Customer Release Notes

for eRAD RIS

Version 3

Builds 2018.3 to 2018.3.3.1

REPLISHED JULY 13, 2022

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PURPOSE

This is the Customer Release Notes document for eRAD RIS Version 3.2018.3 through to 3.2018.3.3.1

Not every feature will be described in this document. Typically, only features which can be visually demonstrated are outlined here.

INTENDED AUDIENCE

The intended audience for this document is the RIS Administration team for eRAD RIS customers. For assistance with configuration of any of these features, please contact eRAD RIS Support.

NEW SETTINGS

NEW ACCESS STRINGS

Setting	Default	Purpose
Clinical.Infobar	None	Controls access to the infobar at the top of various screens
Clinical.PatientEditEmail	None	Controls access to the edit email button on the patient tab
Clinical.PatientEditPhone	None	Controls access to the edit phone button on the patient tab
Clinical.PatientFolder.EditPatient	Full	Edit Patient Screen Access from the patient folder
Clinical.PatientFolder.Walkin	None	Controls access to Walk-In button on the patient search results screen and the patient folder worklist
Clinical.ProtocolReview	None	Controls access to the Protocol Review context menu item on a worklist.
Clinical.ProtocolReview.ScheduleOverride	None	Controls access to allow users to schedule even though protocol review is required.
Clinical.RADARNudge **REPLACES** Clinical.RADARSecureMessage	None	Controls access to the Nudge message feature.
Clinical.Schedule.AllowManualSchedulingInOpen	Full	Controls the ability to manually schedule appointments in open (white) Appointment Book time slots. Updated in v2018.3.3 #27791.
Clinical.Schedule.AutoCopyRoom	None	Access to auto copy room for same modality type while scheduling. Updated in v2018.3.3 #26304.
Clinical.Schedule.NewAppointment	Full	Controls access to the new appointment button on the Schedule menu
Clinical.Schedule.RescheduleLater	Full	Controls access to the "Schedule Later" button From the Reschedule Dialog, Cancel Study dialog, the Tech screen's Abort button, and from Schedule Order while rescheduling a study. When not full, then only cancellation is available. Updated in v2018.3.3 #24397.
Clinical.Walkin.AutoCopyRoom	None	Access to auto copy room for same modality type while doing a walk-in. Updated in v2018.3.3 #26304.
Clinical.WalkinOrder	None	Controls access to the "Walk-in" context menu from the Orders To Schedule worklist and the Patient Folder worklist. Appears for items in Ordered status. Updated in v2018.3.3 #25803.

Config.AIArbitrator	None	Access to the configuration screen for the AI Arbitration
Config.AppointmentBook.ModalityClosure	None	Allows user to create modality closures and restrictions from the appointment book.
Config.LookupEditor.BloodType	None	lookup table access for Blood Type
Config.LookupEditor.ConfigFile	None	lookup table access for Configuration Files
Config.LookupEditor.Department	None	lookup table access for Department
Config.LookupEditor.IdVerificationMethod	None	lookup table access for IdVerificationMethod
Config.LookupEditor.PatientExtraInfo	None	Lookup table access for Patient Extra Info
Config.LookupEditor.ProcedurePlanExamTitle	None	lookup table access for ProcedurePlanExamTitle
Config.LookupEditor.ProcedurePlanTechnique	None	Config.LookupEditor.ProcedurePlanTechnique
Config.LookupEditor.ProtocolRules	None	Config.LookupEditor.ProtocolRules
Config.LookupEditor.ProtocolStatus	None	Config.LookupEditor.ProtocolStatus
Flag.AppointmentConflict	Full	Access to see the flag for Appointment Conflict
Flag.ApprovedAppointmentConflict	Full	Access to see the flag for Approved Appointment Conflict
Flag.ClinicalTask	Full	Access to see the flag for Clinical Task
Flag.CTRMClosed	Full	Access to see the flag for CTRM Closed
Flag.CTRMPending	Full	Access to see the flag for CTRM Pending
Flag.ProtocolCompleted	None	Access to see the flag for Protocol Completed
Flag.ProtocolDenied	None	Access to see the flag for Protocol Denied
Flag.ProtocolRequired	None	Access to see the flag for Protocol Required
WL.Protocol	None	Controls access to the Protocol Worklist on the Radiologist menu.

NEW SYSTEM CONFIGURATION SETTINGS

Setting	Default	Purpose
AIServiceEndpoint	N/A	(value = string) The URL used by the arbitrator program to call the AI Service.
AppointmentBookCombineConsecutive	False	(value = Y/N) Determines whether consecutive procedures on the same order and modality should be combined into a single block in the Appointment Book.
CombineExamTitle	False	(value = True/False) Determines if the exam titles of linked exams are combined.
CombineExamTitleSeparator	N/A	(value = string) Defines the separator used between each exam description when combining the titles of linked studies.
CombineTechnique	False	(value = True/False) Determines if the exam technique of linked exams are combined.
CombineTechniqueSeparator	N/A	(value = string) Defines the separator used between each technique when combining the techniques of linked studies.
DaysToKeepAvailabilityTemplates	180	(value = int) The number of days to keep availability templates that have template end dates in the past.
DaysToKeepModalityClosure	180	(value = int) The number of days to keep modality closure rules where the dates are in the past.
DaysToKeepModalityRestrictions	180	(value = int) The number of days to keep modality restrictions rules where the dates are in the past.
EnableArriveMultipleDialog	True	(value = bool) True enable the Arrive Multiple Dialog during Registration
OrderLevelAccessionNumber	N	When Y, all studies contained within an order will be linked and share the same accession number.
PatientSearchIgnoresLeadingZerosInMRNs	True	(Value=True/False) - When True, a Patient ID search from the Patient Search screen will locate patient IDs even when they are prefixed with extra zeros. Updated in v2018.3.3
PromptForIdVerificationMethod	False	(value = True/False) When enabled, will cause the ID verified check boxes to also prompt for the verification method.
ProtocolBypassSTAT	False	(value = Y/N) Determines if Protocol is performed on STAT orders.
ProtocolEnabled	False	(value = Y/N) Determines if Protocol workflow is enabled.

RegistrationBarcodeIDVerificationMethodCode	N/A	(value = string) If PromptForIdVerificationMethod is True, ID Verification Method Code used when opening the Registration screen via an ID's Barcode.
RPPACSDownloadViewerURL	N/A	(value = string) The full URL for downloading PACS Full Viewer
SAMLCertificateThumbprint	N/A	(value = string) The thumbprint identifying the certificate to be used to sign the SAML document. Must be installed on the server.
SAMLDomain	eRAD	(value = string) the domain the SAML token is authored for
SAMLIssuer	eRAD RIS	(value = string) the issuer which authored the SAML token
SAMLLifePeriod	24	(value = int) how many of the hours the SAML token is valid for.

NEW FEATURES

HOSPITAL-TYPE FEATURES

FEATURE #18397 - SUPPORT ORDER LEVEL ACCESSION (OLA)

Background

In a hospital (or some urgent care settings) the expectation of what the "Accession Number" represents is different than at an imaging center. At an imaging center, each study that is performed is represented by a unique accession number. If a referring physician places an order for 2 studies, each study will have its own accession number. If a user was to look at the PACS, they would see 2 studies, each with its own accession number.

In some hospitals or urgent care settings, the expectation is that the ***same*** accession number would be used for each study with the order. In that environment, if the user was the look at the PACS, they would still see the two studies, but each study would have the identical accession number. It is also the assumption in this scenario that there would be only one diagnostic report for all of these studies.

Therefore, the description for this new feature is quite simple. eRAD RIS now supports using the same 'accession number' for each study in the order. This new feature is tightly integrated with the "Linked Reports" feature that was added to RIS in version 2.45.1. When order level accession is used, each study within the order is considered to be part of the linked report collection - therefore only a single report will be associated with all the studies in the order.

The list of sub-features below documents the differences and/or sub-features of this new feature called "**Order Level Accession**" (OLA).

- Feature #19579: Order Level Accession: Inbound Interface
- Feature #19933: Order Level Accession: CD Import
- Feature #19966: Order Level Accession: UI Review
- Feature #20226: Order Level Accession: Manual linking/unlinking should be disabled when OLA enabled
- Feature #20232: Order Level Accession: Prevent switching of primary study if the interpretation exists already
- Feature #20118: Order Level Accession: What determines the primary study

Please contact eRAD Support to implement this feature.

FEATURE #19579 - SUPPORT ORDER LEVEL ACCESSION NUMBERS VIA THE INBOUND INTERFACE

Background

When Order Level Accession is enabled, the messages sent over the interface that need to support and react appropriately on all studies in the dataset. In some messages, an SPS ID will be passed for each study allowing it to be uniquely addressed, but in other cases the update must apply to all studies represented by that single accession number.

Feature

The external interface service (EIS) and the wedge inbound shared logic now support multiple studies with the same accession number.

The framework will ensure that one of the studies in the order is the primary linked study and it will also ensure that all studies in an order are given the same linked id.

FEATURE #19933 - SUPPORT CD IMPORT WITH ORDER LEVEL ACCESSION

Background

eRAD RIS currently supports a CD import process where the CD is read, one or more orders/studies are created in the RIS and the DICOM data is sent to PACS. The accession number supplied on the CD could potentially overlap with actual eRAD RIS accession numbers, therefore the original accession number from the CD is stored in an "external_accession_number" field and eRAD generates and sends its own accession number for ***each study*** sent to the PACS. When working with the new Order Level Accession feature however, each study should not necessarily have its own accession number.

Feature

When Order Level Accession is enabled, the accession numbers of the studies being read from the CD are checked so that studies on the CD with the same accession number are assigned the same RIS-generated accession number and stored under the same order.

FEATURE #19966 - RESCHEDULE USES SAME ACCESSION (WHEN USING OLA)

Feature

With Order Level Accession enabled, several RIS features change in behavior:

- When rescheduling a study with OLA enabled, the newly scheduled study will re-use the original accession number as long as the order is still the same.
- When signing or saving a dictation, the RIS will ensure that the primary study has the appropriate chair id set.
- Conditional tabs will display based on the primary study (if an order has more than one study)

FEATURE #20226 - MANUAL LINKING/UNLINKING IS NOW DISABLED (WHEN USING OLA)

Feature

When Order Level Accession is enabled, studies cannot be added or removed from the linked collection with the usual right-click context menu from the patient folder. The linked screen itself is still accessible as it might be used to move another study in the collection to be the primary study, but removing/adding studies is not supported.

FEATURE #20232 - PREVENT SWITCHING OF PRIMARY STUDY IF THE DICTATION EXISTS (WHEN USING OLA)

Feature

When Order Level Accession is enabled, it is no longer possible to change the primary study once a report has been started. This is purposely restricted as the report template and other fields are driven by the primary study. If a user attempts to do so now, the following error message will be displayed:

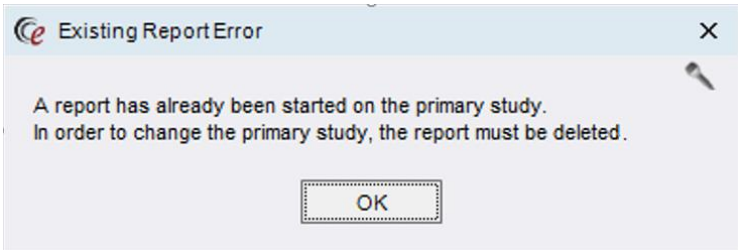
FEATURE #20118 - DEFAULT THE PRIMARY STUDY WHEN LINKING (WHEN USING OLA)

Background

Currently, the primary study is defaulted to be the first study in the dataset when creating the studies.

Feature

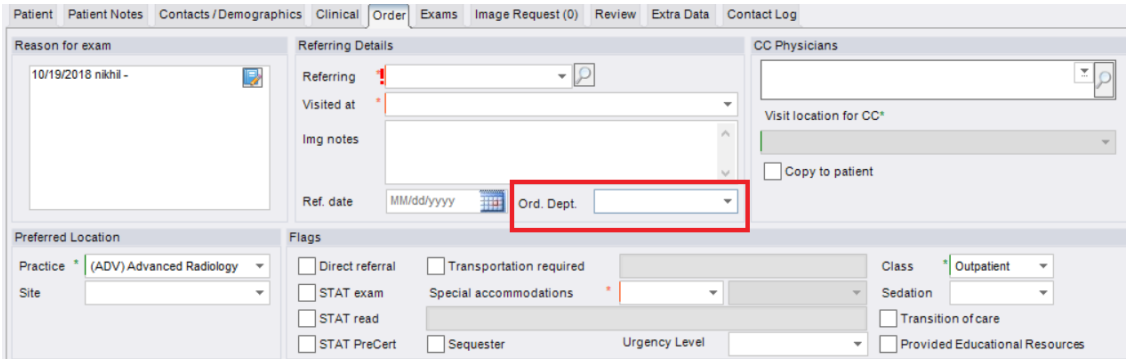
When Order Level Accession is enabled, eRAD RIS will now default the earliest scheduled study as the primary study. This can still be changed manually by the user in the link studies screen.



FEATURE #20189 - SUPPORT ORDERING DEPARTMENT

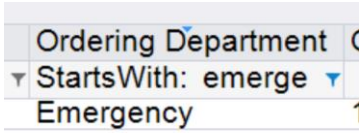
Feature

At most hospitals there is a need to enter and display the name of the department that ordered the study for the patient. A new lookup table (l_department) has been added to the RIS. The scheduler or appropriate person can set this field when the order is created. If the order is received electronically, it is possible to automatically set this value within the interface logic.



In addition, this value is shown on the following worklists:

- Orders To Schedule
- Reception
- Technologist
- Pending Dictation
- Exam Search



FEATURE #26183 - ADD ORDERING DEPARTMENT DESCRIPTION TO PENDING SIGNATURE ALL WORKLIST

This enhancement adds the "Ordering Department" column to the Pending signature all worklist and the Technologist worklist. Now, when an order gets to transcribed status it will populate the Ordering Department column on the worklist.

FEATURE #26291 - ADD ATTACHMENTS CONTEXT MENU TO OTS AND TECH WL

This enhancement adds the "Attachments" context menu to the Order To Schedule worklist and the Technologist worklist.

Previously, the "Attachments" context menu was present on the Labwork, Reception, Patient Folder, and Confirmation worklists.

Behavior of the menu item is unchanged and allows users to add or edit attachments. The menu only visible when the user has permissions, controlled by the existing "Clinical.Attachments" Access String.

FEATURE #25803 - SUPPORT WALK IN FEATURE FROM THE ORDERS TO SCHEDULE WORKLIST AND FROM THE PATIENT FOLDER

This enhancement adds support for the "Walk in" feature, with proper order context, from the Orders To Schedule Worklist and from the Patient Folder using a right-click context menu item.

Currently, orders can be sent to RIS that need to be scheduled by a user. It is possible that the patient will arrive to have the procedure performed as a walk-in, before the study was scheduled.

The menu only visible when the user has permissions, controlled by the new "Clinical.WalkinOrder" and " Clinical.Schedule.RescheduleLater" Access Strings.

AZMA (EXTERNAL HIS) INTEGRATION - UI PLUGIN + HTTP/MIRTH

Background

As part of an ongoing effort to enhance RIS integration with external systems, eRAD has begun development of a UI Plugin Framework. The first implementation of this framework is an interface between RIS and a custom HIS used by one of our customers referred to as AZMA. While this framework is intended to be generic as to the implementation of the plugins, the requirements have been specified and developed with AZMA in mind.

These features are not intended to be modified by customers. Please contact eRAD Support if you have questions.

Note: The AZMA HIS is considered the owner / source of truth for all patient demographic information at the site. All patients are created and updated in AZMA and this new plugin will facilitate updates to RIS. Additionally, users working in RIS may open a particular AZMA screen.

This set of enhancement includes the following items:

PLUG-IN Features

- Feature #20137 - Launch the AZMA Add Patient Screen
- Feature #20123 - Launch the AZMA Reception screen
- Feature #20192 - Query AZMA for data before opening a RIS screen (Query Clinical Data)
- Feature #24478 - Detect and alert on demographics mismatch from AZMA Clinical Data Query
- Feature #20631 - Invoke the AZMA timeout (time out) feature from the technologist window.
- Feature #20639 - Invoke the AZMA timeout (time out) feature from the radiologist window.
- Feature #21218, 21973 Launch and Close the AZMA patient folder
- Feature #21241 - Close AZMA when RIS closes
- Feature #21910 - Add localization support for AZMA Plugin
- Feature #21061 - Launch AZMA Referring Physician management screen
- Feature #24347 - AZMA - Registration WMI message to contain CC physicians

MIRTH Enhancements

- Feature #22085 - HTTP/Mirth based integration with AZMA
- Feature #23715 - AZMA - Accept Multiple Allergies/Alerts via Demographics Query

RIS UI Changes

- Feature #21679 - Disable procedure picker controls when integrated with AZMA after visit number received
- Feature #24447 - Limit CD import procedure codes specific to AZMA
- Feature #21204 - Retrieve AZMA Visit Number during CD Import

FEATURE #20137 - LAUNCH AZMA ADD PATIENT SCREEN

Background

In most hospitals, patients will not be created directly in RIS. Generally, patients are created in a Hospital Information System (HIS), sometimes referred to as an Admit/Discharge/Transfer (ADT) system. This system then sends HL7 messages to the RIS to inform it of the patient records that it has created or updated. The HIS is considered the golden store of patient demographics.

In some hospitals, outpatients can walk straight into the radiology department to have procedures performed. They may or may not have records already existing in the HIS and RIS systems. The RIS Walk-In window would generally be used for this workflow and the first step would be a patient search to find an existing patient record in RIS. If no record is found then, depending on the desired rules of the hospital, the patient will need to be created from the HIS. Rather than making the user launch the HIS separately, log in, go to the appropriate screen to create the patient, then come back to RIS to re-do their patient search, it should be possible to launch the appropriate HIS screen directly from RIS and then automatically load the patient when the HL7 message is received.

With this feature, the RIS will launch the SZMC HIS (called AZMA) to manage the creation and update of patient data. This action will trigger a backend HL7 message to transmit the data to RIS. The front-end communication only returns the patient id and issuer of the patient that was created or updated.

In order to make this function extensible, a plugin-based system would to allow RIS to switch integrations in and out based on the needs of the customer. While this feature is intended to be generic as to the implementation of the plugins, the requirements below will be specified and developed with AZMA in mind.

Intended Workflow:

The user will not directly use the Add Patient feature in RIS. Instead, from the search screen an AZMA button will allow the user to go to AZMA and create the patient from there. The RIS will become disabled during that time while work is being done in AZMA.

FEATURE #20123 - LAUNCH AZMA RECEPTION WORKFLOW

Background

The customer has requested that RIS launch their HIS system (AZMA) during the registration process with the following workflow:

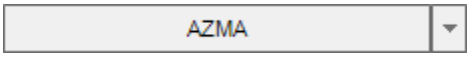
- Add a button between Checking In and Arrived on the RIS screen.
- Activate AZMA with registration message automatically when pressing Checking In. This is equivalent to the AZMA button being pressed
- Disable the Arrive button until the AZMA visit number is received via interface.

Intended Workflow

The front desk receptionist will attempt to search for the patient in RIS (usually using the Israeli National ID). If the patient is found, workflow will continue as normal, but if the patient is not found, the receptionist will invoke AZMA using a new button in RIS, and will add the patient directly in AZMA. Both a front end and a back end HL7 message will return the newly created data to RIS. The patient search screen will self-update, so that they newly created patient is now in the search results in RIS. The Receptionist workflow will then continue as normal.

Feature

The RIS search screen can now be modified by the Plug-in framework. The AZMA plugin can add a button to the search screen which in this case is an AZMA button:



Clicking the button will cause the plug-in to send the appropriate WMI messages to open AZMA on the appropriate screen, along with information from the attempted search in RIS.

The receptionist will then add the patient in AZMA, and the data will be returned to RIS as explained above. The search screen will self-refresh so that the newly created patient is now in view.

FEATURE #20192 - QUERY AZMA FOR DATA BEFORE OPENING A RIS SCREEN (QUERY CLINICAL DATA)

Background

If the HL7 message between the HIS and the RIS is backlogged, it is possible that when a patient is opened in RIS that the data in RIS's database is out of date. This would then have the risk of showing the RIS user data that is out of date. This was deemed a risk which must be mitigated by a more real-time retrieval from the external system.

Feature

The RIS will now query a stored procedure on the loading of every clinical screen, such as Registration or Perform Exam. The data retrieved will be displayed to the user and also stored by the RIS, therefore confirming the most up to date information is known.

There is not much visible to the user during this process. The normal data load process from RIS retrieves the data from the RIS Database. In this case, the data is loaded first from the results of the clinical data query.

