

Product Release Notes

Product: Ponemah™ Physiology Platform
Model: Ponemah
Version: 5.20-SP11
Build: 006920-014 (CD Build)
Date: April, 2018

Product Release Notes for Ponemah Physiology Platform version 5.20 Service Pack 11 (SP11) indicate revisions made to the Ponemah core application since release of version 5.20. Since the v5.20-SP10 install includes the revisions from previous v5.20 service packs, those revisions are also listed with associated Previously Fixed Version distinctions for reference. For information regarding changes to the software from previous versions, please refer to the Release Notes folder located on the version 5.20 CD. Product Release Notes indicate only revisions to application contents that are part of a specific CD build.

Product Release Notes for Ponemah do not include information regarding revisions of the Ponemah Analysis Modules. Information regarding revisions to the Analysis Modules is detailed in separate Product Release Notes.

Notice for organizations that must comply with FDA's Good Laboratory Practices (GLP) and 21 CFR Part 11 Electronic Records; Electronic Signatures: Ponemah Versions may contain **Preview Features**. These **Preview Features** are listed in the Product Release Notes table under the column, "Type of Change". A **Preview Feature** indicates that enhancements have been made to Ponemah, but have not been validated. Instead, Data Sciences International (DSI) has opted to delay complete validation until receiving comments from customers regarding use of these features. Further validation of these features will be performed in later releases of Ponemah. There may be additional **Preview Features** that had been documented in previously released versions that are not documented here. These features are not available unless manually enabled by the user. If documentation is needed regarding these features, please contact the DSI Technical Support Group – support@datasci.com.

Reference #	Type of Change	Previously Fixed	Description
Ponemah Core - General			
40432	E	V5.20-SP10	Enhanced window management by including a message handler for all pop-up messages displayed during acquisition. Note that a notification icon will be displayed at the bottom of the Ponemah window to alert the user of a new message.
40048	F	V5.20-SP10	Changing the X axis scaling or switching in/out of parser view mode would cause a graph page to freeze if the Parser segment watermark label was enabled. This has been corrected.
39361	E	V5.20-SP10	Changed folder/path where our product definition files are stored to be version-specific to ensure compatibility with multiple versions on a single PC.
38369	F	V5.20-SP10	Installing SP8 or later would always default the Hardware interface to use the MX2 interface despite being listed as the PhysioTel Digital interface in the Application Configuration. This has been corrected.
36604	N	V5.20-SP9	Added SEND related information accessible via Excel tabs and Database tables for use by 3 rd party SEND preparation tools. This is a purchasable option.
35755	E	V5.20-SP9	Added Acquisition synchronization capability between analog signals collected using the ACQ-7700/ACQ-16 and signals from implantable telemetry collected using the MX2 (PhysioTel/PhysioTel HD implants) or the CLC (PhysioTel Digital implants).
39610	N/A	V5.20-SP9	The default protocol file has been updated to set all channels to RAW analysis and to a sample rate of 500 samples/second.
39459	F	V5.20-SP9	Fix for the Implant Status dialog displaying the implant Status as Idle when the first channel of the implant is disabled during Acquisition.
39443	F	V5.20-SP9	Added an automated settings verification upon selecting Save & Exit or Cancel from the PhysioTel/HD Hardware Configuration dialog to ensure sampling rates are set appropriately for configured channels.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
38106	F	V5.20-SP9	<p>When using the MX2 (PhysioTel and PhysioTel HD) or the CLC (PhysioTel Digital), the Selected Implants list in the Hardware menu Select Implants dialog is automatically sorted. This prevents users from dictating the subject order which impacts the channel order within Setup P3 Setup Channel Input Setup.</p> <p>When replacing a subject within a Study context, it is important to keep the other subjects/channels in the same order, requiring the ability for the user to dictate the order within the Selected Implants list.</p> <p>The user ability to sort the Selected Implants list has been added to solve this issue.</p>
37487	F	V5.20-SP9	Fix for repeating Data Reduction labels in the Excel output generated from an Acquisition or Replay.
37486	F	V5.20-SP9	<p>Fix for listing the incorrect time within the Events Excel sheet of the Excel output from an Acquisition or Replay.</p> <p>Workaround This was introduced in Ponemah v5.20-SP8. To obtain the correct time listings for the Events, load the data into Review and Save a Mark Section. The resultant Excel output generated will list the correct times.</p>
36634	F	V5.20-SP9	Fixed issue where the C:\ProgramData\DSI\DACSS\ settings folder would be inaccessible to non-ADMIN users if it was created by a user running with ADMIN privileges.
31608	N	v5.20-SP8	Added Subscription Licensing to allow time-based licensing schemes and notifications.
32850	E	v5.20-SP8	Added an Update Labels button to Primary and Trend graph setup pages to automatically update the Labels and Units entered based on those defined in the Channel Input Setup to expedite graph configuration.
32871	E	v5.20-SP8	Added the ability for users to display group names throughout the Ponemah Application in place of the standard nomenclature used in the Derived List Views (DRa, DRb, etc.) and Data Reduction List Views (DataReductionA, DataReductionB, etc.), as well as Excel output file tab names (Group A, Group B, etc.). This can be done within Setup P3 Setup Setting, under the Global Settings list, enable Use Group Labels.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
34062	E	v5.20-SP8	Added the ability to allow users to report Data Reduction results such that Auto Label Time uses the End Time for the Data Reduction Data Reduction interval. Original functionality of the default Auto Label Time used the interval Start Time. This is a checkbox option, defaulted to unchecked; i.e. using the original functionality of using the interval Start Time.
32849	E	v5.20-SP8	Added the ability to automate the Experimental Protocol Header input process through an import of a .txt (CSV) file. This is available only in Idle mode; i.e. during Protocol creation. It is not available during Review.
34745, 34746	E	v5.20-SP8	Extended the ability of Pivot Compatible Tables to use all Experimental Protocol Header fields as columns within their Pivot Compatible Excel output.
34352	E	v5.20-SP8	Added the Ponemah Process Logger application to the installation and made it accessible through the Windows Start men All Programs Ponemah folder.
33475	E	v5.20-SP8	Updated the description of Ponemah Options specified in the Product Information P3 Options tab and the Help View License Options list to more accurately reflect the available options. For example, the Template option referred to ECG Pattern Recognition Option (PRO), therefore the description now reads ECG PRO.
31400	E	v5.20-SP8	Added the .NET version information to the Help Product Information System Modules tab.
31399	E	v5.20-SP8	Added the computer name to the Help Product Information General tab.
32914	E	v5.20-SP8	A warning dialog was added to notify users that once a new license file is loaded, Ponemah must be restarted.
33770	E	v5.20-SP8	The Ponemah Experimental log file contains an entry "Last Calibration" which is a holdover from the legacy platform. This calibration information is no longer valid in the current platform and was removed. File Print Calibrations was also removed.
33608	E	v5.20-SP8	The Ponemah Experimental log file contains an entry "Report complete" when Data Reduction is triggered during an Acquisition or Replay. This was removed from the Excel log file output.
31702	E	v5.20-SP8	Added the Analysis Module version to the Experiment Log Excel output.
31717	E	v5.20-SP8	Improved the usability of the Acquisition Status List View by no longer displaying disabled channels.

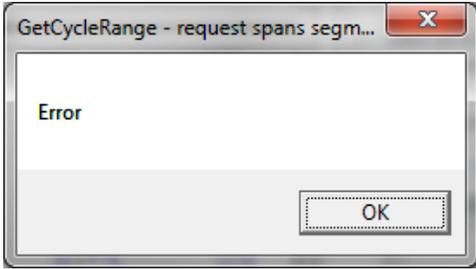
Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
33135	F	v5.20-SP8	Installing Noldus Video Components no longer prevents Dataquest A.R.T. files from being converted to Ponemah file types.
33000	F	v5.20-SP8	Remote Notification would report an alarmed channel and its associated derived output value that triggered the alert correctly. However, it would also include channels not in an alarm state and report incorrect values of '0.0' for those channels. This has been corrected.
