PC-DMIS 2019 R2

- Release Notes -

Table of Contents

Release Notes - 2019 R2 SP11

- PCD-212092 - You no longer get an application error when you send Feature Control Frame (FCF) data to Edge Client.

- PCD-215959 - PC-DMIS now correctly loads and saves the illumination settings for Vision Auto features.

Release Notes - 2019 R2 SP10

- PCD-149154 - You can now see that when a CAD model was transformed, PC-DMIS correctly transforms the probe position when it computes the deviation from CAD (T) in the Probe Readouts window.

- PCD-162303 - You no longer get an application error when you edit a form report that contains an error in the VB script.

- PCD-185414 - You can now see the correct theoretical values for a constructed 3D width.

- PCD-196206 - PC-DMIS no longer sends incorrect error events when you enable the **Find Hole** option for auto features.

- PCD-205779 - You no longer get an application error when you change the Nominal value for a constructed line in the Edit window.

- PCD-207984 - You can now see the correct default options for graph, text, and output of the Thickness Gage feature's internal 3D distance dimension.

- PCD-207985 - PC-DMIS now correctly calculates the nominal for thickness gage dimensions.

- PCD-208067 - You no longer get an application error when you save a measurement routine that contains an image capture command.

- PCD-208631 - You can now see that PC-DMIS no longer sets the internal location dimension options for the Thickness Gage to their default values after you execute the measurement routine.

- PCD-210608 - You no longer get an application error when you switch between active measurement routines.

- PCD-210652 - You no longer get an application error when you close a measurement routine that contains vision features.

- PCD-210681 - You no longer get an application error when there is a license failure.

Release Notes - 2019 R2 SP9

- PCD-185747 - Fixed an issue where PC-DMIS took more time to export a pointcloud file than usual when you exported a psl file.

- PCD-187629 - Fixed an issue where the paste operation didn't work properly when you copied the measurement sequence from one measurement routine into another.

- PCD-193861 - Fixed an issue where PC-DMIS showed an incorrect message when you added Point of Interest (POI) in the **Thickness Gage** dialog box.

- PCD-194376 - Fixed an issue where PC-DMIS didn't create a point pair alignment when you clicked on points on the CAD model.

- PCD-194852 - Fixed an issue where PC-DMIS showed a black background in the **DOF** area of the **Best Fit Alignment** dialog box.

- PCD-194875 - Fixed an issue where PC-DMIS didn't create annotation points to a selected CAD face for a Point Colormap when you marked the **Create annotation points** check box in the **Pointcloud Operator** dialog box.

- PCD-195227 - Fixed an issue where PC-DMIS would color the Pointcloud Thickness Colormap red when you clicked the **Apply** button on the **Pointcloud Operator** dialog box instead of the Thickness colors when working in Inch units

- PCD-195832 - Added the new names for TesastarMP US components and support for the 6-way module.

- PCD-198971 - Fixed an issue where the CWS Thickness Scan didn't work with the feature-based measurement.

- PCD-200143 - Fixed a software crash that occurred when you changed the hit target direction in the Live View for the 2D profile.

- PCD-200965 - Fixed an issue where, instead of executing the COP/OPER, EXPORT command from a subroutine, PC-DMIS would display an error message.

- PCD-201077 - Fixed an issue where auto calibrate didn't work when a machine was in Manual mode which caused PC-DMIS to report collisions that did not exist.

- PCD-201313 - Added definitions for the HP-Te series of probes.

- PCD-201556 - Fixed an issue where new measurement routines couldn't send their file name to the **HxGN SFx | Asset** Management.

- PCD-201881 - Updated device drivers for the Heidenhain IK5000 (Metronics) controller.

- PCD-201970 - Fixed a software crash that occurred when you imported the NX part file from the **File | Direct CAD Interfaces | NX** menu item.

- PCD-202002 - Fixed an issue where the vision features had an incorrect calibration when you used the illumination override on a feature.

- PCD-202099 - Fixed an issue where the CAD model views indicated the incorrect presence of the GD&T features when PC-DMIS added the icons next to the views without PMI.

- PCD-202759 - Fixed a software crash that occurred when you clicked **OK** in the **Thickness Gage** dialog box after you edited the **Point of Interest** value for the command.

- PCD-203000 - Fixed an issue where PC-DMIS failed to set the tolerance to a negative value in the Thickness Gage command when you changed from the Edit window.

- PCD-203163 - Fixed a software crash that occurred when you executed thickness scans.

- PCD-203241 - Fixed an issue where the `COP` command was incorrectly removed from the Edit window when you opened and closed the Caliper **Gage** dialog box without any changes.

- PCD-203293 - Fixed an issue where the **Report Output** check box was automatically deselected in the **Output Configuration** dialog box when you clicked the **Print Full Report** button in the Marked Sets window.

- PCD-203601 - Added bonus tolerance to the K0060 field for the .dfq output file in Q-DAS Configuration.

- PCD-203865 - Fixed an issue where PC-DMIS changed the internal dimensions when you pressed F9 to open the **Thickness Gage** dialog box and closed the dialog box without any changes.

- PCD-204106 - Fixed a software crash that occurred when you created a construct feature set from the `COPCLEAN` command.

- PCD-204302 - Fixed an issue where PC-DMIS didn't show an error message when decimal symbol comma didn't convert to decimal point in the Windows regional settings for the number formats.

- PCD-204360 - Fixed an issue where an event was missing in the EventModule.xml file in the onStartingApplication command.

- PCD-204457 - Fixed an issue where the tabs in the **Best Fit Alignment** dialog box were not displaying properly on high resolution monitors.

- PCD-204558 - Fixed an issue where the CWS scan reported no points even though the scan was successful.

- PCD-204562 - Fixed an issue when PC-DMIS didn't retain the tolerance values of the internal min/max dimensions when you edited the values in the Edit window.

- PCD-204661 - Fixed an issue where the size command was not able to calculate the ISO limits and tolerance when the tolerance was associated with an ISO 286 tolerance code.

- PCD-204858 - Fixed a software crash that occurred when you edited the thickness gage dimensions from the **Thickness Gage** dialog box and used internal command suffixes in the feature names.

- PCD-204861 - Fixed an issue where lines didn't join polylines properly when you created a thickness scan on the CAD.

- PCD-204936 - Fixed a software crash that occurred when you opened a measurement routine with CAD GD&T elements.

- PCD-206263 - Fixed an issue where PC-DMIS showed an incorrect nominal value of the internal distance dimension for a Point of Interest (POI) with zero gage distance.

- PCD-206597 - Fixed an issue where the positions of the **Graphic Window in Y+** and the **Graphic Window in Y-** icons were reversed in the **Graphic View** toolbar on the high resolution monitors.

Release Notes - 2019 R2 SP8

- PCD-146826 - Fixed an issue where the Gaussian filter didn't work when you created a measurement in the inch mode.

- PCD-163923 - Fixed an issue where PC-DMIS didn't show correct leader line's style when you applied it from the **Label Layout Wizard** dialog box.

- PCD-164339 - Fixed an issue where both perpendicularity and parallelism showed an incorrect color representation of the size deviation graphic colors.

- PCD-177908 - Fixed an issue where PC-DMIS showed incorrect results when you calculated ESF features with and without actual thickness.

- PCD-178948 - Fixed an issue where PC-DMIS didn't apply the **No data color** that you selected in the **Color Scale Editor** dialog box for areas on the part where no data was found.

- PCD-186451 - Fixed an issue where PC-DMIS prevented the clearing of a feature list when you selected a new geometric tolerance from the **Xact Measure** dialog box.

- PCD-186811 - Fixed an issue where the **Use datums** check box in the legacy **Position** dialog box was turned on for all dimensions when you selected the **Use datums** check box for only a single dimension.

- PCD-188047 - Fixed an issue where the probe tips were duplicated in the probe file.

- PCD-189807 - Fixed an issue where PC-DMIS was not able to export ESF (VWMP) features to a DMIS file.

- PCD-191049 - Fixed an issue where the variables with a fixed text were imported incorrectly when you imported a DMIS file.

- PCD-191254 - Fixed a software crash that occurred when you opened the **Constructed Plane** dialog box and selected **Primary Datum** from the list.

- PCD-192158 - Fixed an issue where Q-DAS Configurator doesn't output the correct value for the legacy Profile Form and Location.

- PCD-192526 - Fixed an issue where the Shift + right mouse button in the Graphic Display window corrupted the mouse controls.

- PCD-194153 - Fixed an issue where the pointcloud cross-section annotations were not updated automatically when you changed the associated profile line tolerances.

- PCD-194910 - Fixed a software crash that occurred when you scrolled in the Edit window of the Summary (Preview) mode.

- PCD-195192 - Fixed an issue where PC-DMIS showed an incorrect collision message when you calibrated a list of tips twice and didn't close the **Probe Utilities** dialog box.

- PCD-195513 - Fixed an application error that occurred when you pasted an ESF feature that doesn't carry a VW standard name.

- PCD-195737 - Fixed an issue where an improper move in an incorrect direction occurred at the start of a Defined Scan with a Zeiss VAST XT probe when a measurement routine used Imperial units.

- PCD-195874 - Fixed an issue where an event was missing in the EventModule.xml file in the onClosingApplication command.

- PCD-195962 - Fixed a software crash that occurred when you worked on a laser scan in Dual Arm mode.

- PCD-197422 - Fixed an issue where PC-DMIS converted the nominal incorrectly when you edited the Distance command and changed the units from inch to mm.

- PCD-197763 - Fixed an issue where the Paste With Pattern feature failed when all the axis values were not defined in the `Move/Point` command.

- PCD-198324 - Fixed an issue where PC-DMIS showed an error message when you created a QdasData.xml file with a legacy true position dimension with axes in polar coordinate.

- PCD-198541 - Fixed an issue where PC-DMIS was not able to parse the OCR file when you used the **GD&T Selection Mode (from file)** option from the **Graphic Modes** toolbar.

- PCD-199068 - Fixed a software crash that occurred when you created a plane through the feature widget and attached a plane circle scan strategy to it.

- PCD-199946 - Updated a DLL to help fix a software crash that occurred when you closed a measurement routine.

- PCD-200640 - Fixed the HP-TM components issue which included updating the nomenclature from HP-TM2 to HP-TMe, and ensured the compatibility with the Samara rack (HP-MP).

- PCD-201302 - Fixed an issue where PC-DMIS Home page couldn't display the News feed on the upper-right corner of the page.

Release Notes - 2019 R2 SP7

- PCD-123716 - Fixed an issue where the `IMAGECAPTURE` command added a blank feature label when you generated the report.

- PCD-145735 - Fixed an issue where the Analysis View was different when you viewed it in the Custom Report and Report windows.

- PCD-147397 - Fixed an issue where the vectors and sizes were incorrect when you used the **Create Multiple Features** check box in the **Auto Feature** dialog box for Flush and Gap.

- PCD-158031. Fixed an issue where PC-DMIS displayed a message about the failure to load the HSI.DLL library when you opened PC-DMIS.

- PCD-163049 - Fixed an issue where the T-probe button was not able to close the **Probe Measurement Failed** message box when you tried to take points.

- PCD-164073 - Fixed an issue where the offline Help didn't work even when the offline help was installed and the **Use Offline Help** option was selected.

- PCD-164604 - Fixed a software crash that occurred when you clicked **Cancel** in the **Snapshot** dialog box.

- PCD-169301 - Fixed an issue where the labels were lost when you double-clicked on the image in the Report window to edit the Analysis View command.

- PCD-170663 - Fixed a hardware crash that occurred when an invalid tip was created for a probe.

- PCD-171041 - Fixed an issue where a laser pointer was not activated when you did the machine configuration.

- PCD-175235 - Fixed an issue where relative measure doesn't work when you selected multiple features from the Graphic Display window.

- PCD-176498 - Fixed an issue where the pointcloud exclusion plane was connected to an incorrect plane when you executed a measurement routine.

- PCD-177160 - Fixed an issue where PC-DMIS wouldn't automatically switch the Edit window to Summary Mode when you edited a custom report.

- PCD-177755 - Fixed an issue where PC-DMIS showed incorrect symbols for deviations in a custom report when you used positive reporting for all axes.

- PCD-177971 - Fixed an issue where PC-DMIS showed incorrect point positions in the CAD report when the points were used in the loop instructions.

- PCD-185194 - Fixed an issue where the colormap annotations were evaluated at 0,0,0 position when you executed a measurement routine.

- PCD-186676 - Fixed an issue where the report label changed its position in a custom report when you closed and reopened a measurement routine.

- PCD-187890 - Fixed an issue where the colormap gradient scale was not shown in the Graphic Display window when you loaded a different scale profile that wasn't the default one from the **Profiles Manager** dialog box.

- PCD-188449 - Fixed an issue where Q-DAS Configurator wouldn't report the maximum and minimum values for legacy profile of surface of a plane (Form Only).

- PCD-188578 - Fixed an issue where the diameter of the circle was calculated incorrectly when you select **MIN_SEP** (Best Fit type) in the **Auto Features** dialog box.

- PCD-188888 - Fixed an issue where the **Thickness Colormap** scale values were incorrect in the **Mesh Operator** dialog box when you didn't mark the **Compare to CAD** check box.

- PCD-189225 - Fixed an issue where PC-DMIS didn't create multiple Mesh Thickness colormaps when you executed a measurement routine.

- PCD-189732 - Fixed an issue where the CAD window displayed the elements and their Ids when you generated the legacy report.

- PCD-190622 - Fixed a software crash that occurred when you typed a non-existing Mesh ID for the `MESH/OPER` command in the Edit window.

- PCD-191049 - Fixed an issue where PC-DMIS didn't import the variables with fixed text correctly when you imported a DMIS file.

- PCD-191391 - Fixed an issue where PC-DMIS automatically unmarked the **Symmetrical** check box when you changed the feature type in the **Extended Sheet Metal Features** dialog box.

- PCD-191402 - Fixed a collision issue with laser probes on double arm machines with FDC controller when you executed a specific measurement routine.

- PCD-191484 - Fixed an issue where the **Colormaps** list was disabled when the measurement routine didn't contain a pointcloud.

- PCD-192421 - Fixed a software crash that occurred when the `On Error` command failed to set a variable.

- PCD-192474 - Fixed an issue where the laser auto features were not automatically executed when data was received from a TCP/IP transfer, such as the AICON OptoCat software.

- PCD-193410 - Fixed a collision issue that occurred when an incorrect wrist position failed to recover a probe change from Contact to Laser.

- PCD-193699 - Fixed an issue where the Thickness Colormap gradient scale value showed a negative percentage at the lowest level when you didn't mark the **Compare to CAD** check box.

- PCD-194190 - Fixed an issue where PC-DMIS showed a mathematical calibration error when you calibrated a dual-arm machine with laser probes, on Arm2 after you completed the calibration on Arm1.

- PCD-194926 - Fixed an issue with the I++ DME client where indexing head support was incorrect due to a mistake with how angles were treated if they were not reported from the I++ server.

Release Notes - 2019 R2 SP6

- PCD-47924 - Fixed an issue where PC-DMIS didn't execute the `Go 6DoF` command when you pressed Alt + F9 for the AT960 and AT901 trackers.

- PCD-148254 - Fixed an issue where Pointcloud Cross Sections were not visible in the Report window when you activated the `Snapshot` command.

- PCD-155565 - Fixed an issue where Laser scanning performance was affected with blue and purple points when you re-executed a measurement routine.

- PCD-160256 - Fixed an issue where PC-DMIS didn't display the current alignment in the Report window when you created the `SNAPSHOT` command.

- PCD-171477 - Fixed a software crash that occurred when you had cut a quick align group of manual and DCC alignment to paste the group elsewhere.

- PCD-171891 - Fixed a software crash that occurred in **Summary Mode (Preview)** when you executed a measurement routine with the Thickness command.

