



Release Notes

Instrument Manager™ v8.14

Maintenance Release 1

Terms of use, trademarks, and copyright

All information in this document, including URL and other Internet Web site references, is subject to change without notice. Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, except as provided in your license agreement, without the express written permission of Data Innovations® LLC.

Data Innovations may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Data Innovations, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

This documentation contains CONFIDENTIAL TRADE SECRET INFORMATION owned by Data Innovations LLC and/or its affiliated companies.

Data Innovations, the IMpowered graphic, and Instrument Manager are trademarks or registered trademarks of Data Innovations LLC.

Caché is a trademark of InterSystems Corporation. Any use of the Caché trademark or the Caché software by Data Innovations is under license.

VMware is a registered trademark of VMware, Inc.

Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Java is a trademark of Oracle and/or its subsidiaries.

All other company or product names are either trademarks or registered trademarks of their respective owners.

Instrument Manager was written and designed at Data Innovations LLC, 120 Kimball Avenue, South Burlington, VT 05403 USA. Portions of Instrument Manager were created using the TList 8 OCX component. Bennet-Tec Information Systems, Inc. is the copyright owner for the TList control.

©1994-2016 Data Innovations LLC. All rights reserved.

For any questions or problems with this software, please contact us:

Data Innovations

120 Kimball Avenue, Suite 100

South Burlington, Vermont 05403 USA

Tel: +1-802-658-2850

Fax: +1-802-658-2872

Email: northamerica-support@datainnovations.com

For documentation questions or suggestions, please send email to documentation@datainnovations.com

Visit us at www.datainnovations.com

Instrument Manager - Intended Use

Instrument Manager is a stand-alone software application that provides connectivity between laboratory instruments and Laboratory Information Systems, aiding the flow of laboratory information, including test orders and results, specimen information, and patient information. Instrument Manager also provides data management functions that aid in the interpretation and management of laboratory results. Instrument Manager is a software package intended to be used by trained laboratory personnel as an aid in laboratory instrument interfacing and laboratory data management.

Instrument Manager is a medical device and is registered with the following regulatory agencies:

- US Food and Drug Administration (FDA) as a Class I and Class II device

NOTE: 510(k) cleared as a Class II device for use in a blood bank environment

- Health Canada as a Class I and Class II device
- German Competent Authority as an Accessory to an In Vitro Diagnostic Medical Device
 - EDMA Group 27-02 Data Management Software Consumables

NOTE: CE Mark for use in the European Union

Below are the intended use statements on file for each regulatory body.

US Food and Drug Administration

Instrument Manager in a blood bank (FDA 510(k) clearance)

Instrument Manager is a software package intended to be used by trained laboratory personnel in a blood-banking environment as an aid in interfacing and managing data between blood bank automated instruments and Blood Establishment Computer Software (BECS).

Instrument Manager's Device Description:

Instrument Manager is a stand-alone software package that provides connectivity between laboratory instruments and Laboratory Information Systems, aiding the flow of laboratory information, including test orders and results, specimen information, and patient information. Instrument Manager

also provides data management functions that aid in the interpretation and management of laboratory results.

Instrument Manager is a software package intended to be used by trained laboratory personnel as an aid in interfacing and managing data between blood bank automated instruments and Blood Establishment Computer Software (BECS).

When used in a blood bank, Instrument Manager is a Major Level of Concern device.

Health Canada

Instrument Manager is a stand-alone software application that provides connectivity between laboratory instruments and Laboratory Information Systems, aiding the flow of laboratory information, including test orders and results, specimen information, and patient information. Instrument Manager also provides data management functions that aid in the interpretation and management of laboratory results. Instrument Manager is a software package intended to be used by trained laboratory personnel as an aid in laboratory instrument interfacing and laboratory data management.

German Competent Authority

The intended purpose of Instrument Manager (IM) is as a standalone software to be used together with in-vitro-diagnostic medical devices (IVDs) for the testing of human specimen. It performs data processing and evaluation of data provided from the IVD.

IM provides information for the clinician or physician in an appropriate form for use in diagnosis and plan of care. That means that the analysis results from the in vitro examination of human specimens are enhanced or calculated by IM in such a way that the physician gets the necessary, correct and meaningful information in order to make the appropriate diagnosis and therapeutic decisions.

