SecurView®

Breast Imaging Workstation

Installation and Service Manual
Advanced Multimodality Option
MAN-11727 Revision 001

HOLOGIC®

SecurView® DX

Breast Imaging Workstation

Advanced Multimodality Option

Installation and Service Manual

For Software Version 12.0

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HOLOGIC®

Product Support

USA:	+1.877.371.4372
Europe:	+32 2 711 4690
Asia:	+852 37487700
Australia:	+1 800 264 073
All Other:	+1 781 999 7750
Email:	BreastHealth.Support@hologic.com

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Chapter 1 Introduction

This chapter provides an overview of how to use this manual, safety precautions, document conventions, a glossary, and warning information.

1.1 About This Manual

This manual provides installation, configuration, and maintenance procedures on installing the following on a Hologic SecurView® DX 12.0 Standalone or multiworkstation system:

- Advanced Multimodality (MM) Option
- Second MM Monitor

1.2 Preinstallation Checklist

1.2.1 Before You Arrive at the Site

Before you travel to the site, ensure that you have the materials needed for the following:

- **Licenses.** Review the licenses for each system before starting the installation (select **Administration**, then the **Licensing** tab). You must acquire a new MULTIMODALITY license key code. Obtain a new license file by emailing *SecurViewLicenses@hologic.com* with the serial number and dongle ID. Contact Technical Support for further assistance.

Note
To obtain the license key code for SecurView DX Software-Only systems, refer to the latest *FMI, SecurView DX 12.0 Software-Only Installation Instructions* (MAN-11720).

- **SecurView version.** Before installing the MM option, ensure that the workstation is currently at SecurView version 12.0 or later. If the workstation is at an earlier version, perform an upgrade to the latest software version.

Note
Separate instructions are available that explain how to upgrade qualified existing SecurView DX Workstations to the latest software version. For more information, refer to the latest *FMI, SecurView DX/RT Upgrade to 12.0* (MAN-11719) for Windows 10 / Windows Server 2016, *FMI, SecurView DX/RT Standalone/Client OS Upgrade to 12.0* (MAN-11722) that includes Windows® 10 upgrade, and the latest *FMI, SecurView DX/RT Manager OS Upgrade to 12.0* (MAN-11723) that includes Windows Server 2016 upgrade.

- **Dell T7910 or older.** If the customer currently has a Dell T7910 or older computer as its Standalone or Client, then they must upgrade to the current workstation computer hardware (Dell T3620 or newer) before you can install the MM option for SecurView 12.0 or later.

1.2.2   Additional Notes

- **Time required.** This modification requires up to one hour to complete.
- **License dongle ID.** For each DX workstation, record the license dongle ID printed on the dongle. The dongle should be present in a USB port on the computer. If you remove the dongle to read the ID, make sure that you reconnect the dongle.
- **Other modalities.** Check with the other modalities such as ultrasound and MRI to start the process of configuring them to send images to this workstation.
- **Configuration instructions.** Depending on the site system configuration, consult the following table for the appropriate configuration instructions:

Table 1: Configuration Instructions

System Configuration	Configuration Instruction
Multimodality Option	Begin with section 2.1
Second MM Monitor	Refer to the following sections: 2.3, 2.4, 2.5, and 3.1

1.3   Training

Hologic does not accept responsibility for injury or damage associated with improper or unsafe system operation.

Service Engineers must ensure that they receive training on the SecurView workstations with Hologic training programs prior to servicing the unit.

Service Engineers should refer to the user guides for directions on how to use and configure the SecurView workstations.

1.4   Descriptions of Warnings, Cautions, and Notes

Descriptions of Warnings, Cautions, and Notes used in this manual:

⚠️ **WARNING!**
The procedures that you must follow accurately to prevent possible dangerous or fatal injury.

⚠️ **Warning:**
The procedures that you must follow accurately to prevent injury.

⚠️ **Caution:**
The procedures that you must follow accurately to prevent damage to equipment, loss of data, or damage to files in software applications.

Important

An instruction provided to ensure correct results and optimal performance, or to clarify limitations of the device.

Note

Notes show additional information.

1.5 Safety

Observe all electrical, mechanical, and radiation safety standards.

Caution:

Always obey Electrostatic Discharge (ESD) precautions when working with electronics and electronic components.

Note

It is recommended that you read through this document fully before starting to work.

Note

The Service Engineers must complete Hologic training courses before they operate or service a system.

Chapter 2 Installing the Advanced Multimodality Option

This chapter describes the procedures needed to install the Advanced Multimodality Option.

2.1   Backing Up the Old SecurView Settings (Standalone, Manager)

Use these instructions to save configuration settings and back up the database. This backup will be your failsafe if something goes wrong during an installation.

1. Log into Windows as **Administrator**.
2. Display **File Explorer** by pressing **Windows + [E]**.
3. Navigate to **E:\SecurView\Hologic-Service**.
4. Double-click **SaveSettingsAndDB.bat**. Follow the on-screen instructions.
5. Close the window after the script finishes.
6. Load an external removable media.
7. Navigate to **F:** and drag the **Hologic-Service-Data** folder into the removable media.

2.2   Installing a Multimodality Monitor

1. Position the MM LCD monitor next to the Barco monitors according to customer preference.
2. Connect the MM monitor to the next available display port on a 4-port Barco Controller.

Note
If the SecurView computer has a 2-port Barco Controller and a separate MM video card, connect to the MM video card. If the SecurView computer has a 2-port Barco Controller, but does not support a separate MM video card, upgrade to a 4-port Barco Controller is required to support multimodality.

3. Power on the MM monitor.
4. Power on the computer.

2.3   Installing a Second Multimodality Monitor

Perform this procedure only if the site has ordered a second monitor for the Advanced Multimodality Option.

1.   Shut down and power off the computer.

2.   Connect the second MM monitor.

   a.   Position the second MM LCD monitor to the right of the first MM LCD monitor.

   b.   Connect the second MM monitor to the remaining port on a 4-port Barco Controller.

Note

If the SecurView computer has a 2-port Barco Controller and a separate MM video card, connect to the MM video card. If the SecurView computer has a 2-port Barco Controller, but does not support a separate MM video card, upgrade to a 4-port Barco Controller is required to support multimodality.

   c.   Power on the MM monitors.

   d.   Power on the computer.

2.4   Arranging the Displays

Note

Consult with the customer for monitor arrangement preference. The following diagram is a suggested layout.