- PCD-173164 - Fixed a software crash that occurred in **Summary Mode (Preview)** when you changed the **Animation speed** percentage from the **Setup Options** dialog box.

- PCD-180502 - Fixed an issue where you were not able to select the text labels when you selected the **Back face culling** check box on the **Lighting** tab of the **CAD and Graphic Setup** dialog box.

- PCD-183366 - Fixed an issue where PC-DMIS didn't change the file type for the COP ID in the Edit window when you changed the file type from the **Type** list in the **Pointcloud Operator** dialog box.

- PCD-183493 - Fixed a software crash that occurred when you closed the measurement routine after the execution of a Laser calibration program.

- PCD-186461 - Fixed an issue where the CSV converter displayed an error message when you imported an EG (square slot) Laser feature.

- PCD-186675 - Fixed an issue where the left-click on the GD&T callout doesn't create any features when you enabled the **GD&T Selection Mode** and **Characteristic IDs**.

- PCD-186844 - Fixed an issue where PC-DMIS was not able to rotate the probe to an appropriate angle when you were about to perform calibration.

- PCD-187251 - Fixed an issue where a measurement routine was not created or opened when you used a portable SCANMESH license with the Aicon - Offline interface.

- PCD-187655 - Fixed an issue where PC-DMIS didn't display the Pointcloud select area when you edited the `Select` command from the **Pointcloud Operator** dialog box.

- PCD-187973 - Fixed an issue where you were not able to close the Load Probe message when you pressed the RomerRDS RA8 arm button.

- PCD-188006 - Fixed an issue where extra surface anomalies were visible for some probe models.

- PCD-188327 - Fixed an issue where PC-DMIS reported incorrect values of D1, D2, and D3 when you had generated the statistics.xml file.

- PCD-189525 - Fixed an issue where PC-DMIS failed to move the CAD objects to a part when you clicked the **Move To Part** button in the **CAD Assembly** dialog box.

- PCD-189577 - Added the ability to add the "RANGE_" prefix to the range of the Size dimension in Q-DAS Configurator so that the ID is not blank.

- PCD-189889 - Fixed an issue where the Control string and unit fields were missed when Q-DAS Configurator generated the statistics.xml file for the UAME axis of the Size ASME command.

- PCD-191781 - Fixed a software crash that occurred when you opened your measurement routine in modes other than the Operator Mode.

Release Notes - 2019 R2 SP5

- PCD-161301 - Fixed an issue where the Z-axis was not included when you automatically inserted a Location for a Laser circle.

- PCD-164450 - Fixed an issue where the Auto Line projection to a sample feature (for example, a measured plane) failed when the vectors were fine.

- PCD-171107 - Fixed an issue where you could not extract Extended Surface Point features when you marked the **Remove outliers** check box in the Laser **Auto Feature** dialog box.

- PCD-179194 - Fixed an issue where PC-DMIS displayed the **Feature failed to execute** dialog box from the On Error command in automation.

- PCD-185751 - Fixed an issue where the extraction of a circle feature from a perfect cloud created on a 20mm circle always returned a bigger diameter value after you executed the measurement routine.

- PCD-186862 - Fixed an issue where the **Defined scan** option in **Blade Scan** dialog box was not working when CAD equals part was not performed and an external alignment was recalled.

- PCD-187553 - Fixed an issue where PC-DMIS did not update a 2D distance or 2D angle dimension when you inserted the `WORKPLANE` command.

- PCD-187875 - Fixed an issue where the template match code was used incorrectly in the Probe Offset Calibration and the Pixel Size Verification of the Vision sensor.

- PCD-188086 - Fixed an issue where Q-DAS Configurator was not able to read datum features from the Legacy True Position dimension.

- PCD-188128 - Added the ability to add the "RANGE_" prefix to the axis name in the statistics (.xml) file.

- PCD-188408 - Fixed an issue where the .dfq file displayed a positive value instead of a negative K-field K2112 (Lower Allowance) value for Legacy Profile Form and Location dimensions.

- PCD-188448 - Fixed an issue where Q-DAS Configurator doesn't show nominal values of true position (X, Y, Z) in Q-DAS output files when the tolerances were turned off.

- PCD-189207 - Fixed an issue where the DMIS Output (.dmo) file was incorrect when you imported the .dmi file.

- PCD-189273 - Fixed a software crash that occurred when you migrated your measurement routine to the previous version and selected any light settings.

- PCD-189327 - Fixed an issue where the Polish language used comma instead of decimal point when Q-DAS Configurator created the QdasData.xml file.

- PCD-189631 - Fixed an issue where an invalid data message occurred for Laser Plane auto feature when you re-executed a measurement routine.

- PCD-189691 - Fixed an issue where PC-DMIS was not able to output correct values of K8500 and K8501 for the size command in the Q-DAS output files.

- PCD-189855 - Fixed an issue where Q-DAS Configurator doesn't show the correct number of digits after decimal for the K2022 value when read in from a measurement routine in inch units.

Release Notes - 2019 R2 SP4

- PCD-147628 - Fixed an issue where the path line for the adaptive cone concentric circle scan was incorrect when the start angle and end angle were changed.

- PCD-159921 - Fixed an issue where PC-DMIS displays an error when the number of hits or the density value was set greater than 1000 in the **Spline Path** area on the **Path Definition** tab in the **Scan** dialog box.

- PCD-160138 - Fixed an issue where PC-DMIS would hang when you used a RomerRDS arm and distance to target with auto zoom is enabled on the **Probe Readouts Setup** dialog box.

- PCD-162438 - Corrected an issue where the **Remove points with normals outside** check box was not available in laser Auto Feature dialog box when the pointcloud was imported as an STL file type. For existing measurement routines, the STL file needs to be re-imported so the normal IJK values are calculated.

- PCD-164330 - Corrected an issue where, if you ran PC-DMIS online and opened the **Auto Feature** dialog box and manually changed the probe position, PC-DMIS didn't show and update the position.

- PCD-165032 - Fixed an F9 issue where datums were added before the FCF command and not after the command.

- PCD-167497 - Fixed the issue when you clicked a button on the **Measured Feature** toolbar, and your active probe is on a portable arm, PC-DMIS would not create the correct feature type.

- PCD-169815 - Fixed a per-unit Straightness issue that allowed the diameter to report twice.

- PCD-170401 - Fixed an issue where the Edit window cursor was left in an incorrect location.

- PCD-171132 - Fixed a crash that occurred when you deleted the thickness gage from the measurement routine.

- PCD-171501 - Corrected an issue where the Surface Profile dimension was not calculated for a Point Colormap.

- PCD-171551 - Fixed an issue where the Autofeature Edge Point (Focus Off) failed to create an edge when you switched on the laser beam with the Laser ON/OFF button in the **Probe Toolbox** dialog box.

- PCD-171688 - Fixed an issue where the scanner **Start/Stop** button was not always available on the **Tracker Operation** toolbar, when the machine was locked on to a laser scanner.

- PCD-172111 - Fixed an issue where the **Close** button overlapped the text of the Reorder title.

- PCD-173016 - Fixed an issue where some spherical surfaces didn't tessellate correctly.

- PCD-173021 - Fixed an issue where the movement of the field of view in the CAD view did not move the machine.

- PCD-173273 - Fixed a crash that occurred when you typed the FCF command and pressed F9 with no features selected.

- PCD-174711 - Fixed an issue where the save operation hangs when you save a large STL file.

- PCD-175456 - Fixed an issue where the feature calculation error occurred though the orange points were shown in the extraction zone when you set the Laser Auto Cylinder horizontal clipping to zero.

- PCD-176095 - Fixed an issue where the **Skip** and **Jump** buttons were not available in the **Execution** dialog box when you executed an optical **Extended Sheetmetal Feature**.

- PCD-177331 - Fixed an issue where the extraction from a pointcloud was incorrect when a few points existed on the radius of a laser auto slot.

- PCD-177379 - Fixed a software crash that occurred when you used Five Unique.

- PCD-177382 - Fixed an issue that caused the nominal values to change to incorrect measurement units when a Size tolerance was entered in an XactMeasure command.

- PCD-177611 - Fixed an issue that showed incorrect intensity values for illumination in the editor.

- PCD-177972 - Corrected an issue where PC-DMIS reported a false warning regarding a "template area" that was not inside the "template search area"

when the system had a rotary table at certain angles, such as angles greater than 90 degrees or less than -90 degrees.

- PCD-178443 - Corrected a crash that occurred when you selected **Undo** after you chose **Edit | OverrideGuess** and changed the feature type.

- PCD-179333 - Improved vision feature multi-capture checks for similar illumination between features.

- PCD-179545 - Fixed an issue where the values on the Pointcloud Colormap gradient scale defaulted to three decimal places of accuracy when it was expected to be more than three decimal places.

- PCD-180393 - Fixed a software crash that occurred when you used the autocalibrate command with vision and tactile probes on a ring tool.

- PCD-180549 - Fixed a software crash that occurred when you saved measurement routines that contained vision features.

- PCD-159016, PCD-179682, and PCD-180650 - Fixed a software crash that occurred when you clicked on the expand arrow in the **Selected Items** list in the **XactMeasure GD&T** dialog box.

- PCD-180688 - Fixed an issue where values weren't parsed correctly when XYZ files were imported as CAD.

- PCD-181221 - Fixed an issue where the offline vision CAD camera view did not work when you renamed the machine HSI.dll.

- PCD-181235 - Fixed an issue where the illumination values were not remembered and synced between software and hardware at startup.

- PCD-181556 - Fixed a software crash that occurred when you cancelled a vision probe tip offset calibration where a focus operation was active.

- PCD-181894 - Fixed an issue that corrupted the mouse states and events.

- PCD-182117 - Fixed a delay that occurred when you created Cross Sections with a Mesh data object.

- PCD-182992 and PCD-187581 - Fixed an issue where the selection of multiple features from Graphic Display window didn't work properly when you created an XactMeasure dimension from the **XactMeasure** dialog box.

- PCD-183181 - Fixed a software crash that occurred when you closed PC-DMIS.

- PCD-183249 - Fixed a software crash that occurred when you pressed the emergency button on arm 1 or arm 2 and the machine goes into an emergency mode.

- PCD-184311 - Fixed an issue where the Quick Feature (Shift + Click) method did not create a Laser Auto Feature because the dense Pointcloud covered the CAD model.

- PCD-184918 - Fixed a Chinese translation issue where a few items were not translated in the Auto Features interface when you turned on the Home Page.

- PCD-184975 - Fixed an issue where the Excel Output labels were not created for dimensions.

- PCD-185104 - Fixed a software crash that occurred when the Test button in the Laser Auto Feature dialog box was used to extract an auto circle from a pointcloud.

- PCD-185347 - Fixed an issue where the Edit window failed to print when you select the **Prompt** option in the **Output Configuration** dialog box.

- PCD-185388 - Fixed an issue where PC-DMIS would hang with large CAD models.

- PCD-186651 - Fixed an issue with an inconsistency between the segregated points (orange) and the analysis points (green) for Laser Plane auto feature.

- PCD-186691 - Fixed a software crash that occurred when you press the Esc key after you selected the **Select Pointcloud** option from the **QuickCloud** toolbar.

- PCD-186714 - Fixed an issue where scanning circle paths for Adaptive Scan strategies was incorrect.

- PCD-186763 - Added the `ONERROR/LASER, SKIP` functionality to a measurement routine that contains failed ESF (VWMP) commands and is managed as the standard Laser Auto Feature.

- PCD-187016 - Fixed a software crash that occurred when you execute a measurement routine from Inspect that contains a Form command.

- PCD-187179 - Fixed an issue that caused the nominal values to change to incorrect measurement units when a Size tolerance was entered in an XactMeasure command.

- PCD-187266 - Fixed an issue where the QdasData.xml file was broken for the Size dimension.

- PCD-187441 - Fixed an issue where Q-DAS Configurator was not able to read the second and subsequent Size dimension modifiers.

- PCD-187822 - Fixed an issue where the range of Size dimension was not reported in Q-DAS output files.

Release Notes - 2019 R2 SP3

- PCD-46402 - Fixed an issue that occurred when you changed a nominal value and the software would revert it back to the original nominal value. This happened when you pressed F9 to input feature data from a Distance or Angle command and then you clicked Cancel.

- PCD-149585 - Fixed an issue where the selection of AutoFeature Point features for constructions and dimensions could not process single point features.

- PCD-152721 - Fixed an issue where the Pointcloud Cross Section ID could not be changed from within the dialog box.

- PCD-162253 - Corrected an issue where the reference ID for Pointcloud Operators could not be used in automation.

- PCD-162487 - Fixed the issue where the Composite Profile Tolerance was not being reported to Q-DAS.

- PCD-170402 - Corrected an issue where a Mesh Thickness Colormap was not applied when using selected CAD surfaces.

- PCD-170533 - The LampDefinitions.xml file is now installed into the PC-DMIS application directory.

- PCD-171261 - Fixed an issue where dimensions were not able to report in the degree, minute, and second format in Excel Form report.

- PCD-171355 - Corrected an issue that caused slow report load times.

- PCD-171572 - Corrected an issue where the percentages of the Colormap Gradient Scale were not appearing in the pdf report, and the numbers on the Gradient scale was not sized properly when the Graphic Display window height was changed.

- PCD-172591 – Corrected an issue which resulted in an application error when using optimize path.

- PCD-173320 - Fixed an issue when creating multiple QuickFeature circles where PC-DMIS would not find all the circles when they were colinear and on opposite sides of a flange.

- PCD-173437 - Fixed an issue where Home Page would crash when you clicked the "What's New" link in Chinese.

- PCD-174369 - Fixed an issue where millimeter units weren't correctly converted to inch units when you had created scans.

- PCD-174550 - Fixed an issue where clearance cube controls were disabled in manual mode.

- PCD-174719 - Fixed an issue where annotation points for the Pointcloud Point Colormap were picked on the back-facing surface. Points are now picked in the current front facing view.

- PCD-175227 - Fixed an issue where an occasional wrong compensation was observed when you measured a pull hit. To correct this issue, the default value in the Settings Editor for RomerRDS_Interface | VectorTolMM parameter was changed to 15 mm.

- PCD-175344 - Fixed an issue where sometimes a small portion of the pointcloud was far away from the main cloud during dual-arm execution with Laser sensor and FDC control.

- PCD-176014 - Fixed an issue where the wrong illumination value was shown in **AutoTune** dialog box.

- PCD-177006 - Fixed an issue with BASIC scripting where the line continuation symbol was missing. This resulted in compile errors.

- PCD-177886 - Fixed an issue where the Gradient Color Scale did not appear for a Pointcloud Surface Colormap when the measurement routine was closed and re-opened.

- PCD-179705 - Fixed an issue where some spherical surfaces were not tessellating correctly.

- PCD-180282 - Fixed an issue where PC-DMIS didn't draw all the patch scan lines in Graphic Display window. PC-DMIS now draws all the lines when it is edited and also when the Patch scan is edited.

- PCD-180324 - Corrected an issue where the Surface Colormap ID could not be changed when the command was edited from the **Pointcloud Operator** dialog box.

- PCD-180706 - Fixed a problem where an application error could sometimes occur when routines were opened or closed in Operator Mode or Inspect.

- PCD-181049 - Fixed an issue where the Excel form report always reported U.Tol and L.Tol equal to half the True Position tolerance for the X, Y component. The check box under Reporting tab is now marked. True position tolerance is assigned to axes if the check box is marked and not assigned if the check box is cleared.

- PCD-183171 - Fixed an automation problem where the Tips.Add (...) method, called inside a loop, worked correctly only the first time it was invoked.

Release Notes - 2019 R2 SP2

- PCD-146773 - Fixed an issue with the Outlier filter where you couldn't apply it to auto circles and line features.

- PCD-151139 - Fixed an issue where a double-click didn't open a measurement routine file. Instead, PC-DMIS displayed an error about a bad archive.