| | |
|---|-----------|
| Instrument Manager - Intended Use | ii |
| US Food and Drug Administration | ii |
| Instrument Manager in a blood bank (FDA 510(k) clearance) ... | ii |
| Instrument Manager's Device Description: | ii |
| Health Canada | iii |
| German Competent Authority | iii |
| Instrument Manager v8.14.10 - April 2016 | 1 |
| Install/Upgrade | 1 |
| Instrument Manager Base Enhancements | 1 |
| Specimen Management Enhancements | 1 |
| Run Worksheet | 2 |
| Color Coding | 3 |
| Data Elements | 4 |
| Rules Processing | 4 |
| IHE LAW support | 5 |
| Specimen Routing | 5 |
| Known Issues Corrected in 8.14.10 | 6 |
| Configuration | 6 |
| Instrument Manager base | 6 |
| Specimen Management | 6 |
| Laboratory Intelligence | 7 |
| Rules Processing | 7 |
| Diagnostics | 7 |
| Instrument Manager 8.14.02 - January 2016 | 8 |
| Known Issues Corrected in 8.14.02 | 8 |
| Instrument Manager Base | 8 |
| Instrument Manager 8.14.01 - December 2015 | 9 |
| Known Issues Corrected in 8.14.01 | 9 |
| Instrument Manager Base | 9 |
| Specimen Management | 9 |
| Instrument Manager 8.14.00 - October 2015 | 10 |
| Quality Control Enhancements | 10 |
| Open QC Framework | 10 |
| QC Logging and Reports | 10 |
| Rules Enhancements | 10 |
| New Operators, Actions, Data Elements | 10 |
| Rules Processing | 12 |

| | |
|---|----|
| Rules Testing | 12 |
| Specimen Management (SM) Enhancements | 12 |
| Edit Right-Click Menus | 12 |
| Filters | 13 |
| Report Designer | 13 |
| New Data Element | 13 |
| Overwrite Patient Data | 13 |
| Processing Speed Improvements | 14 |
| Show Icon in Color Coding / Field Formatting | 14 |
| Notifier Enhancements | 14 |
| Triggered Notifier Events | 14 |
| SSL/TLS Communication | 15 |
| Moving Average Threshold | 15 |
| User Security Enhancements | 15 |
| Default System and Master Layouts | 15 |
| Laboratory Intelligence | 15 |
| Laboratory Intelligence (LI) Enhancements | 16 |
| Access Archive Databases | 16 |
| Laboratory Intelligence Folder Items | 16 |
| Miscellaneous Enhancements | 16 |
| Moving Averages (MA) Enhancements | 16 |
| Precision of the Mean, SD, and Data Point Result Value Calculation in Moving Averages | 16 |
| IE Compatibility | 17 |
| Archiving Enhancements | 17 |
| Processing Enhancements | 17 |
| Instrument Manager Base Enhancements | 17 |
| Operating System | 17 |
| Diagnostics | 17 |
| Database Restore | 17 |
| Secure Communications and Connection Level Changes | 17 |
| Test Code Mapping | 18 |
| User Interface Enhancements | 19 |
| Customize Instrument Manager Menus | 19 |
| Tab Control | 19 |
| Multiple Monitor Display | 19 |
| Known Issues Corrected in 8.14 | 19 |
| Instrument Manager Base | 19 |

| | |
|-------------------------------|----|
| Laboratory Intelligence | 21 |
| Moving Averages | 22 |
| Rules Processing | 22 |
| Specimen Management | 23 |

Instrument Manager v8.14.10 - April 2016

The new version of Instrument Manager has been extensively enhanced and tested. Here's what's new in Instrument Manager Maintenance Release 1 (8.14.10).

Install/Upgrade

For a first time installation of Instrument Manager on a system (i.e. a clean install), the install process no longer files errors when the start routine is called.

Instrument Manager was updated to add a Caché version check upon start up and to display an error if there is a mismatch between the IM/Caché versions. Additionally, if performing an upgrade across new hardware, after a clean install has been performed and databases copied to the new system, IM will check the copied databases and detect that an upgrade on new hardware is being performed. IM will prompt the user with a message box to confirm the registry key on the new system correctly indicates the version from which the databases were copied.

Instrument Manager Base Enhancements

Instrument Manager was updated to improve legibility in grids with alternate shading when using the Default Theme in Windows 8.1.

Specimen Management Enhancements

Specimen Management (SM) now has the ability to indicate if there is a patient ID/specimen ID mismatch in the SM database. If Instrument Manager detects a mismatch, a new data element, **{Specimen Warnings}**, is populated. The **{Specimen Warnings}** data element can also be populated via Rules based on user-defined criteria. When performing the **Release**, **Release for 2nd Level Review**, **Release Run**, or **Release Group** actions in SM Workspace, any warnings present in the **{Specimen Warnings}** data element will be displayed to alert the user before releasing the specimen.

Run Worksheet

Specimen Management users now have the ability to manually select and delete specimens and tests from the Specimen Management database and the Archive Specimen Management Database. A new action, **Delete**, is enabled when at least one row is selected. This action can be configured to require re-authentication from Instrument Manager's **Security>System Setup** menu. You cannot edit popup preferences for this action, and are required to enter a comment upon deleting a specimen. Upon selecting **Delete** from the **Action** menu, the specimen(s) will be purged from the database. The action, along with the comment, will be logged in the Specimen Event Log and the System Log. Deleting a specimen from the live SM database automatically deletes that specimen in the Archive database; however, deleting a specimen from the Archive database does not delete the specimen from the live SM database. Upon upgrade, only members of the Administrators group will have access to the **Delete** action.

The Previous Results Pane now respects the Group Display Order defined in **Test/Profile Setup>Display Order**.

