



Users Guide

Canvas Dicom Printer

Version 1.1.302

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Introduction

The Canvas Dicom Printer is a virtual printer utility that allows you to print anything directly to your Picture Archive and Capture System. The output is stored as encapsulated PDF and implements the encapsulated PDF SOP class.

Unlike other Print to PACS systems, Canvas Dicom Printer allows the user to preview and annotate the print document *before* storing the document into the PACS system. This allows the user to edit or export a copy before storing the PDF document in the PACS System.

Please note: this manual attempts to use as little DICOM syntax as possible since DICOM can be very complex.

The Canvas Dicom Printer actually has two modes of operation. It can function as a Dicom printer and also as a DICOM PDF Storage application for *existing* PDF files. This mode allows you to submit several PDF files (such as scanned documents) to the patients' records.

This mode is also useful for the initial setup when the printer driver is not yet configured

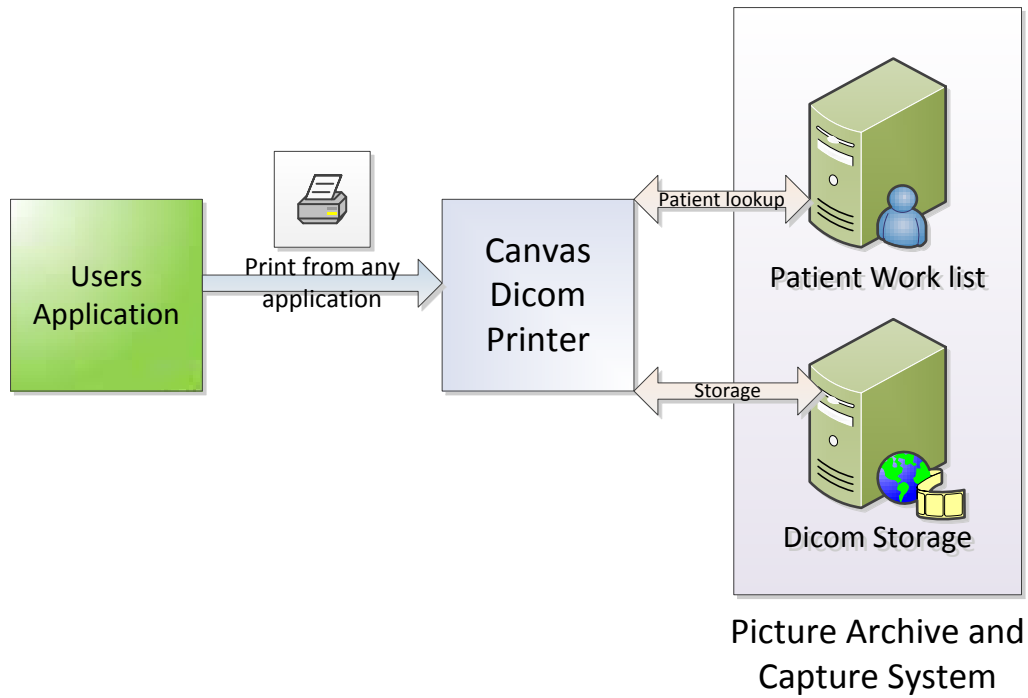
Features

- Virtual Printer enables any application to print to your Picture Archive and Capture or Electronic Health Record System
- Annotate and edit your print jobs or PDF files before saving them to the record
- Export a copy as a PDF file
- Use Computerized Order Entry via a Modality Work list to avoid manual input of patient names
- Application mode allows you to upload multiple *existing* PDF files to a patient's record as encapsulated PDFs.

