

SC PACS VIEWER USER GUIDE



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Software version–2.5.0.2

30/07/2021

Sofia, Bulgaria

This document can be found on the installation CD
SOFIA 1407, 9 „Kozyak“ street



SC PACS Viewer is class lib certified which allows
for its use as a medical software for diagnostic purposes.

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Document history

Version	Author	Date	Description of the change
0	Miroslav Nikolov Valentin Tafrajiiski	Dec 2012	Initial version of SC PACS Viewer v.2.0.0.1
1	Miroslav Nikolov Valentin Tafrajiiski	Dec 2013	SC PACS Viewer v.2.0.0.1 0– bug fixes were introduced
2	Miroslav Nikolov Valentin Tafrajiiski	Dec 2015	SC PACS Viewer 2.2.0.0– bug fixes; added new features – patient anonymization (page 54) and Patient Reporting (page 55)functionality

3	Miroslav Nikolov Valentin Tafrajiiski	Dec 2016	SC PACS Viewer 2.3.0.0 –document format changes (page 2) – CE Mark and Intellectual Rights details; added new functionality Audio Report (page 73); bug fixes
4	Miroslav Nikolov	13/11/ 2017	SC PACS Viewer 2.4.0.0 – added new functionalities: page 6 – opening SR series from CT; on page 20 – Report font change; bug fixes were introduced
5.	Miroslav Nikolov	10/04/2018	SC PACS Viewer 2.5.0.0 – new functionalities: page
6.	Maria Atanasova	16/10/2019	Changed build version throughout the entire document Changed Bulgarian with English screenshots – pages 8, 11, 12, 14, 21, 22, 24, 25, 26, 27, 34, 38, 39, 40, 41, 42, 45, 47, 49, 52, 78, 79 Changed order in toolbars and docking windows – p.13 Changed screenshots of main toolbar by reason of missing buttons – p.15 Changed order of buttons and added Record and Audio Report List Window button – p.19 Added the Sort button description – p. 27 Changed Option names – p. 49 Changed Patient List with Local Storage Explorer – p. 63, 64
7.	Maria Atanasova	16.07.2021	p.25 – Added Google Speech-to-Text
8.	Maria Atanasowa	30.07.2021	p.13 – Maximize Windows View p.20 – Draw a Freehand Object

9.	Maria Atanasova	12.03.2023	p.6 – Added information about the device according to MDR requirements
10.	Maria Atanasova	03.04.2023	p.6. – Changed company address

SC PACS VIEWER

The intended purpose of the SC PACS software is related to the archiving of medical imaging studies, communication of imaging studies with medical imaging devices, visualization and management of imaging studies, statistics, recording of studies on electronic means and their printing on medical printers.

The biggest consumers of SC PACS are hospitals. SC PACS main purpose is to replace hard film copies with digital images that can be used and seen by several different medical professionals and different medical automation systems simultaneously.

Description of SC PACS Viewer?

SC PACS is a medical device according Rule 11 of MDR.

SC PACS is produced by Software Company Ltd., Bulgaria.

Address: SOFIA 1407, 9 „Kozyak“ street

Websites: <https://novotika.com>, www.pacs.bg

SRN: BG-MF-000024466

Basic UDI-DI: 380060000681SCZFP2PQ

Notified body : KIWA CERMET ITALIA

REQUIREMENTS

In order to run the SC PACS Viewer ver. 2.5.0.2, your system should meet the following requirements:

1. Hardware:

- **CPU**– minimum 2.0Ghz
 - **RAM** – 8 GB or more (recommended)
 - **Hard drive space** - 300 MB of free hard drive space for installing the application files. The amount of disk space for image storage depends on the number of files that will be stored.
 - **Optical Storage** - CD or DVD burner (recommended)
 - **Video display adapter** – special video card with OPENGL (recommended)
 - **Video Display** - 1 or 2 displays running normally at resolution 1280x1024.
- ✓ **Software:**
- **Operating System**
 - MS Windows 8 Pro or 10 Pro 64bits
 - **Additional Software:**
 - MS .NET Framework 4.7 or later
 - Windows Installer 4.5 or later
 - Microsoft Visual C++ 2012 or later
 - To export reports outside of SC PACS - Adobe Acrobat Reader and/or MS WORD and/or Open Office

REGISTRATION OF SC PACS VIEWER

You can install, run and use the full functionality of SC PACS Viewer, after it has been added to the license key of SC PACS Server.

IMPORTANT

Important note: if the user makes changes on the same image when displayed in two views, when selecting the command “Save”, the Viewer will save the changes on the image, which was marked just before the recording

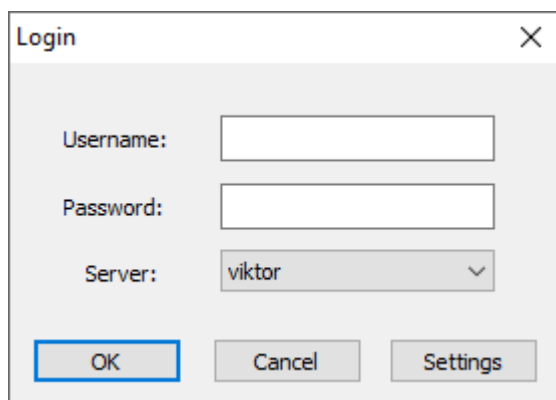
Important note: Patients and images are deleted only from the local computer and remain unchanged on the SC PACS Server. For information on retrieving deleted images from SC PACS Server, please see Retrieve Patients of SC PACS Server

Important note: SC PACS Viewer is a multimodal platform which works with all types of devices for digital imaging, therapy and ECG, which support the DICOM standard - XA, CT, MRI, US, PET, SPECT, CR, DR, MG, ES, PX, SR series from CT, etc.

Important note: Templates for any studies are added into the system initially and can be saved as doc, pdf, dcm in a new series to the study and also be sent to the Hospital Information System/HIS. They are displayed in the SC PACS Viewer as DCM file in separate series and in SC PACS Web in pdf part of the examination. There is also the option to export - for more information, please contact support@pac.bg

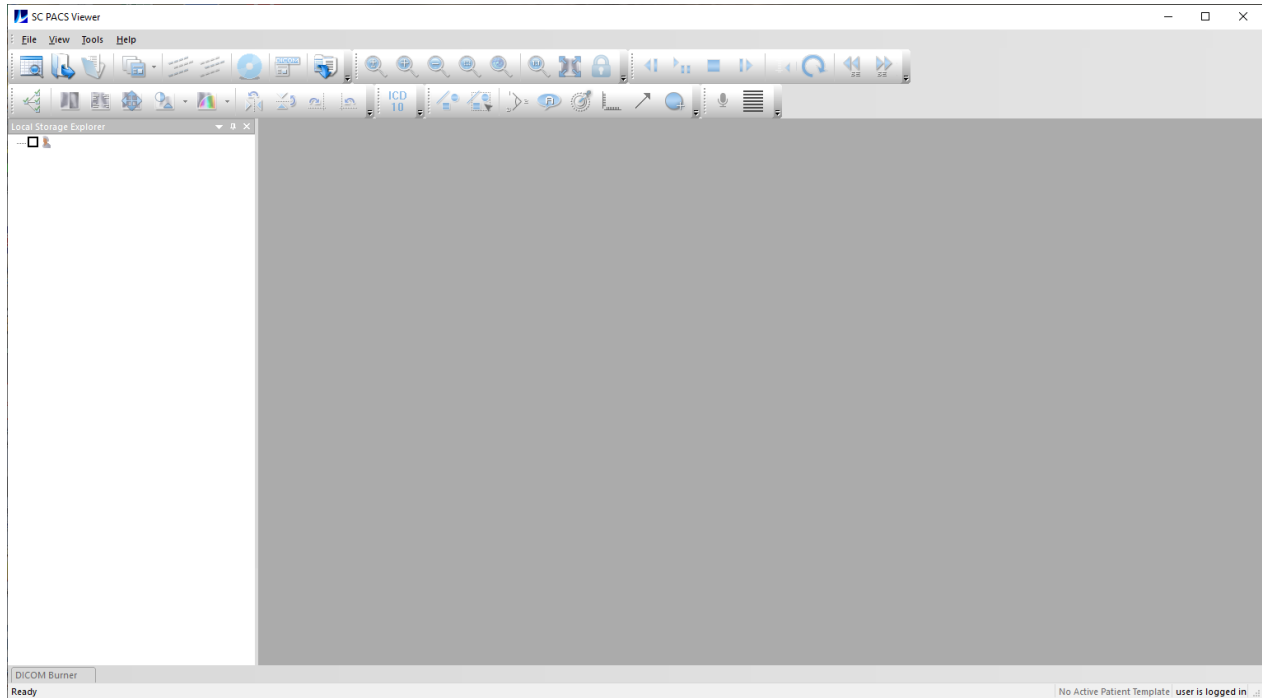
USER INTERFACE

To start SC PACS Viewer, you need individual authorization with user name and password for access:



A screenshot of a 'Login' dialog box. The dialog has a title bar with 'Login' and a close button (X). It contains three input fields: 'Username:' with an empty text box, 'Password:' with an empty text box, and 'Server:' with a dropdown menu showing 'viktor'. At the bottom, there are three buttons: 'OK' (highlighted with a blue border), 'Cancel', and 'Settings'.

The main window of SCPACS Viewer can be seen on the next picture



In general, the User Interface (UI) consists of several components:

- **Main Menu** – contains the following options: File, View, Tools, Help; the toolbar located under the main menu contain icons with different functionalities
- **Main Toolbar** - contain icons with different functionalities
- **Workspace Area** - the largest area on the above picture. When images are open, they are displayed inside a tab panel. The Workspace area can hold many tabs with images
- **Dockable panels** - These are the tabs displayed in the left part of the main window. Each panel can be docked anywhere in the main window or remain

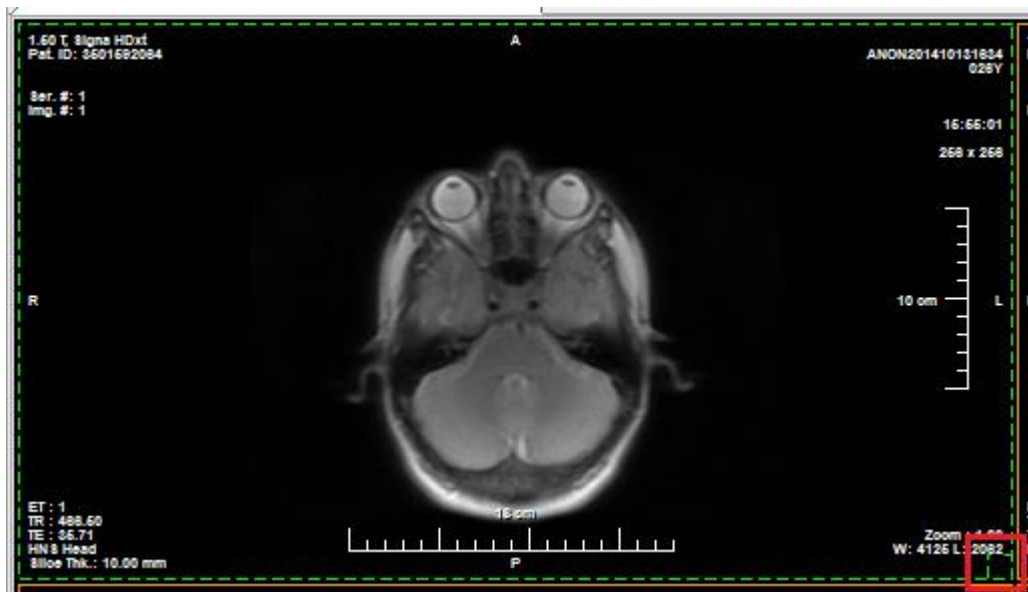
a floating window with the help of the arrows, which get activated when moving the window

- **Status bar** - This is the bar at the bottom of the main window. It is used to display progress notifications and status messages

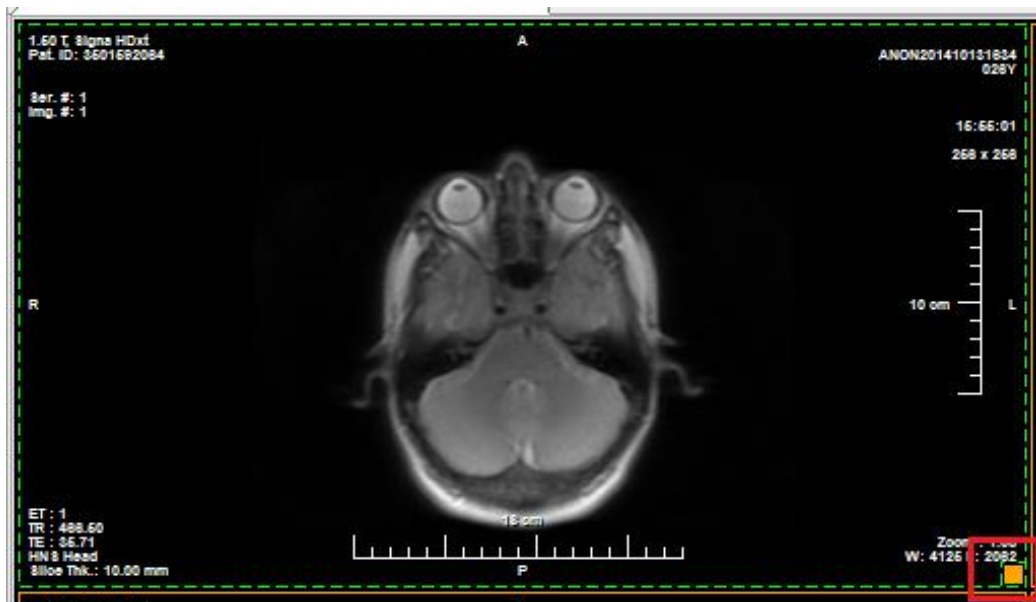
FILE MENU

File menu commands:

- **Open (Ctrl + O)** – to open a DICOM file (".dcm").
- **Close** – to close the active tab from the workspace area.
- **Save as AVI**
- **Save Selected Images** – to save changes in selected images as DICOM files. A new series description should be written. The new series get SC added to their name (Secondary Capture).
- **Save Selected Images As** – to save selected images and their modifications as raster images into a new folder. Images could be saved in the following file formats: bmp, jpg, gif, tiff, png. To save the images, mark the selected image by clicking on the square in the bottom right corner of the image.



If the image is properly marked, the square will turn orange.



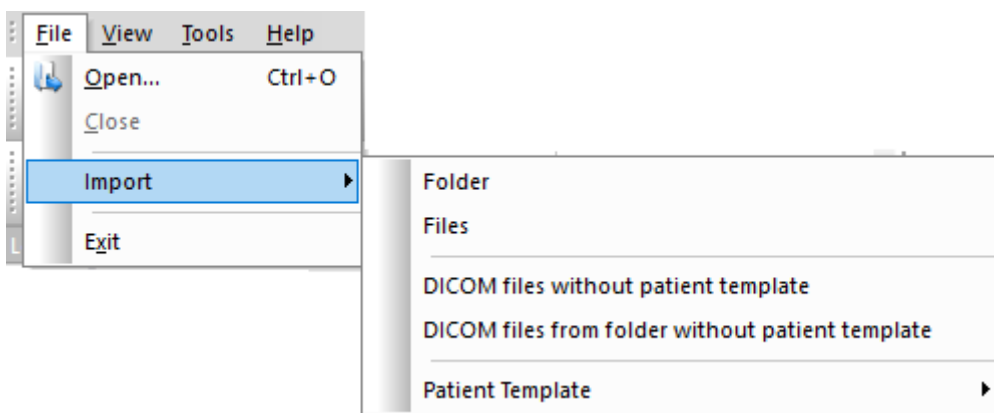
Then hit "Save image as ..." and select the file format you want. A new window opens so that the user can assign where the images should be stored and whether they should to be recorded with or without overlay:



- **Import** – contains a submenu (see Import submenu) for importing images from DICOM files in 5 ways, as described below. The imported files could be assigned to a particular series, a new series or be imported without modification of the information stored in them (in case the imported files are DICOM ones).
- **Exit** – to exit the SC PACS Viewer.