These instructions assume you have basic knowledge of configuring monitors in Windows 10. If you are not familiar with how to arrange and configure monitors in Windows 10, select the following link to the Microsoft Technical Bulletin on dual monitor setup in Windows 10:

https://support.microsoft.com/en-us/help/4340331/windows-10-set-up-dual-monitors

1.   Log into Windows as **Administrator**.

2.   Select **Start** and type `Display` in the search bar. Select the option to change the display settings.

3. Change the display configuration to the customer's preference as in the following example:
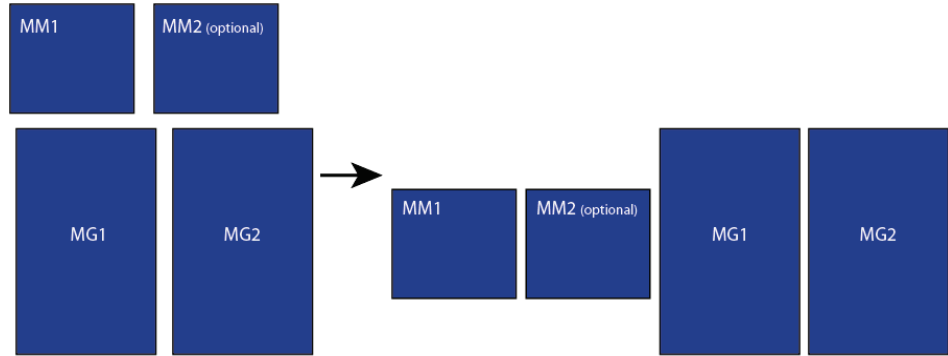
Figure 1: Multimodality Configuration

4. Select the first **multimodality monitor (MM1)**.

   a. In the multiple displays list, select the option to extend the displays.

   b. Select the **Make this my main display** check box.

   c. Set the screen resolution for MM1 to 1600 × 1200 for a standard display or 1920 x 1200 for a wide-screen display.

5. If the second MM monitor (MM2) is installed, select the second **multimodality monitor (MM2).**

   a. In the multiple displays list, select the option to extend the displays.

   b. Set the screen resolution for MM2 to 1600 × 1200 for a standard display or 1920 x 1200 for a wide-screen display.

6. Select **OK**, then **Yes** to accept the changes.

7. Test the monitor configuration to verify that the mouse travels across the monitors from the leftmost monitor to the rightmost monitor as configured.

2.5   Configuring Patient List for Display on Multimodality Monitor

If the customer wants to display the patient list on the MM monitor (or the second MM monitor), refer to the *Configuring Patient List for Additional Color Monitor (Optional)* section in the latest version of the *SecurView DX/RT Workstation Installation and Service Manual* (MAN-11721).

2.6   Configuring Standalone License Settings

This section is for Standalone systems only. To configure a Manager-Client system, refer to *Configuring Client License Settings* on page 13.

1. For each workstation, record the license dongle ID (for example, `9-65EA736E`) printed on the dongle. The dongle is installed in a USB port on the computer.

2. Email the serial number and license dongle ID to *SecurViewLicenses@hologic.com*.

Note

The SecurView license team confirms that the system is eligible for the license requested, generates the new license, and emails the **license.dat** file(s) to you.

Note

To obtain the license key for SecurView DX Software-Only systems, refer to the latest *FMI, SecurView DX 12.0 Software-Only Installation Instructions* (MAN-11720).

3. Make sure that the SecurView license team emailed the requested license.dat file(s) to you.

    a. If there is a problem with the received **license.dat** file(s), respond to the email from *SecurViewLicenses@hologic.com*.

4. Log into Windows as **SCR**. Log into the SecurView application as **service**.

5. Select **Administration**, then select the **Licensing** tab.

6. The *Licensing* window opens. Select **Open License File** and browse to the license.dat file location.

7. Select the **license.dat** file, then select **Open**. SecurView copies the license.dat file to the hard drive and displays the licenses in the *Licensing* window.

8. Make sure that the MULTIMODALITY license is present. Select **OK.**

9. Select the **Exit to Windows** tab, then select **OK** to confirm.

Note

Restart the application after making changes to the service settings.

10. Double-click the **SecurView** icon.

11. Log in as **service**, then select **Administration**.

2.7   Configuring Routing for a Standalone Workstation

Use the following procedure to configure routing only on a Standalone workstation.
Routing for a Client is performed on the Manager.

> **Note**
> For further assistance with image routing, refer to *Configuring Routing* in the latest
> version of the *SecurView DX/RT Workstation Installation and Service Manual*
> (MAN-11721).

> **Note**
> Consult with the customer to determine which modalities will be viewed on the
> Standalone workstation, and to which viewer modalities such as SC (Secondary
> Capture of modality other than US or MG), DX (of modality other than MG), and CR (of
> modality other than MG) should be routed. Each configured modality should be routed
> to only one viewer.

1. Select the **Routing** tab. The *Image Routing / Modality Acceptance* window opens.
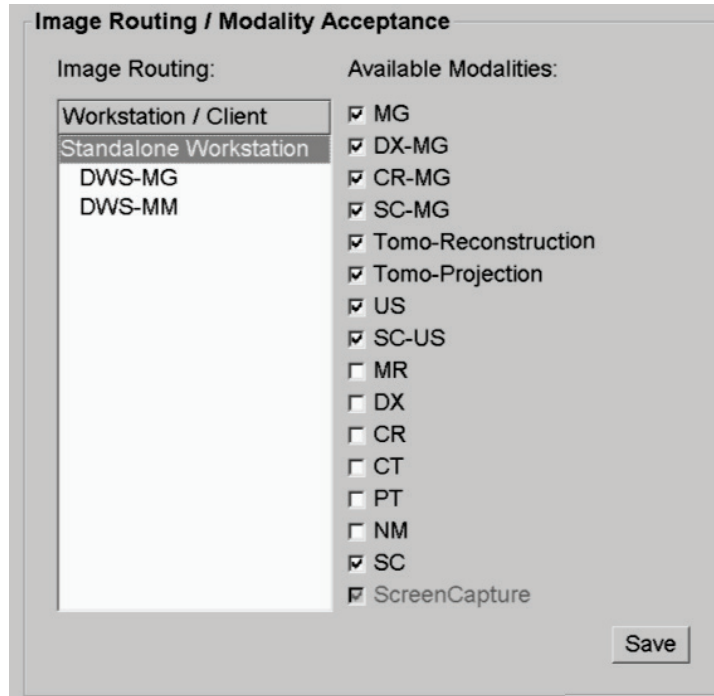
Figure 2: Image Routing / Modality Acceptance Window

2. In the *Image Routing* section, select **Standalone Workstation**.

3. Under *Available Modalities*, select the check boxes for the image types that the
    customer intends to send to the workstation.

4. In the *Image Routing* section, select **DWS-MG**.

5. Clear the following check boxes if the customer prefers to view ultrasound images in
    the MM viewer**: US** and **SC-US**.