35168	F	v5.20-SP8	Corrected the time displayed in Real Time for Start/End columns when using Data Reduction during Acquisition.
34821	F	v5.20-SP8	Fix for Implant Name disappearing when attempting to add it to the Selected Implants list within the Hardware Select Implant dialog when the Implants within the Available Implants list have the same name.
22975	F	v5.20-SP8	Changes to the hundredths place of the Analysis Module version no longer require a license file update.
30852	F	v5.20-SP8	A private, dedicated network is recommended for the connection of implantable telemetry acquisition hardware (e.g. MX2 and CLC) when using Ponemah to collect data. When running Ponemah on an open, non-private network (i.e. university or corporate network) discovery of UPnP devices could, over time, lead to an "OutOfMemory" exception and result in data collection stopping unexpectedly. This has been corrected.
34952	F	v5.20-SP8	Fixed issue in Acquisition Start of MX2 and PhysioTel Digital hardware that could allow slightly different acquisition start times across implants.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
25802	E	v5.20-SP7	<p>Added the ability to output Derived Parameter and Data Reduction data from all Groups (Subjects) into a single data table/ Excel spreadsheet.</p> <p>When enabled, two new Excel spreadsheet tabs will be available in the Excel output:</p> <ul style="list-style-type: none"> • Derivations – contains the Derived Parameter data • DataReduction – contains the Data Reduction data <p>Column IDs for Subject, Dose Group, Gender, Test Article, User Comment, and Study Day are pulled from the Experimental Header, located within Setup P3 Setup.</p> <p><i>Note:</i> If the Subject field is blank, the Group number will be used. If the other fields list above are blank, “NA” will be used.</p>
28865	E	v5.20-SP7	Experimental Header fields are now able to be edited within Review.
28904	E	v5.20-SP7	<p>When using Data Reduction, the user has the option to let Ponemah automatically assign Labels to the Data Reduction lines viewable within the Data Reduction List View. One option is {M}, which provides the time in minutes from T0; e.g. T5 would represent 5 minutes from the T0 event. This format, however, is not always what is expected within reports.</p> <p>The following have been added as automatic labeling options:</p> <ul style="list-style-type: none"> • {T} provides hh:mm:ss format • {T2} provides hh:mm format
28872	E	v5.20-SP7	<p>Added the Ponemah Utilities application to the installation CD.</p> <p>This utility displays the current state of the system settings (computer Services and Firewall) needed to have a valid configuration to aid in troubleshooting.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
29160	F	v5.20-SP7	<p>In Data Reduction when Parser Segments are defined as the Type, the application will change Parser Segments to Time for Acquisition or Replay because Parser Segments are a Review only feature. The default Time used in this case was 5 Seconds.</p> <p>This can cause Ponemah to shut down unexpectedly (Data Buffer Overflow) if there are many Derived Parameter calculations enabled. It can also lead to a SQL database issue if Study is being used.</p> <p>The default Time has been updated from 5 seconds to 60 seconds to prevent these issues and will reset back to the previous time when acquisition is stopped.</p>
26862	N	v5.20-SP6	<p>Added support for DSI's new Matrix 2.0 (MX2) hardware interface. The MX2 is the next generation version of the Data Exchange Matrix (DEM).</p> <p>The MX2 is compatible with the PhysioTel™ and PhysioTel HD implant models and the RPC, RSC, and RMC receiver models.</p>
27624	F	v5.20-SP6	<p>When using an Ambient Pressure Reference (APR-1) with PhysioTel Digital, JET, and/or the new Matrix 2.0 (MX2) acquisition interfaces, an E2S-1 is required for connection of the APR-1 to the network. If the acquisition PC has multiple network interface cards (NIC) to connect to the dedicated acquisition hardware network, as well as the corporate network, Ponemah would only search for the E2S-1/APR-1 on one of the NICs. This could result in the E2S-1/APR-1 not being found during hardware/protocol setup.</p> <p>This has been correct to search for the E2S-1/APR-1 across both NICs.</p>
23326	N	v5.20-SP5	<p>Added the ability to send email notifications based upon alarm conditions and/or application failures. Users can differentiate the send to fields for alarm conditions or application failures to notify the appropriate groups to take action.</p> <p>This is a purchasable option.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
23993	E	v5.20-SP5	Ponemah will now prevent Windows from entering Sleep mode during an acquisition to prevent unwanted issues from occurring. This feature is only available for the Windows7 operating system.
24480	F	v5.20-SP5	<p>The <ALT> + <S> hotkey is used within Review to easily synchronize all graphs and spreadsheets for a particular channel without requiring multiple clicks across different Ponemah Review windows. This was not function properly when sync'ing from the Primary graph page to the Trend graph page.</p> <p>This has been corrected.</p>
19565	E	v5.20-SP2	<p>User Account Control (UAC) notifies users before changes to the computer are made that require administrator-level permission. When launching Ponemah the User would receive a UAC warning message that the Application Publisher is Unknown and would be required to verify that the system should run the application. The UAC also allows IT groups to set policies defining applications with Unknown Publishers as Untrusted and disallowing Users the ability to run these applications.</p> <p>The Ponemah application has been digitally signed with the appropriate certificate defining Data Sciences International, Inc. (DSI) as the Publisher.</p>
20254	E	v5.20-SP2	<p>Updated the Browse for Folder dialogs from Windows XP to Windows 7 style to allow for network folders to be displayed when browsing to files or folders. This change will update the following areas:</p> <ul style="list-style-type: none"> • Study Edit Study Search Path • Options Application Configuration... Data Paths • File Import DSI ART Data...

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
18987	F	v5.20-SP2	<p>The Auto Configure feature will adjust certain settings within the Setup P3 Setup dialog to help reduce the time configuring a system prior to starting an acquisition. However, when using the OpenART acquisition interface and configuring an Ambient Pressure Reference (APR-1) with an Implant that has pressure as its first channel (e.g. PA-C10), selecting Auto Configure Protocol will incorrectly display channel labels.</p> <p>This has been corrected to function as expected.</p>
18094	F	v5.20-SP1	<p>In previous versions of Ponemah (5.0 and lower), the A/D Sample rate, Channel Input Setup, and Channel Mapping dialogs would display channel letters in front of the channel name for each separate implant. In 5.1 and above, those letters have disappeared.</p> <p>For Example: Previous Version of Ponemah A1: Pressure A2: Biopotential A3: Temperature B1: Pressure B2: Biopotential B3: Temperature.</p> <p>Ponemah 5.1+ 1: Pressure 2: Biopotential 3: Temperature 4: Pressure 5: Biopotential 6: Temperature</p> <p>This has been corrected to display the Subject ID (OpenART), Implant ID (PhysioTel Digital, Device ID (JET), and channel letters (ACQ-7700/ACQ-16).</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
18244	F	v5.20-SP1	<p>An Ambient Pressure Reference (APR-1) is required for data acquisitions from DSI pressure implants (e.g. HD-S21) and must be configured within the OpenART interface to account for ambient pressure changes. When an APR-1 is not present in the configuration, which is typical when acquiring from implants that do not contain a pressure sensor (e.g. biopotential only devices, such as ETA-F10), the Auto Configuration feature will still assign the last channel within P3 Setup's Channel Input Setup as an Ambient channel by configuring the BARO analysis module and assigning the associated label and units.</p> <p>This has been corrected to configure the last channel appropriately regardless of the presence an APR-1.</p>
19098	F	v5.20-SP2	<p>When using the Scatter Graph, the user can draw a free form drawing around specific points of interest using the Free Form Select icon. Two methods are available for the user to determine how selected and unselected points are handle: Delete Cycles or Add Bad Data Marks. Once points are selected, the user can right-click to display options for either applying the method to the selected or unselected points. When using the Delete Cycles method, the user may see the following error:</p>  <p>When this error occurs, this message will repeat for each point selected/unselected upon hitting OK.</p> <p>This has been corrected.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
20531	F	v5.20-SP2	<p>When printing a primary graph that includes a freeform note, the freeform note should be printed on a separate page. Similarly, when printing an ECG PRO template graph page, the template graph page statistics should be printed on a separate page.</p> <p>In both instances, the graph pages print correctly; however, the freeform note and template graph statistics pages print with misaligned headers and missing note and statistics details.</p> <p>This has been corrected.</p>
Replay			
34628	F	v5.20-SP8	<p>Fix for an unexpected shutdown of Ponemah if the user ran a Replay of an Acquisition file in Study, closed Study, and then selected Replay Start Replay.</p>
18372	F	v5.20-SP2	<p>Enabling the Measure feature in Replay would result in the Measure window being partially displayed, rendering the feature unusable. The Measure window would then not be able to be closed and prevent the user from moving forward with the Replay. Ponemah would have to be closed via the Windows Task Manager to get out of this state.</p> <p>This has been corrected to allow Measure and Replay to function as expected.</p>
Review			
41507	F	N/A	<p>Fix added for Q-A interval being reported as an 'x' in the Derived Parameter List View when the data loaded into Review exceeds 60 hours.</p>
35665	F	V5.20-SP9	<p>Fix for using the incorrect Units label when printing a hardcopy of the waveform from Review. Prior to the fix, the units on the Y-axis were taken from the Channel Input Setup Units instead of the units from the Graph Page. This would be an issue if using a presentation signal, dP/dt for example, where the Graph Page would correctly display mmHg/s while the Channel Input Setup would be set to mmHg.</p>
33392	E	v5.20-SP8	<p>Added the following hotkey to allow all Bad Data Marks within a channel to be deleted and automatically execute a reanalysis of the channel: <Alt> + <R></p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
32861	E	v5.20-SP8	Added <Alt> + <s> hotkey to synchronized the Derived List View to the selected point in the Scatter graph. <i>Note:</i> The implementation of <Alt> + <s> for Scatter graph type is different than for Primary or Trend. These graphs SYNC all possible views, while the Scatter only does the Derived List View.
