



HEXAGON
MANUFACTURING INTELLIGENCE

PC-DMIS 2019 R1

- Release Notes -



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- PCD-140680 - Fixed an issue where the clearance plane was not drawn in the correct location when there was a part setup transform.
- PCD-151149 - Fixed an issue where the Pointcloud Surface Colormap incorrectly appeared in the **Feature List** box in the **Dimension** dialog box.
- PCD-152016 - Made improvements to colormap so that it relates better to the selected surfaces.
- PCD-153254 - Fixed an issue where 4-axis scanning was not available for the Adaptive Plane Circle Scan strategy for the Plane Auto Feature.
- PCD-153551 - Fixed an issue where the **Colormaps** list box was inadvertently set to **None** when the report was refreshed.
- 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-157701 - Fixed an issue with animation where animating a hit could have ended prematurely and given the impression of a bad retract.
- PCD-158089 - Corrected an issue where auto-insert moves ignored the measured features.
- PCD-158353 - Fixed an issue where an auto wrist did not appear where it was expected to appear (inside a Quick Align feature's groups).
- PCD-158362 - Fixed an issue where a cylinder could be solved as inner when it was actually an outer cylinder.
- PCD-158727 - Fixed an issue where continuous scanning did not work when you used an AT901 Tracker.
- PCD-158842 - Fixed an issue where a DCC command could be added to a measurement routine that ran in Protected Mode.

- 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 open.
- PCD-160312 - Fixed an issue that occurred when you created linear open scans with the auto-dimension setting enabled.
- PCD-160716 - Fixed a crash that occurred when you set the `DoNotUseAmyuniRTF` registry entry in the Settings Editor application to 1 or 2.
- PCD-160827 - Fixed a crash that occurred when you loaded and executed a measurement routine with `DIMINFO` commands inside a loop.
- 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-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-162047 - Fixed an issue that affected bonus to appear when the input features had different vectors.
- PCD-162368 and PCD-162690 - 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.
- PCD-162476 - Fixed a crash that occurred after you deleted a work plane and updated all dimensions.

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- 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-162732 - Fixed an issue where CAD model views were empty. This issue only occurred when the measurement routine used inches.
- PCD-163100 and PCD-163222 - Fixed an issue that occurred when you created an invalid QuickFeature.
- 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-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-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-164530 - Made a change to set the `EdgeClientNotifications` registry entry in the Settings Editor application to **False** by default.
- Changes were made to improve the user experience based on feedback collected from recent releases.

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- PCD-149791 - Updated to release version 2.2 of Edge Client.
- 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-151095 - Fixed an issue where if you switched the Part Model off and then on didn't allow surface selection.
- PCD-152217 - Fixed an installation issue on Spanish or Korean language operating system.
- PCD-153261 - Fixed a crash that occurred when a Laser pointcloud scan was simulated offline after editing it.
- PCD-154084 - Fixed an issue where the selection of the Pointcloud Colormap didn't remember the **Use Dimension Color Scale** option.
- PCD-157396 - Fixed an issue where incorrect conversion happened in the Laser feature dialog boxes. This used to happen when you inserted standard deviation multiplier values for measurement routines in the Inch unit.
- PCD-158633 and PCD-151911 - Fixed an issue where PC-DMIS prevented the polar co-ordinate axis from appearing in the summary label of the Xact Measure position.
- PCD-158864 - Fixed an issue for the "with feature creation" safe move option that created incorrect commands in the routine.

- PCD-158909 - Added support for Protect to work with borrow license when you run outside the company domain or without a network connection.
- PCD-159819 - Improved the performance to create surface scans.
- PCD-159853 - Fixed an issue where Q-DAS Configurator failed to launch the HTML Help file.
- PCD-159984 - Fixed an issue where Auto Insert moves altered hit targets.
- PCD-160165 - Added an OCR blueprint of the demo block to facilitate demonstration and training for the new GD&T OCR feature.
- PCD-160190 - Fixed an issue for loading a VISI WXF model where all the points were not imported properly.
- PCD-160482 - Fixed an issue where the calibration tool moved and performed a manual measurement, the collision detection incorrectly reported a collision that didn't exist.
- PCD-160715 - Fixed an issue where if you read the CMM limits to avoid collisions during the probe calibration, the offline machine was used. The CMM limits now correctly read from the online machine also.
- 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 combo box on the Pointcloud and Quickcloud toolbars was not displayed properly.
- PCD-160961 - Added the ability to immediately free diagnostic images. The `DiagnosticsAutoFree` registry entry in the PC-DMIS Settings Editor application enables you to immediately delete Vision diagnostic images in PC-DMIS memory after a feature is executed. If the registry entry is set to TRUE, the diagnostic image will not appear on the Vision Diagnostics tab in the Probe Toolbox. This setting can dramatically reduce the memory usage when the `DiagnosticsAutoExport` registry entry is set to TRUE.
- PCD-160976 - Fixed an issue where the template match code was not working with the machines that have a rotary table.