6. Confirm the site modalities for viewing in the Mammography (MG) viewer. Select the following check boxes as appropriate: **MG, DX-MG, CR-MG, SC-MG, Tomo-Reconstruction, Tomo-Projection, DX, CR**, and **SC**.

Note
Selecting DX or CR under DWS-MG versus DWS-MM depends on where the customer wants to view digital X-Ray or computed radiography images with a modality other than MG.

7. In the *Image Routing* section, select **DWS-MM**.

Note
SecurView 10.1 and later cannot route MG, DX-MG, CR-MG, Tomo-Reconstruction, and Tomo-Projection to the MM Viewer.

8. Confirm the site modalities for viewing in the MM viewer. Select the following check boxes as appropriate: **US, SC-US, MR, DX, CR, CT, PT, NM**, and **SC**.

Note
Selecting SC under DWS-MG versus DWS-MM depends on where the customer wants to view Secondary Capture images with modality other than MG or US, such as scanned paper documents or digitized films with other modality values.

9. Select **Save**, then select **OK** (twice).

10. Configure the MM viewer for each user as needed (refer to the latest version of the *SecurView DX Advanced Multimodality Option User Guide*).

11. If the customer wants to print from the MM viewer, then configure the printer (refer to *Setting Up a Printer* on page 23).

12. Select the **Exit to Windows** tab, then select **OK** to confirm.

Note
Restart the application after making changes to the service settings.

13. Enable the second MM monitor (refer to *Enabling a Second Multimodality Monitor* on page 15).

2.8   Configuring Routing for a Manager

1.   On the Manager, log into Windows as **SCR**. Log into the SecurView application as **service**.

2.   Select **Administration**, then select the **Routing** tab. The *Image Routing / Modality Acceptance* window opens.

Note

For further assistance with image routing, refer to *Configuring Routing* in the latest version of the *SecurView DX/RT Workstation Installation and Service Manual* (MAN-11721).

Note

Consult with the customer to determine which modalities will be viewed on the Client workstations, and to which viewer modalities such as Secondary Capture (SC) (other than US or MG modality), DX (other than MG modality), and CR (other than MG modality) should be routed. Each configured modality should be routed to only one viewer.
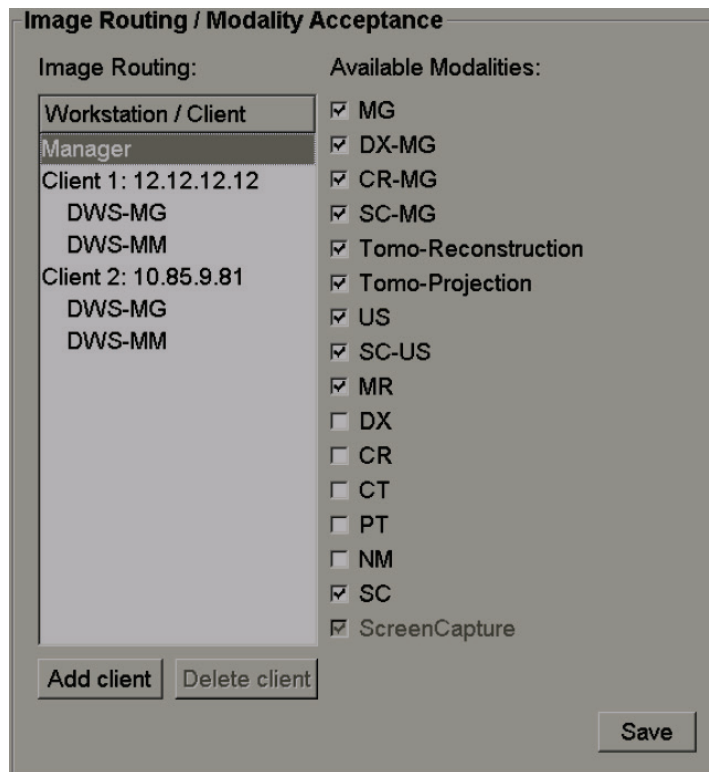

Figure 3: Image Routing / Modality Acceptance Window

3.   In the *Image Routing* section, select **Manager**.

4.   Select the check boxes for the image types the customer intends to send to the workstation.

5. For each Client workstation connected to the Manager, do the following:

    a. In the *Image Routing* section, highlight **DWS-MG**.

    b. Clear the following check boxes if the customer prefers to view ultrasound images in the MM viewer: **US** and **SC-US**.

    c. Confirm the site modalities for viewing in the Mammography (MG) viewer. Select the following check boxes as appropriate: **MG, DX-MG, CR-MG, SC-MG, Tomo-Reconstruction, Tomo-Projection, DX, CR**, and **SC**.

Note

Selecting DX or CR under DWS-MG versus DWS-MM depends on where the customer wants to view digital X-Ray or computed radiography images with modality other than MG. Tomosynthesis settings apply only when the customer has a valid license.

    d. In the *Image Routing* section, highlight **DWS-MM**.

Note

MM Routing can be configured only for the first listed Client. MM Routings must be the same for all Clients connected to this Manager; therefore, subsequent Clients will use the routing configured for the first Client.

Note

SecurView 10.1 and later cannot route MG, DX-MG, CR-MG, Tomo-Reconstruction, and Tomo-Projection to the MM Viewer.

    e. Confirm the site modalities for viewing in the MM viewer. Select the following check boxes as appropriate: **US, SC-US, MR, DX, CR, CT, PT, NM**, and **SC**.

Note

Selecting SC under DWS-MG versus DWS-MM depends on where the customer wants to view Secondary Capture images with modality other than MG or US, such as scanned paper documents or digitized films with other modality values.

6. Select **Save**, then **OK**.

7. Configure the MM viewer for each user as needed (refer to the latest version of the *SecurView DX Advanced Multimodality Option User Guide*).

8. If the customer wants to print from the MM viewer, then configure the printer (refer to section *Setting Up a Printer* on page 23).

Note

Printer configurations will be applied to all connected Clients.

9. Select the **Exit to Windows** tab, then select **OK** to confirm.

Note

Restart the application after making changes to the service settings.

2.9   Configuring Client License Settings

Perform the procedure in this section on all Client workstations connected to the Manager.

Note

When configuring a multiworkstation system, be sure to perform *Configuring Routing for a Manager* on page 11 before performing this section.

1. For each workstation, record the license dongle ID (for example, `9-65EA736E`) printed on the dongle. The dongle is installed in a USB port on the computer.

2. Email the serial number and license dongle ID to *SecurViewLicenses@hologic.com*.

Note

The SecurView license team confirms that the system is eligible for the license requested, generates the new license, and emails the license.dat file(s) to you.

