



PC-DMIS 2013 MR1 Release Enterprise Metrology Solutions

- Release Notes -



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Recommended System Requirements

- PC-DMIS 2013 MR1 operates under 32-bit and 64-bit Vista; 32-bit and 64-bit Windows 7; and 32-bit and 64-bit Windows 8. No other operating systems are supported.

NOTES

PC-DMIS Vision machines do not support 32-bit and 64-bit Windows 8.

The Matrox Framegrabber and CMM-V probe PC-DMIS Vision hardware components do not support a 64-bit operating system.

To resolve HASP driver issues on a computer running Windows 8.1, see "[Troubleshooting](#)" in these release notes.

- 2 GHZ or higher Duo-Core processor.
- 4 GB of RAM or higher. (4 GB is the highest amount of memory capable on a 32-bit OS.)

NOTE: 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.

- 2 GB of free hard drive space plus allocated Virtual Memory of 8 times the largest CAD file used.
- For PC-DMIS CAD and CAD++: Professional 3D graphics processors such as Quadro line from Nvidia or FirePro line from AMD/ATI. Nvidia seems to produce better OpenGL drivers than AMD, so Nvidia is recommended over AMD.

NOTES

The graphics driver must support OpenGL 3.0 or higher. A warning message will be displayed on PC-DMIS startup if the driver does not support OpenGL 3.0.

A graphics driver that supports OpenGL 4.2 is required for high-quality transparency.

For PC-DMIS Pro, a non-professional graphical processor may also be acceptable (Intel HD Graphics, GeForce, or Radeon, for example) as long as it supports OpenGL 3.0 or higher.

- 1 GB of video RAM.
- DVD drive.
- SSD drive, HDD 10K, or two disks in RAID 0 mode (high-performance hard disk drive).
- 2 USB ports.
- 2 Ethernet ports. (This is only required for specific machine controller communication needs, such as CMM systems.)
- Screen resolution of 1280 x 1024 or higher.

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- Microsoft .NET 4.0 for Windows 7.
- Microsoft .NET 4.5 for Windows 8.
- Internet Explorer version 9.

IMPORTANT: When using 3rd-party drivers, you should contact your local Hexagon representative to ensure Operating System compatibility.

ANTI-VIRUS SOFTWARE: The Sophos Anti-virus tool was used by Wilcox Associates Inc. while testing PC-DMIS. The performance of any other anti-virus tool will need to be confirmed by the user.

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

INSPECTION PLANNER: You may need to recreate the IPD file for needed parameters so that imported Inspection Plan items are created correctly.

WINDOWS XP SUPPORT: Beginning with v2012 MR1, there will be no support for the Windows XP operating system. While this version likely runs fine in XP, it will not be tested under the XP operating system. Also note that some parts of the user interface do not appear optimally in XP.

Installing PC-DMIS

To install the application, follow these steps:

Step 1: Check System and Hardware Requirements

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

- To get your computer's properties, highlight the **My Computer** icon, right-click on it, and select **Properties**.
- To check the display properties for the graphics card, select **Start | Settings | Control Panel**, and then select **Display and Settings**.

Step 2: Log on as an Administrator

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

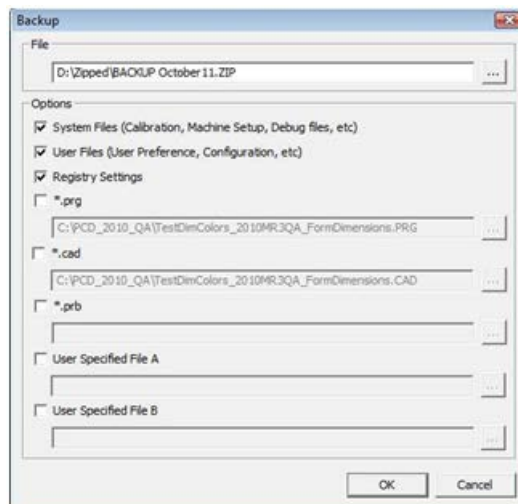
Step 3: Back Up Existing Settings and Layout Data Files

Back up your settings and layout files from your previous version.

- If your current version uses the pcdln.ini file for its settings, back up your pcdln.ini file. This file is found in the Windows system directory (either WinNT or Windows). 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:

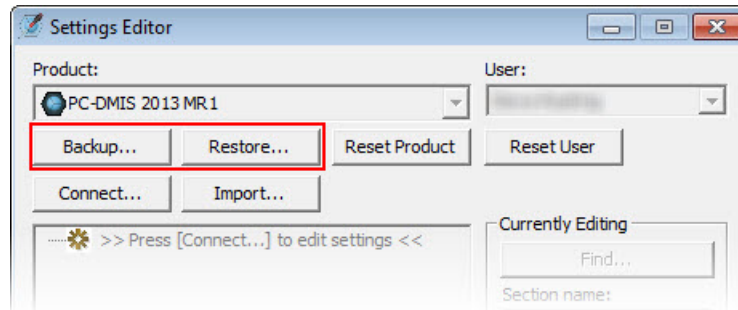
1. Access the PC-DMIS Program Group for your existing version, and start the **Settings Editor**.
2. Click the **Backup** button (or **Export**). The **Backup** dialog box appears:



3. In the **File** box, define a safe location to save the backed up files, and give the file a .zip extension.
 4. Mark the first three check boxes, and click **OK**.
- If your current version uses the PC-DMIS Settings Editor, also back up the files that control the layout of PC-DMIS as well. These files will be in the \PCDMIS\

By default, PC-DMIS attempts to migrate existing settings from previous installs on the same computer, even from really old versions of PC-DMIS where settings were stored in the pcdlrn.ini file.