32714	E	v5.20-SP8	Added <Alt> + <v> hotkey to analyze the visual region of the selected channel within a Primary graph.
32715	E	v5.20-SP8	Added <Alt> + hotkey to place Bad Data Marks across the visible region of data within Primary and Trend graphs for the <i>currently selected channel</i> .
32854	E	v5.20-SP8	Added <Alt> + <z> hotkey to place Bad Data Marks across the visible region of data within Primary and Trend graphs for <i>all groups and their associated channels</i> .
32182	E	v5.20-SP8	Added the following hotkeys to search for Parser Segments: <Shift> + <F6> searches from previous Parser Segment. <Shift> + <F7> searches from next Parser Segment.
32131	E	v5.20-SP8	Added the ability to change Event Labels, Group Names, Channel Labels, and Units while in Review.
32745	E	v5.20-SP8	Associating a Data Insights Search with a Channel will now automatically select that Channel/Search Pair to display its Results, no longer requiring manual selection.
34922	F	v5.20-SP8	Fix for an error being displayed when using ECG PRO after selecting "Delete all unmatched cycles and Save Mark Section." The error stated: <i>ODBC Database Error: Syntax error in INSERT INTO statement.</i> Note: ECG PRO does not need to run prior to these actions to cause the error, templates need only be configured. Additionally, the "Delete all unmatched cycles and Save Mark Section" button has been separated into two separate buttons/actions.
34955	F	v5.20-SP8	Improved the usability of the deletion hotkeys for marks, Bad Data Marks, and Events by lifting some imposed restrictions that did not apply.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
32719	F	v5.20-SP8	Fix for Data Insight Searches remaining in an In Progress/Waiting state upon manually deleting multiple Bad Data Marks.
32731	F	v5.20-SP8	Fix for Data Insights Results Wave View displaying more cycles than specified in the search. This may occur when analyze visible region results in marks placed outside the visible region, such as when syncing with prior cycles in ECG. Data Insights was expecting changes only in the region being analyzed i.e. the visible region.
32908	F	v5.20-SP8	Fix for Ponemah getting into a <i>Not Responding</i> state when Data Insights was selected from the Functions menu, while already opened, but minimized.
32794	F	v5.20-SP8	Fix for Ponemah unexpectedly shutting down upon changing the number of Panes displayed in a Template graph after a template cycle had been previously added.
35147	F	v5.20-SP8	Corrected the hotkeys <Ctrl>+ <←> and <Ctrl>+ <→> to function as expected; e.g. move Events within Review.
34024	F	v5.20-SP8	Fixed the display of checkboxes within the Data Insights dialog when using different Windows themes.
35633	F	v5.20-SP8	Ensured that Data Insights Match Result background colors are always displayed with opening Data Insights with associated searches.
34661	F	v5.20-SP8	Corrected the Ponemah ASCII output such that it would no longer incorrectly output an occasional repeated Time Stamp value.
32508	F	v5.20-SP8	Added a progress dialog to the Merge Bad Data Mark process with a Cancel. Canceling a merge will result in a partially completed merge.
32718	F	v5.20-SP8	Fix for validation marks no longer displaying after combining RAW files.
33737	F	v5.20-SP8	Fix for incorrect timestamp within Excel output for Events occurring at greater than or equal to 100 hours elapsed time.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
N/A	N	v5.20-SP7	<p>Added support for DSI's new Data Insights feature that permits:</p> <ul style="list-style-type: none"> • Improved efficiencies and accuracy in data validation, arrhythmia detection, and anomaly reporting. • Expanded functionality for arrhythmia detection and classification (Runs, bi/trigeminy, and other sequences). • Improved result with the elimination of data anomalies and inclusion of valid data. <p>If licensed, the feature can be accessed within Ponemah Review by selecting Functions Data Insights.</p> <p><i>Please note: Mark Sections created in Ponemah v5.20-SP7 are not backwards compatible with previous versions of Ponemah. When opening a .RVW file created with v5.20-SP7 with a previous Ponemah version the mark section information will not be displayed – cycle marks will not be displayed within the graphs pages and Derived Parameter and Data Reduction List Views will be empty. The data will need to be reanalyzed to display the marks and populate the List Views.</i></p>
13915	F	v5.20-SP6	<p>When Saving a Mark Section within Ponemah Review, one of the following error messages may be seen under certain conditions due to memory fragmentation.</p> <p>ODBC error. Ponemah needs to close.</p> <p>This would result in Ponemah becoming unresponsive and requiring the user to shut down Ponemah from the Task Manager. The ODBC interface file (MS Excel® or Access®) would also not be created.</p> <p>This has been corrected.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
23805	F	v5.20-SP5	<p>When loading data in Review, Ponemah may request more memory than the system can provide. This situation may arise when ECG PRO generates a large set of match information. The size of the match information is based on the number of cycles analyzed and the number of match regions used. When dealing with 130 – 150 bpm data and a single match region, the system can typically handle 12 channels of 24 hour data.</p> <p>The error could manifest itself in a number of ways. It could show an error allocating memory error or there may be an unhandled exception due to an attempt to access an invalid memory location.</p> <p>This issue has been corrected by removing the ability to “Load Previous Matches,” freeing up extra memory from being used during the Review loading process.</p>
24473	F	v5.20-SP5	<p>If Parser Rules are created when in Idle mode, parser segments are automatically set up when opening the Review file created after an Acquisition or Replay. This automatic creation of parser segments was reducing the speed at which the Review file would open.</p> <p>The following conditions need to be in place for this issue to manifest itself:</p> <ul style="list-style-type: none"> • A large multi subject dataset (24 hours) • Parser set to Group mode • Use Parser Rules in use with a large number of parser segments (divide the entire dataset into 1 minute intervals) • Enable Data Reduction for all subjects and set interval to “Parser Seg” <p>This issue has been corrected allowing Review to load the file more expeditiously.</p>
23159	F	v5.20-SP5	<p>Entering a larger number of Events within a short segment of data (>15 events within < 60 seconds) could cause Ponemah to crash upon changing the logging rate or saving a mark section.</p> <p>This has been corrected.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
23873	F	v5.20-SP4	ECG PRO template analysis performance (speed) was reduced to an unacceptable level after a software fix was implemented with the Ponemah v5.20-SP3 release. This has been corrected to the performance level prior to the SP3 release.