- PCD-155563 - Fixed an issue where the B5 controller would not accept any commands from PC-DMIS when in PARK mode. This change ensures that PC-DMIS does not send temperature compensation commands to the B5 controller until it sends the ENDPARK status through the measurement routine.

- PCD-161289 - Fixed a crash that occurred when you tried to calibrate additional tips after a tool changer calibration.

- PCD-162867 - Fixed an issue that occurred when you opened or edited an old custom report.

- PCD-167498 - Fixed an issue where an incorrect diameter was computed when you box-selected a laser cylinder feature from a COP.

- PCD-170533 - Fixed an issue where the software deletes the LampDefinitions.xml from the ProgramData folder when you reset PC-DMIS.

- PCD-171391 - Updated the HR-MP rack calibration measurement to account for a design change in the production rack. This fix also allows the TP20 probes to be used with the HR-MP rack.

- PCD-173138 - Fixed an issue to allow PC-DMIS to show snapshots in landscape orientation in report templates.

- PCD-173438 - Fixed a crash in summary mode that occurred when a start block command was used without an end block command.

- PCD-173470 - Fixed a crash that occurred when you tried to open the **Thickness Scan** dialog box after Quick Linear scans.

- PCD-173545 - Fixed an issue where silent or passive install modes failed to install on network license servers.

- PCD-174088 - Fixed an import VISI issue where the surface colors were not correct.

- PCD-174370 - Fixed Solidworks tessellation issues.

- PCD-174472 - Removed the unneeded blank space in the Axis field to correct the value in the statistics.xml for legacy profile dimension.

- PCD-174473 - Corrected a probe drawing issue.

- PCD-174982 - Fixed an issue where the **Scale Drawing** dialog box would not open from the Shift + Right-mouse button combination.

- PCD-175419 - Fixed an issue where the camera ID for a vision probe was changed, but any existing optical calibration data was not deleted.

- PCD-175673 - Fixed a crash that occurred when you used the Analysis window on a custom report.

- PCD-175777 - Corrected DMIS syntax for the `MEAS/ENDMES` block.

- PCD-175818 - Fixed an issue where PC-DMIS would not open an Online measurement routine from the Home page on a Portable system.

- PCD-175846 - Fixed the issue where filtering didn't work as expected because the conversion from decimal to percentage was missed when calculating the point reduction filter value in **Laser Scan** dialog boxes.

- PCD-176129 - Fixed a crash in a dual-arm machine configuration that occurred when you used Arm 2 to measure a point in manual mode and clicked the Done key on the jogbox.

- PCD-176574 - Fixed a crash that occurred when you used nested groups.

- PCD-176641 - Fixed an issue that caused some torus surfaces in IGES imported files to not render properly. This was an issue especially noticed in IGES files that were exported out of TubeShaper.

- PCD-176746 - Added a change to our service pack policy that requires a Software Maintenance Agreement for installation.

- PCD-176898 - Fixed an issue that occurred when you set the `SkipNumberOfStripes` registry entry in the Settings Editor application to -1. This value indicates that no purple scan stripes were visible in the Graphic Display window for the active scan pass. Once the scan pass was finished, the graphically-rendered blue pointcloud was seen.

- PCD-177036 - Fixed an issue with the Euler transformation. The I++ server can now use Scan Circle with HSSDAT and set the `ManHitRetract` registry entry.

- PCD-177426 - Fixed a software error that occurred because of a startup timing issue.

- PCD-177452 - Fixed an issue in the feature extraction where laser features were measured relative to others.

- PCD-178020 - Fixed an issue where readouts of x, y, z, a, and b were corrected for I++ server.

- PCD-178572 - Fixed an issue with the TempComp for the Wenzel version of the I++ server that supports GetProp/SetProp part.

- PCD-178618 - Fixed an issue where the hardware component name was corrected from Senmation_HP-S-S-X5 to Senmation_HP-S-X5.

- PCD-178990 - Fixed a typographical error which caused a tip to report a thickness of 0.

Release Notes - 2019 R2 SP1

- PCD-36046 - Fixed an issue where the find hole option would not work with the Wenzel interface.

- PCD-109698 - Fixed an issue where performance was decreased during the execution of a laser scan and COP commands in a loop.

- PCD-132016 - Fixed an issue where PC-DMIS stopped responding when you ran the Zeiss interface on new computers. This fix also enhanced the performance of the execution of many independent features.

- PCD-156784 - Fixed a crash that occurred when you used a 4 bit-per-pixel bitmap for the CAD texture.

- PCD-158609 - Added support for DEVA 037 Manual Counter Card. To use this interface, you must rename MANUALCMM.DLL to INTERFAC.DLL, and GMS_for_Deva_EncLib.XML to GMS.XML. All files related to the DEVA card are installed with the DEVA driver.

- PCD-158646 - Fixed an issue where the pointcloud cross-section **Show/Hide distance gages** button was disabled in the Slideshow view.

- PCD-167625 - Improved compatibility with some USB serial cables used to connect the HP-C-VE controller to the PC via USB.

- PCD-169328 - Fixed an issue where PC-DMIS did not pass the surface ID to the command when you created a 3D Laser QuickFeature and had to re-pick the CAD surface from the Laser **Auto Feature** dialog box.

- PCD-169386 - Fixed an issue where the points went to the wrong surface when you picked point pairs in a pointcloud to CAD alignment. This issue depended on the view orientation.

- PCD-169906 - Fixed an issue where pointcloud stripe IJK information was not included in the **Pointcloud | Export XYZ** file format.

- PCD-170207 - Added a change for the **PointcloudOperator** | `ExportXYZSeparator` registry entry to define one or more separator characters used for the Pointcloud XYZ export.

- PCD-171304 - Fixed an issue where PC-DMIS reported the worst point instead of the measured centroid for non-plane features.

- PCD-171381 - Fixed an issue with the Chinese operating system where settings to execute the collision avoidance during calibration were not read correctly from the registry on machines.

- PCD-171396 - Fixed an issue where the Mesh colormap annotation points were not created unless the measurement routine was closed and then re-opened.

- PCD-172057 - Fixed an issue where the news feed on the Home page was empty for Chinese (Simplified). It now uses Chinese (Traditional).

- PCD-172202 - Fixed an issue where PC-DMIS did not obey the marked set's output settings when PC-DMIS executed a marked set.

- PCD-172853 - Fixed an issue where the execution of laser probe calibrations from the auto-calibrate command didn't finish. The **Execution** dialog box had to be closed through the **Stop** button.

- PCD-173186 - Fixed an issue where the Home page was switched off when the **Part/Machine Setup** tab was the active tab in the **Setup Options** dialog box.

- PCD-173227 - Fixed an issue for laser auto cylinders and spheres where the CAD offset value was incorrectly applied for inch units.

- PCD-173264 - Fixed a timer functionality for the CMM-OS interface.

- PCD-173687 - Fixed an issue that occurred when you executed toolkit module features.

- PCD-173721 - Fixed an application error that occurred when you created a linear open scan with a CWS probe, and the **Measure** option was selected in the **Linear Open Scan** dialog box.

- PCD-173743 - Fixed an issue where the measurement routine stopped responding if you opened the Tilt Readouts window (**Tracker | Nivel | Start Tilt Readout**) for the Leica ATS600 Tracker.

- PCD-174456 - Fixed an issue where the Home page overrode PC-DMIS locale enforcement for decimal numbers, which caused issues with entering numbers of specific locales.

- PCD-174671 - Fixed a Vision probe-focus calibration error that occurred when the **Find Surface (Focus)** parameter was incorrectly enabled.

- PCD-174797 - Fixed an issue where the **Tracker Operation** toolbar was missing the measurement profile buttons for the AT40x Leica Tracker interface.

- PCD-175045 - Fixed an application error that occurred when you edited or executed a Vision feature with multiple hit targets.

- PCD-175460 - Fixed an issue where, after the machine left a probe change rack, PC-DMIS computed an incorrect mount-point move. This issue caused either an incorrect movement or an "out of machine limits" error.

Release Notes - 2019 R2

PC-DMIS 2019 R2 is a significant development release of the software. For detailed information and video tutorials about this release, visit hexagonmi.com/products/software.
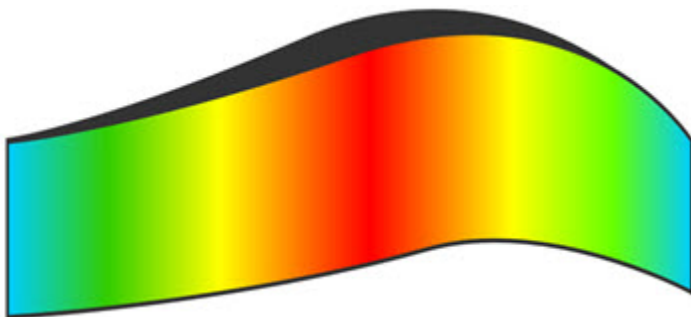

Featured Items

Home Page
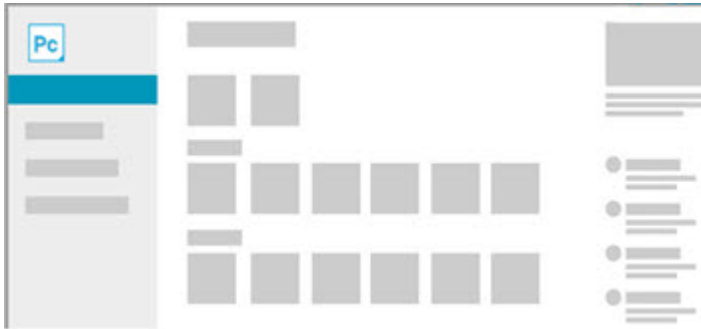
We added a Home page that offers access to recent and favorite measurement routines, News stories, community links, and videos to help discover new features in PC-DMIS. You can clear the **Show Home Page** check box from the **Setup Options** dialog box to turn off the Home page.

See PCD-162022.

Thickness Colormap

We added the ability to create a **Thickness Colormap**, which shows either the part thickness measurement or the thickness deviation from CAD as a colormap. This colormap uses only the Pointcloud (COP) or Mesh data object.

- For a pointcloud, access the Thickness Colormap from the **Pointcloud** toolbar (**View | Toolbars | Pointcloud**) or **Insert | Pointcloud | Thickness Colormap** menu option.

- For a Mesh, access the Thickness Colormap from the **Mesh** toolbar (**View | Toolbars | Mesh**) or **Insert | Mesh | Thickness Colormap** menu option. You need a Mesh license.

See PCD-159933.

Measurement Strategy Widget with QuickFeatures

You can now show the measurement strategy widget with a single-click. The widget appears when you click once to create a QuickFeature. You can also create a pattern of multiple features with the **Apply All** button in the measurement strategy widget. This feature accelerates your workflow.

See PCD-157392.

Ring Light Migration

This new feature brings significant quality-of-life improvements for PC-DMIS Vision. It allows offline measurement routines to target specific machines and provides migration between machines that use different ring light configurations.

This feature allows a measurement routine to target a specific machine so that it requires less illumination changes when it is loaded onto the target machine for the first time.

Once configured, the ring light options in the user interface will match those of the target machine, which makes the creation process easier.

In addition, using this same mechanism, an existing measurement routine written with one ring light can now easily be migrated to a different ring light offline, without the need to load the measurement routine on the actual machine.

For migration, when a measurement routine is opened on a machine which has a different ring light, if PC-DMIS can automatically detect the type of ring light, a measurement routine will migrate seamlessly.

If PC-DMIS can't auto detect the ring light used for the measurement routine, or if the measurement routine was created in an older version of PC-DMIS, you need to manually specify which type of ring light was used when the measurement routine was created.

Once this is known, the migration proceeds to get the best ring light settings to use on the target machine. If you save the measurement routine in PC-DMIS 2019 R2, you won't need to migrate again.

A measurement routine now contains separate illumination settings for the different types of ring lights it has been used with, and you can edit illumination settings for one ring light without affecting the other ring lights.

See PCD-23650.

Summary Mode with a New Peek Window

Summary mode has been changed to improve the visibility of command definitions. Now, to edit a command in Summary mode, press F9, or double-click on the command. This opens the command's associated dialog box. (Our new design no longer supports editing commands through the Summary mode itself.)

Also, a new Peek window is available. This window shows a brief definition of the command as you position your mouse pointer over a command.

If you don't see the Peek window, you may need to enable it. To do so, press F5 to open the **Setup Options** dialog box. Then, from the list of check boxes on the **General** tab, select **Show Peek Window**.

We're also working on a new and improved experience with Summary mode. We expect to release it in a future version. A preview of this Summary mode is now available with this release. While there are more changes to come, we want to get your feedback on this upcoming functionality. To enable the Summary mode preview, from the **View** menu, choose **Summary Mode (Preview)**. Or, you can click

the **Summary Mode (Preview)** icon from the **Edit Window** toolbar.
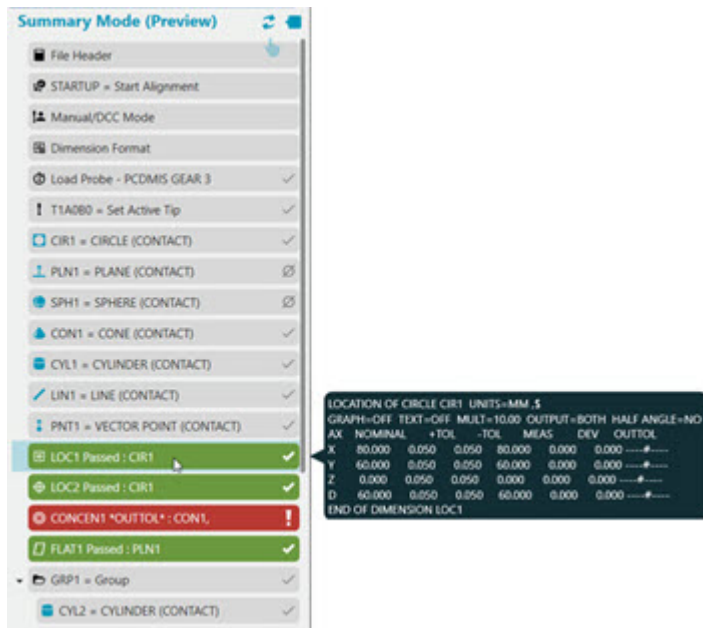
See PCD-157478 and PCD-163862.

Import CAD files into Graphic Display window

Added the ability to drag CAD files into the Graphic Display window. It follows the same process as a file import. Based on the file extension, PC-DMIS determines the file format and imports the file using the DCT. If you do not have a license for a specific file type, the file does not import.

See PCD-149747.

New Enhancements

Auto Features

- Added the ability in the QuickFeature pattern tool to recognize features that include a countersink and counterbore. See PCD-137171.

- Added the ability to turn on or off the features drawn in the Live View. To do this, select the **Show features** check box in the **Live View Setup** dialog box (**Edit | Graphic Display Window | Live View Setup**). See PCD-132263.

- After PC-DMIS completes a move insertion, it displays the **Safe Moves Insertion Report** dialog box that shows a list of items and the results for you to review. This list contains only those items that failed. If you click on any item in the list, PC-DMIS displays it in the Graphic Display window. See PCD-163936.

CMM

- Added the ability to do a collision detection during the calibration method available from the AUTOCALIBRATE command. See PCD-154894.

- Added the ability to do a collision detection during the calibration method available on horizontal arm machines. See PCD-154903.

DCI/DCT

- Added support for SolidWorks 2019. See PCD-157814.

- Added the ability for NX DCI to support the NX 1847 series. See PCD-161026.

- Added the ability to import geometry information from an EDGECAM file (.ppf) into the Graphic Display window. See PCD-163779.

- Added the ability to support CATIA 5 R29 for both DCI and DCT. See PCD-163780.

Edit Window

- To improve the user experience with Summary mode, PC-DMIS now condenses the command tree to the basic command level. The Peek window provides visibility into the command, which keeps the measurement routine condensed and easy to navigate.