IMPORT SUBMENU

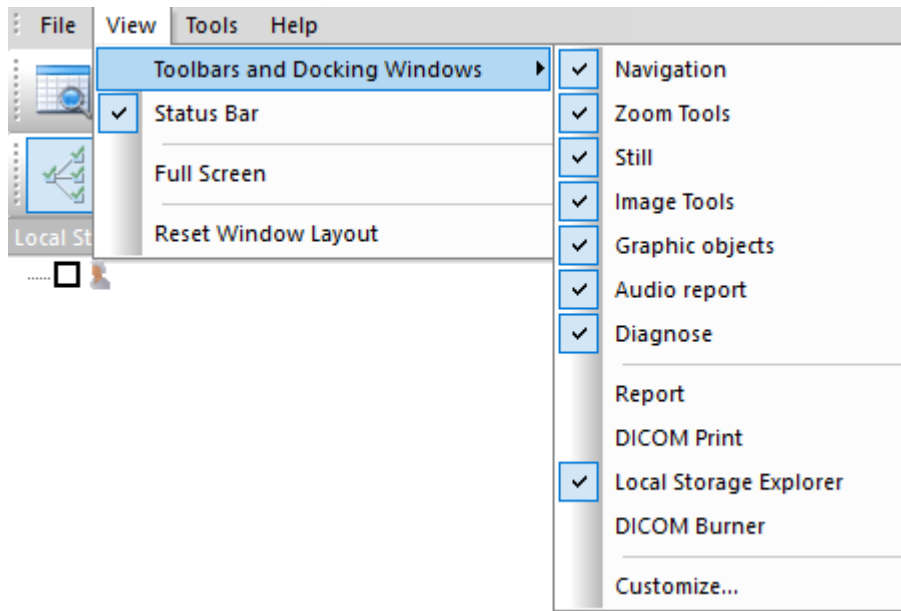
The **File- Import** submenu contains the following commands:



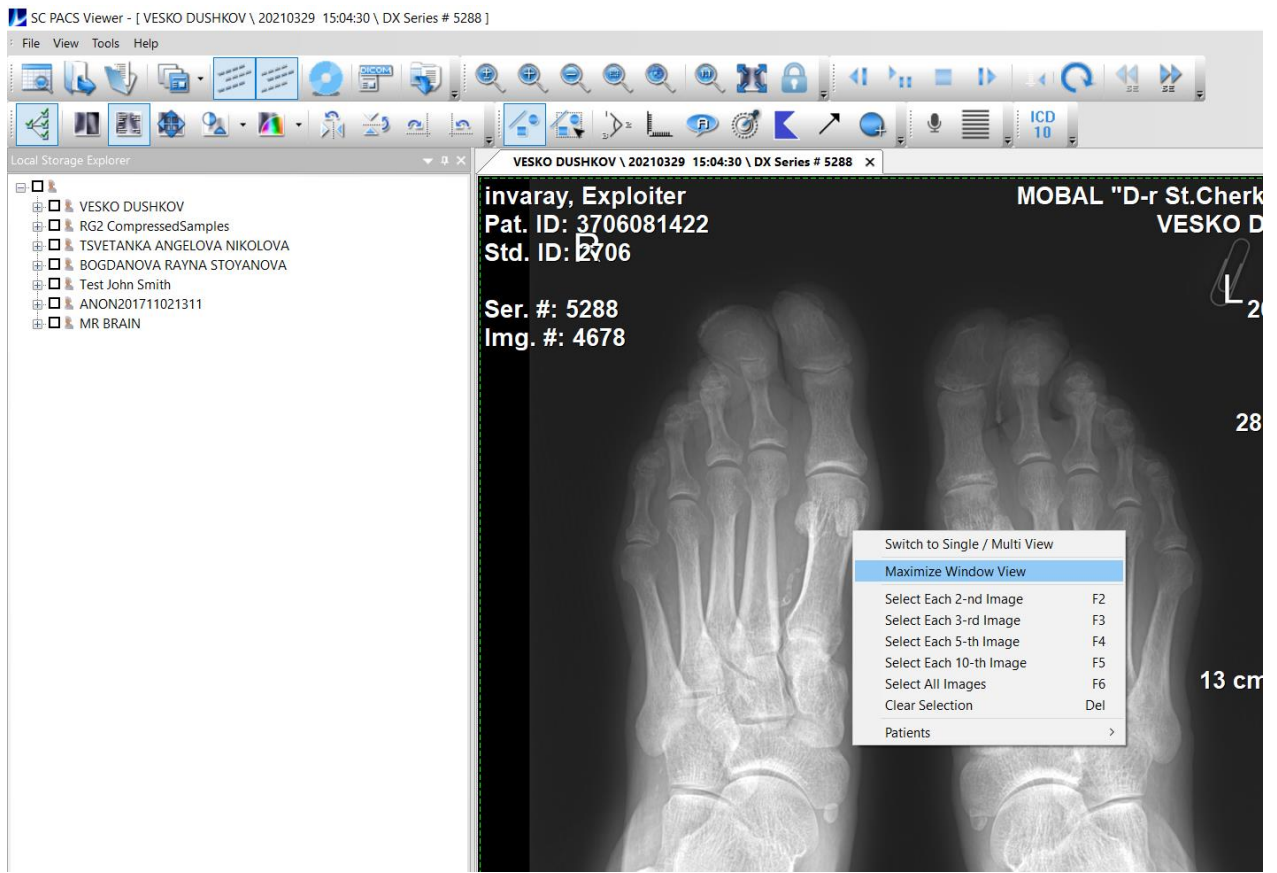
- **Folder** – import the contents of a folder using the current patient template. If there is no active patient template, then the “**Patient Template**” dialog appears.
- **Files** – import the contents of file(s) using the current patient template. If there is no active patient template, then the “**Patient Template**” dialog appears.
- **DICOM files without template** – import the contents of files(s): image(s) contained inside and info about the patient(s) and the study(s).
- **DICOM files from folder without template** – import the contents of a folder: images contained inside and info about the patient(s) and the study(s).
- **Patient Template** – Contains sub menu - New, Edit and Delete. Choosing New or Edit opens the window “Patient Template” and the option Delete - Delete the current template patient.

VIEW MENU

The View menu is used to show / hide some of the docking panels. If any of the panels is visible, a check mark is placed in front of the corresponding menu item. Short description of each item follows:



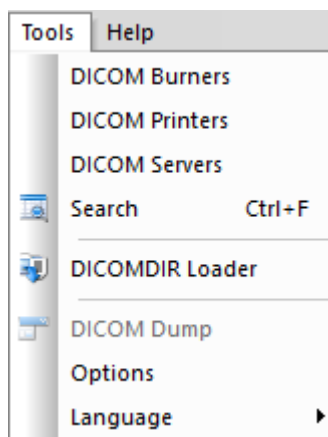
- **Toolbars and Docking Windows** – allows showing/hiding the following toolbars on the work area – Navigation, Zoom tool, Still, Image tools, Graphic objects, Audio report, Diagnose, Report, , DICOM print, Local storage explorer, DICOM Burner, Customize
- **Status Bar** – it is located at the bottom of the main window and indicates the status of the processes, which are being executed.
- **Full Screen** –stretches SC PACS Viewer to full screen mode. If there is more than one monitor, SC PACS Viewer will be stretched on any available work surface provided by the existing monitors. SC PACS Viewer can be stretched on 2 monitors using the “Maximize Windows View” option:



- **Reset Window Layout** –restores the default location of all the docking panels

TOOLS MENU

The contents of this menu are as follows:

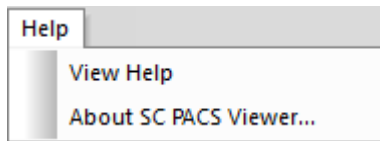


- **DICOM Burners** – opens the “Configure DICOM Burners” dialog

- **DICOM Printers** – opens the “Configure DICOM Printers” dialog.
- **DICOM Servers** – opens the “Configure DICOM Servers” dialog.
- **Search (Ctrl + F)** – opens the “Search” dialog
- **DICOMDIR Loader** – opens DICOMDIR files browse dialog.
- **DICOM Dump** – shows an overview of DICOM Header.
- **Options** – opens a dialog with application settings and parameters.
- **Language** – gives opportunity to choose the language, which SC PACS Viewer works with – English or Bulgarian language.

HELP MENU

This menu provides access to the help system of the SC PACS Viewer



View help – opens the Help files of the system

About SC PACS Viewer... - opens a dialog, which displays the SC PACS Viewer version in use.

MAIN TOOLBAR

The main toolbar gives access to most of the major features of the SC PACS Viewer



Starting from the first row, left to right, these buttons are:

-  **Search [Ctrl + F]** – opens a dialog where search criteria could be chosen for a search in the SC PACS Server database.
-  **Open [Ctrl + O]** – used to open DICOM files.
-  **Browse the series opened in current document window** – opens a dialog, which allows choosing a series to be open in the active series view.
-  **Switch to Single/Multiple View** - Allows switching between different count shown images of one series in the visible part of the workspace area..
-  **First/Last Reference Line** – shows/hides the first and last reference lines, if two or more series from one examination are open.
-  **Current Reference Line** – shows/hides the current reference line, if two or more series from one examination are open
-  **DICOM Burn** – sends the selected files to a DICOM Burner
-  **Show DICOM Header** – shows the info contained in the selected image. If the image is imported from a non-digital source, it is possible to have missing information in the header. For more information, please contact support@pacs.bg
-  **Load DICOMDIR file** – opens a DICOMDIR file browse dialog. After loading the DICOMDIR file, the study is temporarily saved. The file can be loaded from a CD or other external media.
-  **Free Zoom** – in this mode the zoom factor is modified by moving the mouse up or down with pressed left button
-  **Zoom In** – each mouse click on the image increases the current zoom factor

-  **Zoom Out** – each mouse click on the image decreases the current zoom factor
-  **Window zoom** - in this mode a rectangular area from the image selected with the mouse is zoomed to the size of the cell.
-  **Magnifying glass** – Works by holding the left mouse button on the image. The enlarged image is displayed in red square. When holding the left mouse button and moving the mouse in the square, the increase in the relevant section is shown
-  **Pixel to Pixel View** – Displays the image in its original size relative to the pixel of the image.
-  **Fit** – stretches the image to the borders of the grid cell, while keeping the aspect ratio of the image
-  **Synchronize scrolling** – It is used for the comparison of images or series
-  **Move 1 frame back** – moves the animation one frame back. This button is active only when the animation is paused.
-  **Start/Pause the Animation** – this button is used to start and pause the animation
-  **Stop** – stops the animation process.
-  **Move 1 frame forward** – moves the animation one frame forward. This button is active only when the animation is paused.
-  **Show Playback Speed Setup Dialog** – opens a dialog where the animation speed is adjusted (frames per second).
-  **Play all** – Plays all images.



- **Previous Series** – gives the option to move to the previous series, when there is more than one series in a study.



- **Next Series** - gives the option to move to the next series, when there is more than one series in a study.

Second row from left to right:



- **Apply changes to entire series** – if this button is checked, any changes made to one image are applied to all images from the series. If it is not checked, then only the active image is modified. When first starting the Viewer, this option is checked by default



- **Invert Colors** – - if this button is not checked, then the image is drawn using normal colors. If the button is checked, then the colors are inverted.



- **Toggle Overlay** – Shows / Hides the text information on the image.



- **Move/pan image across the view** – if this button is checked, it is possible to move the image within the borders of active window..



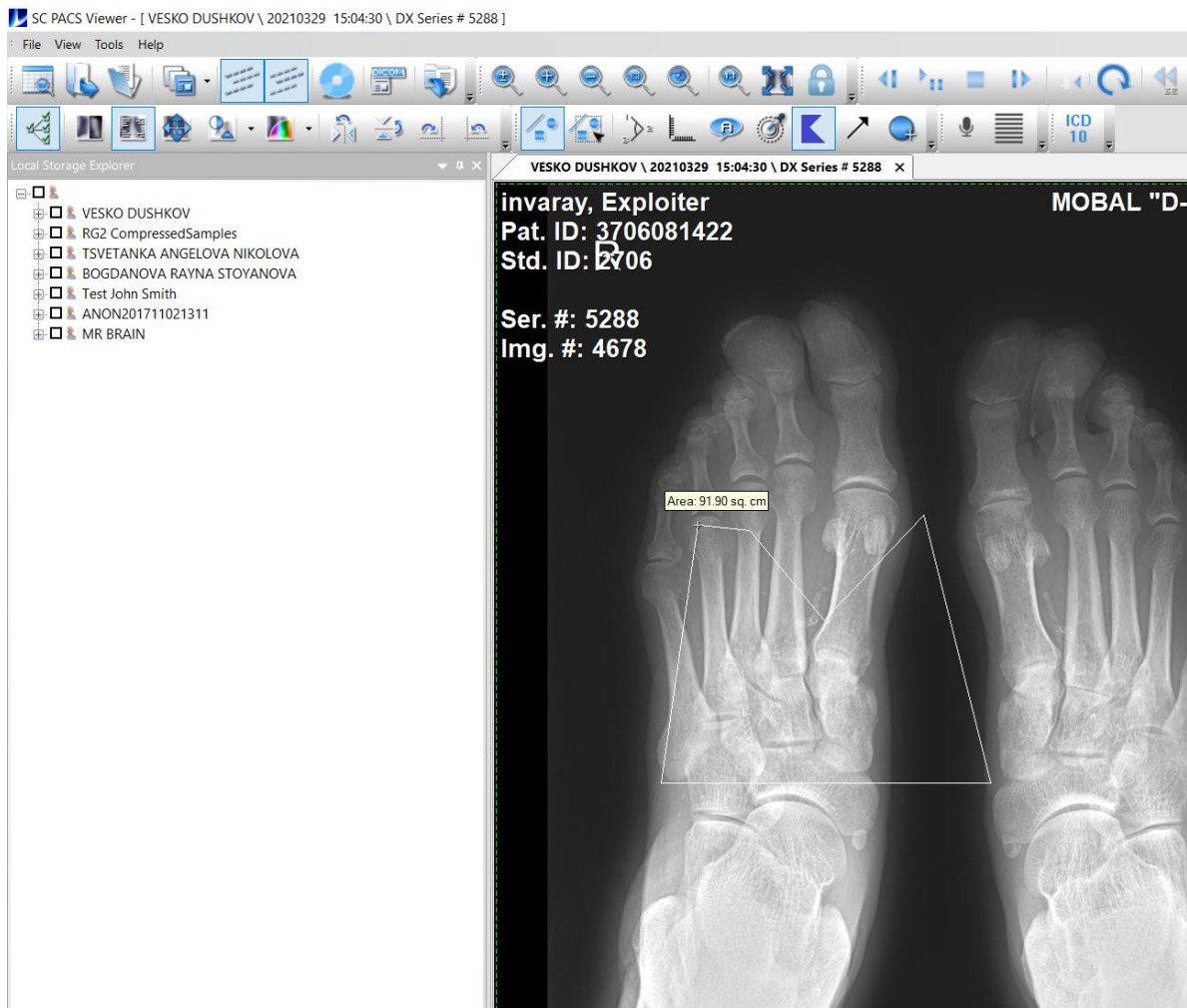
- **Window Level / Window Width (Adjust window params)** – when this button is checked, the adjustment tool is activated. The adjustment is made by dragging the mouse with its left button pressed. When the mouse is dragged to the left, then the Window Width or Contrast values are increased. When the mouse is moved to the right, these values are decreased. When the mouse is moved upward, the Window Level or Brightness are increased. Moving it down will decrease them. Clicking the

triangle on the right side of the button will show a context menu from which it is possible to choose some predefined or stored sets of window parameters.

-  **Apply Pseudo-coloring Scheme** - the Pseudo colouring tool is used for colouring of monochrome images. The colours are replaced using a set of predefined charts accessible through the drop-down menu of this button.
-  **Flip Horizontal** – flips the original image horizontally.
-  **Flip Vertical** – flips the original image vertically.
-  **Rotate image on 90 degrees to the right** – rotates the image 90 degrees to the right.
-  **Rotate image on 90 degrees to the left** – rotates the image 90 degrees to the left.
-  **Show/Hide Graphic Objects** – if this button is checked, the drawn objects are visible. If the button is unchecked, the drawn objects are hidden.
-  **Move or Modify Graphic Objects** – if this button is checked, it is possible to move and modify all the drawn graphic objects.
-  **Draw an Angle** – Draws an angle and measures it in degrees. Kobb angle also available - draws Kobb angle.
-  **Draw a Text Annotation Object** – Draw an arrow with annotation to it and a blank space filed for adding notes
-  **Density Meter** – measures density and Hounsfield units (HU)
-  **Draw a Measurement Line** – draws a measurement line and measures its length in mm / pixel



- **Draw a Freehand Object** – when this button is pressed you can use the cursor to draw an area and measure it



- **Draw an Arrow** – Draws an arrow



- **Draw an Ellipse** – draws an ellipse.



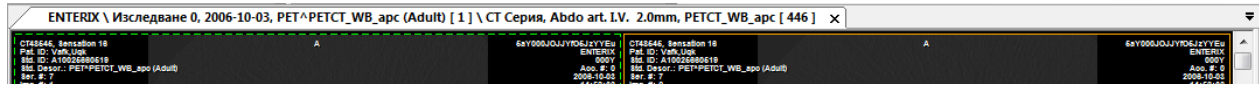
- **Record** – shows Audio Report Window where an audio clip can be recorded and submitted.



- **Audio Report List Window** - shows Audio Report List Window

-  **ICD 10**– opens "Diagnose" dialog ICD revision 10. Two different diagnoses can be assigned to a study. For more information, please contact support@pacs.bg

IMAGE EDITOR



This is the main part of the SC PACS Viewer window and it occupies most of the main window space. It is used to organize all opened studies into a tabbed environment. Each tab displays a series of one study. The “X” button next to name of the series is used to close a single tab. Different studies could be switched between each other by using the drop menu displayed after a left click over the small downward facing black triangle.

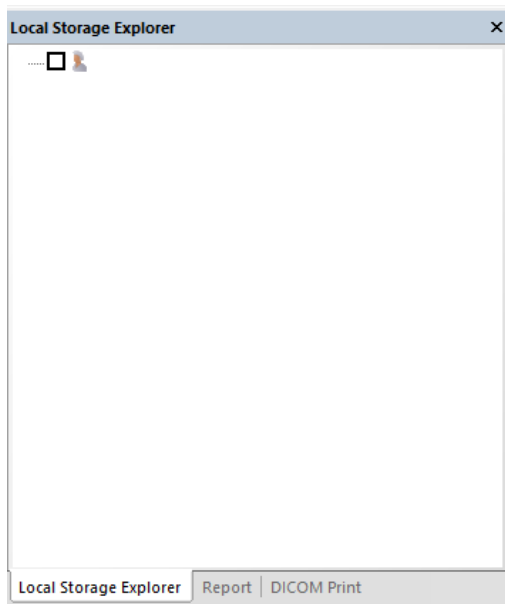
For more information about switching between different series in a tab page, see Working With Series Views.

STATUS BAR

The Status Bar is located at the bottom of the main window of the SC PACS Viewer. It contains four parts.

The first one is used mainly for displaying text information that describes the current operation. The second one is used to display the progress bar during some time-consuming operations. It is visible only in case a time-consuming operation is running. The third one shows the current active Patient Template. The template is displayed in the following format: **Name/Study Description/Series Description**. The last part is for the Login status. It indicates whether the user is logged in to the server or not.

LOCAL STORAGE EXPLORER



The Local Storage Explorer panel is the main navigation control. If it is hidden, you may make it visible by clicking the **View – Toolbars and Docking Windows – Local Storage Explorer**. It is used to display the internal viewer database of SC PACS Viewer into a tree-form view. All imported images are arranged in a tree-like structure with 3 layers:

1. Patient
2. Study
3. Series

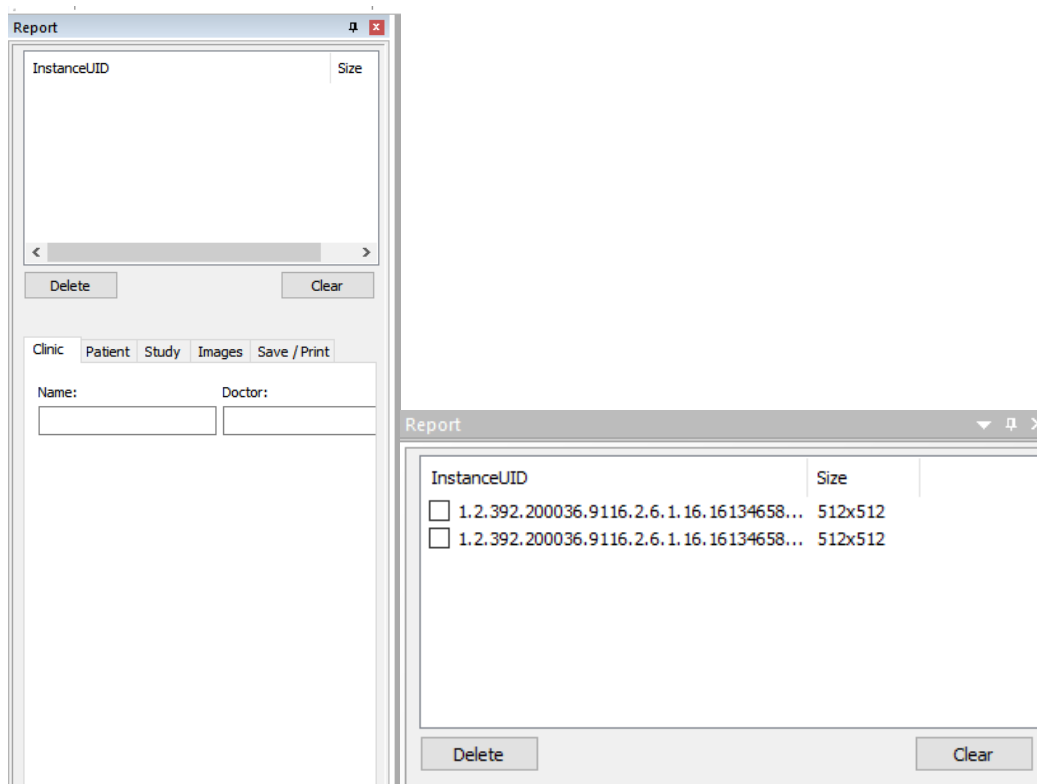
PATIENT REPORT FUNCTIONALITIES

Patient report is one of the functionalities of SC PACS Viewer allows to perform and save the report of a patient in the SC PACS Server. The panel has several tabs and

each gives information about the "Clinic", "Patient", "Study", "Series", "Save / Print".