23672	F	v5.20-SP4	Ponemah would occasionally crash when using the <Shift> + Scroll Wheel up/down or <Ctrl> + Scroll Wheel up/down hotkeys. This has been corrected.
22062	F	v5.20-SP3	Ponemah would occasionally crash when reanalyzing data within a short time frame after removing bad data marks from the entire channel. This has been corrected.
22209	F	v5.20-SP3	Ponemah would occasionally crash when loading a dataset into Review if channels were disabled from the Select Review Channels dialog. This would only occur when the following analysis modules were defined to the channels being loaded: <ul style="list-style-type: none"> • PAF • CYS • MAP • SBF • PT This has been corrected.
22210	F	v5.20-SP3	Ponemah would crash when deleting certain validation markers from the Primary graph page using hotkeys. This has been corrected.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
22426	F	v5.20-SP3	<p>The original implementation of the Zoom hotkey when used in conjunction with the Mouse Scroll wheel was contrary to the standard implementation used by other software applications (e.g. Google Maps).</p> <p>This has been updated to follow the standard convention:</p> <ul style="list-style-type: none"> • Hotkey* + Scroll Wheel up – zoom in (expand time span) • Hotkey* + Scroll Wheel down – zoom out (compress time span) <p>*Hotkey: <Shift> or <Ctrl></p>
22911	F	v5.20-SP3	<p>Ponemah would crash when using the hotkeys to insert a P or T mark on an ECG cycle that did not previously have an R mark present for that cycle.</p> <p>This has been fixed by disabling the insert P/T mark hotkey and insert QRS marks hotkey functionality to prevent the user from inadvertently entering this state.</p>
19014	E	v5.20-SP2	<p>Users have requested the use of hotkeys within Review to quickly execute certain functions from the keyboard without having to use the mouse to click icons or access menus. Please see the Ponemah Hotkeys Mapping Guide for keystroke combinations and their associated functions within Review.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
18759	F	v5.20-SP2	<p>While in Review, users can enter the Setup P3 Setup Channel Input Setup to enable and disable the derived parameters desired to be displayed in the derived data spreadsheets for the channels loaded within the Review session. When successive channels within a single group have analysis modules defined such that the preceding channel's analysis module has more available derive parameters than the analysis module of the next channel, disabling or enabling a derived parameter in the preceding channel may also automatically remove the next channel's derived parameters from the derived data spreadsheet.</p> <p>For example: Assume the following conditions: Channel 1 and Channel 2 are defined to Group A Channel 1 is defined to a BP analysis module (25 derived parameters) Channel 2 is defined to RAW analysis module (10 derived parameters) Channel 1 has the following parameters enabled: Num, Sys, Dia, Mean Channel 2 has only the NPMN derived parameter enabled</p> <p>Then, disabling Channel 1's Num parameter will also remove Channel 2's NPMN parameter from the derived data spreadsheet, but would remained enabled within the Derived Parameter selection dialog.</p> <p>Saving a mark section in this state would result the following error message and the mark section not being saved:</p> <p><i>"ODBC Database error: Number of query values and destination fields are not the same."</i></p> <p>This has been corrected to update the derived data spreadsheet and save mark section as expected.</p>

Reference #	Type of Change	Previously Fixed	Description
ECG PRO			
36774	F	v5.20-SP8	<p>If either of the Preserve options are selected (i.e. “Add Cycle and Analyze [Single Template - Preserve]” or “Analyze using Single Template – Preserve”) subsequent analysis using “Analyze [Entire Library]” may not update results as expected. Cycles will only be updated if their match percentages exceed the current match percentages.</p> <p>A workaround is to select either “Add Cycle and Analyze [Single Template]” or “Analyze using Single Template”</p>
33718	F	v5.20-SP8	Fix for Ponemah unexpectedly shutting down if ECG PRO placed the Tpeak and Tend mark on the same point.
32847	E	v5.20-SP8	Improved memory usage when analyzing with ECG PRO.
23686	E	v5.20-SP7	<p>Template Cycles can now be tagged with a description from a predefined list. Once a Template Cycle is tagged, any ECG cycle that is matched to that Template will also be assigned the specified tag. Data Insights can then be used to create custom searches based on the Template tags to quickly view all cycles that match the search conditions based on that tag.</p> <p><i>Please note: Template Libraries created in Ponemah v5.20-SP7 are not backwards compatible with previous versions of Ponemah.</i></p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
23751	E	v5.20-SP7	<p>Template Specific Attributes have been added for finer control of Template analysis. Now, users can apply unique Template Analysis Attribute settings to an individual Template Cycle, while still applying different, more standard Template Analysis Attribute settings to the rest of the Template Cycles within the Library.</p> <p>Additionally, P Offset has been added as a Template Specific Attribute. This allows the user to use a standard ECG cycle as the Template and offset the Pwave search region to locate, match, and place Validation Marks on isolated P waves.</p> <p>Together, this allows Ponemah to mark standard Pwaves and isolated Pwaves using a single Template Library. Users can then use Data Insights to locate and report on instances of AV Block.</p> <p><i>Note:</i> When using Template Specific Attributes with a Template Cycle to located instances of AV Block (isolated Pwaves), the standard Pwave for any cycles within the dataset matched to that specific Template Cycle will not be marked, as Ponemah cannot mark multiple Pwaves for a given cycle.</p>
30673	E	v5.20-SP7	<p>When using ECG PRO, the user has the option to delete unmatched cycles after Template Analysis has been run. This is done through a right-click menu option via the Primary graph page, one channel at a time. To expedite the process, a Delete all unmatched cycles and save mark section option has been added to the Review Functions menu. This will delete unmatched cycles from all channels with Template Libraries associate to them.</p>
27746	E	v5.20-SP7	<p>When adding new Template Cycles to a Template Library, users will save the Template Library to ensure all Template Cycles within the Library are accessible for future Review sessions. In some instances, users may wish to augment an existing Library and save it separately without having to rebuild from it from scratch or losing its original state. To permit this, a Save as new Template file option has been added.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
30331	E	v5.20-SP7	<p>When working with ECG PRO, it is useful to monitor the lowest matches as templates are added to the library and used to analyze data. Monitoring the lowest matches permits adding high value templates.</p> <p>When using "Add cycle and analyze" or "Analyze using single template", the match results for unmatched cycles correspond to the results from the new template. Previous unmatched results are discarded regardless of the relative value of the results.</p> <p>The following Template analysis options have been added:</p> <ul style="list-style-type: none"> • From the Primary graph page right-click menu "Add Cycle and Analyze - Preserve" • From the Template right click menu "Analyze using single template Preserve" <p>Both options will replace unmatched results only if the new template results are better than the existing.</p> <p>Note: there may be situations where all match regions exceed the respective minimum matches but are satisfied by different Templates and the cycle will NOT be matched. The user must run an Analyze All to update the match results. The recommendation is to work with a single region at a time unless working with Q and S in which case whole cycle should be used.</p>
Study			
41350	F	N/A	Fix added for issue where PhysioTel Digital implants could not be reordered in the implant list when using Study.
39331	F	V5.20-SP9	<p>Fix for Ponemah shutting down when attempting to Review a Study run that was created on a different workstation without performing a Sync Entire Study.</p> <p>Workaround: Perform a Sync Entire Study before attempting to Review data.</p>
38949	F	V5.20-SP9	Added fix for Network Study synchronization being unable to sync when specific runs were manually selected for the Report, then the default runs are reselected.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
38723	F	V5.20-SP9	The protocol associated with a Study could be changed between Study creation and the first acquisition. This has been prevented since modifying a protocol after Study creation can interfere with DSIR.