Note

To obtain the license key for SecurView DX Software-Only systems, refer to the latest *FMI, SecurView DX Software-Only Installation Instructions* (MAN-11720).

3. Make sure that the SecurView license team emailed the requested license.dat file(s) to you.
    *   If there is a problem with the received **license.dat** file(s), respond to the email from *SecurViewLicenses@hologic.com*.

4. Log into Windows as **SCR**. Log into the SecurView application as **service**.

5. Select **Administration**, then select the **Licensing** tab.

6. The *Licensing* window opens. Select **Open License File** and browse to the license.dat file location.

7. Select the **license.dat** file, then select **Open**. SecurView copies the license.dat file to the hard drive and displays the licenses in the *Licensing* window.

8. Make sure that the MULTIMODALITY license is present. Select **OK**.

9. Configure the MM viewer for each user as needed (refer to the latest version of the *SecurView DX Advanced Multimodality Option User Guide*).

10. Select the **Exit to Windows** tab, then select **OK** to confirm.

Note

Restart the application after making changes to the service settings.

11. Enable the second MM monitor (refer to *Enabling a Second Multimodality Monitor* on page 15).

2.10   Locking the Taskbar

1. Right-click the **taskbar** to display the shortcut menu.

2. Clear the **Lock the Taskbar** option.

3. Drag the taskbar to the bottom of the MM monitor (MM1 or the monitor that was defined as the primary monitor in *Arranging the Displays* on page 6).

4. Right-click the **taskbar**, then select **Lock the Taskbar** from the shortcut menu.

5. Select **Start**, then select the **user profile icon**, then select **Sign Out**.

6. Log into Windows as **Administrator**.

7. Repeat steps 1 to 4.

8. Select **Start**, then select the **user profile icon**, then select **Sign Out**.

2.11   Backing Up the New SecurView Settings (Standalone, Manager)

Create a new backup disk using the instructions in *Backing Up the Old SecurView Settings (Standalone, Manager)* on page 5.

2.12   Completing the Installation Report

Ensure that an installation report is recorded in H1. For regions outside the US that do not have access to H1, refer to your local procedures.

Chapter 3 Additional Information

This chapter provides information on enabling a second MM monitor, importing and editing DICOM image preparation configuration, configuring key functions, and setting up a printer.

3.1   Enabling a Second Multimodality Monitor

This section applies to sites using a second monitor for the MM option.

1. Log into the application as **service**.

2. On the MM viewer, right-click the **Application toolbar** and point to **Display Setup** > **Use**, then select **Use Display n** (where *n* is the identity of the second MM monitor).

Figure 4: Display Setup > Use > Use Display Toolbar

3. Set the Study Browser to reduce the travel distance of the pointer when navigating between the MG and MM viewers. The recommended side for the Study Browser is the side where the MG viewer monitors are situated, relative to the MM viewer monitors.

4. On the MM viewer, right-click the **Application toolbar** and point to **Display Setup** > **Study Browser**, then select **Right** or **Left**.

Figure 5: Display Setup > Study Browser > Right or Left Toolbar

5. Log out of the application.

6. For each application user, log in and perform steps 2 and 3.

Note
If user is a radiologist and/or a technologist, you will need to open a patient for review to display the MM viewer.

3.2   Importing DICOM Image Preparation Configuration

The MM viewer is provided with a configuration file that controls the preparation and sorting of incoming DICOM images into 2D, 3D, or 4D image sets to be reviewed within the MM viewer. The default parameters should be sufficient for the majority of multimodality customers. If needed, the Service Engineer is authorized to make a copy of the default configuration file, edit the parameters, and import the new configuration file as follows. The configuration file should be edited with the required changes prior to importing, using *Editing DICOM Image Preparation Configuration* on page 18 as a guideline.

1. On the Application toolbar, select **Multimodality Configuration** ⚒ (or press **[Alt] + [Shift] + [W]**).

2. The *Multimodality Configuration Editor* window opens. Select **Workflow**.
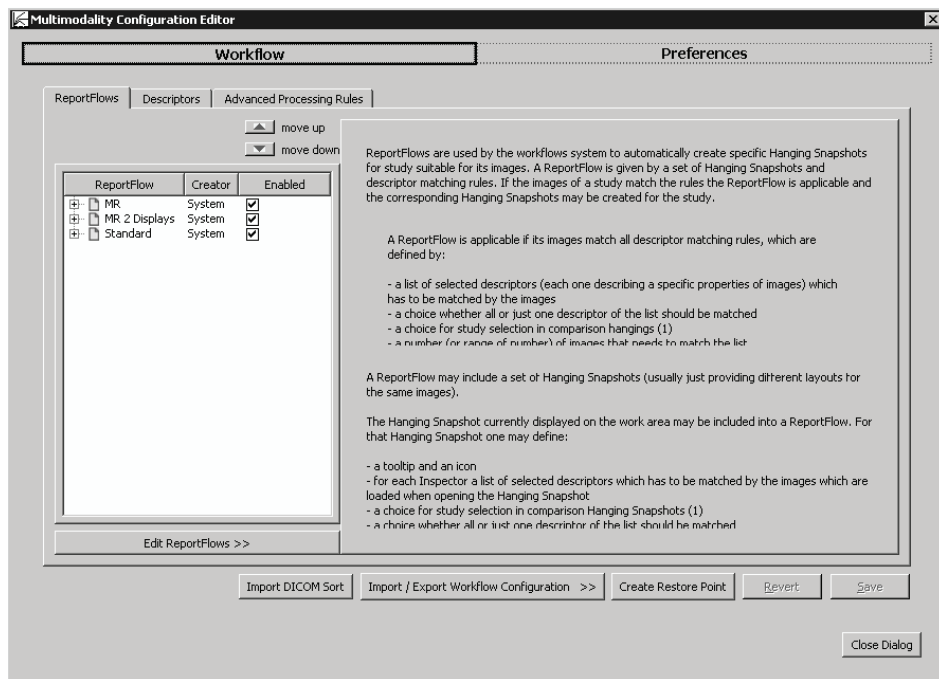
Figure 6: Multimodality Configuration Editor Workflow > ReportFlows window

3. The *Workflow* window opens. Select the **ReportFlows** tab, then **Import DICOM Sort**.

4. The *Choose a DICOM Sort configuration to import* window opens. Navigate to **E:\SecurView\MAP** and locate the default **sortPart.cfg** file or a modified copy of that file.

Figure 7: Choose a DICOM Sort configuration to import Window

5. Select the file, then select **Open**.

In a multiworkstation environment, you must log off and log on again to activate the imported settings. (This step can be performed on either the Manager or the Client – in either case, the settings will be activated.)