Run Worksheet

The Run Worksheet allows you to sort Runs from left to right. A new menu item in the SM Workspace **View** menu allows sorting Runs in ascending or descending order. Ascending and descending order are determined based on the Run ID assigned by Instrument Manager. By default, IM assigns a Run ID of 1 to the first appearance of a specimen once it receives another Run on the same specimen, which is assigned the identifier 2. Subsequent Runs are assigned incremental ID numbers as they are received in the system (e.g. 3, 4, 5, etc.). Note that it is possible to write rules to change how Run IDs are assigned, which would subvert the default logic of this feature. However, if Run IDs are assigned as designed, viewing Runs in ascending order means that Run ID 1, the first Run received, is displayed in the left-most column with subsequent Runs ascending to the right. If viewing Runs in descending order, Run ID 1 is displayed in the rightmost

column, with subsequent Runs descending down to the leftmost column, which will display the most recently received Run.

With 8.14.10, the Run Worksheet only displays certain data elements once and does not repeat them across multiple Runs. Because the values for these data elements are the same for every Run, these data elements have been termed non-repeatable. This change ensures the Run Worksheet display is not crowded with redundant information. From the **View** menu, **Run Worksheet Preferences** submenu, click **Non-Repeatable Location** to switch the *location* of non-repeatable data elements between the leftmost column and the rightmost column.

By default, these data elements will appear as part of the leftmost Run. The data elements currently deemed non-repeatable are:

{Previous Patient Test Reference 1, 2 & 3}

{Previous Patient Result 1, 2 & 3}

{Previous Patient Date/Time 1, 2 & 3}

{Previous Patient Dilution 1, 2 & 3}

{Previous Patient Instrument ID 1, 2 & 3}

{Previous Patient Collection Date/Time 1, 2 & 3}

Color Coding

You can now export and import Color Formatting settings in Specimen Management using the **Import**, **Export Selected**, and **Export All** buttons from the **Color Coding/Field Formatting** window. Select a row or multiple rows in the Color Coding/Field Formatting window and click **Export Selected** to export color formatting to a file. Upon importing color formatting, users are prompted to append to or overwrite existing color schemes. If appending color schemes, any imported color scheme descriptions that are identical to existing color schemes are renamed with a number added to the end of the name. If overwriting, existing color formatting is deleted and replaced with the contents of the exported file.

Data Elements

New test level data elements added to Specimen Management:

{Aliquot ID}

{Test Inventory Info}

New patient level data elements added to Specimen Management:

{VIP Indicator}

New specimen level data elements added to Specimen Management:

{Callback Info 1}

{Callback Info 2}

{Specimen Warnings}

The SM database now includes the following test level data elements for IHE LAW support :

{AWOS ID}

{Parent AWOS ID}

The following patient level data elements were renamed:

{CPT-4 Code} was renamed **{CPT Code}**

{ICD-9 Code} was renamed **{ICD Code}**

Rules Processing

The **{Collection End Date/Time}** data element will no longer be set to the date/time when the instrument queries for the specimen. Starting with 8.13, the date/time when the instrument queries for the specimen is recorded in **{Last Query to IM Date/Time}** data element. Any site relying on the **{Collection End Date/Time}** must update their rules to **{Set} {Collection End Date/Time}** equal to the current date/time for status messages with the Specimen Action equal to Q (query).

A new action in Rules Processing enables you to store orders in Instrument Manager for manual download to the instrument. The **{Hold Test for Download}** and **{Hold That Test for Download}** actions can be used in the Incoming Request location (for LIS configurations) and

Outgoing Request location (for instrument configurations) to flag a test for manual download.

IHE LAW support

Two new data elements, {AWOS ID} and {Parent AWOS ID}, were added to Instrument Manager to support the IHE LAW communication protocol. These data elements can be generated by Instrument Manager and, if supported by the instrument driver, sent to the instrument.

In prior versions of Instrument Manager, results and orders were matched based on the order in which they were received by Instrument Manager, (i.e. "first in, first out"). With the new {AWOS ID} data element, results are matched to orders based on an assigned AWOS ID in those instances where the driver and the instrument can process AWOS IDs.

NOTE: If the LIS is unable to transmit AWOS IDs, Instrument Manager will automatically assign an AWOS ID to each test.

The {AWOS ID} is a unique identifier for the test. The {Parent AWOS ID} refers to the {AWOS ID} of the original test for reflexed tests. For reflexed tests, the {AWOS ID} field will be blank, and the {Parent AWOS ID} field will contain the {AWOS ID} of the original test.

Specimen Routing

Previously, in order to edit Specimen Routing (SR) setup, you had to stop the SR connection. With 8.14.10, you can edit SR settings without stopping this connection. Upon saving your updated Specimen Routing setup, Instrument Manager automatically locks the SR connection, applies your changes, and unlocks the SR connection.