32852	E	v5.20-SP8	Added the option to append the Marks Section Name to the end of the Runs' file names.
33672	E	v5.20-SP8	When using Study, the user has the option to manually designate a particular Run as the Report Run, from which DSI Reporting will report results. The selected Run for Reporting is now logged within the Study Data Log.
32052, 31084	F	v5.20-SP8	Added a verification to Study Creation dialog to prevent a Study from being created if no Subjects were defined to the Study. The user will need to create Subjects to continue.
33811	F	v5.20-SP8	Corrected an issue where the Study database columns would shift resulting in DSI Reporting incorrectly reporting data. This would occur if Data Reduction was triggered during an Acquisition and the subsequent Study Run was opened in Review and a Save Mark Section is performed without first exiting Ponemah as the Date and Real Time columns would not be created.
34081	F	v5.20-SP8	Fix for Studies backed up from one system and restored on another causing Run errors.
25587	F	v5.20-SP8	<p>When creating a study, users may create negative study days (Day -1, -2, -3, etc.). It is a requirement that they add Subjects for each group during the negative study days. However, if Subjects are not added, the study will still verify successfully. The user may go to Run Study and start an acquisition. However when an event is added that triggers Data Reduction, the software will shut down unexpectedly. Alternatively, if an event is added during Review and the Marks Section is saved the software will also shutdown unexpectedly.</p> <p>This has been corrected.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
28913	F	v5.20-SP7	<p>When using Network Study, Ponemah provides a two methods to sync data between workstations. Sync Study copies the data contained within the database (e.g. Study Protocol information, Derived Parameter data, Data Reduction data, etc.) to all workstations, while Sync Entire Study copies the database data and all associated data files (e.g. .RAW, .RVW, etc.) to the workstation from which the Sync Entire Study was executed. If data files are missing when a Sync Entire Study is executed, none of the files will be copied to that workstation.</p> <p>This has been corrected to display a message to the user notifying them of that files are missing and allow them to choose to continue and copy the available files or to cancel the sync. The Study Log will record the actions taken in this dialog and maintain a list of the missing files.</p>
27947	F	v5.20-SP6	<p>The Data Manager tool makes files management easy by only displaying the name of the data collection or Study Run to the user. This approach ensured no files were missed during a move, copy, and/or delete action.</p> <p>This functionality was inadvertently changed with v5.20-SP3 while adding control of additional file types to Data Manager and resulted in the file types being displayed. This would require the user to select each individual file associated with the data collection/ Study Run on which the action was to be performed.</p> <p>This has been corrected to work as previous version of Ponemah, displaying only the data collection/Study Run.</p>
27849	F	v5.20-SP6	<p>When trying to create a Study backup file (.sdybkup), occasionally the following error message would be seen and the Study backup would fail.</p> <p>Error: Schema changed after the target table was created.</p> <p>This has been corrected to allow successful creation of the Study backup.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
21070	F	v5.20-SP3	<p>With Network Study, users can predefine their study protocol within the software prior to the start of data collection to accelerate the software setup process. When setting up a Tox study with multiple collection days, the subjects would not automatically populate on subsequent days resulting in the user being unable to view these subjects within the Run Study dialog.</p> <p>This has been corrected to automatically populate all Study Days appropriately.</p>
21076	F	v5.20-SP3	<p>When creating a Study, users were unable to add a Protocol to the setup if the file directory path of the Protocol location exceeded an 80 character limit.</p> <p>This has been corrected to allow users to add Protocol files to the Study setup regardless of the number of characters within the file directory path.</p>
22118	E	v5.20-SP3	<p>Support for Excel (.xls/.xlsx) and Access files generated after an acquisition and a mark section save has been added to the Data Manager. Users can now copy, move, and delete these files using Data Manager, along with the other file types associated with the Study.</p>
22119	E	v5.20-SP3	<p>The Events data table in the SQL Server database was not being synchronized with the Study upon performing a Sync Study or Sync Entire Study.</p> <p>This functionality has been added to the Study Sync. This caused no user facing issues for Ponemah, as the events are saved within the Review file. However, this functionality now allows DSI Reporting to take advantage of this added information for data display and reporting.</p>
22120	E	v5.20-SP3	<p>Data Manager allows researchers move or copy Ponemah generated data files to/from an archive device, while maintaining the integrity of electronic signature information linked to the electronic records. It also allows the user to permanently delete files with the appropriate permissions. The Data Manager could be used for all file types created by Ponemah except for the Study Backup file (.SDYBKUP), which was not recognized by the tool.</p> <p>This has been updated to recognize the Study Backup file and move, copy, or delete based on the user selection.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
19347	E	v5.20-SP2	<p>When using Network Study, users can synchronize data between acquisition and post analysis workstations using two options: 1.) Sync Study, which synchronizes the derived (calculated) and study settings data stored within the Study Database and 2.) Sync Entire Study, which synchronizes the Study Database and pulls all .RAW, .RVW, .SIG files associated with the study to the workstation that performs the sync. The Excel (.xls/.xlsb) and Access files generated after an acquisition and a mark section save would not be pulled with the other data types to the workstation that performed the sync. Note: Excel or Access file creation depends on the ODBC interface selection chosen within the Application Configuration menu.</p> <p>This has been updated to include the .xls/.xlsb and Access database files along with the other files types when a Sync Entire Study is performed. Note: if the ODBC interface is changed after the study data has been collected/analyzed but before the Sync Entire Study is performed, the system will not pull over the existing Excel or Access files, as it is looking for the file extensions based on the currently selected ODBC interface. I.e. If Excel is used during data acquisition and the ODBC interface is changed to Access on the post workstation prior to performing the Sync Entire Study, the system will not pull the Excel files to the post workstation upon selecting Sync Entire Study, as the system will instead be looking for Access files.</p>
18910	F	v5.20-SP2	<p>While in the Run Study dialog, users would experience an application crash when attempting to start an acquisition using the Scheduler Acquisition type. Note: Scheduler Acquisitions run as expected outside of the Study Option.</p> <p>This has been corrected to allow Scheduler Acquisitions from within Study.</p>
Data Security Option (DSO)			
41084	F	N/A	Fix added for issue where user names with apostrophes, e.g. O'Brian, would not appear in user name list.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
39605	F	V5.20-SP9	Changing channel labels in Channel Input Setup on a DSO system prompted the user to enter a reason. The dialog included a reference to Templates. This reference has been removed for changes to the Channel Input Setup and Template changes.
38720	F	V5.20-SP9	Fix for the user unnecessarily being prompted for a Reason Code when selecting OK or Apply from the P3 Setup dialog after a Channel Input Setup Label or Units change during Protocol setup; i.e., while in Idle mode.
38366	F	V5.20-SP9	Fix added to permit Mail Reader to capture failed login attempts when logging into Ponemah using Smart Cards.
38247	F	V5.20-SP9	<p>The Verify feature used for file signature verification would only display a partial list of files within its dialog when a folder does not contain .SIG files for all files that are expected to have an associated .SIG file. For example, if a .RAW file is not signed, only a partial list of .RAW files would be listed to this file (sorting by filename).</p> <p>This has been corrected.</p> <p>Note: This was introduced in v5.20-SP8 and didn't impact previous v5.20 Service Packs.</p>
32872	N	v5.20-SP8	Added an application to the Ponemah install to permit Administrators to copy the Data Security Options configured on one system to other systems. A technical note describing how to use this application is available upon request. Please contact DSI Technical Support.
32860	E	v5.20-SP8	Smart Cards that have been disabled due to exceeding the 5 attempts at entering the correct password may now be reset within the Ponemah Admin application.
33633	E	v5.20-SP8	The Ponemah Admin application would filter the Available Feature list within the Access Level Setup based on the Acquisition Interface selected in the main Ponemah application. This has been updated to ensure all Features are available for selection regardless of the selected Acquisition Interface.