  The Peek window also lets you quickly identify a command's properties and become accustomed to the command's language. When you position your mouse pointer over a command in Summary mode, PC-DMIS displays the Peek window with the most pertinent elements of the command visible. You do not need to click on the command to see the information in the Peek window.

  You can easily enable and disable the Peek window. To enable the Peek window, mark the **Show Peek Window** check box on the **General** tab in the **Setup Options** dialog box. If the Edit window is in Summary mode (Preview), you can also click the **Peek Window** toggle button .

  See PCD-158867, PCD-158870, and PCD-158872.

- To simplify editing in Summary mode, you can now double-click on a command to access dialog boxes associated with a particular feature or command. You can still use the F9 key to access dialog boxes.

You can still drag the commands to add them to a report. But, you can only do it for the entire command and not the elements of a command.

See PCD-159022 and PCD-162416.

- The ability to mark features for execution in Summary mode (Preview) is now more obvious. A small circle at the end of the command indicates its execution state. If the circle is a filled circle, it's marked for execution. If the circle is gray, it's not marked for execution. To toggle the execution state, click on the circle.

  With Summary mode (Preview), it's also easier to identify marked items for a group. When you mark only some items in a group, PC-DMIS displays a blue circle with a white dot. If you mark all items in a group, PC-DMIS displays a completely filled blue circle.

  Currently, Summary mode (Preview) always executes (Ctrl + Q) the entire measurement routine. It does this no matter what you mark. This and many other capabilities will become available in a future release.

  Summary mode (Preview) is not supported on dual-arm systems.
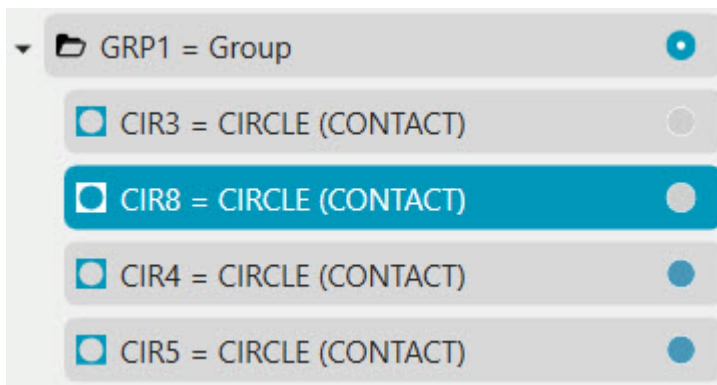
  See PCD-161788, PCD-161789, and PCD-162535.

Excel Form Report

- Added the ability to add a footer to your Excel Form Report command. You can create the footer in the data area of the form. You can drag and drop tracefields or summary fields to associate them with the footer area's cells as required. The footer appears at the end of all measurement results. When you execute your measurement routine, PC-DMIS completes the dimensions and then adds a footer at the end of the Excel Form Report. Also, the Excel Form

Report now provides summary fields, which help you to summarize the measurement results. See PCD-161564.

GD&T Selection From Capture

- Added the **Pause** button on the widget to pause the GD&T import process so that you can work with PC-DMIS to finish defining the datums. Once you are done, you can click **Continue** to resume the process. See PCD-162705.

- PC-DMIS now provides prints and CAD models with the installer. You can use these prints with the **GD&T Selection Mode (from Capture)** tools. See PCD-164294.

- Added the ability to recognize items that have a rotation with a range from -10 to 100. See PCD-157437.

- Added an OCR blueprint of the demo block to facilitate demonstration and training of the new GD&T OCR feature. See PCD-160165.

- Improved the speed of the OCR detection to recognize GD&T selections on images. See PCD-161454.

Measurement Strategy Editor (MSE)

- Added the ability to enable or disable the Measurement Strategy Editor (MSE) application. You can use the **Use Measurement Strategy Editor** check box on the **General** tab of the **Setup Options** dialog box. See PCD-153368.

- Added the ability to create QuickFeatures with the use of the Measurement Strategy Widget, which applies settings automatically as you create features. See PCD-158201.

- Improved the Measurement Strategy Widget settings to support the **Apply** and **Apply All** options. See PCD-158222.

- Removed the selection of units from the **Measurement Strategy Editor** dialog box, so that the editor uses the same unit of the active measurement routine. See PCD-159971.

Pointclouds/Mesh

- You can now use the **Point Colormap** command to color the actual Pointcloud. To open the **Pointcloud Point Colormap** dialog box, from the **Pointcloud** or **QuickCloud** toolbar, select **Pointcloud Point Colormap** or **Insert | Pointcloud | Point Colormap**.

- When you clear all of the check boxes from the **Display** area, PC-DMIS projects the points onto the tesselated CAD model. The software computes the deviations and then colors the Pointcloud accordingly. This method provides a faster way to color the pointcloud and allows you to create annotations.

- When you select any or all of the check boxes in the **Display** area, PC-DMIS projects the points onto the actual CAD model. The software computes the deviations, and then colors the Pointcloud accordingly. This process is more time-consuming but more accurate because the software projects the points onto the actual CAD model instead of onto the tesselated CAD model. Because this operation is more time-consuming, it is recommended that you first filter the pointcloud or confine it to selected CAD faces.

   See PCD-97940.

- Added the ability to export pointcloud cross-section data in IGES format with the use of the **Pointcloud Export** operator. PC-DMIS exports the selected cross sections as a B-spline curve with the use of IGES Type 126. See PCD-139363.

- Added the ability to create a thickness colormap, which shows either the measured part thickness of a pointcloud data object or the deviation to a CAD model. See PCD-150774.

- You can create annotation points, Min/Max annotations, and Show/Hide annotations for Thickness Colormaps, similar to Surface Colormaps.

   - When you create annotations for a Pointcloud or Mesh data object (not compared to a CAD model), the annotations show the measured thickness.

   - When you create annotations for a Pointcloud or Mesh that has been compared to a CAD model, the annotations show the thickness deviation between the measured thickness and the CAD.

   To understand how the annotation point is measured, you can display the initial clicked point, the point on the opposite side of the part thickness, and the connecting line. Then, click the **Show annotation opposing points** check box to enable this function.

   You can change the size of the annotation points and the thickness of the connecting line from the **Pointcloud** area of the **OpenGL** tab on the **CAD and**

Graphic Setup dialog box (**Edit | Graphic Display Window | OpenGL**). See PCD-150775.

- Added the ability to select **Point Colormap** as the active colormap from the **Colormaps** list on the **Pointcloud** or **QuickCloud** toolbar. See PCD-104364 and PCD-150776.

- Added the ability to export selected Mesh cross sections as a B-spline curve based on IGES type 126. This occurs if you choose the EXPORT COPOPER with a cross section that uses the IGES Type. See PCD-152308.

- Added the ability to choose between two mathematical methods for computing the Mesh Thickness Colormap. You can use either the **Ray Based** method or the **Sphere** method.

    - When you select the **Ray Based** method for a Mesh, PC-DMIS pierces the Mesh at each vertex along its normal vector to the opposing side. The software then uses the data within the **Max Angle** to calculate the thickness.

    - When you select the **Sphere** method, PC-DMIS uses a maximum-inscribed sphere to calculate the thickness between the two opposing sides.

    See PCD-159939.

- Added the ability to create a thickness colormap of a Pointcloud or Mesh data object in comparison to a CAD model. If you select the **Compare to CAD** check box from the **Pointcloud** or **Mesh Operator** dialog box, PC-DMIS computes the deviation of the data object thickness in comparison to a CAD model. See PCD-161106.

- With the **Thickness Colormap** command, you can now compare the pointcloud thickness to the CAD model thickness to show the thickness deviations. See PCD-161195.

- Added the ability to create annotations that show the deviations for the colormap of the actual pointcloud in comparison to the CAD model. You need to clear the **Dots**, **Needles**, and **Text** check boxes in the **Display** area of the **Pointcloud Operator** dialog box. See PCD-163007.

Portable

- Updated the probe file graphic image for the Leica Tracker T-Scan5. See PCD-108306.

- Added the ability to support the Leica ATS600 Tracker. You can connect ATS600 Tracker to PC-DMIS through the LeicaLMF Tracker Interface. You can measure with a reflector, a Surface target, or a sphere target. The **Area Fast**, **Area Standard**, and **Area Precise** measurement mode profiles are added to the **Tracker Operation** toolbar. See PCD-154402.

- Added the **Connect to Scanner** button to the **Tracker Operation** toolbar. This button is also located on the **Probe Toolbox** when connected to a laser scanner on the AT960 tracker. This button toggles the tracker scanner connection to the scanning application on and off. For the LAS and LAS-XL scanners, the scanning application is RDS; for the T-Scan scanner, the scanning application is T-Collect. See PCD-156445.

- Added the ability to select the surface target as the active probe when you are connected to the Leica ATS600 Tracker. When you use a surface probe, you can take hits without a reflector or measure an area scan. See PCD-158917.

- Added an icon and toolbar options for the Area Scan measurement profile. You can select the Area Scan from the **Tracker Operation** toolbar or the **Tracker | Measurement Profile | Area Scan** menu option. When you connect PC-DMIS to the Leica ATS600 Tracker with a Surface probe, these are the Area Scan buttons that become available:

  - **Standard Area Scan**

  - **Fast Area Scan**

  - **Precise Area Scan**

  See PCD-161010.

- Added the ability to support the Sphere probe for the ATS600 Tracker. You can select the probe file for the Sphere probe from the **Probes** list on the **Settings** toolbar (**View | Toolbars | Settings**). To measure the sphere centerpoint, perform the following steps:

  1. Select the Sphere probe from the **Probe** list on the **Settings** toolbar.

  2. Select the Sphere feature from the Quick Start window.

  3. Point the tracker beam at the physical sphere.

  4. Click the **Take Hit** button or press Ctrl + H to measure the sphere. PC-DMIS returns the sphere centerpoint as the measured point.

  See PCD-161266.

- Added the **Quality Filter** option on the **Surface Probe** tab of the **Machine Options** dialog box. This filters and removes points that have been measured when the laser beam is partially on and partially off the part surface. You can also set this option with the `QualityFilter` registry entry in the `LeicaLMF` section of the Settings Editor application. See PCD-162486.

- Added the **Area Scan** dialog box for the Leica ATS600 Tracker (**Insert | Scan | Area Scan**). You should first select **Area Scan Measurement Profile** from the **Tracker Operation** toolbar. Then, you can use the settings on the **Area Scan** dialog box to open the overview camera and define the scan region or settings. The selected region or settings are stored so the scan can be re-executed, and the data can be stored in a scan (points) or in a pointcloud (COP). See PCD-162949.

Reporting

- Added support for Q-DAS O-QIS, so that PC-DMIS can now load run charts from both QS-STAT and O-QIS. See PCD-161340.

Responsive HTML Help

- Updated the "Creating an Auto High Point" help topic in the PC-DMIS CMM documentation with a new screenshot and video to address the Auto High Point request filed in the PC-DMIS Idea center: https://hexagonmi.userecho.com/communities/1/topics/321-high-point-help. See PCD-156355.

- Added Application Insights to get analytics on how users interact with the PC-DMIS Help content. These analytics can help us improve the Help and PC-DMIS by studying the collected statistics. See PCD-158124.

- Added the **Use Offline Help** menu item on the **Help** menu where you can choose to use the offline installed Help rather than use the online Help. See PCD-158397.

- Improved the "Calibrating the LSPX5 / HR-XS Probe Changer" topic in the "Defining Hardware" chapter of the PC-DMIS Core documentation to specifically mention that you need to calibrate using a straight tip down with no cubes or any other joints. See PCD-158656.

- Added the ability to install the offline Help as the default if the computer is not connected to the Internet. See PCD-159914.

- Removed the "Help Center" filter from the **Filter** tab. This fixed a problem where many breadcrumb links in multiple topics appeared to be broken. In

reality, the topics were just filtered out and so were temporarily unavailable until the filter was cleared. With this change, topics on the top level of the structural hierarchy of the Table of Contents are no longer filtered out. See PCD-161221.

- Added a Cookie Policy console at the bottom of each help topic to give an easy way to enable or disable Help file tracking analytics and an easy-to-find link to our Privacy Policy. See PCD-162368 and PCD-162690.

User Interface

- Removed the **What's New**, **Idea Center**, and **PC-DMIS User Forum** options from the **Help** menu because these options are now available on the Home page. See PCD-158717.

- Added Global S, Optiv 3-2-2, and Optic 66x Virtual Machine Models. See PCD-156725, PCD-159878, and PCD-150572.

- Moved the **Excel Form Report** menu option from **Insert | Modules | Excel Form Report** to **Insert | Report Command | Excel Form Report**. See PCD-161763.

- Added a command line shortcut **/nomigrate** to avoid migration of registry entries and data files from a previous version. To use this switch, add it to whatever shortcut or command you use that runs PC-DMIS for the first time as an administrator. See PCD-162245.

- Removed the ability to include screen captures in the default crash report. You can include screen captures if you use the full crash dump (**/fullcrashdump**) option. See PCD-163656.

Vision

- Added the **Simultaneous Move** option, which allows you to combine the individual movements of the W (rotary axis) and V (swivel axis) axes of a stacked rotary table into a single joint movement. This results in a faster positioning and thus an overall faster processing of the measurement routine. See PCD-136820.

- Changed the default selection of the **Yes/No** option from selected to not selected in the **Comment type** area of the **Comment** dialog box. See PCD-159814.

- Programming Vision A/F Lines now obtain the edge vector from the CAD model when you select it in the Graphic Display window. Programming from

the Live View remains the same, where the edge vector for the line was determined by the direction of the mouse clicks. See PCD-160804.

- Added the option to fully support the use of laser probes in Offline mode. This option allows you to create features with the correct sensor parameters. See PCD-162902.

Xalt (Hexagon's IoT communication network)

- Updated to Release version 2.2 of Edge Client. See PCD-149791.

- Made a change to set the `EdgeClientNotifications` registry entry in the Settings Editor application to **False** by default. See PCD-164530.

List of Fixes

- PCD-9657 - Fixed an issue where PC-DMIS stops responding when you type an invalid value for the T-Scan point-to-point distance on the **Probe Toolbox** dialog box.

- PCD-14742 - Fixed an issue where PC-DMIS was unable to update the **Standard Deviation** field in the Status bar for Constructed Ellipse, Square Slot, and Round Slot features.

- PCD-19947 - Fixed numerous issues with the Virtual Machine definitions.

- PCD-43424 - Fixed an issue where the graphic for measured circles in X+ workplane was drawn incorrectly.

- PCD-45407 - Fixed an issue with incorrect clearance moves.

- PCD-49602 - Fixed an issue where the **Apply only to the current type** option in the **Change Label Options** dialog box was not working properly.

- PCD-50838 - Fixed a Quick Fixture refresh issue.

- PCD-83314 - Fixed an issue where some changes you made in the **Constraints** tab of the **ClearanceCube Definition** dialog box remained even after you clicked the **Cancel** button on the dialog box.

- PCD-89773 - Fixed the issue with loops in measurement routines, and you selected **View | Path Lines** to generate probe path lines.

- PCD-100898 - Fixed an issue where specific manually-measured contact slot features did not completely execute.

- PCD-107474 - Fixed an issue where the **Initialize Probe** button on **View | Other Windows | Probe Toolbox** failed to connect to or disconnect from the T-Scan 5 T-Collect interface.

- PCD-111008 - Fixed an issue with Protected Mode where some **Probe Calibration** dialog box buttons were enabled that should not have been.

- PCD-114518 - Fixed context mapping (F1) issues with the Help.

- PCD-117877 - Fixed an issue where the **File Operations** toolbar was undocked, hidden, and not easily reset.

- PCD-118408 - Fixed an issue where the report prompted you for information when it wasn't required.

- PCD-121239 - Fixed an issue where contact Auto Sphere with Move Point or Move Clearance commands were not executed properly.