FEATURE #24478 - DETECT AND ALERT ON DEMOGRAPHICS MISMATCH FROM AZMA CLINICAL DATA QUERY BACKGROUND

Background

As per the clinical query performed above, if the data is in fact out of sync between RIS and AZMA, an alert is desired to inform the IT team.

Feature

There is nothing for the RIS user to see. However, if a data mismatch was detected, a mechanism exists for Mirth to send a message to the IT team.

FEATURE #20631 - ABILITY TO INVOKE THE AZMA TIMEOUT (TIME OUT) FEATURE FROM THE TECHNOLOGIST WINDOW.

FEATURE #20639 - ABILITY TO INVOKE THE AZMA TIMEOUT (TIME OUT) FEATURE FROM THE RADIOLOGIST WINDOW.

As these two features are similar, they will be described here as the same feature, however one applies to the technologist in the Perform Exam screen and one applies to the radiologist in the Dictate screen.

Background

AZMA has a feature called Timeout. The idea of that system is that every user involved in the current case should stop and confirm they are working on the correct patient record. The feature is entirely hosted in AZMA but needs to be invoked from the RIS on cases that are identified in AZMA.

Feature

On certain cases (as determined by AZMA) the Perform Exam window will display a “TIMEOUT” button. The technologist should click on this button and perform the Timeout check in AZMA. After this is completed, and PDF form will be created in AZMA and sent back to RIS to be stored as another attachment in RIS. A WMI message is also sent to RIS so that the fact that the Timeout was completed can be documented in RIS. If the Timeout is not completed in AZMA and the technologist attempts to close the case, a warning message is presented to the user:

"Warning: The Timeout was not completed".

The options are "Close" and "Timeout". The latter will invoke the timeout. The technologist must again Close the case.

FEATURE #21218 - LAUNCH AND CLOSE THE AZMA PATIENT FOLDER

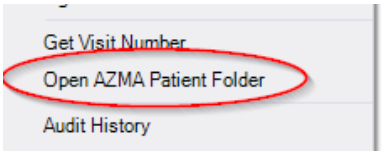
Background

The external AZMA system contains a 'Patient Folder' feature. This request is for the ability to launch the AZMA patient folder directly from RIS and close it when the window is closed in RIS.

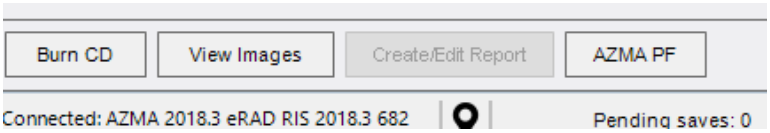
Feature

The plugin framework will cause a number of changes to the RIS UI allowing the user to invoke the AZMA Patient Folder.

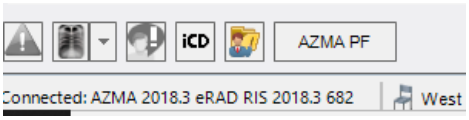
The user can right-click on any study and select "Open AZMA Patient Folder"



From the Technologist worklist, a new button will appear in the list of actions for AZMA Patient Folder:

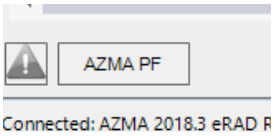


From the Radiologist reading window, a new button will appear in the list of additional buttons called AZMA Patient Folder.



From the View Study feature, there will also be a new AZMA PF button.

From the Protocol Review screen, there will also be a new AZMA PF button.



FEATURE #21241 - CLOSE AZMA WHEN RIS CLOSES

Background

When the user logouts and closes RIS, AZMA also needs to be closed.

Feature

The plugin framework will send a CLOSE message to AZMA when the RIS is closed.

FEATURE #21061 - LAUNCH AZMA REFERRING PHYSICIAN MANAGEMENT SCREEN

Background

Doctors must be added in AZMA, and then transferred to RIS via an HL7 MFN message. The customer has requested the ability to launch their physician data entry screen directly from RIS.

Feature

The plugin framework is able to dynamically add a new Main Menu, and in this case an AZMA menu has been added with a submenu item called 'Add Referring Physician'. This launches the AZMA referring management screen.

FEATURE #21204 - RETRIEVE AZMA VISIT NUMBER DURING CD IMPORT

Background

The regular workflow at SZMC has RIS receiving an AZMA visit number via HL7 during reception. Because reception workflow does not occur during CD Import an alternative way of getting the visit number is required. A WMI mechanism is required for a CD import to receive the appropriate AZMA visit number.

Feature

The plugin framework is now able to be called during the CD Import process. When configured appropriately, during the CD import process will query the AZMA system for an appropriate visit number

FEATURE #21679 - DISABLE PROCEDURE PICKER CONTROLS WHEN INTEGRATED WITH AZMA AFTER VISIT NUMBER RECEIVED

Background

At registration, SZMC requires procedures to be added in AZMA and not in RIS. Therefore, the user must be prevented from adding or removing procedures in RIS once the AZMA visit number has been received. At this point AZMA controls the addition or editing of procedures.

Feature

The plugin framework is now able to modify the behavior of the procedure picker and selectively turn off controls.

FEATURE #22085 - HTTP/MIRTH BASED INTEGRATION WITH AZMA (FRAMEWORK)

Background

It has been suggested that relying only on message queues and the SignalR for a response from AZMA to RIS during registration, timeout and patient update/create workflows may not be as performant as the customer would like, so a feature request was placed to support http calls to mirth and a mirth channel which can then call the AZMA database to query, generate and send time sensitive messages.

Feature

There is no user visible portion of this feature, other than the underlying frameworks function in a timely manner.

FEATURE #23715 - ACCEPT MULTIPLE ALLERGIES/ALERTS VIA DEMOGRAPHICS QUERY AND DISPLAY AS AN ALERT

Background

At SZMC all demographics including allergies are managed in AZMA. RIS already has a plugin to query for demographics but new details have been provided as to how AZMA formats the multiple allergies in the stored procedure RIS is querying. It has also been requested that an alert be added for every allergy.

Feature

There is no user visible change as a result of this feature. Allergy alerts will be set by back-end messages and will appear in RIS as alerts.

FEATURE #24347 - REGISTRATION WMI MESSAGE TO CONTAIN CC PHYSICIANS

Summary

SZMC has requested that the WMI message sent during registration contain the CC physicians. There is no visible user component to this feature.

FEATURE #24447 - LIMIT CD IMPORT PROCEDURE CODES SPECIFIC TO AZMA

Background

Today at SZMC, the technologists simply import a CD and send it to PACS. No extra steps are required.

In RIS, the CD import routine requires the tech to identify a matching study in RIS. Not only is this extra time for the techs, it also must be a very limited list of procedures that should be selectable - as an incorrect procedure being sent to AZMA will cause other billing issues.

Feature

This feature request is to alter the CD import routine to behave as follows:

- Once a patient is selected in the CD import routine, the RIS will identify the modality type of the study(ies) on the CD. Based on the modality type, a procedure will be defaulted into the CD import study based on the list attached below.
- In case the auto selection fails, the user will be able to pick for a short list of procedures matching the list below. (**Note these values are configurable but presented below as an example**)

  Modality type to procedure code:

  when 'CT' then '991953'
  when 'MR' then '991952'
  when 'CR' then '991955'
  when 'DX' then '991955'
  when 'NM' then '991949'
  when 'MG' then '991956'
  when 'PT' then '991954'
  when 'OT' then '991957'
  when 'XA' then '991951'
  when 'US' then '991958'
  when 'RF' then '991959'
  else '991957'

FEATURE #20122 - NOTIFY RIS CLIENT WHEN BACKGROUND DATA IS UPDATED

Background

When data is updated via a back-end message, there is no way to alert the user that this data has changed, nor to display it on their screen other than by manually closing and re-opening the screen.

Feature

eRAD RIS now has an internal framework that allows it to dynamically update data on the screen of an already open patient/order/study. This is currently restricted to a single use case with the AZMA system, but in the future this will be extended to all of eRAD RIS.

FEATURE #25185 - AZMA PLUGIN SHOULD DELETE RESPONSE TO CD IMPORT WMI MESSAGE ONCE READ

Background

Currently, if there are multiple studies being imported from the same CD, AZMA only accepts the first one as the file remains.

Feature

With this enhancement, RIS will import all and delete the response to the CD Import WMI message.

FEATURE #25152 - INCLUDE EXTRA INFO CODE AND VALUE IN OUTBOUND MESSAGE METADATA

Background

Messages sent from RIS to Mirth contain meta-data describing the changes that were made during the action to which the message pertains.

The changes detail what rows are inserted, updated, and deleted. Currently only the primary and foreign key columns are included. Because the RIS 'extra info' tables are key value tables, the primary and foreign keys are not enough information to be useful.

Feature

With this enhancement, a RIS outbound message will now send the extra info code and value of the changed rows, allowing better decisions to be made in Mirth regarding what messages need to be sent.

FEATURE #25153 - AZMA CLINICAL DATA QUERY FROM THE SCHEDULING SCREEN

In addition to querying the AZMA system for Clinical Data when the Registration or Perform Exam screens are opened, RIS will now query on the Schedule Order screen as well.

FEATURE #25152 - INCLUDE EXTRA INFO CODE AND VALUE IN OUTBOUND MESSAGE CHANGE META DATA

Feature

The message sent from RIS to Mirth contains meta-data describing the changes that were made during the action to which the message pertains. The changes detail what rows are inserted, updated, and deleted. It currently only contains the primary and foreign key columns. Because the 'extra info' tables are key-value pair tables, the primary and foreign keys are not enough information to be useful. Knowing the extra info code and value of the changed rows will allow better decisions to be made in Mirth regarding what messages need to be sent.

INTERFACING

FEATURE #24345 - CD IMPORT - ABILITY TO ALTER DICOM DATA VIA PLUG-IN FRAMEWORK

Background

Some customers have all patient IDs padded with spaces to 9 characters and prefixed with both a character (e.g. Z) and the issuer of the patient id. This means that all interfaces need to be able to support formatting the patient ids in this manner. HL7 being sent out through Mirth are easily modified, but the DICOM send part of a CD import currently has no opportunity for enhancement.

Feature

To allow RIS to be able to prefix, modify, and format the patient id field in a DICOM send, the UI Plugin framework has been enhanced to allow the values passed to the DICOM toolkit to be customized. A new plugin can then be added that formats the patient id appropriately.

The RIS now raises an event prior to sending the DICOM message to PACS, allowing a plugin to subscribe to this event to modify the data used to generate the DICOM. The CDImportLib library was also updated to include the issuer of patient id int the data passed to the event.

AZMA Plugin Changes

The AZMA HIS plugin can now subscribe to this event and modify the patient ID to be a concatenation of ‘Z’, the issuer of patient id, and the 9-character space-padded patient id.

FEATURE #22723 - QUERY FOR SCANDOC DATASET WITH SCAN_DOCUMENT_KEY

Background

RIS currently has the ability to send a scanned document over an interface (for example, to Ensemble). These messages currently only contain the scan_document_key related to action that took place.

Feature

This feature adds support for outbound message attachments to include the full Scan Doc Dataset, including the document type, notes, external id, etc. when the Scan Document Key is provided.

FEATURE #20677 - ALLOW PATIENT IDENTIFICATION CHANGE VIA INTERFACE

Background

HL7 defines an ADT transaction that corresponds to the change of an identifier to a patient. In other words, the patient previously identified as 123 should now be identified as 456 and the 123 identifier will no longer be used.

Feature

RIS now supports incoming ADT `ChangePatientIdentifier` messages indicating a patient id has been changed and will update the patient id and issuer fields.

Feature #19594, 19595 - MFN INTERFACE TO UPDATE LOOKUP DATA FROM ANOTHER SYSTEM

Feature

RIS supports Master File Notification (MFN) inbound messages via HL7 to perform dataset updates via webservices. This allows a remote system to 'own' certain lookup tables, and when they are updated in the remote system, an HL7 MFN message will be sent to eRAD RIS, and RIS will update its copy of this table accordingly.

This will be configured by the eRAD Professional Services Team if necessary in your installation.

FEATURE #22146 - EIS SUPPORT FOR PATIENT EXTRA INFO

Feature

EIS business logic has been updated to allow for updating unique rows of `c_patient_extra_info` based on the combination of `patient_key` and `patient_extra_info_code`. EIS will completely replace existing rows for this patient_key when this message is received. In other words, repeatedly sending an incoming message with different values for `c_patient_extra_info.value` will result in a single row in RIS with the most recent value, rather than multiple rows with distinct values in them. The sending system should re-transmit any values it wishes the RIS to maintain.

FEATURE #23975 - EIS SUPPORT FOR CONVERTING HTML REPORT TO PDF DOCUMENT

Background

Currently when RIS accepts a HTML report from an external system via the EIS interface, it will convert it to a PDF and store it in the RIS database using the legacy report functionality and a 3rd party HTML to PDF conversion utility. However, this approach limits the 'legacy report' to one report per study as the external interface will delete any existing legacy reports when receiving a new report.

Feature

The support team can now send a `c_interpretation` row in via the external interface and may now include an element called `<html_report>`. This element will contain the base64 encoded HTML report. When received, EIS will convert the report to a PDF and store it in the `c_legacy_report` table. The reports are then viewable via the View Study screen and Report nugget on the worklists.

FEATURE #25205 - ORDER LEVEL ACCESSION NUMBER - FLAG IN INTERFACE MESSAGE TO APPLY VALUES TO ALL STUDIES

Background

Currently, messages received from PACS that indicate an accession number has been PACS corrected only marks the primary study as corrected. For some messages this behavior is appropriate, but there are cases where it should apply to all studies in the linked set.

Feature

With this (order level accession number) enhancement, each message may specify how the PACS Corrected flag should be handled:

- Default (current) behavior of applying to primary study only.
- Allow a message to specify that values for the c_study node of a message should apply to ALL studies.
- Allow a message to specify that values for the c_study node should apply to ALL Non-Cancelled studies.

FEATURE #20543 - UPDATE BROWSER (PORTALS) INTERFACE TO SUPPORT DIFFERENT USER ACCOUNTS PER USER

Background

The current portal interface implementation uses a single user account no matter who is using it. Credentials are obtained from the Browser (portals) config window. However, some sites require that some interfaced systems be accessed with a unique user and password per user. We therefore need to support this information down at the user level.

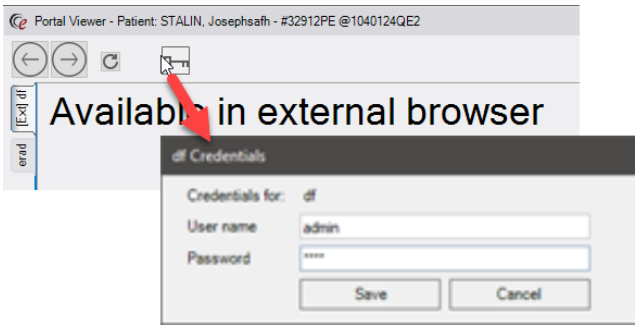
Feature

The browser (portals) interface has been updated to allow a user to access their configured portal systems using their own user account and credentials, rather than relying on a shared account.

Portal support for multiple accounts per user

When accessing external portals, RIS retrieves authentication details from the `BrowserConfig.Password` and `BrowserConfig.UserName` settings.

A new button has been added to the portals window to allow users to enter different credentials for the currently selected portal tab.



Protocol worklist menu option and flags.

Submitting user account information via the `Credentials` dialog will reload the browser using the new authorization details.

FEATURE #24487 - INCLUDE PERSON EXTRA INFO IN OUTBOUND MESSAGES

Summary

This enhancement adds the ability for RIS outbound messages to include person extra info values.

Previously, values from the l_person_extra_info_x_person table representing person extra info values added within RIS were not exported with the other l_person related tables. This table is now retrieved from the database and expanded when exprting person_key nodes.

This sample a Mirth message shows how the requested_by_person_key node will now contain the l_person_extra_info_x_person values:

```
<requested_by_person_key>
    <l_person>
        <person_key>12345678</person_key>
        <last_name>Stuuart</last_name>
        <first_name>Haans</first_name>
        .
        .
        .
    </l_person>
    <l_person_extra_info_x_person>
        <person_extra_info_key>5</person_extra_info_key>
        <person_key>12345678</person_key>
        <person_extra_info_code>english_name</person_extra_info_code>
        <value>Stewart</value>
        <last_updated>2019-11-27T16:31:07.2297704-04:00</last_updated>
        <last_updated_by_user_id>stick</last_updated_by_user_id>
    </l_person_extra_info_x_person>
</requested_by_person_key>
```

FEATURE #24642 - ADD 'INSERT' AND 'UPDATE' ATTRIBUTES TO MODIFYLOOKUPDATASET (MFN) METHOD

Summary

The ModifyLookupDataset (MFN) method has been updated to support inbound messages that include 'insert' and 'update' attributes that control how the interface handles rows that are sent in the message.

- Explicitly specifying that updates are not allowed will insert new rows but NOT update existing rows.
- Explicitly specifying that inserts are not allowed will update existing rows and raise an exception if no existing row is found.

Background

In many cases inbound messages include 'insert' and 'update' attributes that control how the interface handles rows that are sent in the message, with 'insert' adding rows only if they are not found so existing values are not overwritten. Only when the 'update' attribute is specified will a found row be updated.

This change was requested as procedure codes received via an MFN message would always overwrite existing values with each new MFN message received.

Resolution

Messages may now specify if a found row should be allowed to be added, updated, or both. Default behavior when no attributes are specified remains as if both insert and update were specified, so new rows will be added, and existing rows updated.

Insert	Update	Row Exists	Result
Y	Y	False	Row is created
Y	N	False	Row is created
Y	Y	True	Row is updated
Y	N	True	Row is unchanged
N	Y	False	Exception
N	N	False	Exception
N	Y	True	Row is updated
N	N	True	Row is unchanged

Note: When unspecified, insert and update attributes default to Y.

Attributes for "insert" and "update" have been added to the schemas for any lookup row node in the containers for the lookup specific methods ModifyBillingCodeData, ModifyCarrierData, ModifyCarrierTypeData, ModifyModalityData, ModifyOrderingOrganizationData, ModifyPersonnelData, and ModifyProcedureCodeData.

FEATURE #26780 - ALLOW MIRTH TO SET THE STATUS OF A STUDY ON AN INBOUND MESSAGE

This enhancement <verb> the <object> to <action> from <location> when <condition> because <reasons>.

Update[d] the Conditional Tab editor's Display Criteria to include the Confirmation screen on the list of available Screens. This allows Digital Forms to be configured to display during the confirmation workflow.

SCHEDULING AND REGISTRATION

FEATURE #18899 - EXCLUDE LOCKED APPOINTMENTS FROM CRM INTERFACE RESULTS

Background

When scheduling in RIS via CRM interface, a RIS user account must be passed in to be used when locking/reserving results. However, when a single shared user account is used in this manner, the interface will return locked appointments if the userID that locked them is the same userID that is requesting time slots, thus multiple users attempting to use this method will see all locks made by another patient out on the web.

Feature

To support multi-user scheduling via CRM interface using a single shared user account, the web method exposed to the CRM has been updated.

Users can now still see timeslots they have locked by their session as available, but not see other patients' timeslots as they were locked by a different workstation id.

FEATURE #20516 - SCHEDULING SUPPORT FOR ID VERIFICATION METHOD

Background

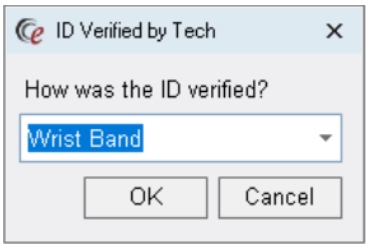
When interacting with patients, it is critical to confirm the patient's identity, and to document in the RIS that the identify verification was completed.

Currently, this action is captured in the following locations using the `ID Verified` checkbox:

- Reception
- Technologist Documentation
- Exam Details

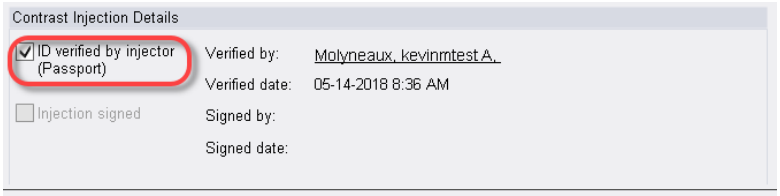
Feature

When documenting that patient identification has been performed using the existing `ID Verified` checkbox, RIS will now display a new `ID Verified by...` dialog to document the specific verification method used, such as driver's license, passport, or wrist band.



The choices that appear in the drop down for verification method are configurable.

This new value will be captured on the Reception, Technologist Documentation, and Exam details screens. Note that while all three utilize the same lookup, each screen saves the user selection independently.



Contrast Injection screen showing the patient ID was verified by a Passport document.