31705	E	v5.20-SP8	Added Cancel All to the Copy/Move when files already exist within the destination folder.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
34542	F	v5.20-SP8	User control of the Ambient Pressure Reference (APR-1) was associated with the ACQ-7700 selection, which was unintuitive to telemetry users. Control of APR-1 configuration is now available as its own feature labeled Select APR1.
11683	F	v5.20-SP8	Fix for Ponemah unexpectedly become unresponsive when attempting to move Read Only files using Data Manager.
12978	F	v5.20-SP8	Improved performance of Data Manager copying files to network locations to be closer to standard Windows Explorer copying speeds.
31318	F	v5.20-SP8	Updated the description within the Audit Log for Data Manager when a file is deleted from "Deleting" to "Deleted".
32688	F	v5.20-SP8	Fix for Ponemah unexpectedly shutting down when attempting to cancel the File Verification process (File Verify). This has been corrected such that selecting Cancel will stop the Verification process on the last file it verifies.
30297	E	v5.20-SP7	<p>On a secure system, users can setup Data Security to prompt the user for a PIN entry every 'X' minutes; where 'X' is a user defined timeout value.</p> <p>This has been updated within Review to not prompt the user for a PIN during active Review session to prevent the user from being interrupted during analysis. The timeout clock will start when the user is no longer moving the mouse and will reset if the mouse is moved before the timeout value is reached. This effectively updates the functionality of this feature to prompt the user for a PIN after a certain time of inactivity.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
26566	N/A	v5.20-SP7	<p>When a login failure occurs, Ponemah would display a user notification and log this notification in the logs using the following language:</p> <p>For an incorrect PIN entry, the log says Illegal Logon: User ID 001234 and User Name. For a logon attempt with a card not on the user list the log says Illegal Card: User ID 001234 and User Name.</p> <p>These notifications and log entries have been updated to provide more precise language as to what is occurring.</p> <p>For incorrect pins, the message was updated to: <i>Failed Login Attempt: Incorrect PIN: User ID 001234 and User Name.</i></p> <p>For attempting to login with a card that has not been configured to the system, the message was updated to: <i>Failed Login Attempt: Unauthorized System User: User ID 001234 and User Name.</i></p>
27814	F	v5.20-SP7	<p>When using DSO with JET, the 'JET Device Configuration' Access Level is enabled but does not allow JET BP device configuration. In order for JET BP to be set up the access level 'Application Configuration' must also be enabled, which may enable settings for that user that are not intended.</p> <p>This has been updated to include JET BP configuration as part of the JET Device Configuration Access Level to make it more intuitive and provide better user access control.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
29610	F	v5.20-SP6.1	<p>When using the Data Security Option, Audit Reason Codes are available for Users who must comply with FDA's Good Laboratory Practices (GLP) and 21 CFR Part 11 requirements. Audit Reason Codes are used to allow the User to enter a justification for modifications made to data/analysis within Ponemah and are logged as part of the Audit Trail.</p> <p>When using ECG PRO's Batch Analysis feature, the user would not be prompted to enter an Audit Reason Code when the Difference Marks were disabled from the Application Configuration Review dialog.</p> <p>This has been corrected.</p>
23498	E	v5.20-SP4	<p>Timing on when an audit trail reason code is required when making changes to the ECG template library has been updated to no longer require a reason code after every mark change and instead only require a reason code upon saving changes to the template library.</p>
21512	F	v5.20-SP3	<p>When DSO is enabled, the ECG template library audit trail was unable to be printed and the audit trail did not capture a reason for changes when changes to an ECG template library were made.</p> <p>This has been corrected.</p>
21513	F	v5.20-SP3	<p>When using the Ponemah Admin program to make changes to users and user access levels, the Administrator audit log did not record who made the changes. All entries were entered as "Admin" despite using an access card to log into the Ponemah Admin program.</p> <p>This has been corrected to list the Admin Username of the access card used to log into the Ponemah Admin program.</p>
22973	F	v5.20-SP3	<p>Ponemah would crash upon removing the Data Security Smart Card during a Review session within Study on a secured system.</p> <p>This has been corrected.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
18792	F	v5.20-SP2	<p>The Ponemah Admin program is used to create Users, access levels, and initialize access cards. When attempting to add a new User within the Ponemah Admin program would cause a crash upon clicking OK when the Windows Domain name and User name exceeded 24 characters.</p> <p>This has been corrected.</p>
18968	F	v5.20-SP2	<p>When DSO is enabled, the Tools menu becomes available within which users can define Audit Reason Codes match their Standard Operating Procedures for changes made to the application. However, when adding these user-defined reasons, random characters may be added to the end of the string that were not entered by the user. These characters may be illegal and cause an error when closing the Audit Reason Codes dialog.</p> <p>This has been corrected and unintended characters will no longer be added to the end of the user-defined reason.</p>
18793	F	v5.20-SP2	<p>An Ambient Pressure Reference (APR-1) is required when collecting from a telemetry pressure channel. When using the network-based JET and PhysioTel Digital interfaces to perform these pressure collections, the APR-1 is connected to the system using the E2S-1 converter to allow the pressure reference to be found across the network. On a system secured with DSO, users were unable to access the APR-1 configuration window from the Hardware button within the Run Study dialog. This was due to the APR-1 configuration being incorrectly defined to the access level feature setting AppConfig - Directories within the Ponemah Admin program.</p> <p>This has been fixed by correctly re-associating the APR-1 configuration with the Setup 7700 Amplifiers access level setting.</p>
PhysioTel Digital			
41297	F	N/A	<p>Implant Pressure and Biopotential channels now default their channel description to the name of the selected Signal Type as defined in their Channel Details configuration page.</p>
41269	F	N/A	<p>The default biopotential gain setting has been updated from +/-14 mV to +/- 10 mV.</p>

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
40995	F	N/A	Fixed the enable/disable channel checkbox, located in the Channel Details page of the configuration dialog, to persist the user selected action.
40117	E	N/A	Users will be provided the following feedback when attempting to add implants to a CLC after its implant capacity has been reached: <ul style="list-style-type: none"> • Red (!) icon will be displayed. • Hovertext will indicate the the CLC has reached its maximum capacity.
39594	E	N/A	Added support for the L03 and L04 implants
39469	F	v5.20-SP10	The Filter Cutoff value in the configuration tool was not updating the value back to the default when the signal-type was changed. This has been corrected.
39814	F	v5.20-SP10	Implants that were off were incorrectly displaying yellow icons when their associated CLC could not connect (should be red icons). This has been corrected.
39902	F	v5.20-SP10	Implants were incorrectly displaying a green icon on exit from Implant Search Dialog when not connected or on different frequency. This has been corrected.
40181	F	v5.20-SP10	When attempting to add new implants to a CLC with existing configured implants that are OFF or out-of-range, the CLC would prevent this operation. This has been corrected.
40364	F	v5.20-SP10	Implants were being changed to incorrect frequencies after exit from Implant Search Dialog when discovering implants from multiple frequencies. This has been corrected.
40365	F	v5.20-SP10	Implants were unable to successfully configure to a CLC after exiting from Implant Search Dialog (required cancelling configuration and trying again). This has been corrected.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
36222 37320 37321	E	v5.20-SP9	Removed the Implant Configuration Wizard in favor of single-item CLC and Implant add/remove(s), including an Implant Search dialog that operates per CLC. Also, added ability to turn all configured implants off at once.
35791 36052 37580	E	v5.20-SP9	Added configuration UI improvements to use color-blind friendly icons, show NTP synchronization status, as well as instructional information on each page.
36364	E	v5.20-SP9	Added visible notification to the About section of the CLC Details page and the CLC hover text to update CLC firmware version if the currently installed firmware is not the latest known by the software.