- PCD-121569, PCD-121570 - Fixed some localized strings in the PC-DMIS product and Help.

- PCD-124435 - Fixed an issue where PC-DMIS prevented entering tolerance values from the Edit window when the **Positive Reporting** area was set to the **Deviations Only** option.

- PCD-125337 - Fixed an issue where multiple routines were allowed to open when working with the Measurement Strategy Editor (MSE).

- PCD-126401 - Fixed an issue where the unmarked commands in a measurement routine were seen in the **Send Current Stats To File** option in the output file.

- PCD-133306 - Fixed an issue where the probe was not shown in the CAD window during execution if the `LOADPROBE` command used a variable instead of the file name.

- PCD-135551 - Fixed an issue where the textual font size remained constant for both small and large toolbars.

- PCD-137572 - Fixed a refresh issue in the **CAD and Graphic Setup** dialog box.

- PCD-139389 - Fixed an issue where the **Auto Wrist** dialog box didn't appear when you turned on the **QuickPath** option and marked the **Auto Location/Position dimensions** check box.

- PCD-139769 - Fixed an issue where incorrect colors were shown when you marked the **Minus tols show negative** check box.

- PCD-139967 - Fixed an issue where PC-DMIS drew the incorrect machine volume on a virtual machine with multiple arms.

- PCD-140680 - Fixed an issue where the Clearance Plane was not drawn in the correct location when there was a part setup transform.

- PCD-143694 - Fixed an issue where you were not able to resize the Clearance Cube with the left mouse button.

- PCD-144409 - Fixed an issue where the incorrect vector appeared when you created a second Freeform Plane.

- PCD-145634 - Fixed the issue where you could create toolkit commands with duplicate IDs.

- PCD-145903 - Fixed an issue where PC-DMIS was not able to generate a Linear Closed scan path if there were holes in the path.

- PCD-146342 - Fixed an issue for pointcloud cross sections where the profile dimension fit type changed when you edited the profile. You can now create the profile dimensions that were created directly from the **Pointcloud Operator** dialog box as a Legacy Dimension, Form and Location, regardless of the Dimension setting.

- PCD-146724 - Fixed an issue where the pointcloud to CAD alignment failed in some cases.

- PCD-146883 - Fixed an import issue where CAD model surface edges were not seen properly when you switched between the **CAD Setup** and **Graphic Modes** toolbars.

- PCD-147121 - Fixed an issue where the Pointcloud Point Colormap showed or hid the points and text based on whether you marked the **Always visible** check box on the **OpenGL** tab in the **CAD and Graphic Setup** dialog box. Now, when you clear the **Always visible** check box, the Point Colormap points and text only appear if they appear in the current view.

- PCD-147302 - Fixed an issue where the software would not show hit targets when you created a 2D profile feature.

- PCD-147342 - Fixed an import issue where the STEP file missed some surfaces.

- PCD-148488 - Fixed an issue where the number of text items was not translated in the **XactMeasure GD&T** dialog box.

- PCD-150141 - Fixed a Quick Scan issue where a TTP probe created a defined scan. Now, Quick Scan with a TTP probe creates a Normal execution mode scan.

- PCD-150142 - Fixed an issue where PC-DMIS would not store the DATADEF command when you deleted a feature, and then you pressed Ctrl + Z or clicked the **Undo** button.

- PCD-150803 - Fixed an issue where the dimension color scale **Show colors in two directions** option was automatically marked for pointcloud colormaps:

  - When you enter a +Tol and zero in -Tol in the colormap dialog box, the **Show colors in two directions** option is cleared in the Dimension Color Scale. The scale shows the colors from 0 to the +Tol value.

  - When you enter a positive and negative tolerance in the colormap dialog box, the dimension color scale shows in two directions. This is because you entered the tolerances in two directions.

- PCD-151040 - Improved the design to compute the actual on 2D auto features. We now project the measured feature to its nominal plane.

- PCD-151095 - Fixed an issue where, if you switched the Part Model off and then on, PC-DMIS didn't allow surface selection.

- PCD-151149 - Fixed an issue where the Pointcloud Surface Colormap incorrectly appeared in the **Feature List** box in the **Dimension** dialog box.

- PCD-151154 - Fixed an issue where all the Laser edge points were tested in a group when you only wanted to test a single point in the group.

- PCD-151908 - Fixed an issue where the settings file was not imported from previous versions.

- PCD-151911 - Fixed an issue where PC-DMIS prevented the polar coordinate axis from appearing in the summary label of the Xact Measure position.

- PCD-151942 - Fixed an issue where the **Mark Used** button in the **Probe Utilities** dialog box marked incorrect tips.

- PCD-152016 - Made improvements to the colormap so that it relates better to the selected surfaces.

- PCD-152353 - Fixed an issue where Auto Insert Moves gave unexpected results after you optimized paths.

- PCD-152821 - Fixed an issue where, if you tried to insert a new move by selecting a pathline that was created with a laser sensor, the coordinates for the new move were in the wrong location.

- PCD-152825 - Fixed an issue with multi-capture where the surface vector was exactly the same as other features. Now, PC-DMIS allows the surface vector difference to be within 2.5 degrees.

- PCD-152892 - Fixed an issue where PC-DMIS stopped working when you copied and pasted the frequency parameters for the CWS sensor.

- PCD-153098 - Fixed an issue with the Romer Absolute RA8 arm where no sound occurred when you selected the **Beeping on** check box for the POINT AUTOTRIGGER command.

- PCD-153132 - Corrected an issue where the **File | Import | ASCII** operation always generated tactile features even if the current probe was a laser probe. Laser features are now created if the active probe is a laser scanning sensor.

- PCD-153254 - Fixed an issue where 4-axis scanning was not available for the Adaptive Plane Circle Scan strategy for the Auto Plane feature.

- PCD-153277 - Fixed truncated text in the **Reporting** tab of the **XactMeasure GD&T** dialog box for all non-English languages.

- PCD-153421 - Corrected the math for Projected Slots when coming from DMIS Import.

- PCD-153551 - Fixed an issue where the **Colormaps** list box was inadvertently set to **None** when the report was refreshed.

- PCD-154084 - Fixed an issue where PC-DMIS did not save the **Use Dimension Color Scale** option for the Pointcloud Colormap selection.

- PCD-154158 - Fixed an issue where the visualization of the laser working area didn't always consider the sensor-based clipping settings.

- PCD-154226 - Fixed an issue where PC-DMIS stopped working when you performed a Paste with Pattern with a fixed head. A fixed head is not able to rotate to the required angle. In the future, development work will be done to better determine the correct angle for fixed heads.

- PCD-154385 - Fixed an issue where the **XactMeasure GD&T** dialog box did not scroll to the selected feature when editing the dimension.

- PCD-154435 - Fixed the text that was not translated in the **Datum Definition** dialog box.

- PCD-154698 - Fixed an issue where Auto Plane, Auto Point, and Auto Trigger functions did not work for Portable arms when you measured contact features.

- PCD-154801 - Fixed an issue where copy and paste didn't work correctly with Adaptive Plane Circle Scan strategies.

- PCD-155030 - Fixed an issue where CMM machine limits were reset to their default values when you clicked the **OK** button to close the **Machine Options** dialog box.

- PCD-155193 - Fixed an issue where, when you imported a .dmi file, you could create and execute measurement routines; however, when you closed and then reopened the same measurement routine, PC-DMIS would crash.

- PCD-155271 - Fixed a crash that occurred when you performed a DCC Quick Scan.

- PCD-155294 - Fixed an issue where Laser point measurements failed on the embedded controller.

- PCD-155392 - Fixed an issue where F1 on the **Use Parameter Set** and **Blade Section** menu items opened the Introduction topics instead of the actual Help topic for those menu items.

- PCD-155579 - Fixed an issue in I++ Client where PC-DMIS was not able to recognize the effective radius.

- PCD-156593 - Fixed the truncated text issue in the **Comment** dialog box.

- PCD-156737 - Improved the documentation on command-line parameters with the latest parameters.

- PCD-156784 - Fixed a crash that occurred when you used a 4 bit-per-pixel bitmap for the CAD texture.

- PCD-156814 - Fixed an issue where the **Safe Moves Insertion Report** dialog box was not able to display the entire list when the list contained more items than it could fit in the dialog box. The **Safe Moves Insertion Report** dialog box now displays a vertical scroll bar.

- PCD-156973 - Fixed an issue where the rotary scan would generate a large number of points when you edited it.

- PCD-157107 - Fixed an issue where saving the measurement routine would cause the selection in the Graphic Display window to fail until you did a pan, zoom, or rotate.

- PCD-157142 - Fixed an issue where PC-DMIS showed the display of adaptive scan child features when you edited the **Legacy Dimension** dialog box.

- PCD-157216 - Fixed an issue where CAD information didn't work on XYZ CAD points.

- PCD-157470 - Fixed an issue where some parameters were missed for CWS sensors on embedded controllers.

- PCD-157651 - Fixed many memory issues that occurred during auto feature creation with Feature Creation and Collision Detection turned on.

- PCD-157701 - Fixed an issue with animation where, if animating a hit ended prematurely, the software gave the impression that a bad retraction occurred.

- PCD-157810 - Fixed an issue where PC-DMIS drew the Clearance Plane Paths in an incorrect orientation.

- PCD-157822 - Fixed an issue where tool changes failed on an HR-R (Tesastar-R) change rack in dual-arm mode when used on Arm2 in combination with other rack types on that same arm.

- PCD-157888 - Fixed an issue where a loaded inspection routine with selected CAD faces for the Clean Pointcloud Operator had automatic **CAD Offset** selected. In addition, when you select more than 300 surfaces with the **CAD Offset** option selected, the software now displays a message to inform you about a long operation time.

- PCD-158076 - Fixed an issue where breakpoints were ignored in measurement routines with laser probes.

- PCD-158118 - Fixed an issue where Feature Based Measurement (FBM) was not able to mark an angle offset base feature in the `MOVE/ROTAB` command.

- PCD-158136 - Changed the default **Point Density** value for CWS Thickness scan to a more sensible value.

- PCD-158169 - Fixed an issue where constructed sets made from multiple hits were not allowed as input features into the constructed datum features.

- PCD-158837 - Fixed an issue where a cylinder could be solved as inner when it was actually an outer cylinder.

- PCD-158842 - Fixed an issue where a DCC command could be added to a measurement routine that ran in Protected Mode.

- PCD-158849 - Fixed a crash that occurred for a non-supported datum feature specified in an MBD annotation (Position FCF).

- PCD-158864 - Fixed an issue where, when you selected the **With Feature Creation** check box for the **Safe Move** option, the software created incorrect commands in the measurement routine.

- PCD-158884 - Fixed a Datum reference frame error message so that it isn't hidden behind another window.

- PCD-158909 - Added support for Protect to work with borrowed licenses when you run Protect outside the company domain or without a network connection.

- PCD-159052 - Fixed an issue where the Pointcloud simulation was not working properly when using a different HP-L sensor in a measurement routine.

- PCD-159060 - Fixed a crash that occurred when you used the Outlier Filter in Auto Features.

- PCD-159145 - Fixed an issue where PC-DMIS stopped working when you tried to view older shopping cart information that was missing country information.

- PCD-159305 - Fixed an issue where the software was writing incorrect temperature compensation parameters to the TS 1.5 server.

  Corrected the TS rotary table settings for ScanOnCircle and ScanOnCurve.

  Applied the correct sets of I++ machine interface settings for TS 1.5 on the LEITZ B5 both with and without a rotary table.

- PCD-159326 - Fixed an issue where the calculated Point of Interest (POI) was reported incorrectly.

- PCD-159401 - Fixed an issue where the menu options were disabled after you canceled the creation of FCF from grouped text box mode.

- PCD-159540 - Fixed an issue where the text in the Comment window was truncated in certain instances.

- PCD-159543 - Fixed an intermittent application error when you executed Basic scripts.

- PCD-159853 - Fixed an issue where Q-DAS Configurator failed to launch the HTML Help file.

- PCD-159894 - Fixed a crash that occurred at the end of measurement routine execution. When the **File Open** dialog box opened to enable you type the

name of the PDF output file, another smaller output dialog box opened and showed the print progress, but you couldn't close it. At this point, when you tried to click **File | Close** or **File | Exit**, PC-DMIS would consistently crash.

- PCD-159963 - Fixed an issue where PC-DMIS would stop responding when you tried to edit a Thickness Gage.

- PCD-159984 - Fixed an issue where Auto Insert moves altered hit targets.

- PCD-160056 - Fixed a crash that occurred when you clicked on **GD&T Selection Mode (from File)**.

- PCD-160171 - Enabled the **Remove outliers / Standard deviation multiple filter** option for 2D Laser Auto Circle and Slot Features. The filter is located on the **Feature Extraction** tab in the **Laser Auto Feature** dialog box.

- PCD-160190 - Fixed an issue where some points did not import properly when you loaded a VISI WXF model.

- PCD-160232 - Fixed an accuracy issue that occurred when a rotary table was switched on with Technology Server 1.5 on Leitz CMMs with a Leitz B5 controller.

- PCD-160255 - Fixed a crash that occurred when you deleted new features with the **Auto Wrist** dialog box open.

- PCD-160312 - Fixed an issue that occurred when you created linear open scans with the auto-dimension setting enabled.

- PCD-160486 - Corrected a PMI import issue where commands were not inserted properly.

- PCD-160706 - Fixed a software crash where the **Optimized Path** dialog box would stop responding.

- PCD-160827 - Fixed a crash that occurred when you loaded and executed a measurement routine with `DIMINFO` commands inside a loop.

- PCD-160834 - Fixed an issue where the software would change a drawn circle after execution.

- PCD-160894 - Fixed an issue where Vision Auto Features, such as circles and lines with manual targets, had the crosshair shrink and disappear as the rotary angle went to 90 degrees.

- PCD-160933 - Fixed an issue where the colormap selection combination box on the **Pointcloud** and **QuickCloud** toolbars did not properly appear.

- PCD-160953 - Corrected an import issue where Product Manufacturing Information (PMI) didn't appear properly when using Catia files.

- PCD-160976 - Fixed an issue where the template match code was not working with the machines that have a rotary table.

- PCD-161245 - Fixed an issue where Thickness Scan and Thickness Gage showed all previous hidden labels in the CAD window when you clicked **Create** or **OK**.

- PCD-161246 - Changes made to the nominal values and tolerances of a dimension for a Point of Interest (POI) in the Thickness Gage command are now retained.

- PCD-161247 - Fixed an issue with marked parent and child mode commands in Thickness Scan and Thickness Gage.

- PCD-161249 - Fixed an issue where the POIs from the Thickness Gage were not reported properly relative to an alignment that differed from the CAD alignment.

- PCD-161250 - Fixed an issue with incorrect thickness gage Point-of-Interest (POI) locations after alignments.

- PCD-161285 - Fixed an issue where measured features could be added to a measurement routine that ran in Protected Mode (or Inspect) after you took hits and pressed the **Done** button on the jog box.

- PCD-161286 - Fixed an issue where tip changes could be added to a measurement routine that ran in Protected Mode (or Inspect) through machine usage.

- PCD-161306 - Corrected an issue for Surface Colormaps where deviation colors would extend onto CAD faces when there was no pointcloud data and a large maximum distance value was used. Changed the default value to True for the `EnableNormalPerPointComputation` registry setting for DCC machines. Added the `ColorMapFaceMaxCadCopNormalsAngleDeg` registry setting whose default value is set to 45 degrees. This setting excludes points that fall outside the angle. When the colormap is computed, the estimated normal vector of the points in the cloud are compared to the CAD normal vectors.

- PCD-161372 - Corrected a delay issue that occurred when you had a probe with a Hexagon Absolute Arm (RA8) and showed the results in the wrist

display. Also, a new `ArmWristDisplayActive` registry entry was added that allows the user to disable the wrist display in PC-DMIS.