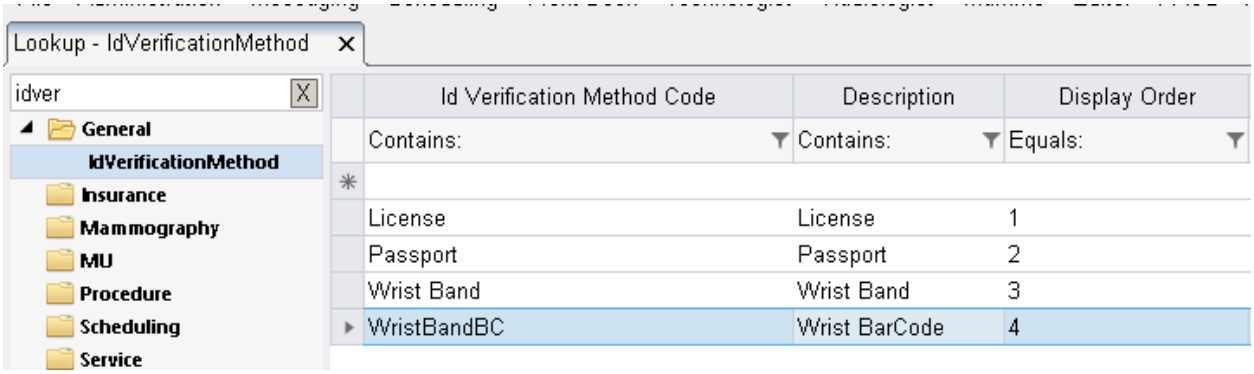
To configure the ID Verification Method

1. Configure ID verification methods in the `l_id_verification_method` lookup table.
2. Enable the `PromptForIdVerificationMethod` SysConfig value.
3. Enable the `RegistrationBarcodeIDVerificationMethodCode` SysConfig value if desired.

Configuration

The following lookup tables have been added:

1. The `l_id_verification_method` lookup table is used to configure ID verification methods.



Sample ID verification methods.

TIP: By setting the Verification Method Code used for the BarcodeWF to active_flag = 'N', it will not display in the list the user picks from but may still bet used in the Barcode Workflow. This can be useful because then if you see verification with this method code you can be sure it came from an actual barcode scan and not a user selection.

System Config

The following system config settings have been added:

1. `PromptForIdVerificationMethod` (default is `false`) - Setting this value to `true` enables a dialog to prompt for a `Verification Method` value when the `ID Verified` checkbox is checked.
2. `RegistrationBarcodeIDVerificationMethodCode` (default is `<blank>`) - The `Verification Method` value used when opening the Registration screen via an ID's Barcode.

FEATURE #22053 - CREATE STUDY ITEM CERTIFICATIONS FOR STUDIES SCHEDULED OVER THE INTERFACE

Background

Currently, an order from an EMR or other interface method to RIS does not automatically generate the billing entries for the procedure.

Feature

To support workflows that arrive a study via interface, RIS will now handle the case of no study item certification (SIC) rows being sent in the message (the sending system may not care or know about our billing codes).

FEATURE #21385 - SUPPORT REDUCED DURATION FOR ADDITIONAL PROCEDURES ON THE SAME ORDER AND ROOM

FEATURE #21386 - SUPPORT SEARCHING FOR 0 MINUTE DURATION PROCEDURES IN SCHEDULING

FEATURE #21388 - COMBINE CONSECUTIVE PROCEDURES ON THE SAME ORDER AND MODALITY IN THE APPOINTMENT BOOK

FEATURE #23118 - ACCESS STRING TO CONTROL COMBINING OF CONCECUTIVE APPOINTMENTS

Background

Currently, when a procedure is scheduled, there is a default duration that comes from the procedure code table (RIS also supports an alternate "automatic override" value). When an additional procedure(s) is added to the same order, the normal process is for the duration of the subsequent procedure to be populated with the same default value as if it was scheduled alone.

However, in cases where multiple procedures are being performed on the same modality (scanner/room), this full duration may not be required, as the patient preparation is already complete (they are already on the table), therefore an alternate duration (reduced or even 0) may be appropriate instead.

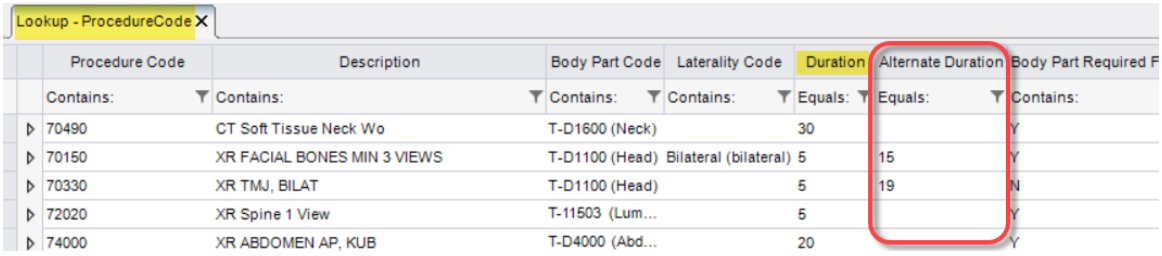
Feature

This feature enhances the handling of multiple consecutive procedures on the same order. Rather than treating each as an independent appointment, adjacent procedures can be adjusted in duration to accommodate the efficiencies of completing multiple activities in a single visit. Additionally, adjacent procedures can be visually combined, and overall duration reduced.

New: Procedure Code Alternate Duration

A new `Alternate Duration` column has been added to the `ProcedureCode` table, in addition to the existing suggested `Duration` column and "automatic override" value (see Note).

When an alternate duration is specified for a procedure code, that time be used for subsequent procedures rather than duration.



An Alternate Duration column has been added.

Valid column values are Null, and the numbers 0 to Max (max duration). The behavior when a subsequent procedure is added to an order with the same modality type as the previous study is:

- When the alternate value is **Null**, it will be ignored, and the original duration will be used as it is today (i.e. support legacy behavior).
- When the alternate value is **0 minutes**, the procedure will be given start and end times identical to the end time of the previous procedure and they will display as combined.

- When the alternate value is **non-zero**, it will be used as the duration for this subsequent procedure.

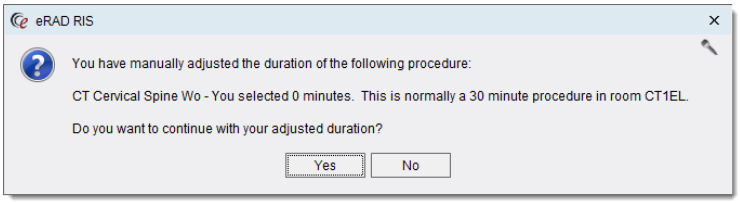
Notes:

1. If a modality or site/template/tech or rad duration "automatic override" value exists, it will be ignored for that instance and the duration of the subsequent procedure will come from the newly added procedure code column.
2. As always, the defaulted value may be manually amended prior to saving.
3. The search screen may display the original duration on each procedure (current search behavior), but the search results will offer the reduced time when it is a subsequent procedure. This behavior is necessary as the procedure is only 'subsequent' if the search engine is able to find a long enough consecutive time block to accommodate both procedures. If it needs to separate the procedures, the original duration will be used.

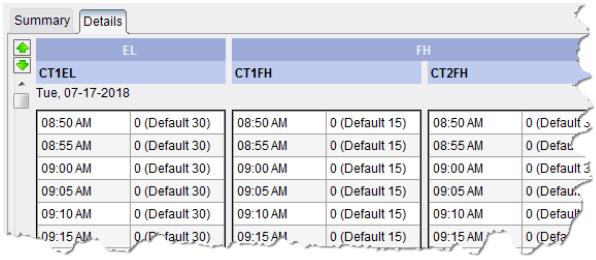
Updated: Scheduling Search

Scheduling Search now supports a duration of 0 minutes. This change is in support of the consecutive procedure functionality.

Duration adjusted to 0.



Adjusted duration prompt.



Scheduling search results will use scheduling interval to separate different timeslots.

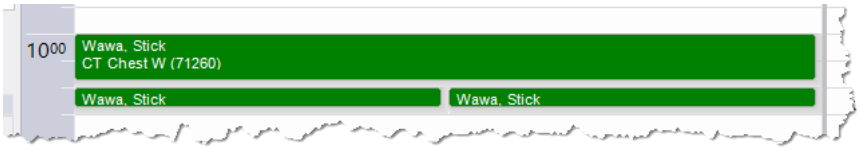
Note that a subsequent procedure that is on the same order and on the same modality (room) but is NOT adjacent may NOT have a duration of 0 minutes (i.e. if not sharing the time slot, it must have its own duration).

Updated: Appointment Book

With the above enhancements in place, RIS now supports combining consecutive procedures on the same order and modality in the appointment book. This is controlled with the SysConfig setting:

AppointmentBookCombineConsecutive default = False

Previously, manually adjusting additional procedure displayed them as consuming a 5-minute time slot.



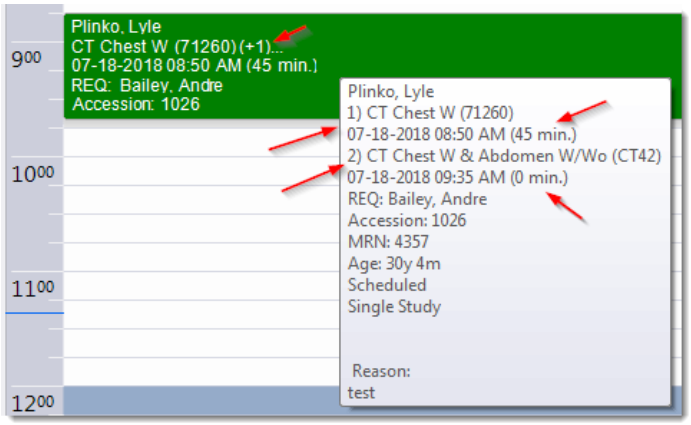
Previously, procedures displayed as separate visual elements.

With this change, procedures will display in a combined entry in the appointment book:

- The first procedure will have the (normal) duration associated with that procedure.
- Procedures immediately following will be visually represented in the calendar as a combined item.
    - Subsequent procedure of 0 duration start and end times will exactly match the end time of the previous procedure
    - The new feature 21385 allows subsequent procedures to have a different duration for a subsequent study on the same order/modality (room).

When displaying multiple procedures as combined calendar items,

- The description of the main procedure will indicate the presence of additional procedures, e.g. `(+3)...`
- The tool tip will list each of the overlapping procedures, including their duration.



Consecutive procedures will now display as a contiguous block of time.

Configure Alternate Duration

Edit the `ProcedureCode` table to define an `Alternate Duration` per procedure as desired.

Note that this new duration is only used as described below.

Appointment Search

Schedule an order for two procedures with the **same modality type**. Search for appointments and choose one of the results that makes the procedures **consecutive** and save. The appointment book will combine the appointments and display the procedure breakdown in the tooltip.

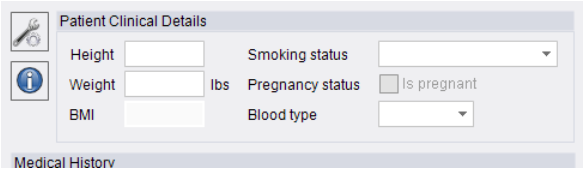
Note that existing behavior is unchanged:

- Schedule an order for two procedures with **different** modality types. Search for appointments, choose one of the results, and save. The appointment book will not combine the appointments.
- Schedule an order for two procedures with the **same** modality type, leaving a **gap of time between** the two procedures and save. The appointment book will not combine the appointments.

FEATURE #20190 - ABILITY TO DISPLAY PATIENT BLOOD TYPE

A new field has been added on the Clinical tab to display patient blood type as a dropdown list box. In the case of a HIS driven workflow, custom access strings make this a read only field. Blood type is stored on c_patient database table and is prepopulated on the form.

Clinical tab form:

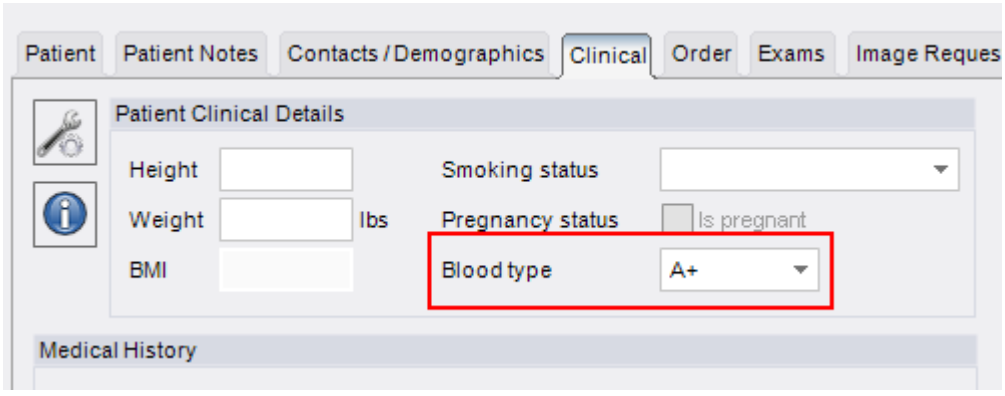


Access string that controls access to the blood type lookup table:

Access String Code	Description	Display Order	Default Access Level Code	Created Date	System Flag	Last Updated	Active
Contains: bloodt	Contains:	Equals:	Contains:	Contains:	Contains:	Equals:	Con...
Click here to add a new row							
Config.LookupEditor.BloodType	lookup table access for Blood Type	1	None	05-29-2018 09...	Y	05-29-2018 09...	Y

Lookup table that controls blood type value options:

Blood Type Code	Description	Display Order	Last Updated	Active
Contains:	Contains:	Equals:	Equals:	Contains:
Click here to add a new row				
1	A+	1	05-28-2018 09:47	Y
2	A-	2	05-28-2018 09:47	Y
3	AB+	3	05-28-2018 09:47	Y
4	AB-	4	05-28-2018 09:47	Y
5	B+	5	05-28-2018 09:47	Y
6	B-	6	05-28-2018 09:47	Y
7	O+	7	05-28-2018 09:47	Y
8	O-	8	05-28-2018 09:47	Y
9	unknown	9	05-28-2018 09:47	Y



FEATURE #25585 - SUPPORT FOR OVERLAPPING SCHEDULING TEMPLATE DURATION OVERRIDES

Background

Previously, when multiple scheduling templates existed with overlapping date ranges, RIS would use the default duration rather than template duration, even if the template times did not overlap.

Feature

Now when multiple scheduling templates exist for the same modality, the template's duration override will be used unless the templates have both an overlapping date and times, in which case the default duration will be used.

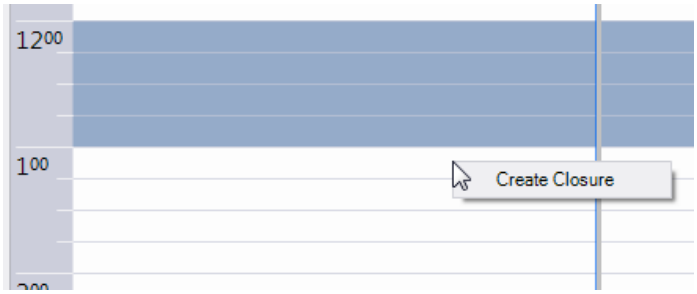
FEATURE #25391 - SUPPORT CLOSING OR RESTRICT MODALITY TIMESLOT FROM THE APPOINTMENT BOOK VIA A CONTEXT MENU

Background

Previously, RIS only supported creating modality closures and restrictions via the modality lookup table.

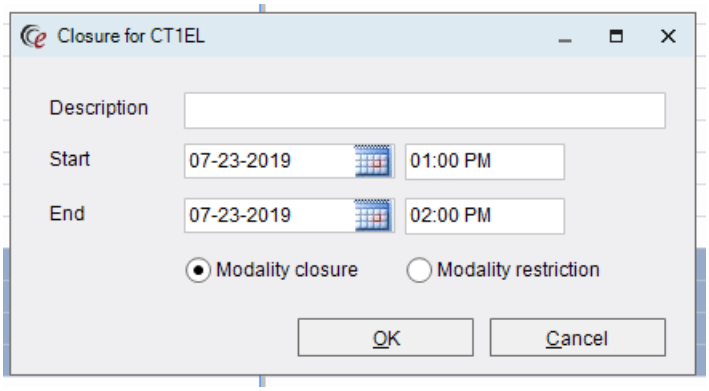
Feature

With this enhancement, schedulers are frequently adding non-recurring closures, can create these simple closures directly from the appointment book.



Right-click a time slot to display the context menu.

Users with permissions can use the new appointment book `Create Closure` context menu option to open a dialog to create a simple modality closure or restriction.



When creating a closure, the duration will default to 1 hour.

Configuration

New access strings:

- Config.AppointmentBook.ModalityClosure (default = None) - Allows user to create modality closures and restrictions from the appointment book.

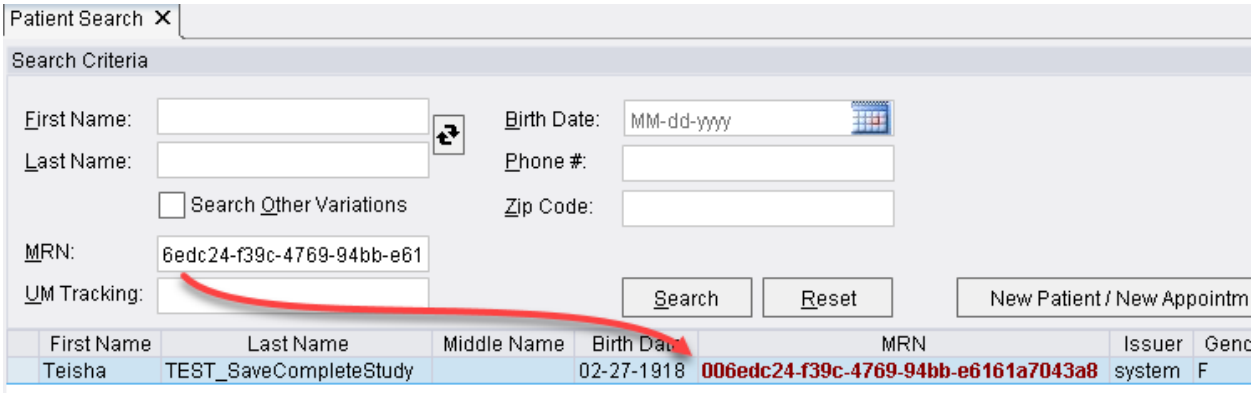
FEATURE #25976 - MRN SEARCH NEEDS TO IGNORES LEADING ZEROS

This enhancement changes the behavior of MRN search from the Patient Search screen to disregard leading zeros when searching.

Note that this change does not update the MRN as stored in the database, as the MRN for billing must include the leading zeros.

For example, an official MRN might be prefixed with one or more zeros, such as MRN 00012345. When a patient search is performed, it should locate this record whether the MRN search was specifically for "12345", "012345", or "00012345".

Note that search results will still include any leading zeros, and when the MRN in the search criteria is not an exact match to the MRN in the database, RIS will highlight the (legit) MRN in red in the search results:



FEATURE #26304 - AUTOMATIC COPY OF ROOM TO SIMILAR STUDIES ON WALK-IN AND SCHEDULE

Description

When there are multiple studies with the same procedure group, selecting a room for one study can now automatically populate the same room into the other studies.

Background

Currently when a Walk-in is performed, each study and each room must be selected. Similarly, when scheduling, a room can be manually select for each study.

However, when there is more than one study of the same procedure group, they will most likely be for the same room. This request simplifies re-using the same room for all studies that have a matching procedure group.

Feature

When multiple studies exist, selecting a room for one study will automatically populate the same room for the other studies, provided:

- The room is not already populated on the other study(ies)
- The other study(ies) are of the same procedure group
- The user has permission to schedule that procedure into that room
- The user has permission to schedule the other procedure in the same room, based on their schedule groups.

Two new access strings have been added, Clinical.Walkin.AutoCopyRoom to control this feature for Walk-in and Clinical.Schedule.AutoCopyRoom to control this for the Scheduling window.