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- PCD-161128 - PC-DMIS Help file now provides a link to the "Important Notes" and "Append Mode" topics from the parent topic for the Excel Form Report.
- PCD-161632 - Fixed an issue where you couldn't uninstall PC-DMIS 2019 R1 from Universal Updater.
- PCD-161655 - Fixed an issue where if you pressed the stop button after a collision on arm2, it was not possible to continue the execution.
- PCD-162220 - Fixed an issue where PC-DMIS was offline and the **Set Machine Interface** menu option was grayed out. This used to happen when you used the AllPortable license option that didn't allow the selection of the portable interface.
- PCD-162271 - Fixed the Catia V5 DCI version in the PC-DMIS Readme.
- PCD-162469 - Fixed an issue where I++ server didn't report the X and I values for PtMeas.
- Changes were made to improve the user experience based on feedback collected from recent releases.

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PC-DMIS 2019 R1 is a significant development release of the software. For detailed information and video tutorials about this release, visit hexagonmi.com/products/software.

Introducing Universal Updater



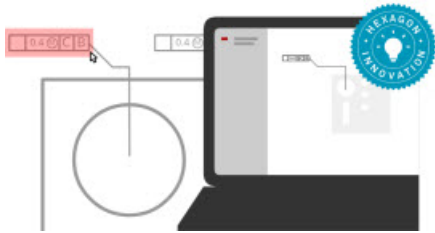
You can now use a single tool, the Universal Updater, to update PC-DMIS and other Hexagon metrology software products, including major releases. This new tool also gives you access to the latest Hexagon Manufacturing Intelligence news and links to our community platforms. The PC-DMIS installer installs the tool.

The tool allows you to:

- Download and update all metrology software from one place with one click.
- Get notified on the next major release of a product, and not just service pack updates of the current version.
- View the What's New information before you choose to install.
- Integrate Windows 10 activity center for notifications.
- Discover other products in our extensive portfolio, with a short description that shows what each product specializes in.
- Keep up to date with Hexagon Manufacturing Intelligence news.

See PCD-136035 and PCD-148057.

Copy and Paste Your Part Prints



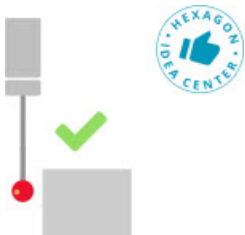
You can now use Optical Character Recognition (OCR) technology to bridge the gap between the 2D print and the 3D CAD model. You can select PMI off of a digital copy of a 2D print. PC-DMIS is able to use OCR to recognize tolerances.

- Create routines from user selected dimensions on a print.
- Create routines from all dimensions on a print.
- Remove human error from manual entry.

A helpful tool steps you through the steps that you need to completely define a tolerance.

See PCD-147698 and PCD-148975.

Collision Course



Enhanced collision avoidance is now done at calibration time. This new feature automatically finds the safe moves needed to avoid collisions during the calibration of tactile probes on Bridge CMMs. Before we rotate any tip in calibration, we compute whether or not the upcoming rotation will exceed the machine limits.

- If we don't exceed the machine limits, we rotate the tip at the current position (as we do it today).

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- If we do exceed the machine limits, we move the tip to a position where we don't collide any longer and rotate there.

See PCD-131138.

Protect Your Files

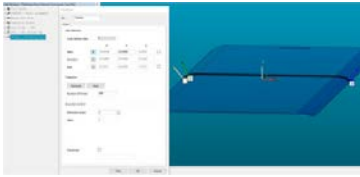


Protect your files with a single click within PC-DMIS. The Protect feature provides capabilities for organizations to both control and track changes made to measurement routines.

- Organizations can assign permissions to their employees based on job responsibilities. These permissions are used to control access to measurement routines and to track modifications to certified or "Protected" measurement routines.
- Two roles can be specified - Programmer and Operator. Programmers are given the ability to certify or "Protect" measurement routines and modify previously-certified measurement routines. Operators are not able to certify measurement routines and can only execute previously-certified measurement routines.
- It tracks all modifications to the dimensional output in a measurement routine once a routine is certified by creating a protect log file. The log file is only viewable via the Protect Log Viewer.