- PCD-161375 - Fixed a crash that occurred with a Laser probe and active Vision view.

- PCD-161412 - Fixed a crash that occurred when you clicked the **Measure** button in the **Probe Utilities** dialog box for the calibration of a CMS probe. This issue occurred only in Online mode with FDC dual-arm controls and the probe was marked for Arm2.

- PCD-161529 - Fixed a crash that occurred at times when you executed a Pointcloud Surface Colormap within a Loop command.

- PCD-161674 - Fixed an issue on some list items where there was too much white space between bullets and their associated text.

- PCD-161690 - Fixed an issue where **GD&T Selection Mode (from Capture)** didn't handle measured features properly.

- PCD-161705 - Fixed an image in the Help file where it showed an incorrect Universal Updater icon.

- PCD-162047 - Fixed an issue that caused the affected bonus to appear when the input features had different vectors.

- PCD-162078 - Fixed an issue where reported X, Y, and Z values for the position dimension with planar zone were not shown properly.

- PCD-162170 - Corrected an import issue where PC-DMIS failed to load the NX DCI and assemblies.

- PCD-162469 - Fixed an issue where the I++ server didn't report the X and I values for PtMeas.

- PCD-162552 - Fixed a crash that occurred where the constructed features and dimensions from toolbars were not greyed out when you opened the OCR widget.

- PCD-162569 - Fixed an issue where Technology Server 1.5 ignored the prehit and retract properties for scanning. Now, you need to set the retract properties in DCC mode before scanning, similar to Manual mode.

- PCD-162652 - Fixed a crash that occurred when you selected multiple circles in OCR mode.

- PCD-162661 - Corrected a number of English text strings in the user interface.

- PCD-162715 - Fixed an issue that occurred when you selected **ON** from the **Report textual analysis** list on the **Reporting** tab in the **XactMeasure GD&T** dialog box. This selection always used to display zero bonus values in the report.

- PCD-162745 - Fixed a crash that occasionally occurred when you selected the colormap function from the **Pointcloud** or **Mesh Operator** dialog box after the selection of another function.

- PCD-162805 - Fixed a crash that occurred when you turned off RDS, and you selected a portable interface from the **Edit | Set Portable Interface** menu option.

- PCD-162816 - Corrected an issue for the AT-960 Tracker with a T-Probe where the A button would take hits indefinitely when you set the measurement mode to either **Continuous Distance** or **Continuous Time**. You can now start and stop the continuous scan.

- PCD-162843 - Fixed a crash that occurred when you deleted a Thickness Gage command whose Point of Interest (POI) was used in a best fit constructed feature.

- PCD-162941 - Updated the pointcloud CLEAN operator to use the normal orientation of the pointcloud, relative to the CAD faces. When the pointcloud contains usual information, this results in a more accurate and cleaner selection of points. Also, you can now enter any value in the **CAD Offset** option.

- PCD-163223 - Fixed an issue where the setup default settings of the I++ Client for Technology Server 1.5 on CMMs with a Leitz B5 controller were incorrect. The change is described in the MIIM Help documentation.

- PCD-163357 - Fixed an issue where the execution of specific laser commands caused an application error.

- PCD-163503 - Fixed an issue with movement of a CMM-V when the machine axis was changed in PC-DMIS.

- PCD-163586 - Fixed a crash that occurred when PC-DMIS executed nested loops in a measurement routine a second time.

- PCD-163707 - Corrected an import issue where NX DCT files would hang indefinitely after certain point on the progress bar.

- PCD-163766 - Fixed an issue where the **Datum Definition** dialog box didn't display sets if it was opened from the main menu (**Insert | Dimension | Datum Definition**).

- PCD-163823 - Fixed an issue where the **Done** button on the jog box did not work when both arms executed a manual feature in a dual-arm measurement routine.

- PCD-163829 - Fixed a crash that occurred when the probe toolbox appeared in a measurement routine.

- PCD-163970 - Improved and optimized the Auto Insert Moves algorithm.

- PCD-163975, PCD-163976, and PCD-163977 - Fixed an issue that occurred when you imported a part model onto any of these Virtual Machine models:

  - Optiv 4-4-2

  - Optiv 6-6-3

  - SAPHIR-10-6-6

- PCD-164261 - Fixed an issue that caused slowness when you opened an **XactMeasure GD&T** dialog box with a long feature list.

- PCD-165045 - Fixed a software assertion issue when you ran PC-DMIS on a computer with more than one monitor.

- PCD-165065 - Fixed a note in one of the topics so that it now refers to the proper group name instead of an older group name that was used earlier in development.

- PCD-165202 - Fixed an issue where the size of the inspection routine was increased when you modified the Pointcloud Colormap command.

- PCD-165205 - Fixed an issue where the bonus value in lower segments of composite position callouts were not shown properly when the input features had no similar vectors.

- PCD-165295 - Updated the CMS Toolkit to version 7.40 to improve the calibration process.

- PCD-165335 - Fixed an issue where a comma was missing in the Xact Measure command to separate options.

- PCD-165383 - Fixed an issue where you were not able to create laser scans when you used the read file option.

- PCD-165512 - Fixed a crash that occurred for a Feature Control Frame Position when 192 or more features were selected.

- PCD-165593 - Fixed an issue where PC-DMIS was not responding when you use a star tip.

- PCD-165636 - Fixed an issue where the outlier filter didn't always properly filter Vision Line features if those features were in a subroutine.

- PCD-165693 - Fixed an issue with the Round Slot icon in the feature list.

- PCD-165719 - Fixed a tessellation issue that affected some planar surfaces.

- PCD-166030 - Fixed an issue with the Leica AT901 Tracker where the machine connection and target recognition were both okay, but it would not take hits.

- PCD-166088 - Fixed a tessellation issue that caused spheres to render incorrectly.

- PCD-166331 - Fixed an issue where the clearplane was drawn in an incorrect location.

Information about this Release

We at Hexagon Manufacturing Intelligence are proud to bring you PC-DMIS 2019 R2. This platform brings together new aspects of the software for the development of a complete manufacturing process control solution. Available in this release are variations of the software designed to assist with every aspect of the fabrication and quality control process. The newly-created packages include the established PC-DMIS Laser, PC-DMIS NC, PC-DMIS Vision, PC-DMIS Pro, PC-DMIS CAD, and PC-DMIS CAD++ platforms.

The testing of this version has been significant. We'd like to take a moment to discuss this process and also make you aware of the various components of testing.

Testing consists of two parts. These can be described as functional testing and integration testing.

- The vast majority of testing effort goes on in the functional area. This is the testing that determines that specific functions that are core to the software, regardless of what type of machine is used, are working correctly.

- The integration testing is essentially a testing of the interface with a particular type of machine.

In the ideal scenario, Hexagon Manufacturing Intelligence would have access to at least one of every piece of hardware running the software that is operating in the field. However, in practical terms, this is impossible. This integration test plan is then performed on as many types of machines as we have available.

Should you experience problems with your system after you install PC-DMIS 2019 R2, it could possibly be an integration problem. If it is a problem of this nature, it will probably be evident immediately upon first use of the possibly untested configuration. To report any integration problems, see "Contact Hexagon Manufacturing Intelligence". Should such a problem materialize on a commercial release, you will be given the highest priority for correcting these problems.

For existing users of the software who currently have earlier versions of the software installed, it is advised that you install PC-DMIS 2019 R2 into a new directory. This lets you continue to use your current version if you have problems with the new version.

Recommended System Requirements

Operating System

PC-DMIS 2019 R2 operates under 64-bit Windows 10, Windows 8.1, Windows 8, Windows 7, and Windows Vista. No other operating systems are supported.

> When you use third-party drivers, you should contact your local Hexagon Manufacturing Intelligence representative to ensure operating system compatibility.
>
> Running PC-DMIS inside a Virtual Machine (VM) is supported only if the VM supports OpenGL 3 or higher.
>
> PC-DMIS Vision machines do not support 64-bit Windows 8.
>
> The Matrox Framegrabber PC-DMIS Vision hardware component does not support a 64-bit operating system.

Microsoft .NET Framework

Microsoft .NET Framework 4.6.1 for Windows. If you do not have Microsoft .NET Framework 4.6.1, the PC-DMIS installer will install it for you.

RAM

- 4 GB of RAM or higher

  The size of the CAD data file and the tessellation multiplier value used affect the amount of memory needed. These both affect the amount of tessellated facets needed to display the model. The smaller the tessellation multiplier value used, the more memory needed for the facets. For large CAD models, this could cause an "Out Of Memory" error. If this occurs, the current PC-DMIS session will be left in an unstable state and should be terminated.

  The default tessellation multiplier value is 1.0. Setting a tessellation multiplier of 0.1 will result in a 10 to 20 percent increase in the memory

required over the default value of 1.0. Decreasing the tessellation multiplier further to 0.01 will result in an additional 50 to 65 percent increase of memory required.

- 1 GB of video RAM

CPU

2 GHZ or higher quad core processor

Graphics

Any popular graphics card that meets or exceeds the following suggested minimums:

- GPU Memory 2 GB DDR3*

- Memory Bandwidth 29.0 GB/s

- CUDA Cores 384

- Open GL 3.0

* For an RS4 laser sensor or later model, you need to have a GPU with at least 4 GB DDR3.

The graphics driver must support OpenGL 3.0 or higher. A warning message appears on PC-DMIS startup if the driver does not support OpenGL 3.0 or if your graphics driver is more than three years old.

Hard Drive

- 2 GB of free hard drive space plus allocated virtual memory of eight times the largest CAD file used

- SSD drive, HDD 10K, or two disks in RAID 0 mode (high-performance hard disk drive)

Display

Screen resolution of 1280 x 1024 or higher

Connectivity

- Two Ethernet ports. This may be required for specific installations in consideration of local needs, including but not limited to CMM systems where one port is required for controller communications and another for intranet/Internet communications.

- Two USB ports

- DVD drive

- A properly-configured LMS license or a HASP key (a physical USB portlock)

> A HASP key does not act as general-purpose data storage; therefore, you cannot use a HASP key to store (download) arbitrary data from a computer. Similarly, you cannot use a HASP key to put (upload) arbitrary data on a computer. Also, only Hexagon Manufacturing Intelligence applications can read or write to a HASP key; other applications do not have this capability. As a result, you cannot use a HASP key to load and unload data to and from a computer.

Browser

Internet Explorer 11 or later

Anti-Virus Software

Hexagon Manufacturing Intelligence used the Sophos anti-virus tool to test PC-DMIS 2019 R2. You will need to confirm the performance of any other anti-virus tool.

http://sophos.com/products/enterprise/endpoint/security-and-control/

Solutions for CMMs Using RS-232 Communications

If you are installing PC-DMIS 2019 R2 on a new or existing computer, but you have an older CMM model that uses RS-232 communications, then you will need to install one of these solutions on your computer:

- An external RS-232 serial-to-USB adapter cable plus the serial-to-USB adapter cable driver

- An internal serial adapter card with serial ports

Installing the Software

To install the software, follow these steps:

Step 1: Check System and Hardware Requirements

Before you attempt to install a new version, ensure that you meet the system and hardware requirements discussed in "Recommended System Requirements". You must also have a USB portlock or valid LMS license for the installation to work. Your IT specialist can help you with this information.

- To get your computer's properties, highlight the **This PC** icon, right-click on it, and select **Properties**.

- To check the display properties for the graphics card, go to **Start** and type **Control Panel**, and then select **Display and Settings**.

Step 2: Log on as an Administrator

To install and run your new version for the first time, you must be logged on as a user with administrator privileges.

Step 3: Back Up Existing Settings

Back up your settings from your previous version. By default, PC-DMIS 2019 R2 attempts to migrate existing settings from previous installs on the same computer, even from very old versions of the software where settings were stored in the pcdlrn.ini file.

- If your current version uses the pcdlrn.ini file for its settings, back up your pcdlrn.ini file. This file is in the Windows system directory. Save a copy of the file in a safe place.

- If your current version uses the PC-DMIS Settings Editor, back up your PC-DMIS Settings Editor data. To do this, perform the following steps:

  1. Start the Settings Editor.

  2. Click the **Backup** button (or **Export**) to open the **Backup** dialog box.
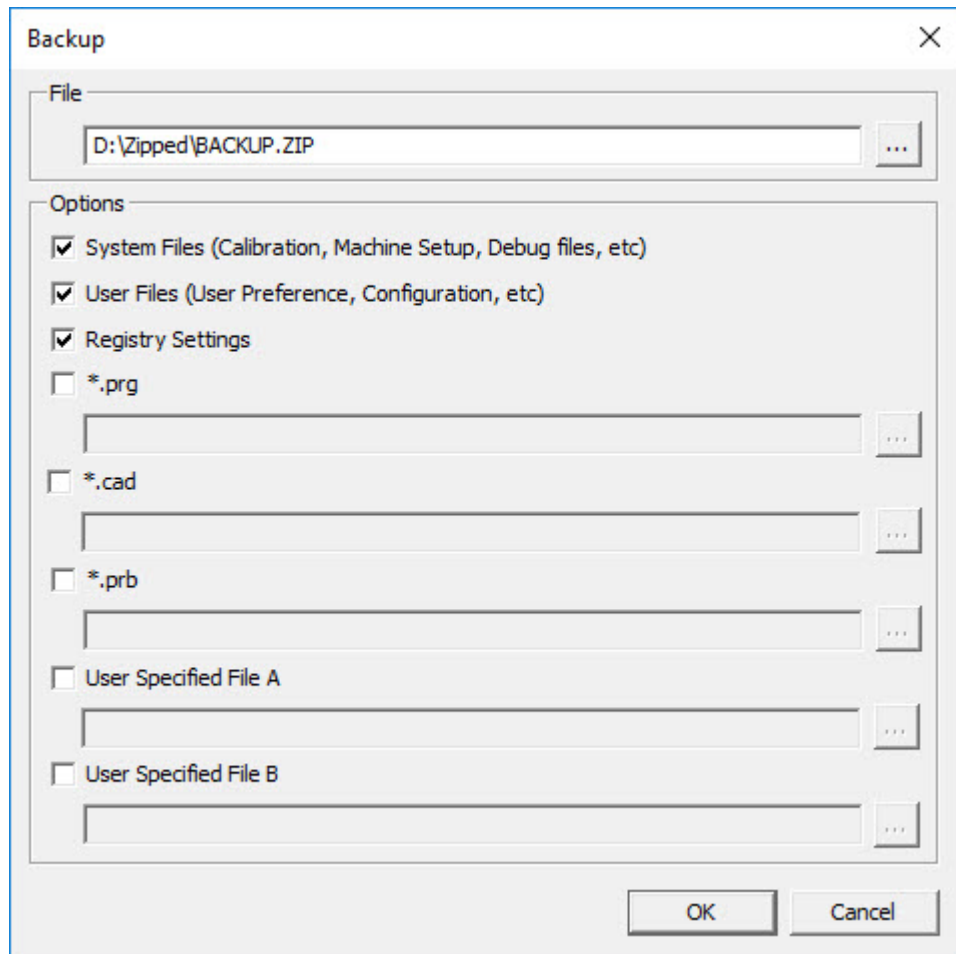
Backup dialog box

3. In the **File** box, define a safe location to save the backed-up files, and give the file a .zip extension.

4. Under the **Options** area, select the first three check boxes, and click **OK**.

If you replace your computer or transfer settings that reside on another computer, you can use the Settings Editor's **Backup** and **Restore** buttons:
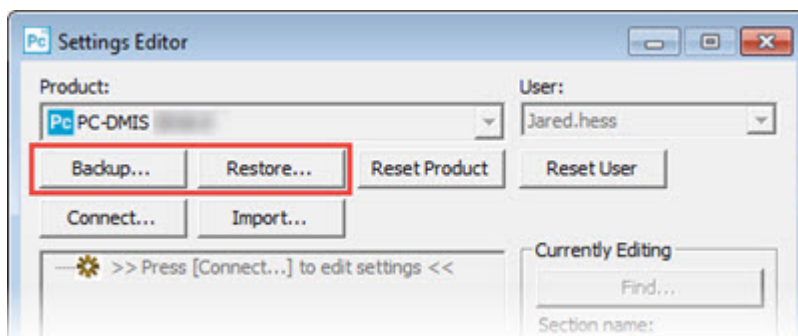
Backup and Restore buttons

For more information on the backup and restore functionality, refer to the Settings Editor documentation.

