

User Pre-Release Notes

for RADNET rRIS Build 1.04

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1. Purpose

This document describes some of the new features and changes implemented in rRIS as of the end of Sprint 4. This pre-release version of rRIS is referred to as Build 1.04.

Only features which can be visually demonstrated to the user will be outlined in this document.

2. Intended Audience

This document is created by the rRIS Development team for the RADNET RIS management team.

3. Installing/Accessing the Application

The client installer for rRIS is still in the early development stages. For now, users can access the system by remoting to the rRIS test server in Baltimore as follows:

1. Start Remote Desktop Connection and specify IP 10.120.0.152
2. Username: Radnet domain account
3. Password: Radnet domain password
4. Double click the rRIS icon on the desktop or go to Start→All Programs→rRIS
5. Login User: terry
6. Login Password: ris

If you experience difficulties accessing the application, please do not hesitate to contact Spencer MacDougall with the PEI RIS Development Team.

4. New Features and Enhancements

Worklists

During this sprint, there has been considerable effort spent on building upon the existing worklist framework as it is a key area of the application. Some of the features areas which will be described in more detail below include:

- Custom toolbars per worklist
- Pass context of selected worklist row
- Support multiple filter criteria per worklist
- Support multiple statuses per worklist
- Patient driven worklist

Custom Toolbars per Worklist

rRIS now has the ability to dynamically build what buttons are available for each worklist. For example, it makes sense to have the “Edit Order” button available for the Ordered Worklist but not for the Radiologist Worklist. When the Ordered Worklist is created, it can now be configured with what buttons should be available to the user.

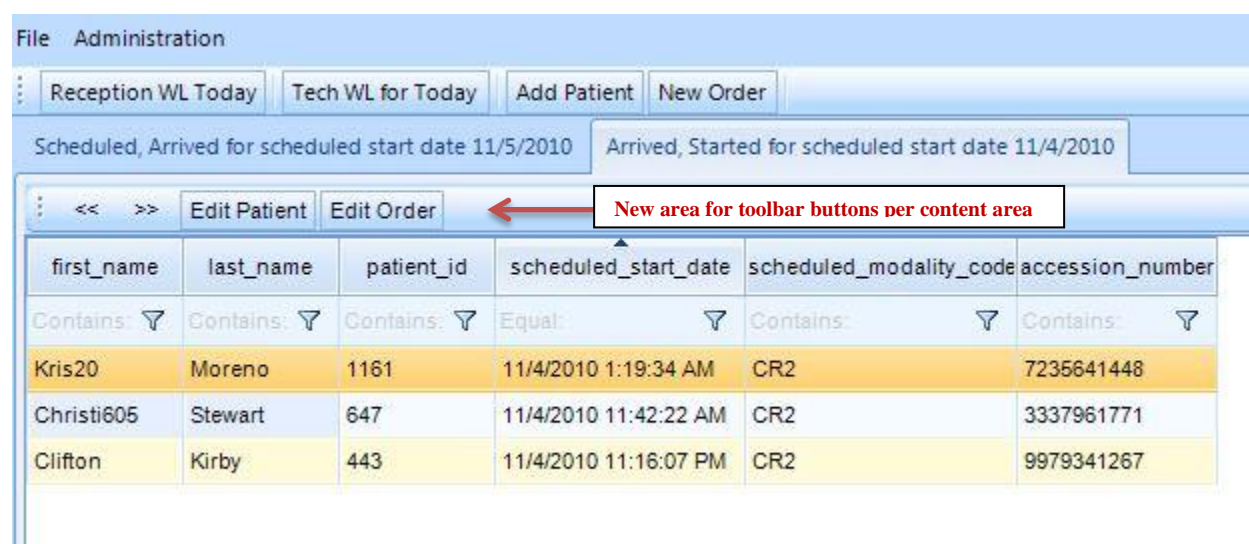


Figure 4.1 – Worklist Custom Toolbar Buttons

Pass Context of Selected Worklist Row

The application now has the ability to pass the context of the selected row to a screen. For example, selecting the “Edit Order” button from the worklist will open the Edit Order screen and load the dataset for the selected order. The ability to pass context from the worklist row is available from both a worklist button click and the worklist selected row double-click action.

first_name	last_name	patient_id	scheduled_start_date	scheduled_modality_code	accession_number
Karin8	Bird	1150	10/18/2010 2:17:24 PM	CR2	5491187959
Vickie	Andrews	519	10/18/2010 8:00:02 PM	CR2	6622543219

Figure 4.2 – Arrived Worklist with Edit Order Button

General Information

First Name: Vickie Middle Name:
Last Name: Andrews Gender: Unknown
Birth Date: 09-20-2001
MRN: 519

Contact Information

Address 1: 148 Pine Stree
Address 2:
City: PE
State: PE
Zip Code: 12478
Home Phone #: 902-777-8520
Mobile Phone #: 902-555-4789
Email: mail@mail.com

Figure 4.3 – Edit Order Content Area with Patient and Order Context

Support Multiple Filter Criteria per Worklist

This relates to the actual creation of the worklist. In the previous build worklists were limited to one filter (ex: Exam Priority = Stat). Now multiple criteria can be defined such as Modality Type = CT and Exam Priority = Normal as an example.

