eRAD Scheduler
User Manual
Version 2.1

eRAD Scheduler User Manual
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Revision Table

Revision	Date	Author	Comments
1.0	10-Apr- 08	JKC	Initial version
1.1	24-Jun-09	JKC	Updates for version 1.1
2.0	15-Jul-11	JKC	Updated for version 2.0
2.1	13-Mar-13	JKC	Updated for version 2.1 for eRAD PACS v7.2

TABLE OF CONTENTS

1. Introduction

eRAD Scheduler is the scheduling component of eRAD PACS™. eRAD PACS is a picture archive and communication system (PACS) and teleradiology system used to receive DICOM images, scheduling information and textual reports, organize and store them in an internal format, and make the information available across a network via web and customized user interfaces. eRAD PACS is for hospitals, imaging centers, radiologist reading practices and any user who requires and is granted access to patient image, demographic and report information. eRAD PACS provides information management and distribution services. The system is comprised of acquisition components, a central system manager component, diagnostic and review workstation components and an archiving component.

The sections that follow provide instructions on installing, configuring and using the eRAD PACS scheduling module. This module organizes the radiological exam ordering process, including room assignment, calendar scheduling, patient information collection, procedure specification, check-in and completion procedures, and some associated processes.

For more general instructions on using other parts of the eRAD PACS, refer to the following documents.

- eRAD PACS Operator Manual
- eRAD PACS Viewer Manual
- eRAD PACS XML Template Customization Manual

1.1 General Safety Information

eRAD RIS/PACS system components are not approved for direct patient contact applications.

The eRAD RIS/PACS system components and associated cables must not be operated in the presence of moisture.

To avoid excessive product leakage of contents and maintain product compliance to medical protective guidance requirements, the PACS and workstations power cords shall be connected directly to hard-wired AC receptacles.

Federal law prohibits this device for sale to, or use by, anyone other than a medical professional.

The eRAD RIS/PACS system components must not be carried by the connecting cables.

1.2 Indications of Use

The eRAD PACS system acquires image and patient information from data entry terminals and several types of medical imaging modalities. The eRAD RIS/PACS open software architecture enables hospital network users to enter, review, archive and print patient demographic and radiographic study information entered directly into the system's user interface, or received from a hospital information system (HIS), electronic medical record (EMR) system and/or a radiology information system (RIS). The patient demographics and order information can be routed through the hospital network structures and sent along with the diagnostic images to remote hosts for viewing and printers for hard copy imaging. The open system architecture allows for the adoption of changes in technology so hardware can be switched while maintaining consistent workflow.

Follow all safety labels on the equipment.

1.3 Patient Contact

The PACS system components are not approved for direct patient contact applications. Users must follow hospital cleaning and decontamination policies and procedures.

1.4 Product Safety

The eRAD RIS/PACS system has been classified as an acceptable application of use in accordance with Medical Device regulations. The use of accessory equipment and/or hardware not complying with the equivalent product safety and EMC requirements of this product may lead to a reduced level of safety and/or EMC performance of the resulting system.

1.5 Contact Information

For more information concerning eRAD RIS/PACS, or to report a problem with this manual or the software, contact eRAD technical support.

eRAD Technical Support

United States/North America
9 Pilgrim Road
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Budapest H-1122, Hungary
Voice: +36.1.489.4700
FAX: +36.1.489.4709

2. Getting Started

Initiating a browser session and getting to the scheduling page requires a web-enabled workstation with a compatible web browser and Java VM. The following minimum requires are needed:

- eRAD RIS/PACS version 6.1
- Microsoft Internet Explorer version 6.0, or Firefox version 2.0.
- Java VM version 1.6

The information provided here assumes the workstation is running Internet Explorer on Microsoft Windows XP, 7 and 8. There are differences between these versions of Windows which may impact the information contained in this manual. By default, all Windows operations are shown for Windows XP.

2.1 Initiating a Browser Session

Before starting, obtain the facility-dependent URL for the eRAD PACS server from your system administrator. The URL can be a hostname or an IP address. The following examples are indicative of eRAD PACS URLs:

pacs.eradimagemedical.com
http://pacs.eradimagemedical.com
https://192.168.10.1

From your workstation, launch the web browser and enter the URL into the address line. By default, the eRAD PACS Main page appears in the browser.

eRAD PACS forces your connection to use secure HTTP if the server is configured to provide secure communications to your workstation. If HTTPS is required, you may be prompted to verify the digital certificate, as described in section *2.1.1 Accepting Certificates*.

2.1.1 ACCEPTING CERTIFICATES

A digital certificate verifies the server with which the user communicates is actually a valid eRAD PACS server, and confirms the software and data have not been modified by an unapproved entity. You can accept the eRAD PACS certificate each time you log onto the server, or you can save the certificate on your local workstation. The advantage of the latter is you may not receive a warning notice each time you log into the server.

eRAD PACS supports both Microsoft Internet Explorer and Mozilla web browsers. Each has a different method of saving certificates. Follow the instructions below for the browser you are using.

2.1.1.1 ADDING A CERTIFICATE IN INTERNET EXPLORER

Step by step instructions for adding a certificate to Internet Explorer are given in section 2.1 of the eRAD PACS Operator Manual.

2.1.1.2 ADDING A CERTIFICATE IN FIREFOX

Step by step instructions for adding a certificate to Mozilla Firefox are given in section 2.1 of the eRAD PACS Operator Manual.

2.2 Basic Function Overview

eRAD RIS/PACS is a web-enabled system accessible from a web browser, using many of the familiar conventions you find when visiting other web sites. The home page is the first page you encounter when you gain access to the server. The system information is available through a hierarchy of other pages accessible from the main page. You can save the link to eRAD RIS/PACS in your Favorites folder.

The information in the sections below provides a brief overview of eRAD Scheduler's basic functions. Find more detailed descriptions of each function, along with options and configuration settings, elsewhere in this manual.

2.2.1 SIGNING ON TO ERAD PACS

Log on to eRAD RIS/PACS by entering a valid User ID and password in the fields on the home page. For detailed information about signing on to eRAD RIS/PACS, refer to section *eRAD RIS/PACS Sign* On.

2.2.2 TABBED PAGE LAYOUT

Tabs displayed across the top of the web page group the eRAD PACS functions. The specific tabs available depend on the privileges assigned to your user account by your system administrator. Access to the Scheduling page requires *Scheduling* permissions. Click the Scheduling tab to access the scheduling pages.

If a tab requires one or more pages to present its information, a second row of tabs appears below the first. To proceed to an alternative page, click the tab in the second row.

2.2.3 SCHEDULING FUNCTIONS

The scheduling functions are available through the following second-tier tabs under the Scheduling tab.