Patient report is added as follows:

When the study we are interested is loaded, we retrieve any image of it in the top window of the Report. We have the option to retrieve more images (if the study permits), and these images will be inserted in Report, as objects of interest. There is a button that can delete certain images, by selecting them and pressing the Delete button. We can also clear all the information by pressing the "Clear" button.



Once we have retrieved the image / images, SC PACS Viewer automatically takes the data from the image and fill in some of the fields in the "Report" in order to facilitate the

work. The user has the option to change the font size of the text written of the report by clicking the buttons +/- within the Study tab. The information that is filled out is:

Tab “Clinic” - information about the medical institution where the study was done and the name of the physician (the name with which you signed into SC PACS Viewer).

The image shows a screenshot of the SC PACS Viewer interface. At the top, there is a horizontal menu bar with five tabs: "Clinic", "Patient", "Study", "Images", and "Save / Print". The "Clinic" tab is currently selected. Below the menu bar, there are two input fields. The first field is labeled "Name:" and the second field is labeled "Doctor:". Both fields are empty and have a light gray border. The background of the interface is white, and the tabs are highlighted in a light gray color.

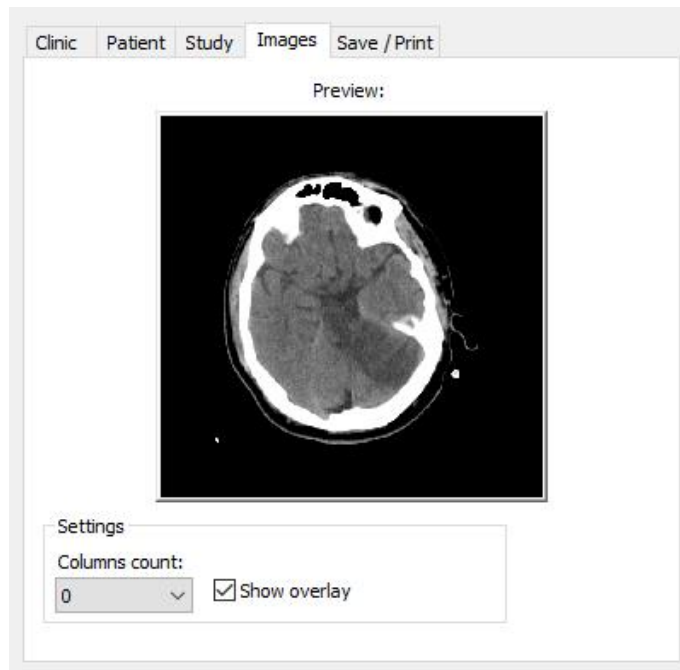
Tab “Patient” - SC PACS Viewer automatically fills out the fields (if they were input into the device during the examination and are contained in the image) Patient Name, date of birth, identification number, gender, address, weight, height, E-mail, age, phone number of the patient. Each of the fields is unlocked and although it is automatically filled, it can be edited.

Clinic	Patient	Study	Images	Save / Print
Name:		Date of birth:		
Patient ID:		Gender:		
Address:		Weight (kg):		
E-mail:		Size:		
Phone number:		Patient Age:		

Tab “Study” - The tab contains the report itself and is divided into three main parts - Description, Report, and Conclusions. The system allows introducing a number of templates for the report, ordered by modality or body part.

The screenshot shows a software window with five tabs: 'Clinic', 'Patient', 'Study', 'Images', and 'Save / Print'. The 'Images' tab is currently active. Inside this tab, there is a section with a '+' button and a '-' button. Below these buttons, there is a 'Description:' label followed by a text input field. Underneath the description field is a 'Report:' label followed by a dropdown menu that currently displays 'test123'. Below the dropdown menu is another text input field labeled 'Test report'. A vertical scrollbar is visible on the right side of the content area.

Tab “Images” - it contains information about the images that were retrieved in the upper tab. This tab has two options: Number of columns i.e. whether we want the images from the upper tab to be displayed or not. If the number of columns is "0", then no images will be displayed. From the drop-down menu we can choose a number (in how many columns to display the images) and based on it, we will see a number of images in columns. There is also the option 'Text on image "- if selected, we will see the patient's information and if not selected, we will only see the images, no patient data.

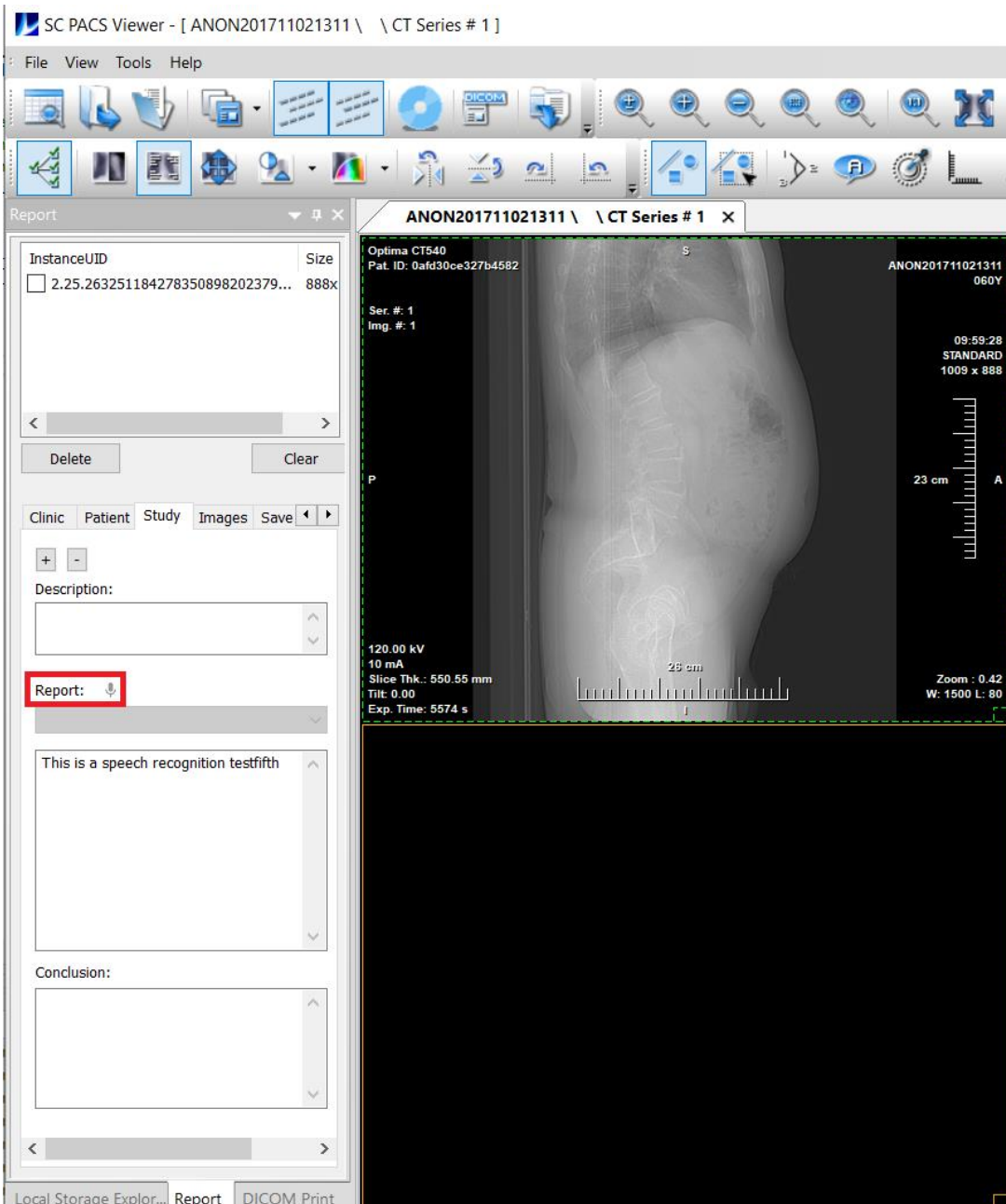


Tab "Save / Print": In this tab we have the option to save the newly created report.

There are five options:

- Preview / Print - Here you can see the report as doc file and accordingly print it;
- Save as DOC – saves the report as a doc file on your computer;
- Save as DOCX - saves the report as a docx file on your computer
- Save as PDF - saves the report as a pdf file on your computer
- Store – stores the study in SC PACS Server, creating a new series to the study.

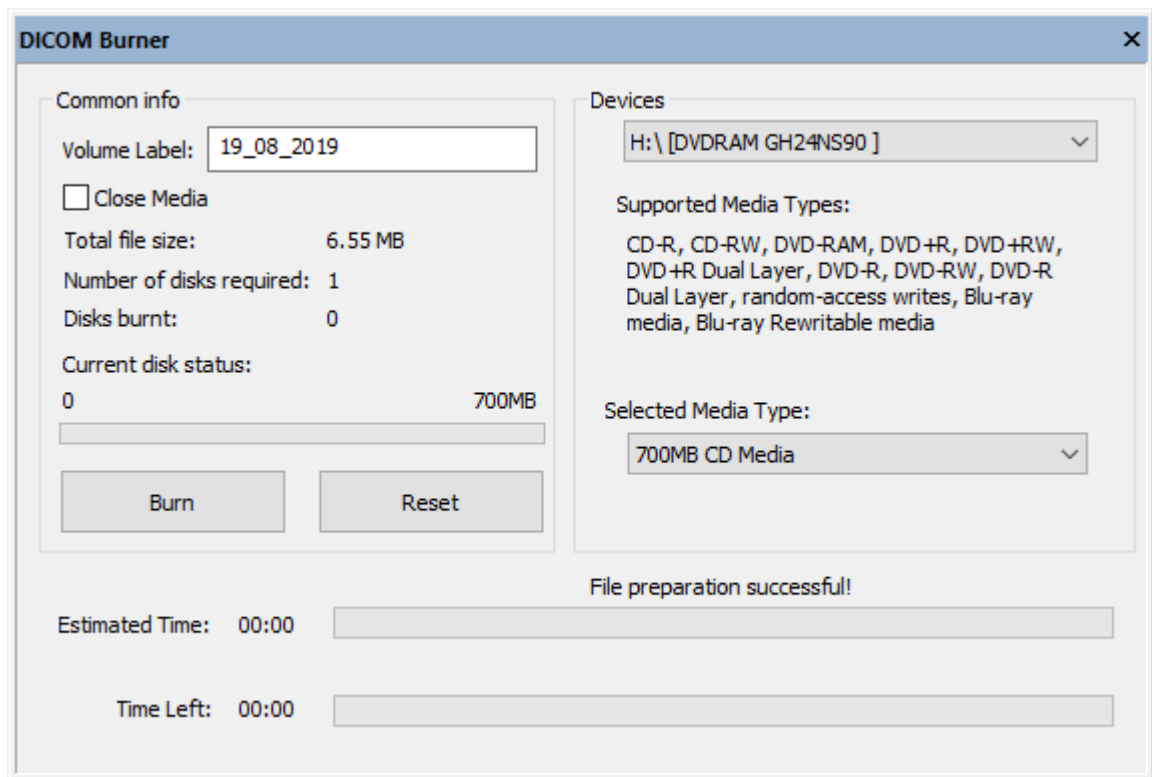
In the latest version of the SC PACS Viewer Google Speech-to-Text functionality has been provided. After clicking on the microphone icon, you can start speaking in English. The words will be recognized and filled in.



LOCAL STORAGE EXPLORER FUNCTIONALITIES

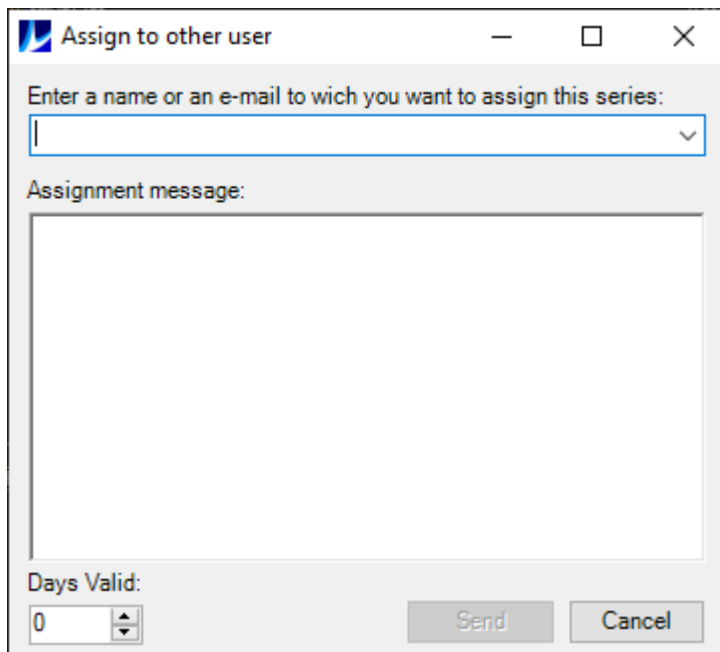
If you right-click on the “**Local Storage Explorer**” field, a context menu opens and it contains the following commands:

1. **Open** – opens the selected patient/study/series.
2. **Open Selected**– opens the selected patient/study/series.
3. **Open in 3D** – loads the selected series 3D (additional feature, user rights)
4. **Delete** – deletes the selected patient/study/series.
5. **Delete Selected**– deletes the selected patient/study/series.
6. **Burn DICOM CD/DVD** – this command is active, if there is a selected patient. If you choose this command, the “**DICOM Burner**” dialog opens, where the media type and label are set. Once you hit “**Burn**”, the exam will be burned in the CD.



7. **Anonymize** - used for anonymization of the study.

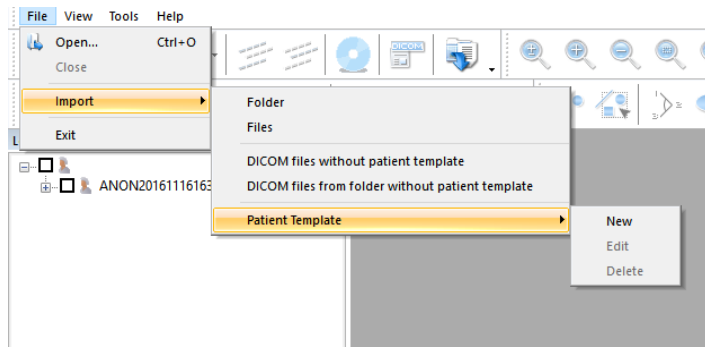
8. **Assign to Other User** – opens a dialog, where you could choose the receiver of this assignment and for how many days this assignment should be active.



9. **Set as Patient Template** – this command creates a **Patient Template** from the selected series and sets it as a default **Patient Template**. After that, all imported images will use this **Patient Template** until it is changed.
10. **Rebuild DB** – used in case there is a problem with the patients' tree structure. This command rebuilds the entire database
11. **Sort** – gives two options for sorting the Storage Explorer – by Name or by Last downloaded

CREATE NEW PATIENT / EDIT PATIENT

The SC PACS Viewer provides two dialogs for the creation of a new patient and for editing the patient's data of an already existing one. Each of these dialogs could be launched through the main menu "**File – Import – Patient Template**".



In the first case, when registering a new patient, choose **“Patient Template - “New”**. There you can fill in all the necessary patient and study data.

 A screenshot of the 'Patient Template' dialog box. The dialog box is divided into two main sections: 'Patient' and 'Study'. The 'Patient' section includes fields for 'ID', 'Name', 'Birth date' (with a calendar icon), 'Weight' (with a spinner box set to 0 and 'Kg' unit), 'Sex' (with radio buttons for 'Male', 'Female', and 'Other'), and 'Series' (with a 'Description' field). The 'Study' section includes fields for 'Date' (with a calendar icon and date '10/ 3/2016'), 'Time' (with a time picker set to '3:52:24 AM'), 'Referring Physician's Name', 'Study ID', 'Accession Number', and 'Description'. At the bottom right, there are 'OK' and 'Cancel' buttons.

When editing the patient information, first one of the study series has to be assigned as a patient template. After that, choose **Edit** from the main menu **File– Import – Patient Template** and change the required information. The **Delete** command (launched through main **File – Import – Patient Template- Delete**) , the program replaces the default **Patient Template**.

SET AS PATIENT TEMPLATE

Set as Patient Template – this command is accessible from the context menu that appears when clicking the right mouse button on a series from the Local Storage Explorer tree. It creates a template from the chosen series and sets it as a current template. After that, all imported images will use this template until it is replaced.

OPEN OR DELETE IMAGES

Open Image(s) – Images could be opened in several ways:

1. From the main menu –**File – Open**.
2. From the **OPEN** button located in the quick access toolbar.
3. Through dragging of an image from the Windows Explorer to the “**Workspace Area**”.

Regardless of the opening method, the selected images are opened in the “**Workspace Area**”. This means that images are organized into series depending on the DICOM data stored in them and then each series is opened into a separate view.

Delete Image(s) – Images could be deleted only through the **Local Storage Explorer** context menu. Deletion of an image means that it will be permanently deleted from the hard disk drive of the computer running the SC PACS Viewer, but it will stay unchanged on the SC PACS Server. For information about retrieving deleted images from the SC PACS Server, see Retrieve and Update. It is possible to delete all Patient, Study or Series images.