See MMSCE-5234.

Thickness Scan



As the Chromatic White Light Sensor can operate in Thickness mode, we implemented a Thickness scan that you can use to measure the thickness and profiles of a transparent material in a single operation. Previously, the measurement of the top and bottom surfaces could only be performed in two separate operations. See PCD-126232 and PCD-135905.

Thickness Gage



The Thickness Gage command enables you to report the thickness and position of two features at specific gage distances relative to a datum reference.

- It calculates and reports a 2D thickness and gage position.
- It requires a selection of a primary and secondary feature as the thickness calculation is determined by piercing the secondary feature normal to a primary feature gage point.
- It supports the Thickness Scan, Linear Scan, and Profile 2D feature types.
- It does not support features with curves that have multiple intersections along any line normal to the gage axis.

See PCD-126232 and PCD-150771.

Auto Insert Safe Moves

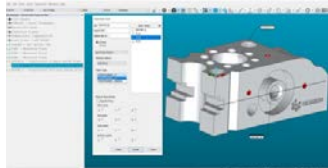


We developed a preview method to help you insert safe clearance moves for your probe between all features or some features in your measurement routine. (The legacy method is still available.) The preview method is the default method.

The preview method is more robust than the legacy method, particularly with more complex parts. The preview method uses a more thorough and current algorithm and current advancements in path planning. To use this method, select **Operation | Graphic Display Window | Auto Insert Moves | Preview**.

See PCD-144288 and PCD-150403.

Constructed Datums



These constructions are available:

- Constructed Line - Secondary Datum. This construction uses the points within the input feature (or features) as well as the plane from the Primary Datum input to create an "orientation constrained" and "external to material" 2D line.
- Constructed Point - Tertiary Datum. This construction uses the points within the input feature (or features) as well as with the specified primary and secondary datums to create an "orientation constrained" and "external to

material" point. You can use this point in alignments to simulate a tertiary datum.

- A new math option called Min_SEP (Min/Max) to Constructed Plane - Best Fit & Best Fit Recomp.

See PCD-123609.

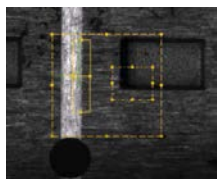
Local Size Options - ASME



We added a Circular Elements option, and now support two methods of local size in accordance with ASME Y14.5. Previously, we supported only Opposed Points.

The Circular Elements option (the default) reports the largest circumscribed circular element (internal feature/hole) or the smallest inscribed circular element (external feature/pin) among all local sizes.

Template Matching



Template matching is designed to allow you to define a master Image of an area of interest. You could use it to search the Field of View before you perform any edge detection for a feature measurement. This should improve the measurement repeatability since it removes factors such as part variability. See PCD-120914 and PCD-150802.

Portable Device Switching



A new "All Portable" license option is available. During installation, if the license contains "All Portable", you can select the default portable device. This is particularly useful if you have only one machine. You can also select or switch the device interface from within PC-DMIS, and connect to the machine without exiting.

Existing users with a specific portable license, such as Romer RDS arm or a tracker, will be able to switch their portable interface from the menu.

Select **Edit | Set Portable Interface** on the initial PC-DMIS screen. A check mark identifies the active or selected Portable interface. When you select a device on the menu, it dynamically switches the interface; you do not need to close and re-open PC-DMIS.

The following Portable interfaces are supported:

- RomerRDS Arm
- Romer Arm (WinRDS)
- AT40x Leica Tracker
- AT901 Leica Tracker
- AT9x0 LeicaLMF Tracker
- TDRA6000 LeicaTPS Tracker
- Aicon - Offline
- MoveInspect
- Faro Arm
- SMX Laser Faro Tracker

For Application Engineers and Sales personnel who have an "All Interfaces" license, Portable shortcut flags and copying the interfac.dll file are no longer needed for portable devices. Instead, you can select the portable device on the menu.

If you select a Portable interface on the menu, the interfac.dll file is ignored. If you want to use the interfac.dll file (for example, to run a CMM), clear the Portable interface from the menu.

See PCD-149047 and PCD-151288.

Customize Template Reports

You can convert a template report into a custom report. This feature offers all of the tools and flexibility of custom reporting without forcing you to start with a blank slate. Now, take a complete report and further enrich it with analysis that is not available for a report template. See PCD-121508.

Excel Form Report



PC-DMIS added the Excel Form Report command. This command enables you to easily complete a form such as the AS9102 - First Article Inspection Report or any other custom form that was created in Microsoft Excel. You can arrange the form's data in row or column format. You have access to all of the values that PC-DMIS is measuring during execution. You can associate any cell to any of the values. You can also create "custom fields", and assign the value of a custom field to each dimension.