Known Issues Corrected in 8.14.10

Configuration

- **Instrument Manager** was updated to ensure the Add button on the Connection Assignment screen respects User Security settings. (KI3013)
- **Instrument Manager** was updated to prevent an error when creating a new non-interfaced configuration. (KI3012)

Instrument Manager base

- **Instrument Manager base** was updated to ensure the **Site** and **Location** fields on the **Connection Properties** screen do not change values due to a discrepancy between how the Instrument Manager database sorts these values and how the user interface sorts these values. (KI2948)
- **Instrument Manager base** was updated to ensure when a user selects multiple events from the Triggered Notifier Events screen and clears them, the System Log entry for the top event in the list doesn't overwrite the Event Text for all cleared events. (KI2871)
- **Instrument Manager base** was updated so that the Time Between Notification settings are respected, when using the Notify within Instrument Manager method. (KI2995)
- **Instrument Manager base** was updated to correct an issue causing Notifications to be sent out, even after the Notification Event was cleared. (KI3028)

Specimen Management

- **Specimen Management** was corrected so when a user edits a workspace layout, the prior layout is deleted instead of overwritten and stored. (KI2959)
- **Specimen Management** was corrected so that the action of deleting patient, specimen, or test comments in SM is logged in the Specimen Event Log as "Suppress Specimen Comment". (KI2977)

- **Specimen Management** was corrected so when a user edits a workspace layout, the Run Information Pane settings are preserved. (KI2982)

Laboratory Intelligence

- **Laboratory Intelligence** was corrected to prevent a <ZDUPL> error that occurred during Caché cube compilation. (KI2975)
- **Laboratory Intelligence** was corrected to ensure that if the data elements {**Test Quality Indicator 1**} through {**Test Quality Indicator 5**} are populated, errors will not occur when Purging or performing SM Actions on the specimen in SM Workspace. (KI3023)

Rules Processing

- **Rules Processing** was corrected so that the {**Length of**} operator works correctly when used in conjunction with the {**On Test**} data element. (KI2996)
- **Rules Processing** updated to ensure changed data for the {**Mark Test Out of Service**} action displays in Rules testing. (KI3011)

Diagnostics

- **Instrument Manager Diagnostics** updated to increase the timeout defined for Serial and TCP/IP connections, to ensure users on Windows Server 2012 can perform loopback testing for a connection. (KI3019)

Instrument Manager 8.14.02 - January 2016

Known Issues Corrected in 8.14.02

Instrument Manager Base

Instrument Manager base was corrected so that importing Error Code Mapping does not clear out the Error Code Mapping on another configuration. (KI2990)

Instrument Manager 8.14.01 - December 2015

Known Issues Corrected in 8.14.01

Instrument Manager Base

Instrument Manager base was corrected to prevent the software from crashing when Specimen Routing is licensed and a user, while in a driver configuration's Test Code Mapping screen, selects a test code that contains a double quote (") from the Test Code dropdown. (KI2979)

Specimen Management

Specimen Management was corrected to ensure SM Workspace still loads workspaces while using non-English East Asian regional settings. (KI2976)

Instrument Manager 8.14.00 - October 2015

Quality Control Enhancements

Open QC Framework

IM v8.14 was updated to move Quality Control setup from the Instrument Manager application and into a QC driver configuration. This open QC framework model makes it possible for you to connect Instrument Manager to any QC vendor for which there is an IM driver.

QC Logging and Reports

Changes to quality control setup, including the changes made and the user who made them, are stored in the System Log.

With 8.14, view and print QC configuration and setup information by going to **Reports>Configuration Options and Mappings** and selecting your QC configuration.

Rules Enhancements

New Operators, Actions, Data Elements

You can now write rules to calculate **{Log}**, **{Natural Log}**, and **{Inverse Natural Log}**.

{Patient Icon}, **{Specimen Icon}**, and **{Test Icon}** allow you to write a rule to display one or more icons in a field in the SM Workspace, based on criteria defined in the **If** statement.

Patient Data Elements

In addition to **{Patient Icons}**, new patient level data elements now allow you to evaluate and set **{Patient Height}**, **{Patient Height Units}**, and **{Patient User Date/Time 01-05}** data elements.

Test Data Elements

New test level data elements for processing previous results enable you to pinpoint the previous result you wish to evaluate based on **{Previous Collection Date/Time}**, **{Previous Patient Result}**, **{Previous Run Result}**, **{Previous Result Date/Time}**, **{Previous Instrument ID}**,

{Previous Connection}, **{Previous Test Status}**, and **{Previous Patient Dilution}**. You can evaluate using these criteria as far back as the last three previous results or Run results sent through the system. These enhancements improve the effectiveness of a delta check by ensuring a previous result comes from a different specimen for the same patient (i.e. same patient ID, different specimen ID).

New test level data elements were added to define/evaluate ranges.

These, along with other range data elements, can be used in conjunction with the new **{Within Range}** general data element to evaluate whether results are in or out of range without having to define a Range - High and a Range - Low value. New range level data elements include:

- **{Validation Range}**
- **{Critical Range}**
- **{Rerun Range}**
- **{Reflex Range}**
- **{Delta Range}**
- **{Slide Range}**

Instrument Manager was updated so **{LIS Previous Result}** and **{LIS Previous Result Date/Time}** data elements take priority over IM previous results. If a test is rerun, the **{LIS Previous Result}** and **{LIS Previous Result Date/Time}** information from the previously Run test is updated on the rerun test.