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



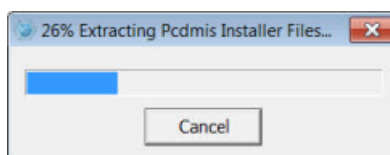
See the help documentation for the Settings Editor if you need more information on the backup and restore functionality.

Step 4: Install PC-DMIS

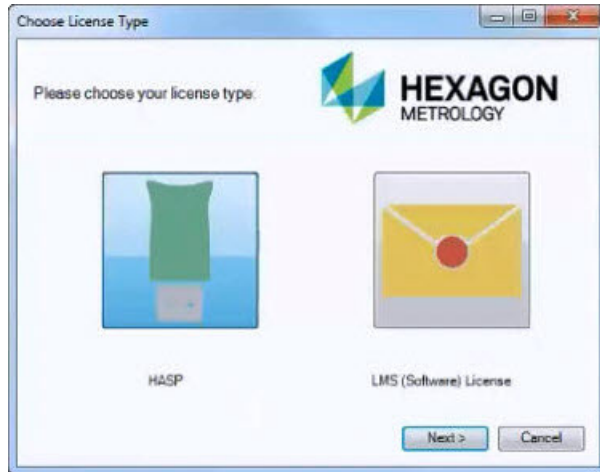
The following steps run you through a typical installation. Your installation screens may differ if you are running a different version of PC-DMIS. In addition, your USB portlock may be configured with different options.

1. Ensure that your USB portlock is connected to your machine.
2. Locate the PC-DMIS install file on your installation media; or, if you downloaded it, open the directory containing the downloaded file. The install file looks like this: Pcdmis2013_MR1_Release_#.#.###.#_x##.exe, where the # symbols represent the specific version numbers and the version type (x64 or x86).
3. Double-click this executable to begin the installation process. If presented with a security warning, click **Run**.

The files are extracted to a temporary directory:



The **Choose License Type** screen appears:



4. Click on one of the following license types:
 - **HASP** - If you have a physical USB portlock key, click this item. This is selected by default.
 - **LMS (Software) License** - If you have been issued a software license (called an Entitlement ID), or if you are connecting to a local license server, click this item.

Click **Next** to proceed.

5. If you chose **Hasp**, ignore this step, and proceed to step 6. If you chose **LMS (Software) License**, and it cannot find a valid license on your system, you need to fill out the **LMS License Setup** dialog box:



Fill out the **LMS License Setup** screen as needed:

- **Use Entitlement ID** - If you have an Entitlement ID, select this item, and then type or paste the ID you were issued in the box.

- **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** - You only need to fill this out if you are on a network where a proxy server is needed to reach the Internet. Contact your IT specialist to get this information, and then fill in the server host, user name, and password.
- **Use License Server(s)** - If you are using a local license server, select this item, and then type your license server name. The format of this line of text should be <portnumber>@<servername>, where <portnumber> is the TCP port number for the license server and <servername> is the name of the server. The default TCP port number is 27000, and is used automatically if no specific port number is identified. For example, these mean the same thing:

@server1

27000@server1

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

@licenseserver1;@licenseserver2;@licenseserver3

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

Providing LMS Licensing Information to the Installer from the Command Line

LMS licensing information can be sent 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.

LMS License Update

Once the licensing is completed and PC-DMIS is installed, PC-DMIS checks for license updates on startup and every eight hours of running. If a license update is available, a notification message 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?

Click **Yes** to apply the update. If **No** is clicked, PC-DMIS displays the message every eight hours of running or on the next startup.

- If an option or 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 requesting you to restart PC-DMIS is displayed. A pop-up message also displays in the System Tray to inform you of this.
- If an option or feature is obsolete, it is automatically removed.

Note: To ensure that PC-DMIS functions properly, you must restart PC-DMIS after any update is applied.

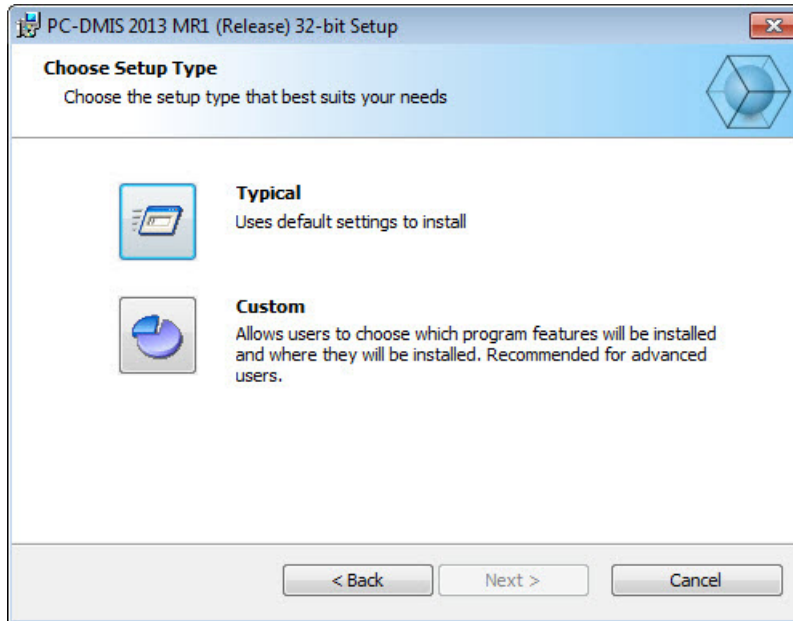
6. The main setup interface then appears. Click **Next** to start the installation:



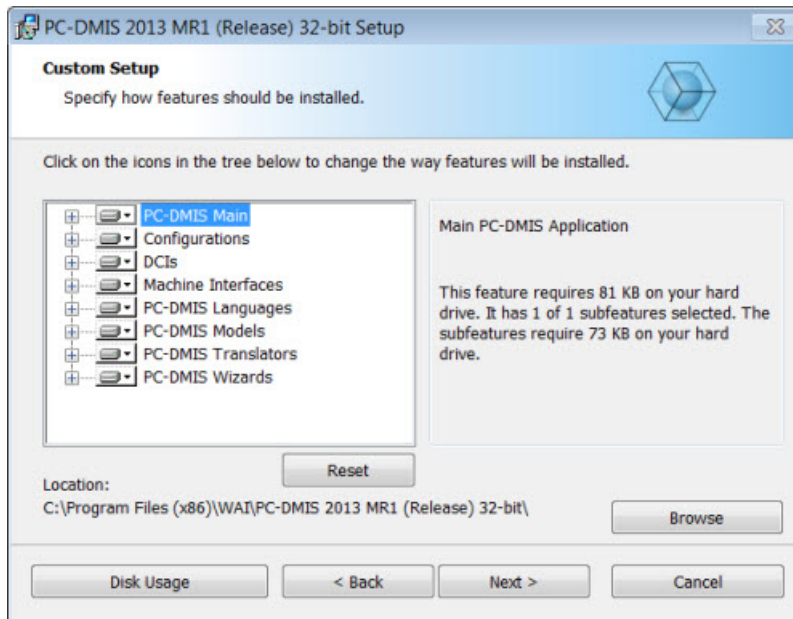
7. The license agreement then appears. Read and accept the license agreement, and then click **Next**:




8. Choose a setup type from the **Choose Setup Type** screen:

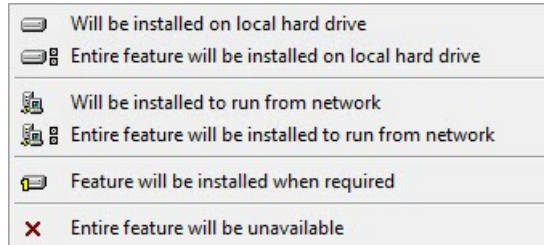


- **Typical** - This option installs the program files to the default installation location: C:\Program Files\WAI\PC-DMIS 2013 MR1\
- **Custom** - This option lets you specify what components to install as well as customize the installation location. A screen similar to the following screen opens:



Overview of Customizing Installed Features

By default, all program components are selected to be included in the installation. You can use the tree view to customize when or if these features are installed. To do this, click the small drop-down icon  next to the component to exclude. This list appears:



Choose the desired option:

- **Will be installed on local hard drive** - The selected feature is installed to the hard drive on your computer.
- **Entire feature will be installed on local hard drive** - The entire feature is installed to the hard drive on your computer. This means that sub-features of the selected feature are also installed.
- **Will be installed to run from network** - *This option is currently unsupported.* This option installs the selected feature on a network share.
- **Entire feature will be installed to run from network** - *This option is currently unsupported.* This option installs the entire component to a network share. This means that sub-features of the selected feature are also installed.
- **Feature will be installed when required** - The feature is only installed if required during the installation process. Some files are informational and are not required for the application to run. These may include documentation or other files.
- **Entire feature will be unavailable** - This option excludes the component from installation.

Customizing the Installation Location

By default, the program installs to this location under the "PC-DMIS 2013 MR1" directory:

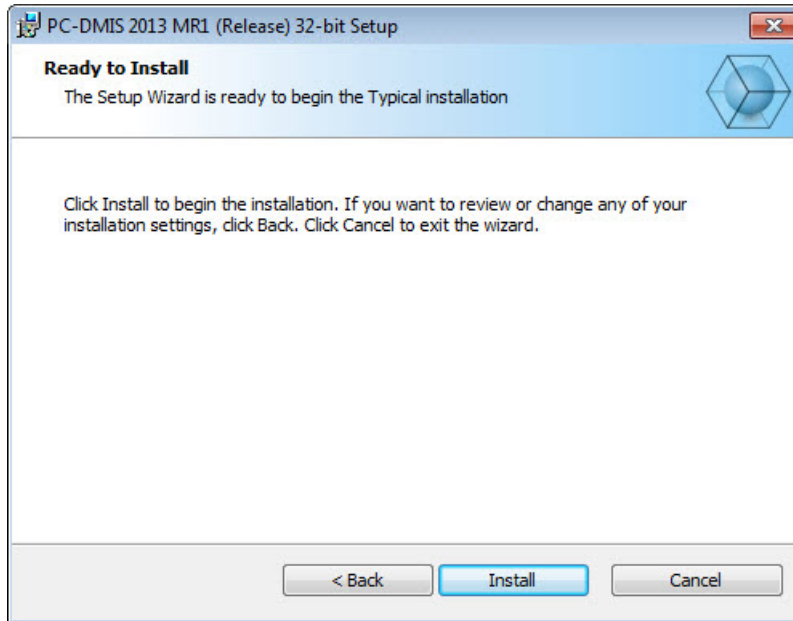
- C:\Program Files (x86)\WAI\ (if you have a 32-bit version)
- C:\Program Files\WAI\ (if you have a 64-bit version)

To change the default location, click the **Browse** button and navigate to the directory on your computer that you want to hold the program files. When you click **OK**, the **Location** box changes to show the selected location.

If you ever want to reset the items to the default selection, click **Reset**.

Click **Next** when you have finished customizing the install.