Operation

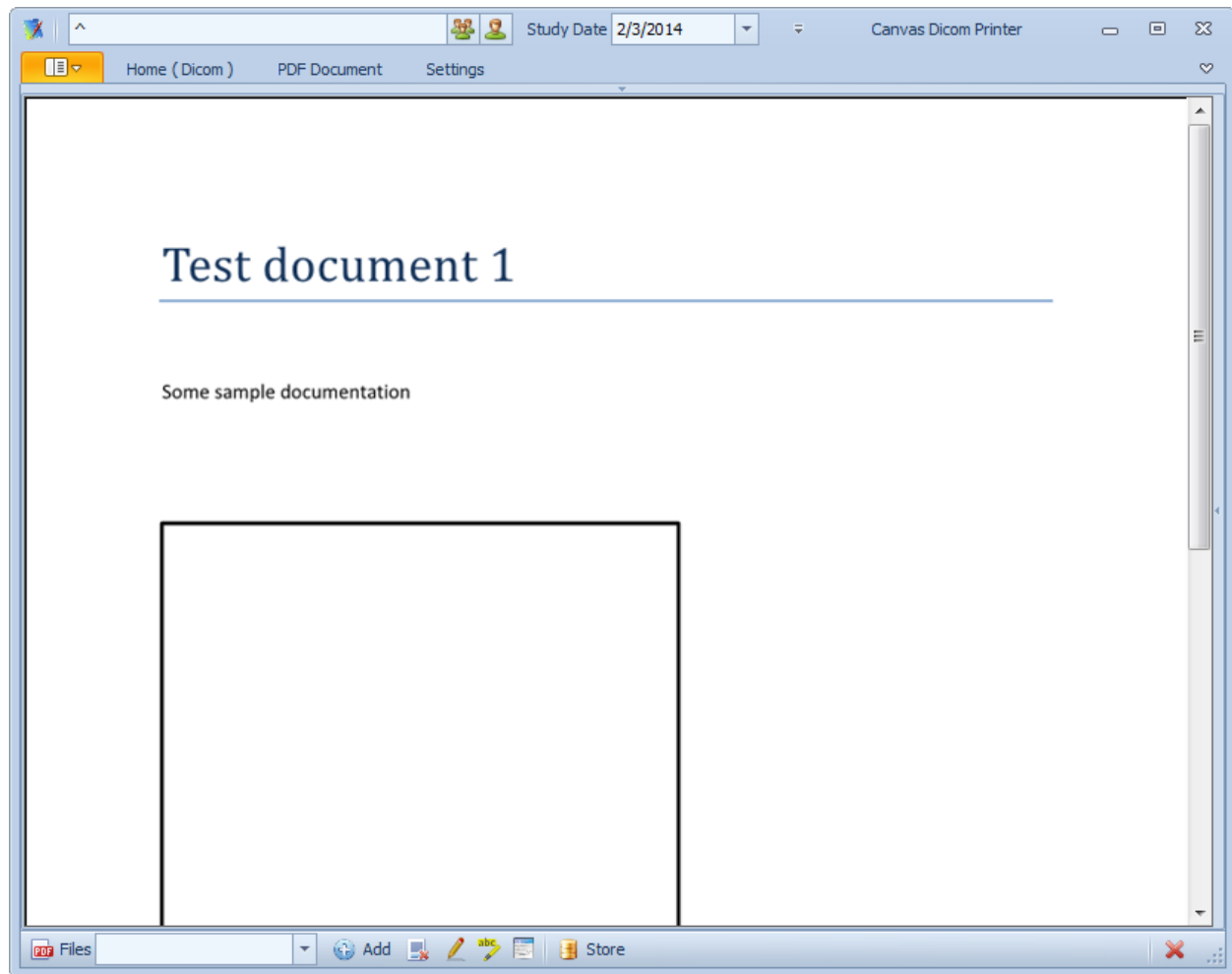
Overview

Canvas Dicom Printer functions like any printer on your system. For any document that you would like to place into your PACS or EHR system, you simply “print”. This straightforward workflow is shown in the following diagram:



Application

After printing, or when using the printer in application mode, the application's main window will show a preview of the current print job. This allows you to decide whether you printed what you expected. This prevents inappropriate documents or malformed documents from being sent to the patient's record.



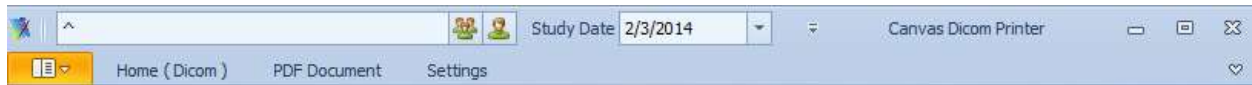
Application Menu

By default the application menu starts in collapsed mode. This mode presents the minimal set of tools and operations that are required for the basic workflow, which is simply:

1. Lookup Patient
2. Store document

Since this process is very short, it is unnecessary to present tools that are not required.

Collapsed Menu

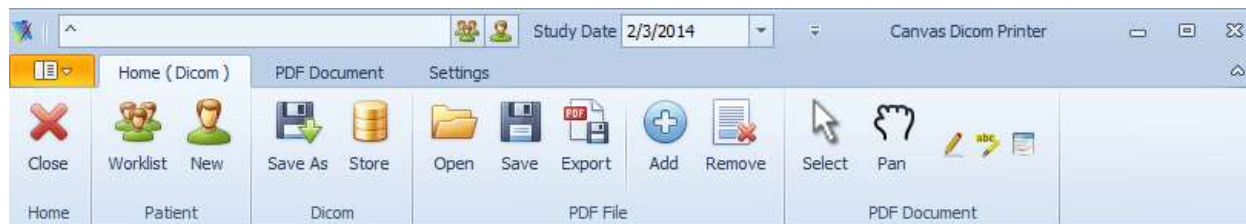












The following table summarizes the main functions of the application menu in collapsed mode






	This is the current patient's name other demographic information
	Shows the work list query
	This shows the manual patient entry screen. This is useful if the patient is not on the work list, or there is no work list available.
	The current date for this study. All fields are read-only.
	Shows the application menu and help options
	Toggles the menu between collapsed and expanded modes

Expanded Menu

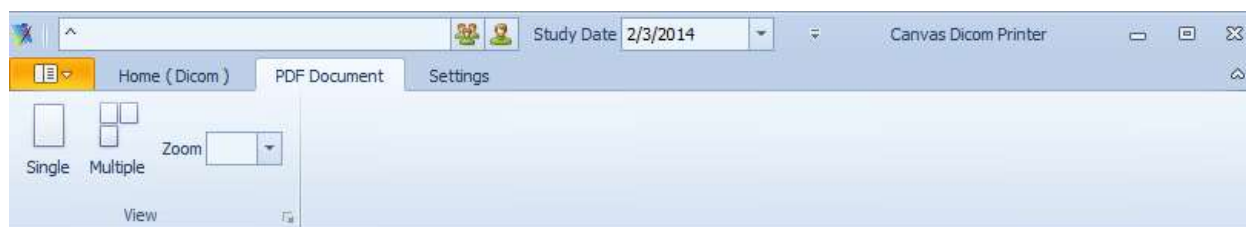
Home - Dicom



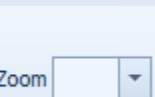


Home Group	
 Close	Closes the application. If you printed something by mistake or the output is not what you intended, please use this option and try again.
Patient Group	
 Worklist	Allows the user to select the patient and study information from a modality work list on your PACS server. Please see the appropriate section for more information.
 New	Allows the user to manually input patient and study information. Please see the appropriate section for more information.
Dicom Group	
 Save As	Stores all the files in the current file group to file using the specified patient and study information.
 Store	Stores all the files in the current file group to the dicom server using the specified patient and study information.
PDF File Group	
 Open	Opens a new PDF from file. Only useful if you wish to annotate an existing document and not store it.
 Save	Saves any changes made to the pdf document to the current file. Please note that if you are using this in printer mode, these changes will be saved to the temporary file, not as a new file. Please make sure to use export if this is your intention.
 Export	Exports the current document or print job as a new PDF file.
 Add	Adds a new file to the pdf file group.
 Remove	Remove the currently selected patient from the file group.

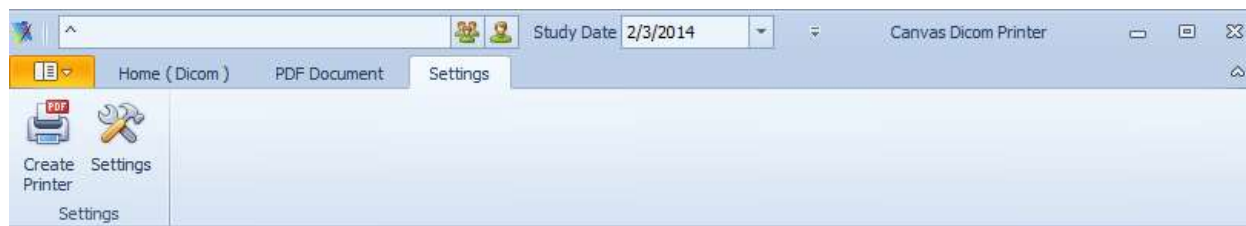
PDF Document Group	
 Select	Default mode Allows the user to select annotations for editing.
 Pan	Pan the PDF document by clicking and moving the mouse or your finger.
	Allows freehand drawing on the PDF document
	Inserts highlighting onto the PDF document
	Inserts text annotations onto the PDF document

PDF Document



View	
 Single	Views the current document as a single page.
 Multiple	Views the current document as multiple pages.
 Zoom	Allows you to change the zoom of the current document view.