E.g., before:

After:

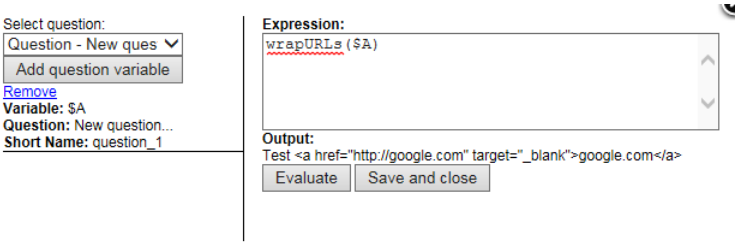
DIGITAL FORMS

FEATURE #19714 - ADD ABILITY FOR DIGITAL FORMS TO SUPPORT HYPERLINKS

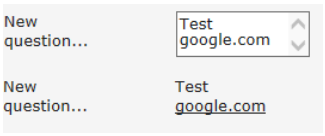
Feature

A new function of digital forms called “wrapURLs” is now available. It can be used in the expression editor to extract and wrap all the URLs in the given text. By default, hyperlinks created with “wrapURLs” will open in a new tab/new window; however, the function has an optional second parameter (boolean) that if set to false, will open the URL on the current tab “ex. wrapURLs($A, false)”.

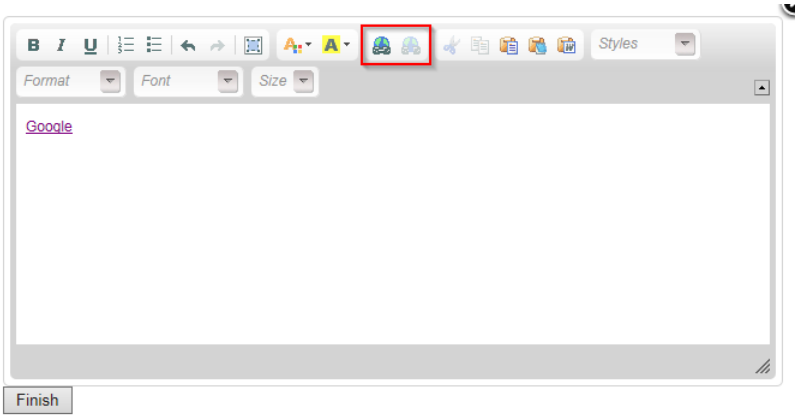
Example: wrapURLs in the expression editor:



Result



The ability to create hyperlinks has also been added to the “New Textbox” option. There is a “Link” and “Unlink” option in the CKEditor for new textboxes.



GENERAL RIS ENHANCEMENTS

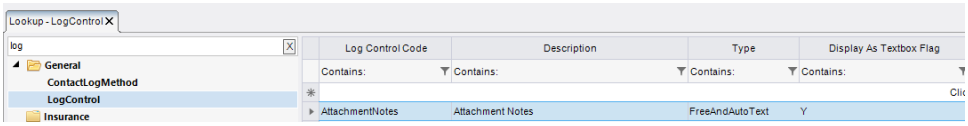
FEATURE #23082 - SUPPORT AUTOTEXT CONTROL IN ATTACHMENT NOTES (SCANNING COMMENTS)

Background

The scanning window in RIS has a comment field in case a PSR wants to attach a comment to the current document. The desire it to have the Autotext feature enabled for this comment box.1

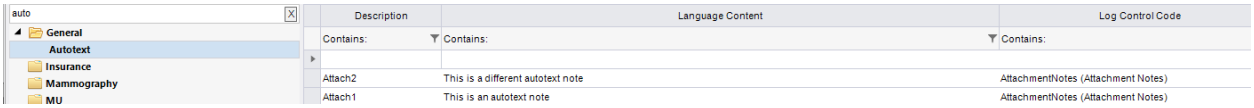
Feature

The comment box has been replaced with a log text control, which means its behavior can be altered using the Log Control lookup table.



Setting the log control “type” to any form of autotext will enable the autotext control in the identical way to how it is handled in all other log controls.

A new autotext log control code also now exists called “Attachment Notes”



Accessing the comment field is unchanged - simply select the paper note icon on the scan screen to open the Edit Note window. If configured for Autotext, the autotext icon will now appear as shown:

FEATURE #23153 - POLISH THE ATTACHMENT NOTE (COMMENTS) FEATURE

Feature

Minor enhancements to the existing RIS comments feature were added including:

- The icon for the Notes button now has a tool tip saying “Edit Note”.
- The screen that launches now has a new title – “Edit Note” instead of the old title “Scan Document Notes”.
- The Attachment viewer screen now has a hover text feature which will show the content of the attachment note.

FEATURE #21365 - PATIENT EXTRA DATA AND A TAB TO DISPLAY ALL CUSTOM DATA FIELDS

Background

Previously, the capability for customers to define additional custom fields was implemented at both the order and study level. Data at the study level was viewable within the user interface, but order level data was not and there was no ability to define extra data at the patient level.

Feature

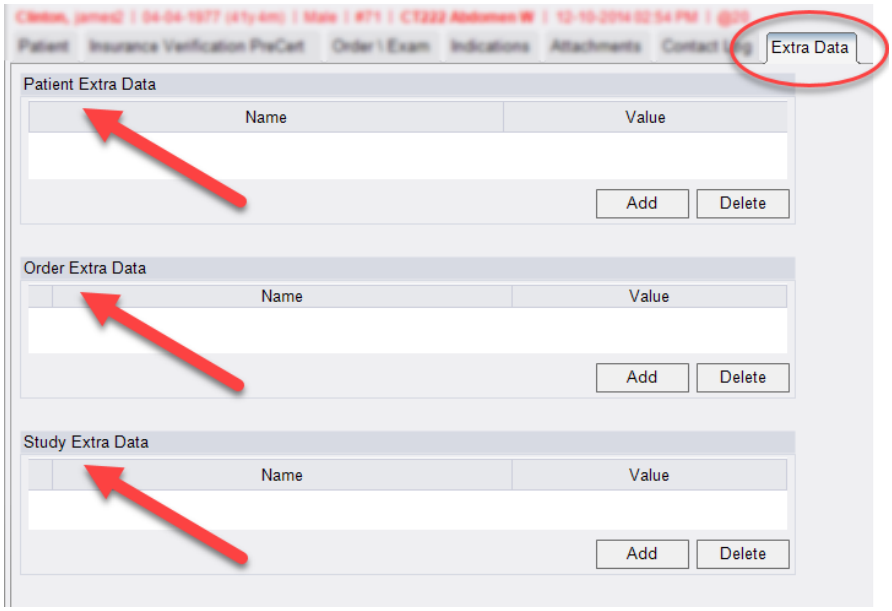
This enhancement adds the capability for users to define custom fields at the Patient level (in addition to order and study) and shows data from all three levels for consolidated viewing and editing by adding a new tab to the user interface.

New: Extra Data tab to display custom values at the Patient, Order, and Study level

An Extra Data tab that supports displaying and editing of custom fields at the Patient, Order, and Study level is now available on the following screens:

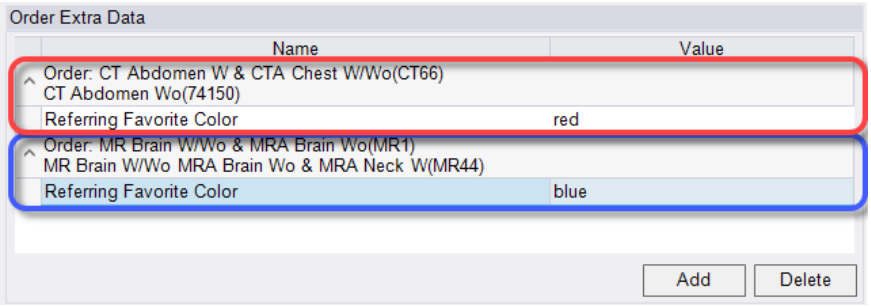
- Schedule Order
- Registration
- Perform Exam
- IVT
- View Edit
- Billing Exceptions
- Add Patient
- Edit Patient

Rows can be added or deleted from each of the three sections, and any Value cell can be edited in-place by double-clicking the cell. Length validation is supported, and null values are allowed.



The Extra Data tab displays fields at the Patient, Order, and Study level.

In cases where there are multiple orders or studies, the extra data will be grouped by order or study.



Order Extra Data is grouped and displays a multi-line description for all procedures in the order.

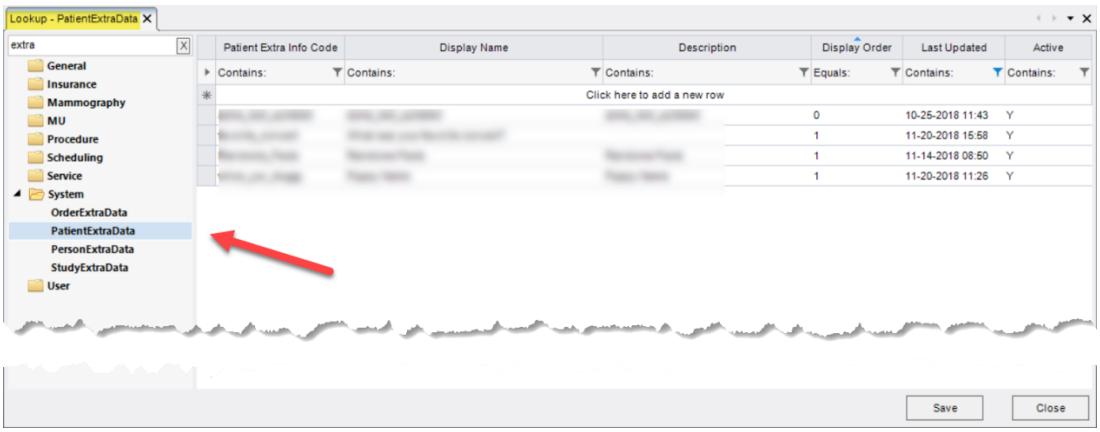
Lookup tables

Previously Extra Data fields were available via three existing extra data lookup tables:

- PersonExtraData
- OrderExtraData
- StudyExtraData

This feature adds a fourth lookup for values at the patient level:

- PatientExtraData



The new PatientExtraData lookup.

All four lookup tables contain a code, display name, description, and active flag.

Note that previously, a visible flag in the lookup controlled which extra info codes should be displayed in RIS, but this will now be controlled by creating access strings as required.

Access Strings

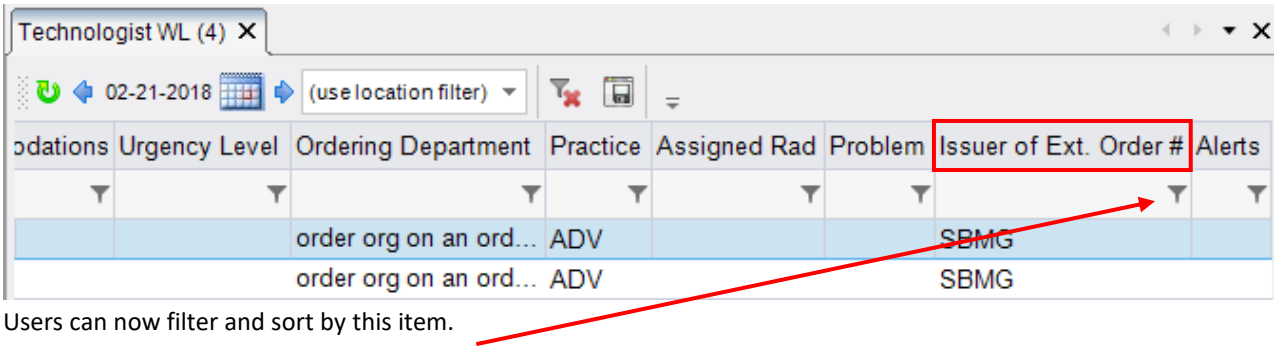
Previously, a visible flag in the lookup controlled which extra info codes should be displayed in RIS. This will now be controlled by creating access strings with a value of hidden/readonly/full.

e.g. A user with an access string for a the custom field `Custom.Visibility.AdditionalData.CustomValueName` with a permission level "None" is unable to add or view add values.

FEATURE #21580 - ADD COLUMN "ISSUER OF EXTERNAL ORDER" TO THE TECHNOLOGIST WL

Feature

RIS now supports "Issuer of External Order #" as a column on the Technologist worklist to support linking exams based on issuer.



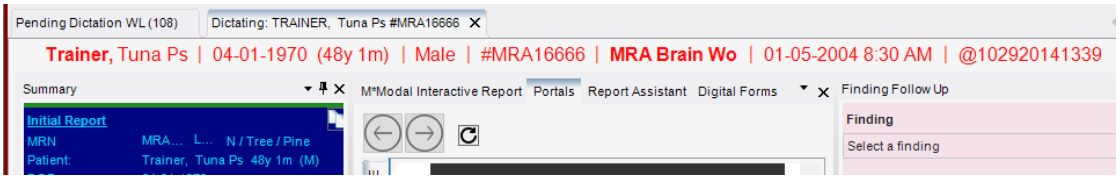
Users can now filter and sort by this item.

FEATURE #20542 - SUPPORT 'RAD INFOBAR' ON TECH, RECEPTION, SCHEDULING, VIEW/EDIT, IVT, EDIT BILLING SCREENS

FEATURE #20541 - DISPLAY PATIENT ALERTS ON THE INFOBAR

Background

RIS currently has an informational title bar ("Infobar") that is currently displayed only for radiologists. It can show patient data and study data in a different font size and color. It is useful as a constant reminder of which patient the user is viewing/editing.



The existing "Infobar" for radiologists.

Feature

The current RIS informational title bar ("Infobar"), currently displayed on the radiologist's screens has been enhanced:

1. The enhanced Infobar can now display on the Scheduling, Reception, Technologist, View/Edit, IVT and Edit Billing screens.
2. The Infobar now includes an Alerts section (in addition to patient data and study data) to display active flags (alerts) for the current patient and study.
3. The Infobar now supports a "Modify Patient Alerts" action that provides the same functionality as the patient alerts button.

Display Infobar

Users with `Clinical.Infobar` permissions may display the Infobar, including patient identifiers, study identifiers, and any active alerts on any of the following screens:

- Scheduling
- Reception
- Technologist
- View/Edit
- IVT
- Edit Billing

The Scheduling screen may not display study details, as RIS's order splitting functionality permits more than one order to be open at once.

If there is more than one study in the order, only the details of the first study will be displayed on the Infobar.

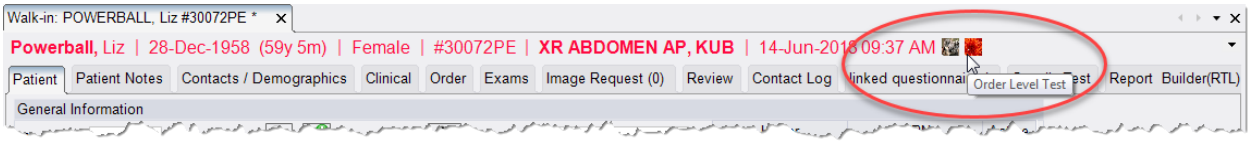
If the procedure of the primary study is updated, the Infobar will update appropriately, however if a tech (for example) includes another study (using the include checkbox), the title will not change.

The content and visual appearance of the Infobar may be customized, as described below. By default, all elements of the Infobar will be enabled. Any changes will update all instances of the Infobar.

Infobar Alert Display

The RIS Infobar now includes an Alerts section to display active flags (alerts) for the current patient and study.

Previously, these flags were not always easily visible to the average user. As alerts become more important to patient safety, it becomes more important to clearly display them.



Hover over alert icons to display the description of the alert as a tooltip.

An Alerts section can now be displayed on the right-hand side of the Infobar showing active alerts that have icons associated with them. Hovering over alert icons will display the description of the alert as a tooltip.

Infobar Modify Alerts

RIS now supports quick access to the "Modify Patient Alerts" dialog via Infobar menus, which functions the same as the current patient alerts button.

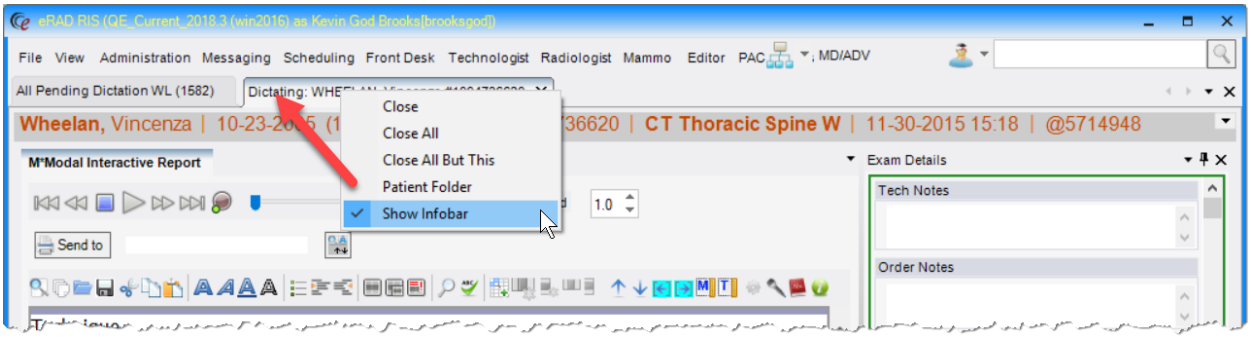
Alerts can be viewed and edited in the Patient Alerts dialog.

Configure the Infobar

The content and visual appearance of the Infobar may be customized.

To display the Infobar

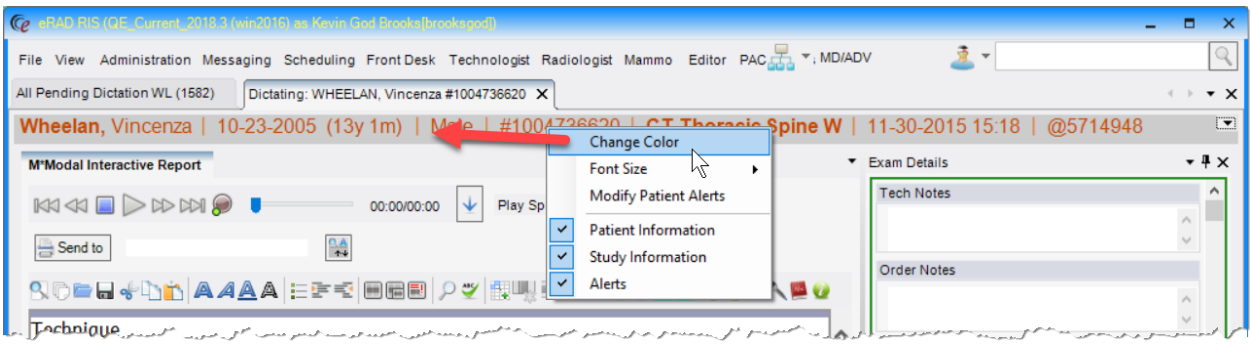
1. Navigate to the Scheduling, Reception, Technologist, View/Edit, IVT or Edit Billing screens.
2. Display the Infobar context menu via either:
    - Right-click the Infobar (below the screen tab).
    - Click the triangle glyph on the right side of the Infobar.
3. Select Show Infobar.



Right-click the screen tab to enable the Infobar.

To modify the Infobar

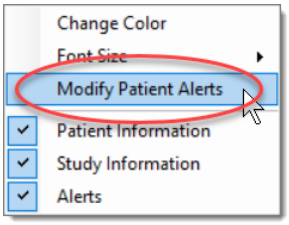
1. Display the Infobar context menu via either:
    - Right-click the Infobar (below the screen tab).
    - Click the triangle glyph on the right side of the Infobar.
2. Modify appearance
    - Text color and background color
    - Font size
3. Show or hide content
    a. Patient details on the Infobar
    b. Study details on the Infobar
    c. Alerts on the Infobar



Right-click the Infobar directly to customize it.

To display and modify alert details

1. Display the Infobar context menu via either:
    - Right-click the Infobar (below the screen tab).
    - Click the triangle glyph on the right side of the Infobar.
2. Select "Modify Patient Alerts" review the Patient Alerts dialog.



Access Strings

The following access strings manage access to the Infobar:

1. `Clinical.Infobar` (default = `None`) - Controls display of the Infobar and menus.

FEATURE #25388 - DISPLAY PATIENT ALERT NOTES TEXT AS A FLAG TOOLTIP

Background

RIS has a patient-alert (flag) feature that will, when enabled, display an alert icon on worklists. Hovering the mouse over this icon will display the description of the alert in a tooltip.

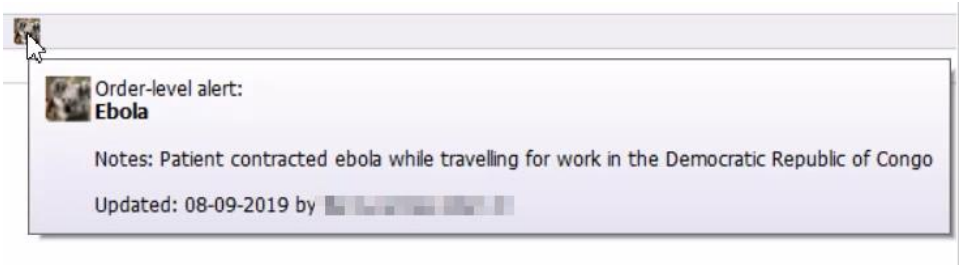
The patient-alert feature also has an implicit ability to store a note about the alert. However, there is no indication of this associated note text. Viewing this note requires navigating to the RIS window and selecting the alerts icon on the patient tab.