Calendar	The calendar page displays a particular day's workload by day and hour, across one or more imaging facilities. Users can schedule exams, review the bookings for future days, and initiate patient processing from this page.
Patients	A searchable list of patients stored in the system database. Data in the table can be added, modified, exported or deleted. New orders can be created for a specific patient from this page.
Orders	A searchable list of past, current and future orders stored in the system database.
Tables	Read-only access to procedure information, referring physician tables and other information.

The Scheduler's administration functions require system Admin privileges. The functions are available from the following second-tier tabs under the Scheduling tab.

Tables	This page provides access to Scheduling administration features, including the definition of imaging facilities, modalities and other devices, procedures, insurance providers, referring physicians, and ICD 9/10 code tables. Additional administration functions, particularly those shared by other system components such as the PACS system, are available from the system administration page.

3. Main Pages

The Main page tab provides access to the eRAD RIS/PACS home page and the user sign on area. The home page may be the default or may look different if customized by your facility.

3.1 eRAD RIS/PACS Sign On

To sign on to the eRAD RIS/PACS server, you must have a user account. The user account identifies your personal user profile, providing you with the same custom interface, preferences and permissions regardless of your location.

To log onto eRAD RIS/PACS:

1. Launch your browser.
2. Enter your eRAD RIS/PACS server URL into the address textbox.
3. Enter your User ID and password. Both are case sensitive.
4. Click the Sign On Button.

3.1.2 SECURITY ALERT

To protect the user when visiting secure web sites, web browsers check the server certificate against a database of registered sites managed by a certification authority. For companies participating in this service, the validation is done in the background and the user sees nothing unless a security problem occurs.

By default, your eRAD RIS/PACS server is not registered with a certification authority. For this reason, accessing the eRAD RIS/PACS home page may display a Security Warning dialog. This warning informs the user the site certificate was issued by a source which cannot be verified by the certification authority.

While most users simply choose to accept the certificate and proceed each time they access the server, it is possible to prevent the message from displaying in the future. To do so, accept the new site certificate as a trusted source. Instructions for accepting and storing the eRAD PACS security certificate on your workstation are available in section *2.1.1 Accepting Certificates*.

3.2 Signing Off

To sign off eRAD RIS/PACS:

1. Go to the Main Page.
2. Click the Sign Off Tab.
3. Click the *Sign Off* Button.

eRAD RIS/PACS includes an auto-logout feature. If enabled by the administrator, the system logs you off if your session remains inactive for the specified period of time. If prompted to relogin, enter your user ID and password and you will return to the page last displayed. Alternatively, you can return to the Main page and sign on again.

4. Scheduling Pages

The Scheduling pages are for creating patient records, scheduling exams and managing facilities and exam rooms. They are available under the Scheduling tab, found on the top row of tabs.

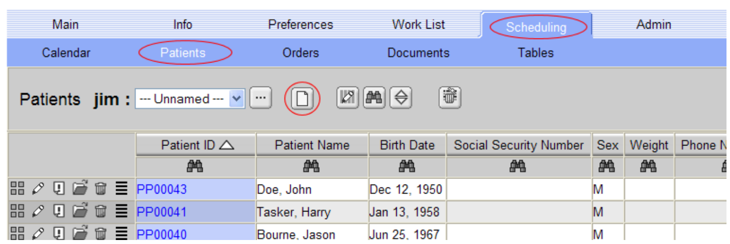
4.1 Patient Registration

This section covers the processes for pre-registering a patient, fully registering a patient, clearing the exam with the patient's insurance provider, attaching scanned documents such as IDs and insurance cards to a patient's record, and other tasks associated with a patient record.

4.1.1 Creating a Patient Record

Creating a patient record allows you to capture patient information prior to scheduling an exam. The information recorded during pre-registration is configurable, but will generally include the patient name, ID, and social security number, plus the referring physician's name and contact information.

To record patient information, perform the following steps:



- Click the *Scheduling* tab
- Click the *Patients* tab
- Click the New Patient button, , to display the patient data entry page.
- Fill in the fields. Required fields are highlighted.
- Click one of the following buttons to finish:
  - o Save – Store patient information and return to Patient table
  - o Save and Order – Store patient information and proceed to the New Order page.
  - o Cancel – Ignore changes and return to Patients table.

4.1.2 Searching for a Patient Record

To locate a pre-registered patient record, search the patient database.

- Click the *Scheduling* tab
- Click the *Patients* tab
- Click the Filter button, . The Filter button above the table provides a single page for entering search criteria in multiple fields. The Filter button at the head of each column in the table provides a popup window for entering search criteria specific to the respective field.
- Enter the search criteria into the available fields, and click Apply.

A filtered list displays the search criteria at the head of each filtered column, replacing the Filter button with a hyperlink. Click the hyperlink to modify or clear the search criteria.

4.1.3 Editing a Patient Record

You can modify the information stored for any patient.

- Find the patient record. Refer to section *Searching for a Patient Record* for details.

- Click the Edit button, , in the row containing the patient information to display the entire patient record.
- Make the necessary changes by editing the existing data or selecting new values from the available lists.
- Click one of the following buttons to finish:
  - Save – Store patient information and return to Patient table
  - Save and Order – Store patient information and proceed to the New Order page.
  - Cancel – Ignore changes and return to Patients table.

Changes to patient information take effect throughout the system immediately. They apply to ordered and scheduled exams. Some modifications with no impact on previous procedures may apply to past exams, as well. Patient information changes do not necessarily affect historical logs.

4.1.4 Scanned Patient Documents

Attach relevant patient documents by scanning them into the workstation and assigning them to the associated patient record.

Some patient data pages and popup windows contain specific fields for attaching scanned documents. In these cases, the Attach button, , and the Scan button, , appear on the screen next to a label describing the document. Click either of these buttons to upload a document. Refer to section 4.7 for additional details on scanning a document. Refer to section 4.8 for additional details on uploading a document.

To retrieve a document previously attached to a patient record, open the patient record from the Patients table using the Edit button, and scroll to the Attachments section. You may need to expand this section using the Expand button, . In the section listing the file you want to open, click on the Open Attachment button, . The file is downloaded to your workstation and opened in a new window.

4.1.5 Insurance Provider Information

Individual insurance provider information is collected when the patient is first registered in eRAD Scheduler. You can update this information at any time.

To enter new insurance provider information into a patient record, follow these steps:

- Create a new patient record as described in section Creating a Patient Record or find a patient record as described in section Searching for a Patient Record and click the Edit button, .
- Scroll to the Insurance Provider Data section.
- Select the insurance provider from the pull down list.
- Enter the patient's specific information for this provider in the remaining fields.