3.3 Editing DICOM Image Preparation Configuration

3.3.1 Sorting Incoming DICOM Images

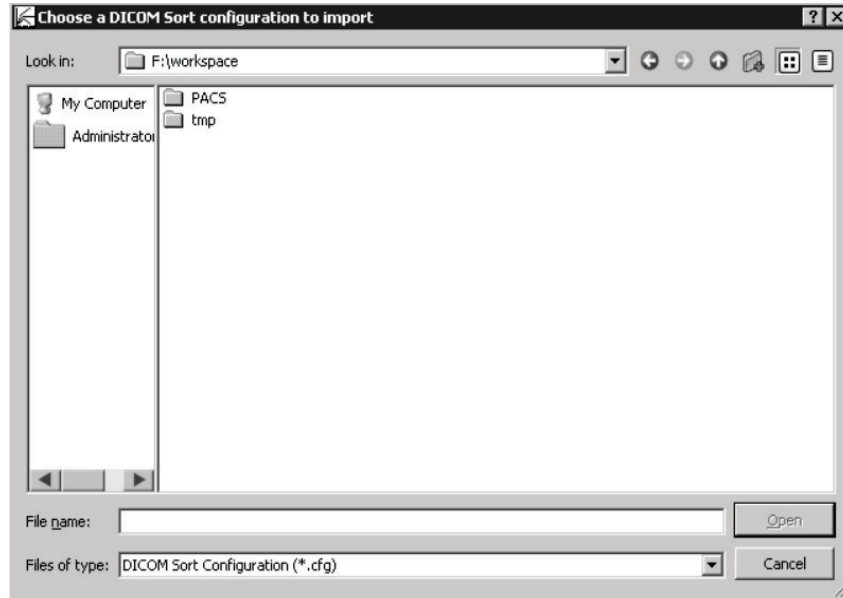The purpose of the sortPart.cfg file is to enable you to configure the preparation and sorting of incoming DICOM images into 2D, 3D, or 4D image sets for review in the MM viewer.

If you plan to edit the file, do not edit the original sortPart.cfg. Make a copy of the original sortPart.cfg and give it a distinctive name. After making the changes to the distinctively named copy, store the file in the MAP folder and also in another location that will not be affected by software upgrades or computer replacement. The configuration file may be edited via Notepad:

```
(
{Element = '(0008,0060)'; Name = Modality; Sort = 1; Part = 1; },
{Element = '(0008,0020)'; Name = StudyDate; Sort = 1; Part = 1; },
{Element = '(0008,0030)'; Name = StudyTime; Sort = 0; Part = 0; },
{Element = '(0020,0052)'; Name = FrameOfReferenceUID; Sort = 0; Part = 0; },
{Element = '(0008,0008)'; Name = ImageType; Sort = 0; Part = 0; },
{Element = '(0020,0011)'; Name = SeriesNumber; Sort = 0; Part = 0; },
{Element = '(0008,0021)'; Name = SeriesDate; Sort = 1; Part = 0; },
{Element = '(0008,0031)'; Name = SeriesTime; Sort = 1; Part = 0; },
…
```

3.3.2 Sort/Part Entry Syntax

Each line is related to a DICOM tag that can be used for sorting and partitioning in the following form:

```
<key> = <value>;
```

Table 2: Supported sortPart.cfg Keys

Key	Definition
Element	The DICOM tag number in the form (xxxx,xxxx) where x is a hexadecimal digit.
Name	The name of the DICOM tag (for example, ContentDate). At least one of the Element and Name tags must be present to identify the DICOM tag.
Sort	If Sort = 1, the images are sorted by the given tag in the order they appear in this file. If Sort = 0, the tag is not used.
Part	If Sort and Part are 1, this tag is used as a partition criteria (for example, if images differ in the contents of the given tag, they are put in different image sets).
SortCondition	This contains a string with an additional condition that must evaluate to true for the sorting to take place (in addition to having Sort = 1). If the condition evaluates to false, no sorting or partitioning is done for the given tag.
PartCondition	This contains a string with an additional condition that must evaluate to true for the partitioning to take place (in addition to having Sort = 1 and Part = 1); for example, 'Modality = CR'.
Tolerance	A float number that describes the maximum absolute difference between two numerical values to consider them equal (defaults to 0). This can be used to soften some partitioning conditions, based on numerical values; for example, Echo Time.

3.3.3   DICOM Tag Conditions Syntax

A DICOM tag condition (SortCondition, PartCondition) can be used as:

- A sort condition in the sortPart.cfg file

- A partition condition in the sortPart.cfg file

- A condition for creating 2D+T images in the config entry
  PreProcessing_Force2DPlusTCondition

A DICOM tag condition consists of an expression (conditional preprocessing). An expression can be:

```
<tagid> <operator> <value>
```

```
exists <tagid> : unary operator checks for the existence of a tag
```

```
<expression> | <expression> : The '|' (or '||') binary operator links two
expressions with a logical 'OR'
```

```
<expression> & <expression> : The '&' (or '&&') binary operator links two
expressions with a logical 'AND'
```

```
!<expression> : The '!' operator represents a logical 'NOT' operator and
inverts the meaning of the expression. The '!' operator will always have
a higher priority and negate the following <expression> or (<expression>)
```

```
(<expression>) : The parentheses can be used to change the precedence of
expressions; if not used, expressions are evaluated from left to right
(no preference of AND!)
```

A tagid can look like the following:

```
(####,####)
```

```
(####,####)[index]
```

Where '#' is a hexadecimal digit, index is the decimal index of the tag (for tags with VM > 1).

Note
It is not possible to use DICOM tags that are part of sequences. It is also not possible to use private DICOM tags.

The operators can be:

= for strings: case-insensitive check for equality, otherwise check for equality

== for strings: case-sensitive check for equality, otherwise the same as =

like only for strings: case-insensitive substring check (the like operator is not used like in SQL statements: the usage of wildcards is not possible; it will be checked for any occurrence of the given string in the value of the appropriate DICOM tag)

<, <=, >=, >, != the usual arithmetic operators (do not use for strings).