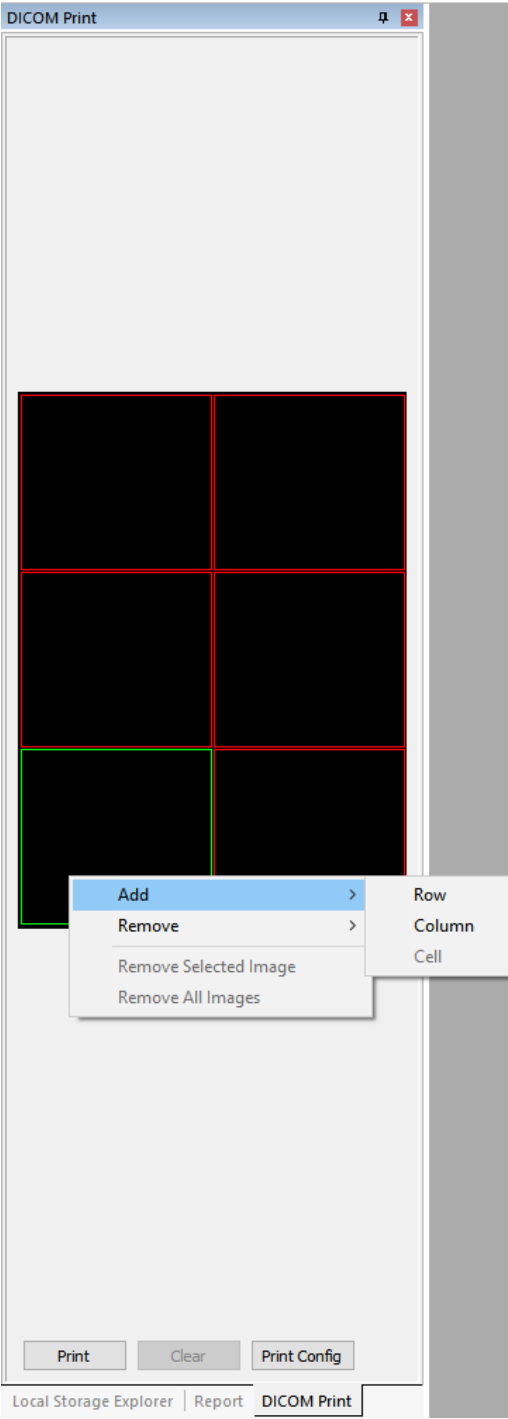
DICOM PRINT FORM

This form is used to prepare the images for printing using a DICOM compatible printer. You could setup interactively the grid configuration for the print job by using this form. The preview generated by this form is proportional to the output of the printer. Only the overlay texts are not displayed, even if they will be printed.

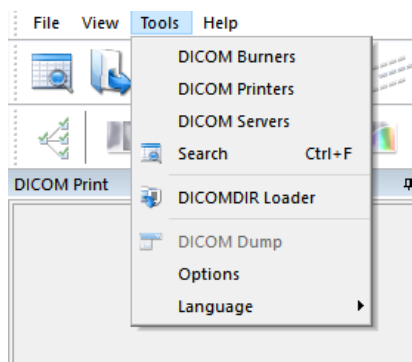
To add images to the print job drag and drop them from the workspace area or select the relevant images and press F7.

The grid could be rearranged using the context menu that appears after a right mouse click over the grid area or using the **DICOM Print Settings** dialog opened when the **Print Config** button is pressed. When using the context menu, you could only add and remove columns, rows or cells. The green border around some of the grid rectangles indicates that they are selected by a mouse click. When the Add command is selected, then the respective object is added right after the selected one. The Remove command is applied to the selected object. The commands below the separator line are used to remove one or all of the images, which have already been sent for printing. The "Remove All Images" command performs the same action as the **Clear** button at the bottom of the DICOM Print form.

The Print button is used to prepare and send the print job to the currently selected printer through the **DICOM Printers** or the **DICOM Print Settings** dialogs. A status message box is displayed after the printing job is completed. When the printing job is completed, the selected images are not removed and they could be used in another printing.

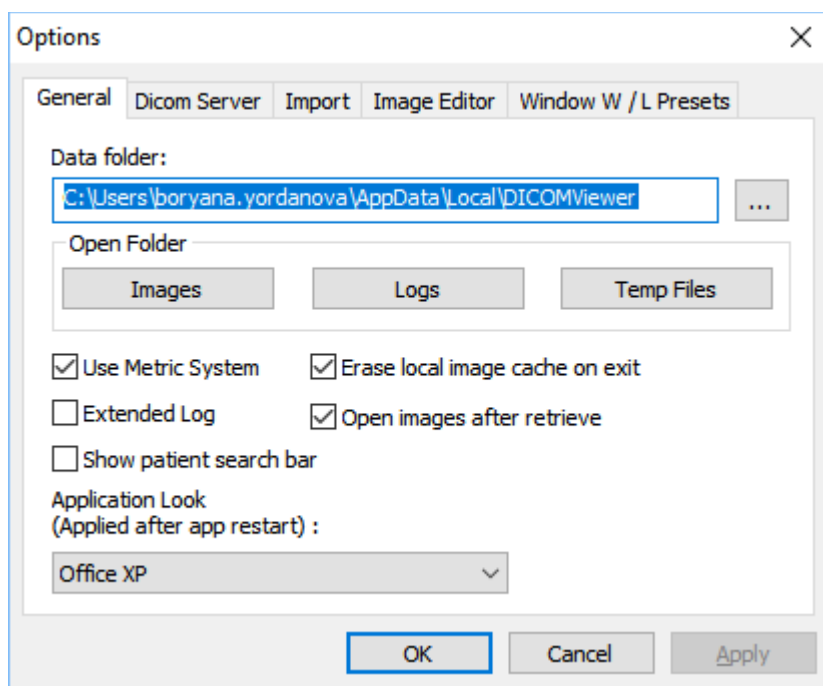


OPTIONS

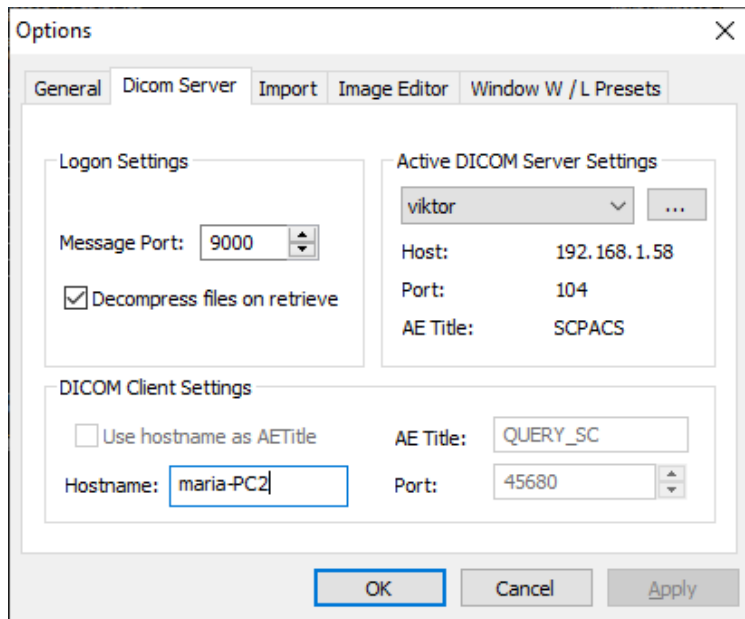


The “**Options**” dialog is used to setup various SC PACS Viewer product settings and features. It is built as a set of tab pages. Each page is used for a different group of settings. A brief description of the settings follows.

GENERAL



- **Data Folder** – it specifies where to store the data used locally by the SC PACS Viewer.
- **Open Folder** – this menu allows opening folders where images, logs and SC PACS Viewer's temporary files are stored.
- **Use Metric System** – if this option is checked, the measurements in SC PACS Viewer will be displayed in metric units. If this box is not checked, the measurements will be in inches.
- **Extended Log** - if this option is checked, SC PACS Viewer writes an extended log file
- **Show patient search bar** – if selected, shows the patient search bar
- **Erase local image cache on exit** - if selected, SC PACS Viewer • Erase local image cache when being closed
- **Open images after retrieve** - if this option is checked, SC PACS Viewer automatically opens images after retrieval
- **Application Look** – drop-down menu which to choose between different styles of visualization SC PACS Viewer. To apply the change, you should restart the Viewer



- **Logon Settings** –SC PACS Viewer could be set to connect automatically to the server application. Communication port could be configured from here, too.
- **Active DICOM Server Settings** – the active DICOM server data is shown here and it could be modified from the “...” button which opens the “**Configure DICOM Servers**” dialog. You can choose a server to be active from the drop-down menu. Once the server is selected, its data can be reviewed.
- **Decompress files on retrieve**
- **DICOM Client Settings** – used for user settings
 - ✓ **Use hostname as AETitle** - if this option is checked, the SC PACS Viewer uses AE Title as IP / Name
 - ✓ **AETitle** – here the AE Title is defined
 - ✓ **Hostname** – the host name is defined here

✓ **Port** – the port is defined here

IMPORT

It defines the type of compression, which is applied when images are imported. There are the following options:

- Little Endian Explicit
- RLE Lossless
- JPEG Baseline
- JPEG Lossless, Non-hierarchical, 1st Order Prediction
- JPEG 2000 (Lossless only)
- JPEG 2000 (Lossless or Lossy)

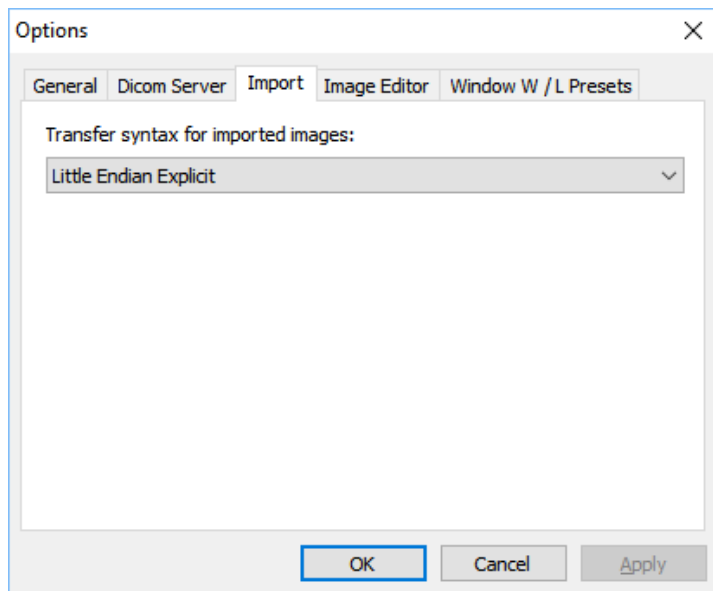
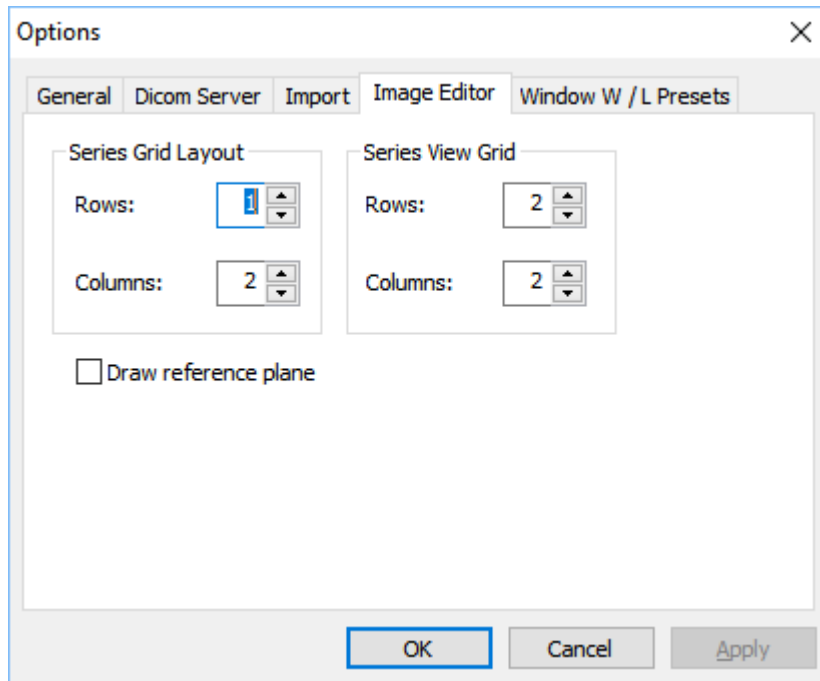


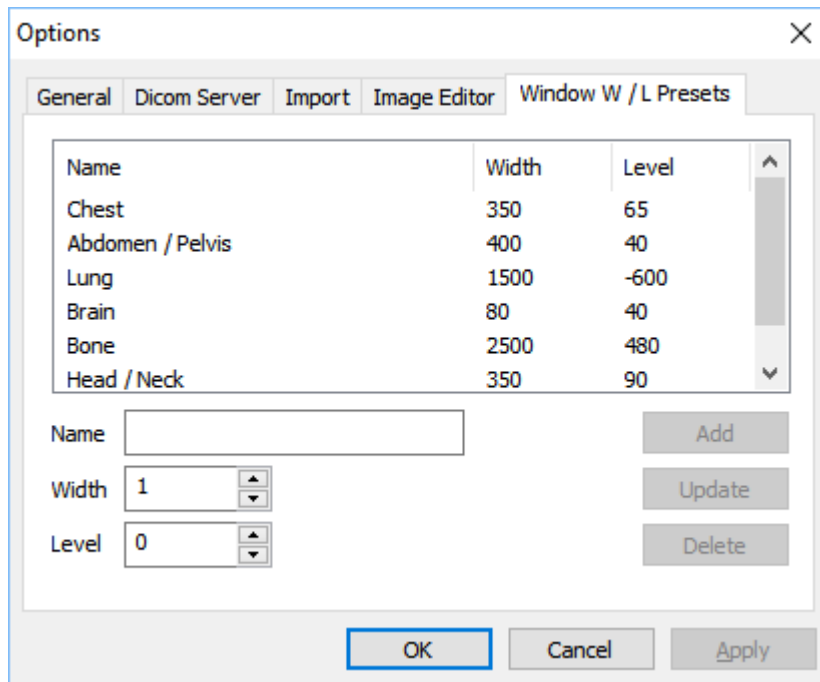
IMAGE EDITOR

It sets the visualization parameters defining the number of visible images. "Draw reference plane" option could be activated from here.



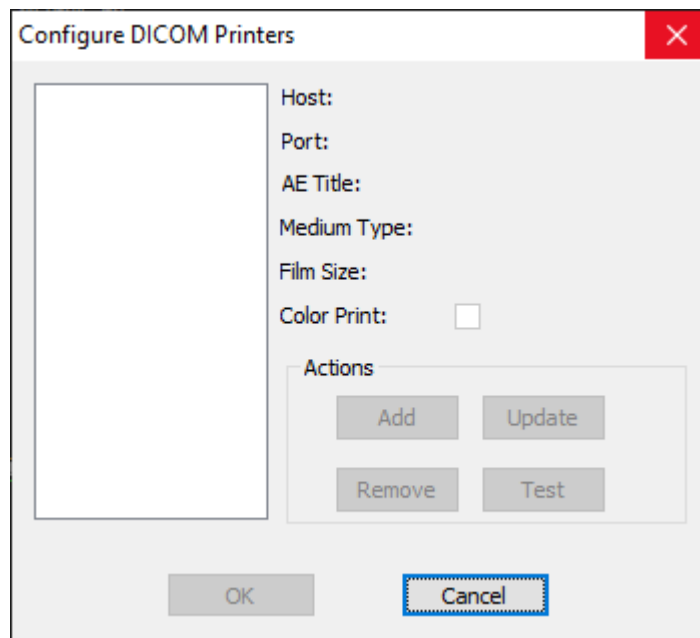
WINDOW W/L PRESETS

This tab page defines your own windows (Window W / L) or edits the already set ones. Each defined window consists of a name and two numbers – width and level



DICOM Printers Dialog

The DICOM Printers dialog is used to manage the DICOM Printers definitions. The communication between the SC PACS Viewer and the selected DICOM Printer is made according to the DICOM 3.0 Network Communication Protocol.



1. **Add** – Displays the “**DICOM Printer**” and “**Windows Printer**” dialogs. The first one is used to add a DICOM printer, while the second one is used to add a standard printer or use an existing one. Each **DICOM** printer is identified by 7 values:

- ✓ **Printer Name** – a string that is displayed in the DICOM Printers list .
- ✓ **Host** – The IP or Name of the DICOM Printer.

- ✓ **Port** – The port on which the DICOM Printer accepts Print Jobs

- ✓ **AE Title** – A string value required by the DICOM standard that identifies the DICOM SCP of the DICOM Printer.

- ✓ **Type of media** - whether it is paper, blue films, white films or other type of media

- ✓ **Film size** - choose what size of the

film

- ✓ **Color printing** – this option is checked, if the media is paper and the printer can do color printing

For each media type and size, a different DICOM printer is configured

Each Windows Printer is identified by two values:

- name – chooses printer to use from the available configured printers
- Paper size – desired paper size

2. **Remove** – Removes the selected printer from the list.

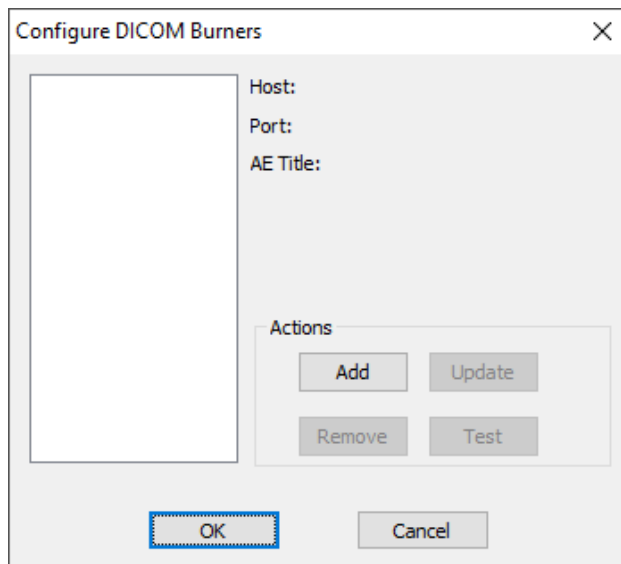
3. **Update** – This dialog allows you to modify the already registered printer settings.

4. **Test** – This button tests the printer availability. The result is displayed into a message box, there is no physical printing

All changes made in this dialog are saved only when the **OK** button is pressed. In all other cases, the changes are not saved.