To add additional insurance providers for a patient,

- Click the Add Record button, . An additional insurance provider group appears on the page.
- Select the insurance provider from the pull down list.
- Enter the patient's specific information for this provider in the remaining fields.

To remove an insurance provider for a patient,

- Click the Remove Record button, .

4.2 Ordering an Exam

This section explains how to create and edit an order. Orders can be created from the Patient page, the Order page or the PACS worklist.

4.2.1 CREATING AN ORDER FOR A KNOWN PATIENT

One method for creating an order starts with finding the patient's record. From there, you can enter in the order details.

- Click the *Scheduling* tab.
- Click the *Patient* tab to display the patient table.
- Use the Filter button, , to find the patient record. If no patient record is found, enter the patient information as described in section *4.2.2*.
- Click the New Order button, , in the row containing the patient information. This displays the new order page.
- Fill in the order details. Required fields are highlighted, and must be filled in.
    - Click the Show List button, , in the Procedure field to select a procedure. Only one procedure can be defined at a time. Use the Save and Clone button to define multiple procedure exams.
    - Click the Scan button, , to scan and upload relevant documents to this order. Refer to section *4.7* for additional information on scanning documents.
    - Click the Attach button, , to upload an existing document to this order. Refer to section *4.8* for addition details.
    - Click the Show List button, , and select a referring physician. Add additional referring physicians if necessary by clicking on the Add Record button, .
    - Confirm the patient's insurance information associated with this order. Refer to section *Insurance Provider Information* for details on adding and removing insurance provider information.

      Note: These insurance provider selections apply to this order only. Edit the patient record to make permanent changes to the patient's default insurance provider information.
- Click one of the following buttons to finish:
    - Save – Store order information and return to Patient table.
    - Save and Schedule – Store order information and proceed to the Calendar page.
    - Save and Clone – Store order information and enter another order for the same patient.
    - Cancel – Ignore changes and return to the Patient table.

For details on assigning a scheduled date and time for an existing order, refer to section *Booking a Room*.

4.2.2 CREATING AN ORDER WITHOUT PATIENT INFORMATION

Start the order creation process directly from the Order page. You can define or select a patient, or leave it blank until you have more information available.

- Click the *Scheduling* tab.
- Click the *Orders* tab to display the order table.
- Fill in the order details. Required fields are highlighted, and must be filled in.

- Click the Show List button, , or New Patient button, , in the patient field to assign a patient to this order.
- Click the Show List button, , in the Procedure field to select a procedure. Only one procedure can be defined at a time. Use the Save and Clone button to define multiple procedure exams.

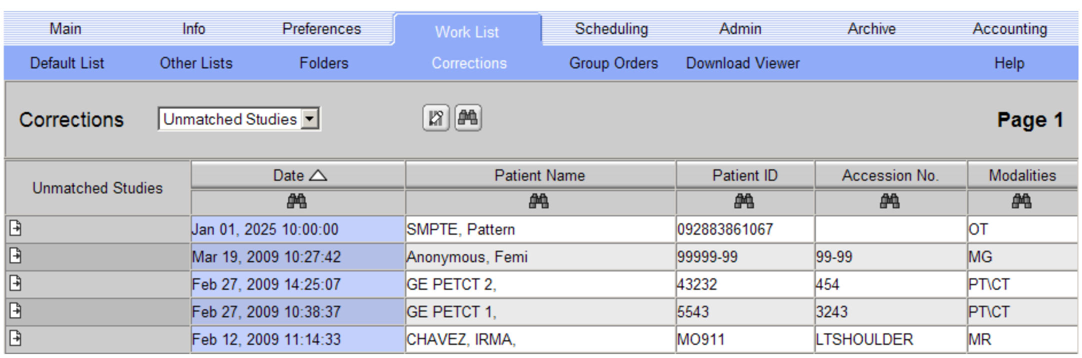
- Click one of the following buttons to finish:
  - Save – Store order information and return to Order table.
  - Save and Schedule – Store order information and proceed to the Calendar page.
  - Save and Clone – Store order information and enter another order for the same patient.
  - Cancel – Ignore changes and return to the Order table.

For details on assigning a scheduled date and time for an existing order, see section *Booking a Room*.

4.2.3 Creating an Order from a PACS Study

When the PACS acquires a set of images for which no order exists, the RIS may not process the exam, bill the customer or insurance provider, etc, until someone creates the order in the RIS. To create an order using the demographic information entered at the modality and present on the PACS worklist, use the PACS Corrections page.

1. Click the *Worklist* tab.
2. Click the *Corrections* tab.
3. Select *Unmatched Studies* from the pull-down list to display the list of studies that were not matched to any order.



4. If necessary, use the filter tools to find the study in the table.
5. The PACS uses the Accession Number in the study to see if it exists in eRAD Scheduler. If found, the Get Order button, , is available. Click it to retrieve the order from eRAD Scheduler. Skip the next step.
6. Click the Create Order button, , to initiate the wizard to walk you through creating the order. The screens that follow prompt you to select, in order, the acquisition device, the procedure, the patient, the referring physician, and the procedure details. In each case, select the value from the pull-down list or click the More button, , to pop up a detailed list. In the case of patient demographics, click the Add New button, , to create a new patient record using the study's data to pre-initialize it. When done, click the Save button.

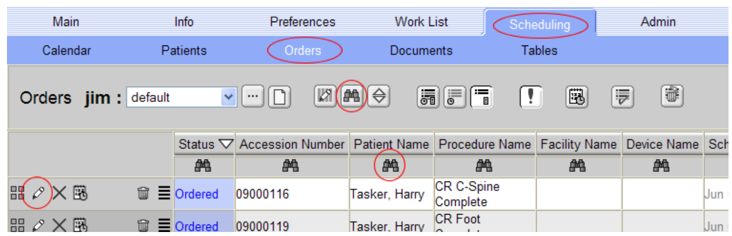
After completing the wizard or retrieving the order from eRAD Scheduler, the system automatically combines the order and procedure using the Default Correction Sources configuration, and creates the order in eRAD Scheduler.

If multiple records on the worklist use the same Accession Number, a warning indicator, ⚠, appears in the study's row. This condition occurs when two studies share the same accession number, or an order and study are not automatically corrected. The administrator must clear the condition manually before processing this study further.

To initialize the lists of devices, procedures, patient data and referring physicians used by the wizard, set up the matching criteria tables. Refer to the Scheduler's Matching Criteria section of the PACS Operator Manual for instructions.

4.2.4 Editing an Existing Order

To edit an existing order, find it on the order table and select the edit function.