Settings



Settings



Create
Printer

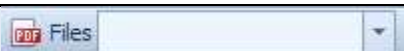
Allows you to create a new Virtual Printer.
Please note that this option is also available from the getting started help tab in the application menu.



Settings

Allows you to specify the dicom communication settings.
Please note that this option is also available from the getting started help tab in the application menu.

Status bar commands



PDF Files

Displays all files in the current PDF file group.
This option will show a popup of all the files in the current PDF file group.
You may load or delete files accordingly.



Add

Adds more documents to the PDF file group.



Remove

Removes documents from the PDF file group.
Please note that this feature is being deprecated in favor of the operation in the file popup manager described above.



Draw

Allows freehand drawing on the PDF document



Highlight

Inserts highlighting onto the PDF document



Text

Inserts text annotations onto the PDF document



Store

Stores all the files in the current file group to **the dicom server** using the specified patient and study information.




Close

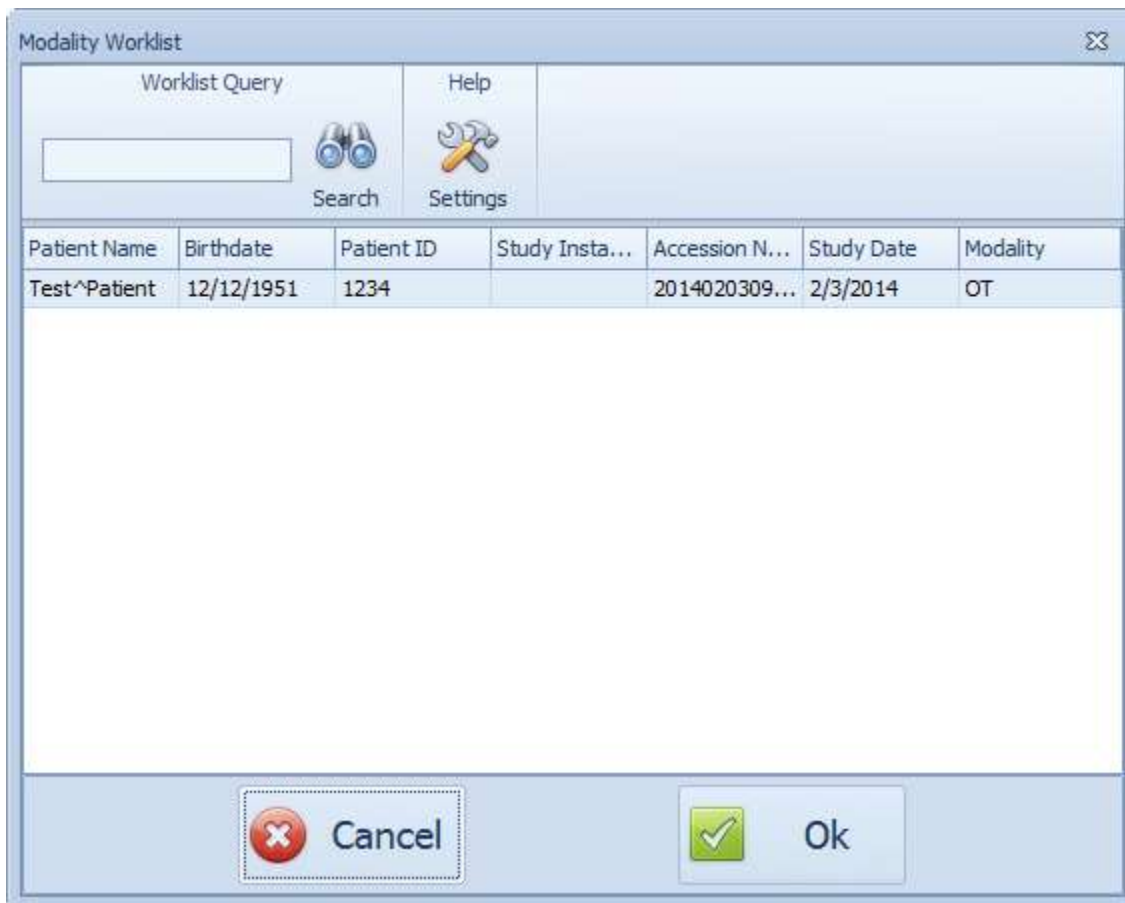
Closes the application. If you printed something by mistake or the output is not what you intended, please use this option and try again.

Patient Operations

Modality Work list

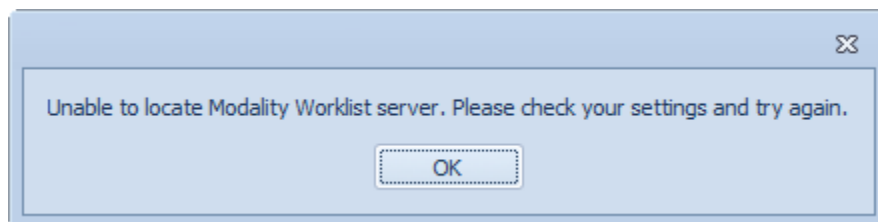


By clicking the modality work list icon () the work list search window will be displayed. The work list screen will then attempt to contact the PACS's modality work list and automatically retrieve criteria based upon the specified parameters. You may also enter some additional patient search criteria. If you require other forms of modality based queries, please contact help@remedisoftware.com.

A screenshot of the 'Modality Worklist' window. It has a title bar with the text 'Modality Worklist' and a close button. The window is divided into several sections. At the top, there is a 'Worklist Query' section with a text input field and a 'Search' button (represented by a magnifying glass icon). To the right of this is a 'Help' button (represented by a question mark icon) and a 'Settings' button (represented by a wrench and screwdriver icon). Below these buttons is a table with the following columns: 'Patient Name', 'Birthdate', 'Patient ID', 'Study Insta...', 'Accession N...', 'Study Date', and 'Modality'. The first row of data shows 'Test^Patient', '12/12/1951', '1234', and '2014020309...' for the last three columns, with 'OT' in the 'Modality' column. The bottom of the window contains a 'Cancel' button (with a red 'X' icon) and an 'Ok' button (with a green checkmark icon).

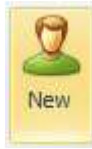
Default modality work list patient list

If the modality worklist server is unreachable or unavailable the following error message will be shown.

