fully expanded.

To see the contents of any directory, click on the directory name. The contents will be shown in the *file list* to the right (Figure 7). Just as almost any other table in the user interface, you may sort the contents according to a column by clicking on the column title. Click again to reverse the order.

Figure 7: File list.

By default, all files or directories in the file list are selected. You may deselect any items you do not want to export by unchecking the checkbox to the left of each file's filename. Remember that all export types act in a recursive fashion: if a directory is checked for export, all of its subdirectories and their files will implicitly be included.

Figure 8: File export options.

At the bottom of the file list, there are several options (Figure 8). If you wish to select or deselect all items in the file list, check or uncheck the checkbox to the left of *All files*. If you have administration rights for the project and the project has a configured pseudonymization configuration, you may also choose whether the exported DICOM files will be pseudonymized by toggling the checkbox to the left of *Pseudonymized export*.

4.4.1 Directory naming and tree structure

First level, the project, consists of the project's number. Second level consists of the patient name followed by the patient id taken from the dicom files, separated by an underline character. Third level, studies, consists of "US_" followed by the date and time for the study or, if they are missing, the instance id for the study. The fourth level is either "Misc files", containing miscellaneous files, or "Dicom", containing the dicom series. Each dicom serie folder is named by taking the serie number, the serie description, and the date and time for when the serie were made. In case either date or time is missing for the serie, its instance id will be used instead.

4.4.2 SFTP export

If the project has any assigned SFTP servers, the SFTP Export button will be activated. To export to any of these servers, click on the button and choose which server you want to export to. Start the export by clicking on ok. The system will upload a zip archive to the SFTP server, containing the selected items. If pseudonymization is enabled, all DICOM files will be pseudonymized according to the project's pseudonymization configuration.

4.4.3 DICOM export

If any DICOM nodes has been assigned to your user account, the DICOM Export button will be activated. To export to any of these nodes, click on the button and choose which node you want to export to. Start the export by clicking on ok. The system will send all selected DICOM files to the chosen node. No pseudonymization will be done when exporting to a DICOM node.

4.4.4 Download

By clicking on the Download button, your web browser will immediately download a zip archive containing the selected items. If pseudonymization is enabled, all DICOM files will be pseudonymized according to the project's pseudonymization configuration.

4.4.5 Upload

You may also upload files from your computer to any of the Misc files folders in the project by clicking on the Upload button. It will only be active when you have selected a Misc files folder. You will be presented by a file select dialog. Choose which files you want to upload and click Open (this could differ depending on which browser you are using). The upload process will start immediately. Remember that you will not be able to delete or modify any uploaded files. Users with superuser permissions are able to delete files in the inbox through network drive mapping, all other types of modifications and/or removal of files and directories can only be done by Medicinsk Bildteknik (by contacting support desk).

4.4.6 ZIP Archive

When exporting to an SFTP server or downloading to your web browser, you will receive the files as a zip archive. The archive will have the same tree structure as the corresponding project. If pseudonymization is enabled, the original tag values for the modified tags are saved to a tab separated text file named keyfile_[token].txt. This file is password protected, and may be unlocked by a project administrator with the aid of the digits in [token].
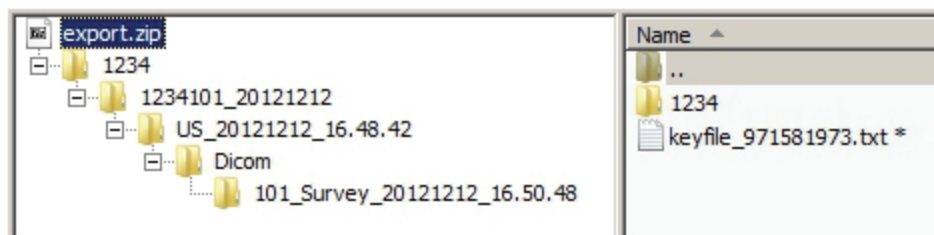