- Click the *Scheduling* tab.
- Click the *Orders* tab.
- Click one of the Filter buttons, , to pop up the filter window. Enter the search criteria identifying the order you want and click Apply.
- Click the Edit button, , to display the order edit page. Make the necessary changes by editing the values in the fields or selecting values from the pull down lists.
- Click one of the following buttons to finish:
  - Save – Store order modifications and return to Order table.
  - Save and Schedule – Store order modifications and proceed to the Calendar page.
  - Save and Clone – Store order modifications and enter another order for the same patient.
  - Cancel – Ignore changes and return to the Order table.

4.3 Scheduling an Exam

This section explains how to assign an order to a specific room or device, how to modify the time of a scheduled exam, and how to reserve an exam room's or device's time slot for a pending exam.

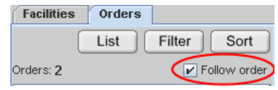
4.3.1 Booking a Room

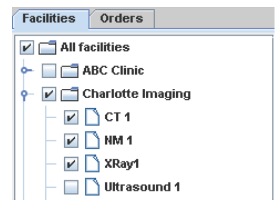
Individual and group orders receive a scheduled start and end time when assigned to a specific room. This drag-and-drop function takes place on the Calendar page. The first step is to generate a list of orders you want to schedule.

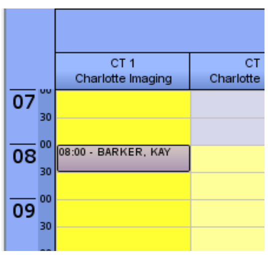
- Click the *Scheduling* tab
- Click the *Orders* tab
- Select a predefined filter from the drop down box at the top of the table, or use the Filter buttons, , to select one or more studies you want to schedule.
- Click the Schedule button, , to load this list into the orders window on the Calendar page.

From this list of orders located under the Orders tab on the Calendar page, assign it a room for a given date and time.

- From the data calendar, click on the date for the exam. The main calendar displays the available rooms for that day.
  - o To display additional days in the main calendar, select the single, 5-day or weekly view button, .
- Use the scroll bar on the Orders list, if present, to locate the order.
- Single click on the order to highlight the modalities/rooms capable of performing the procedure.
  - o Check the Follow Order box to show only the modalities/rooms capable of performing the exam.
  - o If too many rooms appear on the main calendar, go to the Facilities tab and uncheck the facilities you want to hide from this list.
- Use the left mouse button to drag the order from the Orders list to the day and time you want the procedure to take place.







When you drop the order, it appears in the main calendar as a scheduled exam. The respective scheduling parameters are updated.

The time allocated to the order is the default time assigned to the procedure. Adjust the default time allocation if necessary, as explained in section *Changing the Allocated Procedure Time*.

The order is removed from the Orders list if it no longer matches the filter requirements specified on the Orders page when you created the list.

4.3.2 Changing the Allocated Procedure Time

When you first schedule an order, the allocated time for the procedure is taken from the default time assigned when the procedure was defined. Change the time allocated to a scheduled order from the calendar.

- Left click on the order in the main calendar. Control boxes appear at the top and bottom of the order.
- Position the mouse over the top or bottom edge. The cursor changes to a two-sided arrow. Left click the mouse and drag the edge of the order box to increase the allocated time.
- A popup window appears prompting you to enter a reason for the change. This reason is recorded in the log files and available for administration reports. It is not available in the order information.
- The order box appears with hash lines while the server is confirming the new date and time. When the hash lines disappear, the operation is complete.

4.3.2.1 Exam Time Modifiers

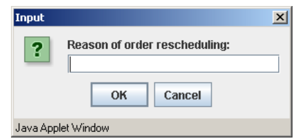
Exam time modifiers are changes to the assigned procedure times as a result of special conditions, such as the patient is in a wheelchair. Modifiers are defined in the order validator. For more details, refer to the validator section of XML Template Editor manual.

Modifiers are reflected in the scheduled procedure time in the Order table and in the calendar cell. When an exam time modifier has been applied to a scheduled procedure, "Exam time modifier applied" appears in the information panel, to the left of the calendar.

4.3.3 Changing the Scheduled Date and Time

You can modify an exam's scheduled date and time from the calendar.

- Left click on the order in the main calendar. The border changes to a dotted line, indicating the order box is selected.
- Position the mouse over the center of the order in the calendar. The cursor should appear as the normal pointer. Left click the mouse and drag the order box to the new location.



- A popup window appears prompting you to enter a reason for the change. This reason is recorded in the log files and available for administration reports. It is not available in the order information.
- The order box appears with hash lines while the server is confirming the new date and time. When the hash lines disappear, the operation is complete.

If you cannot display both the existing and target dates in the same calendar view, unschedule the exam. Then change the view to the new exam date and reschedule it. For details on removing a scheduled exam from the calendar, see section *Unscheduling a Previously Scheduled Exam*.

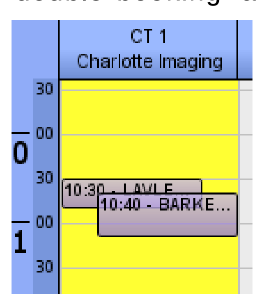
4.3.4 Reserving a Time Slot

Reserving a room or modality for a specific date and time requires you to create an order and schedule it. The order can be for a specific procedure or a place-holder procedure, created for this exact purpose. Using the booking procedure and possibly modifying the default time allocated, you can block out time and add details when they become available.

- Create an order containing no patient information, as described in section *Creating an Order without Patient Information*. If the required procedure is unknown, select a stub procedure from the procedure list. If no stub procedure exists in the procedure list, ask your system administrator to create one.
- Assign the procedure to the room or modality for the date and time you want to reserve, as described in section *Booking a Room*.
- Adjust the time allocated to the procedure to reflect the reserved time period, as described in section *Changing the Allocated Procedure Time*.

4.3.5 Double-Booking a Time Slot

The system permits users to schedule multiple procedures to a single resource for the same date and time. A double-booked time slot is denoted graphically as overlapping orders on the main calendar, as shown in the diagram. The consequences of double-booking a resource is outside the scope of eRAD Scheduler.



To double-book a resource,

- Create both orders
- Drop them on the calendar for the specific date and time. The system will automatically handle the overlapping order boxes.
- To adjust one of the orders, left click on it to select it. Apply applicable functions to modify the date and time, the allocated time slot, or update the state.

4.3.6 UNSCHEDULING A PREVIOUSLY SCHEDULED EXAM

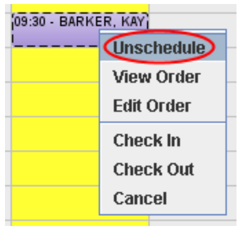
To return a scheduled exam to the Ordered state, change the status. This can be done from the Orders table or from the Calendar page.

