



- Blue Mountain RAM R3 Features Guide



Add Similar – When adding a new record (for most record types), the user can create the new record based on an existing record. A user can configure which fields to copy over from the original for each record type.

R3 Administration – A designated administrator can set-up the software to appear and behave according to an organization's business processes for each department and/or site. Settings include, but are not limited to, label configuration, user access, work processes and electronic signature usage.

Archive and Delete Records – Records throughout the application can be archived and deleted to eliminate from active use assets and related records that are no longer available or applicable. Rights to archive, delete, un-archive, undelete and view archived and deleted items are all controlled and can be provided to limited groups and individuals.

As Found / As Left – An instrument record can indicate the as found and as left calibration measurement data. This is beneficial for highlighting where remediation is required, provides concrete documentation on current condition and provides valuable information for further analysis.

R3 Asset Records – All data pertinent to an asset is recorded in the asset master record, including manufacturer, department, serial number, and contact person. Information on work performed is accessible from the master asset record. The asset record is completely configurable, including field labels, tabs, pick lists, and associated documents and reports in order to track information important to an organization's facility.

R3 Audit Trail – The audit trail provides a permanent record of all changes made to the data. Each time a record is saved and changed, the audit trail tracks the date, time, old value(s), new value(s), and the user who made the changes. Data from a specific point in time can then be easily retrieved and reviewed, with highlighting of the changed or signed fields. Audit reasons can be configured to be entered in a freeform textbox or from a pre-defined picklist. Different approaches and different picklists can be used for different record types.

Barcode search – Use the quick search field to pull up any record automatically from the input from a barcode reader.

Batch advance – Users with the appropriate rights can advance multiple records to the next state or even move them into an entirely different business process rule. Select records to advance from the query results. The user will be advised if any of the selected records have not met prerequisites to be advanced.

Batch assign – Through the Batch Update functionality, multiple work items can be assigned or reassigned to an individual at once.

Batch sign – In cases where the review process can be completed from the query results and where consistent with corporate policies, users can sign off on multiple records at once.



R3 Batch update – Replace values on multiple fields across multiple records at once. The software will confirm that the user has the right and the current state permits the update of each field to be updated before proceeding, clearly indicating any cases where the update cannot be completed as requested.

Calibration Failure Flags – A visual indication in a list of assets to highlight calibration failures.

R3 Change Control – The software tracks Change Control for many different aspects of an asset's life cycle. This includes but is not limited to the current status of an asset, changes to the maintenance and calibration events for an asset, and like-for-like substitutions for an asset's replacement parts.

Configurable Labels – Users can rename most of the labels for fields and tabs within the software to match the specific terminology used at their facility. Different departments can have different labels, giving users the utmost flexibility to collect unique data for each group.

Craft Codes – Individuals can be associated with specific crafts or disciplines (electricians, plumbers, carpenters, machinists, welders, masons, mechanics, etc.) and then called up for work designated as requiring that particular craft.

Data Export – Use the integrated reporting tools to export specific data from Blue Mountain Regulatory Asset Manager or export the data to a spreadsheet from most on-screen query results.

Datasets – Datasets allow sites to separate their asset records into functional groupings to account for variations in procedures and access rights. Datasets can be set-up by department, facility, or however an organization wants to best manage records. Users can be set-up with different rights per dataset.

R3 Due Date Calculation – The application automatically calculates due dates for activity based on a predetermined interval. These calculations can exclude non-business hours, weekends and holidays.

Dynamic Queries – Dynamic information taken from the active session used in a saved query. For example, there is a macro to include the active user's display name within a notification or as part of query. Other macros provide such information as the current day and time, business process rule and other user information.

R3 Electronic Signature – The Electronic Signature functionality meets 21 CFR Part 11 requirements while offering extreme flexibility to fit a company's business processes. A user ID, password and reason must be specified when signing a record. Signatures can be required at various work states with precedence enforced. The order and number of signatures can be specified. Different signature rules can be created for different circumstances. All signatures are recorded in the audit trail and become a permanent part of the record.

R3 Failure Codes – Failure Codes classify the cause and remedy of maintenance failures for later analysis to discover trends and larger issues. Failure class, problem code, cause code and remedy codes are all configurable to provide the best representative classification for a particular situation.

R3 New or Enhanced Feature



R3 Failure Escalation – A failed calibration or a problem occurring during maintenance can trigger a notification to the appropriate users to alert them to the instrument's status. This can be customized to fit an organization's business processes.

Family Tree – The family tree window provides a quick view of all records associated with the active asset, including scheduled and past activity. The family tree not only provides a summary of activity, but also allows for easy navigation through the different records associated with an asset.