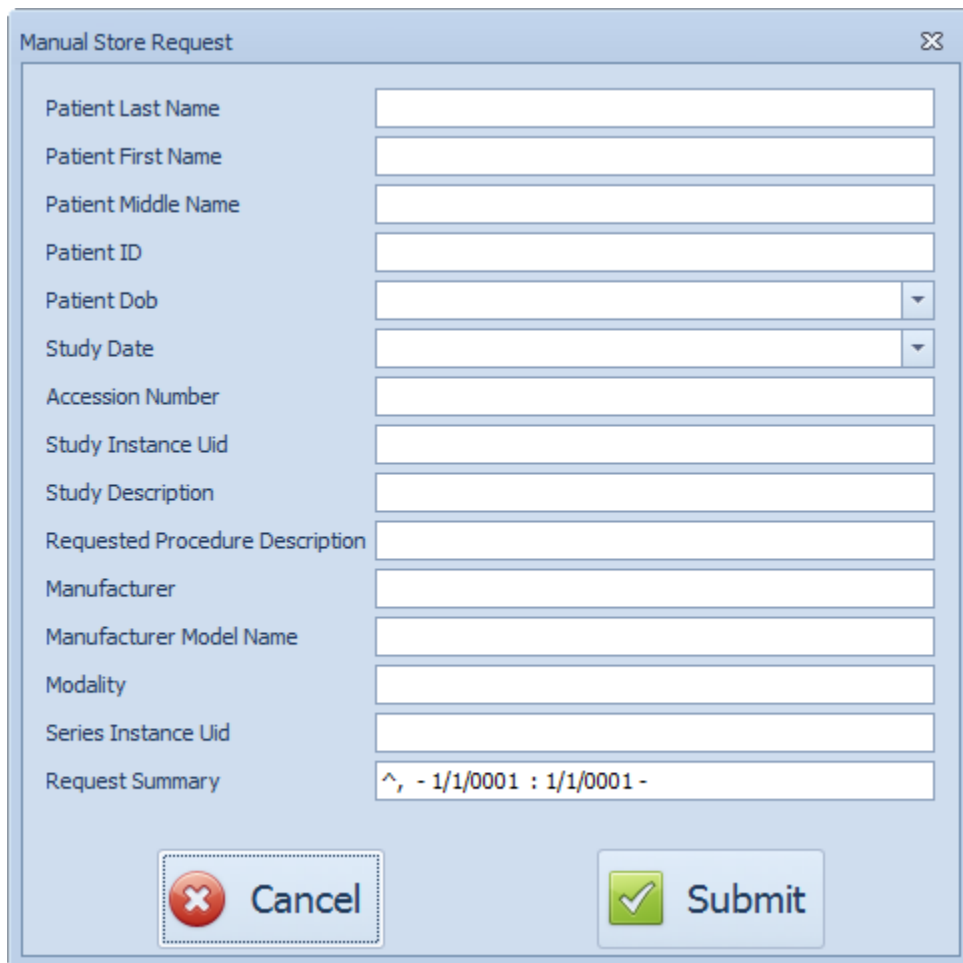


Manual Entry

If the work list server is unavailable or you do not have a work list server, you may manually enter



information by clicking the manual button . The following screen will then be displayed:

A screenshot of a software dialog box titled "Manual Store Request". The dialog box has a light blue border and a close button (X) in the top right corner. It contains a list of input fields for patient and study information. The fields are: Patient Last Name, Patient First Name, Patient Middle Name, Patient ID, Patient Dob (with a dropdown arrow), Study Date (with a dropdown arrow), Accession Number, Study Instance Uid, Study Description, Requested Procedure Description, Manufacturer, Manufacturer Model Name, Modality, Series Instance Uid, and Request Summary. The Request Summary field contains the text "^, - 1/1/0001 : 1/1/0001 -". At the bottom of the dialog box, there are two buttons: "Cancel" with a red X icon and "Submit" with a green checkmark icon.

Patient Last Name	<input type="text"/>
Patient First Name	<input type="text"/>
Patient Middle Name	<input type="text"/>
Patient ID	<input type="text"/>
Patient Dob	<input type="text"/>
Study Date	<input type="text"/>
Accession Number	<input type="text"/>
Study Instance Uid	<input type="text"/>
Study Description	<input type="text"/>
Requested Procedure Description	<input type="text"/>
Manufacturer	<input type="text"/>
Manufacturer Model Name	<input type="text"/>
Modality	<input type="text"/>
Series Instance Uid	<input type="text"/>
Request Summary	<input type="text" value="^, - 1/1/0001 : 1/1/0001 -"/>

Manual Store Request

As you can see there are quite a few options for this process. Most PACS system will accept dicom files if they have the following minimum values. This way, you don't have to specify every field unless needed.

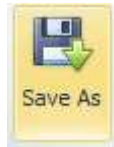
- Patient Last Name
- Patient First Name
- Patient ID
- Patient DOB
- Study Date
- Accession Number - simply a tracking number for the PACS system
- Modality (usually OT for other)
- Manufacturer Model Name

The other values may or may not be required or might be auto-assigned by your PACS system. Please contact your PACS vendor for more details. If you have any questions, please contact help@remedisoftware.com.

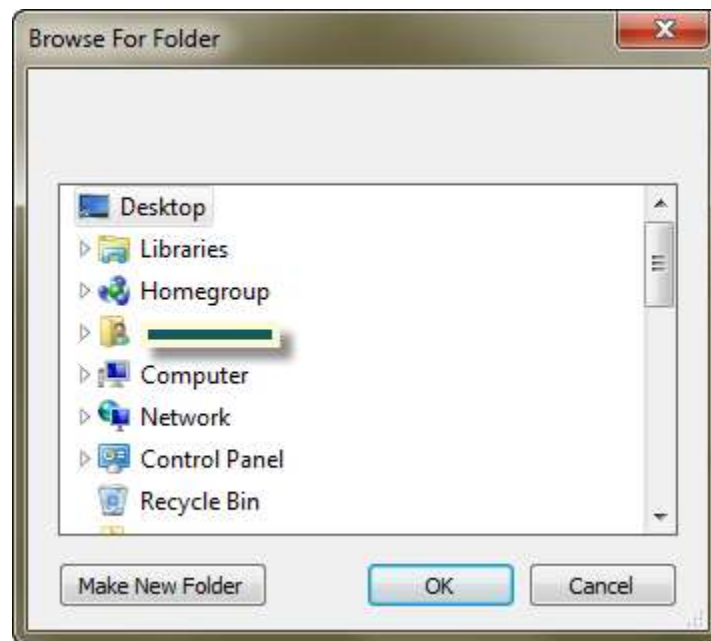
Dicom File Storage

You have two options for saving your encapsulated PDF Dicom files. You may either export them to a file location or send them to a PACS system.