Feature

With this enhancement, when a worklist row displays a patient-alert flag and the mouse is hovered over the icon, an enhanced tooltip will display for users with permissions to view that flag and permissions to view the note.

The enhanced tooltip will display:

- Alert level
- Alert description
- Any saved notes
- The date and the last user to modify the alert.



Tooltip information is refreshed approximately every minute.

FEATURE #23152 - SUPPORT ACCESS STRINGS FOR EACH CUSTOM ALERT

Background

Customers have requested the ability to control access to the alerts feature. In some cases, it is desirable to have certain users see only certain alerts. Additionally, some users should only be able to edit (turn on or off) certain alerts. Finally, some users should be able to edit certain alert notes.

Feature

The Custom Access String framework has been extended to control access to these alerts. The format for these access strings is as follows:

Custom.Alert.{alert name}

- When this alert level is created and set to **NONE** for a user group, then the alert will not be visible at all to this user.
- When it is set to **READONLY/DISABLED,** then the alert will be visible, but its state (checked on or off) cannot be edited by the user. (also provided that Clinical.EditPatientFlags is set to full or read-only)
- When it is set to **FULL** then the alert will be visible and editable (check on or off)

An additional level of access string is now also supported:

Custom.Alert.{alert name}.Notes

- When set to anything other that **FULL**, then the notes that are associated with an alert will not be editable regardless of other settings.

How to enable this feature

To enable this feature, simple create an access string in the format of:

```
Custom.Alert.{alert name}.
```

Once added to the Access Strings table, grant the appropriate access string and level to the appropriate user group that you wish to control.

Similarly, to control access to the alert notes, create an access string in the format of:

```
Custom.Alert.{alert name}.Notes
```

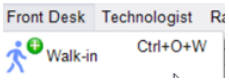
Once added to the Access Strings table, grant the appropriate access string and level to the appropriate user group that you wish to control.

FEATURE #21532 - ADD NEW ACCESS STRING FOR WALK IN FROM PATIENT FOLDER/SEARCH

Background

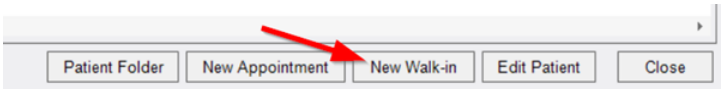
Currently, two workflows exist to register a patient walk-in:

1. From the Front Desk menu, select Walk-in and then search for the patient.

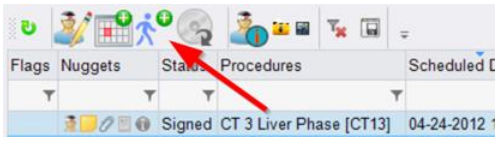


2. Perform a patient search first, then either:

   a. With the patient highlighted in the patient search results worklist, use the command button at the bottom of the screen:



   b. Open the patient folder, use the icon at the top of the screen:



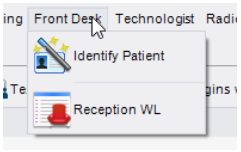
However, visibility of both options is currently managed by a single access string. Disabling the walk-in command for the front desk menu will also disable the control on the patient search results worklist.

Feature

This enhancement allows the visibility of the two walk-in functions to be independently managed via separate accesses strings.

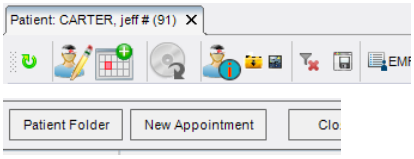
Existing:

- Clinical.Walkin - default = FALSE - Controls access to Walk-In on the Front Desk menu.



New:

- Clinical.PatientFolder.Walkin - default = FALSE - Controls access to Walk-In button on the patient search results screen and the patient folder worklist.



FEATURE #20660 - LINKED STUDIES SHOW A COMBINED EXAM DESCRIPTION AND TECHNIQUE IN THE DIAGNOSTIC REPORT

Background

Currently eRAD RIS has a feature where the exam description and the technique can be displayed in the diagnostic report using a field called Exam Description and Technique. When the linked study feature is used however, only the primary study's description and technique can be shown in the report.

Feature

eRAD RIS now supports the ability to show all the exam descriptions for each study in a linked report in the Exam Description field in the diagnostic report. This also applies to the Technique field.

To enable the feature, simply set the following System Configuration values as appropriate:

SysConfig Settings

CombineExamTitle - (value = True/False) Determines if the exam titles of linked exams are combined. The default is False.

CombineExamTitleSeparator - (value = string) Defines the separator used between each exam description when combining the titles of linked studies. The default is an empty string. *Note - if a carriage return is desired between each description, the value "%newline%" should be used.

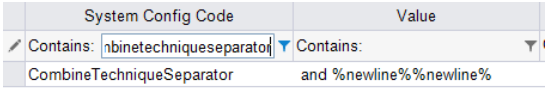
CombineTechnique - (value = True/False) Determines if the exam technique of linked exams are combined.

The default is False.

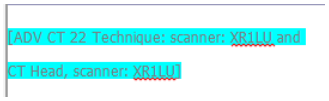
CombineTechniqueSeparator - (value = string) Defines the separator used between each technique when combining the titles of linked studies. The default is an empty string. *Note - if a carriage return is desired between each description, the value "%newline%" should be used.

Examples:

Configuration value:

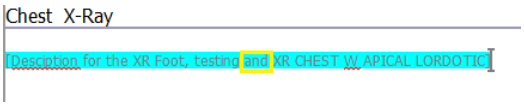


Appearance in diagnostic report:



Example (without newline):

Appearance in diagnostic report:

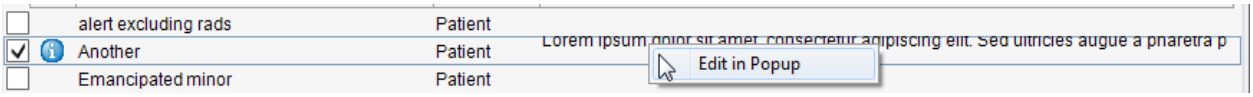


FEATURE #26153 - SUPPORT INCREASED FIELD SIZE FOR PATIENT ALERT NOTES

This enhancement increases the maximum field size for the order-level patient alert notes field from 250 to 4000 to be consistent with patient-level alert notes which are already have a 4000-character maximum.

To better support editing of longer notes, the ability to edit the note in a pop-up window has also been added.

Notes longer than 1000 characters will display as truncated in worklist tooltips, but the full note can be viewed via a context menu within the Patient Alerts window.



ELIGIBILITY

FEATURE #22401 - "MEDICAL GROUP" CAN NOW BE ADDED TO THE BILLING FILE

Background

The current billing file does not include the "medical_group_string" because it is not stored in the c_eligbility_response table. It is now necessary to include this string in the billing file.

Feature

RIS now includes the column medical_group_string to the table c_eligibility_response to store the data from the z_get_medical_group function. With it now stored in the database, the information can now be sent in outgoing message.

Example of data store in c_eligibility_response table:

Results | Messages

	medical_group_string	eligibility_request_key	raw_result	exception_message	completed_date	eligible_api_id	coverage_status
58	ST. MARY's MEDICAL GROUP	21014	{"created_at":"2014-10-20T14:15:53-04:00","eligible_id":"eRAD_...	NULL	2018-09-25 15:25:34.1908892 -03:00	eRAD_DEMO	Active Coverage

Example of XML in outgoing message:

```
    <medical_group_string>ST Mary's MEDICAL GROUP</medical_group_string>
</c_eligibility_response>
```

RADAR

FEATURE #20840 - SUPPORT FOR NUDGE CONVERSATIONS TO BE OPENED IN A SINGLE WINDOW

Background

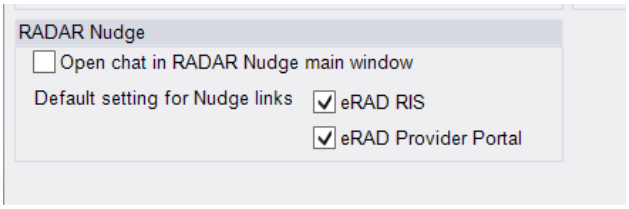
Previously, creating a nudge message from RIS opened two Nudge windows. This occurs both in the View/edit window and in the Dictation window, exam details tool window referring, tech, etc.

Feature

This feature introduces a new user configuration option:

User Preferences » Integration » RADAR Nudge group » Open chat in RADAR Nudge main window

When checked, Nudge Chat is opened in main Nudge window. When unchecked, each Nudge chat will open in their own separate window.



PROTOCOL WORKFLOW

FEATURE #20081, 21973, 22109, 23956 - SUPPORT A PROTOCOL WORKFLOW

Background

A Protocol Workflow (PW) refers to the concept of reviewing an order (or an already scheduled appointment) for medical appropriateness and/or for providing feedback to the scheduler and/or the technologist about performing the procedure.

The intent is for the radiologist to review the protocol instructions that direct the performance of the exam with the objective of decreasing the risk of patient injury and increase the consistency image quality. It is common to manage a large number of scanning protocols (hundreds), and each of these protocols contains dozens of technical parameters that can be adjusted for specific diagnostic tasks and specific scanner models.

When procedures are added to an order, they are evaluated to determine if they require Protocol Review and flagged as appropriate. Protocolling will occur at the order level, but the trigger of whether or not to protocol occurs at the billing code level. Therefore, if more than one study associated with an order requires protocoling, it is only protocolled once, and the same protocolling information is visible no matter which study is opened.

The review is typically performed by a radiologist (but not limited to a role) who will examine clinical history of the patient and will make a decision on if and how to proceed. The order may be passed back and forth between different users in the RIS as the protocoling is completed.

Feature

RIS has added support for a protocol workflow by introducing the following elements:

1. UI Changes
    - New: Protocol Worklist
    - Updated: Orders To Schedule Worklist
    - New: Protocol Screen
2. Workflows
    - A configurable Protocol Status Code tracks initial, intermediate, and final states in the Protocol Workflow.
    - While in progress, status can be changed between site-defined states, e.g.
        - Awaiting protocol data completion (Secretary)
        - Awaiting protocoling (Radiologist)
    - When complete, status is set to a configured final state, e.g. Approved
3. Related Lookup Tables, System Configuration Settings, and Access Strings

Protocol Worklist

A new order-level worklist displays orders requiring protocoling (usually by a Radiologist), as well as orders requiring follow-up (e.g. awaiting protocol data completion by a Secretary).

 Open the Protocol Worklist

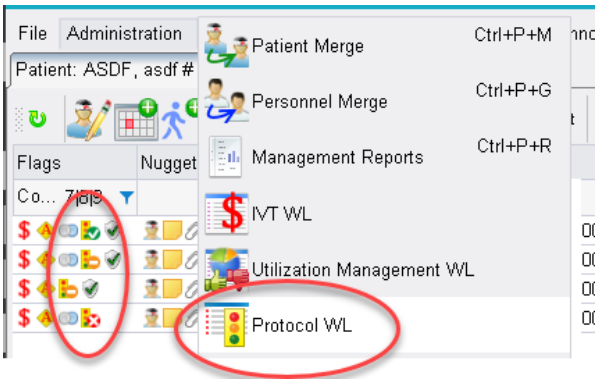
Protocol flags have been created to identify the protocol status of each item:

 Protocol pending (required but not complete).

 Protocol completed and rejected.

Protocol completed and approved to proceed.

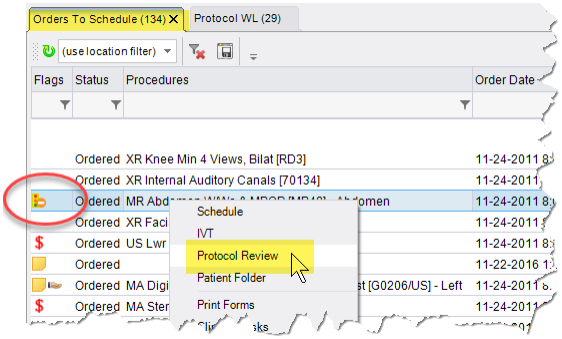
Radiologists can sort and filter the Protocol worklist based on procedures or on any column in the worklist as appropriate for their workflow, then open any case to access the Protocol screen. For example, where Radiologists and Secretaries share the same protocol worklist, Radiologist may hide items awaiting protocol data completion by the Secretary.



Protocol worklist menu option and flags.

Updated: Orders to Schedule Worklist (OTSW)

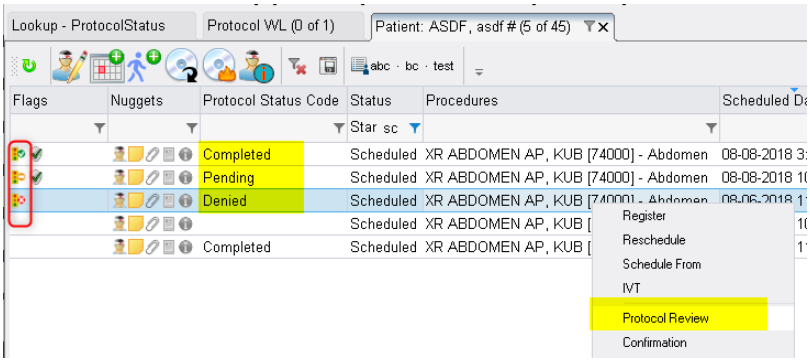
The existing OTSW will be updated with the new Protocol flags to clearly display the protocol state for all items pending scheduling.



OTSW worklist with context menu.

Updated: Patient Folder

The Patient Folder will be updated with the new Protocol flags to clearly display the protocol state for all items pending scheduling.

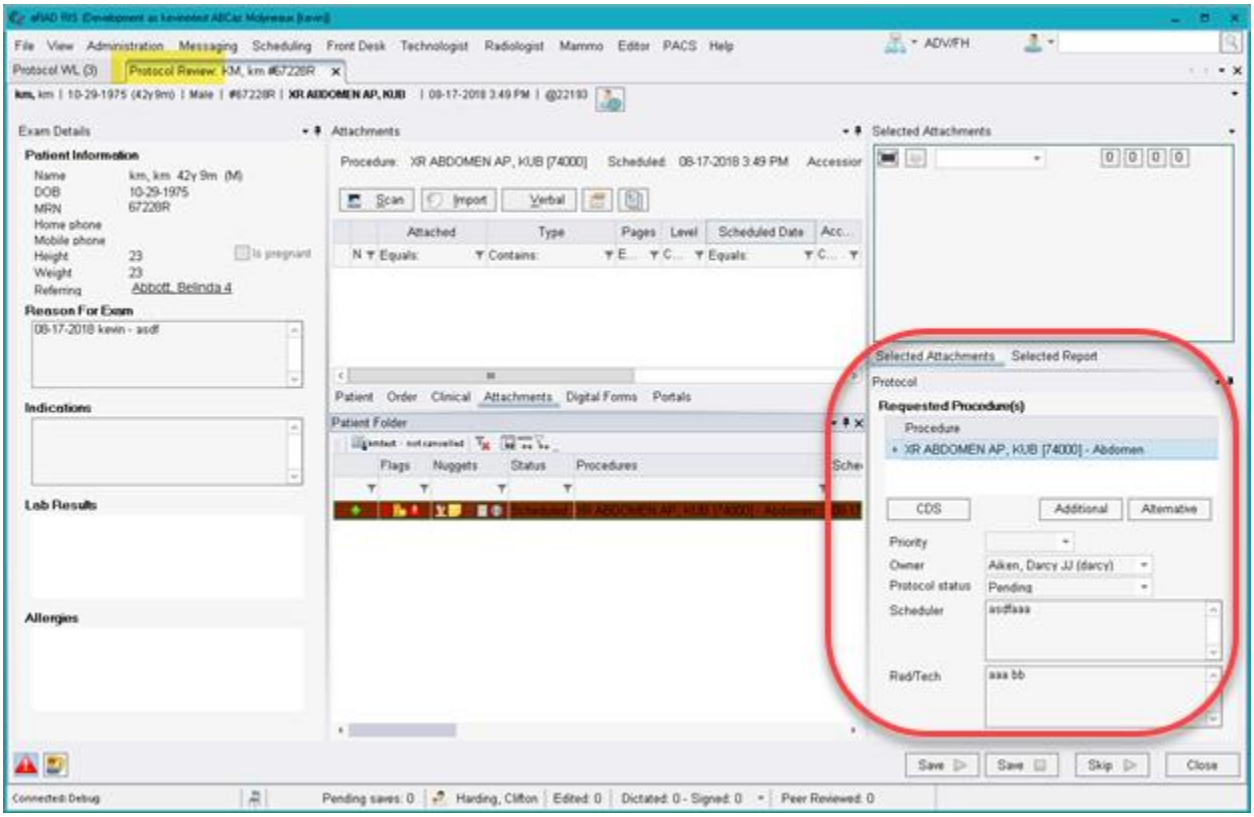


Patient Folder with Protocol Status Code column.

Protocol Review Screen

A new Protocol Review screen, similar to the existing “View Study” screen, is used to review relevant details and complete the workflow.

The layout of the Protocol Review screen can be customized, including displaying scanned documents, prior reports and adding a custom digital form to document the protocol.



Protocol Review screen, featuring the Protocol pane and Protocol Status field.

Custom Protocol Digital Form

eRAD RIS supports custom digital forms that allow sites to create forms tailored to their protocol processes.

For example, a digital form utilizing the concept of cascading lookup tables could be created that would allow a radiologist to protocol via a series of fields. The form can incorporate logic so selections from one field control the options for the subsequent level. This could support CT protocol which often has 2 levels of protocolling, while MR's might have 4. Given that these screens are configurable outside of RIS source code, these decisions can be made and customized at a later time.

Optional CDS (ACR Select) Integration

eRAD RIS supports an optional integration with the National Decision Support Company`s ACR Select. ACR Select utilizes ACR Appropriateness Criteria to determine the most appropriate procedure.

When enabled, the ACR Select button is displayed at the bottom of the Protocol screen, allowing the reviewer to launch ACR Select. This passes both the age and gender of the patient. The reviewer then selects one or more clinical indications and clinical scenarios. ACR Select will return a list of procedures ranked by appropriateness. The appropriateness criteria are available to the reviewer by clicking on the Display Evidence link.

Once as exam is selected, a Decision Support Number (DSN) is generated and stored with the order in eRAD RIS. The DSN proves that a Clinical Support System was consulted for the order.

Optional OFEK/EITAN Integration

These are considered 'portals' and can be accessed with the portals tab.

Optional AZMA HIS Integration

The optional `AZMA Patient Folder` button appearing at the bottom of the screen launches AZMA with this patient in context.

Optional PACS Image Viewing Integration

The optional PACS button appearing at the bottom of the screen allows PACS images to be launched.

Protocol Review Action Buttons

Available actions for Protocol Review:

1. Save and Continue
2. Save and Next
3. Skip and Continue
4. Close

Configure Protocol Review

The protocol workflow moves items from an "Initial" status, through any number of intermediate user-defined statuses, with all cases considered complete when they reach a "final" status.

The ProtocolStatus table is used to define these statuses and related behaviors, specifically:

- Customizing the available Protocol Status Codes
- Which statuses permit protocolling
- Which statuses permit scheduling
- Business Rules for auto-advancing protocol status when an attachment is received

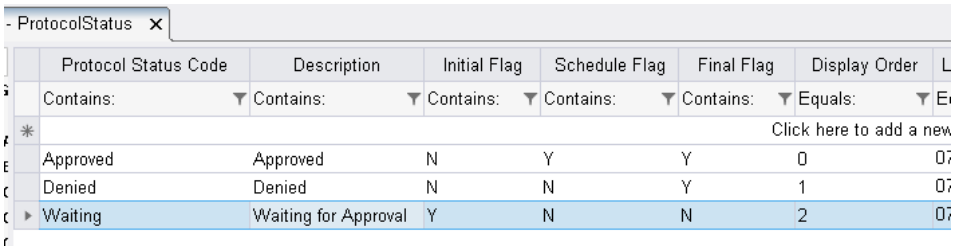
Custom Protocol Status Codes

A pre-requisite to using Protocol Review is defining `Protocol Status Code` values for the site.

The `Protocol Status Code` reflects the workflow status of items, from initial to final, as well as controlling when the study is eligible to be scheduled (see below).

Statuses can be added and configured as needed for dynamic workflow - i.e., a new status can be added to represent a new workflow step. Configure as appropriate, e.g.:

- Studies requiring protocol begin in an initial state, `Initial Flag` = `Y`.
- While in progress, status can be changed between site-defined states, e.g.
  - Awaiting protocol data completion (Secretary)
  - Awaiting protocoling (Radiologist)
- Once complete, status is set to a configured final state, `Final Flag` = `Y`.