The new **{Fluid Group}** data element allows you to set the fluid group for tests with the same display name, but unique fluid group values.

The **{Fluid Group}** data element is used by Instrument Manager to determine previous patient results.

Additionally, the following new data elements were added to Rules Processing:

- **{Slide Requested}**
- **{Slide Done}**
- **{Run Comments}**

Five new Test Quality Indicator List data elements were added to Rules Processing. These new data elements are available from the Laboratory Intelligence cubes.

Specimen Data Elements

Two new specimen level data elements were added to capture the {IM Collection Date/Time} and the {IM Centrifuge Date/Time}. These data elements can be set by an LIS driver in order to standardize the date/time to the Instrument Manager server time.

NOTE: The LIS driver may need to be updated to populate these fields with the server time. By default, these fields contain the local time from the LIS.

Five new Quality Indicator List data elements were added to Rules Processing. These new data elements are available from the Laboratory Intelligence cubes.

General Data Elements

The new {Date Difference Between} data element can be used to evaluate two dates and return the difference between them in hours, days, or years. Use the {In Hours}, {In Years}, and {In Days} data elements to specify time units.

Rules Processing

Rules processing was updated so if a Date/Time data element is being set by a Date Only data element, the time portion of the data element is defaulted to null, not midnight.

Rules Testing

Rules testing was updated to display any errors generated during when testing rules.

Specimen Management (SM) Enhancements

Edit Right-Click Menus

Right-click on the SM toolbar to access and edit the right-click menus available from the **Test Worksheet**, **Specimen Worksheet**, and **Run Worksheet**. Using standard drag-and drop functionality from the **Customize** menu, you can add and remove menu items using a graphical representation of the toolbar that appears on the SM toolbar. Once

finished, you can uncheck the right-click menu to remove this from the toolbar. The right-click menu that appears from the applicable worksheet is updated to reflect your edits.

Filters

SM filters now apply to specific panes on the SM Workspace. The panes to which the filters can be applied are: **Specimen Worksheet**, **Test Worksheet**, **Run Worksheet** and **Previous Result Worksheet**. The Filter wizard allows you to apply filters to all or a subset of the available panes.

Filters can be written on a Date and a Date/Time that are either relative or specific.

Dynamic filters can now be written using all Instrument Manager data elements.

The **Allow filter to be turned on and off** check box in the Filter wizard enables you to turn static filters on and off from the SM workspace, resulting in a filtered view at the click of a button.

By default, no data will be displayed in SM Workspace if no filters are enabled.

Report Designer

In Report Designer, users can specify the font size used in their printed reports by typing it into the font size field. Users are no longer restricted a pre-defined list of font sizes.

New Data Element

The **{Last Known Location}** specimen data element was added for this release. This data element is updated when status, storage, query, or results messages are processed in Instrument Manager. The SM Workspace can display the **{Last Known Location}** of a specimen to aid in specimen tracking.

Overwrite Patient Data

If a connection is included in SM from **Connection Properties**, you have the ability to specify whether to overwrite the patient data in SM

Processing Speed Improvements

with data from the instrument.

Processing Speed Improvements

Manual results entry in SM workspace has been streamlined for increased speed in processing.

Color-coding has been enhanced to increase processing speed.

Filter functionality was updated to minimize unnecessary calls to the database, thereby improving processing speed.

Show Icon in Color Coding / Field Formatting

In the SM workspace, you can use the Color Coding/Field Formatting wizard to display icons in a cell. Users have the ability to import their own icons using .bmp, .ico, .cur, .wmf, .emp, .gif, or .jpg formats.

Additionally, you can also write a rule to display icons in the SM workspace using new patient, specimen, and test level data elements. Each data element (i.e., {Patient Icon}, {Specimen Icon}, and {Test Icon}) can be used to display multiple icons in the same data element field. To configure the rule, set one of the data elements to a comma separated string containing a color scheme. The data element can be added to the SM grid to display the icons, which are associated with the color scheme names, side-by-side.

Notifier Enhancements

Triggered Notifier Events

From Notifier Profile Settings, you can configure notification within IM from the **Triggered Notifier Events** notification bar. If configured, any notifier events appear in a warning message from main Instrument Manager screen. Clicking the warning opens a list of all Notifier events triggered for those connections that you have permission to view. Each event contains a Date/Time stamp recording when the notification triggered. From this notification bar, you can clear any user-defined event. The **Triggered Notifier Events** bar displays on both the main IM screen and on any Thin Clients.

NOTE: Notifications for triggered events on a connection are only visible to users with access to that connection through User Security.

SSL/TLS Communication

In **Notifier Setup**, you have the ability to select whether the SMTP client uses SSL/TLS to communicate with the email server. You can select whether to use an Authenticated SMTP server by identifying its username and password. You can also select a SMTP mail server to connect to for outgoing messages that are sent by the Notifier.

Moving Average Threshold

The notifier event **Moving Average Threshold Exceeded** notification now includes Connection and Instrument ID information.