Save to File



When you click the "Save As" icon, then a dialog will ask you where to save the files.



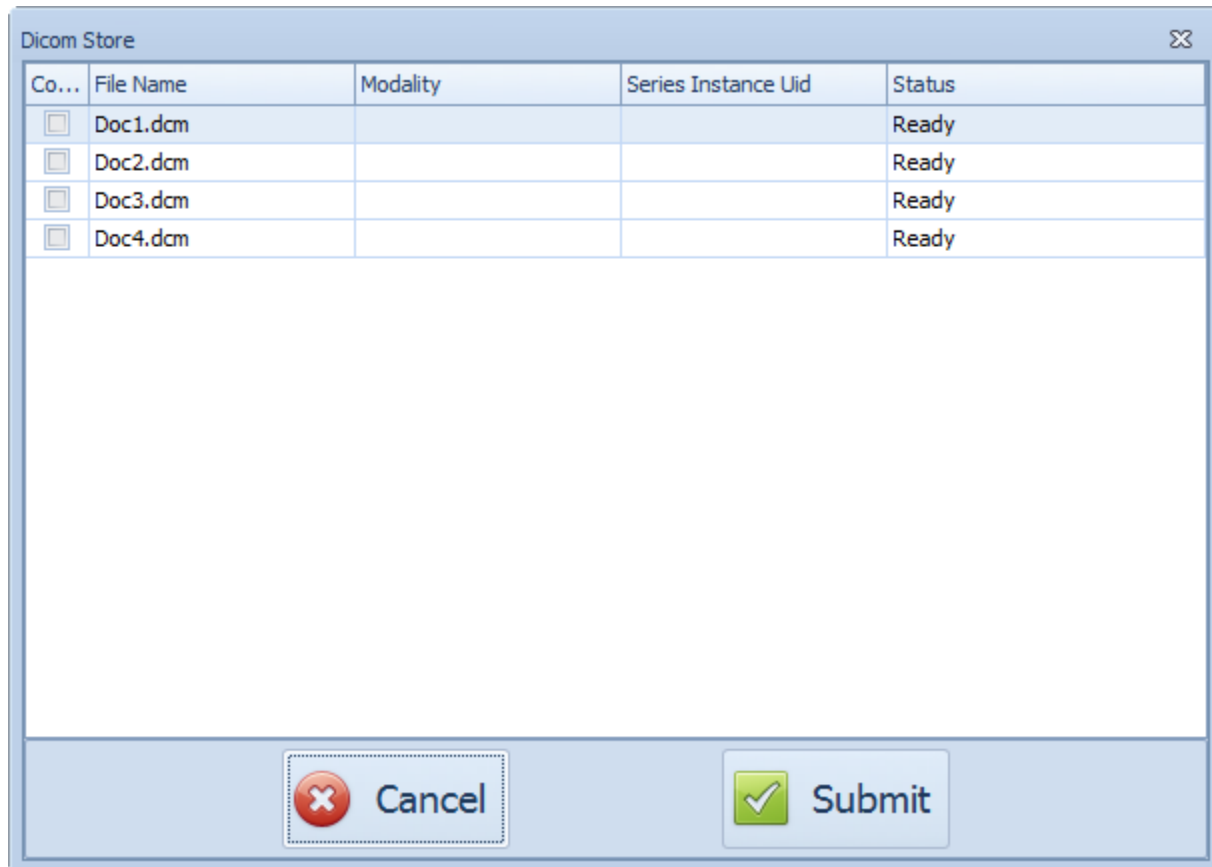
Folder Browser Dialog

Simply select the folder path or make a new folder and press "OK", your documents will be saved as dicom files.

Send to Dicom Storage (PACS C-Store)



When you click the “Save As” icon, then a dialog will show you the current PDF File group that is going to be sent to the PACS system. Please note that this process is the same for the printer operation and application operation.

A screenshot of a 'Dicom Store' dialog box. It features a table with four columns: 'Co...', 'File Name', 'Modality', 'Series Instance Uid', and 'Status'. The table contains four rows of data, each with a checkbox in the 'Co...' column and the status 'Ready'. Below the table is a large empty rectangular area. At the bottom of the dialog are two buttons: 'Cancel' with a red 'X' icon and 'Submit' with a green checkmark icon.

Co...	File Name	Modality	Series Instance Uid	Status
<input type="checkbox"/>	Doc1.dcm			Ready
<input type="checkbox"/>	Doc2.dcm			Ready
<input type="checkbox"/>	Doc3.dcm			Ready
<input type="checkbox"/>	Doc4.dcm			Ready

Once you press submit, the application will contact the Dicom server and send the DICOM files. As each dicom file is sent, the status will be updated to inform you of the progress. The following shows an example of this :

Co...	File Name	Modality	Series Instance Uid	Status
<input checked="" type="checkbox"/>	Doc1.dcm			Success
<input checked="" type="checkbox"/>	Doc2.dcm			Success
<input checked="" type="checkbox"/>	Doc3.dcm			Success
<input type="checkbox"/>	Doc4.dcm			Ready

If the PACS system is unavailable, then an error message will be shown. If this occurs , please check your setup or contact your PACS administrator to ensure that DICOM storage operations are running.

Example of Storage Error

The following shows an error connecting to the storage server.

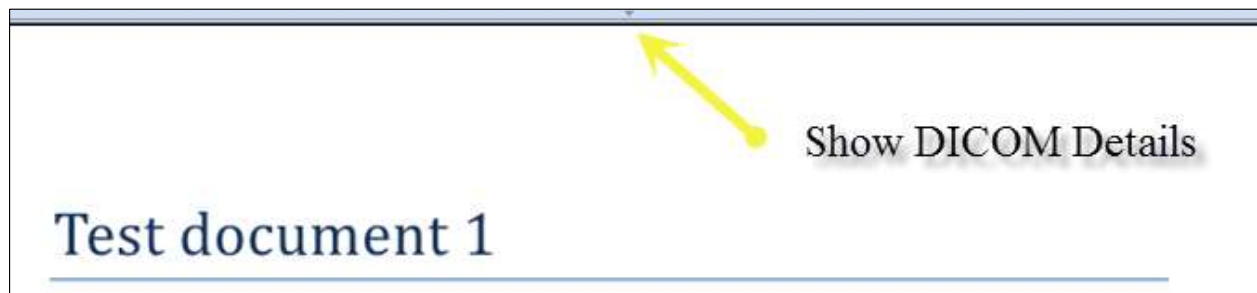
Co...	File Name	Modality	Series Instance Uid	Status
<input type="checkbox"/>	Doc1.dcm			Error - No connection could b...
<input type="checkbox"/>	Doc2.dcm			Error - No connection could b...
<input type="checkbox"/>	Doc3.dcm			Error - No connection could b...
<input type="checkbox"/>	Doc4.dcm			Ready

Successful Operational Note

Please note that if you are running in printer mode, the application will close upon a successful storage operation.