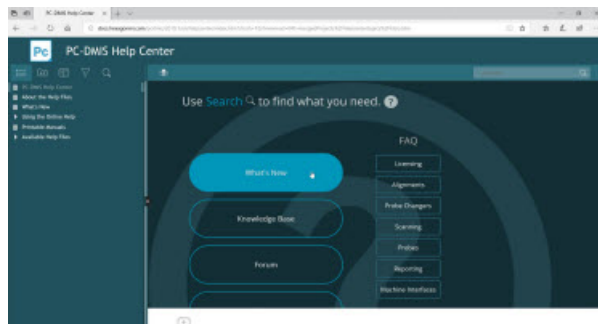
You can create the layout once for every form by dragging and dropping items onto cells. After that, you can insert the form in any measurement routine. If required, you can complete multiple forms from the execution of the measurement routine.

The command has the ability to generate data in various formats.

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See PCD-149796.

Responsive HTML Help



PC-DMIS introduces a new and modern online Help system that opens in your browser. The Help no longer uses the old compiled HTML Help (.chm) functionality from Microsoft. The benefits of this new Help system are:

- You can turn off the Help content that doesn't apply to you. To do this, use the "Filter" tab in the Help system's navigation pane.
- The Help system supports HTML5 and CSS3. This makes it easier for us to maintain and update the look and feel. It also provides the opportunity for more media-rich content in the future.
- The Help system is now available online. This provides a pathway for us to implement analytics and other online improvement to better understand how you use the Help and provide you with better user assistance.

PC-DMIS provides an option to install the Help system on your computer in case you do not have Internet access. Once it installs, the Help file is located in the **helpcenter** directory under your language directory where you have PC-DMIS installed. For example, for English, it is in the **en\helpcenter** directory. You can launch it in your browser from the index.htm file there.

See PCD-100455 and PCD-100457.

Auto Features (Laser)

- We added support for a new triangulation Laser to the Optiv product line. See PCD-119109.

CAD

- CATIA v5 Direct CAD Interface (DCI) now supports R28. See PCD-143992.
- We updated the Direct CAD Translators (DCT) libraries. They added upgraded import support as follows:
 - CATIAv5: R7 to R28 (V5-6R2018)
 - CATIAv6: R2010x to R2018x (R208 - R420)
 - Creo: Pro/E 2000i to Creo Parametric 5.0
 - Inventor: 9 to 2019

See PCD-144056.

CMM - Hexagon and Rotary Table

- We added the IGNOREROTAB/CALIBRATION option. With this option, you can calibrate rotary tables using measurement routing. This function was mainly added to support the rotary table that uses the error compensation map. However, you can use it with tables that either use or do not use error compensation. See PCD-133500.

Constructed Features

- We added the MIN_SEP (Chebyshev) math type to a constructed plane. It supports ISO 1101 with a Legacy Flatness dimension. See PCD-150645.
- "Tangent" plane was renamed to "Primary Datum" plane to clarify design intent and prevent confusion with the tangent plane modifier. See PCD-150397.

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- We added "Secondary Datum" 2D line constrained in orientation to a Primary Datum plane and external to material per ASME Y14.5 and ISO 5459. See PCD-147135.
- We added "Tertiary Datum" 3D point constrained in orientation to a Primary Datum plane, Secondary Datum line and external to material per ASME Y14.5 and ISO 5459. See PCD-149395.

DCI

- We now support the latest version of Creo, which is Creo 5. This brings our CREO DCI support up to the latest-supported version. See PCD-143983.

Edit Window

- You can print the Edit window when it is in Summary mode. See PCD-113669.

Gage

- You can select 2D Radius Gage in Distance and Location Dimensions (Form is not supported). You can use a 2D Radius Gage to construct features. See PCD-142191 and PCD-150161.

GD&T - Dimensions

- We added these ASME Local Size options: Circular Elements and Opposed Points. See PCD-149400.

Installation

- We removed Notification Center from the PC-DMIS installer. Instead, you can install Notification Center through the Universal Updater. See PCD-150447.
- We removed the built-in check for PC-DMIS updates because we are now using the Universal Updater to update PC-DMIS. See PCD-149304.
- We removed Inspect from the PC-DMIS installer. Instead, you can install INSPECT through the new Universal Updater. See PCD-150468.