Examples

'Sort and Partition on SliceThickness only if the SeriesDescription is not like MIP'. This fixed a problem with different slice thicknesses within a MIP series, generated from a modality, which were partitioned on SliceThickness.

```
{
SortCondition = "! SeriesDescription like mip";
Element = "(0018,0050)";
Name = SliceThickness;
Part = 1;
Sort = 1;
},
```

'Partition on SOPInstanceUID if the Modality is like CR'. This will create a single Image Set for each image. This is the expected behavior for the mentioned Modality.

```
{
PartCondition = "Modality = CR";
Element = "(0008,0018)";
Name = SOPInstanceUID;
Part = 1;
Sort = 1;
}
```

'Partition on Repetition Time if the difference between 2 values is more than 0.1 ms'. This fixed a problem that the pre-contrast image was not included because the Repetition time was different, but only by about 0.02 milliseconds (10.82 vs. 10.89).

```
{
Element = "(0018,0080)";
Name = RepetitionTime;
Part = 1;
Sort = 1;
Tolerance=0.1
}
```

Configuration entries used for preprocessing

The following entries also may change the results of the preprocessing:

- **PreProcessing_Delay**: The minimum time in seconds after the last image of a given study arrives before preprocessing is triggered.

- **PreProcessing_DistTolerancePercent**: The maximum difference between 2 slice distances in percents that does not split up a 3D volume.

- **PreProcessing_DistToleranceTenthMM**: Absolute tolerance in tenth mm, added to the previous value to decide if a volume is homogeneous.

- **PreProcessing_MinimumImagesInVolume**: The minimum number of images that have to be contained in a homogeneous volume.

- **PreProcessing_Force2DPlusTCondition**: A DICOM tag condition string; if evaluates to true for the first image in an Image Set, a 2D+T image set will be created (instead of a 3D or inhomogeneous image).

3.4 Configuring Key Settings

On the Application toolbar, select **Multimodality Configuration** (or press **[Alt] + [Shift] + [W]**). The *Multimodality Configuration Editor* window opens. Select **Preferences**.

The *Preferences > All Settings* window lists all keys and key settings (for example, functions and values, assigned users, hosts) and provides a description. The default keys should be sufficient for the majority of customers.

- Select **+** to expand the list items.
- Select **-** to collapse the list items.

The keys are displayed with their key settings and description. If the description is too long, point to the entry to see a tooltip containing the complete text line.
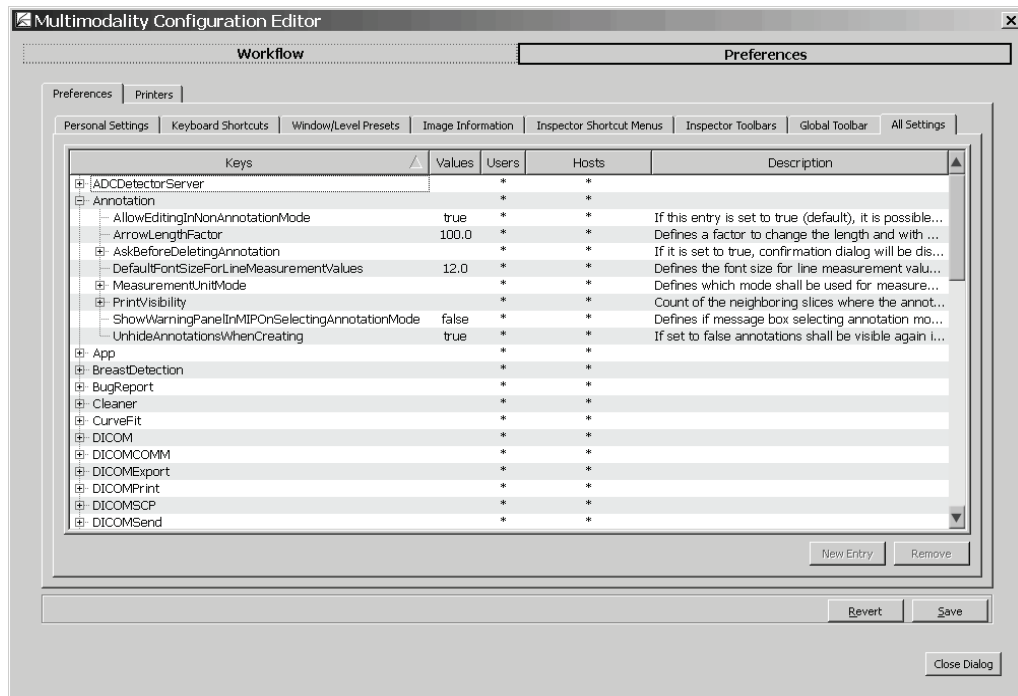

Figure 8: Multimodality Configuration Editor Preferences > All Settings Window

3.4.1 Add Key Settings

You can add key settings to an existing key.

1. Navigate to the **Preferences** > **All Settings** window.
2. To view the key settings, expand a key (refer to *Annotation* in the previous figure) to view the values and settings.
3. Locate and select the key setting (for example, *MeasurementUnitMode*) that you want to edit. Select **New Entry** to insert a copy of this key setting.

4. Double-click the **Values** cell to view a drop-down or edit field. You can then select or type the desired value (for example:

).

> **Note**
> You cannot edit the description.

5. Select **Save** to save your settings.

3.4.2 Remove Key Settings

This button is available only for user-entered key settings.

1. Select a new entry that is marked as a sub-item (second level). This entry often has an individual user and/or host.

2. Select **Remove** to remove this item.

3. Select **Save** to save your settings.

3.5 Setting Up a Printer

On the Application toolbar, select **Multimodality Configuration** (or press **[Alt] + [Shift] + [W]**). The *Multimodality Configuration Editor* window opens. Select **Preferences**, then **Printers**.

The setup procedure for a printer is based on a printer template that must first be installed and then adapted. The MM viewer is delivered with some printer templates that may be configured by Service Engineers.

3.5.1 Installing Printer Templates

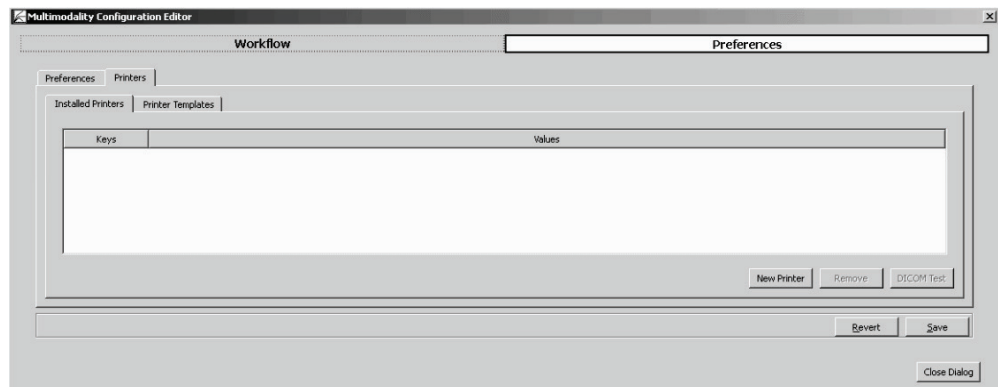1. Navigate to the **Printers** > **Installed Printers** tab.