Backing Up Machine Files for an Xcel CMM or a Sharpe Controller

If you are using a Brown and Sharpe Xcel CMM or a CMM that uses a Sharpe controller, and you are going to install PC-DMIS 2019 R2 on a new computer, save copies of the following CMM machine files from your previous version to a safe place:

- comp.dat

    Starting with PC-DMIS 2013 MR1, the comp.dat file moved to:

        C:\ProgramData\WAI\PC-DMIS*version*

- downl.oad

The files are located in the installation (root) directory for all software versions prior to 2013 MR1, regardless of the operating system.

The location of the installation (root) directory is:

    C:\Program Files\WAI\PC-DMIS *version*

For versions of PC-DMIS up to and including 3.7 MR3, the location of the installation (root) directory is:

    C:\PCDMISW

Backing Up Machine Files for a CMM with a DEA Controller

If you are using a DEA or other CMM with a DEA machine controller, and you are going to install PC-DMIS 2019 R2 on a new computer, save copies of the following CMM machine files from your previous version to a safe place (the files vary according to the type of CMM):

- cosdat1.bin

- compens.dat

    Starting with PC-DMIS 2013 MR1, the compens.dat file moved to:

        C:\ProgramData\WAI\PC-DMIS*version*

- Fzyfile.txt

- Rcxfile.txt

- Rmxfile.txt

- Any file with your machine's serial number in its name

The files are located in the installation (root) directory for all software versions prior to PC-DMIS 2013 MR1, regardless of the operating system.

The location of the installation (root) directory is:

C:\Program Files\WAI\PC-DMIS *version*

For software versions up to and including 3.7 MR3, the location of the installation (root) directory is:

C:\PCDMISW

Step 4: Install the Software

The following steps run you through a typical installation. Your installation screens may differ if you are running a different version of PC-DMIS 2019 R2 or if you are installing a custom build with additional options. In addition, your license may be configured with different options.

1. Locate the installation file on your installation media; or, if you downloaded it, open the directory that contains the downloaded file. The name of the installation file is:

   Pcdmis2019_R2_release_##.#.###.#_x64.exe

   The # symbols represent the version and build numbers.

2. Right-click on this executable file and click **Run as administrator** to open the installation program.

3. If a security warning appears, click **Run**.

4. From the initial license screen, read the license agreement, and select the **I agree with the License terms and conditions** check box.

5. In the box at the bottom, you can define the installation folder. By default, the file installs to:

   C:\Program Files\Hexagon\PC-DMIS 2019 R2 64-bit

To change the folder, either click the browse button (⬛) and choose a folder, or in the box, type a new path.

6. Once you accept the license agreement and choose the installation folder, click **Next** to open the licensing screen.

7. From the licensing screen, choose your license type:

- **LMS (Software) License** - If you have a software license (called an Entitlement ID), select this option. Complete the boxes beneath this option.

- **LMS License Server** - If you have a license server to connect to, select this option and then type the server address.

- **HASP** - If you have a portlock (a physical USB device with the licensed options), ensure that it is connected to your computer, and then select this option.

For help on how to set up an LMS license, see "LMS License Setup".

8. Click **Next**.

9. Choose to install additional software components. If you chose a custom installation path, the additional software still installs to your default measurement routine directory (usually C:\Program Files\Hexagon\).

- **PDF Converter 5.0** - This third-party tool converts PC-DMIS 2019 R2 reports to PDF outputs.

    If you are a Portable user and you have the appropriate license, you can select a Portable interface as your default. For details, see "Switchable Portable Interface" in the PC-DMIS Portable documentation.

- **Offline English Help** - This option installs the English HTML5 Help into an installation folder that you define in step 14. When you access the Help, PC-DMIS tries to use the Internet-based Help, but if it cannot detect an Internet connection, it then attempts to access this offline fallback Help. If you mark the **Use Offline Help** option from the **Help** menu, then it also accesses this offline fallback Help even if you are connected to the Internet. This option appears if you have not installed the offline Help yet. Once you install the offline Help, and you later install an update to PC-DMIS, any updates to the Help occur automatically without presenting a prompt.

> If you need a non-English offline Help, see "Installing Non-English Offline Help Files from Language Packs".

- **Join the Hexagon Customer Experience Improvement Program** - To help improve the product and send usage data to Hexagon Manufacturing Intelligence, select this check box. To opt out of sending usage data, clear the check box. For more information about this program, visit the Hexagon Customer Experience Improvement Program website.

10. Click **Install** to start the installation. A progress bar shows the overall progress.

11. When the installation finishes, a screen shows any warnings or errors. It also contains these options:

- **Launch PC-DMIS 2019 R2 64-bit** - To launch PC-DMIS 2019 R2 now, select this check box. If this is your first time installing this version on this computer, you should do this to initialize registry entries. For more information, see "Administrator Privileges Explained".

- **Show Release Notes** - To display a Readme.pdf file that shows what is new or has changed in this release once you click **Close**, select this check box.

12. Click **Close** to close the installation program.

13. If you have marked the **Offline English Help** check box in step 9, the Help installer program opens to install the offline Help.

14. In the box at the bottom, you can define the installation folder. By default, the file installs to:

> C:\Program Files\Hexagon\PC-DMIS 2019 R2 64-bit English Help

To change the folder, either click the browse button (⬛) and choose a folder, or in the box, type a new path.

15. Click **Install** to start the installation. A progress bar shows the overall progress.

16. When the installation finishes, a screen shows any warnings or errors. Click **Close** to close the installation program.
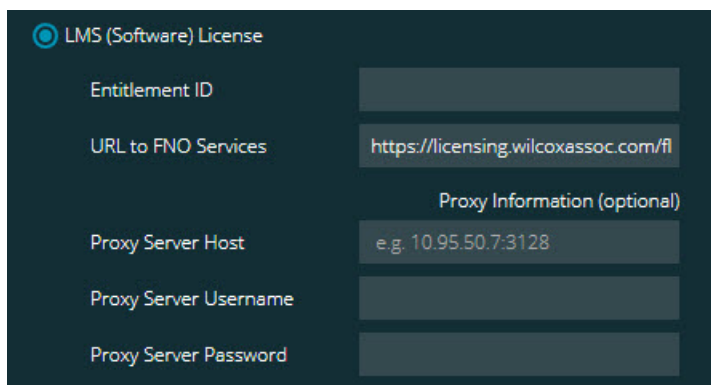
LMS License Setup

This topic provides information if you need to:

- Set up your LMS (software) license

- Connect to an LMS license server

- Update your LMS license

- Provide licensing information to the installer from the command line

LMS (Software) License

If you chose **LMS (Software) License** on the licensing screen, and the installation cannot find a valid license on your system, you need to complete these options:

LMS (Software) License option

1. Complete the options:

    - **Entitlement ID** - If you have an Entitlement ID, type or paste the ID you were issued in the box. If you have supplied this value in a previous installation, the installer pulls in that value from the registry.

    - **URL to FNO Services** - This points to the URL that verifies your license. Ensure that it has this URL:

        https://licensing.wilcoxassoc.com/flexnet/services

    - Proxy information - If your computer is on a network where you need a proxy server to reach the Internet, contact your IT specialist to get this information. Enter the server host, user name, and password.

2. If you do not have an Entitlement ID and you need to activate your license offline, use the CLM Admin application. From the CLM Admin application, choose **Activate new licenses**, and follow the on-screen instructions.

> For information on how to use the CLM Admin application, consult the Hexagon Client License Manager (CLM) Software documentation. You can find this in the subfolder for your language (such as the **en** directory for English).

3. Click **Next**. The installation software connects to the Internet and activates your license. It then installs the FLEXnet Licensing Service required to use LMS licenses.

LMS License Server

LMS License Server option

If you use a license server, select this item, and then type your license server name in the **License Server(s)** box. The format of this line of text is *port number@server name*, where *port number* is the TCP port number for the license server, and *server name* is the name of the server.

The default TCP port number is 27000. If you don't identify a specific port, the license server uses the default. For example, these mean the same thing:

@server1

27000@server1

> If you use this option, place the "@" symbol in front of the server address. If the "@" symbol is left off, the installation process attempts to look locally for the license. This may result in an error.

You can also specify multiple license servers. You can separate them with semicolons. For example, suppose that you have three license servers called licenseserver1, licenseserver2, and licenseserver3, and all of them use the default TCP port. You can specify all of them in a single line of text, like this:

@licenseserver1;@licenseserver2;@licenseserver3

Updating Your LMS License

Once you finish with the license setup and install PC-DMIS 2019 R2, it checks for license updates when it starts and after every eight hours of running. If a license update is available, this notification appears:

PC-DMIS

Updates are available for your PC-DMIS license. Applying them now will require PC-DMIS to restart. Would you like to apply the updates now?

To apply the update, click **Yes**. If you click **No**, PC-DMIS 2019 R2 displays the message every eight hours of running or the next time it runs.

- If an option or a feature is added, you are given the choice to apply the changes. A pop-up message displays in the system tray if you apply the changes.

- If an option or feature is removed, a message that requests you to restart PC-DMIS 2019 R2 appears. A pop-up message also appears in the system tray to inform you of this.

- If an option or feature is obsolete, it is automatically removed.

 After you apply an update, restart PC-DMIS to ensure that it functions properly.

Providing LMS Licensing Information to the Installer from the Command Line

You can send LMS licensing information to the installer through command line parameters. For more information, see "Providing LMS Licensing Information to the Installer from the Command Line" in Appendix A.

Administrator Privileges Explained

Software versions earlier than version 2012 require that you run the software as an administrator because some system settings (such as the last probe used, wrist angles, and other items) were shared among all users on that computer. This required that these settings were placed in the LOCAL_MACHINE section of the Windows registry instead of in the CURRENT_USER section (for user-specific settings). Making changes to settings in the LOCAL_MACHINE section requires administrator privileges.

In PC-DMIS version 2012 and later, the settings mechanism used by PC-DMIS changed to only require administrator access the very first time it runs at the end of the installation. From that point forward, standard user access is sufficient.

The PC-DMIS installer has a flag that is built into the setup executable file (Pcdmis2019_R2_release_##.#.###.#_x64.exe) that requires the setup process to run with administrator privileges. If the current user has lesser privileges, the setup program displays a prompt to provide a user name and password of an account with administrator privileges.

Once the installation finishes, the first time you run PC-DMIS 2019 R2, you must launch it with administrator privileges. If you mark the **Launch PC-DMIS 2019 R2 64-bit** check box when the installation finishes, PC-DMIS 2019 R2 does this automatically by passing the original privilege level of the installer onto PC-DMIS.

Note, however, that if you do not mark this check box, you will need to explicitly right-click on the shortcut and select **Run as administrator** as described in step 6.

For more information on the file system and registry rights that PC-DMIS 2019 R2 requires, see "Required User Access Rights" in Appendix B.

Step 5: Copy Files after Installation

If these files are available, copy them from your old PC-DMIS installation directory to the directory where you installed the newer version:

- Sysparam.dat

- Downl.oad

- Fzyfile.txt

- Rcxfile.txt

- Rmxfile.txt

Starting with PC-DMIS 2010 MR2, PC-DMIS automatically copies common system files to the program data files directory when you install a newer version of PC-DMIS.

The comp.dat, compgrid.at, comp.enc, and compens.dat volcomp files used with volcomp methods 13 (ASI) and 14 (BNS) must be in the program data files directory. When you install a newer version of PC-DMIS, these files automatically copy to the program data files directory for the new version. For the default path location of this directory, see "Understanding File Locations" in the PC-DMIS Core documentation.

For additional information on volumetric compensation files and setup, see the Machine Interface Installation Manual (MIIM).

You can access the MIIM help file in the language subfolder where you installed the offline PC-DMIS documentation. For the English 2020 R2 Release version of PC-DMIS, it is located here: "*C:\Program Files\Hexagon\PC-DMIS 2020 R2 64-bit English Help*".

Copying Machine Files for an Xcel CMM or a Sharpe Controller

If you are using a Brown and Sharpe Xcel CMM or a CMM that uses a Sharpe controller, and you installed PC-DMIS 2019 R2 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

> C:\Program Files\Hexagon\PC-DMIS *version*

For more information about these files, see "Backing Up Machine Files for an Xcel CMM or a Sharpe Controller".

## Copying Machine Files for a DEA CMM with a DEA Controller

If you are using a DEA CMM with a DEA machine controller, and you installed PC-DMIS 2019 R2 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

> C:\Program Files\Hexagon\PC-DMIS *version*

For more information about these files, see "Backing Up Machine Files for a DEA CMM with a DEA Controller".

Step 6: Launch the Software for the First Time

1. When you run PC-DMIS 2019 R2 for the first time, go to **Start** and type **PC-DMIS 2019 R2 64-bit**.

2. From the list of shortcuts in the **Start** menu, right-click on either the **Online** or **Offline** icon, and then select the **Run as administrator** option (required only if the **Launch PC-DMIS** check box wasn't checked at the end of the installation).
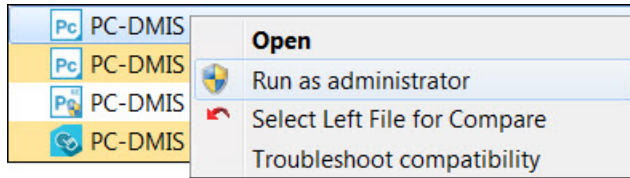
Run as administrator option

The **Run as administrator** option allows the program to write the needed machine-specific settings.

3. You can import settings from a previous version.

   If your previous version used the pcdlrn.ini file, PC-DMIS 2019 R2 asks if the settings in your PCDLRN.INI file should be used as your registry settings. Click **Yes** at the prompt. Otherwise, PC-DMIS 2019 R2 loads in the factory defaults.

   If your previous version used the Settings Editor, do the following to use your previous software settings:

   a. Close PC-DMIS 2019 R2.

   b. Launch the PC-DMIS Settings Editor from the **Start** menu.

   c. Once it opens, click **Import**, and open the PCDRegFile.dat file you backed up in the "Step 3: Back Up Existing Settings" section of this document. PC-DMIS 2019 R2 imports your settings.

   d. Close the PC-DMIS Settings Editor.