- The PCDLRN.exe file has the build number stamped into it for the Universal Updater. See PCD-136071.
- We added the CAD models used in PC-DMIS training classes to the PC-DMIS installer. See PCD-142140.
- We added the new digitally-signed Metronics Drivers to the PC-DMIS installer. See PCD-132941.
- If your license is programmed with the new ROY-I-PORTABLE option, you are prompted to specify the default device type that you would like to connect to when you start PC-DMIS. This enables the PC-DMIS installer to correctly configure the default system for first-time use. See PCD-147402.

Pointclouds

- We added the **CAD Offset** check box to the pointcloud CLEAN operator in the **Pointcloud Operator** dialog box (**Insert | Pointcloud | Operator**). You can enable the CAD offset and then enter the value used to shrink away from the CAD edges. This allows you to isolate points that are relative to specific CAD faces, and ignore points that are along the edge within a fixed offset distance. See PCD-128164.
- The font colors of colormap and cross section annotations change based on the label's background color. Bright colors use black font, and dark colors use white font. See PCD-150464.
- A new Angle filter is available when simulating pointcloud laser scans for Surface Scan features. PC-DMIS filters out data that is outside of the defined angle, relative to the probe orientation. See PCD-151959.
- We added a **Smoothing Factor** option to the CROSS SECTION operation in the **Pointcloud Operator** dialog box (**Insert | Pointcloud | Cross Section**). This new option replaces the previous **Smoothing Tol** option.

If you set the **Smoothing Factor** option to 0 (zero), PC-DMIS applies a very small internal smoothing factor.

- If you enter a value for the **Smoothing Factor** option, PC-DMIS applies a Least Square fit with a smoothing constraint to an ordered set of points. As the roughness of the spline is smoothed, the points move from their original position. Consequently, you should use caution when you apply the smoothing factor since it moves or changes the data. This option may be useful for smoothing points that you consider to be "noise". See PCD-149329.
- We added a **Keep all points** option to the **Mesh Command** dialog box (**Insert | Mesh | Feature**). This option uses all the points in the pointcloud to create the mesh object. You should ensure that scan passes are well-aligned. Note that if you select this option, PC-DMIS may require more processing time to mesh the pointcloud. See PCD-124386.
- Due to the improved pointcloud laser scanning simulation algorithm to take care of surface orientation when piercing the CAD, it was necessary to support backward compatibility with older measurement routines. Use the `Use CAD surface side correction` registry entry in the Settings Editor application to enable or disable surface orientation checks. To enable surface orientation checks, set this entry to True. To disable surface orientation checks, set this entry to False. For earlier measurement routines that you open in PC-DMIS 2019 R1 or later, this setting is False by default. See PCD-150722.
- Colormap scale values are now adjusted based on a minimum font size. You can set the minimum font size through the `ColorGradientMinFontFactor` registry entry in the Settings Editor application. The value is a factor with a default value of 100. Increasing the factor to 120 results in a smaller minimum font, and decreasing the value to 80 may result in a larger minimum font. There are limitations in how small the font can be and still be readable in the Graphic Display window or report based on your computer's display resolution. See PCD-147657.

Pointcloud/Mesh

- We added the **CAD offset** option to 3D Laser auto features (Cylinder, Cone, and Sphere). This setting applies an offset to the COP or mesh data relative to the edges of the selected CAD face. It allows the relevant points to be extracted more accurately. See PCD-144113.
- The pointcloud cross section **Show/Hide nominal polylines** and **Show/Hide measured polylines** buttons on the **Cross Section Graphic Control** toolbar in the Graphic Display window have been updated. See PCD-147557.
- We added a **Colormaps** list to the **Mesh** toolbar. You can create multiple colormaps in a PC-DMIS measurement routine. The last colormap that you applied and created (pointcloud surface colormap or mesh colormap), or the last one that you executed, is always the currently-active colormap.

You can select which colormap is the active one from the **Colormaps** list. When you activate a new colormap, PC-DMIS displays its associated scale with tolerance values and any annotations in the Graphic Display window. See PCD-151517.

Portable

- For Leica AT9x0 trackers, if you lose communication between PC-DMIS and the AT9x0 tracker, a "Connection Lost" message appears, and PC-DMIS enters Offline mode. To re-establish communication, check your cabling or Wi-Fi. PC-DMIS runs a timer and tries to reconnect to the tracker every 30 seconds. Once you re-establish communication, PC-DMIS returns to Online mode without restarting. See PCD-108302.
- We added support for manual and automatic part temperature compensation for the Romer RA7 arm. See PCD-135448.
- Shortcut flags that define the portable device and laser scanner are no longer needed by users and internal Hexagon Applications/Sales. Instead, the

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user can select the portable device from the **Edit | Set Portable Interface** menu when PC-DMIS starts. See PCD-146492.