User Security Enhancements

Default System and Master Layouts

You can define system-wide or user-specific default layouts for users. In **Security > System Settings**, you can set up a:

- **Default System Layout user.** This user becomes the system-wide default layout user for all users. This user's default layout is applied to any user if that user does not already have a default layout master user assigned to their profile.
- **Default Layout Master User.** This user becomes the user who defaults into the **Layout Master User** column of **User Security** setup when you define a new user configuration.

In **Security > Users and Groups > User Configurations**, you can further modify the default layout for that user in the **Layout Master User** column.

Laboratory Intelligence

Laboratory Intelligence Dashboards can be secured through IM Security. You can determine whether a user can access individual existing dashboards or have automatic access to newly created dashboards.

Laboratory Intelligence (LI) Enhancements

Access Archive Databases

Laboratory Intelligence now enables you to access archive databases (IMArchiveTestCube and IMArchiveSpecimenCube). To take advantage of this new functionality, from **Laboratory Intelligence > Setup**, use the **Queue Laboratory Intelligence Data for Cube Synchronization** options to select whether to include the live SM database and/or archived SM database information for use in LI. By creating pivot tables that point to the archived databases, you can view long term trends in your archived data from a LI dashboard.

NOTE: To use SM archive data in LI, you must have SM archiving enabled.

Laboratory Intelligence Folder Items

LI users can back up and restore Laboratory Intelligence Folder Items. These settings include folder items (i.e., Dashboards, Pivot Tables) stored in DeepSee. Laboratory Intelligence Folder Items appears as an option for automatic or manual backups and restores.

Miscellaneous Enhancements

The **Connection Status** LI widget now considers any connections designated as "Utility" on Status Display to be always started/on.

Moving Averages (MA) Enhancements

Precision of the Mean, SD, and Data Point Result Value Calculation in Moving Averages

When Data Point Result Values are calculated, each result that makes up one Data Point Result Value is evaluated to determine which has the most decimal places. The Data Point Result value is calculated to that number of decimal places plus one.

If the Protocol is configured to automatically calculate the Target Mean and the Target SD, the same logic is used to determine the number of decimal places in the Mean and SD.

For example, if the result values have three decimal digits, the Data Point Result value will be calculated to four decimal digits.

IE Compatibility

The Moving Averages desktop is now compatible with Internet Explorer 11.

Archiving Enhancements

Processing Enhancements

The Archiving feature was enhanced to ensure SM data is not archived more than once.

Instrument Manager Base Enhancements

Operating System

Instrument Manager v8.14 was validated on Windows 8.1 (64-bit) and Windows Server 2012 R2 (64-bit).

Instrument Manager v8.14 was not validated on Windows XP.

Diagnostics

Marking a connection in or out of service is now logged in System Log.

Database Restore

When restoring databases from a backup, you have the ability to map databases from your backup file to the default database locations defined on your new system.

Secure Communications and Connection Level Changes

You now have the ability to specify the Caché SSL/TLS configuration to use for communication with each device. Additional character encoding is available for communication from the **Connection Prop-**

Test Code Mapping

erties window. You can select character encoding from a drop down list containing the following open parameters:

| | | | |
|--------|--------|------------|---------------|
| BIN | CP874 | LatinC | UnicodeLittle |
| CP1250 | EBCDIC | LatinG | URL |
| CP1251 | HTML | LatinH | UTF8 |
| CP1252 | JS | LatinT | XML |
| CP1253 | JSML | RAW | XMLA |
| CP1255 | Latin2 | SAME | XMLC |
| CP866 | Latin9 | UnicodeBig | None |

When configuring TCP/IP communication for a device, you can uncheck the **Log Error for Disconnects** check box to prevent errors on TCP/IP disconnections. Prior to 8.14, when IM acted as the server and a device was disconnected, an error was filed on the connection and in the Communications Trace. With the new technologies IM drivers support (REST, HTTP, etc.), connections are not always persistent. With version 8.14, you can determine if a disconnect logs an error on the **Status Display** screen.

Test Code Mapping

In prior versions of Instrument Manager, the first ordered test code encountered in the result message would have been replicated for all test codes mapped to one Instrument ID. With IM 8.14, test code mapping functionality now respects all ordered test codes in those instances when multiple test codes are mapped to the same instrument code, and more than one of those test codes are returned in a result message.

The **Test Load Mapping** button was removed from **Configuration Properties**, to remove the **Test Load Factors** screen. In this release, use the **Test Code Map** button from **Configuration Properties** to define

test load mapping in **Test Code Mapping**, using the new **Load Factor** or **Duration** and **Multiple** tests run for load balancing fields.

NOTE: This is only applicable when the system is licensed for Specimen Routing and the configuration represents an instrument.

User Interface Enhancements

Customize Instrument Manager Menus

The Customize option available on most workspace menu bars is now available on the Main Menu of Instrument Manager. Using standard drag and drop functionality, you can customize the menu options that appear on the main Instrument Manager menus.

Tab Control

When you are working with multiple windows open, this feature provides a method to organize your windows in a central location, pinned as tabs to the location you specify (i.e., top, bottom, right, or left).