CONFIGURE DICOM BURNERS

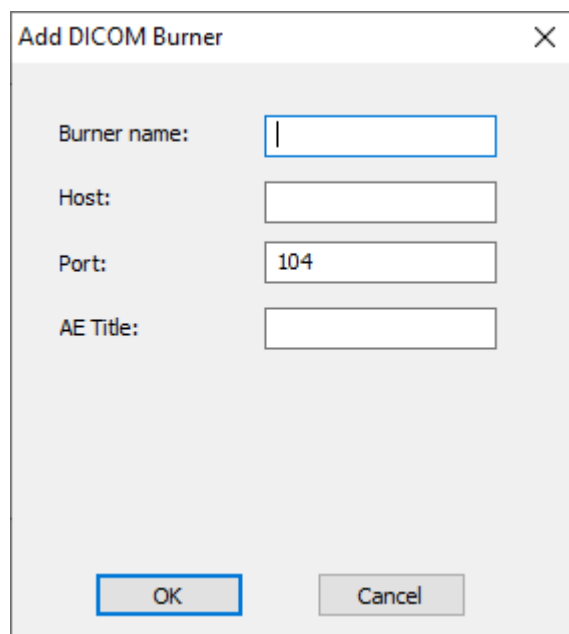
The window "Configure DICOM burners" is used to manage the definitions of DICOM burners and the connection the between SC PACS Viewer and the selected DICOM burner.



The main dialog consists of six buttons:

- Add – to add a new burners
- Update - to change settings of already introduced burners
- Delete - to remove the already configured device
- Test - to send a signal to the device and to verify communication
- OK - confirms the changes made
- Close - cancels the changes made

To configure DICOM burners, the following four criteria are needed:



The image shows a screenshot of a software dialog box titled "Add DICOM Burner". The dialog box has a standard Windows-style title bar with a close button (X) in the top right corner. Inside the dialog, there are four labeled text input fields arranged vertically: "Burner name:" with an empty field, "Host:" with an empty field, "Port:" with the value "104" entered, and "AE Title:" with an empty field. At the bottom of the dialog, there are two buttons: "OK" and "Cancel". The "OK" button is highlighted with a blue border, indicating it is the default action.

- Name - sets a device name (how it will be displayed)

- Host - the device address
- Port - computer port
- AE Title - A string of characters used by the DICOM standard for identification of DICOM SCP of DICOM burner

DICOM PRINT SETTINGS

The “**DICOM Print Settings**” dialog is used to define all the necessary print job settings. Once saved, these settings are applied to all print jobs until this dialog is called again and the new settings are saved. This dialog appears in the **DICOM Print Settings** after clicking the Print config button.

The screenshot shows the "DICOM Print Settings" dialog box. It includes the following settings:

- Layout Format:** STANDARD\1,2
- Registered DICOM Printers:** Lexmark MX610 Series XI
- Image Polarity:** (empty dropdown)
- Job:**
 - Priority: LOW
 - Copies: 1
 - Label: (empty text box)
- Settings:**
 - Film Orientation: PORTRAIT
 - Resolution (DPI): High
 - Show Overlay: ☒
 - Magnification Type: (empty dropdown)
 - Smoothing: (empty dropdown)
 - Trim: (empty dropdown)
 - Film Destination: PROCESSOR
- Densities (1/100ths of optical density):**
 - Min: 0
 - Max: 0
 - Border: WHITE
 - Empty: WHITE

Buttons at the bottom: <<, OK, Close.

Short description of the available options:

1. Format – Defines the type of the grid that will be used for the current print job.

There are 3 types of basic grids: **STANDARD**, **ROW**, **COL**. Each of these words is followed by a backslash and numbers separated by a comma. The **STANDARD** grid is used to define a rectangular grid. The number of columns and rows are defined by the first and the second number after the backslash, respectively. For example, STANDARD\3,5 will produce a grid with 3 columns and 5 rows. The **ROW** and **COL** types are used to generate a grid from rows/columns. The number of rows/columns is equal to the numbers after the backslash. Each number defines the number of cells in the corresponding row / column. ROW\1,2,3 defines a grid with 3 rows. Starting from the top, the first row will have one cell, the second 2 cells and the third one will have 3 cells. The same applies for the **COL** type.

2. Registered DICOM Printers – A list of all predefined DICOM and Window printers. The selected one is assumed to be the default one.

3. Image Polarity – This option specifies how the images shall be printed. There are two values: NORMAL - The images are printed as they are, and REVERSE - the image colors are inverted.

4. Task

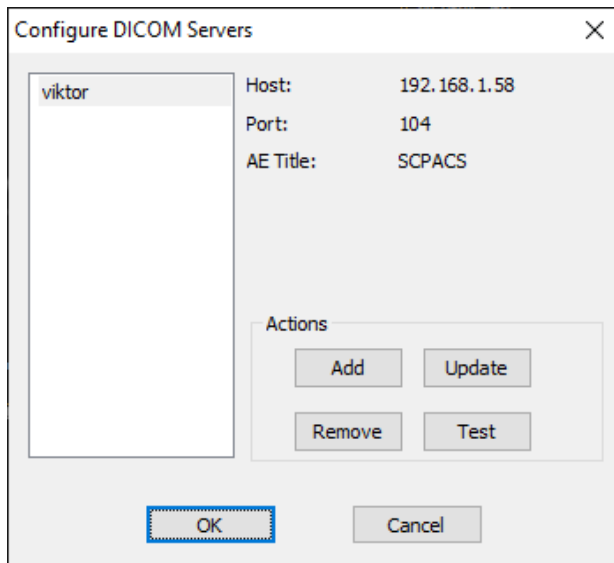
- **Priority** – Specifies with what priority the job should be processed by the printer.
- **Copies** – The number of copies to be printed.
- **Label** – A short string that identifies the print job.

5. Settings

- **Film Orientation** – Specifies the orientation of the print media. Possible values - PORTRAIT and LANDSCAPE.
- **Resolution (DPI)** – Specifies the density of the produced images. Larger DPI leads to more precise images but needs more time for printing.
- **Show Overlay** – Toggles on/off the overlay texts that are printed over the image
- **Magnification Type** – Defines the interpolation type by which the printer magnifies or shrink the image in order to fit it in the film image box.
- **Smoothing** – Specifies the the interpolation function type.
- **Trim** – Specifies whether a trim box shall be printed around each image on the film.
- **Film Size** – A list of the standard film sizes.
- **Film Destination** – Defines which output of the DICOM Printer should be used.

6. Densities (1/100th of optical density)

- **Min Optical Density** – Minimum density of the images on the film, expressed in hundredths of OD. If the Min Density is lower than the minimum printer density, then the Min Density is set to the minimum printer density.
- **Max Optical Density** – Maximum density of the images on the film, expressed in hundredths of OD. If the Max Density is higher than the maximum printer density, then the Max Density is set to the maximum printer density.
- **Border** – Specifies the color used for the border of the film.
- **Empty** – Specifies the color used for filling of the empty areas.



The "Configure SC DICOM Server" dialog is used to manage the definitions of SC DICOM servers. These SC DICOM Servers are used in windows – “Save SC DICOM Server” and “Search” Each server is a DICOM Service Class Provider (SCP) in the local network. Communication between SC PACS Viewer and the selected SC DICOM Server is done through the protocol DICOM 3.0 Network Communication.

The four buttons in the **Actions** field is used to manage the list of DICOM servers. The possible actions with these buttons are:

1. Add – launches the “**Add DICOM Server**” dialog, where the new SC DICOM server parameters can be filled in.

- **Name** – a string of characters that appears in the SC DICOM server list.
- **Host** -IP or Name of the computer on which the server is installed.

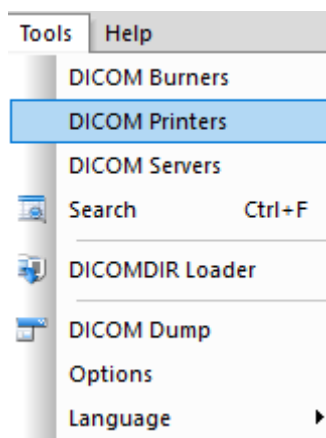
- **Port** – a computer port on which the SC DICOM server accepts requests to connect.
- **AE Title** – a string of characters used by the DICOM standard for identification of the DICOM SCP, which works on the respective computer.
- **WADO port** – a port that communicates with the web client.

2. Remove - deletes the selected server from the list.

3. Update - allows to edit the parameters of an already registered server

4. Test - this button sends a test request for connection to the selected server. A new window pops up and reports whether the server is available or not.

All changes made in this dialog are saved when the **OK** button is pressed. In all other cases, the changes are not saved. The **SC DICOM Server** button is also available in the “**Tools**” menu.

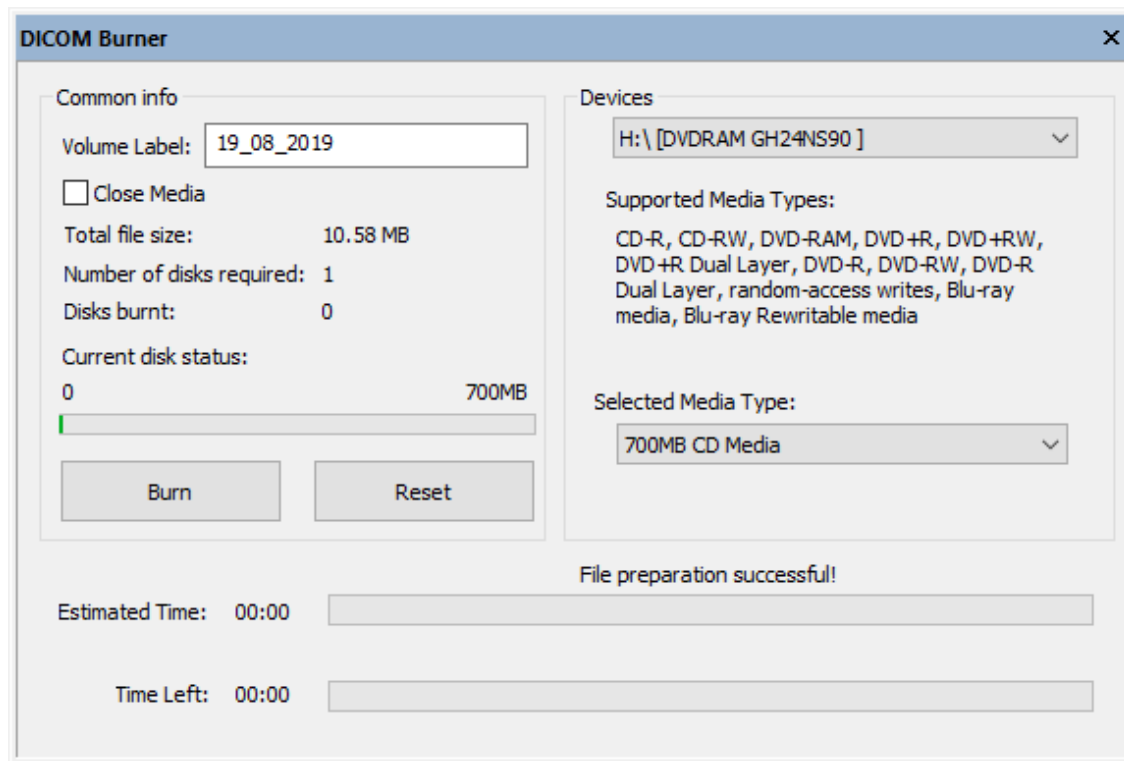


SEARCH

- Patient - date of birth
- Search in BIS (for integration with such)
 - ID
 - Case history number
 - Year

When the **Search** button is pressed, the filters are combined and sent to the active SC DICOM Server. As a result, it returns all records that meet the search criteria. There is an area at the bottom of this window, where status messages are shown - Success, Error, etc.

If the query is executed successfully and there are some results, then the **Retrieve** buttons are enabled – “**Retrieve patient** “, “**Retrieve study**”, “**Retrieve series**”. When it is pressed, a context menu appears just below it. This menu makes it possible to retrieve all or part of the images associated with the result of the query. After the **Find** dialog is closed, the retrieved images appear in the „Series Browser” dialog, which allows the user to select the images to be opened in the Workspace Area.



This dialog is used to prepare selected files from the **Local Storage Explorer** and all the required information for the creation of a DICOM CD and burn it onto a blank medium. It was mentioned above that the files to be added to the DICOM CD are selected from the **Local Storage Explorer** using the check boxes before each tree node.

Before starting the burning, there are the following options:

- Label - type a volume label.
- Close Media - check the box to close the disc after recording.
- Devices - change the drive that will be used for burning.
- Select Media Type - select the type of recording media.
- Burn
- Reset

In the beginning of the recording the DICOM Burner calculates **Estimated Time** and **Time Left** until the end of the burning process. The progress is displayed in the **Progress bars**.

IMPORTING IMAGES

The SC PACS Viewer has its own internal database of patients, studies and images. All the patients and their related images that are stored in this DB are visualized by the **Local Storage Explorer**. These images are stored on the local SC PACS Server, too. That is why before importing any images, the user should **Log In** to the server.

When images are imported using the SC PACS Viewer, it acts as a SC PACS Modality Worklist. During the import, the images are stored on the SC PACS Server.

When the files to be imported are DICOM images, then there are two ways to import them. The first one is to replace the information inside their DICOM headers using the information from the current Patient Template. The second one is to import them as they are without any changes. The first method is useful when we need to anonymize the images (i.e. to hide the patient's identity) but it should be used carefully because it may cause some patient's images to be assigned to another patient.

the non-DICOM images as a **Patient Template**.

HOW TO OPEN DICOM IMAGES

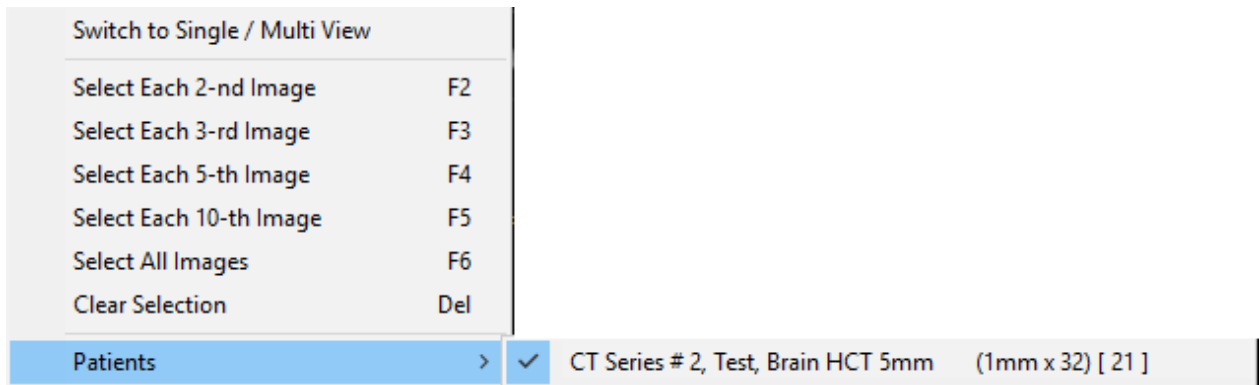
There are several ways to open images with the SC PACS Viewer and they are:

1. From the **Main Menu**, choose **File - Open**. The selection of this command will open a "**File Open**" dialog. Go to the folder that contains the DICOM files. Select one or several of the files and click the **Open** button.
2. From the Main Toolbar using the button  – The action executed when this button is clicked is the same as the action of the **File – Open** menu.
3. From the **Local Storage Explorer** using:
 - The **Open** command from the context menu displayed for the tree nodes – This command is available for all tree nodes except for the rootnode. Depending on the selected node, the number of files that will be opened may vary from 1 to several.
 - Drag and drop a tree node to the Workspace Area – This operation is similar to the previous one.
4. From the Windows Explorer:
 - **Open** command from the context menu displayed for the file – If there is a running instance of the SC PACS Viewer, then the selected file will be opened inside it, otherwise a new instance will be started.
 - Double click on a DICOM file – The same as the above.
 - Drag and drop a DICOM file to the Workspace Area – This action is similar to the action performed after **File–Open** is selected.

All files will be opened into a single tab inside the Workspace Area. The files are grouped into a series depending on the contents of their DICOM Headers. Each Series is opened into a single Series View. If there are more than one series of images opened in this tab, they can be accessed using the context menu displayed after a right mouse click over an image inside the Series View.

WORKING WITH SERIES VIEWS

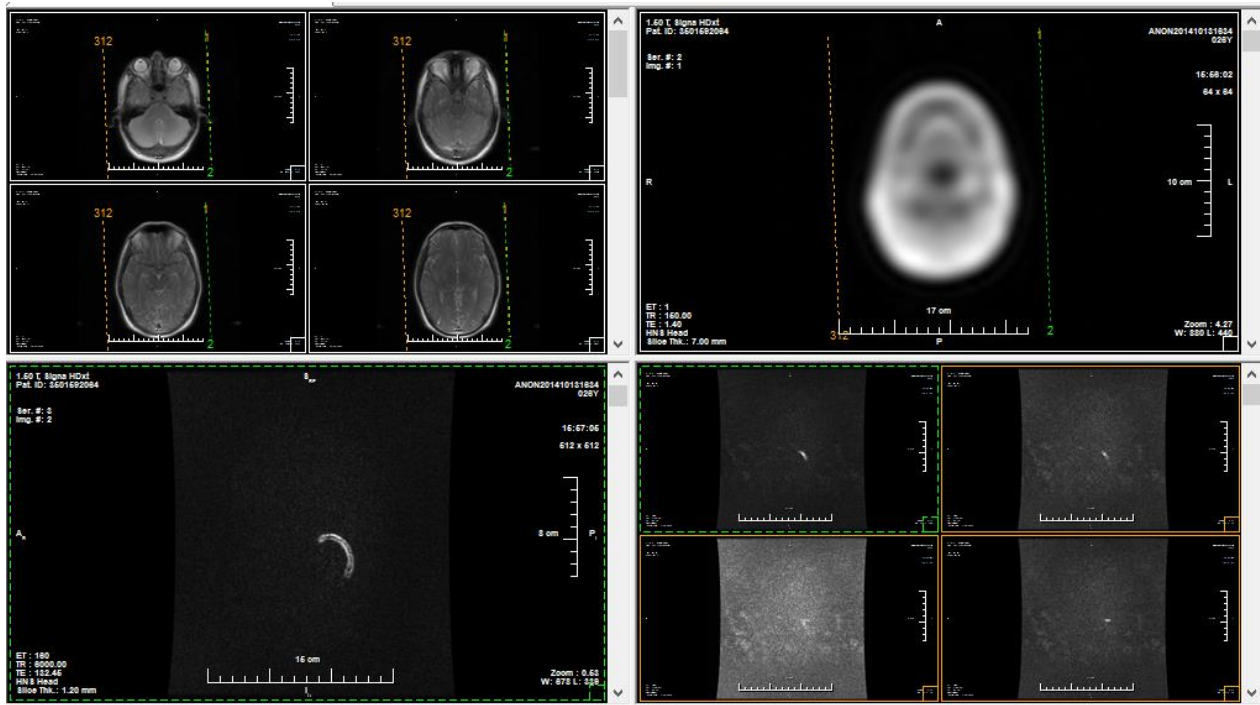
The area in which the images from one series are displayed is called **Series View**. One tab from the Workspace Area may contain few Series Views. When a patient or a study is opened, the “**Studies/Series Browser**” dialog appears in order to choose which study or series to be opened. If you want to see another series in the current view, choose this series from the context menu.