Dicom Storage Request Details Mode

Although most situations will not require extensive dicom IODS to be specified, you may expand the details for the document and specify them. This can be done by clicking the arrow right above the document preview as shown:



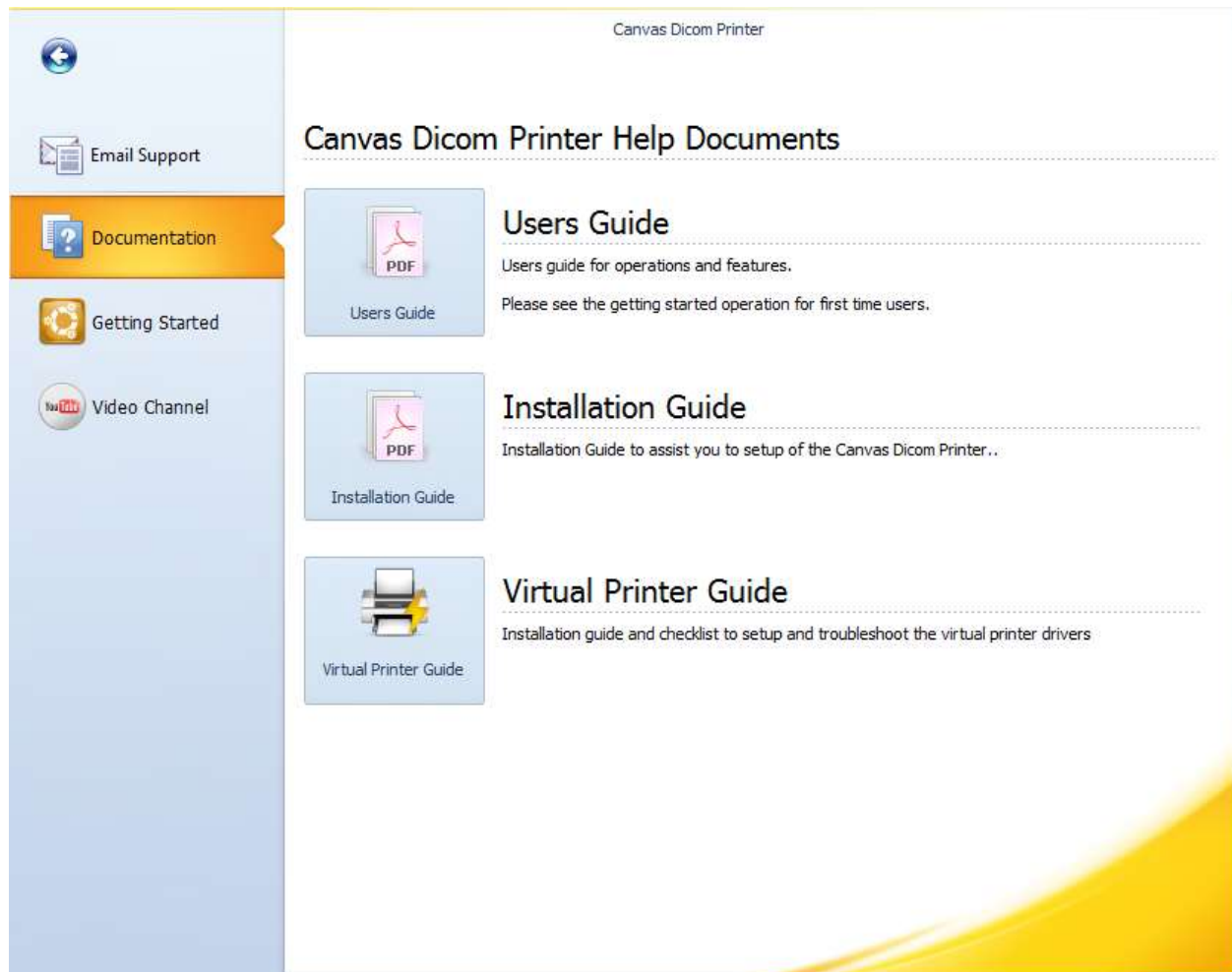
Which shows the following changes to the preview window.

Dicom Information				
Last Name	First Name	Study Date	Modality	Manufacturer
<input type="text"/>	<input type="text"/>	<input type="text" value="2/3/2014"/>	<input type="text"/>	<input type="text"/>
Patient ID	Patient Dob	Accession Number	Study Description	Model Name
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



Test document 1

Application Menu options

When you click the application menu, the in-application help will be displayed. From here you can access documentation, setup tools, email support, and access the Remedi Software video channel. Each of the in-application options have descriptions to help you use the application better.




Documentation


 Email Support
 Documentation
 **Getting Started**
 Video Channel

Canvas Dicom Printer

Getting Started with Canvas Dicom Printer

These steps will guide you to setup your dicom printer.



Install PDF Creator Virtual Printer

PDF Creator is necessary to handle the virtual printer registration and ghostscript drivers. Please visit the website and chose your best install option. It is recommended that you chose the offline install method if possible.




Register New Printer

Please register a new printer using this option. You use a name of your choosing. Typically the name of your PACS.