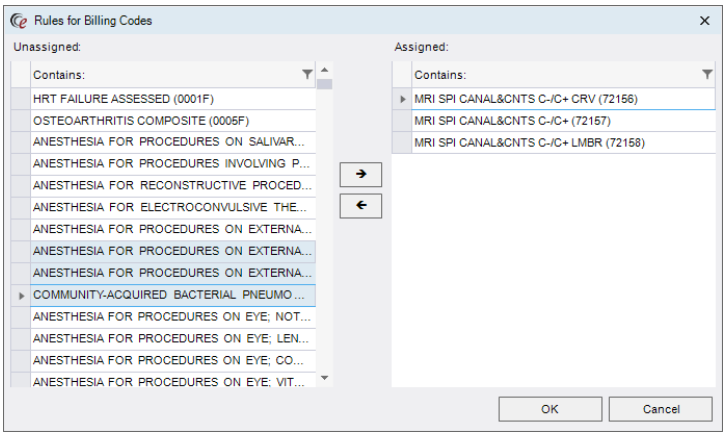


The ProtocolStatus lookup table.

Enable Protocol Workflow

By default, Protocol Review is disabled, and no protocol action is required for any exam type. To enable the protocol workflow:

1. Update the system configuration values for `ProtocolEnabled` (default = `FALSE`).
   - This determines if the Protocol workflow is enabled for the RIS instance (True/False)
2. Configure the `ProtocolRules` lookup table to identify which procedures require protocol review.
   - Orders require protocoling when they include Billing Codes (which are linked to the study) matching a rule in the `ProtocolRules` lookup table.
   - Each rule whitelists one or more Billing Code.
     Note: Use `Ctrl+Click` and/or `Shift+Click` to select multiple codes from the list.

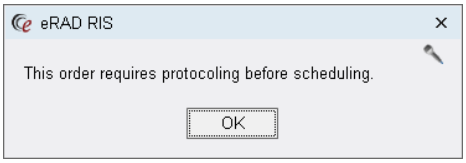


Selecting Billing Codes to apply to a Protocol Rule.

Business Rules - Scheduling Permitted

By default, when Protocol Review is required for an order, it may not be scheduled until Protocol is complete.

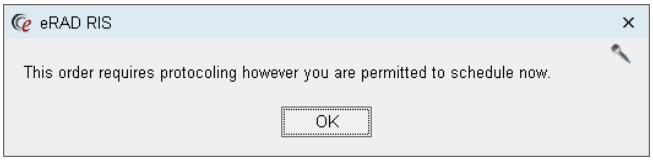
When this occurs, users will be advised via a message dialog, and may only save the order (any timeslot detail is discarded):



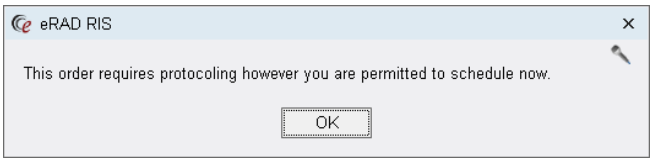
When scheduling is prevented, the order may only be saved or cancelled.

To enable scheduling of items still pending protocol review:

1. Optionally update the system configuration values for `ProtocolBypassSTAT` (default = `FALSE`).
    - This determines if scheduling is permitted (by any user) for STAT orders when protocolling is required but incomplete.
2. Optionally configure the `ProtocolStatus` lookup table (described above).
    - The `Schedule Flag` determines if the study can be scheduled even though its current Status has `Final Flag` = `N`.
    - When this occurs, users will be advised via a message dialog:



3. Optionally apply the `Clinical.ProtocolReview.ScheduleOverride` access string to selected users.
    - Users with this permission may schedule even though its current Status has `Final Flag` = `N`.
    - When this occurs, users will be advised via a message dialog:



Business Rules - Advance Status When Attachment Received

Radiologist may require that one or more document types to be attached to the order before they begin Protocol Review.

There are a several scenarios:

- One specific document type must be attached to the order.
- One of several different document types must be attached to the order.
- Two specific document types must be attached to the order.

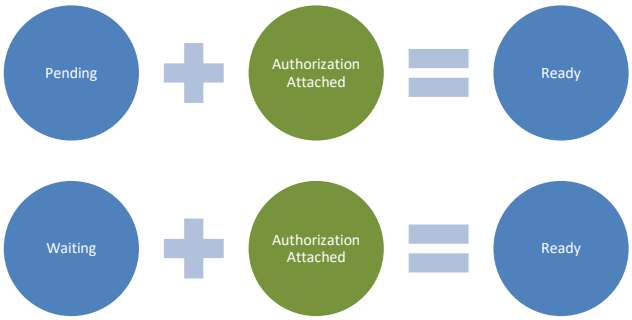
To accomplish this, the Protocol Status field will be used. Attaching the specified Document Type will advance the

The Protocol auto-advance workflow.

Items in a final protocol status ("Final Flag" = Y) should not be configured to advance to a non-final status ("Final Flag" = N).

Scenario 1 - One Document Type Required

e.g. Configure the protocol workflow to advance an item from a protocol status of "Pending" or a protocol status of "Waiting" to a protocol status of "Ready" once a scan of type "Authorization" is attached.



1. Configure a ProtocolStatus rule that includes the following values:
   - Protocol Status Code = "Pending"
   - Auto Advance Scan Type Code = "Authorization"
   - Auto Advance Protocol Status = "Ready"
2. Configure an additional ProtocolStatus rule for any other initial status, e.g. "Waiting":
   - Protocol Status Code = "Waiting"
   - Auto Advance Scan Type Code = "Authorization"
   - Auto Advance Protocol Status = "Ready"

Scenario 2 - Two Document Types Required

e.g. Configure the protocol workflow to advance an item from a protocol status of "Pending" to a protocol status of "Ready" once a scan of type "Authorization" and a scan of type "Exception" is attached.

Without additional configuration, this scenario would only work when scans are attached in a specific order. To work regardless of the order in which the scans are attached, an intermediate Protocol Status will be used.

1. Configure a ProtocolStatus rule that includes the following values:

- Protocol Status Code = "Pending"
- Auto Advance Scan Type Code = "Authorization"
- Auto Advance Protocol Status = "Pending Insurer"

2. Configure a ProtocolStatus rule that includes the following values:
   - Protocol Status Code = " Pending Insurer"
   - Auto Advance Scan Type Code = "Insurance"
   - Auto Advance Protocol Status = "Ready"

Explanation

When a scan type of "Authorization" is attached, the Protocol Status advances to "Pending Insurer" per the first rule. When a scan type of "Insurance" is then attached, the Protocol Status will advance to "Ready per the second rule.

However, when a scan type of "Insurance" is attached first, the Protocol Status does not change as there is no relevant rule. When a scan type of "Authorization" is attached, the Protocol Status first advances to "Pending Insurer" as expected, but immediately and automatically advance to "Ready" per the second rule.

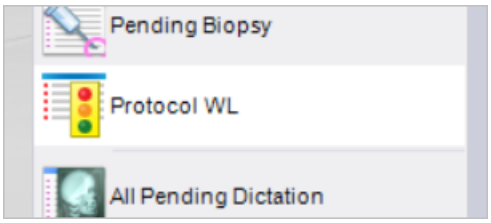
Requiring more than two document types is possible but complex.

Radiologist Protocol Workflow

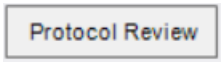
This section describes a typical Radiologist workflow when a Protocol Workflow is in effect.

To perform a series of Protocol Reviews:

1. From the `Radiologist` menu, select `Protocol WL`.



2. Apply filters and sorting as desired. In particular, sites that have configured multiple custom Protocol Status Codes may wish to filter based on status, for example hiding items with Protocol Status = "Awaiting Documentation" (see **Configuration** section, **Business Rules - Advance Status When Attachment Received**).
3. Open any order bearing the Protocol Required icon:
   a. Select a row and click the Protocol Review button.

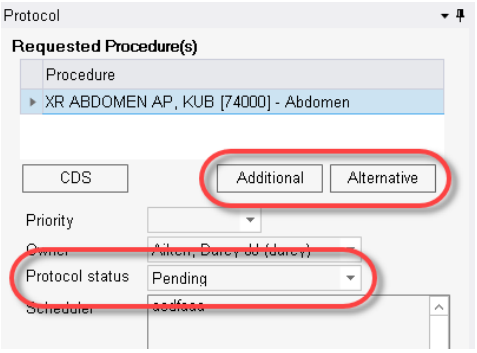
   

   b. Right-click and select `Protocol Review` from the context menu.
   c. Double-click the row.

a) Perform the review (see Protocol Screen above):
   a. The radiologist views the patient demographics, the referring, the reason for the order, the lab results, the allergies, the requested procedures, the faxed documents and all prior reports, scanned documents, questionnaires and protocols.
   b. The radiologist can modify the procedure and/or type instructions to the scheduler or technologist.

b) If there are pending questions, the radiologist can set an appropriate status and can make someone else, such as a secretary, the "assignee" and enter their request in the corresponding textbox. The secretary can complete the follow-up at a later time, update the status, and assign back to the radiologist.

c) When necessary, Additional or Alternative procedures may be selected.



d) Select an appropriate Protocol Status, for example (your site may differ):

- Skipped (leaving status unchanged)
- Denied (setting to deny status)
- Incomplete (leaving in waiting for approval status)
- Complete (setting to approve status) - item is removed from the protocol worklist and may be scheduled via the orders to schedule worklist.

e) Close and save the window. If selected, worklist “next” functionality automatically loads the next case in the worklist.

Scheduler Protocol Workflow

When a site has enabled the protocol workflow, a typical scheduler will monitor both the Protocol Worklist (PW), filtered to their own name, for items requiring follow-up, and the Orders to Schedule Worklist (OTSW) for items completed protocol review.

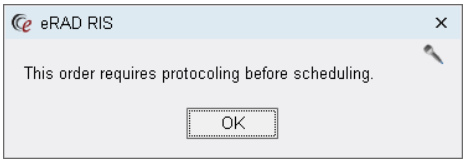
They should be aware that they will encounter warnings when attempting to schedule orders that were automatically flagged as requiring protocolling.

Typical workflow for the Scheduler:

Scenario 1: Patient Calls In

Upon being entered into RIS, the protocol rules will trigger a check to see if protocolling is required.

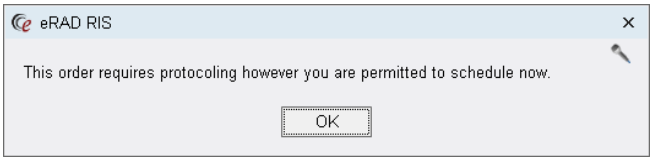
1. If protocoling is not required, then scheduling may proceed.
2. If protocoling is required, then by default:
    a. The status will be updated to the Initial Protocol state.
    b. The scheduler will be alerted by the appearance of the following window the warning will block scheduling:



    c. Given this message, the scheduler will direct the patient to fax in the appropriate paperwork to the inbound FAX feature (See below for Inbound Document Workflow).
    d. Scheduling is blocked, and the scheduler can opt to:

i. Simply cancel the process.
ii. Save the order into RIS at that time

3. However, if protocoling is required but that certain procedure is configured to allowed to be scheduled even when protocoling is required, the messagebox is different and the study can be immediately scheduled by the scheduler:



Scenario 2: Patient faxes the paperwork:

In this case the workflow begins at the Inbound Document Worklist. Upon receipt of a fax representing protocol related documentation, the secretary will:

1. search for the correct patient,
2. link the fax to the correct order (or create it if it does not exist)
3. set the procedure and
4. save the order.

The protocol rules will then trigger a check to see if protocolling is required and if so:

5. the status will be updated to the Initial Protocol state.
6. They may opt to initiate scheduling directly from the IDW, proceeding as described in Scenario 1 above.

Scenario 3: Worklist Monitoring:

A typical scheduler will monitor both the Protocol Worklist (PW) and the Orders to Schedule Worklist (OTSW). If desired, the worklists can be filtered, e.g. filtered to their own name to display only items awaiting protocol data completion by the Secretary.

To action an order bearing the Awaiting protocol data completion icon:

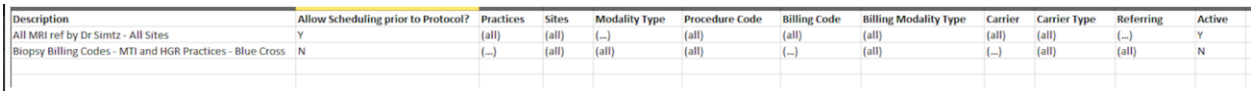
1. Double-click to open the first case which will launch the Protocol screen.
2. Complete their activity (see Protocol Screens above).
   Both Radiologists and Secretaries share the same protocol window. If desired Secretaries can hide portions of the protocol window such as the prior report.
3. Update details, including:
   a. Status
   b. Assignee
4. Close and save the window. If selected, worklist “next” functionality automatically loads the next case in the worklist.

System Configuration

1. **ProtocolEnabled (default = TRUE)** - Determines if the Protocol workflow is enabled for the RIS instance (True/False)
2. **ProtocolBypassSTAT (default = FALSE)** - Determines if scheduling is permitted for STAT orders when protocolling is required but incomplete (True/False)

Lookup Tables

Protocol Rules - The rules configured here are used to determine if a study requires protocolling. Currently this determination is based on examination of billing codes (which are linked to the study).



Description	Allow Scheduling prior to Protocol?	Practices	Sites	Modality Type	Procedure Code	Billing Code	Billing Modality Type	Carrier	Carrier Type	Referring	Active
All MRI ref by Dr Simtz - All Sites	Y	(all)	(all)	(...)	(all)	(all)	(all)	(all)	(all)	(...)	Y
Biopsy Billing Codes - MTI and HGR Practices - Blue Cross	N	(...)	(all)	(all)	(all)	(...)	(all)	(...)	(all)	(all)	N

Protocol Status - The protocol status determines if the protocoling stage is complete and if scheduling can proceed. Additional user-definable statuses may be added and configured as needed for dynamic workflow - i.e., a new status can be added to represent a new workflow step, e.g. Denied

Protocol Status Code	Description	Schedule Flag	Initial Flag	Final Flag
AppointmentUPD	Appointment Update (sec)	N	N	N
DataCompletion	Data Completion (sec)	N	N	N
RepatingApp	Repeating Approval (rad)	N	N	N
Waiting	Waiting for Approval (rad)	N	Y	N
Approved	Approved	Y	N	Y

Access Strings

The following access strings control the Protocol workflow:

2. WL.Protocol - Controls access to the Protocol Worklist on the Administration menu
3. Clinical.ProtocolManagement - Controls access to the Protocol Review context menu item on a worklist.
4. Clinical.ACRSelect - This will allow access to use the ACR Select functionality from the Protocol Review screen.

FEATURE #23041, 23956, 23961, 23962, 23963, 25675, 25586 - ENHANCEMENTS TO PROTOCOL WORKFLOW

This enhancement Includes the following new features:

- Feature # 23041 - Protocol screen should support existing re-use and next workflow patterns
- Feature # 23956 - Protocol Workflow - Advance protocol status when attachment received
- Feature # 23961 - Protocol Workflow - Support additional/alternate study when scheduled
- Feature # 23962 - Protocol Workflow - add Performed Protocol column to radiologist worklists
- Feature # 23963 - Protocol Workflow - Bypass protocol based on departments
- Feature # 25675 - Protocol Workflow - Add "Procedure Modifier Description" to the My and All Pending Signature worklists
- Feature #25586 - Protocol Workflow - Show procedure modifiers in the radiologist mini-patient folder

Background

These are enhancements to the previously delivered ***Feature #20081 - Support for Protocol Workflow***.

Protocol Screen Support for Next Workflow Pattern

The protocol screen now implements the complete and move to next item workflow that is common to other RIS worklists, rather than requiring each review be closed before opening the next case.

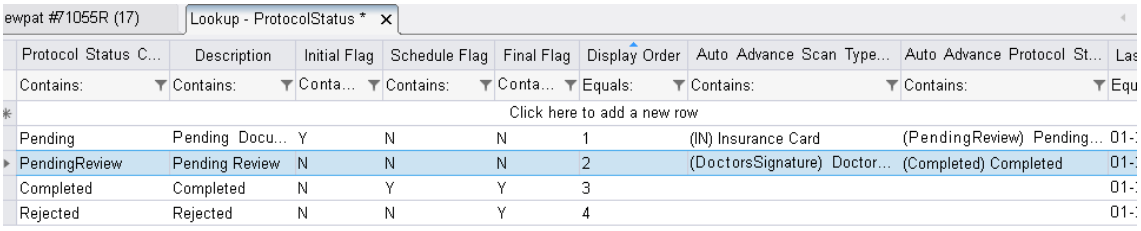
Protocol Workflow - Advance Protocol Status When Attachment Received

Radiologists performing a protocol review may require a specific document type (typically an order) as a prerequisite to begin the protocol review for a scheduled exam. These documents will arrive as an attachment to the order.

This enhancement will automatically update the protocol status of exams in the protocol workflow to the next specified status either:

- when a document of the configured type is attached to the order, or
- when the status of the order is updated and a document of the configured type is already attached to the order.

In the following example, the first auto advance rule (on the first row) will automatically advance the protocol status from `Pending` to `Pending Review` when a scan type of `Insurance Card` is attached to the order. The exam would then appear on the radiologist's worklist, allowing them to open the Protocol Review screen and move the exam directly to `Completed` or `Rejected`.



ewpat #71055R (17) | Lookup - ProtocolStatus *

Protocol Status C...	Description	Initial Flag	Schedule Flag	Final Flag	Display Order	Auto Advance Scan Type...	Auto Advance Protocol St...	Las
Contains:	Contains:	Conta...	Contains:	Conta...	Equals:	Contains:	Contains:	Equ
Click here to add a new row								
Pending	Pending Docu...	Y	N	N	1	(IN) Insurance Card	(PendingReview) Pending...	01-:
PendingReview	Pending Review	N	N	N	2	(DoctorsSignature) Doctor...	(Completed) Completed	01-:
Completed	Completed	N	Y	Y	3			01-:
Rejected	Rejected	N	N	Y	4			01-:

Sample auto-advance rules.

Multiple auto-advance sequences are also supported. If in the above example, if a doctor's signature was already present when the insurance card caused the protocol status to advance to `Pending Review`, then the second rule

would further advance the status from `Pending Review` to `Completed`, and the item would be removed from their worklist.

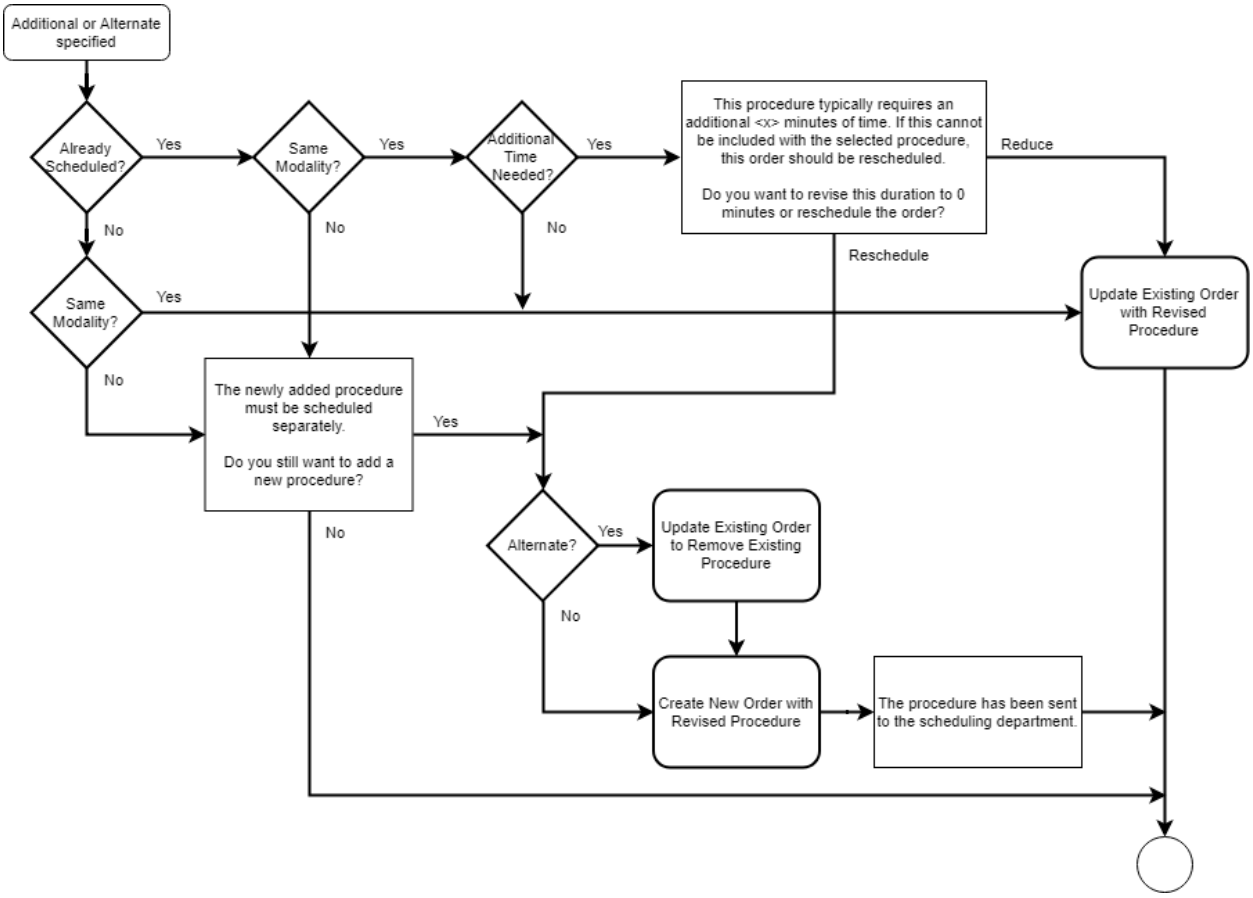
Support Additional/Alternate Study When Scheduled

Radiologists performing a protocol review may update the order by selecting additional procedures or specifying alternate procedures. When the existing procedures are not scheduled, these changes have minimal impact. However, when a procedure has already been scheduled, or the procedure is for a different modality, the workflow can vary depending on the change.