Subsequent Startups

For subsequent startups, click the usual **Offline** or **Online** shortcut to launch PC-DMIS 2019 R2 normally :


PC-DMIS 2019 R2 shortcuts

Once PC-DMIS 2019 R2 starts, the **Software License** screen displays the current license agreement. Read the agreement carefully and then at the bottom, click **I agree with the License terms and conditions** to proceed:
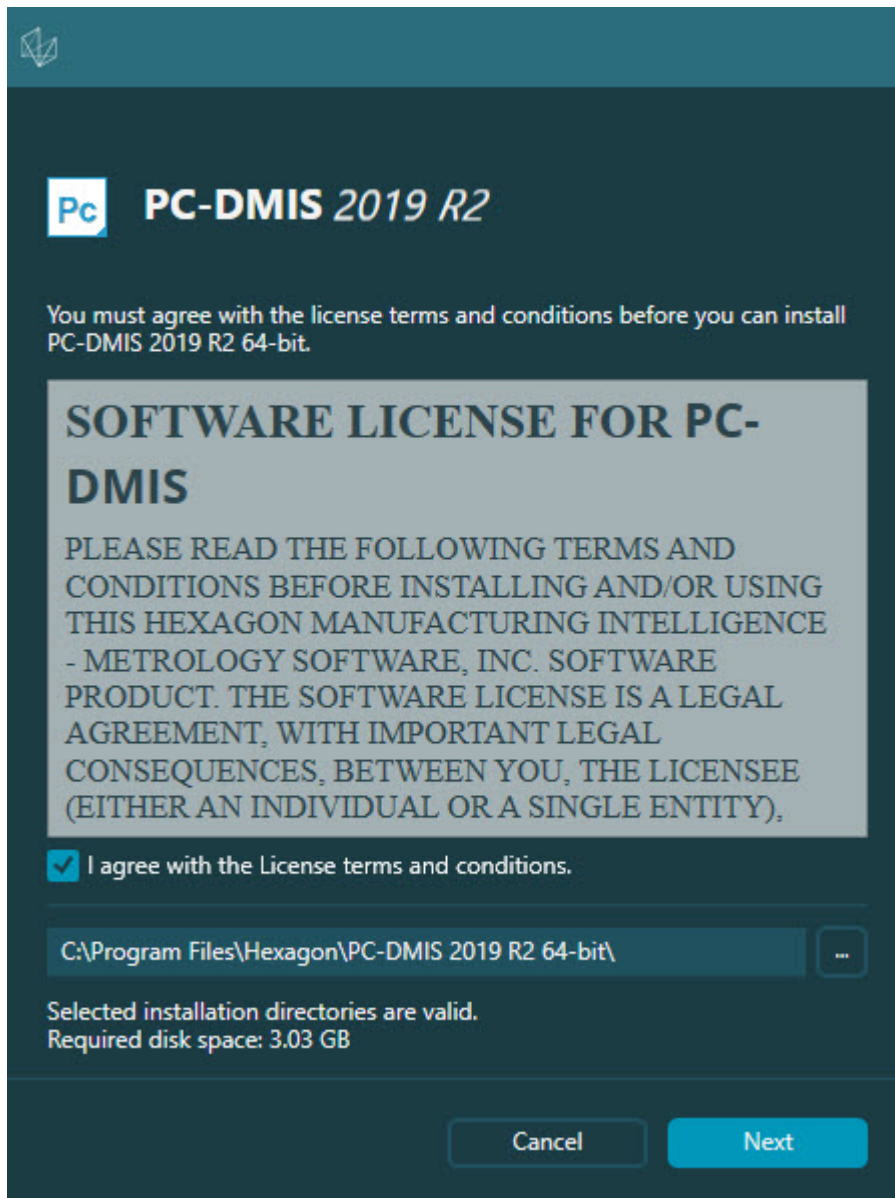
Software License screen

Once PC-DMIS 2019 R2 runs, an icon displays in your system tray. If your portlock or LMS license is programmed correctly, the icon displays a green check mark as shown below:
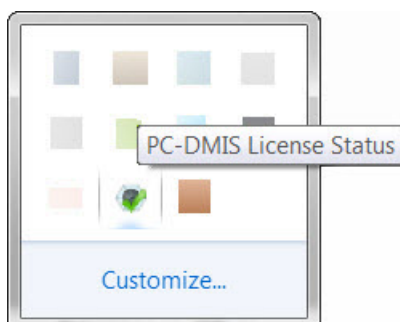
Message for valid PC-DMIS license

If your portlock is not connected or is not programmed correctly, or if you are using an LMS license and your software has not been properly licensed, the icon appears with a red exclamation point overlay. A pop-up message says that the license is disconnected:

The PC-DMIS License is disconnected. PC-DMIS will exit in 5 minutes. Please save your data as soon as possible.

Message for disconnected PC-DMIS license

If the license is disconnected, PC-DMIS 2019 R2 functions normally, but after 5 minutes, it automatically closes. Be sure to save your data immediately before this occurs.

Note About CMMs Using RS-232 Communications

By default, PC-DMIS 2019 R2 communicates through the COM1 communications port. You need to change this port number to the number that Windows automatically created if a serial-to-USB adapter cable or serial adapter card was installed for communicating with an older RS-232 CMM.

To change the COM port number, perform the following steps:

1. In Windows Device Manager, note the number that Windows assigned to the communications port on your computer. For help, refer to Windows Help.

2. Open PC-DMIS in Online mode, and then open or create a measurement routine.

3. Select **Edit | Preferences | Machine Interface Setup**.

4. In the **Comm port** box, enter the port number from Windows Device Manager.

Updating the Software

For information on the installation process, follow the installation steps described in the topics above. Once the installation process finishes, you can use the latest version.

For information on evaluation versions and changing HASP to LMS, see "Updating the Software" in the PC-DMIS Core documentation.

Repairing or Removing an Installation

You can also repair or remove an installation once you install it. To do this, double-click the Pcdmis2019_R2_release_##.#.###.#_x64.exe file as if you were beginning the installation process. The setup displays a screen with these options:
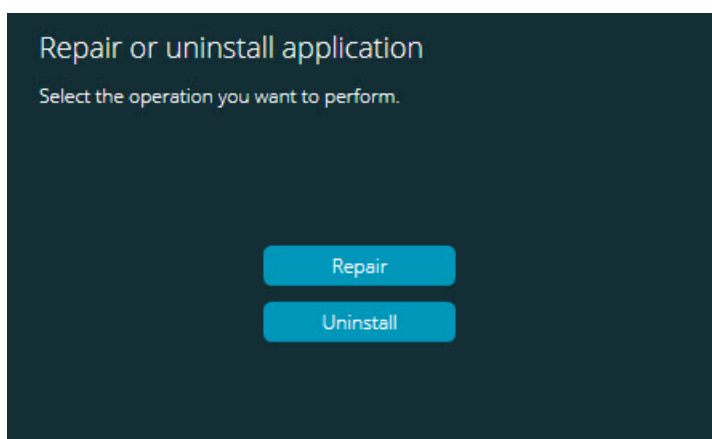
"Repair or uninstall application" dialog box

- **Repair** - This option reinstalls all of the product files as they were originally installed. This option may help resolve issues where an installation didn't properly install all of the files.

- **Uninstall** - This option removes the application from where you installed it. You can also use the **Apps and features** screen or the **Programs and Features** control panel item in Control Panel to uninstall the application.

Running the Software in Another Language

The initial installation setup file for PC-DMIS 2019 R2 contains the user-interface files for all of the supported languages. When you install PC-DMIS 2019 R2, it installs the language files based on your operating system's language.

To run PC-DMIS 2019 R2 in a language other than the operating system's language, select **File | Language**, and then click the desired language. PC-DMIS shows a message that says the application will be shut down and restarted. Click **Yes** to continue. PC-DMIS 2019 R2 immediately closes and then reopens in the selected language.

To get the help content available in a non-English language, see "Installing Non-English Offline Help Files from Language Packs".

Installing Non-English Offline Help Files from Language Packs

This topic only applies to users who don't have Internet access.

- With Internet access, the online Help for PC-DMIS 2019 R2 is already available from a public web server in all supported languages. The Help opens in your browser whenever you access it.

- Without Internet access, PC-DMIS 2019 R2 uses the Help where you installed the offline Help for your version.

With the main installation file, you can install the offline Help in English. However, non-English offline Help files are not included in the main installation file. This means if you intent to use a non-English language, and you don't have Internet access, in order to see any Help content, you *must* also install a language pack for that language.

A language pack contains all of the offline Help content for that language.

To install a language pack, do the following:

1. Locate the desired language pack (and .exe file) on your installation media or download it from the Internet here:

    ftp://ftp.wilcoxassoc.com/PC-DMIS-Versions/Release/2019_R2/Release/x64/Lang/

2. Run the .exe file and follow the setup instructions. You do not need to have administrator access to do this step.

This procedure installs the Help content into the folder where you installed the offline Help for your version.

You can then switch to that language in the software and access the Help content as expected.

Troubleshooting

This topic provides information for you to troubleshoot installation, startup, and software update problems.

Startup is Slow

Problem: You use a computer with at least the recommended system requirements as detailed in the "Recommended System Requirements" topic, and it takes longer than 30 seconds to launch the software.

Description: This happens if you try to run PC-DMIS 2019 R2 on a Windows 7 computer, but you didn't mark **Run as administrator** on the installation wizard. This results in a problem loading the HASP driver. Note that this problem only occurs when you install with a HASP license type, as discussed in "Step 4: Install the Software".

Solution: Uninstall PC-DMIS 2019 R2 and then reinstall it. To reinstall it, right-click on the installation file and choose **Run as administrator**.

Setting Up the Network to Send Crash Reports

Problem: PC-DMIS 2019 R2 cannot automatically send crash reports to Hexagon Manufacturing Intelligence even when your software configuration does not use the **/nocrashdump** switch. (This switch disables crash reports in PC-DMIS 2019 R2.)

Description: A firewall on your computer may be blocking the Hexagon Universal Updater application from connecting to the server. If PC-DMIS 2019 R2 crashes, it uses a PHP script over HTTP to send the crash report. If this fails, it then tries to send the report to crashreport@wilcoxassoc.com. It tries using the standard SMTP email protocol. If that fails, it tries to send the email through MAPI.

Solution: The crash report system needs to be able to use port 80 to get out to the server, **http://www.wilcoxassoc.com**/.

Installing on top of an Existing Version Results in Unexpected Behavior

Problem: You installed on top of an existing version of the software, and now the software does not behave normally. Potential symptoms include:

- After you start up the software, you get a "Procedure Entry Point" error.

- When you select **Help | About**, it does not show the new build number.

- Reported bug fixes do not seem to be fixed, and PCDLRN.EXE does not have a newer date and time than the original release.

Description: Something did not install properly on top of the existing version.

Solution: Use **Apps & Features** or Control Panel to completely uninstall the existing version and then reinstall the version you're trying to install.

Running the Legacy DPUPDATE.EXE Does Not Work

Problem: The legacy DPUPDATE.EXE does not run.

Description: If you run PC-DMIS 2019 R2 without administrator privileges, DPUPDATE.EXE does not work.

Solution: Run PC-DMIS 2019 R2 with administrator privileges.

Contact Hexagon Manufacturing Intelligence

If you are participating in the *technical preview* of PC-DMIS 2019 R2, please post your feedback in the appropriate technical preview forum located at www.pcdmisforum.com/forum.php. Please <u>do not</u> contact Hexagon Technical Support for technical previews.

If you are using the *commercially-released version* of PC-DMIS 2019 R2 and would like further information or technical support, please contact hexagonmi.com/contact-us or visit hexagonmi.com/products/software. You can also reach Hexagon Technical Support at support.hexagonmi.com or by calling (1) (800) 343-7933.

Appendix A

Providing LMS Licensing Information to the Installer from the Command Line

You can send LMS licensing information to the installer by using the command line:

- If the installer is running in silent mode (**-q**) or basic silent mode (**-passive**), and the correct information is provided, everything runs without user interaction. The command switch **-q** displays the progress bar and handles installer errors. The **-passive** switch hides the user interface.

- If the installer is not running in silent mode, the information provided is used to populate the LMS activation form and skip the license screen.

- You can provide the **-?** to review additional command line arguments.

Descriptions of the parameters follow, along with examples.

Descriptions

USELMSLICENSING=1 - This flag is useful only if the system already has an LMS license that the user is using. It allows silent mode to work without having to prompt the user for a license choice. If the installer is not running in silent mode, it still allows the install process to skip the license type selection dialog (thus saving some time).

LMSENTITLEMENTID=*entitlement id* - This parameter and value are useful on a new system where no LMS license was previously installed. It indicates that you want LMS licensing and provides an Entitlement ID to try and activate. When this value is specified, there is no need to specify **USELMSLICENSING**.

LMSLICENSESERVERS="*server1,server2…***"** - This parameter is used on systems that communicate with a license server. It also allows the license type selection dialog box to be skipped and the installation to be done silently.

LMSPROXYHOST="*proxyhostaddress***"** - This optional parameter gives the address of a proxy host. In silent mode, it is used directly in activation. In non-silent mode, it populates the activation form with this value.

LMSPROXYUSERNAME="*user name***"** - This parameter is another optional parameter for the proxy user name. It behaves in the same manner as **LMSPROXYHOST**.

LMSPROXYPASSWORD="*unencrypted password*" - This parameter is another optional parameter for the proxy password. It behaves in the same manner as **LMSPROXYHOST**.

LMSURLTOFNOSERVICES=*URL to FNO server* - This parameter is mostly for internal development. The default URL is to the production server. The new value can be used to override the default value and point to the development server.

Examples

On a brand-new system with a node-locked Entitlement ID, the following line installs PC-DMIS 2019 R2 in silent mode:

-q LMSENTITLEMENTID=99999-88888-77777-66666-55555

On a system that already has a license, the following line installs PC-DMIS 2019 R2 in silent mode:

-passive USELMSLICENSING=1

On a brand-new system using license servers, the following line installs PC-DMIS 2019 R2 in silent mode:

-passive LMSLICENSESERVERS="123.12.134.42"

On a brand-new system with no license, the following line skips the license type selection dialog box and populates the activation form:

LMSENTITLEMENTID=99999-88888-77777-66666-55555
LMSPROXYHOST="123.123.123.123" LMSPROXYUSERNAME="bob"
LMSPROXYPASSWORD="marley"

Appendix B

Required User Access Rights

PC-DMIS 2019 R2 requires read, write, and create access to the locations defined below in the file system and registry.

File System

Windows 10, Windows 8, Windows 7, and Windows Vista:

- C:\ProgramData\Hexagon\PC-DMIS\2019 R2

- C:\Users\Public\Documents\Hexagon\PC-DMIS\2019 R2

- C:\Users\UserName\AppData\Local\Hexagon\PC-DMIS\2019 R2

- Any user-specified folder locations for storing measurement routines, probes, subroutines, and so on

Registry

All of these versions have their own registry settings, which are stored in a version-specific registry key. The items shown below are for version 2019 R2.

- HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hexagon\PC-DMIS\2019 R2 Key and all sub keys

- HKEY_CURRENT_USER\Software\Hexagon\PC-DMIS\2019 R2 and all sub keys

- HKEY_USERS\.DEFAULT\Software\Hexagon\PC-DMIS\2019 R2 and all sub keys

Notes

The first time you run a new version, PC-DMIS automatically copies the settings from the most recent version of PC-DMIS that is installed. For this to work, PC-DMIS needs to run with administrator privileges the first time you run it. During the installation, if you select the **Launch PC-DMIS** check box in the setup wizard, it runs PC-DMIS as an administrator and completes this first step.

This initial migration automatically sets read, write, and create permissions on the registry for the relevant keys.

If you are using fixturing or laser sensors, the following registry keys are stored back one level:

- HKEY_LOCAL_MACHINE\SOFTWARE\Hexagon\FxtServer

- HKEY_LOCAL_MACHINE\SOFTWARE\Hexagon\PC-DMIS\NCSENSORSETTINGS

It may be easier to just apply create/read/write privileges to the HKEY_LOCAL_MACHINE\SOFTWARE\Hexagon\ key and all sub keys to cover these also.

Appendix C

First-Time Installation with Flexible Fixturing

To be compliant with the permission rules for PC-DMIS products, files associated with fixturing are now located in this folder:

C:\Program Files\Hexagon\PC-DMIS 2019 R2 64-bit\Models\QuickFix

This allows access to the files without needing administrator privileges on the computer running PC-DMIS. To accomplish this, the following steps are required when you install PC-DMIS for the first time:

1. The first time you install PC-DMIS and FxtServerInterface, run the FxtServerInterface installation program for the first time with administrator privileges (as is required for the PC-DMIS installation).

2. When you run FxtServerInterface, a message states that the system will migrate all of your data files to the "FIVEUNIQUE" Documents folder described above.

   - If you choose **Yes**, the files are moved, and the original folder is deleted.

   - If you choose **No**, the files are copied, but the original folder is kept.

   Once this is done, the files are moved (or copied), and you are able to run FxtServerInterface.exe without administrator privileges.