To unschedule an exam from the Orders table, do the following:

- Click on the *Scheduling tab*.
- Click on the *Orders* tab.
- Use the Filter button, , to locate the order.
- For the row containing the order, click the Edit button, .
- In the State field, change the state to Ordered.
- Click Save to save the change.

To unschedule an exam from the Calendar page, do the following:

- Click on the *Scheduling tab*.
- Click on the *Calendar* tab.
- Select the scheduled date on the calendar. The order appears in the main calendar area. You may need to scroll the main calendar to display the assigned room and/or the assigned time.
- Right click the order to select it.
- Right click again to pop up the menu.
- Left click Unscheduled on the menu. The order disappears from the main calendar and appears on the Orders list, assuming this order matches the filters applied to the Orders list.



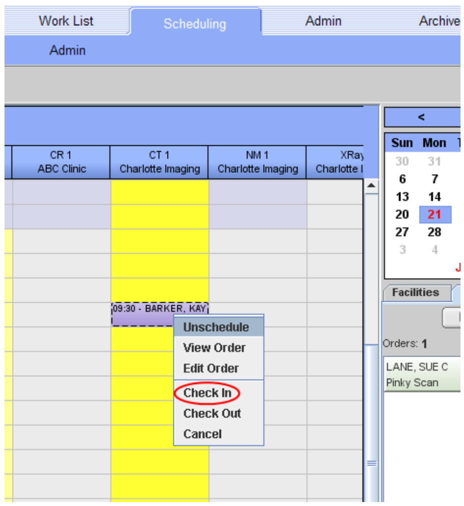
4.4 Performing a Procedure

This section contains details on pre- and post-processing a patient for a scheduled procedure. Steps include verifying the patient and exam information is complete, collecting all forms and signatures, confirming the insurance carrier has certified the procedure, questioning the patient for last-minute medical conditions, acquiring the images, any performing any post procedure processes.

4.4.1 CHECKING IN

When a patient arrives for a scheduled procedure, the check in procedure will review the patient and order record for completeness.

- Click the *Scheduling* tab.
- Click the *Calendar* tab.
- Position the mouse cursor over the order in the calendar and right click to display the popup menu.
- Click *Check In*.
- Review the patient information. Add missing information and make changes as necessary. Click the Confirm button when finished. The system checks for any conflicts or missing information. If prompted, provide the missing information and clear the notice.
- Review the order information. Add missing information and make changes as necessary. Click the Save button when finished. Click the Skip button, if present, to continue without



checking the patient in for the displayed procedure.
- If multiple procedures are scheduled, the next order page appears. Repeat the last step until no more procedures for this patient for this date are found.
- The order(s) on the Calendar page is marked as Checked In.

4.4.2 COMPLETING THE IMAGING PROCEDURE

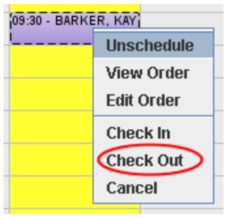
When the technologist completes the imaging procedure, the RIS can be updated manually or automatically. The user can manually change the order state to Completed from the Order Edit page. Or, the user can manually check the patient out, which changes the state to Completed or Cancelled, depending on the information provided.

The study's state will change automatically when the images arrive in eRAD PACS. The state in this case will be Unviewed. The user can still perform the check out procedure at this point, although the state will not be editable from the check out interface.

4.4.3 CHECKING OUT

After completing an exam, the check out procedure reviews the state of the order and prompts for completing follow-up actions.

- Click on the *Scheduling tab*.
- Click on the *Calendar* tab.
- Position the mouse cursor over the order in the calendar and right click to display the popup menu.
- Click *Check Out*.
- Review the order information. Add additional notes and make changes as necessary.
- Click the Save button when finished.



4.5 Configuration

Administrators can define the facilities and imaging devices managed by eRAD Scheduler, the list of available procedures, user accounts including a list of referring physicians, and insurance company data. The system can also keep an assortment of canned forms and documents for printing out and attaching to patient records. The sections that follow describe these configuration options.

4.5.1 FACILITIES

Facilities are the buildings or departments managed by eRAD Scheduler. A facility contains one or more devices/rooms. Its parameters include the hours of operation. To add, modify or remove facilities, users require administrator privileges.

To get to the facilities table,
- Click on the *Scheduling* tab.
- Click on the *Tables* tab.
- Click the Facilities Table button/hyperlink.

To add a facility to the RIS, follow these steps:
- Click the New Facility button, .
- Fill in the fields on the page. Required fields are highlighted.
- Click one of the following buttons to finish:
    - Save – Store facility information.
    - Save & New – Store facility information and open an empty New Facility page.

- Cancel – Return without creating the facility.

To edit an existing facility,

- Use the Filter button, , to locate the facility you want to edit.
- Click the Edit button, , in the row containing the facility's information.
- Edit the fields as necessary.
- Click one of the following buttons to finish:
  - Save – Save changes to the facility information.
  - Cancel – Ignore changes.

4.5.2 DEVICES

Devices are the imaging modalities or rooms managed by eRAD Scheduler. A device belongs to a specific facility. Its parameters include the hours of operation (which may differ from those of the facility), and the procedures it can perform. To add, modify or remove devices, users require administrator privileges.

To get to the devices table,

- Click on the *Scheduling* tab.
- Click on the *Tables* tab.
- Click the Devices Table button/hyperlink.

To add a device or room to the RIS, follow these steps:

- Click the New Device button, .
- Fill in the fields on the page. Required fields are highlighted.
  - Select the facility where the device resides from the pull down list.
  - If the hours of operation for this device are shorter than those of the facility, enter them in the *operating* fields.
  - The AE Title is the DICOM parameter used by the device to identify itself.
- Select the procedures this device or room supports.
  - To add additional procedures, click the Add Record button, . New procedure fields appear. Fill them in.
  - To initialize the device with multiple procedures, an alternative mechanism exists. Collect the information requested on this page and enter it into a tab-delineated list or spreadsheet, with one entry per line. Then contact eRAD support for assistance.
- Click one of the following buttons to finish:
  - Save – Store device information.
  - Save & New – Store device information and open an empty New Device page.
  - Cancel – Return without creating the device.

To edit an existing device,

- Use the Filter button, , to locate the device you want to edit.
- Click the Edit button, , in the row containing the device's information.
- Edit the fields as necessary.
  - Use the Add Record button, , to add procedures performed by this device.
  - Use the Remove Record button, , to delete procedures performed by this device.
- Click one of the following buttons to finish:
  - Save – Save changes to the facility information.
  - Cancel – Ignore changes.