Notes:

- When possible, existing scheduled timeslots will be re-used. If an alternate procedure of the same modality is replacing a scheduled procedure, the existing timeslot will be reused if the procedure does not require additional time, as specified by the new procedure's `Alternate Duration` value.
- Unscheduled procedures will appear on the `Orders To Schedule` worklist.

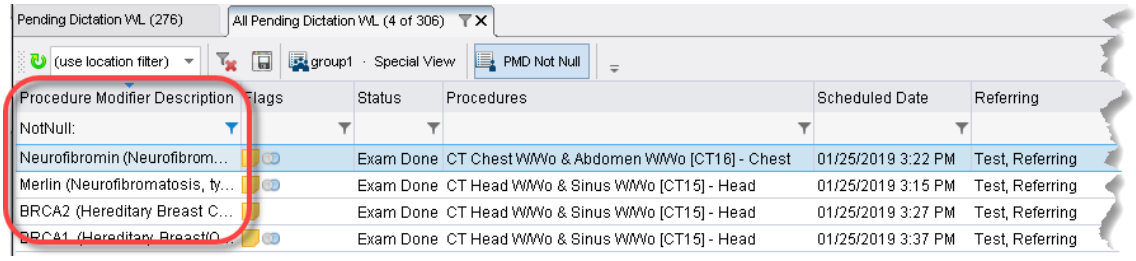
This enhancement will follow the workflow rules illustrated in the following diagram:



Workflow for additional/alternate during protocol review.

Add Performed Protocol Column to Radiologist Worklists

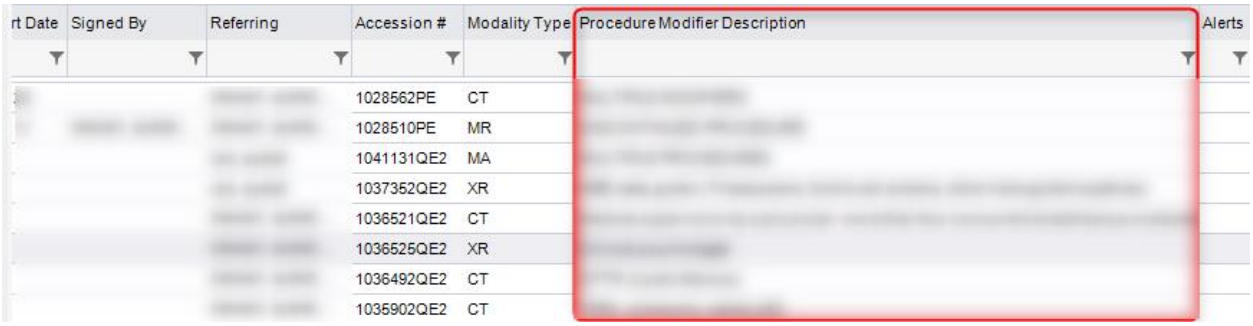
The `Pending Dictation` and `All Pending Dictation` worklists have been enhanced to include a `Procedure Modifier Description` column indicating the exact protocol that was performed on the modality. This value originates from the modality exam description (not to be confused with study description).



A new a Procedure Modifier Description column has been added to the Pending Dictation worklists.

As per feature 25675, this new column was also added to the My and All Pending Signature worklist.

As per feature 25586, this new column was also added to the mini-patient folder in the radiologist reading window.

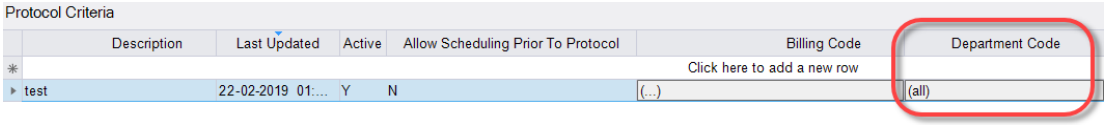


This allows, for example, using the Exam Description column to group studies by radiologist specialty, such as MSK, BODY, or NEURO.

FEATURE #23963 - BYPASS PROTOCOL BASED ON DEPARTMENTS

Feature

The protocol workflow has been enhanced to support bypassing protocoling for configured departments. For these departments, the protocol status is immediately set to a "Final" state.



A new Department Code column has been added to the Protocol Criteria rules.

This allows specific departments, for example ER, to bypass protocol.

FEATURE #25357 - SUPPORT OPENING IMAGES ON PRIOR STUDIES FROM THE PROTOCOL WINDOW

Feature

Double clicking on a row in the PatientHistoryWorklist control in the Protocol Review screen will now open the corresponding images in the configured PACS viewer. The first row selected will open as the primary study, all additional rows double-clicked will be added as priors in the PACS.

FEATURE #25437 - ADDED RIGHT CLICK MENU ON RECEPTIONIST WORKLIST TO OPEN PROTOCOL WINDOW

Feature

The reception worklist now has an additional right-click menu item to launch the Protocol workflow.

PACS INTEGRATION

FEATURE # 22621, 20545 - SUPPORT SYNGO PLAZA PACS INTEGRATION

Feature

eRAD RIS now supports a PACS integration with Siemens Syngo Plaza. This integration follows the standard PACS integration methodology of using a plug-in.

Configuration

Configure the PACS lookup with the type of SYNGOPLAZA:

Description	Protocol	Url	Port	Display Order	Pacs Ae Title	Pacs Server Type Code
Contains: syngo	Contains:	Contains:	Equals:	Equals:	Contains:	Contains:
Click here to add a new row						
SyngoPlaza PACS	http	pacs	80	1		SYNGOPLAZA

In the “Config” column of PACS lookup, configure the integration as appropriate. An example and description of each field is shown below:

```
<SyngoPlazaConfig>
 <UseRISCredentials>false</UseRISCredentials>
 <SingleSignOn>false</SingleSignOn>
 <OpenStudyUsing>ACCN</OpenStudyUsing><!-- PSUID, SSUID, PATID_ACCN, ACCN -->
 <PACSDomain>PACS</PACSDomain>
 <CloseAction>ApplicationDefault</CloseAction> <!--  ApplicationDefault, SaveImagesWithoutPrompting, DiscardChanges, SaveImagesWithPrompt-->
 <LoadFlaggedImages>All</LoadFlaggedImages> <!-- All, Flag1, Flag2, Both -->
 <LoadPriorType></LoadPriorType> <!-- Related, Exact, All -->
 <LoadOnlyTopJ>false</LoadOnlyTopJ>
</SyngoPlazaConfig>
<!--
```

Configuration options:

Single Sign On - optional setting - If enabled the current windows credentials are passed to the integration. The user must have the Syngo Plaza role “syngo.plaza_single_signon”.

OpenStudyUsing - Determines what parameter is used to launch the study. Options are: PSUID, SSUID, PATID_ACCN, ACCN

PACSDomain - If there are multiple domains in Syngo Plaza, the domain needs to be configured here so that it is passed to the integration.

CloseAction - Determines what action is taken when the study is closed in RIS.

LoadFlaggedImages - A Syngo Plaza set of options:

- All - (default) Load all images, independent of flagging.
- Flag1 - load images that are flagged with "Flag1"
- Flag2 - load images that are flagged with "Flag2"
- Both - load images that are flagged with "Flag1" or "Flag2"

LoadPriorType - Determines the mechanism for loading priors. Options are:

- Unknown - Syngo Plaza will not automatically load priors. This value should be used if RIS is supplying the list of priors.
- Related - When this option is set, Syngo drives prior loading. Studies that are older than the current study will be loaded.
- Exact - When this option is set, Syngo drives prior loading. If both modality and organ match the current study and the date is prior to the current study, they are considered priors and will be loaded.
- All - When this option is set, Syngo drives prior loading. All studies that are available and have a study date-time older than the current study are loaded.

Note that the Syngo Plaza viewer itself provides additional settings for configuring related priors.

LoadOnlyTop

- False - (default) Images are loaded into the viewer
- True - Patient will be open in the Patient Jacket feature of Syngo Plaza. Images will not be loaded into the Viewer

FEATURE #3446 - PACS (ERAD) INTEGRATION: STORE INCOMING MEASUREMENTS FROM THE DICOM SR OBJECT

Background

The DICOM SR (structured report) object can contain measurement data from the modality. This object can be sent from the modality to the RIS via Mirth.

Feature

As part of an ongoing effort to enhance RIS integration with external systems, eRAD has **begun** developing support for displaying measurement data from the DICOM SR object.

This initial enhancement adds interface and database functionality to accept and store DICOM SR messages from modalities. **As this is the preliminary stage of this feature, there is no native mapping for any of the data within the RIS client.**

To display these measurements in a diagnostic report, the structured data must be parsed and formatted. Future efforts may support this via the digital forms 'report builder' with its associated JScript capability to extract the data and format it for the report.

FEATURE #18881 - UPDATED PACS (NON - ERAD) INTEGRATION WITH GE ZFP TO USE ENCRYPTED URL

Background

Currently, Portal URLs are opened in RIS's internal browser window with parameters displayed as clear text.

Feature

GE has updated their interface to improve security by opening Portals windows using an encrypted URL rather than displaying the user's credentials in plain text.

URL Encryption

The format of the URL for the new interface is:

```
https://zfptest.asuta.co.il/zfp?mode=inbound#pl=patid=123456789&un={BrowserConfig.UserName}&pw={BrowserConfig.Password}
```

The new format allows DLL input to be separated into a constant part and variable part, e.g.:

Constant part

```
https://zfptest.asuta.co.il/zfp?mode=inbound#pl=
```

Encrypted part

```
patid=123456789&un=testUser&pw=TestZFP@123!
```

Once configured, opening the Portals window URL will now be encrypted:

```
?PC=MSSH&ocid=1PRCMSE&ResetID=131354358398710192&GUID=ED211631-1338-423C-8734-67D7C9103936
```

User credentials are no longer visible as plain text

FEATURE #20544 - INTEGRATION SUPPORT FOR EITAN PORTAL

Background

RIS currently integrates with the OFEK patient information portal which is used by customers in Israel.

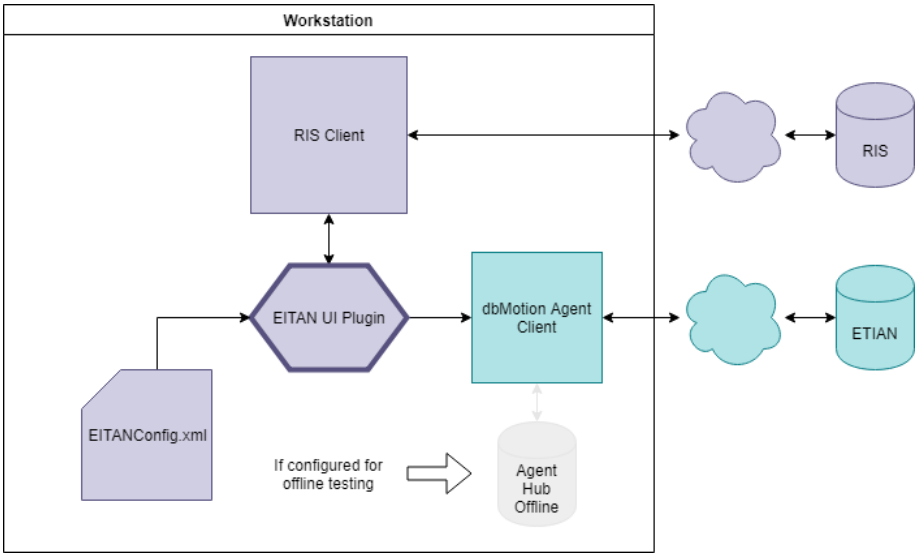
The supplier of the OFEK system has created a new application called EITAN which will eventually replace OFEK.

The new EITAN system is not actually a web-based application, but instead is a small companion application that provides the user full access to all clinical information relating to the Patient.

Feature

A new RIS Plugin has been created that will pass patient and user context from RIS to the dbMotion Agent Client.

When a screen which has patient context on it is opened, RIS will attempt to launch the EITAN service so it can display the appropriate information. Note that the integration is one-way, so RIS has no way of determining whether the call was successful.



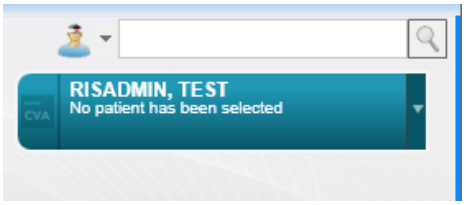
Overview of the EITAN UI Plugin.

Integration Support for EITAN portal

A new plugin has been developed which will pass patient and user context from RIS to the dbMotion Agent Client.

Workflow

- When the RIS logs in or switches credentials, the user is synced with EITAN.



When login is successful, users will see the EITAN overlay in the corner of the RIS window.

- Two authentication methods are supported:
    - Plain text username.
    - SAML payload, via a new generic web method to the RIS service.
- When RIS navigates to a screen which has patient context, RIS will attempt to launch the EITAN service so it can display the appropriate information.

The EITAN overlay will display the basic patient profile.

- When RIS navigates away from a screen, patient context is cleared to ensure patient security.
- When RIS is logged out, the dbMotion agent will logout as well.

Note that the integration is one-way, so RIS cannot ensure or confirm if calls are successful.

FEATURE #25638 - RE-LAUNCH PACS UV SESSION EVEN IF ALREADY OPEN

Background

Previously, when a UV session is closed directly by closing the PACS window, clicking the `View Images` button on the `Dictation` window does not re-launch it. This is due to the RIS expecting that the images are already open, and no call to PACS to open them should be necessary.

Feature

With this enhancement, clicking the `View Images` button in RIS will now force a Context Change call to the PACS so images will always appear.

RESOLVED DEFECTS

The following bugs and support issues are resolved in this release:

Category	Bug #	Subject
Access strings	20489	Renamed access string for RADAR Nudge from Clinical.RADARSecureMessage to Clinical.RADARNudge to better reflect its purpose.
Access strings	22704	n/a
Access strings	24397	Resolved Access Strings issue where using Schedule Later on an order in Check In status will leave an AZMA visit number attached.
Access strings	25726	Improved readability of AZMA Access String descriptions.
Admin-Other	22927	Resolved System Config issue where lookup values were not saving when a filter is applied.
Alerts	26197	Resolved Alerts issue where Patient Flag tooltips are not correctly translated to Hebrew.
Appointment book	25266	Resolved issue where opening the Appointment Book returns an error due to a cursor file issue.
Appointment book	25717	Resolved Appointment book issue where a user without permission to a room is able to close that room from the Appointment Book.
Appointment book	27014	Resolved Appointment book issue where attempting to view the Appointment Book returns an "Unable to cast" error.
CD Import	24622	Resolved CD Import issue when importing multiple procedures.
Clinical Tasks	22995	Resolved Clinical Tasks worklist issue by renaming 'Edit Image Request' to 'Image Request'.
DB	20892	Resolved logging issue where the column last_updated_by_user_id was populated with 'system' rather than 'user_id'.
Digital Forms	23558	Resolved Digital Forms issue where digital forms in the protocol review screen are not being saved.
Digital Forms	24606	Resolved Digital Forms issue where saving answers from tech screen without changing status returns an error.
EMR	23706	Enhanced ability for EMR interface to update Ordered Procedures via Interface.
EMR	24294	Resolved EMR issue where an existing external order procedure is missing on the patient folder worklist.
EMR	24296	Resolved EMR issue where an assigned eRAD RIS procedure is missing for the EMR order.
Exam Detail Page	21545	Resolved issue opening the Exam details page when a new patient has a UM Portal cancelled study.
Extra Data	23240	Added warning that saving an Order will remove any "Study Extra Data" field values.

Category	Bug #	Subject
Extra Data	24157	Resolved Extra Data issue where the extra data added when entering multiple orders may not be saved.
Insurance Eligibility	19628	Enhanced error checking around insurance eligibility communication.
Insurance Eligibility	20744	Resolved Insurance Eligibility issue where the Patient Grid Name was used rather than Policy Holder Name.
Insurance Management	20396	Resolved Insurance Management issue where Amount to Collect button is disabled when multiple carriers added to an order.
Insurance Management	24309	Resolved Insurance Management issue that allowed adding a payment on the Order tab while the study was in Ordered status after a reschedule->schedule later.
Integration	22068	Resolved Newcrop integration issue where Newcrop is enabled for all RIS administrators.
Integration	22647	Enhanced AZMA HIS integration to notify when a Credential Swap occurs.
Integration	22695	Resolved AZMA HIS integration issue where unable to refocus a minimized window.
Integration	22697	Resolved AZMA HIS integration issue allowing duplicate Allergies to be created.
Integration	22736	Resolved integration issue displaying the User ID in outbound messages.
Integration	24302	Resolved AZMA HIS integration issue on the Sign Report Screen in AZMA causing a Null Reference Exception when the patient folder is not open.
Integration	24450	Resolved AZMA HIS integration issue that permitted the AZMA perform exam copy/paste button to update cancelled studies.
Integration	24464	Resolved AZMA HIS integration issue where AZMA check-in fails and the registration screen is not refreshed.
Integration	24559	Resolved AZMA HIS integration issue where AZMA plugin is causing focus issues with the RIS window on login.
Integration	26946	Resolved Integration issue where RIS may crash due to an issue with AZMA integration when a file is locked.
Interfaces	19547	Resolved an interface issue where inbound EMR's can fail to generate if insurance data is not provided.
Interfaces	20225	Enhanced performance for scan document updates.
Interfaces	20473	Resolved interface issue updating personnel npi/patient id/rad license number.
Interfaces	20815	Enhanced interface error messaging when a table does not exist.
Interfaces	23627	Resolved Interfaces issue where HL7 removes the Laterality from a study when order level accession number is turned on.

Category	Bug #	Subject
Interfaces	24641	Resolved Interfaces issue where MFN fails receiving Exam Titles for Procedure Codes due to a typo in the l_procedure_code_x_exam_title rows column name.
Interfaces	25172	Resolved Interfaces issue where HL7 Update messages are overwritten when the study is open in RIS and Order Level Accession mode is active.
Interfaces	25204	Resolved Interfaces issue where a Cancelled Primary study retains the primary study flag when Order Level Accession mode is active.
Interfaces	26288	Resolved Interfaces issue where a registration message may set an incorrect study as the primary study.
Interfaces	26363	Resolved Interfaces issue where Order Alerts icons may not appear when expected.
Interfaces	26740	Resolved Interfaces issue where an inbound message with multiple insurances would not process.
Interfaces	26965	Resolved Interfaces issue where the accession number is changed by the PACS inbound channel when updating a order with all cancelled studies.
Localization	22934	Resolved Hebrew Localization issue where the Cancel Order dialog was missing values.
Localization	23549	Resolved Hebrew Localization issue where the Documentation screen is not right aligned.
Localization	23555	Resolved Hebrew Localization issue where the Perform Exam Screen was missing translation for the "ID verified by Tech" check box.
Localization	24616	Resolved Localization issue on Protocol screens when running in Hebrew.
Log In Page	23072	Resolved UM Portal issue where usernames displayed trailing "_P" text.
Logging	20670	Resolved issue with service startup logging not reporting correct capture directory.
MRN	20676	Resolved MRN issue where Editing a patient's Alternate ID alone does not update the database record with PatientUpdated action.
MRN	23404	Resolved MRN issue where all active issuers were incorrectly displaying in the MRN grid.
Order Level Accession	24018	Resolved Order Level Accession issue where HL7 messages were incorrectly updating the Accession Number.
Order Level Accession	26869	Resolved Order Level Accession issue where the Exam Details datapane is showing inactive study.
PACS (Non - eRAD) Integration	18289	Resolved Infinitt PACS integration issue where studies opened from the patient folder were not closing.