Field Counters – Counters automatically enter a number in a field whenever a user adds a record; for example, system IDs BMQ-001, BMQ-002, etc. This capability makes it easy to create an identification sequence based upon the order in which records are created.

R3 Flags – Flags are visual representations that alert users to various conditions, including past due events, calibration failure of an instrument, and out of tolerance conditions. Flags highlight particular information and make it easy to take the appropriate action.

Functions – Fields can be automatically populated with a username, date, time or counter. This feature reduces data entry. These functions are also available in the query builder, for example to request work coming due 7 days from today or are assigned to the active user.

Groups – Individual users can be members of one or multiple groups. A group can then be assigned specific rights and receive notifications. Any user definable fields within the software can be configured to select an individual within a certain group.

Hiding Fields – Fields that are not being used can be hidden for a simpler screen display and data entry experience.

Impact Assessments – On a single screen, users can perform a complete impact assessment for a given time period to see where the asset was used in production of specific lots / batches, test runs and work on other assets (including Standards reverse trace), what log book entries were made and what work was performed on that asset.

R3 Inventory Parts Management – The inventory system maintains a list and count of spare parts. Parts can be issued and received and a reorder point can be established with automatic notifications when that point is reached. Order unit and order costs can be established distinct from units and costs applied in a work record.

Key Performance Indicators – Key Performance Indicators (KPI) are a beneficial tool for optimizing calibration and maintenance operations. The pre-configured KPI Reports in the software cover asset base, productivity and quality and can be expanded and configured according to specific needs.

Labor Planning – Labor requirements, either by individual or by craft, can be forecasted within the application. These forecasts are projected, either by week or by month, based on the number of hours or number of jobs scheduled.



Labor Tracking – Keep track of labor information, including time utilized and associated cost.

Like-for-Like Replacements Management – Designate and sign for qualified substitute parts. Qualified like-for-like replacements can differ by how and where the part is being used. This feature gives users the flexibility to make decisions easily and respond quickly.

R3 Linked Fields – Administrator can configure linked fields, transferring any information from a wide variety of records (including events, equipment, system, loop, location, lot and process records) into the work record.

Localization – As a global solution, the software can be localized to meet the needs of different locations. Cultural settings can correspond to local date, time and number conventions. Information displayed in the application can be configured to a native language and all of that information is stored separately from the main data. The application uses the UTF-8 character set, which supports almost every language.

Locations Hierarchy – Construct location hierarchy representations of a facility and associate assets and work within those locations. Therefore, a user can quickly locate assets and subsequent information through the location hierarchy. Work can also be requested, performed and documented for a location, for example changing a light bulb in a particular room.

Log Book –Designed to store all information about an asset’s lifecycle in a single location. Users with the rights to do so can make a log book entry for an asset. When it comes time to review the logbook entries, quality personnel can view all logbook activity on a single form, select individual entries to review, review all selected entries in a single window, choose which of the reviewed items to sign for immediately and sign for all selected items at once. A complete history of logbook entries, including a history of revisions to log book entries is maintained and available whenever the information is needed.

Logs – In addition to the audit trail which tracks changes to the data, the log files keep track of changes and activity in the system. Examples of such log records include changes to system configuration and failed login attempts.

R3 Loop Calibrations – Perform a calibration on an entire loop or on individual components. Users can view loop calibration work at the system level. This makes it easy to analyze the history and data for an instrument that is part of one or multiple loops over time.

Loop Records – The loop record contains information about the loop and its elements, including all work performed on the loop. Activity is tied-in with the loop record. Like all records, it is configurable to collect the information required.

R3 Lot Records – These records store information about specific manufacturing lots or batches. Typically, these lots would reference the process used and “inherit” the assets specified for that process. The system can inform the user if all planned assets for use are pass due for PM or calibration or are scheduled for either during the batch production schedule.

R3 New or Enhanced Feature



Measurement Data Set Points Calculated from Percent of Operating Range – In a measurement data template, the set points can be specified as percent of operating range. When the measurement data template is used for calibration work, the operating range of the asset is then used to calculate the actual set points.

R3 Measurement Data Templates – Designed for recurring calibration activity, the measurement collection details (test points, tolerances, etc.) can be pre-configured using measurement data templates. Templates can be created for individual instruments or groups of instruments. This saves time by eliminating the need for repetitive entry of the same set points and acceptable tolerances for each calibration and offers control over the approval process. Measurement Data Templates can be assigned during work planning or on demand for new calibrations.

Measurement Uncertainty – Measurement uncertainty for a standard can be tracked and referenced when it is used in an instrument's calibration.