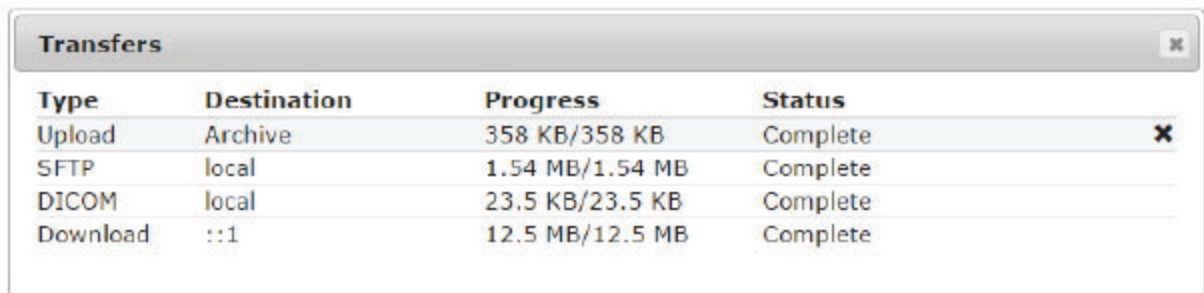*Figure 9: ZIP archive contents.*

Since the keyfile is password protected using strong encryption, a zip utility compliant with the AES-256 encryption method must be used to extract this file. The following applications are recommended:

- Windows: 7-Zip, WinZip, WinRAR

- Mac OS X: iZip

Note when using Mac OS, iZip is the only supported SW at the moment and is necessary since the usual way to unpack zip files on MAC is not working.

4.4.7   Transfers

By clicking on *Transfers* in the menu bar, you may at any time get a detailed view of the started transfers for the

current login session (Figure 10). If you wish to abort a transfer, or simply removing it from the list if the transfer is

complete, click on the cross to the very right of the corresponding transfer.

Transfers				
Type	**Destination**	**Progress**	**Status**	
Upload	Archive	358 KB/358 KB	Complete	✖
SFTP	local	1.54 MB/1.54 MB	Complete	
DICOM	local	23.5 KB/23.5 KB	Complete	
Download	::1	12.5 MB/12.5 MB	Complete	

Figure 10: Transfers window.

4.5   Pseudonymization administration

If your user account has administrative rights for the current project, the Administration menu will be visible at the very right of the menu bar (Figure 11).
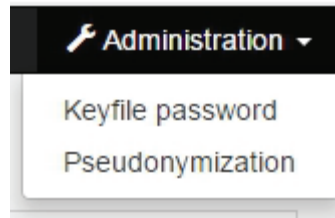

Figure 11: Pseudonymization administration

4.5.1   Keyfile password

Whenever an export has been made with automatic pseudonymization, a password protected keyfile containing the original dicom tag values is placed in the root of the zip file (see ZIP archive above). To retrieve the password, choose the corresponding project in the Project menu and click on Keyfile password under the Administration menu. This will open a new window, see Figure 12.

Figure 12: Keyfile password retrieval.

Enter the digits in the keyfile name in the field under *Token*. For example, if the keyfile is named *keyfile_123456789.txt*, you enter 123456789. Click on the *retrieve* button to display the password. Use this password to decrypt the keyfile with your zip program of choice (see page 27: *ZIP Archive*).