Virtual Printer Settings

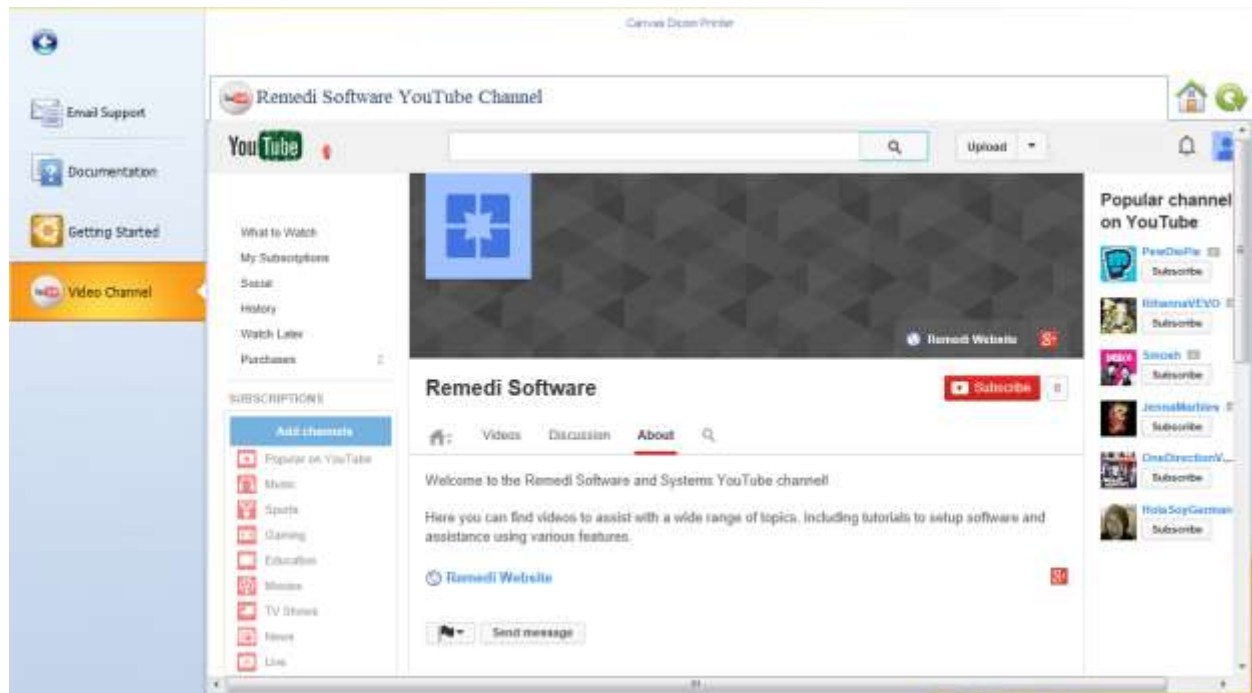
Configure printing options for each Canvas Dicom Printer



Configure Dicom Communication

Finally, configure your Modality Worklist and Storage settings

Getting Started with the Canvas Dicom Printer



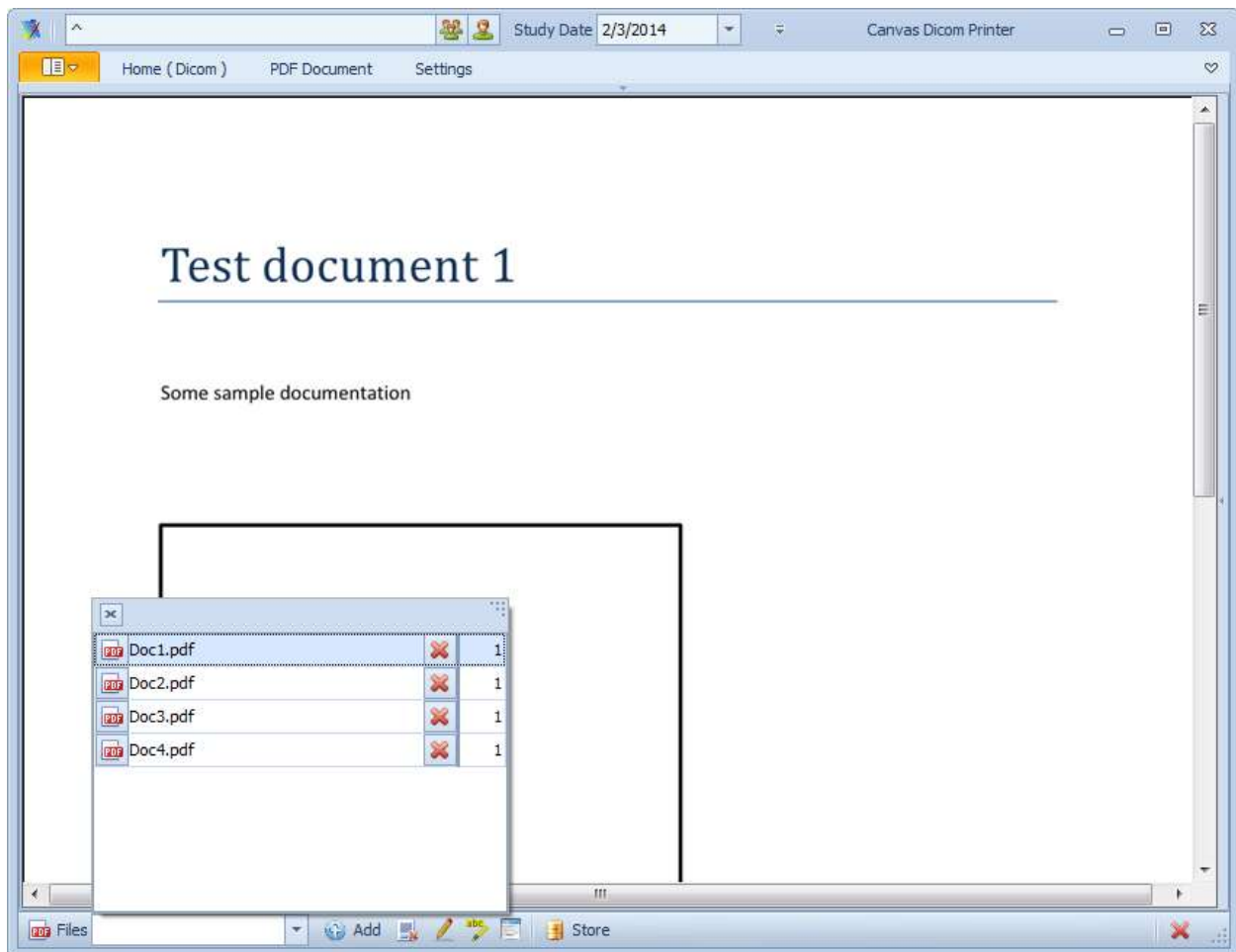
Remedi Software Videos



Advanced Operation

As previously mentioned, the Canvas Dicom Printer can be loaded as a stand-alone application. Simply double the application icon from start menu or program files group.