R3 Measurement Uncertainty Calculator – Users can calculate measurement uncertainty within Blue Mountain RAM, eliminating the need to use outside programs and tools.

Meter-Based Scheduling – In addition to time-based scheduling, the application allows schedules to be driven by meters measuring usage. A single meter can be used to schedule activities for one or more assets.

Multiple Reading Data Entry – The measurement data collection table simplifies the collection of multiple readings per set point to improve productivity. The standard deviation and mean for each set point are calculated automatically with the ability to designate a tolerance level any reading can be from the mean before a warning is given.

Multiple Windows – Blue Mountain RAM lets users view multiple records at once by having several windows open at a time. This is an excellent way to multi-task and to compare and analyze data quickly.

Multi-site Ready – To reduce validation costs and improve consistency, Blue Mountain Regulatory Asset Manager can be implemented across multiple sites. The web-based architecture significantly simplifies implementation and validation across multiple sites and the ability to localize the software by site within a single implementation accommodates differences in uses and preferences across sites. When new sites are brought on board an existing implementation, downtime during the migration of the new site's data is minimized by staging out the data outside of the live database before the final import is executed.

R3 Notification System – A notification can be sent to a user's Blue Mountain Regulatory Asset Manager inbox or external email address triggered by an incident, such as the need to sign a record, a calibration or maintenance failure and a record status change. This functionality is configurable and facilitates collaboration between departments.



Out of Calibration and Failed Calibration Automatic Flagging – Choose to have the out of calibration and failed calibration fields automatically set based on as found and as left measurement data respectively based on calibration, adjustment or process tolerances. Based on the configuration, the user may then have the option to override the status assignments before they are saved.

R3 Parts Planning – Parts requirements can be forecasted within the application, either by week or by month, based on the number of jobs scheduled. Forecasts can be on parts stored in different inventory points and can differentiate requirements for parts that may have multiple uses (i.e. GxP and non-GxP uses).

Personal Queries – User specific queries that are only visible to that user, as opposed to public queries that are available to all users.

Personnel Fields – Any user-defined field can be designated as a personnel field. This provides the user a list of names from which to choose from. When used in combination with a notification condition, this field identifies the recipient of the notification message.

Personnel Records – Information about personnel are stored in personnel records, configured to collect all the information about direct personnel, contract personnel and contract companies. Training can be recorded for personnel to document an employee's qualifications.

R3 Picklists – Most fields within the software can be designated as a picklist. Lists can be either appendable or offer a fixed list of choices. Picklists not only save time, but also guarantee the data is entered consistently.

Planned Work – Includes work that is on a regular schedule or work that is planned but only occurs as needed. Planned work can be configured to meet a company's SOPs, business rules, and GxP requirements and stored as an event to be used as a template when the work is to be performed. Events can include, but are not limited to maintenance, calibration and validation.

Procedures – A procedure for an event can be referenced within a record. A link to an external document containing procedure details can be included in any record. The document can reside on the network or within a document management system.

Process Records – Process records provide a single location for information pertaining to process lines used at a site, for example production and QC processes. The process records retain information about the process line and the assets that make up the line. Work, such as validation, performed on the process is also documented and managed within the application.

R3 Purchasing – The Purchasing system in Blue Mountain RAM provides a thorough way of managing Purchase Requisitions, Purchase Orders, Receiving, Vendors and Inventory levels. This feature lets users track vendor information, purchase orders against the parts, purchase history information and more. The Purchasing system allows users to streamline the process for submission of purchase requests to order spare parts, as well as enforce purchase order approvals via electronic signatures.



Query – Queries enable users to search the database for specific records. Most fields or combination of fields in the software can be used to locate records and specify the order in which they are sorted. Users can apply the quick find to search for a particular record(s). A list of most recently used queries is presented to users on the home screen for quick access to information used on a regular basis. Queries can be personal or public.

Quick search – Users simply start typing the record ID for any record type in the quick search box available from any area of the application and a list of matches is displayed. Once the result set is narrowed to a single item that record opens automatically.

R3 Record Layout – The record forms are highly configurable with the ability to name tabs and field labels, reposition field locations and select field properties.

R3 Reporting System – Out of the box, the software utilizes SQL Server Reporting Services. The software comes with report templates, which can be tailored to an organization’s needs. New reports can also be created. Reports can be easily accessed from a drop down menu on records.

Reverse Traceability – Quickly and easily view instruments impacted by a specific standard during a period of time. Configurable Reverse Traceability reports can be run directly within any standard record.