9. Once the installation has all the information it needs, the **Ready to Install** screen opens:



10. Click **Install** to proceed with the main installation.

11. Once the installation finishes, this final screen appears:



- **Launch PC-DMIS after the install finishes** - Mark this check box to launch the application once you click **Finish**. You should do this so that the needed registry entries are initialized. For more information, see "[Administrator Privileges Explained](#)".

- **Display Release Notes** - Mark this check box if you want to see a PDF file that shows what's new or changed in this release once you click **Finish**.

12. Click **Finish** to close the installation program. PC-DMIS is now installed.

Administrator Privileges Explained

PC-DMIS versions earlier than version 2012 require that you run PC-DMIS as an administrator because some system settings (for items 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 built into the setup executable (setup.exe) that requires the setup process to run with administrator privileges. If the current user has lesser privileges, the setup 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, you must launch it with administrator privileges. If you mark the [Launch PC-DMIS after the install finishes check box](#) when installation finishes, PC-DMIS 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 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 shared data files directory when you install a newer version of PC-DMIS.

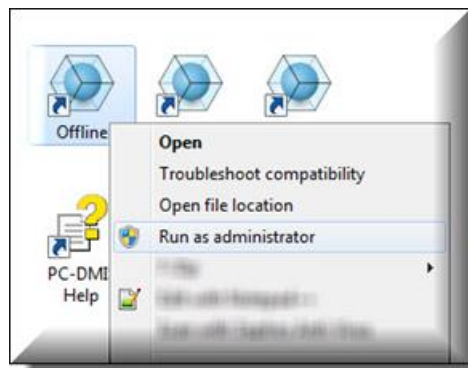
The comp.dat, compgrid.at, comp.enc, and compens.dat volcomp files used with volcomp methods 13 (ASI) and 14 (BNS) must be in the shared data files directory. When a newer version of PC-DMIS is installed, these files are automatically copied to the shared data files directory for the new version. For the default path location of this directory, see "[Understanding File Locations](#)" in Appendix B.

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

Step 6: Launch PC-DMIS 2013 MR1 for the First Time

Important: Running PC-DMIS inside a Virtual Machine (VM) is not supported.

1. When running this version of PC-DMIS for the first time, choose **Start, All Programs,** and then **PC-DMIS 2013 MR1.**
2. From the list of shortcuts, right-click on either the **Online** or **Offline** icon, and then select the **Run as administrator** option (required only if the **Launch PC-DMIS after the install finishes** check box wasn't checked at the end of the installation).

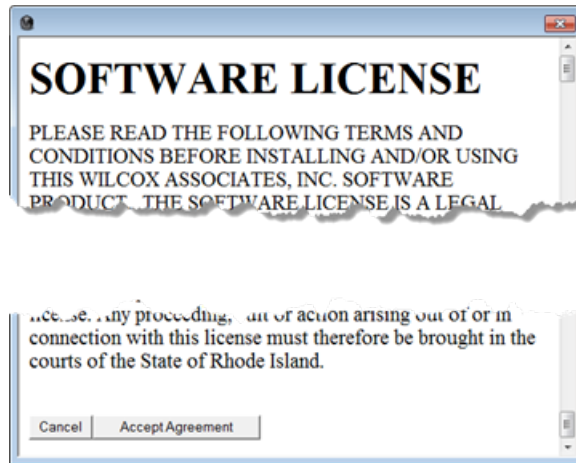


3. This allows the program to write the needed machine-specific settings.
 - If your previous version used the pcdlrm.ini file, PC-DMIS asks if the settings in your PCDLRN.INI file should be used as your registry settings. Click **Yes** at the prompt. Otherwise, PC-DMIS loads in the factory defaults.
 - If your previous version used the Settings Editor, do the following to use your previous PC-DMIS settings:
 - a. Close down PC-DMIS.
 - b. Launch the PC-DMIS Settings Editor from the Program Group.
 - c. Once it opens, click **Import**, and open the PCDRegFile.dat file you backed up in the "[Step 3: Back Up Existing Settings and Layout Data Files](#)" section of this document. PC-DMIS imports your settings.
 - d. Close down the PC-DMIS Settings Editor.

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



Once PC-DMIS starts, the **Software License** screen displays the current license agreement. Read the agreement carefully and then at the bottom, click **Accept Agreement** to proceed:



Once PC-DMIS runs, an icon displays in your System Tray. If your portlock or license is programmed correctly, the icon displays a green check mark as shown below. A message says that the PC-DMIS license is valid:



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 appears and says that the PC-DMIS license is disconnected:



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

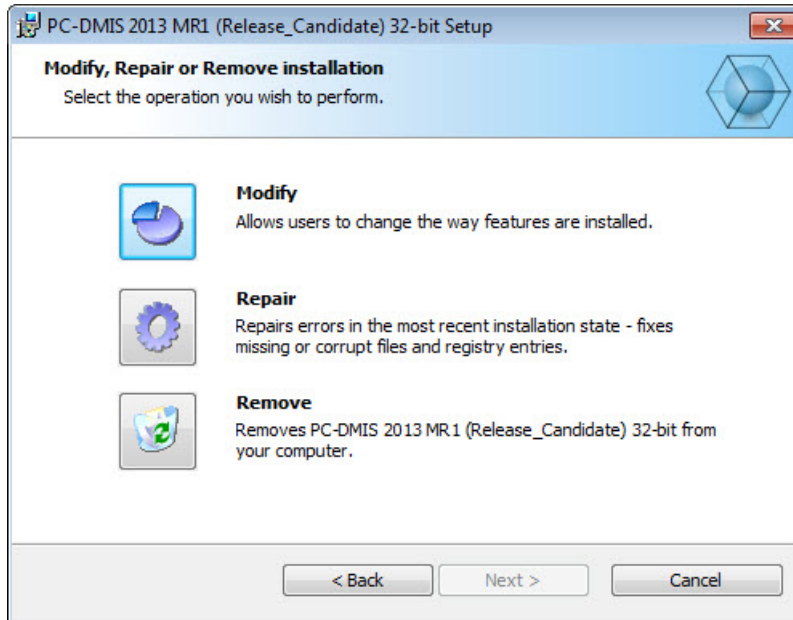
Updating the Software

By default, PC-DMIS automatically checks for updates to the software if you are connected to the Internet. If it detects that an update is available, the **Hexagon software updater** opens to inform you of the software update. You can then download and install these updates as desired. You can also manually check for updates by clicking **Help** and then clicking **Check for updates**.

If you need information on using the software updater, see "Updating the Software" in the PC-DMIS Core documentation.

Modifying, Repairing, or Removing the Installation

You can also modify or repair an installation as needed once it is installed. To do this, double-click on the **Pcdmis2013_MR1_Release_#.###.#_x##.exe** file as if you were beginning the installation process. The setup displays the **Modify, Repair or Remove installation** screen with these options:



- **Modify** - This option opens the **Custom Setup** screen as discussed in "[Step 4: Install PC-DMIS](#)". Use this option to change the installed features, either by adding something that was previously not installed or removing a software feature that you no longer need.
- **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.
- **Remove** - This option removes the application from where it was installed. You can also uninstall the application using the Programs and Features control panel item in Control Panel.

Running PC-DMIS in Another Language

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

To run PC-DMIS in a language other than the operating system's language, click the **File** menu, point to **Language**, and then click the desired language.

PC-DMIS restarts and displays the application in the desired language. See the information below on how to get the help content available in a non-English language.

Installing Non-English Help Files from Language Packs

The English help files are the only help files included in the main installation package. They are installed regardless of the installation language. However, non-English help files are not included in the main installation file.

This means that if you install a non-English language or if you switch to a non-English language, in order to see any help content at all, you *must* also install a language pack for that language. Otherwise, if you try to access the help file, PC-DMIS displays an error message indicating that it cannot find the help file.

A language pack contains all of the 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/2013_MR1/Release/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 appropriate two-letter language subdirectory where you have PC-DMIS installed. You can then switch to that language in the software and access the help content.

Troubleshooting

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

Connecting the USB Portlock to a Computer Running Windows 8.1 Results in a "Program Compatibility Assistant" Message

Problem: A "Program Compatibility Assistant" message appears when you connect your USB portlock to a computer running Windows 8.1. This message indicates that the PC-DMIS HASP driver cannot be used due to compatibility issues.

Description: Windows 8.1 incorrectly indicates that the HASP driver isn't compatible with PC-DMIS.

Solution: You can safely ignore this message. Click the message's **Close** button; HASP driver 5.20.0.0 automatically installs onto your computer. This driver is compatible with PC-DMIS.

Using High Quality Transparency Results in a "NVIDIA OpenGL Driver" Error Message

Problem: When you run PC-DMIS 2013 MR1 with the **High quality transparency** option enabled, the following "NVIDIA OpenGL Driver" error message may appear:

"Your hardware configuration does not meet minimum specifications needed to run the application. The application must close."

Description: Some Nvidia graphics cards do not properly work with the **High quality transparency** option in PC-DMIS. Specifically, some Nvidia Quadro 2000 and 1000M accelerators that are running recent graphics drivers (for example, versions 320.49 and 329.92) have this problem. If you are running PC-DMIS on a computer that is using one of these cards, PC-DMIS may sporadically display the error message and close.

Solution: Until Nvidia fixes the problem with the graphics cards, perform one of the following workarounds:

- Clear the **High quality transparency** check box (**Edit | Graphic Display Window | Lighting, Materials | OpenGL** tab). This solution worked on all of the computers that experienced the problem.
- Downgrade to an earlier Nvidia driver. For example, driver version 310.90 has been found to be stable. You can directly download earlier drivers from the Nvidia website. This solution worked on only some of the computers that experienced the problem.

PC-DMIS 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 PC-DMIS.

Description: This happens if you try to run PC-DMIS 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 PC-DMIS](#)".

Solution: Uninstall PC-DMIS, and then reinstall it by right-clicking on the installation file and choosing **Run as administrator**.

Updating the Software Results in a "(407) Proxy Authentication Required" Message

Problem: You use the **Help | Check for Updates** menu option to update the software, and when the Web Updater opens, it shows: "The remote server returned an error: (407) Proxy Authentication Required."

Description: A firewall on your computer may be blocking the updater from connecting to the server.

Solution: Check your firewall's settings and ensure that the following address is not blocked: <http://www.wilcoxassoc.com/WebUpdater>

Installing on Top of an Existing Version Results in Strange Behavior

Problem: You installed on top of an existing version of PC-DMIS, 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 PC-DMIS**, 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 Control Panel to completely uninstall the existing version, and then reinstall the version you're trying to install.

Information about this Release

We at Hexagon Metrology are proud to bring you this new version of PC-DMIS 2013 MR1 Release. This Enterprise Metrology Solutions platform brings together new aspects of PC-DMIS for the development of a complete manufacturing process control solution. Available in this release are variations of PC-DMIS 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 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 is comprised 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 Metrology would have access to at least one of every piece of hardware that is operating in the field running PC-DMIS. 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 2013 MR1 Release, 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. See "[Contact Hexagon Metrology](#)" on how to report any integration problems. Should such a problem materialize on a commercial release, you will be given the highest priority for correcting these problems.