Figure 9: Multimodality Configuration Editor Preferences > Printers >Installed Printers Window

2. Check if any printers are listed in the **Installed Printers** tab. Check if any templates are listed in the **Printer Templates** tab. If this page is empty, you must first install an initial printer template.

3. Select the **Printer Templates** tab. The *Printers > Printer Templates* window opens.
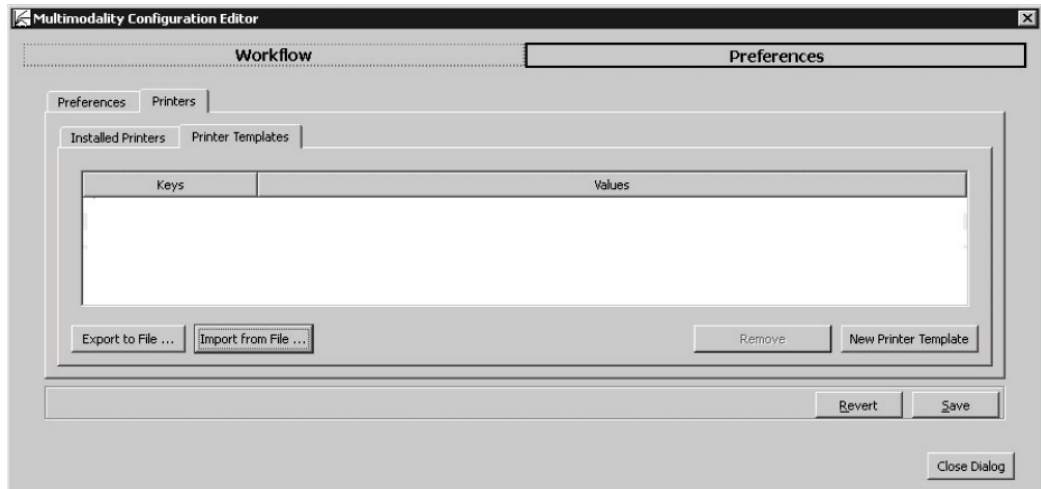

Figure 10: Multimodality Configuration Editor Preferences > Printers > Printer Templates Window

4. Select **Import from File**.

5. The *Select File to Import* window opens. Navigate to **E:\SecurView\MAP** and locate the **printerTemplates.txt** file.

6. Select the file and select **Open**. The *Printers > Printer Templates* window is now populated with the various printer templates.
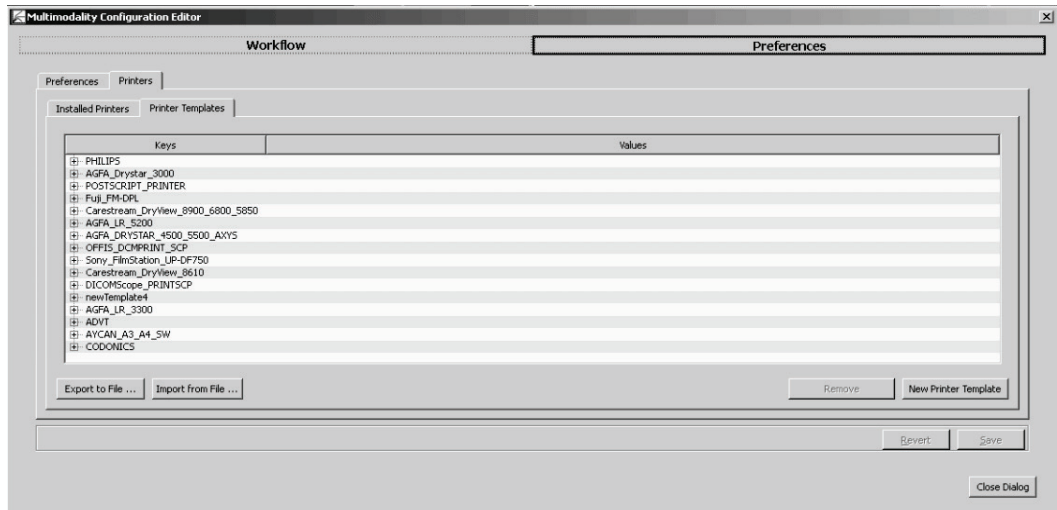

Figure 11: Printer Templates Window with Printer Templates

Note

In the *Printer Templates* window, some templates for different vendors and different printers are listed, including a POSTSCRIPT_PRINTER. Printer templates can be edited after they have been imported.

> **Note**
> When MM printer templates are imported, they will not overwrite existing templates with the same name. It is best to close and reopen the MM configuration editor after importing new MM printer templates so the settings display correctly. The import tool fills in default values for several settings that were not in the MM printer templates file.

> **Note**
> After a SecurView upgrade, the existing MM printer configuration settings are preserved. If there are new or updated MM printer templates available with the latest SecurView version, they must be loaded manually.

7. Select **Save** to save your settings.

3.5.2 Editing Printer Templates

You can edit an existing or new printer template and its key values.

1. Navigate to the **Printers** > **Printer Templates** tab.
2. To create a new printer template, select **New Printer Template**. A new printer template (newTemplate1) will be appended at the end of the list.
3. Double-click the template name (for example, newTemplate1). The name of the printer template is now in edit mode. Type a unique name for the printer template.
4. To change the key values of the printer template, first expand the printer name (refer to *Test Printer* in the following figure). Locate the key value (refer to the *BlackOnWhite* value in the following figure) that you want to edit.