Support Multiple Statuses per Worklist

Currently, the following statuses have been defined in rRIS:

- OrderRequested
- OrderSigned
- OrderCancelled
- Scheduled
- Cancelled
- Arrived
- Started
- Discontinued
- ExamDone
- Dictated
- Transcribed
- Signed1
- Billed
- Approved

When worklists are defined, multiple statuses can be included in the worklist. For example, the Technologist worklist can be created to include Arrived, Started, and Discontinued statuses.

Patient Driven Worklist

Methods have been put in place that will allow the creation of a Patient Worklist. This method returns all patient exams regardless of study status or where the studies were performed.

Establish Core Screen Elements

In the previous build, all content areas were accessible and customizable by an administrative user at runtime. There is a requirement to lock down certain areas of these screens and establish these areas as the “Core” rRIS screens. For example, certain fields like a patient’s name and gender will be required at all Radnet sites and will be locked down or coded into the content area screens. However, there will still be a customizable area on the content areas to allow for the unique needs across the Radnet organization. Below is an image of the Patient content area identifying both the core and customizable areas. Keep in mind that there is considerable effort remaining in the actual design of the screen.

The screenshot displays a web application interface for patient information. At the top, there are two tabs: "Patient" (selected) and "Order". Below the tabs is a "General Information" section containing fields for First Name (Blanca551), Last Name (Johns), Birth Date (07-05-1953), MRN (317), Middle Name, and Gender (Unknown). Below this is a "Contact Information" section with fields for Address 1, Address 2, City, State, Zip Code, Home Phone #, Mobile Phone #, and Email. A red arrow points from a box labeled "Core Area" to the Contact Information section. Below the Contact Information section is a "Notes" section with a large text area. A red arrow points from a box labeled "Customizable Area" to the Notes section.

Figure 4.4 – Patient Screen Showing Core and Customizable Areas

Permissions Framework

A permissions framework has been created in this build that has been designed to accomplish the following:

- Establish permission levels (None, Full, and ReadOnly)
- The ability for developers to apply permission levels to rRIS controls such as screens, buttons, worklists, lookup tables, fields, etc.
- Apply permissions to user groups. A user can belong to one or more user group. If the user belongs to multiple groups then the user will have the highest level access to the item over all of the groups. So that if their 1st user group has Level.None and their second user group has Level.Full they will receive Level.Full access.
- Apply permissions to individual users. If the user doesn't belong to any groups or if the access_string hasn't been assigned to that group then the user will receive the default access level code as described in the l_access_string table for that access string.
- A lookup table (l_access_string) to store permission strings

For this build, any changes made to the AccessString lookup table will be applied to all users until the ability to apply permissions to users and user groups has been completed. For example, setting the “Clinical.NewOrder” string to None, will take hide the New Order button from the user.

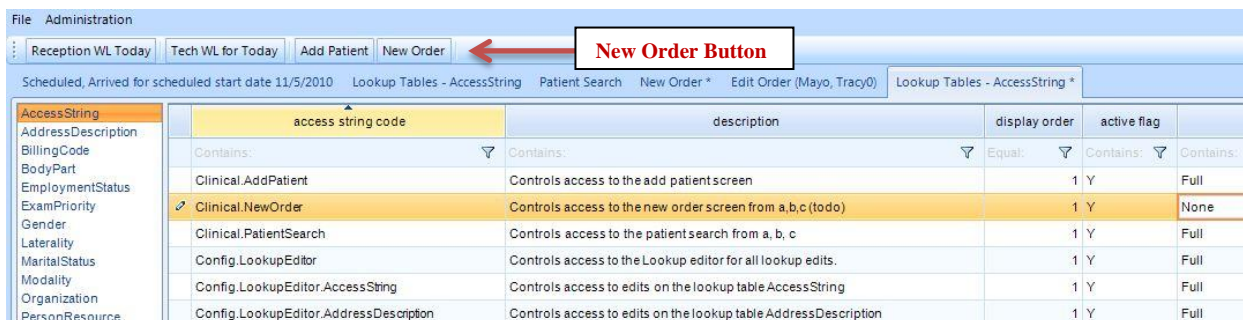


Figure 4.5 – Disabling the New Order Screen Permission

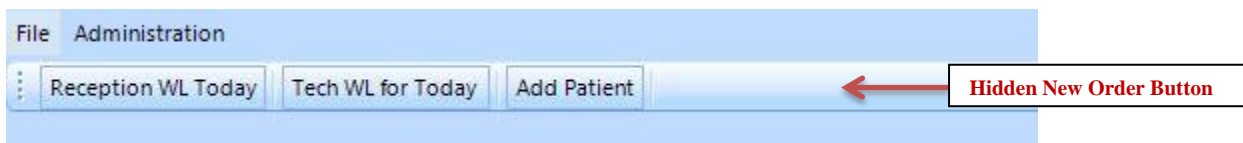


Figure 4.6 – Hiding the New Order Button

The permission framework can also grant read-only access to rRIS screens and fields. This is very useful for example if the radiologists group would like to have the ability to view the order or patient screens but administrators do not want them to have the ability to edit the data.