For existing users of PC-DMIS who currently have earlier versions of PC-DMIS installed, it is advised that PC-DMIS 2013 MR1 Release be installed 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.

New Product Information

2013 MR1 SP6 Release

Release date: October 24, 2014

Version 2013 MR1 SP6 is a Service Pack release of the software. For detailed information about the enhancements and fixes in this release, refer to "[Release Notes - 2013 MR1 SP6](#)".

2013 MR1 SP5 Release

Release date: July 11, 2014

Version 2013 MR1 SP5 is a Service Pack release of the software. For detailed information about the enhancements and fixes in this release, refer to "[Release Notes - 2013 MR1 SP5](#)".

2013 MR1 SP4 Release

Release date: May 30, 2014

Version 2013 MR1 SP4 is a Service Pack release of the software. For detailed information about the enhancements and fixes in this release, refer to "[Release Notes - 2013 MR1 SP4](#)".

2013 MR1 SP3 Release

Release date: May 8, 2014

Version 2013 MR1 SP3 is a Service Pack release of the software. For detailed information about the enhancements and fixes in this release, refer to "[Release Notes - 2013 MR1 SP3](#)".

2013 MR1 SP2 Release

Release date: March 26, 2014

Version 2013 MR1 SP2 is a Service Pack release of the software. For detailed information about the enhancements and fixes in this release, refer to "[Release Notes - 2013 MR1 SP2](#)".

2013 MR1 SP1 Release

Release date: January 31, 2014

Version 2013 MR1 SP1 is a Service Pack release of the software. For detailed information about the enhancements and fixes in this release, refer to "[Release Notes - 2013 MR1 SP1](#)".

2013 MR1 Release

Release date: November 1, 2013

- A 64-bit version of PC-DMIS is now available to early adopters with 64-bit computers. See "About the PC-DMIS 64-Bit Version" below.
- The 64-bit version of PC-DMIS is only supported on Windows 8, Windows 7, and Windows Vista. It is not supported on Windows XP.

Version 2013 MR1 is a significant development release of the software. For detailed information about the enhancements in this release, refer to "[Release Notes - 2013 MR1](#)".

About the PC-DMIS 64-Bit Version

The following items are only supported in the 32-bit (x86) version of the software; they are not available in the 64-bit version.

- CAD (3D ACIS data embedded inside of DXF Files)
- Translators (Avail, Datalog, MeasureMax, MMIV, XMLStats, and Tutor)
- NC product line
- Vision (MEI, Metronics, QVI, ROI, TESAI++, and TESAVISIO)
- CMM (B & S Backtalk, Embedded Board, Manmiti, Manmora, Metrocom, Mitutoyo GPIB, GeoCom, GOM, LK, ManualCMM, Numerex, Omniman, Tech80, and anything using the parallel port driver)
- Portable (FaroArmUSB and Axila)

Note about Calculation of Angle Dimensions

In version 2013 MR1 SP5 and later, PC-DMIS changed its method of calculating angle dimensions near 0 and 90 degrees. If you load a part program from version 2013 MR1 or earlier into the current version, PC-DMIS displays a Migration Report that lists the angle dimensions that have been unmarked for execution and should be checked.

For nominal angles within 10 degrees of a quadrant boundary (0, 90, 180, 270, 360, -90, or -180 degrees), the positive/negative sign of the measured angle is enforced. This prevents a measured angle of -1 degrees from being reported as +1 degrees to match the same quadrant as a nominal angle of 2 degrees. This also prevents a measured angle of 92 degrees from being reported as 88 degrees to match the same quadrant as a nominal angle of 89 degrees. To turn off this behavior, set the value for the EnforcePositiveNegativeAngles registry entry in the Settings Editor application to False.

To change the sign of a nominal angle near 0 degrees, or to choose the supplemental angle of a nominal angle near 90 degrees, do one of the following:

- Flip the direction vector of one of the features.
- Create a line that represents the X, Y, or Z axis.
- Reverse the sequence of feature 1 and feature 2.

Release Notes - 2013 MR1 SP6

- PCD-12892 - Fixed an issue where a black screen with the text "Camera: None" appeared when the **Cancel** button was selected in the **Execution** dialog box after PC-DMIS stopped working while executing a part program or performing a vision qualification using a vision probe.
- PCD-48227 - Fixed an issue where an Arm 2 COPOPER command was marked as an Arm 1 command in the Edit window after the toggle was changed to Arm 2 and the part program was closed and then reopened.
- PCD-49166 - Fixed an issue where PC-DMIS stopped working when a part program with a laser auto feature with break points was executed in multiple arm mode.
- PCD-50141 - Fixed an issue where a machine incorrectly moved after a rotary calibration.
- PCD-51423 - Fixed an issue with a DMIS RECALL/DA (WKS) command where a DMIS imported alignment loop ran continuously.
- PCD-52455 - Fixed an issue where negative nominal and actual values appeared when a part program was executed and the **Y** check box on the **Dimension** tab in the **Setup Options** dialog box was selected, and positive reporting was enabled for the Y axis.
- PCD-52584 - Implemented DEA probe changer anti-crash management when probes with long extensions are changed.
- PCD-52837 - Fixed an issue where PC-DMIS deleted an auto feature from the Edit window when a point was deleted from the auto feature.
- PCD-53879 - Fixed an issue where the X Axis option was incorrectly selected in the **Planar Zone Direction** dialog box (**Insert | Dimension | Feature Control Frame** tab | **Planar Zone** button) instead of using the IJK vector after IJK Vector values were entered, and the dialog box was closed and reopened.
- PCD-54088 - Fixed the way that the Feature Extractor library used "orange points" to evaluate a sphere from a point cloud.
- PCD-54134 - Fixed an issue where PC-DMIS incorrectly wrote the knot in a laser wrist map file when an angle failed during calculation.
- PCD-54261 - Fixed an issue where a "Machine parameter out of tolerance" error always appeared in the **Execution** dialog box for the last MOVE/POINT command during the laser wrist map creation process.
- PCD-54563 - Fixed snap to grid when a VW reference part was positioned in the volume of a virtual BRAVO machine.
- PCD-54667 - Fixed an issue where the gauge coordinates for Arm2 were not transformed in a dual-arm part program with mapped CMS probes.
- PCD-54732 - Fixed an issue where the amount of time that PC-DMIS used to save a laser part program with pointclouds, auto features, and custom reports was unacceptable.
- PCD-54786 - Fixed an issue where the rotary table did not move when a part program with a MOVE/ROTAB command was executed in DCC mode.
- PCD-54907 - Fixed an issue where dimensions that referenced the VWMP AA feature were incorrect when the pp.dmisout2() method was executed in a part program.