5. Double-click the key value. The selected value field is now in edit mode. (refer to the *true* value for *BlackOnWhite* in the following figure).
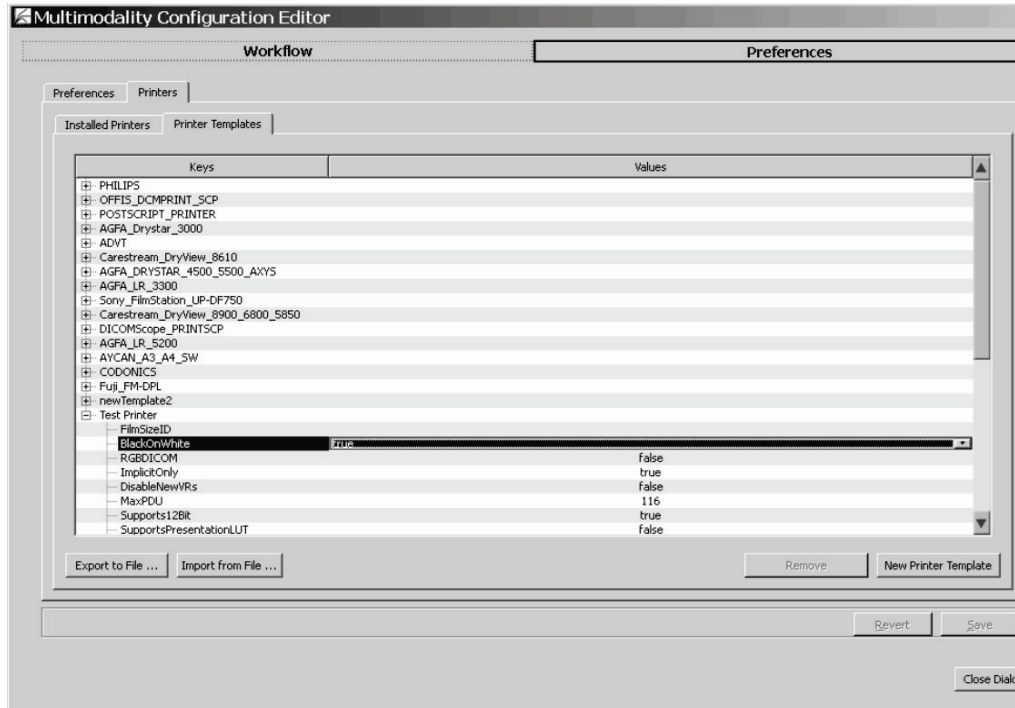

Figure 12: Printer Templates Window with Template Editing

6. Select a value from the drop-down menu or type a new value.

Note

The following keys are available but not supported by the current MM viewer, so their values, if set, will be ignored:

RGBDICOM, PresentationLUTinFilmSession, PresentationLUTMatchRequired, PresentationLUTPreferSCPRendering.

Note

It is not possible to configure a value to send for Configuration Information (2010,0150). It is recommended to set MinDensity and MaxDensity key values according to customer and printer vendor preference for printing MM images (US, MR).

Note

Use of the Presentation LUT SOP Class is supported by setting SupportsPresentationLUT to true. Presentation LUT Shape is set to IDENTITY, Illumination is set to 2000, and Reflected Ambient Light is set to 10. These values are not configurable.

7. Select **Save** to save the new settings.

3.5.3 Installing a Paper Printer

Paper printers are generally used to print images on paper whereas DICOM printers are used to print images on film based on the DICOM Print Management service classes.

1. Navigate to the **Printers > Installed Printers** tab, then select **New Printer**.

2. The *Printer Template Selection* window opens. In the 'Choose a Template for the new Printer' drop-down list, select **PrinterTemplate_POSTSCRIPT_PRINTER**
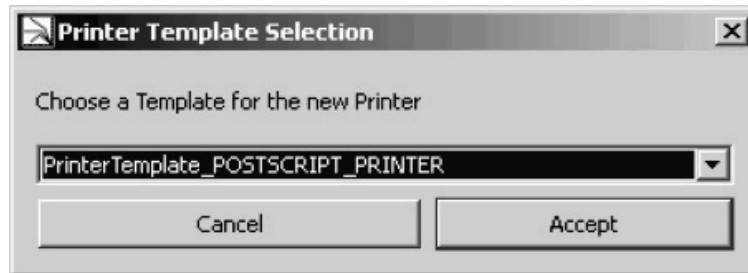

Figure 13: Printer Template Selection Window

3. Select **Accept** to close the window.

4. In the list of installed printers, expand the selected printer template. In the following Keys entries, double-click the right column (Values) to edit, then select or type the following values:

   a. *FilmSizeID* keys item. Select **Letter**, **A4**, **A3**, or **A4\A3**.

   b. *BlackOnWhite* keys item. Select **true**.

   c. *MaxPDU* keys item. Select **0**. This value is needed to distinguish paper printers from DICOM printers.

   d. *host* keys item. Type the name or the IP address of the SecurView system.

   e. *printTarget* keys item. Select the name of the printer to be installed.

5. Select **Save** then **Close Dialog**.

3.5.4 Installing a DICOM Printer

DICOM printers are used to print images based on the DICOM Print Management service classes.

1. Navigate to the **Printers > Installed Printers** tab, then select **New Printer**.

2. The *Printer Template Selection* window opens. Select the appropriate printer template.

3. Select **Accept** to close the window.

4. In the list of installed printers, expand the selected printer template. In the following Keys entries, double-click the right column (Values) to edit, then select or type the following values.

   a. *AET* keys item. Type the AET of the selected printer (for example, DS4500).

   b. *callingAET* keys item. Type the AE Title or the IP address of the SecurView (Manager or Standalone).

c.   *host* keys item. Type the name or the IP address of the DICOM printer's host.

d.   *port* keys item. Type '104' or the port number used by the DICOM printer's host, if different from 104.

e.   *defaultFilmSizeID* keys item. Select the film size specified by the customer.

f.   *defaultMediumType* keys item. Select the type specified by the customer (for example, BLUEFILM).

g.   *defaultMagnificationType* keys item. Select **NONE**.

5.   Select **Save**, then **Close Dialog**.

3.5.5   Testing Installed Printers

When you have set all necessary values according to the currently connected printer, you should test the connectivity.

1.   Navigate to the **Printers > Installed Printers** tab.

2.   Select the desired printer.

3.   Select **DICOM Test**. A *Printer Test* dialog box informs you about the test result.

3.5.6   Exporting Printer Templates

You can export all printer templates at once to a file. On the *Printer Templates* window, select **Export to File....** A standard dialog box opens where you can select the path and filename.

Note

Exported MM printer templates will not match the original MM printer template file because the importing tool adds some default settings.

Note

No file extension will be added. To specify your export file according to the content, you should append '.txt'.

The file is stored and may be edited, copied, or used for import purposes on other workstations. The exported template file is formatted as follows:

```
[OFFIS_DCMPRINT_SCP]
FilmSizeID = A4\LETTER\8INX10IN\11INX14IN
BlackOnWhite = false
RGBDICOM = false
ImplicitOnly = true
DisableNewVRs = true
...
```

Each key is followed by '=' and a list of all possible values. Type '#' at the beginning of a line for comments.

HOLOGIC®

Hologic Inc
600 Technology Drive
Newark, DE 19702 USA
1.800.447.1856

Australian Sponsor **Hologic (Australia & New Zealand) Pty Ltd.**
Level 3, Suite 302
2 Lyon Park Road
Macquarie Park NSW 2113
Australia
1.800.264.073

EC | REP

Hologic BV
Da Vincilaan 5
1930 Zaventem
Belgium
Tel: +32 2 711 46 80
Fax: +32 2 725 20 87

Refer to the corporate website for more facilities worldwide.
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