By default, devices are displayed in the calendar part of the Calendar page alphabetically by device name. You can customize this by creating a specific Device table filter, as follows:

1. Sort the Devices table so the device are listed top to bottom in the order you want them to appear (left to right) on the calendar page.
2. Scroll to the Save List As section at the bottom of the table
3. Select the owner @system, select type *New*, and enter the name *calendardevice*.
4. Click Save.

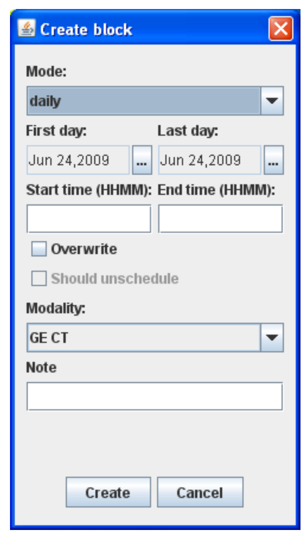
If you delete this filter, the change takes effect after you restart Java.

4.5.2.1 Blocking Time on a Device

When a device is going to be unavailable for a time, whether it's for a few hours on a specific day, or for an extended period of time, you can mark it on the Calendar page as such. To disable a device, it must be properly registered in the Device table, and displayed on the Calendar page. Blocking out a period of time is available to all users with order scheduling permission.

To block out a period of time for a specific device,

- Click on the *Scheduling* tab to get to the Scheduler's Calendar page.
- Click the Create Block button, , to pop up the Block panel.
- Select the Mode:
    - Once – Block is created as a single instance, on the specified date.
    - Daily – Block is assigned to the specified hours for each day in the time period.
    - Weekly – Block is assigned to the specified hours of the First Day and each day of the week until the Last Day.
    - Bi-weekly – Block is assigned to the specified hours for each occurrence of the selected day in the two-week period.
- Select start and end date(s), and the start and end times.
- Check *Overwrite* to apply the block even if orders already exist in these time slots. If cleared, a warning pops up informing you of the conflict. Otherwise, the *Unschedule* setting is applied. If *Unschedule* is checked, all conflicting orders are automatically unscheduled and returned to the Order list section. If unchecked, scheduled orders remain in the calendar, even though the block is applied.
- Select the device from the Device list.
- Add a comment to the Note field. It will be displayed on the calendar.
- Click Create to mark the device disabled.



To remove a block from a device, drag it to the Order area or right-click on it and select Delete Block.

You can schedule to a device even when the device is marked unavailable. Depending on the validator configuration, you may receive a popup notice warning you the device is unavailable at the selected time. Clear the warning, and schedule accordingly.

4.5.3 Procedures

Procedures are the imaging procedures performed by a modality or in an exam room. Its parameters include the time allocated to perform the procedure, the CPT code, the type of modality that performs the procedure, and information for creating multiple procedure procedures. To add, modify or remove procedures, users require administrator privileges.

To get to the devices table,

- Click on the *Scheduling* tab.
- Click on the *Tables* tab.
- Click the Procedures Table button/hyperlink.

To add a procedure to the RIS, follow these steps:

- Click the New Procedure button, .
- Fill in the fields on the page. Required fields are highlighted.
- In the Device Data section, select the devices which perform this procedure. Note that the Modality field must be filled in before you can add devices.
  - o Select the device from the Device pull down list and enter the procedure time if it is different from the default.
  - o Click the Add Record button, . The available devices appear in a pop up window. Select one or more devices. Click the Select button. For each device, enter the procedure time for each device, if different from the default.
- To create combination procedures from two or more existing procedures, click the Add Record button in the Combined Procedure Data section.
  - o From the drop down list, select the first procedure
  - o Click the Add Record button to add additional procedures.
- To define relationships between procedures, click the Add Record button in the Procedure Relationship Data section.
  - o Select the type of relationship from the Type drop down list.
  - o Select the related procedure from the Procedure drop down list.
  - o Select additional arguments in the remaining fields, if any.
  - o Click the Add Record button to add additional procedure relationships.
- Click one of the following buttons to finish:
  - o Save – Store device information.
  - o Save & New – Store procedure information and open an empty New Procedure page.
  - o Cancel – Return without creating the device.

To add multiple procedures to the RIS at one time, an alternative method exists. Collect the information requested on the New Procedure page and enter it into a tab-delineated list or spreadsheet, with one entry per line. Then contact eRAD support for assistance.

To edit an existing procedure,

- Use the Filter button, , to locate the procedure you want to edit.
- Click the Edit button, , in the row containing the procedure's information.
- Edit the fields as necessary.
  - o Use the Add Record button, , to add supported devices, procedures to the combined procedure list and procedure relationships to this procedure.
  - o Use the Remove Record button, , to remove supported devices, procedures from the combined procedure list or procedure relationships from this procedure.
- Click one of the following buttons to finish:
  - o Save – Save changes to the procedure information.
  - o Cancel – Ignore changes.

4.5.4 INSURANCE PROVIDERS

While patients have different insurance plans, much of the provider information is the same. eRAD Scheduler can store this general information to reduce the amount of information entered for each patient. To add, modify or remove insurance provider data, users require administrator privileges.

To get to the insurance provider table,

- Click on the *Scheduling* tab.
- Click on the *Tables* tab.
- Click the Insurance Providers Table button/hyperlink.

To add an insurance provider to the RIS, follow these steps:

- Click the New Insurance Provider button, .
- Fill in the fields on the page. Required fields are highlighted.
- Click one of the following buttons to finish:
    - Save – Store insurance provider information.
    - Cancel – Ignore changes and return.

To edit an existing insurance provider,

- Use the Filter button, , to locate the insurance provider in the table.
- Click the Edit button, , in the row containing the facility's information.
- Edit the fields as necessary.
- Click one of the following buttons to finish:
    - Save – Save changes to the insurance provider information.
    - Cancel – Ignore changes and return.

4.5.5 REFERRING PHYSICIANS

The referring physicians table contains the name and contact information for each physician. To add, modify or remove physician data, users require administrator privileges.

To get to the referring physician table,

- Click on the *Scheduling* tab.
- Click on the *Tables* tab.
- Click the Referring Physicians Table button/hyperlink.

To add a referring physician to the RIS, follow these steps:

- Click the New Physician button, .
- Fill in the fields on the page. Required fields are highlighted.
- Click one of the following buttons to finish:
    - Save – Store physician information.
    - Cancel – Ignore changes and return.