Multiple Monitor Display

Instrument Manager now provides the ability to use multiple monitor displays. When IM loads the screen layout from the last session, if the screen was displayed off of the monitor it will now be repositioned on the monitor. Previously, you had to reset form layouts to view the entire form on the monitor.

Known Issues Corrected in 8.14

Instrument Manager Base

- **Instrument Manager Base** was updated so that when an error message is displayed, the "Copy to Clipboard" button will work correctly. (KI1934)
- **Instrument Manager Base** was updated so that if Security settings restrict a user's access to only one of the buttons in the

Instrument Manager Base

Configuration Editor screen, that user will not be able to access the other buttons (i.e., Add, Delete, Properties and Copy) via the right-click menu. (KI2555)

- **Instrument Manager Base** was updated so that extended ASCII characters are read correctly on serial I/O ports. (KI2651)
- **Instrument Manager Base** was updated to allow for column focus stability in the **Security > Users and Groups** screen, if the **Enabled** column is moved from its original position. (KI2792)
- **Instrument Manager Base** was updated, regardless of column moving on the **Data Elements grid** in the **Security > Users and Groups** screen, to correctly auto-check and auto-uncheck data elements in the **Group Configuration Pane**. (KI2796)
- **Instrument Manager Base** was updated allow column moving and resizing stability in the **Group grid** of the **Group Configuration Pane** in the **Security > Users and Groups** screen. (KI2797)
- **Instrument Manager Base** was updated allow column moving and resizing stability in the **User grid** of the **User Configuration Pane** in the **Security > Users and Groups** screen. (KI2798)
- **Instrument Manager Base** was updated to allow for column focus stability in **User grid** of the **User Configuration Pane** in the **Security > Users and Groups** screen. (KI2799)
- **Instrument Manager Base** was updated to not allow trailing spaces in the **Users and Groups > Groups Configuration**, when creating a new Group Name in the **Security > Users and Groups** screen. (KI2802)
- **Instrument Manager Base** was updated to not file an error and close Instrument Manager if the **User ID** column is dragged into the **Group-By** box in the **Security > Users and Groups** screen. (KI2806)
- **Instrument Manager Base** was updated so that the Customer Name panel in the Instrument Manager status bar will resize correctly after a maximize/minimize of the screen. (KI2832)

- **Instrument Manager Base** was updated so that only the {**Last Order to IM Date/Time**} will be set to the Current Date/Time, when a second order is received for an existing Specimen ID. (KI2848)
- **Instrument Manager Base** was updated so that using the {**Suppress Message**} action in LIS Result Rules does not cause errors to be logged on the LIS and QMGR connections. (KI2855)
- **Instrument Manager Base** was corrected to prevent an error that occurred when the **Driver Properties** button for the Bio-Rad driver dialog was clicked, while Quality Control set-up was open. (KI2865)
- **Instrument Manager Base** was updated so that the Lock Table will not get filled up if there is a Status message for an unknown specimen, and that connection has "Update SM on Status Message" checked. (KI2873)
- **Instrument Manager Base** was corrected to prevent users from being able to send QC results to closed lots in Bio-Rad. (KI2889)
- **Instrument Manager Base** was updated so that on a clean install, the Purge configuration will correctly contain Shadow Latency Limit and Data Source Latency Limit. (KI2933)

Laboratory Intelligence

- **Laboratory Intelligence** was updated to ensure that permissions show up correctly in a license report. (KI2773)
- **Laboratory Intelligence** was updated so that pressing the F1 key on Laboratory Intelligence screens will launch the Help menu. (KI2829)
- **Laboratory Intelligence** was updated so that the Connection Status will accurately reflect the state of IM connections, if the Purge Connection is running on the Laboratory Intelligence Report Server or a Hot Backup Shadow system. (KI2920)
- **Laboratory Intelligence** was updated to ensure data is correctly purged from the cubes. (KI2924)

Moving Averages

- **Laboratory Intelligence** was updated so that Quality Indicator percent measures on Specimen and Test cubes will not misrepresent values. (KI2947)

Moving Averages

- **Moving Averages** was updated so that creating a Moving Averages protocol that filters on Connection Site or Connection Location will not cause an error. (KI2837)
- **Moving Averages** was updated so that the calculations for Mean value would be statistically precise to the number of decimal places in the received data. (KI2905)
- **Moving Averages** was updated so that Qmgr will not go into an Unknown state and stop processing data through the system, if two specimens on the system cause a Moving Averages Violation Flag to be filed. (KI2909)
- **Moving Averages** was updated so that the Moving Averages purge protocol will update results correctly when purging. (KI2949)

Rules Processing

- **Rules Processing** was updated to prevent an error that occurred if there was a carriage return line feed in a specimen comment. (KI2704)
- **Rules Processing** was corrected so that the {Is Numeric} function will work correctly in conjunction with Julian Date and Age in Days/Months/Years. (KI2760)
- **Rules Processing** was updated to prevent an error that occurred when a rule that held tests for verification was followed by a suppress message rule. (KI2821)
- **Rules Processing** was updated so that using the {Length of} Data Element on a Literal value in Rules no longer causes an error when saving the Test/In Validation Rule set. (KI2830)
- **Rules Processing** was updated to enable users to import rule testing scenarios. (KI2831)