The keyfile contains one line for each exported serie, where each line starts with the corresponding path in the zip file followed by tab separated list of all modified DICOM tags and their respective original and pseudonymized data. The DICOM tag number is represented in hexadecimal notation, eight characters.


```
[path in zip]  [DICOM tag] [original data]  [pseudonymized data]  [DICOM tag] [original data]  [pseudonymized data]...
[path in zip]  [DICOM tag] [original data]  [pseudonymized data]  [DICOM tag] [original data]  [pseudonymized data]...
```
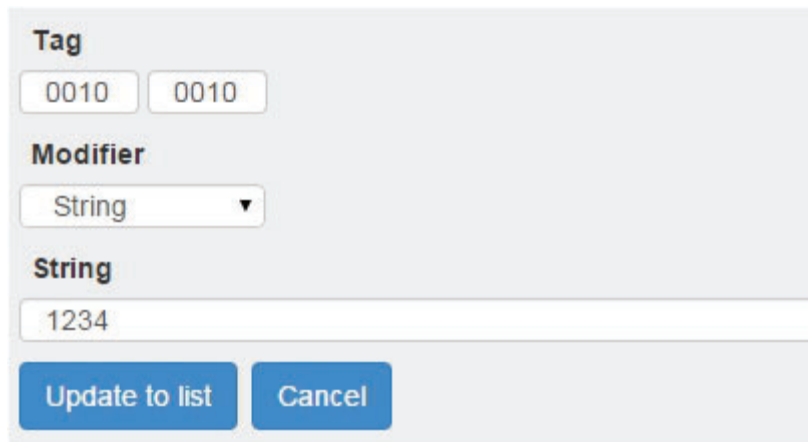
Figure 13: Keyfile contents.

Before a project can use pseudonymization, one of its administrators have to define a pseudonymization template. This is done in the pseudonymization template editor. To edit a project's pseudonymization template, choose the corresponding project in the Project menu and click on Pseudonymization under the Administration menu. This will display the project's current template, an example can be seen in Figure 14. Remember that it will be empty by default. To create a new modifier in the template, click New. This will create a new String modifier for DICOM tag 0000:0000, which has to be edited (see below). To remove any modifier in the list, click on the cross to the very left of the modifier row in the list. To move a modifier up or down in the list, click on the arrows to the very right of the modifier row. By doing this you define the order each modification is being made. Click on a row to edit the corresponding modifier.

Tag	Modifier	Attributes	
0010:0010	String	1234	
0010:0010	Sequence	Start=101 GroupBy=0010:0010	
✖ 0010:0020	Copy	From=0008:0020	∧ ∨
0010:1040	Erase		
		---New---	

Figure 14: List of pseudonymization modifiers.

There are four types of modifiers: *String*, *Sequence*, *Copy*, and *Erase*. They all act on a specific DICOM tag number, defined with two four-character hexadecimal numbers in the fields under *Tag*. Whenever a modifier has been edited, click on *Update to list* to update the corresponding row in the pseudonymization template list. To load a predefined pseudonymization template, click on *Presets* and choose one from the list. To save the template for the current project, click on the *Save* button at the lower right of the screen. If you wish to undo all changes made since last save, click on the *Cancel* button. Every time a DICOM file is pseudonymized it is done in a top-down fashion, starting with the modifier at the top and ending with the modifier at the bottom of the list.

The string modifier will replace the contents of the DICOM tag with an arbitrary string defined in the field under
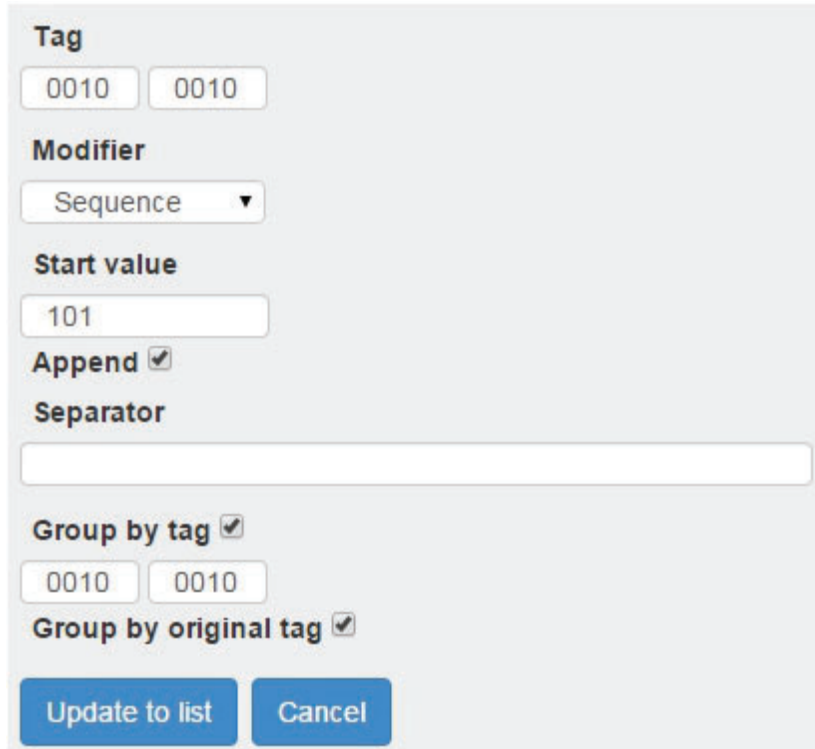