- The 7-axis Hexagon Absolute Portable Arm (RA8) Wrist Display shows communications from PC-DMIS when you measure or execute an inspection routine for the following features:
 - Contact Auto Features
 - Measured features in Guess mode
 - Measuring features with the **Find Nominals from CAD Mode** button enabled on the **Probe Mode** toolbar
 - Contact scans
 - Laser scanning

See PCD-109685.

Probe Changers

- PC-DMIS supports the HR-MP (used with TM or THD) and HR-MS (used with LSPX1) probe changers. See PCD-142139.

Q-DAS

- You can select a subcatalog for Q-DAS statistical implementation. To use a subcatalog, you need to create a QdasDat.xml file for your measurement routine. See PCD-147307.
- The Q-DAS Configurator added an option to output the DFQ/DFX+DFD file in line-by-line mode in addition to the corresponding K-field mode. See PCD-136569.
- File operations such as Copy, Rename, and Delete consider files for Q-DAS configurations. See PCD-127596.

Reporting

- You can specify the number of decimal places to use in the **Dimension Color Bar**. The range is 1 through 6. See PCD-92275.
- The **Snapshot** button is available on the **QuickMeasure** toolbar. See PCD-148765.
- The [SNAPSHOT](#) command creates a CAD object in the report, which enables you to directly edit in the Report window. See PCD-138725.
- The **Bonus** column appears on a report only when the bonus is applicable to the dimension type. See PCD-151421.

User Interface

- We added the **2D Section Slide Show** button to the **Graphic Modes** toolbar. You can use this button to show pointcloud and mesh cross sections in a 2D view. See PCD-141474.
- The About box shows a **Machine ID** field. This field identifies the serial number of that machine in the **Machine** section of the new Notification Center. See PCD-144721.
- We improved the **Blade Nominals Editor** dialog box (**Operation | Modules | Blade Nominals Editor**) to enable you to easily see the data in the **Section Info**. area. See PCD-147616.
- You can add control points to change the density of points on sections that are generated by the Blade Section command. If necessary, you can set the density to 0 if required in certain sections of the blade section. See PCD-147163.

Information about this Release

We at Hexagon Manufacturing Intelligence are proud to bring you PC-DMIS 2019 R1. 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 R1, 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 R1 into a new directory. In this way, you can be assured of continuous use of the existing version should problems arise with this newer version.

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 above 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**.

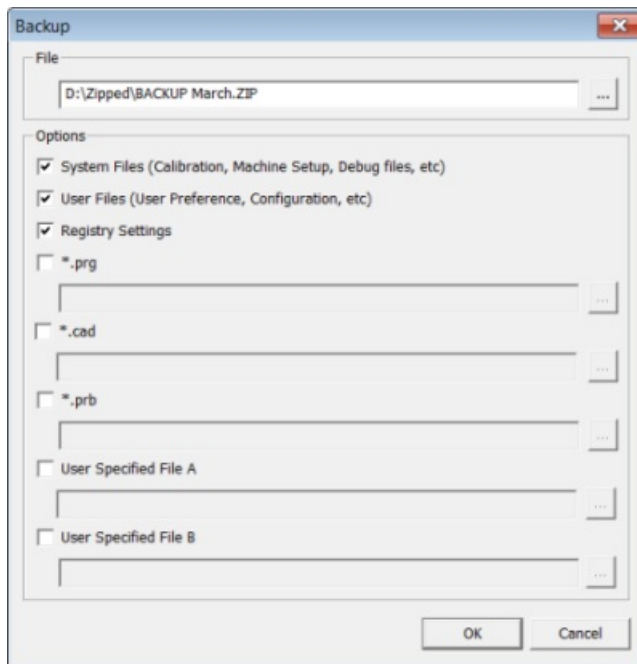
Step 2: Log on as an Administrator

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 R1 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.