Multiple Files

When running in application mode, you can access the PDF file group by clicking the files button on the status bar. This is shown below:

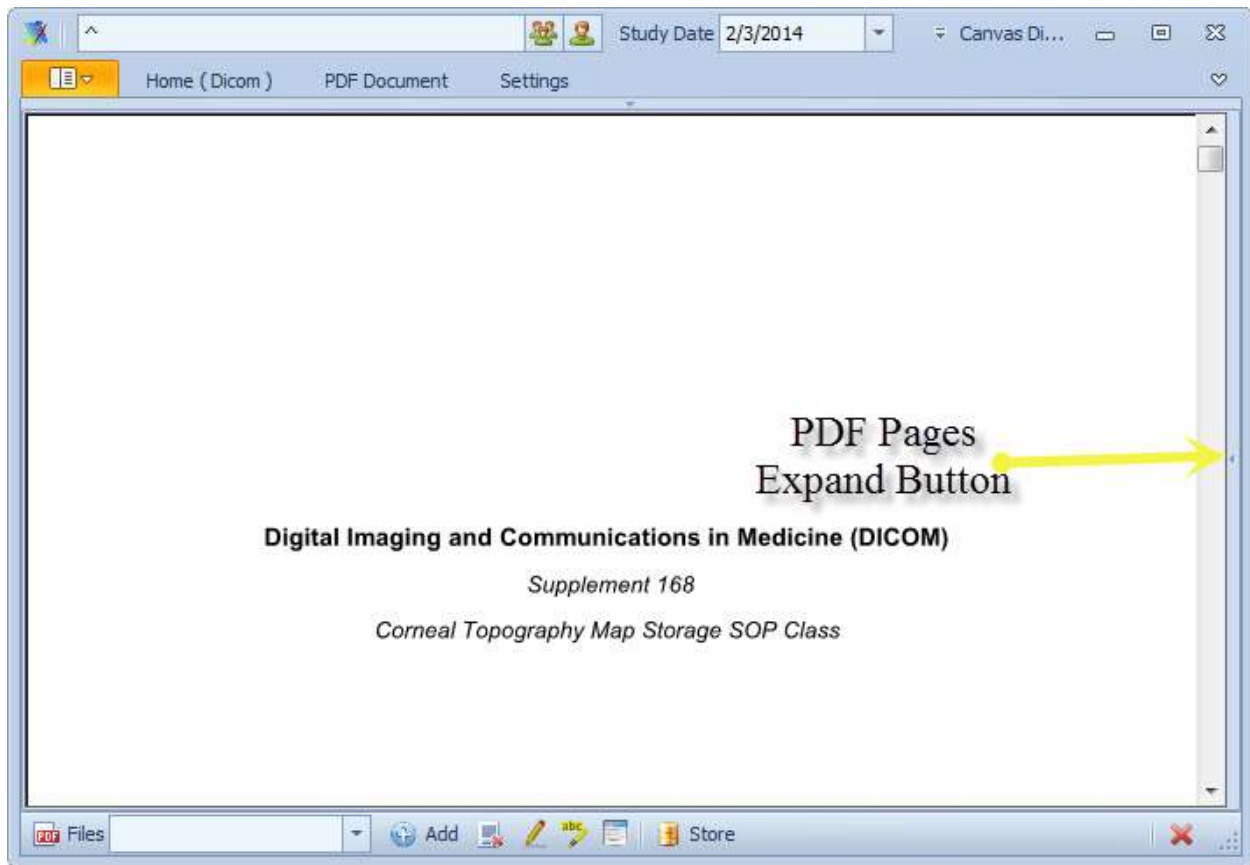


	Loads the selected PDF file into the viewer
	Removes the selected PDF file from the PDF File Group

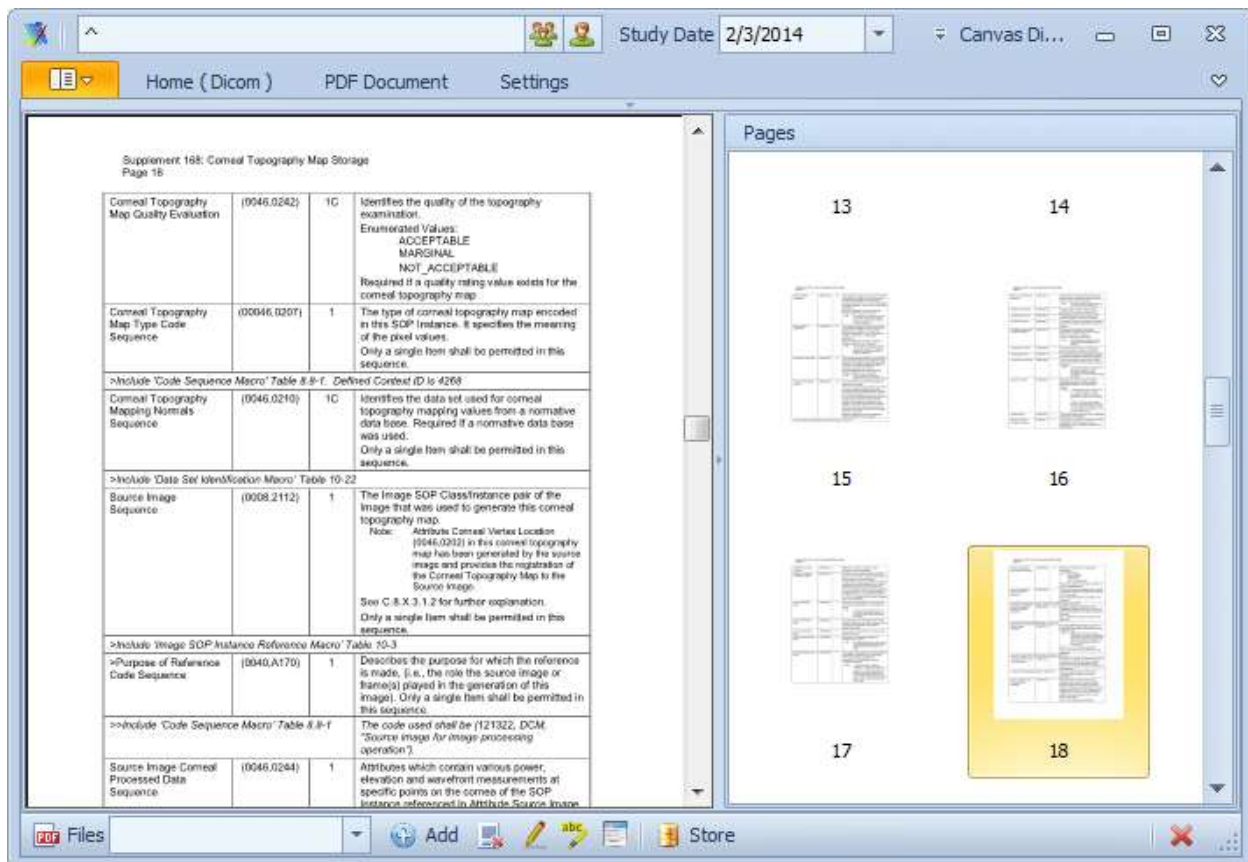
Summary of file group operations

Multiple Pages

You can access multiple pages by clicking the page expand button on the right side of the application.



Pdf Pages Expand Button



Navigate large documents by page thumbnails