To edit an existing referring physician record,

- Use the Filter button, , to locate the physician record in the table.
- Click the Edit button, , in the row containing the physician's information.
- Edit the fields as necessary.
- Click one of the following buttons to finish:
    - Save – Save changes to the physician information.
    - Cancel – Ignore changes and return.

4.5.6 *User Accounts*

eRAD RIS/PACS user accounts are created on the Users page, located under the Admin tab. Details on creating, modifying and deleting user accounts are in the eRAD PACS Operator Manual.

To access the Scheduling page, a user account must be assigned the *Scheduling* permission. When given, the user permissions listed below can be assigned to individual accounts.

Permission	Code	Default	Description
Cancel orders	x	Disabled	Cancel scheduled exams and orders
Check in/out	c	Disabled	Check patients in and out
Delete orders/patients	d	Disabled	Delete orders and patent records
Double book	b	Disabled	Double book a time slot
Edit billing data	e	Disabled	Create and edit procedure billing records
Edit Insurance providers	i	Disabled	Create and edit insurance providers
Edit orders	o	Disabled	Create and edit exams
Edit patients	p	Disabled	Create and edit patient records
Edit referring physicians	r	Disabled	Create and edit referring physician records
Schedule orders	s	Disabled	Assign a date, time and location to an order
View calendar	v	Disabled	Display the calendar. Ignored if *Schedule Order* permission is assigned.

4.5.6.1 Global Restrictions

To restrict access to facilities and the exams, patients and resources associated with those facilities, assign a facility global restriction to the user's account. To set up a facility restriction, follow the steps below:

1. Under the Scheduling tab, click the Tables tab.
2. Click the View/Edit Facilities Table link
3. Filter the facilities list by the Name field. Include all the facilities the user will have access to.
4. Save the list as a global restriction filter. At the bottom of the table, select the ID of the user account from the pull-down list, select *Global Restriction* from the type list and click Save.

When an order procedure has not been scheduled to a specific facility or room, the record is available regardless of the facility global restriction. Once the order has been assigned to a specific facility, it is available only to those user's whose global restriction filter include it.

4.5.7 *Calendar*

The calendar's layout supports customizing cell colors, exam cell details and the information panel.

4.3.1.1 Cell Colors

The colors of the cells in the calendar denote the cell's processing state or availability. By default, the colors are as follows:

State	Cell Color
Ordered	very light blue
Scheduled	purple

State	Cell Color
Cancelled	yellow
Checked In	green
In Progress	light yellow
Completed	light purple
Checked Out	light purple
Unviewed	light purple
Viewed	light purple
Read	light purple
Dictated	light purple
Preliminary	light purple
Final	light purple
Past Scheduled	purple
Past Cancelled	yellow
Past Checked In	green
Unavailable	red
Blocked	grey

The colors can be customized by editing the configuration file on the server. Contact eRAD support for assistance customizing the cell colors.

4.3.1.2 Exam Cell Details

The order details displayed when the mouse is positioned over a cell in the calendar can be customized. Configuration requires access to the server via a terminal session. For assistance, contact support.

The calendar cell fields can be any patient, order, procedure, device, or facility table field. These values can be found on the Customize Labels pages, accessible from the Admin→Settings page.

4.3.1.3 Information Panel Details

The patient and order details displayed in the information panel on the calendar page can be customized. Configuration requires access to the server via a terminal session. For assistance, contact support.

The information panel fields can be any patient, order, procedure, device, or facility table field. These values can be found on the Customize Labels pages, accessible from the Admin→Settings page.

The information panel can accommodate a limited number of lines of data. Note that multi-line fields, such as exam notes, may allocate more than one of the available lines of data.

4.6 Administration

Administration functions give users with certain privileges access to reports, logs, stored documents and other system information.

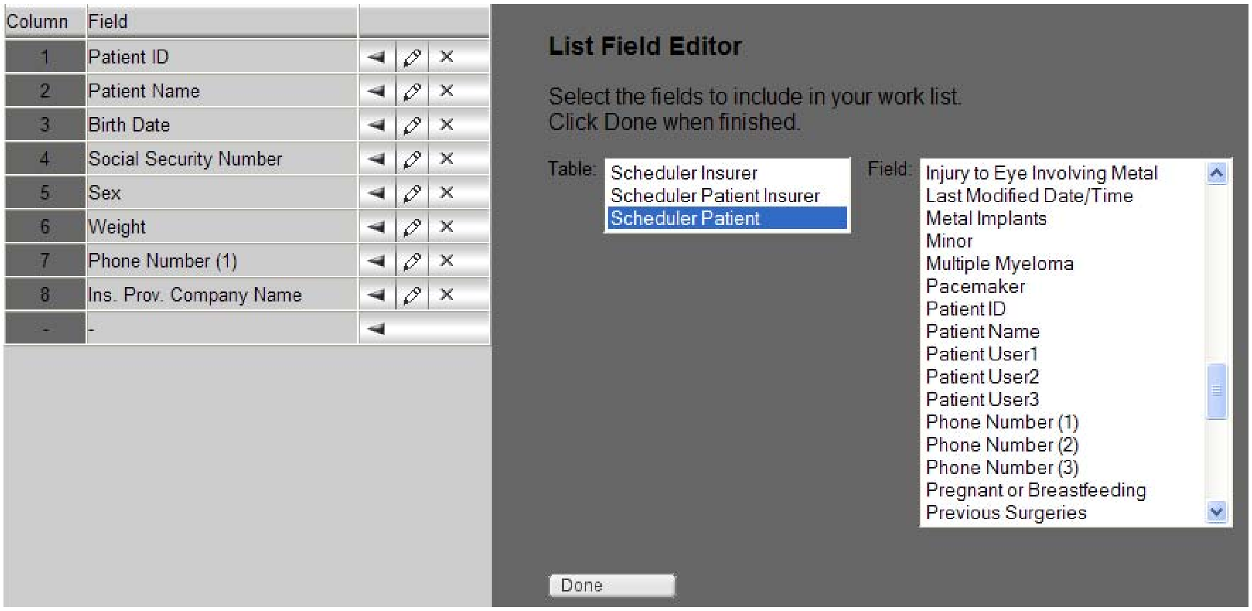
4.6.1 Administration Reports

System administrators and other users with the necessary privileges can collect information from eRAD Scheduler and generate a report. Administrative reports can be produced by exporting filtered tables, using a CrystalReports client or by creating XML templates and calling them up when needed.

4.6.1.1 EXPORTED PATIENT AND ORDER TABLES

To generate a report from patients or orders, go to the Patient or Order table. Use the Edit Fields button, , to select the fields you want in your report. The edit fields page appears.