- PCD-55121 - Fixed an issue where the angle tests in an automated dimension test failed.
- PCD-55152 - Fixed an issue where the Y and Z offsets for a wrist were incorrectly applied on a secondary arm in a dual-arm part program after the probes were mapped and the part program was executed.
- PCD-55384 - Fixed an issue where new angles and calibration results did not appear for the second probe file in a part program that contained two probe files with the same name, new angles or a new calibration was added to the first probe file with the same name, and then the first probe file was saved.
- PCD-55896 - Enabled SP25 calibration to use the correct maximum scan speed when the percentage method of scan speed is used.
- PCD-55938 - Fixed an issue where the setting for the "CADByRef" boolean option in the "SaveAs2" function was not saved in a part program when **File | Save As** was selected.
- PCD-56213 - Fixed an issue where PC-DMIS stopped working when a part program was closed, a CMMVe probe file was removed from PC-DMIS, and then **File | Close** was selected.
- PCD-56409 - Fixed an issue where the X axis for a Vision probe was incorrect in an .fvc file.
- PCD-56622 - Fixed an issue where PC-DMIS stopped working when a sleep timer that was described in the PC-DMIS BASIC documentation was executed. As a result of this fix, PC-DMIS no longer supports the **Sleep seconds:=(Single)** sleep method and the **Wait** method.
- PCD-56661 - Fixed an issue where the lengths of Vision lines changed when PC-DMIS was upgraded to v2013 MR1 SP4 or v2013 MR1 SP5.
- PCD-57217 - Fixed an issue where PC-DMIS stopped working when a part program with advanced graphics features was executed. As a result of this fix:
 - By default, the **High quality transparency** check box on the **OpenGL** tab in the **CAD and Graphic Setup** dialog box (**Edit | Graphic Display Window | OpenGL**) is cleared.
 - High quality transparency is disabled on systems with less than 1 GB memory.
 - The default anti-aliasing value is computed based on the screen resolution and amount of video memory. The higher the screen resolution, the lower the default anti-aliasing value.
 - A message about the video driver appears during the installation of PC-DMIS. This message indicates that the video driver is over a year old and requests that the driver be upgraded to the latest driver.
- PCD-57465 - Fixed an issue where PC-DMIS did not implement the CPartProgramWrapper method as a virtual destructor, which resulted in memory and performance issues.
- PCD-57558 - Fixed an issue where PC-DMIS stopped working when the **High quality transparency** check box on the **OpenGL** tab was selected, the **Antialiasing** value was set to 16x or more, and a CAD model was imported.

PC-DMIS 2013 MR1 Release Notes

- PCD-58266 - Fixed an issue where the machine crashed into the probe changer or machine table when ESTOP was pressed on the jog box while the machine moved to unload a probe, Machine Start was then pressed on the jog box, the controller's error messages were confirmed, and then the **Continue** button was selected in the **Execution** dialog box.
- PCD-58432 - Fixed an issue in PC-DMIS Vision where the Z axis moved during a rotary axis move on a Dual Z Axis machine.
- PCD-59244 - Fixed an issue where the laser tracker executed unnecessary commands and froze when the laser beam was frequently interrupted.
- PCD-60365 - Fixed an issue where the **Construct Curve** dialog box (**Insert | Feature | Constructed | Curve**) was not available for the PC-DMIS Pro configuration.