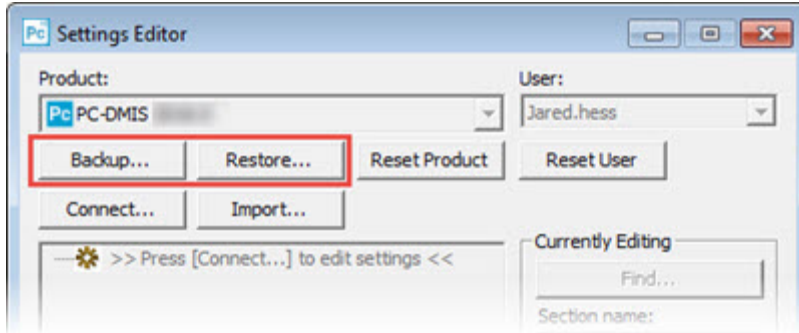
- If your current version uses the pcdlrn.ini file for its settings, back up your pcdlrn.ini file. This file is in the Windows system directory. Save a copy of the file in a safe place.
- If your current version uses the PC-DMIS Settings Editor, back up your PC-DMIS Settings Editor data. To do this:
 1. Start the Settings Editor.
 2. Click the **Backup** button (or **Export**). The **Backup** dialog box appears:



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. 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 R1 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 R1 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:

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 R1 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_R1_release_##.#.###.#_x64.exe

The # symbols represent the version and build numbers.

2. Double-click this executable file 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 R1 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 R1 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 HTML5 help into a **helpcenter** sub-folder under the **en** language sub-folder within the PC-DMIS installation folder. 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.
- **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** - To launch PC-DMIS 2019 R1 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.

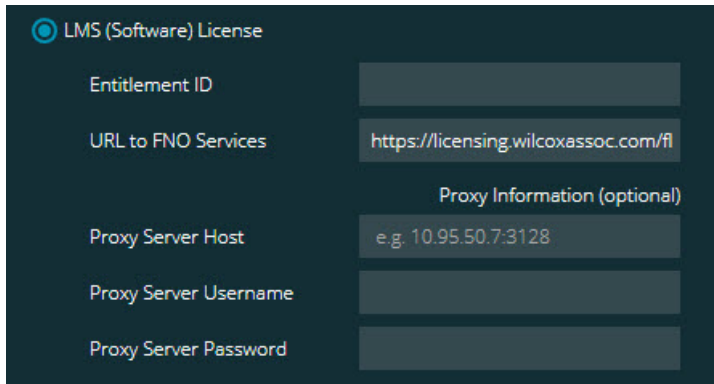
LMS License Setup

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

Entitlement ID

URL to FNO Services `https://licensing.wilcoxassoc.com/fl`

Proxy Information (optional)

Proxy Server Host `e.g. 10.95.50.7:3128`

Proxy Server Username

Proxy Server Password

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.
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 licenser 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 R1, 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 R1 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 R1 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_R1_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 R1, you must launch it with administrator privileges. If you mark the **Launch PC-DMIS after the install finishes** check box when the installation finishes, PC-DMIS 2019 R1 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 R1 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).

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 R1 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

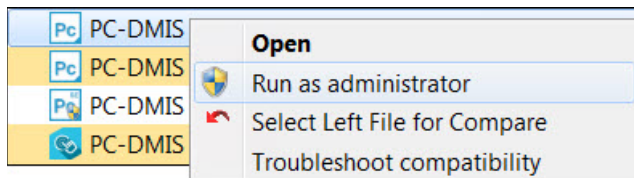
If you are using a DEA CMM with a DEA machine controller, and you installed PC-DMIS 2019 R1 on a new computer, copy the backed-up CMM machine files to the following location on the new computer:

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 R1 for the first time, go to **Start** and type **PC-DMIS 2019 R1 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 R1 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 R1 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 R1.
 - 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 R1 imports your settings.
 - d. Close the PC-DMIS Settings Editor.
4. When you launch PC-DMIS 2019 R1, the **What's New** information appears in your default web browser. You can also choose to display the **What's New** information after you launch PC-DMIS 2019 R1. To do this, click **Help | What's New**.

Subsequent Startups

For subsequent startups, you can launch PC-DMIS 2019 R1 normally by clicking the usual **Offline** or **Online** shortcut:



PC-DMIS 2019 R1 shortcuts

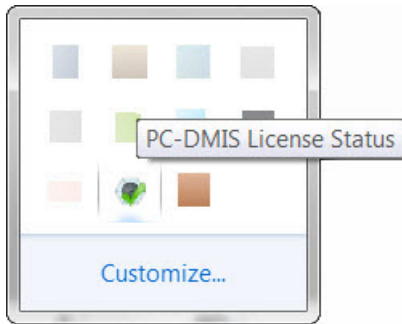
PC-DMIS Readme

Once PC-DMIS 2019 R1 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 R1 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:



Message for disconnected PC-DMIS license

If the license is disconnected, PC-DMIS 2019 R1 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 R1 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:

PC-DMIS Readme

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

The Hexagon Universal Updater application automatically checks for software updates if your computer is connected to the Internet. This application is installed with PC-DMIS and Inspect. If the updater detects that an update is available, the updater uses the Windows notification area to the right of your clock on your taskbar to inform you of the update. You can then click on a notification to open the updater to download and install that update.