From the Table list, select the table containing the field you want. In the Field list, select the field name. Use the left arrow button to insert the selected field in a new column. To remove a field, click the X button in that row. To replace the existing field, click the edit button. When you have all the information you want in your report, click the Done button. The table appears, showing the fields you selected on the edit fields page.



To export this information into a tab-delineated file, click the Export button at the bottom of the patient or order table. Import the exported data into your favorite reporting tool or spreadsheet program.

You may want to save these filter settings to generate the same report at a future time. To save the list, scroll to the bottom of the table. In the area labeled Save List As, select the user – this is available to users with Administrator privileges only – and then New from the next pull down list. In the right-most text field, type a label used to identify this list. Click the Save button. The named filter appears in the Filter list at the top of the table, next to your user name.

4.6.1.2 CRYSTAL REPORTS

The eRAD Scheduler user interface provides access to the information users need to generate various types of administrative reports. The information is displayed in tabular form. To collect the same information and present it in formatted reports, a Crystal Reports interface is available.

Crystal Reports is a third party application you can purchase and use to query the eRAD Scheduler database and extract the same information available on the web pages. For details on Crystal Reports features and functions, or to learn how to design formatted reports, refer to the Crystal Reports user manuals.

4.6.1.3 XML Templates

To create an XML template, use the XML Template editor. Details on creating and modifying XML Templates are provided in the XML Template Editor manual. To load or edit a template, follow the steps below:

1. From the Admin tab, select the Settings tab.
2. Click the Customize Layout XML Files link in the System Settings section.
3. From the Layout Type menu, select Generic Report Template.
4. To upload a new XML template, enter the file name in the Upload XML file field, or click the Browse button and find the file. Click the Upload button.
5. To edit an existing template, select it from the list of Existing XML Files and click Edit. Follow the instructions in the XML Template Editor manual to modify the template and save the changes.

To run a report using an existing template, follow the steps below:

1. Click the Reports tab.
2. Click the Administration tab.
3. Under the section *Administrator Reports*, select the report file from the list.
4. To display a report, click the Open button. The report appears in a new browser window.
5. To print a report, click the Print button.

4.6.2 Uploading Forms and Documents

Generic forms and documents can be stored on the server and printed or attached to patient or procedure records. Documents must be accessible from the local machine, either residing on the local disk or media inserted into the local drive, or on a network accessible machine.

To upload or update a form initialized by eRAD Scheduler, follow these steps:

- Click on the *Admin* tab.
- Click the *Settings* tab.
- Click the *Customize Layout XML Files* link in the System Settings section.
- In the Documents on Server section, enter the filename in the text field, or locate it using the Browse button. Then click the *Upload* button.

To download a previously uploaded document, open the patient record from the Patients table or the order record from the Orders table using the Edit button, . On the edit page, scroll to the Attachments section. To see the available documents, you may need use the Expand button, , to expand this section. Find the document you want to download from the displayed list, and click on the Open Attachment button, , in that section. The file downloads to your workstation and opens in a new window.

To download a copy of an un-initialized document, go to the Documents tab under Reports. Scroll through the list of files to find the one you want, and click the button, , to download the file.

To remove a previously uploaded document, follow the instructions above to locate the document you want. In the section of the attachments list corresponding to your document, click the Delete button, .

4.6.3 LOG FILES

eRAD Scheduler maintains logs on every event taking place on the server. Users with administrator privileges have access to these logs.

To view the scheduler logs, follow these steps:

- Click on the *Admin* tab.
- Click on the *Logs* tab.

Use the Filter button, , to search the logs for a specific event or group of events. For example, to find all events pertaining to a specific patient, use the Patient Name filter to specify the patient's name and click Apply. The log table updates to show all events affecting that patient.

To obtain detailed information on a specific event, click the Details button, , on the row corresponding to the event. A summary page appears showing additional information.

4.7 Document Scanning

Documents can be scanned by eRAD Scheduler and uploaded to the server for storage and subsequent downloads. Some documents, for example, a waiver form, are scanned for a specific purpose and managed accordingly. Others can be scanned and made available for future access, or attached to a patient or exam order.

eRAD Scheduler supports TWAIN-compatible document scanners. The scanner's drivers must be installed according to the scanner's installation manual.

Depending on the capabilities of the scanner, you can scan single and dual sided documents, driver's licenses, insurance cards, assorted notes and forms. The information from a single scan request is stored in a single file.

The default scanner settings are defined for each workstation. Details are available in the scanner configuration section of the eRAD PACS Operator's manual.

Scanning requires Scan permissions. Refer to the user accounts section of the eRAD PACS Operator's manual for information on the Scan permission.

Scanning is performed from a scanning user interface. Instructions for loading, configuration and using the interface are available in the document scanning user interface section of the eRAD PACS Operator's manual.

When the scanning operation completes, the user interface displays the label and a series of buttons, including the Open button, , Print button, , and Delete button, .

4.8 Uploading Documents

A graphical user interface is used to upload JPEG and PDF files into a patient record or order. The Upload panel supports browsing the file system for the files and uploading multiple files in one operation. Additionally, the attachment can be assigned a document type which is used to control who has access to the attachment and from where. The Upload

Uploading documents requires Java VM. If not already installed, download this from the Internet and install it prior to uploading documents.

Access to the Upload panel is as follows:

1. Do one of the following:
    a. From the Patients list, create a new patient record or edit an existing record.
    b. From the Orders list, create a new order or edit an existing order.
2. Expand the Attachments section.
3. Click the Upload Document button, . This launches the Upload panel.

For information on the Upload panel, refer to the document upload user interface section of the eRAD PACS Operator's manual.

4.9 Printing Forms and Documents

Documents can be printed manually on-demand by nearly any user, or automatically if the system is configured to do so.

4.9.1 Manual Form and Document Printing

To print a document, click the Print button, , in the attachment section identified by the document label. In the confirmation, press the print button again to submit the document to the printer. At this point, the Windows print panel appears, offering the available printers and print parameters. Select the printer and press Print.

4.9.2 Automatic Document Printing

eRAD Scheduler automatically sends initialized and general forms to the printer when a specific action is performed. For example, when a patient checks in for a scheduled exam, a patient registration form can be printed automatically. Setting up a print action requires an initialized form exist in the system and the appropriate configuration be completed by the administrator.

To install a form for printing, upload it as described in section *4.6.2 Uploading Forms and Documents*. Then configure the respective print macro into the XML template for the web page. The macro definition includes the condition causing the print to occur. For details on formatting XML templates, refer to the *eRAD PACS XML Template Customization Manual*.

Only XML templates (documents) and static GIF and JPEG files can be printed automatically. These documents are defined or uploaded using the XML template customization tools. See section *4.6.2* for details.

Index