Locking Framework

rRIS requires a locking framework to prevent two users from editing the same study or order at the same time. The framework supports locking with automatic lock refreshes, releasing a lock when it is no longer required, and overriding the lock of another user. Additionally, the web services must throw an exception if a user tries to update data without the required lock.

The application will not retrieve the study data when a failure to obtain a requested lock occurs. The returned lock result will indicate the failure and the user_ID/workstation information for the current lock holder.

The GUI presents a message to the user indicating that a lock could not be obtained and prompts the user to specify whether they wish to view a readonly copy of the data, break the lock, or cancel. If the user clicks “Cancel” the form (e.g. EditOrder) will close. If the user chooses “ReadOnly”, Edit Order will open a readonly copy of the data. If the user wishes to override the lock, the GUI will make an OverRideLock call using the LockItemCode and WorkstationID of the LockResult that was returned when the lock failed. After overriding the lock, the GUI will then make the initial GetStudyData call over again, and display the data as before.



Figure 4.7 – Attempting to Obtain Lock Message

User Management Screen

A user management framework and a basic screen to manage users have been developed. The ability to add and configure users with this screen will be introduced in the next build.

File Administration

Reception WL Today Tech WL for Today Add Patient New Order

Lookup Tables - UserDetail *

AccessString	last name	first name	middle name
AddressDescription	→ Mills	Sally	
BillingCode	aiken	darcy	
BodyPart	harding	clifton	
EmploymentStatus	molyneaux	kevin	
ExamPriority	powell	stephen	
Gender	waite	andrew	r
Laterality	mills	terry	
MaritalStatus	stuart	stephen	
Modality	perry	dave	
Organization			
PersonResource			
ProcedureCode			
ProcedureModifier			
QueueSubscription			
ReadingPriority			
ReportTemplateCDA			
ResourceType			
ScanType			
StudentStatus			
SystemConfig			
UserDetail			

User Information Preferences

General Information

Name: First Name: Last Name: Middle Name:

Name: Sally Mills

Gender: Female

Mobile Phone #: Email Address:

Account Information

User Name: Sally Active

Password: User Group: Scheduling

Address

Location: Home Address City:

Address: State:

Country: United States

Zip Code:

Phone #: Fax #:

Figure 4.8 – User Management Screen

5. Known Limitations

Bugs, Suggested Features, and Support Issues are now tracked in a web based system called Redmine. The following is a snapshot of the issues list as of the end of Sprint 5.

#	Status	Tracker	Priority	Subject	Assigned to	Category	Version
13	Resolved	Bug	Normal	Content Areas with missing required fields are getting marked as dirty	Kevin Molyneaux	Thick Client GUI	1.04
12	New	Bug	Normal	Modifying existing or adding a new user causes exception	Andrew Waite	Admin Tools	1.04
11	Resolved	Bug	Low	Selecting "Cancel" when trying to obtain a lock results in constant hour glass	Darcy Aiken	Thick Client GUI	1.04
10	Resolved	Bug	Normal	Clinical.PatientSearch permission is not functioning	Kevin Molyneaux	Thick Client GUI	1.04
9	Resolved	Bug	Normal	Closing Login Screen using "X" on the Control Box results in error	Darcy Aiken	Thick Client GUI	1.04
8	Resolved	Bug	High	Non-nullable fields are not being enforced by the GUI Custom Areas	Kevin Molyneaux	Thick Client GUI	1.04
7	Resolved	Bug	Normal	Prompted for required fields right away when adding a new user	Andrew Waite	Admin Tools	1.04
6	Resolved	Bug	High	Keep getting prompted to save Custom Area changes	Kevin Molyneaux	Thick Client GUI	1.04
5	New	Bug	Low	Calendar control is unuseable when running the application remotely	Stephen Powell	Thick Client GUI	1.03
4	Resolved	Feature	Normal	Patient Quick Search should be synchronized with Patient Search Screen	Kevin Molyneaux	Thick Client GUI	1.03
3	Resolved	Bug	Normal	Patient Quick Search needs to be configurable	Kevin Molyneaux	Thick Client GUI	1.03
2	Resolved	Bug	Normal	When WCF is down, require better message to user	Darcy Aiken	Web Services/DB	1.03
1	Resolved	Bug	High	Invalid or expired security token error	Darcy Aiken	Web Services/DB	1.03