35684	E	v5.20-SP9	Added the ability to permit resizing of the PhysioTel Digital (CLC) configuration dialog.
34819	E	v5.20-SP9	Added ability to use up to 6 implants per CLC depending on frequency-region and implant model (5 implants per CLC in China). This functionality will require CLC firmware 0.1.28 or higher. See updated PhysioTel Digital User Manual for more details.
38390	E	v5.20-SP9	Added ability to use Primary and Secondary frequencies in the same configuration. This is controlled via an Advanced setting and is OFF by default. Contact DSI Technical Support prior to enabling this feature.
38821	E	v5.20-SP9	Added a Set CLC Name button to make name changes more explicit to the user.
37543	F	v5.20-SP9	Fixed Unicode error seen when launching Diagnostics (found on Windows systems with Japan region).
37331	F	v5.20-SP9	Implant Name is now only being read from the implant. Implant name can now only be set using the Set Name button within the Implant Details.
37246	F	v5.20-SP9	Improved battery reporting for China M-series implant models.
37093	F	v5.20-SP9	Reduced the pressure channel sample rate of the China L11 and the second pressure channel sample rate of the China L21 to improve battery performance and permit additional implants per CLC (i.e. 5 per China CLC).
28928	E	v5.20-SP8	Improved battery reporting for L-series implant models.
31907	E	v5.20-SP8	Added new frequency and hardware models to support PhysioTel Digital in regions outside of North America and Europe.
31908	E	v5.20-SP8	Added support for a new PhysioTel Digital implant model.

Reference #	Type of Change	Previously Fixed	Description
			Key: N = New Feature; E = Enhancement; F = Fix
32460	E	v5.20-SP8	Improved battery reporting for M-series implant models.
35691	F	v5.20-SP8	Configuration Wizard was displaying incorrect maximum selectable CLC's for new frequency-regions.
35312	F	v5.20-SP8	Updated Channel configuration to no longer permit the use of Filter Cutoff for non-Pressure/Biopotential channels. In addition, Filter Cutoff will not be displayed if the Pressure/Biopotential channels are defined to a sampling rate less than 50Hz.
33321	F	v5.20-SP8	A CLC firmware change to improve UPnP(discovery) resulted in connectivity issues when starting configuration before hardware is connected and setup. This has been corrected.
28937	F	v5.20-SP7	The PhysioTel Digital configuration dialog did not permit a method to remove all CLCs from the configuration This has been corrected by allowing the user to select no CLCs on Page 1 of the PhysioTel Digital wizard, which will proceed to the last wizard page upon selecting Next.
28575	F	v5.20-SP7	The MX2 and CLC would occasionally not connect to the system after a reboot as it would only try to obtain an IP address one time. If an IP address was not obtained on this first attempt, a connection issue would occur and a reboot would be required to retry obtaining an IP address. This has been fixed by ensuring the CLC and MX2 continues to try to retrieve an IP address until one is obtained.
20774	E	v5.20-SP3	Added the ability to configure new PhysioTel Digital implant models (M series).
MX2			
41296	E	N/A	Signal Type defaults for HD-X02, HD-S02, F20-EET, F40-EET have been updated to the following: <ul style="list-style-type: none"> • Channel 1 to EEG • Channel 2 to EMG
40643	F	N/A	Fix added to appropriately label channels based on the implant channel signal type configuration when using Auto Configure Protocol.
39100	E	v5.20-SP10	Added support for HD-S1(F0/F2) model implants.
39313	E	v5.20-SP10	Added support for HD-S20 model implants.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
39620	F	v5.20-SP10	Limited implant name to 9 characters for Ponemah 5.x.
39959	F	v5.20-SP10	As temperature data is required for the HD-XG implant to function properly, disabling the temperature channel on glucose devices has been prohibited.
35791 36052 37580	E	v5.20-SP9	Added configuration UI improvements to use color-blind friendly icons, show NTP synchronization status, as well as instructional information on each page.
36364	E	v5.20-SP9	Added visible notification to the About section of the MX2 Details page and the MX2 hover text to update MX2 firmware version if the currently installed firmware is not the latest known by the software.
35684	E	v5.20-SP9	Added the ability to permit resizing of the MX2 configuration dialog.
38821	E	v5.20-SP9	Added a Set MX2 Name button to make name changes more explicit to the user.
39022 39015	F	v5.20-SP9	Fix for HD Implant Status window not populating properly with the Battery On Times during acquisition when using MX2 hardware with Ponemah v5.20-SP6 through SP8.
38290	F	v5.20-SP9	Fixed issue where entering a bad calibration value and storing configuration was leading to clearing out of all calibration values for that implant.
38056	F	v5.20-SP9	Fix to prevent an unexpected shutdown when the same implant is configured on multiple MX2s. Fix no longer allows the same implant to be configured to multiple MX2s, especially when adding and removing MX2s from the configuration.
37543	F	v5.20-SP9	Fixed Unicode error seen when launching Diagnostics (found on Windows systems with Japan region).
37558	F	v5.20-SP9	Fix to disallow implant name from containing any characters that could cause issues with filenames or paths.
36754	F	v5.20-SP9	Updated filter adjustment values on EEG channels for F40-EET/F50-EET/F50-EEE (from 0.5dB drop to more appropriate value of 2dB.)
34004	N	v5.20-SP8	Added support for HD-S02 and HD-X02 implant models.
31752	E	v5.20-SP8	The user is now notified if the MX2 is not synchronized when attempting to get Battery Status or search for HD device.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
31747	E	v5.20-SP8	In the MX2 hardware configuration, the user may select any available, connected receiver to associate with an implant. The receivers that have a different frequency designation will now be grayed out to ensure an incorrect receiver is not selected.
32201	E	v5.20-SP8	Added Unconverted as a user selectable Signal Type for implant Temperature and Pressure channels. This permits the user to collect uncalibrated, raw data should recalibration be required.
33152	E	v5.20-SP8	Improved error handling for bad implant calibration values.
33217	E	v5.20-SP8	Added the ability for users to sort implants in configuration tree-view based on model, serial number, name, or jack number.
35607	F	v5.20-SP8	Inventory Reconciliation dialog was appearing unnecessarily due to use of timestamp rather than details to determine whether implant values were identical between configuration and inventory. Also, added tooltip to the Inventory Reconciliation to enumerate any differences.
35586	F	v5.20-SP8	Create New Implant button (as seen from the Inventory Implant Details page) was not enabled if this implant was just removed from the configuration.
34329	F	v5.20-SP8	Fixed issue in configuration where implants had incorrect receiver assignments when moving implants from one MX2 to another.
34145	F	v5.20-SP8	Fixed issue where if one or more implants are out-of-range, have a dead-battery, or are in the OFF state upon starting acquisition, all implant data would be displayed in Ponemah with a 14 second delay (from real-time). This does not impact the timestamp of the data, only when the data is displayed during acquisition.
34078	F	v5.20-SP8	Fixed incorrect Temperature channel-type on F40-EET / F50-EET.
33321	F	v5.20-SP8	An MX2 firmware change to improve UPnP(discovery) was resulting in connectivity issues when starting configuration before hardware is connected and setup.
33258	F	v5.20-SP8	Fix for Ponemah unexpectedly shutting down if acquisition is running for an extended period of time with one or more implants out-of-range, have a dead-battery, or are in the OFF state.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
33211	F	v5.20-SP8	Fix for intermittent false battery voltage alarms (HD devices only).
32879	F	v5.20-SP8	Fix for erroneous reporting of a zero HD battery calibration value as an error.
32299	F	v5.20-SP8	Fix for issue in MX2 configuration where user could not add decimal points to calibration values.
32117	F	v5.20-SP8	The warranted battery life for the HD-S11-F0 is 60 days. Once the implant has reached the warranted battery life, the software will alert the user. In previous versions, this alert would occur at 45 days, despite the remaining 15 days of warranted battery life remaining. This has been corrected to alert the user after 60 days of On time.