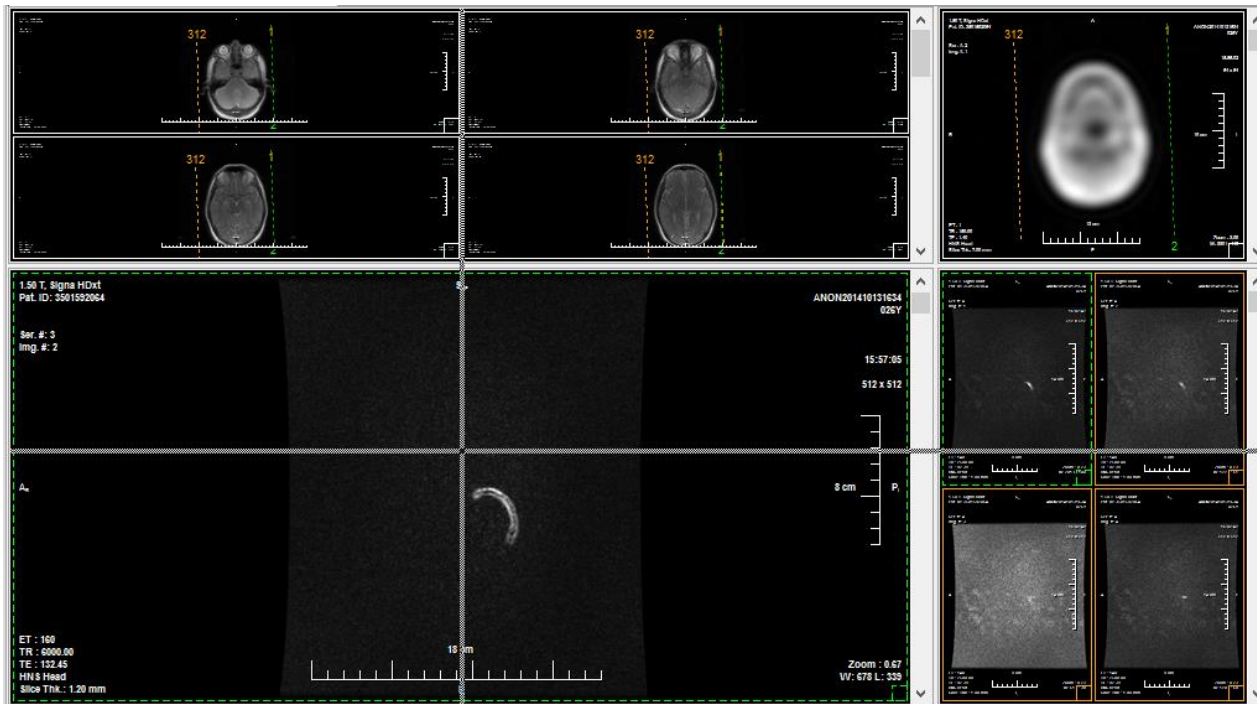
Series opened in **Series View** could be changed from the context menu. The series opened at the moment are marked with a tick.

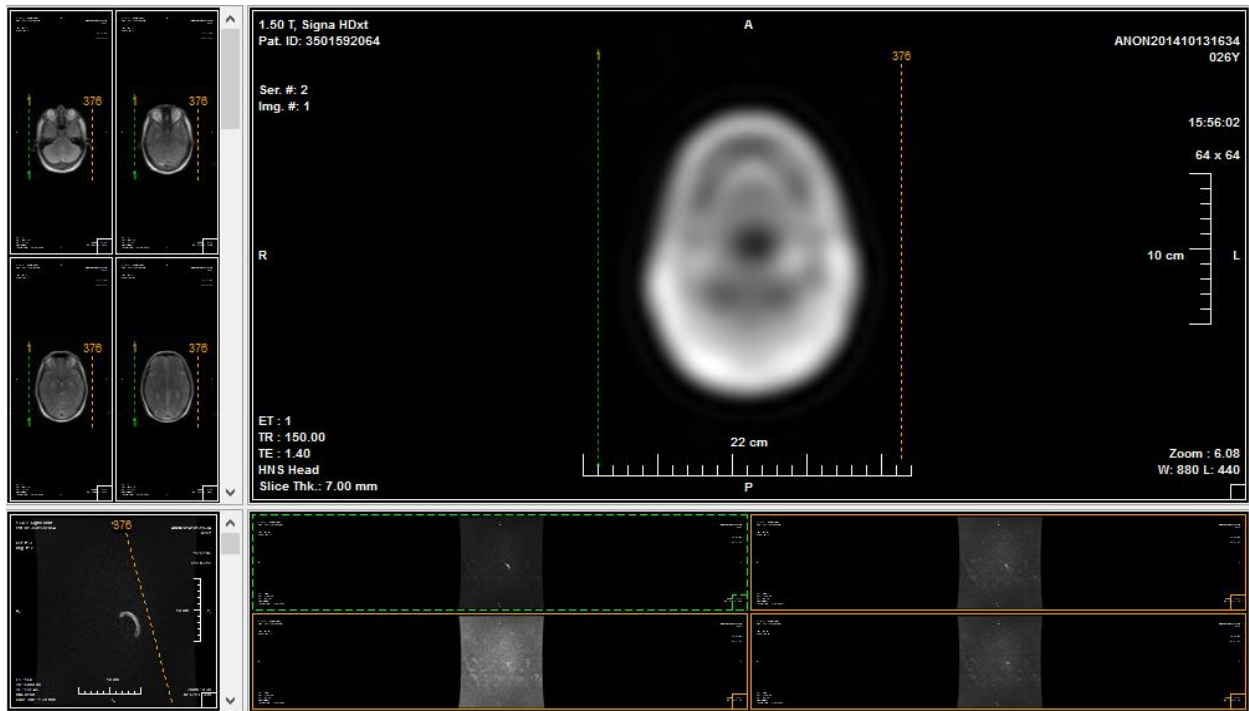
Each patient is visualized in a single tab in the **Workspace area**. Different studies and series of one patient could be seen in the frame of the screen. The number and size of the serial frames could be set manually - **Tools – Options – Image Editor**.

It is possible to slip the screen SC PACS Viewer in 4, where in each part displays one image from a series or a multiple-series view.



This configuration can be resized by dragging the images of interest across:

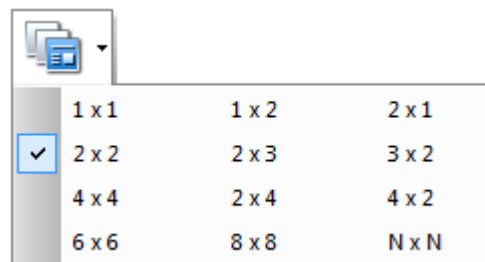




It is possible to open one series in multiple-series view. In this case, if you make changes on images from a single series view, they won't be applied to images from the other series view unless the changes are saved.

The Active view can be distinguished by the color of the cell frames. The color of the active frame is dark orange while the color of the inactive view is white. The active image inside the active view has a green dashed border.

The Active view and active image are changed by a left mouse click.



Each Series View can be configured independently to display multiple images into a rectangular grid. Any manual modifications of the grid are possible through the drop-down menu button for grid settings. The maximum cell number in one series is 100.

If the number of images in the series is greater than the number of cells in serial view, then to the left side of the series, positioning dialog appears. The images from the visible region of the series can be changed through this dialog.

If the active image contains some graphic objects (measures or annotations), then the context menu is extended with a few more items. These items are:

- **Reset Label** – This item is enabled only when the position of the label is changed manually.
- **Delete** – Deletes the active graphic object.
- **Delete All Objects** – Deletes all graphic objects.

Any of the above operations will modify the image and the user will be asked to save the modifications.

WORKING WITH IMAGE TOOLS

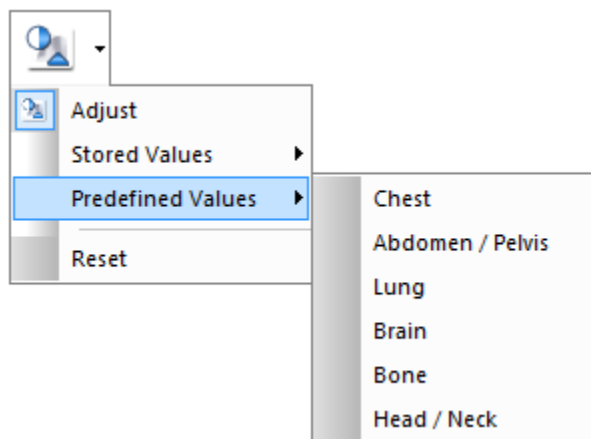
The Image Tools can be used to modify the original image, so that some objects could become better visible. All changes made using any of these tools can be reversed. This means that the original image data will stay intact. Some of the modifications are saved into the DICOM part of the image, but others are not saved at all.

The tools can be divided into two groups:

1. Tools that modify the DICOM image Header



- **Invert Colors** – This tool, as its name shows, is used to invert the image colors. If the Apply To All option is checked, this operation will invert the colors of all images in the current Series View. The color inversion does not depend on the colors of the current image. Each image is inverted for itself.
- **Window Parameters / (Brightness/Contrast) Adjustment** – This tool is used to modify the visible set of colors/gray levels. The input for this tool is mouse movement while the left mouse button is pressed. In vertical direction the modified value is **Window Level** or **Contrast** depending on the type of the image (Monochrome or Color). When the mouse is moved to the top of the screen, the value is incremented. When the movement is down, then the value is decremented. In horizontal direction the modified value is **Window**



Width or Brightness. If the mouse is moved to the left side of the screen, the value is increased, otherwise it is decreased.

These values can be modified not only with the help of the mouse, but also by using the Window Parameters panel or the drop-down menu that can be shown under the button. The three available options here are:

- **Stored Values** – This submenu displays a list of all pairs of Window Width and Window Level that are stored in the DICOM part of the image. When the image contains more than one pair of values, then the last one is loaded at the initial image drawing. When the image is saved and the current pair of values is not available in the list of stored values, it is added at the end of the list.
- **Predefined Values** – These are the Window values entered through the **Instruments -Options** main menu.
- **Reset Image** – Resets the current values of Window Width / Level or Brightness/Contrast to their initial values extracted from the file during its loading.

2. Add / Remove Graphic Objects – There are 5 types of graphic objects that can be saved into the DICOM image. These objects are:



- **Line (Distance) Measure** – A line object is drawn between mouse down and mouse up positions, while moving the mouse. A label is attached to one of the ends of the line object. There is information about the length of the line in pixels inside this label and if there is information about the distance between pixels then the distance is calculated in mm or inches depending on the settings in the **Options** dialog.

- **Angle Measure**  – This tool calculates the angle between the two lines defined by three mouse clicks. The angle is measured at the point of the first mouse click.

- **Ellipse**  – This tool draws an ellipse defined by the top left (mouse down) and the bottom right (mouse up) corners. The label contains information about the number of pixels surrounded by the ellipse, the area of the ellipse (if there is a pixel spacing info in the image), and it also contains the mean value of the Hounsfield Units (HU) or relative values for CT or MRI images, respectively.

- **Arrow**  – Draws an arrow without any label.

- **Text Annotation**  – Draws an arrow with a label that could be edited (to do text annotations) .

- **Density Meter**  – This tool is applicable for CT or MRI images. It displays information about the density of the matter at this point. For CT the density is measured in Hounsfield Units (HU) and for MRI in relative units.

Each of the objects drawn using any of the above-described tools could be moved and resized. It is also possible to move the label to a new position. The label stays connected to the closest end of the graphic object.

3. Tools that do not modify the DICOM image Header

- **Show /Hide Overlay**  – The Overlay is the layer that is used to display the image text information. A detailed description of the overlay text may be found [here](#).

- **Reference Lines**   – The reference lines are useful only for series of images acquired from modalities like CT or MRI. Each image from such a modality contains in its DICOM header the exact positioning information. If the study contains LOCALIZER or SCOUT images or there are at least two series that are orthogonal or near orthogonal to one another and these series are opened inside one tab, then these buttons can be used.

In order to get results from that tool, do the following:

1. Open a study with more than one series or with a series containing LOCALIZER/SCOUT images.
2. In Dual View mode choose the appropriate series for each view.
3. Click the reference lines buttons.

The lines are drawn into the inactive Series View and each of them corresponds to the first, last and the current image(slice) from the active

view, respectively. The first and the last lines are drawn using orange dashed lines with numbers at their top or left sides. The line for the active image is drawn using a green dashed line with a number at its bottom or right side. If the option for drawing reference planes is enabled in the **Options** dialog, then a rectangle in isometric view is drawn marking the location of the slice.



Animation – the Animation Controller is used to playback multiple-frame DICOM images or to animate a series of images. It allows to play, pause and stop the animation. Move one frame forward or backward and change the speed of the animation. It has the following 5 buttons:

1. Start/Pause the Animation – Starts and stops the animation in pause mode.
2. Stop the Animation – Stops the animation..
3. Move 1 frame forward – Scroll one frame of animation forward. If the current frame is the last, the animation moves to the first frame. This button is available only when the animation is paused.
4. Move 1 frame back – Moves the animation one frame backward. If the current frame is the first, the animation moves to the last frame. This button is available only when the animation is paused
5. Show Playback Speed Setup Dialog – This button opens a window in which to set the desired frame speed (frames per second).
6. After you activate this tool, press the left mouse button on the image, hold it and drag the image in the desired direction.



Move – This tool allows to move the image in four directions in order to find some specific part of the image. After you activate this tool, left-click on the image, hold the mouse and drag the image in the desired direction.

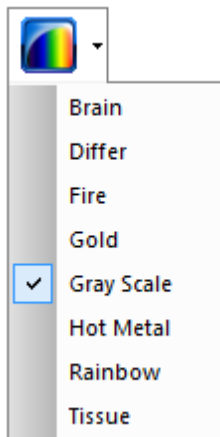


Fit – This tool fits the image within the limits of the visible area.

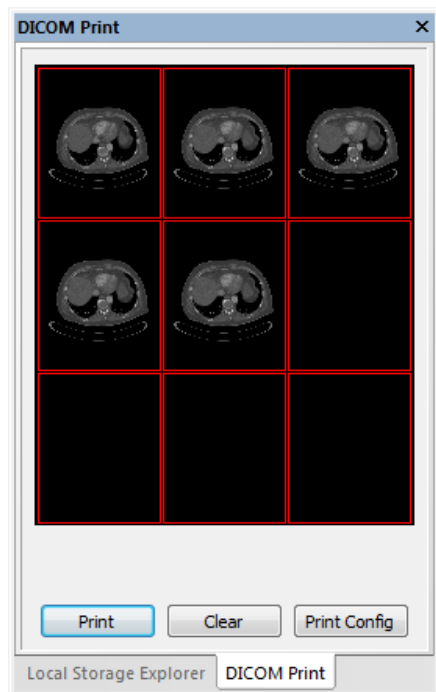


Zoom – these are tools that increase/decrease the image size.

Pseudo Coloring –It is possible to color grayscale images with this tool, using a set of predefined color transformation maps. To use this tool, choose one of the preset color filters:



PRINTING IMAGES TO A DICOM PRINTER



The DICOM Print Form provides an interface to print images directly to any DICOM compatible film printer. Using this form, it is possible to compose and arrange the images that will be printed on a single film. In order to send a print job to a DICOM Printer, the following steps should be performed:

1. If there are no SC DICOM Printers defined for the SC PACS Viewer, then define them using the “**DICOM Printers**” dialog. This dialog could be displayed using the **Tools–DICOM Printers** menu command.
2. Open the images that will be printed.
3. Prepare the images for printing using the image tools. At the end of this step, the images should have:
 - Correct Zoom factor value
 - Correct Window Level / Width values
 - All the necessary annotations and measures.

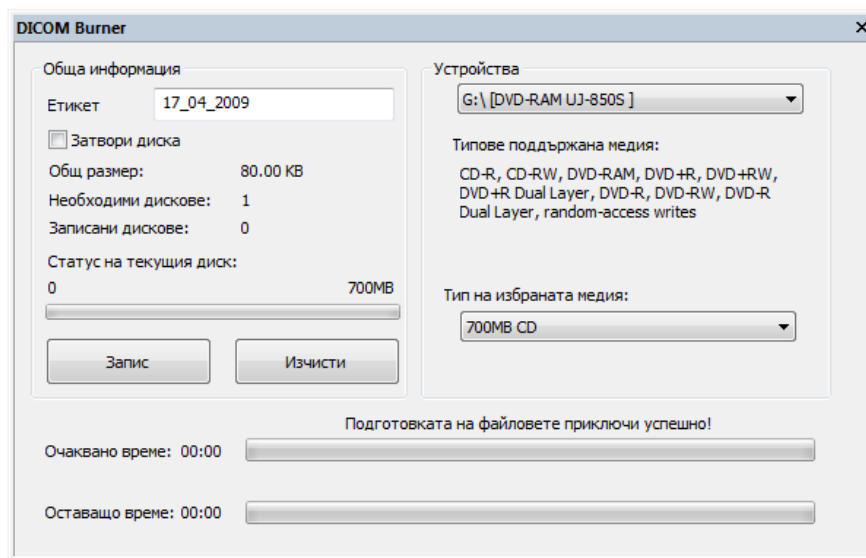
4. Using the “**DICOM Print Settings**” dialog choose the printer, define the grid layout and set any of the settings that will be used for this print job. After this step is completed, the DICOM Print Form will contain a proportional preview of the film that will be printed.
5. Drag all the images that will be printed in this print job from the Workspace Area to the DICOM Print Form. When the image is dropped, a thumbnail is displayed in the cell of the grid that will contain this image.
6. Remove, if necessary, some or all of the images from the print job using the **DICOM Print Form** context menu. If all the images are removed, then step 5 should be repeated.
7. When the print job is ready, click the **Print** button. The printing procedure may take some time since at this point all the images that will be printed are prepared according to the print settings defined in “**DICOM Print Settings**” dialog and after that they are transferred to the DICOM Printer.
8. At the end of the print job a status message will be displayed.

HOW TO WRITE A DICOM CD

In order to create a DICOM CD the “**Local Storage Explorer**” dialog must contain at least one image. The Local Storage Explorer could be populated using image import, or retrieving images from the SC PACS Server or some other DICOM compatible server. The other steps that should be performed to create a DICOM CD/DVD are:

1. Select all the images that should be burned on the DICOM CD/DVD using the check boxes in front of the icon of each Local Storage Explorer tree node.