- **Rules Processing** was corrected so that using the {Rerun Test} action in Rules will not cause all occurrences of that test in the message to be marked as Rerun. (KI2845)
- **Rules Processing** was updated so that enabling a filter in SM on the Specimen Completion Status, while the option **Apply to Filtered Connection** is checked, enables the filter even if there is no enabled filter on the Connection Name. (KI2847)
- **Rules Processing** was updated so that using a Date/Time data element with {On That Test} in the 'If' statement will not cause an error to occur. (KI2892)
- **Rules Processing** was updated so that Rules will execute on Specimen Status messages, but will not execute on Container Status messages, which should not be processed by Rules. (KI2942)
- **Rules Processing** was updated so that an error will not be generated if a Rule is used to check orders for multiple tests in order to suppress them, and there are multiple instances of some, but not all, of the tests contained in the order. (KI2943)

Specimen Management

- **Specimen Management's** Color Coding Wizard was corrected to prevent the Wizard from forgetting the Criteria in Step Two, if the user clicks 'Next' to go to Step Three, clicks 'Back' twice (to go back to Step One), then clicks 'Next' once to go to Step Two of the process again. (KI2477)
- **Specimen Management** workspace was updated to remove errors when loading forms. (KI2764)
- **Specimen Management** was updated to ensure stability when applying color on connection **Site** or **Location**. (KI2768)
- **Specimen Management** now works correctly with "does not start with" and "does not end with" operators. (KI2775)
- **Specimen Management** was updated so that the Operator will not be removed from the selection field of the Color Coding setup, if the user enters criteria in Step 2, clicks the 'Back' button, then returns to Step 2. (KI2776)

Specimen Management

- **Specimen Management** was updated to allow the creation/editing of a Boolean filter in the Workspace. (KI2791)
- **Specimen Management** was updated to prevent an error that occurred when a color filter with differing data types was edited. (KI2828)
- **Specimen Management** was updated so that the Specimen Management Workspace will show the correct information when the user changes rows in the workspace. (KI2852)
- **Specimen Management** was updated so that using a test data element as a delimiter to a Literal value will not generate an error upon saving. (KI2890)
- **Specimen Management** was updated so that after releasing a run, Specimen Management will select the next specimen in the Specimen Worksheet pane. (KI2906)
- **Specimen Management** was updated so that {NOT} is correctly applied to a rule if it is used in conjunction with {Is Numeric}, and the item being evaluated is a Specimen or Patient Data Element, a value list, or a literal. (KI2932)
- **Specimen Management** was updated so that displayed Dynamic Filters will be correctly removed from the Workspace when they are deleted. (KI2937)
- **Specimen Management** was updated so that when creating a Color Coding in SM, the Workspace selection in step 5 will be remembered if the user clicks 'Back' and then 'Next'. (KI2940)
- **Specimen Management** was updated so that no error is generated if the user adds a Corrective Action of more than 30 characters in length to the QC Action Log screen, when using VQAT/QCML integrated QC. (KI2941)
- **Specimen Management** was updated so that the correct Test will have its Date/Time data element updated when both the Specimen Worksheet and the Test Worksheet are being used, and the user changes the Date/Time data element for a Test. (KI2945)

- **Specimen Management** was updated so that changing the Date/Time data element for a Test in the Run Worksheet will not crash Instrument Manager, if the user has both the Run Worksheet and the Specimen Worksheet in use. (KI2946)

DATA INNOVATIONS NORTH AMERICA

120 Kimball Ave., Suite 100
South Burlington, VT USA 05403
Fax: (802) 658-2782



Support

Phone: (802) 658-1955
Email: northamerica-support@datainnovations.com

Sales

Phone: (802) 264-3470
Email: northamerica-sales@datainnovations.com

DATA INNOVATIONS ASIA

Fax: +852 2398 8667

Support

Phone: +852 2398 3182
Email: asia-support@datainnovations.com

Sales

Phone: +852 2398 3182
Email: asia-sales@datainnovations.com

DATA INNOVATIONS LATIN AMERICA

Fax: +55 (11) 3871-9592

Support

Phone: +55 (11) 3801-3283
Email: latinamerica-support@datainnovations.com

Sales

Phone: +55 (11) 3801-3283
Email: latinamerica-sales@datainnovations.com

DATA INNOVATIONS EUROPE

Fax: +32 2 376 43 84

Support

Phone: +32 2 332 24 13
Email: europe-support@datainnovations.com

Sales

Phone: +32 2 770 62 22
Email: europe-sales@datainnovations.com

www.datainnovations.com

AUTHORIZED REPRESENTATIVE IN THE EUROPEAN COMMUNITY

MedicalTechnology Promedt Consulting GmbH Altenhofstrasse 80
D-66386 St. Ingbert, Germany



Is your lab **IM**powered®?