String (see Figure 15).

Figure 15: String modifier.

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The sequence modifier (see Figure 16) will replace the contents of the DICOM tag with a sequence number, starting with the value defined in the field under *Start value* and incremented by 1. If the checkbox to the right of *Append* is checked, the sequence number will be appended to the current tag value (which could be an already modified tag in the template). The field under *Separator* defines an optional separator between the current tag value and the sequence, if appending is enabled.

If tag grouping is enabled by checking the check box to the right of *Group by tag*, every pseudonymized file in the project having the same value in the DICOM tag defined in the two fields under *Group by tag* will get the same sequence number. If the checkbox to the right of *Group by original tag* is checked, tag grouping is being made according to the file's original, unmodified, tag.

Sequence numbers will be reset whenever a new template is saved.
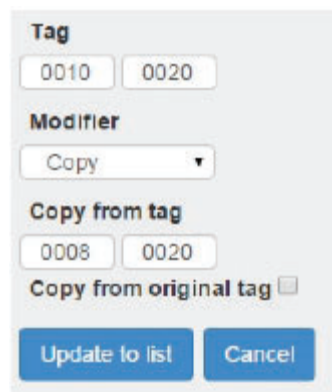
Figure 16: Sequence modifier.

The copy modifier (see Figure 17) will copy the contents of one tag into another. If the checkbox to the right of *Copy from original tag* is checked, the contents from the *original* and unmodified file is copied. Otherwise, if the source tag has been modified earlier in the pseudonymization list, that value will be copied.

Figure 17: Copy modifier.

The erase modifier (see Figure 18) will erase the specified DICOM tag from the exported file.
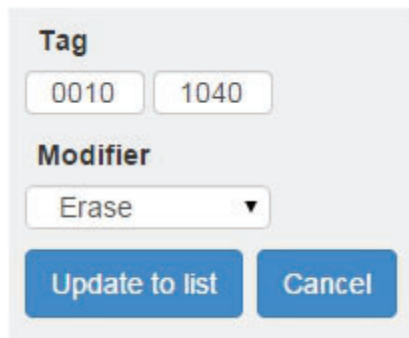
Figure 18: Erase modifier..