32050	F	v5.20-SP8	Those who have previously used Dataquest A.R.T.™ or Ponemah with OpenART™ are accustomed to seeing the Activity data presented as counts/second. The default sampling rate of the Activity channel is set to 10 Hz, which instead presents Activity as counts/0.1 second. Workaround Update the sampling rate of the Activity channel to 1 Hz. This has been corrected by updating the default sampling rate of the Activity channel to 1 Hz.
33790	F	v5.20-SP8	When using Review on an Acquisition computer, closing Review would result in the MX2 hardware configuration being lost. This has been corrected.
28011	E	v5.20-SP7	HD Implant Search duration has been improved to continue searching until a HD device is detected or the user cancels the search. A visual indicate has also been to notify the user is the HD implant found during the search does not match the implant model selected.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
28575	F	v5.20-SP7	<p>The MX2 and CLC would occasionally not connect to the system after a reboot as it would only try to obtain an IP address one time. If an IP address was not obtained on this first attempt, a connection issue would occur and a reboot would be required to retry obtaining an IP address.</p> <p>This has been fixed by ensuring the CLC and MX2 continues to try to retrieve an IP address until one is obtained. (Same as 28575 in PhysioTel Digital section above.)</p>
28163	F	v5.20-SP7	<p>Occasionally, spikes in the Signal Strength signal would be observed during Acquisition.</p> <p>This has been corrected.</p>
29294	F	v5.20-SP7	<p>The Blood Pressure and Left Ventricular Pressure signal range was not ideal to capture the signal from the range of pressure signals needed.</p> <p>If the range was outside of the previous limits, the signal would have presented itself as a railed signal on the Primary graph page.</p> <p>This have been corrected to extend the range</p>
31022	F	v5.20-SP7	<p>When adding any EET or 4ET implant to a configuration, the first biopotential channel is "duplicated" and the second one is discarded. The signal from channel 1 will be presented and saved for both channel 1 and channel 2. The signal from channel 2 is not present.</p> <p>This has been corrected to display and save all channels appropriately from EET implants.</p>
Ambient Pressure Reference (APR)			
37142/37834	N	V5.20-SP9	Added Ambient Pressure Reference 2 (APR-2) support.
37837	E	V5.20-SP9	Updated the frequency at which a lost or disconnected APR attempts reconnection to every 10 seconds.
34197	E	V5.20-SP9	Added APR Diagnostics page.
37934	N/A	V5.20-SP9	Changed the APR Selection dialog to no longer display the model number within the 'Available' list for consistency with the 'Selected' list, which does not display the model number.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
36471/36487	F	V5.20-SP9	Fixed APR reconnecting issue after a disconnect where the APR hardware obtains a different IP address.
OpenART			
29594	F	v5.20-SP6.1	<p>If you do not use previously configured protocol files as described here in your processes, you will not be impacted by this issue.</p> <p>To acquire data using the OpenART interface, users must define the configured implants that will be used for acquisition. This definition occurs during protocol setup within the Select DSI Sources dialog by moving implants from the Available Sources list to the Selected Sources list. Once these and other protocol settings have been defined, the acquisition may be started. Protocols can then be reused for subsequent acquisitions or added to a Study Protocol for acquisitions within Study.</p> <p>Upon loading a previously configured protocol file in Ponemah v5.20-SP6, the defined implants will automatically be deselected from the protocol and reassigned to the Available Sources list, preventing the acquisition from being started. Users will be alerted of the issue when choosing Start Acquisition.</p> <p>This has been correct.</p> <p>Workaround Reassign the implants to the Selected Sources list and start your acquisition.</p> <p>For GLP systems, this solution is only applicable if the user initiating the acquisition also has permission to edit the Select DSI Sources dialog. If the user does not have these permissions, acquisition start will be delayed until a user with the appropriate permissions can perform the workaround.</p>
27623	F	v5.20-SP6	The default filter cutoff frequency for the HD-X10 was set to 100 Hz. This cutoff frequency has been updated to 75 Hz to reduce the noise level present on the pressure signal.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
23332	E	v5.20-SP5	Added support for PhysioTel HD-S10 and HD-X10 telemetry implants.
25095	F	v5.20-SP5	Occasionally, the number of dropout instances would be greater when acquiring from a PhysioTel HD implant when compare to PhysioTel implant. This has been corrected.
18479	F	v5.20-SP1	When configuring an HD implant using OpenART v4.34 (version included on Ponemah v5.20 installation disc), the following error message would appear: "A required resource is not found." This would prevent the user from being able to configure an HD implant. This has been corrected to allow HD implants to be configured.
ACQ-OpenART			
3048	E	v5.20-SP2	When using an OpenART and ACQ-7700/16 sync system to acquire data from DSI Implantable Telemetry together with hardwired signals, the 7700/16 calibration dialog required that the configured implants from OpenART be on and in range of the receivers in order to proceed with the calibration process. This has been updated to no longer require the presence of the OpenART source since calibration of the 7700/16 hardware would occur prior to the subjects being placed on or near their associated receivers.
Jacketed External Telemetry (JET)			
38971	F	V5.20-SP9	Increased the JET BP Module Serial Number text box character limit to accommodate newer BP Modules with longer serial numbers.
38722	F	V5.20-SP9	Fix for JET Optimization error when attempting an optimization on more than 1 JET Bluetooth Receiver. Error: Encountered an improper argument. This issue only impacted Ponemah v5.20-SP8.

Reference #	Type of Change	Previously Fixed	Description
18614	N	v5.20-SP8	Added support for DSI's new JET Bluetooth® Receiver.
18615	E	v5.20-SP8	Updated the JET Optimizer to only list the original 2293 Receivers, as the new JET Receiver does not require optimization. Please note, both receiver types may be configured and used on the same Acquisition system.
32851	E	v5.20-SP8	Added JET Receiver and Device association information to the Experiment Log output. Added a text field to enter the JET BP module serial number to the BP transmitter entry dialog, which will also be included in the Experiment Log output.
32856	E	v5.20-SP8	Added ascending and descending Sort capability to all columns of the JET Devices Found list within the Hardware JET Device Configuration dialog.
22541	E	v5.20-SP3	Added the WrapFinder.exe utility to the Service Pack 3 installation CD to aid customers locate JET Bluetooth receivers on the network.
18175	F	v5.20-SP1	During acquisition from JET devices, the Activity signal was displayed incorrectly and derived measurements from this signal were incorrect. Movement of the device did not correlate to the activity being reported to the software. This has been corrected.
Video			
27888	F	v5.20-SP8	Fix for the unhandled exception message that appears the first time Video Configuration is attempted when using Noldus Media Recorder. Workaround is to launch the Video Configuration a second time.

Reference #	Type of Change	Previously Fixed	Key: N = New Feature; E = Enhancement; F = Fix Description
20577	N	v5.20-SP5	<p>Added support for Noldus Media Recorder v2.60 to allow the synchronized acquisition of up to 8 IP or analog cameras with physiologic data. This added support will not affect those using the current video acquisition module and choose not to upgrade. A separate installation is required to upgrade to Noldus Media Recorder. Once upgraded, Ponemah will only be compatible with the Noldus Media Recorder and the current Ponemah video acquisition module will no longer be accessible. Video collected with the Ponemah video acquisition module remain Review compatible after the upgrade to Noldus Media Recorder.</p> <p>This is a purchasable option that will require Ponemah v5.20-SP5 or higher and the Noldus Media Recorder installation CD and license.</p>
24063	F	v5.20-SP5	<p>When acquiring with the current Ponemah video acquisition module, occasionally the following error would occur, resulting in the video from that camera to longer record until the entire acquisition is restarted.</p> <p>Error with Video Camera <i>Name</i> Dead Camera</p> <p>This has been corrected.</p>
BMDS Wand			
18282	F	v5.20-SP1	<p>When using the BMDS SP-6004 Smart Probe to read from IMI-1000 RFID chips, invalid characters would be appended to the ID and cause the Ponemah to be unable to select the subject for acquisition within Study.</p> <p>This has been corrected to accurately read the RFID chips.</p>