R3 Rules – Ability to incorporate the customer’s business processes into the application to control how activity is managed by the application including the “states” of records, i.e., draft, active, closed and when electronic signatures are applied and by whom. They also drive when and which notifications are sent and to whom. These rules can be specific to the type of records and type of work.

Security – The software offers two choices for setting up system security; integrating with ADSI (including NT security) or using the software’s built-in security system. Like NT security, the built-in security system allows administrators to specify minimum password lengths, password complexity, and password expiration.

Set Point Calculation – For cases where the standard and instrument units are different, to save time, a series of set points can automatically be calculated based on range type and number of readings.

R3 Smart Fields – Smart Fields are a timesaving feature that allows users to auto-populate data on a form using data from another record. For example, you can transfer failed calibration work order information into a newly generated out of tolerance record. Smart Fields also allow you to filter various fields values based on group, department or hierarchical relationship of preceding fields.

Standards Classification – Enhance productivity by filtering standards on a classification that users define to narrow the list of standards for an asset’s calibration.



Standards Management – When an asset record is designated as a standard, it becomes available to be used in an instrument’s calibration. These standards have their own calibration schedule with the ability to provide a warning or even lock down standards that are out of calibration, overdue for calibration, or do not have sufficient accuracy to calibrate a specific instrument.

Standards Test Accuracy Ratio (TAR) Specifications – As a standard is referenced for an asset’s calibration, the standard’s TAR is immediately calculated. If the TAR is outside the asset’s limits, the information is highlighted to ensure the standard applied has sufficient accuracy to calibrate that instrument.

R3 Storeroom Management – Users can manage and track inventory transactions to help minimize waste and unnecessary expenses. It is integrated with Blue Mountain RAM’s purchasing, asset management and work order systems. Key inventory template reports are provided, as well as streamlined forms for common inventory transactions.

System Records – Users can define systems with subcomponents. Subcomponents can include individual assets, loops and even other systems. Like all assets, work can be scheduled and performed against system records.

Technology – Blue Mountain Regulatory Asset Manager is a browser-based, zero-client application utilizing the most recent proven technologies including Microsoft.NET, XML, AJAX, and WebDAV. Built with Service Oriented Architecture in mind, integration with other systems, such as accounting systems or LIMS, becomes more practical.

Test Events and Test Records – Tests performed can be planned through test events and managed through test work records. These tests would generally be performed against a lot, either one manufactured internally or one brought in from another vendor. Assets used during a test can naturally be referenced within this record as well.

Tolerance Limits – Establish a process, adjustment, or calibration tolerance limit for each set point with flags and configurable notifications when a point falls outside the limit. This way a problem does not go unnoticed and can receive the appropriate response.

Training Records – These records apply to personnel, to plan, schedule and record training activity for maintaining an employee’s qualifications and certification.

Unplanned Work – Unplanned work includes activities that are not anticipated, such as emergency repairs and recalibrations. Unplanned work can be initiated via the work request system and carried out using on-demand work. Unplanned work can follow a unique approval route so appropriate procedures are being followed.

User Defined Fields – These fields throughout the application can be configured to track information specific to your needs. These fields can be configured by dataset and site. They can be designated as pick-lists, dates, personnel fields, document fields, report fields, etc.



User Sessions Management – The software will automatically log a user out of the system after a period of idleness as determined by an organization. This feature not only frees up licenses for other users, but meets the regulations of 21 CFR Part 11.

View documents stored within external Document Management Systems – Any record can link to documents stored in document management systems that are WebDav compatible. This allows for easy access for viewing controlled documents.

Where Assets Used – On a single screen, users can bring up a complete history on an asset for a given time period to see where the asset was used in production of specific lots / batches, test runs and work on other assets (including Standards reverse trace).

Where Parts Used – Quickly bring up a list of work that references a specific part, useful for determining the usage of critical spares, remediating issues and responding to recalls.

Work Order System – This system encompasses all the information required to do the work as defined by a company's processes. It includes the work request, the status of the work order and any specific work associated with it. Users can easily access the appropriate information to perform a particular activity.

Work Plans – Detailed step-by-step tasks for performing work on work records. Includes the ability to record acceptance criteria when needed. If desired, each individual task can be signed and the work may "fail" based on the inability to fulfill/complete a required task.

R3 Work Request System – Now up to seven customer defined request types can be accessed and submitted from anyone having access to the application by using the requestor licenses, available at no cost. The form and follow-up activity is set-up by your organization based on your business processes.

R3 Workspaces – This feature lets the user focus on the tasks and access information relevant to their role. For example, user A can have their workspace set-up to see a query with calibrations due and user B can have their workspace configured to show their to do list.