4.6   System administration

If your user account has system administrative (aka super user) rights for the system, an extended *Administration* menu will be visible at the very right of the menu bar (Figure 19).
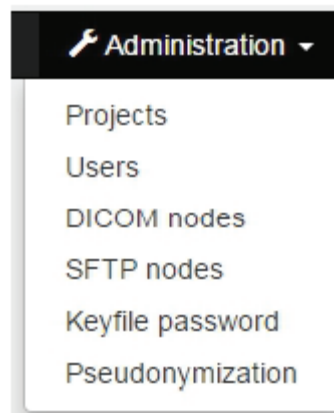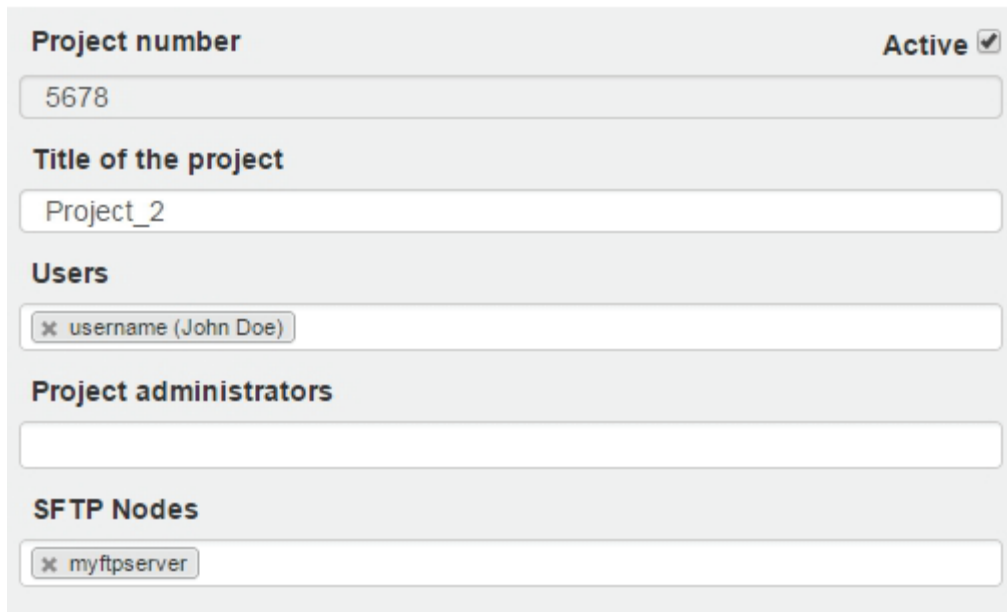

Figure 19: System administration.

4.6.1   Projects

Click on *Projects* in the *Administration* menu to get a list of all projects in the system at the left of the screen. Click on any project in the list to edit the project details, or click on *New* to add a new project. The project editor (see Figure 20) will be shown to the right. All fields are editable, except the *project number* for existing projects. Pick any users, project administrators and SFTP nodes that should belong to the project. If the checkbox to the right of *Active* is unchecked, no assigned members will get access to the project. Click on the *Save* button at the bottom right of the screen to save the project details or, in case a new project is edited, add the project to the system. Remember that projects can only be deleted by Medicinsk Bildteknik (by contacting support desk).

Figure 20: Project administration.

4.6.2   Users

Click on *Users* in the *Administration* menu to get a list of all users in the system at the left of the screen. Click on any

user in the list to edit the user details, or click on *New* to add a new user. The user editor (see Figure 21) will be

shown to the right. All fields are editable, except the *Username* for existing users. Pick any DICOM nodes that should

belong to the user. The checkbox to the right of *Superuser* toggles whether the user will have system administrative

privileges or not. Remember that superuser privileges will only be in effect at certain computers. If the checkbox to

the right of *Active* is unchecked, the user will not be able to log in to the system. The list under *Projects* contains all

projects that the edited user is member of. Click on the *Save* button at the bottom right of the screen to save the user

details or, in case a new user is edited, add the user to the system. Remember that users can only be deleted by

Medicinsk Bildteknik (by contacting support desk).

Figure 21: User administration.

4.6.3 DICOM nodes

Click on *DICOM nodes* in the *Administration* menu to get a list of all DICOM nodes in the system at the left of the screen. Click on any node in the list to edit the node details, or click on *New* to add a new node. The DICOM node editor (see Figure 22Figure 21) will be shown to the right. Click on the *Save* button at the bottom right of the screen to save the node details or, in case a new node is edited, add the node to the system. If you wish to delete a DICOM node, click on the node in the list and click on the *Delete* button at the bottom of the screen to the middle.

Figure 22: DICOM node administration.

4.6.4 SFTP nodes

Click on *SFTP nodes* in the *Administration* menu to get a list of all SFTP nodes in the system at the left of the screen. Click on any node in the list to edit the node details, or click on *New* to add a new node. The SFTP node editor (see Figure 23Figure 21) will be shown to the right. Click on the *Save* button at the bottom right of the screen to save the node details or, in case a new node is edited, add the node to the system. If you wish to delete a SFTP node, click on the node in the list and click on the *Delete* button at the bottom of the screen to the middle.

Figure 23: SFTP node administration.