Category	Bug #	Subject
PACS (Non - eRAD) Integration	26396	Resolved PACS (Non - eRAD) Integration issue where the Protocol screen Skip and Continue button does not close the session.
Patient Demographics	24327	Amended Height and Weight fields to be should be non-editable when AZMA HIS integration enabled.
Patient Demographics	25058	Resolved issue where Allergy list from clinical query is limited to 250 characters.
Patient Folder	22250	Resolved issue in procedure picker where the ICD and Additional Data buttons were not displayed for new studies.
Patient Search	22928	Resolved issue where a DOB-Only search does not return any results.
Peer Review	20851	Resolved Peer Review issue where the Peer Reviewed Counter was not incrementing.
Performance	19851	Resolved a database performance issue when making an appointment.
Portal Viewer	20533	Resolved issue in the Referring Portal viewer launching the correct PACS server full viewer link.
Protocol Workflow	23547	Enhanced Protocol Workflow logic to apply when an order is received from the external (AZMA HIS) system.
Protocol Workflow	23557	Enhanced Protocol Workflow configuration validations to prevent issues when adding an additional procedure.
Protocol Workflow	24556	Resolved Protocol Review issue where digital forms do not display as read only as expected.
Protocol Workflow	24998	Resolved Protocol Workflow issue where the Save and Continue buttons are not translated to Hebrew.
Provider Exam Detail Page	23981	Resolved exception when Ordered By and CC physicians have same referring practice address.
RADAR Nudge	20659	Resolved RADAR Nudge authentication issue when using the RIS Swap Credentials feature.
RADAR Nudge	22973	Resolved RADAR Nudge authentication issue on shared workstations.
RADAR Secure PIC	22821	Resolved RADAR Secure PIC issue where SecurePIC Document Level may not be saved.
Radiology Reporting	22950	Resolved Radiology Reporting issue where opening a study in sign window returns the error "Object reference not set".
Radiology Reporting	22952	Resolved Radiology Reporting issue where opening a study in Dictate returns the error "Object reference not set".

Category	Bug #	Subject
Radiology Reporting	25288	Resolved Radiology Reporting issue where font size/style changes are not applied to dictation additions.
Reception	14823	Resolved issue where the Exam tab (and other tabs) incorrectly prompted to save when no user changes were made.
Reception	23552	Resolved UI Look and feel issue where Reception worklist follow up field descriptions are cut off in Hebrew.
Registration	24778	Resolved Registration issue where choosing Cancel on the Break Lock dialog returns the error "key not present".
Registration	26887	Resolved Registration issue where the ICD button will return an error after using the Black X to change the study.
Scanning	20556	Resolved scanning issue where PDFs imported to RIS are not displayed properly in Chrome.
Scanning	25253	Resolved Scanning issue where scan type is not saved from the Attachments window with an order-level scan.
Scheduling	22930	Resolved a data entry issue in scheduling where some dropdowns would not always recognize a value being selected.
Scheduling	22953	Resolved Scheduling issue where adding a procedure to an EMR order returns the error "duplicate key".
Scheduling	23499	Resolved Portal Procedure Picker issue where inactive Procedure Plan is selected when it matches an active Procedure Code.
Scheduling	23625	Resolved Scheduling issue where preventing reschedule of multiple studies with order level accession.
Scheduling	23755	Resolved issue where rescheduling a cancelled linked study does not re-establish the link.
Scheduling	23797	Resolved issue where rescheduling a linked study using the Schedule Later option does not re-establish the link.
Service Tools	19216	Resolved Report Server Utility issue when exceeding the directory path maximum character limit.
Service Tools	19223	Resolved Report Server Utility issue when grouping reports by Data Source column.
Service Tools - Installer	20747	Resolved Service Tools Installer issue validating the install path.
Service Tools - Installer	20755	Enhanced Service Tools Installer validation and messaging regarding folder structure.
Service Tools - Installer	20757	Resolved RIS Backend Installer issue on Post-Install Configuration screen when attempting to modify the manifest file.
System	20718	Resolved UM Portal issue where the Finalized Date was not saved.

Category	Bug #	Subject
Technologist	20714	Enhanced load time of Technologist Perform Exam screen.
Technologist	22949	Resolved Technologist issue where closing an unchanged View/Edit window prompts for Change Reason Code when the exam is in Started status and beyond.
Technologist	23139	Resolved issue on Perform Exam where a lock was not released after Technologist performs a credential swap.
Technologist	23161	Resolved issue on Perform Exam Screen when credential swap is used.
Technologist	23553	Resolved UI Look and feel issue where Perform Exam Screen Modality (Room) is not filled automatically in Hebrew.
Technologist	23556	Resolved issue opening the Tech screen in Hebrew.
Technologist	23666	Corrected data entry issue on the Perform Exam screen when using type-ahead to change the procedure.
Technologist	24325	Resolved issue where AZMA HIS perform exams WL is not removing the check box when canceling a study in the preform exam screen.
Thick Client GUI	18951	Added validation to prevent deactivating procedures that are part of an active procedure plan.
Thick Client GUI	19322	Resolved display issue where the RIS Windows taskbar icon disappears after locking.
Thick Client GUI	19325	Resolved date display format issue with Patient Quick Search tooltip.
Thick Client GUI	22859	Resolved Hebrew language display issue where the worklist toolbar is not flipped.
Thick Client GUI	22860	Resolved Hebrew language display issue where columns on the Activity Worklist and Pending Dictation Worklist are not visible.
Thick Client GUI	22919	Resolved display issue in the Dictate Summary pane where Hebrew text was cut off
Thick Client GUI	23416	Resolved display issue by adding a scroll bar to the Pathology Type Codes field.
Thick Client GUI	24009	Resolved Thick Client GUI deploy issue where multiple copies of ris.exe were stored in the RIS program folder.
UI Look and feel	23177	Resolved Hebrew language display issue with label text missing from the Contact Log dialog.
UI Look and feel	23396	Resolved issue where the Ordering department field incorrectly disabled.
UI Look and feel	23561	Resolved UI Look and feel issue displaying contact log and editing patient note in Hebrew.

Category	Bug #	Subject
UI Look and feel	23707	Resolved UI Look and feel issue where the OK Button was obscured in Hebrew.
UI Plugins	21758	Resolved UI Look and feel issue by standardizing the placement of status buttons on content screens.
UI Plugins	22040	Resolved AZMA HIS plugin issue where Window Handle values were too large.
UI Plugins	24231	Updated Patient Search message to AZMA HIS to prepend the patient id with zeroes instead of spaces.
UI Plugins	24610	Resolved UI Plugins issue where the Clinical Data Query message to Mirth does not specify the character set as UTF-8.
UI Plugins	24611	Resolved UI Plugins issue request to update Registration Request field mappings.
UI Plugins	24678	Resolved UI Plugins issue where the previous AZMA HIS Patient Folder remains open on when using Next workflow.
UI Plugins	24953	Resolved UI Plugins issue where the Perform Exam window may not open.
UI Plugins	26975	Resolved UI Plugins issue where the AZMA plugin repeatedly logs an unnecessary 'readReadyResponse' message while waiting for other responses.
Validation Rules	22072	Resolved Validation Rule issue where trailing whitespace characters causing "warning" rule to behave like a "prevent save" type rule.
Web Services	22933	Resolved issue that caused the RIS Core Service to stop.
Worklist Filtering	20243	Removed unneeded Location filter from the Signed by Date worklist.
Worklist Filtering	23613	Resolved Pending Dictation Worklist Filtering issue when setting a default view with filter options.
Worklist Filtering	24051	Resolved issue where Signed studies with an addendum not being removed from the Pending Dictation worklist.
Worklist Filtering	25909	Resolved Worklist Filtering issue applying relative ("between") Date/Time filters.
Worklists	19669	Enhanced worklist performance when switching between worklist tabs.
Worklists	20625	Updated Orders to Schedule worklist to include orders in Pending Cancellation status.
Worklists	20734	Enhanced Worklist refresh performance when using context menu actions.
Worklists	21335	Resolved User Preferences issue causing worklists to lock the highlighted WL item.
Worklists	22935	Resolved issue in Perform Exam when selecting Abort and the study is not sent to Orders to Schedule.

Category	Bug #	Subject
Worklists	22954	Resolved Worklists issue where opening the Image Request work list returns an error due to length of delivery_method column.
Worklists	23397	Enhanced Worklists to display the Ordering Department Code.
Worklists	23609	Resolved Worklists issue where Technologist WL queries returned incorrect number of study rows.
Worklists	24159	Resolved Worklists issue where non-primary linked studies were incorrectly appearing on worklists.
Worklists	25006	Resolved Worklists issue where the Status Code column is not translated to Hebrew.

KNOWN LIMITATIONS

The following new unresolved issues were identified in this release. Previously reported Known Limitations are not captured in this document; please review prior release notes.

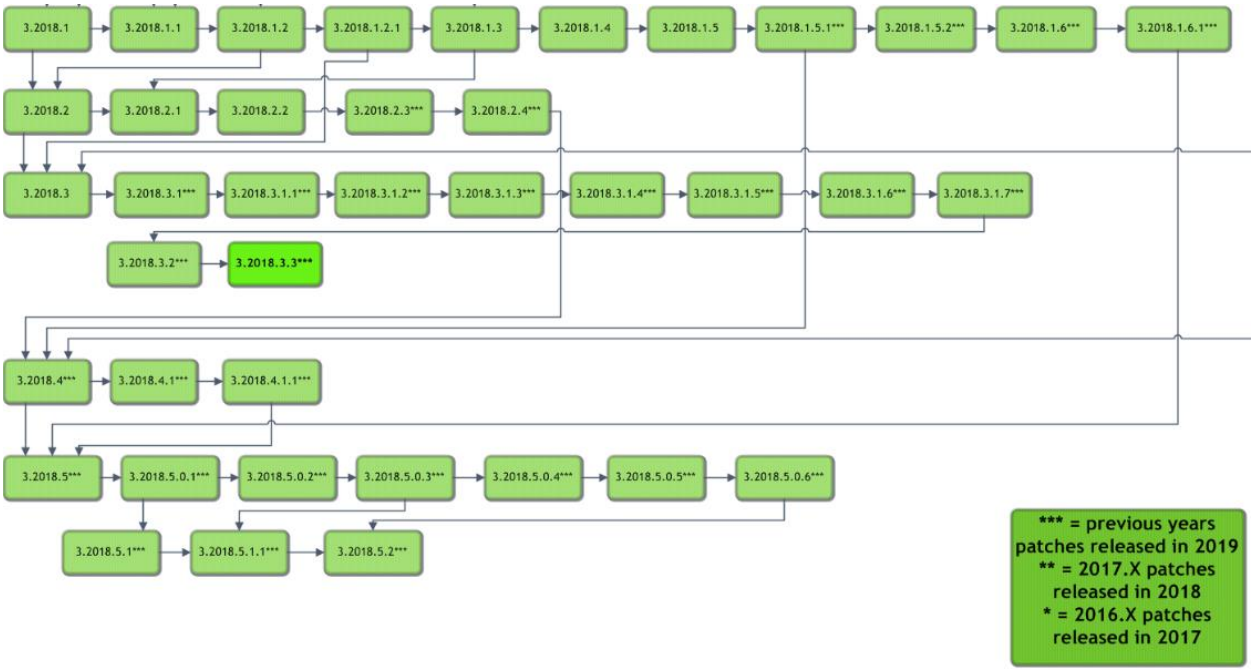
Bug #	Subject
22302	Known Limitation in Radiology Reporting where the Summary text is not properly displayed with larger fonts.
22965	Known Limitation in ICD Search where a Selected Codes button is displayed but non-functional.
22969	Known Limitation in Patient Search where the Patient Folder Preview does not appear.
22972	Known Limitation in Internal Person Search where text is not visible or not properly displayed.
23042	Known Limitation in View Study Summary and Exam Details panes where text and hyperlinks are not properly displayed.
23069	Known Limitation in Patient Management where matching a Portal patient in the RIS does not bind the injury details in the manage policies grid for an order.
23348	Known Limitation in lookup table preventing rows from being deleted with the error "currently referenced by another table".
23542	Known Limitation in Technologist screen where changes to Contrast values may not be saved on Perform Exam.
23559	Known Limitation in Lookup Tables where Availability Templates are duplicated when changing the time ranges for the template.
23597	Known Limitation in Scheduling where the ID Verification Description is not properly displayed.
23665	Known Limitation in Scheduling where Schedule From is available on EMR orders.
24017	Known Limitation in Web Services where the Core service may not stop when requested after running for an extended period.
24156	Known Limitation in Digital Forms where Digital Forms can be saved with a blank name.
24164	Known Limitation where the Infobar menu option is incorrectly enabled on several menus.
24209	Known Limitation in Referring Portal Help where the Clear button is not functioning correctly.
24212	Known Limitation in Provider Portal's My Folder where multiple folders may be inadvertently created.
24215	Known Limitation in Provider Portal's My Folder where the CCDA does not load.
24222	Known Limitation in Create Order where inactive provider addresses are displaying when scheduling with a proxy user.
24227	Known Limitation where searching for UM authorization incorrectly highlights the top worklist row in the patient folder.
24286	Known Limitation in Validation Alerts where the Referral Date of a scheduled exam accepts future dates.
24292	Known Limitation in IVT worklist where opening or closing the IVT screen returns an error.
24340	Known Limitation at Client Login where the error "Collection was modified" may occur.
24395	Known Limitation with AZMA HIS in Registration where Schedule Later is not rescheduling AZMA added procedures.
24397	Known Limitation with AZMA HIS where Schedule Later on an order with Check In status attaches an AZMA visit number.
24473	Known Limitation where a non-Report-Together Procedure Plan appears as three Primary Studies.
24569	Known Limitation where the Service Tools' RESX Override utility requires some terminology and functional changes.

Bug #	Subject
24572	Known Limitation in Technologist screen where changing Performed Procedure using arrow keys returns an error.
24641	Known Limitation with AZMA HIS Interface preventing RIS receiving Exam Titles for Procedure Codes due to a typo in column name.
24801	Known Limitation in Protocol Workflow where Patient Age and other worklist columns are not displayed.

RIS RELEASE VERSION NUMBERS

Build	Patch	UI Version	Core Version	WS Version	DB Version	Digital Forms	Patient Portal	UM Portal	Provider Portal	Notes
2018.2	-	3.18.2(3GB)	3.18.2.0	3.18.2.0	3.18.2.0.01412126	3.18.2.0	3.18.2.0.1416370	3.18.2.0.1416371	3.18.2.0.1416371	Full Version Release. Including Patient, Provider and UM Portals
2018.2	1	3.18.2.1(3GB)	3.18.2.0	3.18.2.1	3.18.2.1.01490049	3.18.2.1	3.18.2.1.1509822	3.18.2.1.1509823	3.18.2.1.1509822	GUI, Web Service, DB, Management Reports, Digital Forms, Patient, Provider and UM portals
2018.2	2	3.18.2.2(3GB)	3.18.2.0	3.18.2.2	3.18.2.2.01563299	3.18.2.2	3.18.2.2.1583286	3.18.2.2.1583287	3.18.2.2.1583286	GUI, Web Service, DB, Digital Forms, Patient, Provider and UM portals
2018.2	3	3.18.2.3 (3GB)	3.18.2.0	3.18.2.3	3.18.2.2.01563299	3.18.2.3	3.18.2.3.1592002	3.18.2.3.1592003	3.18.2.3.1592003	GUI, Web Service, Digital Forms, Patient, Provider and UM portals
2018.2	4	3.18.2.4 (3GB)	3.18.2.0	3.18.2.4	3.18.2.4.01610643	3.18.2.4	3.18.2.3.1592002	3.18.2.3.1592003	3.18.2.3.1592003	GUI, Web Service, DB and Digital Forms
2018.3	-	3.18.3(3GB)	3.18.3.0	3.18.3.0	3.18.3.0.01547822	3.18.3	N/A	N/A	N/A	Full Version Release. Including Patient, Provider and UM Portals
2018.3	1	3.18.3.1(3GB)	3.18.3.1	3.18.3.1	3.18.3.1.01693170	3.18.3.1	N/A	N/A	N/A	Full Version Release.
2018.3	2	3.18.3.2.0 (3GB)	3.18.3.2	3.18.30200.0	3.18.3.2.0.01905964	3.18.3.2	N/A	N/A	N/A	GUI, Web Service, DB updates
2018.3	**3**	**3.18.3.3.0 (3GB)**	**3.18.3.3**	**3.18.30300.0**	**3.18.3.3.0.02152589**	**3.18.3.3**	**N/A**	**N/A**	**N/A**	**GUI, Web Service, DB updates**
2018.4	-	3.18.4(3GB)	3.18.4.0	3.18.4.0	3.18.4.0.0.01654386	3.18.4	3.18.4.0.0.761	3.18.4.0.0.761	3.18.4.0.0.761	Full Version Release. Including Patient, Provider and UM Portals
2018.4	1	3.18.4.1.0(3GB)	3.18.4.1.0	3.18.4.1.0	3.18.4.1.0.01770771	3.18.4.1.0	3.18.4.1.0.806	3.18.4.1.0.806	3.18.4.1.0.806	GUI, Web Service, DB, Digital Forms and Portals
2018.4	1.1	3.18.4.1.1(3GB)	3.18.4.1.0	3.18.4.1.0	3.18.4.1.0.01770771	3.18.4.1.0	3.18.4.1.0.806	3.18.4.1.0.806	3.18.4.1.0.806	GUI only
2018.5	-	3.18.5(3GB)	3.18.5.0	3.18.5.0	3.18.5.0.0.01832865	3.18.5.0	3.18.5.0.0.822	3.18.5.0.0.822	3.18.5.0.0.822	Full Version Release. Including Patient, Provider and UM Portals
2018.5	.0.1	3.18.5.0.1(3GB)	3.18.5.0.1	3.18.5.0.1	3.18.5.0.1.01913234	3.18.5.0.1	3.18.5.0.1.874	3.18.5.0.1.874	3.18.5.0.1.874	GUI, Web Services, DB, Patient/Provider/UM Portals
2018.5	.0.2	3.18.5.0.2(3GB)	3.18.5.0.1	3.18.5.0.2						GUI, Web Services
2018.5	.0.3	3.18.5.0.3(3GB)	3.18.5.0.1	3.18.5.0.3	3.18.5.0.3.01972329	3.18.5.0.3	3.18.5.0.3.887	3.18.5.0.3.887	3.18.5.0.3.887	GUI, Web Services, DB, Digital Forms, Patient, Provider and UM Portals
2018.5	.0.4	3.18.5.0.4(3GB)	3.18.5.0.1	3.18.5.0.4	3.18.5.0.4.02023490	3.18.5.0.4	3.18.5.0.4.903	3.18.5.0.4.903	3.18.5.0.4.903	GUI, Web Services, DB, Digital Forms, Patient, Provider and UM Portals
2018.5	.0.5	3.18.5.0.5(3GB)								GUI
2018.5	.0.6	3.18.5.0.6(3GB)		3.18.5.0.6	3.18.5.0.6.02076323					GUI, Web Services, DB
2018.5	1	3.18.5.1.0(3GB)	3.18.5.1.0	3.18.5.1.0	3.18.5.1.0.01916269	3.18.5.1.0	3.18.5.1.0.878	3.18.5.1.0.878	3.18.5.1.0.878	GUI, Web Services, DB, Patient/Provider/UM Portals and Digital Forms
2018.5	1.1	3.18.5.1.1(3GB)	3.18.5.1.1	3.18.5.1.1	3.18.5.1.1.01983618	3.18.5.1.1	3.18.5.1.1.890	3.18.5.1.1.890	3.18.5.1.1.890	GUI, Web Services, DB, Patient/Provider/UM Portals and Digital Forms
2018.5	2	3.18.5.2.0(3GB)	3.18.5.2.0	3.18.5.2.0	3.18.5.2.0.02084897	3.18.5.2.0	3.18.5.2.0.924	3.18.5.2.0.924	3.18.5.2.0.924	GUI, Web Services, DB, Patient/Provider/UM Portals and Digital Forms

CODE STREAM DIAGRAM



Legend:

Light Green = Previously Released software

Gray = Internal version, non-release version

Bright Green = Current Release