2. Choose “**Burn DICOM CD/DVD**” from the **Local Storage Explorer** context menu.
3. Insert an empty CD/DVD into the recorder.
4. If “**DICOM Burner**” is not visible from the main menu, select **View – Toolbar and Docking Windows – DICOM Burner**.
5. Enter a title of the volume and set any other options inside the “**DICOM Burner**” dialog, if necessary.
6. Click the **Burn** button. This will start the process of burning. The progress bar will display the current status of burning.
7. A status message will be displayed at the end of the burning and if the **Close Media** option is selected, the disk will be closed and it will be impossible to add any other information.



REMOVING ITEMS FROM THE LOCAL STORAGE EXPLORER

The only way to remove an item from the “**Local Storage Explorer**” is by using the context menu. There are two **Delete** commands in the context menu and they are

available, depending on the selected node and the status of the node. The commands are:

1. **Delete** – Deletes the current selected node. If this node is the last in its parent node, then the parent node is removed too and so on until the root node.
2. **Delete Selected** – Deletes all images which are ticked.

If some of the deleted images are opened inside the **Workspace Area**, first they are closed and then are deleted.

IMPORTANT: The patients and images are deleted only on the local machine but they stay untouched on the SC PACS Server. For information about retrieving deleted images from the SC PACS Server, see **Retrieve and Update**.

OVERLAY OVERVIEW

The Overlay is a graphic layer located above the actual image. It contains mostly text data extracted from the DICOM image header. The contents of the overlay are different for each modality. They also may differ depending on the contents of the DICOM image header.

The Overlay is divided into 3 text zones plus 4 graphic zones on each side of the image. The two top text zones are common for all modalities, while the bottom left is different, depending on the modality.

Overlay content descriptions:

- Common image

- CT image
- MRI image
- MG image



The symbols in the upper left corner indicate:

(0x0018,0x0087)	Magnetic Field Strength
(0x0008,0x1010)	Station Name
(0x0008,0x1090)	Manufacturers Model Name
(0x0010,0x0020)	Patient ID
(0x0020,0x0010)	Study ID
(0x0008,0x1030)	Study Description

(0x0020,0x0011)	Series Number
(0x0020,0x0013)	Instance Number
(0x0018,0x0010)	Contrast Bolus Agent
(0x0020,0x4000)	Image Comments

The symbols in the upper right corner indicate:

(0x0008,0x0080)	Institution Name
(0x0010,0x0010)	Patients Name
(0x0010,0x0040)	Patients Sex
(0x0010,0x1010)	Patients Age
(0x0008,0x0050)	Accession Number
(0x0008,0x0020)	Study Date
(0x0008,0x0030)	Study Time
(0x0008,0x0032)	Acquisition Time
(0x0018,0x1210)	Convolution Kernel
(0x0028,0x0010)	Rows
(0x0028,0x0011)	Columns

The symbols in the lower left corner indicate:

CT

(0x0018,0x0060)	KVP
(0x0018,0x1151)	X-ray Tube Current
(0x0018,0x0050)	Slice Thickness
(0x0018,0x1120)	Gantry Detector Tilt
(0x0018,0x1150)	Exposure Time

MR

(0x0018,0x0091) Echo Train Length
(0x0018,0x0080) Repetition Time
(0x0018,0x0081) Echo Time
(0x0018,0x1250) Receive Coil Name
(0x0018,0x0050) Slice Thickness

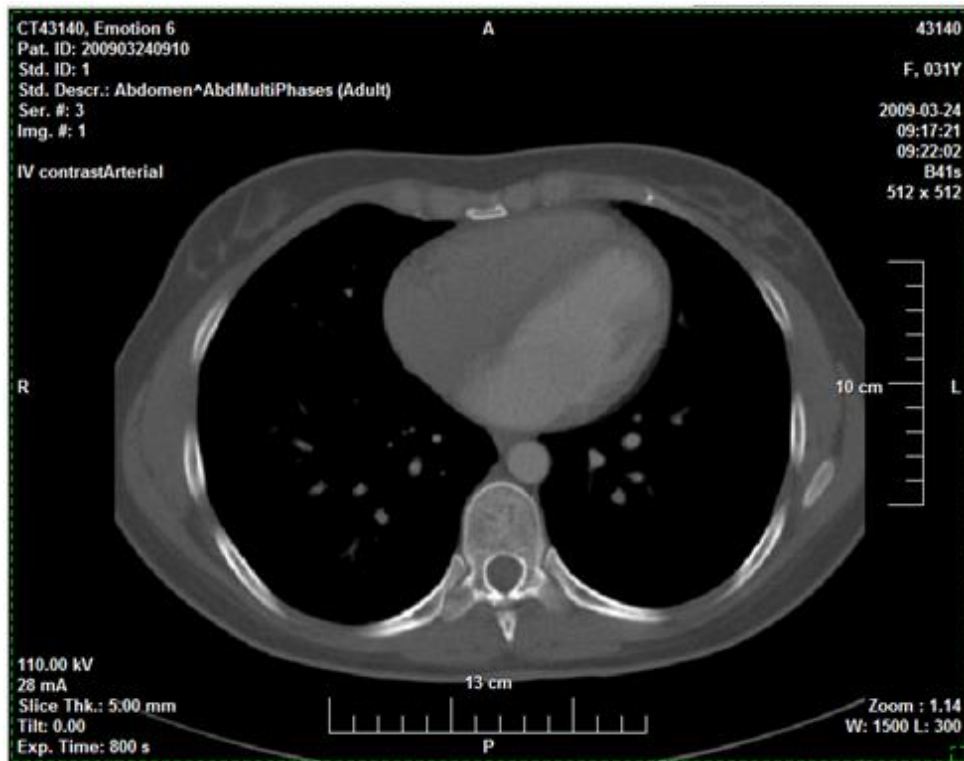
MG

(0x0020,0x0062) Image Laterality

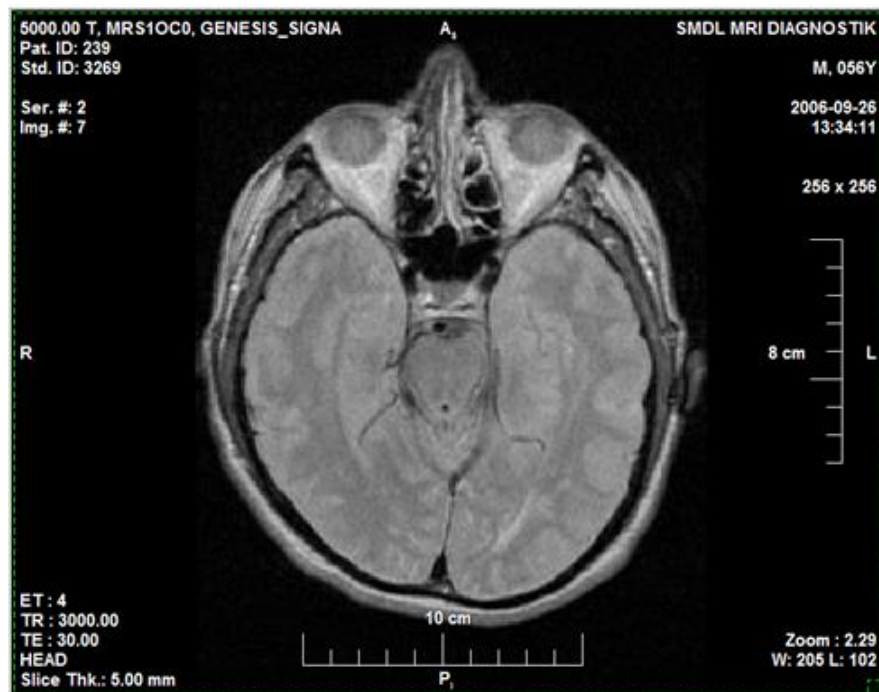
The symbols in the lower right corner indicate:

Frame	It is visible in multiframe images.
Zoom	Zoom factor
Window Width / Window Level	In monochrome images
Brightness / Contrast	In color images

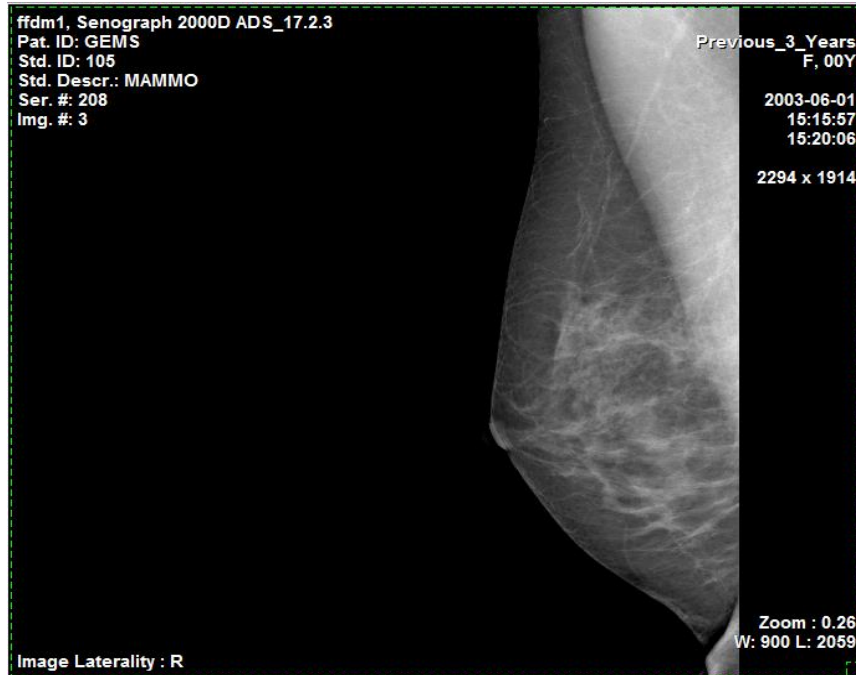
CT image



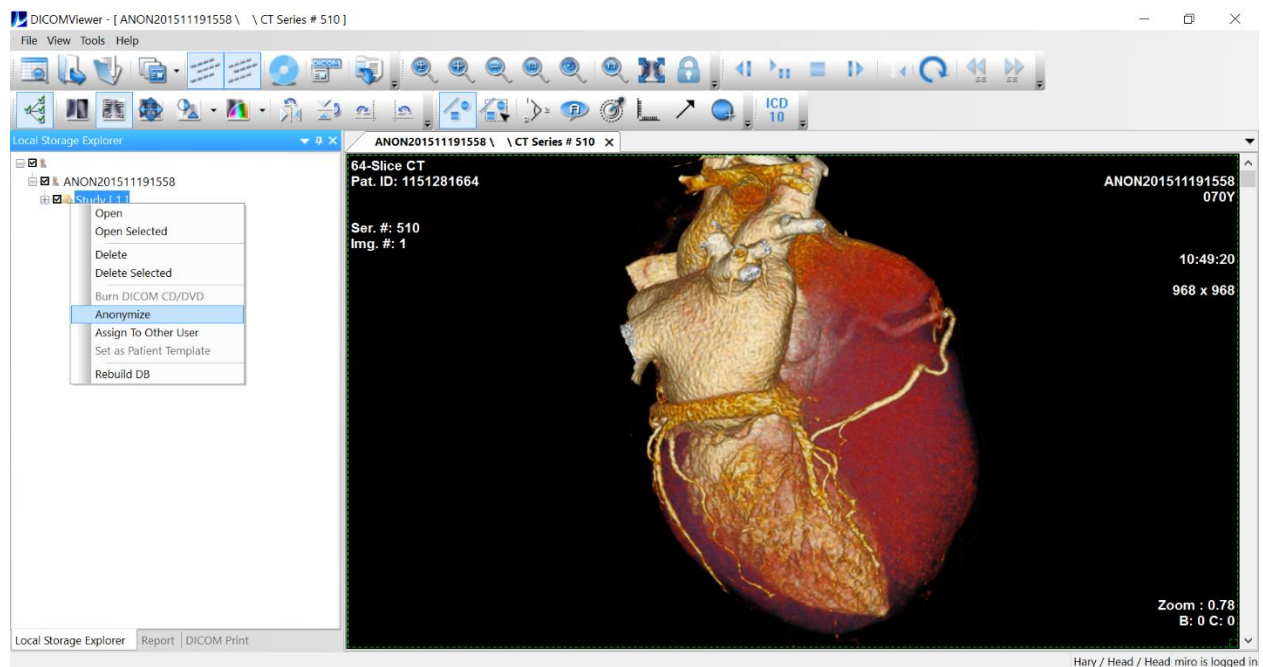
MR image



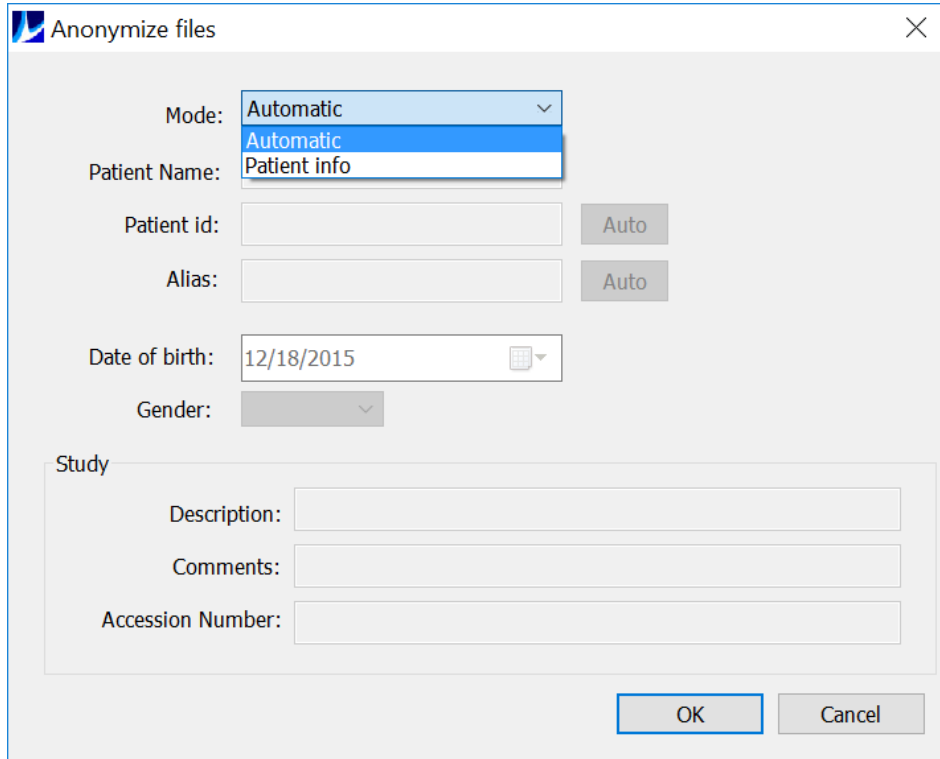
MG image



PATIENT ANONYMIZATION - DICOM ANONYMIZE



1. Once we have retrieved a patient exam, we hit “Anonymize” with a right-click of the mouse



The image shows a software dialog box titled "Anonymize files" with a close button (X) in the top right corner. The dialog contains several input fields and buttons. The "Mode:" dropdown menu is open, showing "Automatic" as the selected option and "Patient info" as an alternative. Below this, the "Patient Name:" field is empty. The "Patient id:" and "Alias:" fields are also empty, each with an "Auto" button to its right. The "Date of birth:" field contains the text "12/18/2015" and has a calendar icon to its right. The "Gender:" dropdown menu is currently closed. Below these fields is a section titled "Study" which contains three text input fields: "Description:", "Comments:", and "Accession Number:". At the bottom right of the dialog are "OK" and "Cancel" buttons.

Anonymize files

Mode: Automatic

Patient Name:

Patient id: Auto

Alias: Auto

Date of birth: 12/18/2015

Gender:

Study

Description:

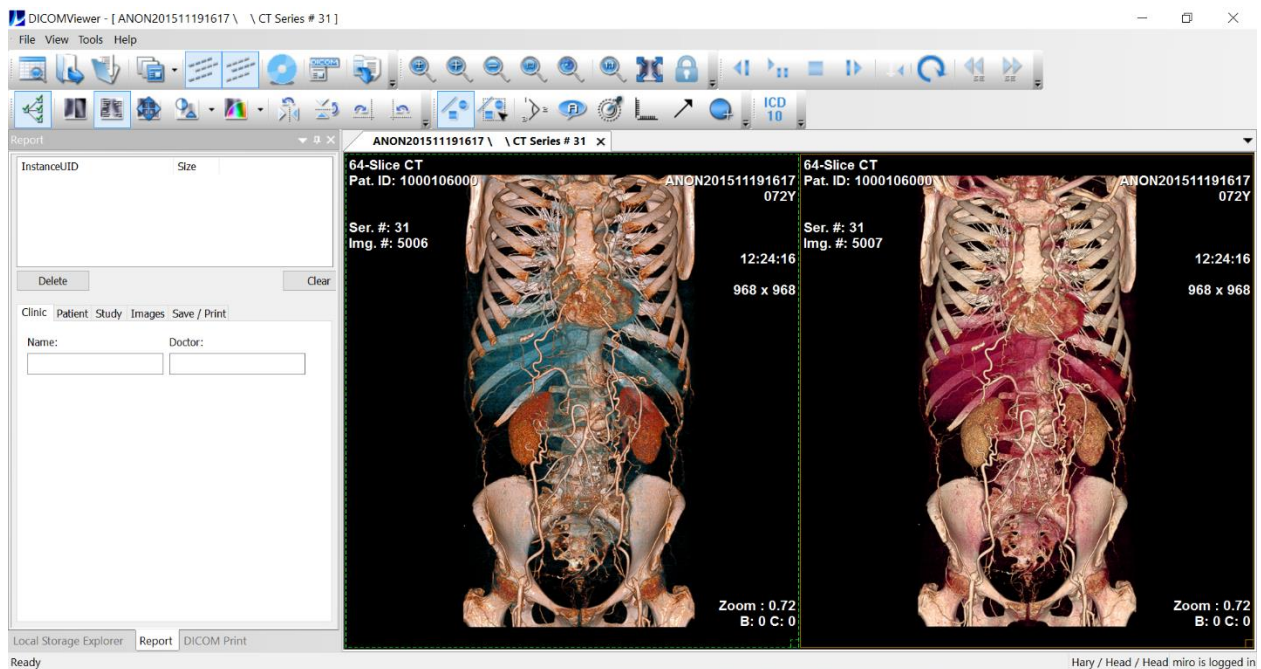
Comments:

Accession Number:

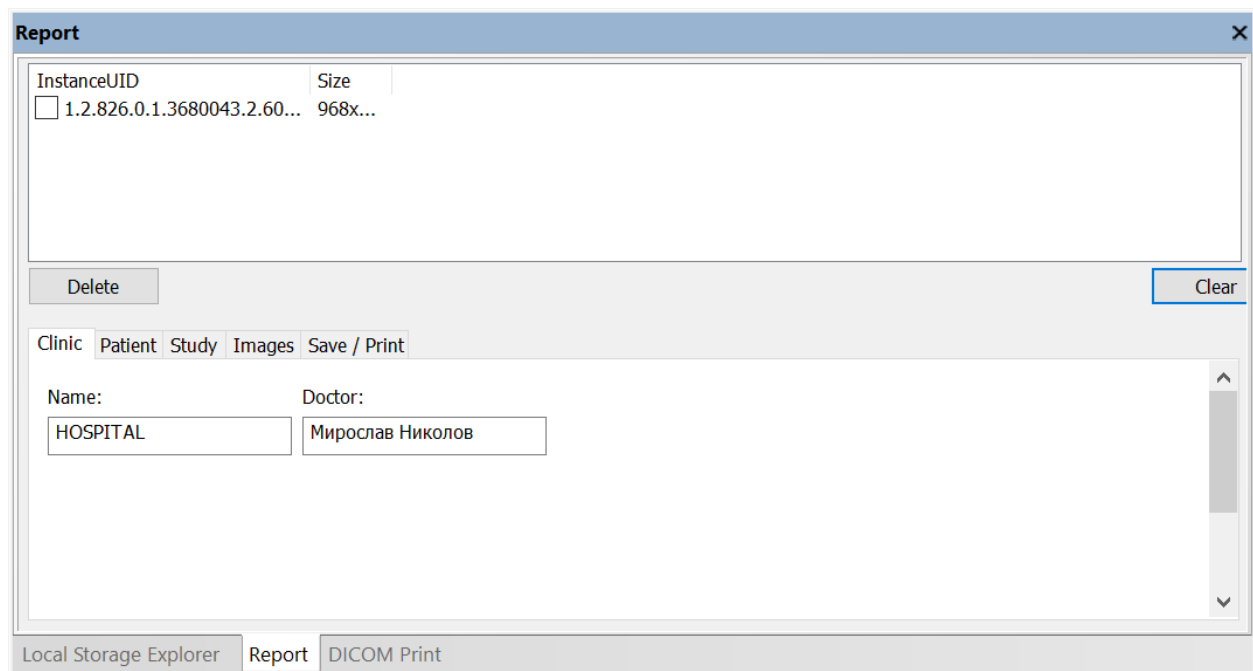
OK Cancel

2. Anonymization can be done in two different modes – automatic or manual when selecting “Patient info” and then hitting “ok”

PATIENT REPORTS - DICOM REPORT



1. From the left hand side of SC PACS Viewer ver. 2.5.0.1 we select the tab Report in which the information about Clinic, Patient, Study Description, Image is automatically populated once we have dragged and dropped the patient exam.