If the updater is running, a small icon for the updater appears in your taskbar's Notifications area (). You can click this icon to open the updater.

If the updater is not running, you can manually run the updater to check for updates. You can also use the updater to launch software or install new software applications. To run the updater, from the **Start** menu, type **Universal Updater**, and select the shortcut for the updater.

If you need additional help with the updater, you can access the help content available from within the updater itself.



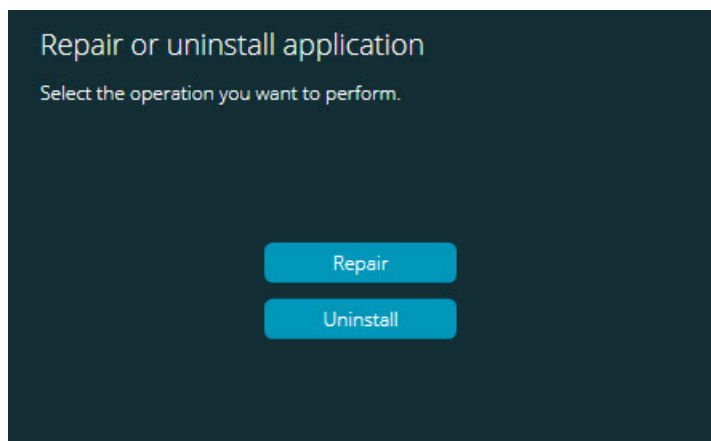
During the download and installation processes, your firewall must allow the <http://www.wilcoxassoc.com/WebUpdater> Internet address. In addition, you must have Administrator privileges to install the software update.

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_R1_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 R1 contains the user-interface files for all of the supported languages. When you install PC-DMIS 2019 R1, it installs the language files based on your operating system's language.

To run PC-DMIS 2019 R1 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 R1 immediately closes and then reopens in the selected language.

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

Installing Non-English Offline Help Files from Language Packs

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

- With Internet access, the online Help for PC-DMIS 2019 R1 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 R1 tries to locate an offline Help from the **helpcenter** sub-folder within your language sub-folder.

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_R1/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.

Installing Non-English Offline Help Files from Language Packs

This procedure installs the Help content into the **helpcenter** sub-folder of your language sub-folder (for most languages, the language folder is a two-letter folder) where you have PC-DMIS 2019 R1 installed.

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 R1 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 R1 and then reinstall it by right-clicking on the installation file and choosing **Run as administrator**.

Setting Up the Network to Send Crash Reports

Problem: PC-DMIS 2019 R1 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 R1.)

Description: A firewall on your computer may be blocking the HEXAGON UPDATES updater application from connecting to the server. If PC-DMIS 2019 R1 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 R1 without administrator privileges, DPUPDATE.EXE does not work.

Solution: Run PC-DMIS 2019 R1 with administrator privileges.

Contact Hexagon Manufacturing Intelligence

If you are participating in the *technical preview* of PC-DMIS 2019 R1, please post your feedback in the appropriate technical preview forum located at www.pcdmisforum.com/forum.php. Please do not contact Hexagon Technical Support for technical previews.

If you are using the *commercially-released version* of PC-DMIS 2019 R1 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

Recommended System Requirements

Operating System

PC-DMIS 2019 R1 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

- For desktops: NVIDIA Quadro K620 graphics card
- For laptops: NVIDIA Quadro K1100M graphics card
- For laptops running PC-DMIS with an RS4 laser sensor: NVIDIA Quadro M3000M graphics card with 4 GB of memory

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 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 10 or later

Anti-Virus Software

Hexagon Manufacturing Intelligence used the Sophos anti-virus tool to test PC-DMIS 2019 R1. 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 R1 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

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 R1 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 R1 in silent mode:

```
-passive USELMSLICENSING=1
```

On a brand-new system using license servers, the following line installs PC-DMIS 2019 R1 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 R1 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 R1
- C:\Users\Public\Documents\Hexagon\PC-DMIS\2019 R1
- C:\Users\UserName\AppData\Local\Hexagon\PC-DMIS\2019 R1
- 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 R1.

- HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hexagon\PC-DMIS\2019 R1 Key and all sub keys
- HKEY_CURRENT_USER\Software\Hexagon\PC-DMIS\2019 R1 and all sub keys
- HKEY_USERS\.DEFAULT\Software\Hexagon\PC-DMIS\2019 R1 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 R1 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.