2. Clinic – information about the patient and the doctor who will do the report

Report

InstanceUID	Size
☒ 1.2.826.0.1.3680043.2.60...	968x...

Delete

Clear

Clinic

Patient

Study

Images

Save / Print

Name:

AHOH201511191617

Date of birth:

Patient ID:

1000106000

Gender:

Address:

Weight (kg):

E-mail:

Size:

Phone number:

Patient Age:

72 year(s)

Local Storage Explorer

Report

DICOM Print

- Print a barcode – a bar code is printed in order to use it for further quick access to patient's personal data

Report

InstanceUID	Size
-------------	------

Delete Clear

Clinic Patient Study Images Save / Print

Name: Date of birth:

Patient ID: Gender:

Address: Weight (kg):

Size:

E-mail: Patient Age:

Phone number:

Print a barcode

Lexmark X364dn Code QR Print

Report DICOM Print

3. Patient – patient information needs to be filled out; the already available fields from the DICOM Header are automatically populated

Report

InstanceUID	Size
1.2.826.0.1.3680043.2.60...	968x...

Delete Clear

Clinic Patient Study Images Save / Print

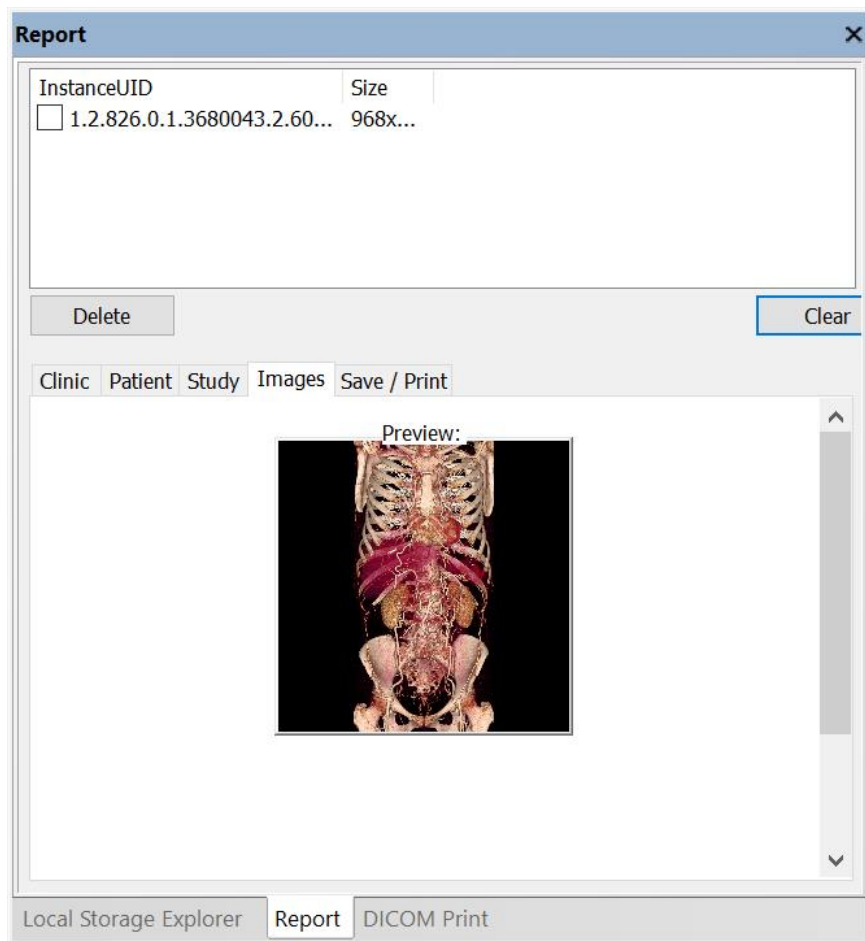
Description:

Report:

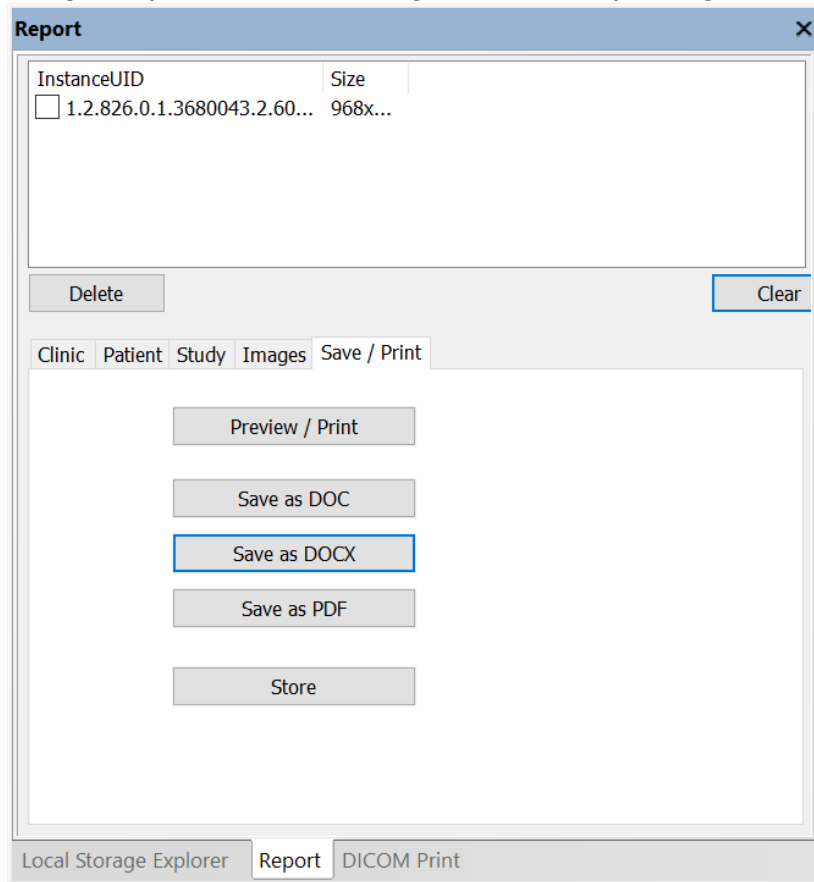
Conclusion:

Local Storage Explorer Report DICOM Print

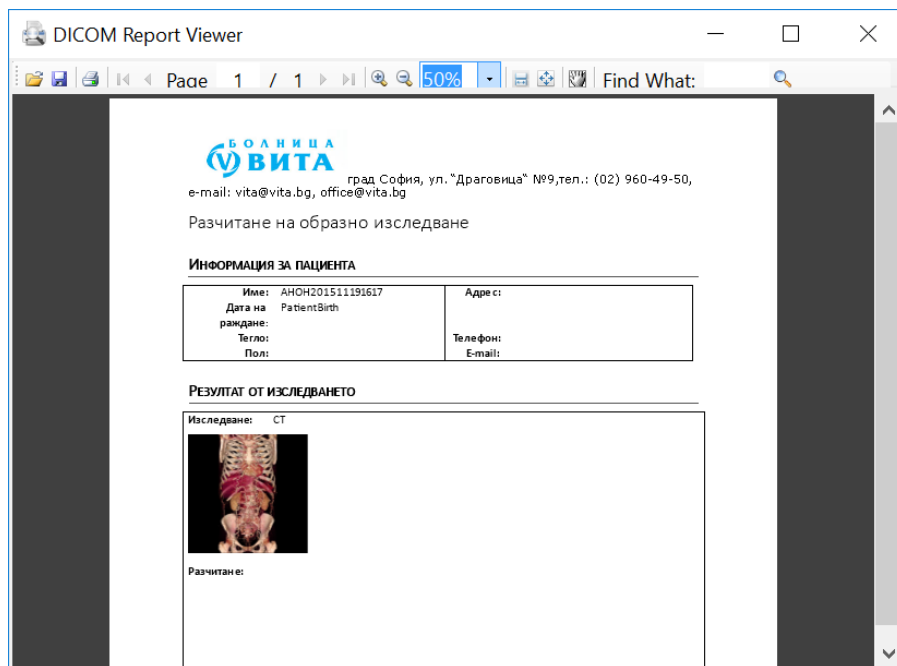
4. Study – the report on this examination is filled out here; it is split up in three parts - Description, Report, and Conclusion.



5. Images – preview of the images added for printing on the report

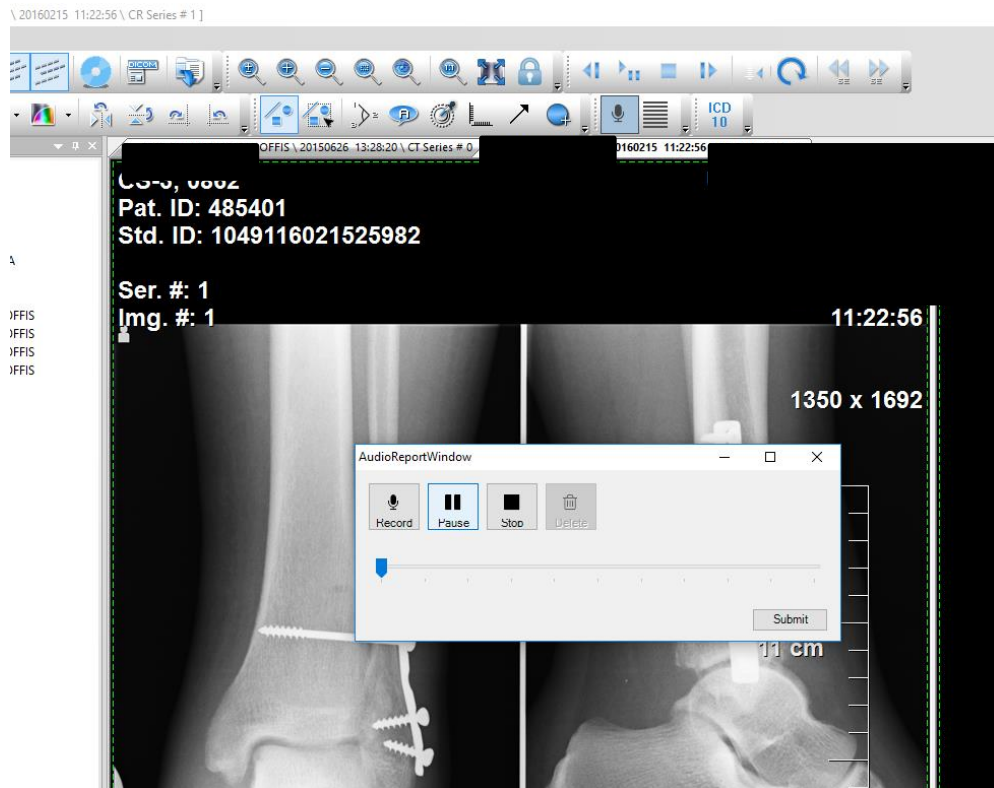


6. Save / Print – options to Preview, Print, Save and Store the report.

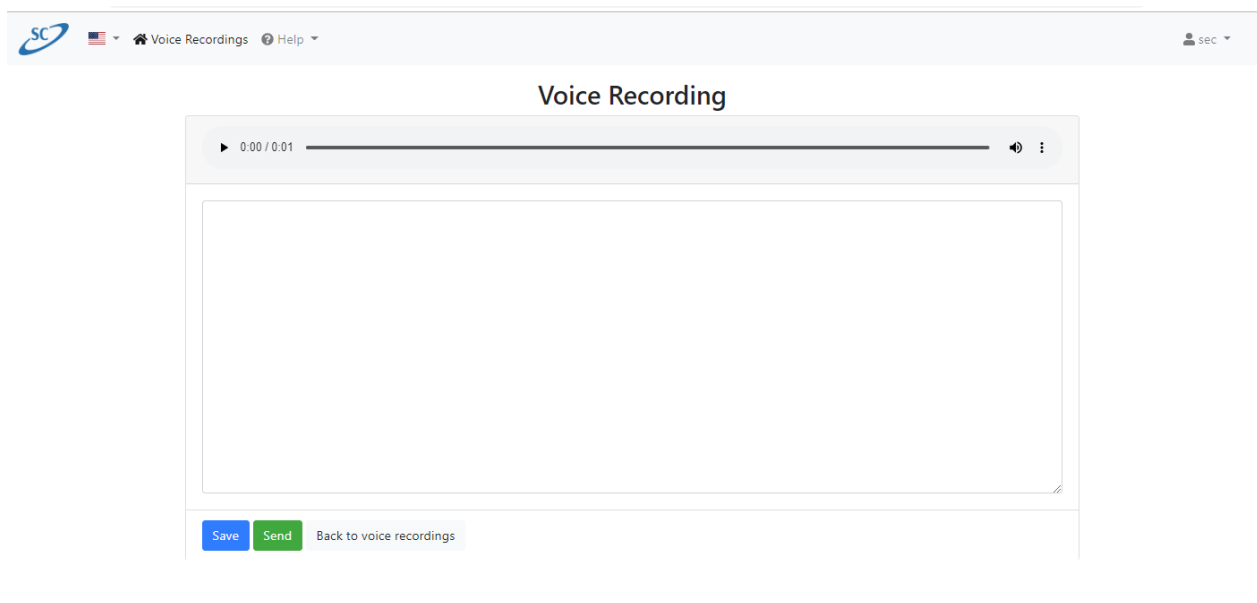
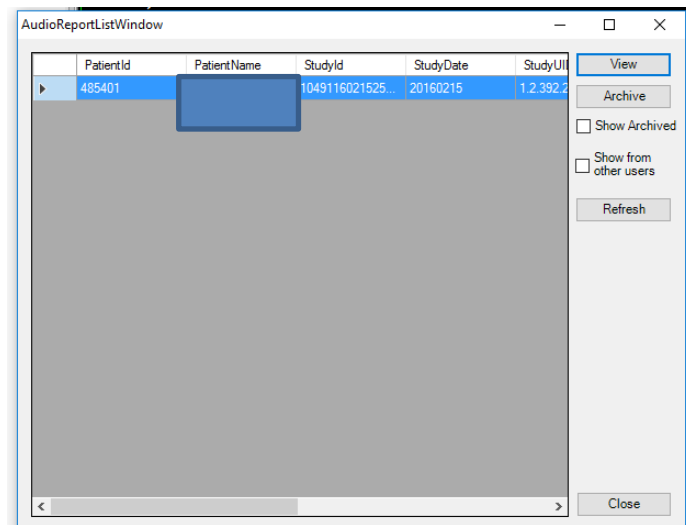


7. Image report - preview

AUDIO REPORT



The first step of the audio record functionality is for the radiologists to record his/her report. This is done with the help of the Audio Report Window of SC PACS Viewer, where the radiologists can record, pause, stop, delete, and submit their audio reports. After that the radiology technical staff has access to this recording via the web version of the Viewer. With the help of the Voice Record window they see which records have been processed and which not. Then the radiology technical staff can type and send the report of this audio recording. Finally, the radiologists have the option to view and archive the written report of their audio record via the Audio Report List Window of SC PACS Viewer.



SC

🇺🇸

Voice Recordings

Help

sec

Voice Recordings

Show 10 entries

Search:

Upload Date	Physician	Patient's ID	Patient's Name	Study ID	Description
8/28/2018 3:05:04 PM	User	S0tNwu	INCISIX	A10020176376	Tete^ Dental (Adulte)
8/28/2018 3:12:26 PM	User	S0tNwu	INCISIX	A10020176376	Tete^ Dental (Adulte)
8/16/2019 6:23:11 PM	User			25359	
8/23/2019 12:05:39 PM	User	7301163201	DIMITAR^DIMITROV	25359	

Showing 1 to 4 of 4 entries

Previous1Next

CS-3, 0862

OFFIS \20150626 13:28:20 \ CT Series # 0 MIROSLAV MILEV \20160215 11:22:56 \ CR Series # 1

AudioReportListWindow

PatientId	PatientName	StudyId	StudyDate	StudyUI
485401		021525	20160215	1.2.392

Text

Transcription of audio record

Copy

Close

View

Archive

Show Archived

Show from other users

Refresh

Close

1350 x 1692

11 cm

9 cm

Zoom : 0.47

W: 4096 L: 2047

OM Print