Release Notes - 2013 MR1 SP5

- PCD-15410 - Fixed an issue where Feature Control Frame (FCF) position tolerance dimensions were incorrect when the **Fit To Datums** check box on the **Advanced** tab in the **Position** dialog box (**Insert | Dimension | Position**) was selected.
- PCD-15791 - Added support for the **BUTTON**, **TEXT**, **TITLE**, and **EDIT** keywords for the **PROMPT** statement during a DMIS import.
- PCD-31237 - Fixed an issue where PC-DMIS stopped working when a patch scan was modified after it was edited by pressing **F9** and then clicking **OK**.
- PCD-38112 - Added the ability to display an internal dimension for a **VWMP** feature on a report template in **Summary** mode when the dimension is dragged and dropped onto the template.
- PCD-44082 - Fixed an issue where the start and end angles for an auto cylinder were incorrect when the theoretical rotation value in an **ALIGNMENT** command was changed.
- PCD-47486 - Fixed an issue where PC-DMIS stopped working when the **HighQualityTransparency** registry entry in the **Settings Editor** application was set to **TRUE** and then the following procedure was performed in PC-DMIS:
 1. A CAD model was imported.
 2. **Edit | Graphic Display Window | Lighting, Materials** was selected.
 3. The **High quality transparency** check box on the **OpenGL** tab in the **CAD and Graphic Setup** dialog box was selected.
 4. **View | Report Window** was selected.
 5. The **Text and CAD** or **Text and CAD Out of tolerance** template on the **Reporting** toolbar was selected.
- PCD-47719 - Fixed an issue where the **Use wrist map if available** check box in the **Probe Utilities** dialog box (**Insert | Hardware Definition | Probe**) was cleared but remained selected when **F9** was pressed on the **LOADPROBE** command in the **Edit** window.
- PCD-49331 - Fixed an issue where a patch scan that was created with a laser probe ended up as a single basic scan when the following procedure was followed:
 1. The patch scan was edited by pressing **F9**.
 2. The **Spline Points** button was pressed in the **Patch Scan** dialog box.
 3. The zoom state in the **Zoom** area on the **Laser Scan Properties** tab in the **Probe Toolbox** was changed.
 4. The **OK** button was clicked.
- PCD-49573 - Fixed an issue where the **Controller Comps Axes Only** option incorrectly appeared in the **Compensation method** list in the **Temperature Compensation Setup** dialog box (**Edit | Preferences | Temperature Compensation Setup**) for the **Sheffield UMP360** controller.
- PCD-49923 - Fixed an issue where some movement of the probe tip for a circle **Auto Feature** was incorrect when the **CW** (clockwise) option in the **Direction** list in the **Auto Feature** dialog box (**Insert | Feature | Auto | Circle**) was selected.

- PCD-51393 - Fixed an issue where PC-DMIS repeatedly prompted for the angle to use for a fixed probe when the **Auto Wrist Toggle** icon in the **Auto Feature** dialog box was not selected, and the **Automatically Adjust Probe Head Wrist** option on the **General** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**) was cleared.
- PCD-51419 - Fixed an issue where the **File | Import | DMIS** option did not import the second OUTPUT command for a label feature that had two OUTPUT commands with the same tolerance values.
- PCD-52582 - Fixed an issue where some Nvidia openGL graphics drivers (in file nvogl32.dll) caused PC-DMIS software to stop working (usually when a part program was closed).
- PCD-52849 - Fixed an issue where LOADPROBE and TIP commands using variables in a loop resulted in a "Program recalls a tip that is not defined" message when a probe that used "T1AnBn" tip names was changed to a probe that did not use the same names (such as "T2AnBn").
- PCD-52873 - Fixed an issue where PC-DMIS stopped working on some systems whenever an ASSIGN command in a part program was edited.
- PCD-53089 - Fixed an issue where the comp.dat, compens.dat, compgrid.dat, cnc.ini, and encoder.5es Vision files did not automatically migrate to the correct folder when a new version of PC-DMIS was installed.
- PCD-53186 - Changed the method that PC-DMIS uses to calculate angle dimensions near 0 and 90 degrees. For more information, see "[Note About Calculation of Angle Dimensions](#)".
- PCD-53196 - Fixed an issue where PC-DMIS stopped working when the **Datum Definitions** button on the **Feature Control Frame** tab in the **Xact Measure GD&T** dialog box (**Insert | Dimension**) was selected, and then the **Close** button in the **Datum Definition** dialog box was selected.
- PCD-53211 - Fixed an issue where PC-DMIS stopped working when a custom report was opened in the Report window (**File | Reporting | Edit | Custom Report**) and then page 2 in the report was selected.
- PCD-53254 - Fixed an issue where PC-DMIS stopped working when a custom report was opened in the Report window, the window was closed, a part program with a CAD file was executed from the cursor's current location (**File | Partial Execution | Execute From Cursor**), and then the custom report was re-opened.
- PCD-53688 - Fixed an issue where PC-DMIS used the diameter of the probe instead of the radius to compensate the point in the vector direction when an Auto Vector Point feature was measured.
- PCD-53702 - Fixed an issue where the options on the **Tracker | Tracker Pilot** and **Tracker | Measurement Profile** menus were unavailable for users who had a Pro license for the Leica machine interface.
- PCD-53736 - Fixed an issue where a part program became corrupted, and the fonts used on PC-DMIS menus and custom reports changed, after a part program was executed multiple times.
- PCD-54002 - Fixed an issue where the dimension axis did not appear in the dimension command for an auto circle when the vector for a vector component was 1.

- PCD-43930 - Fixed an issue where PC-DMIS crashed in Summary mode when:
 1. A part program with dimensions was opened.
 2. **File | Reporting | New | Custom Report** was selected to display the Custom Report Editor, and then a CadReportObject was added to the editor.
 3. A dimension command was dragged onto the CAD image, which created labels.
 4. F9 was pressed on the dimension command in the Edit window to display the **Dimension** dialog box.
 5. The **Cancel** button was selected in the **Dimension** dialog box, which replaced the dimension with a copy of it.
 6. A label was dragged to another location.
- PCD-49267 - Fixed an issue where, in a PC-DMIS Vision part program, some line features were correctly measured in a part program that was executed in 2013 MR1, but went from the start point to 0,0,0 instead of from the start point to the end point, when the part program was saved back to a format compatible with PC-DMIS 2010 MR3 or 2009 MR1.
- PCD-49373 - Fixed an issue where the probe offsets between the master gauge and update gauge positions were incorrect when a new calibration sphere position was updated.
- PCD-53228 - Fixed an issue where the concentricity, coaxiality, and runout dimensions of a cylinder were incorrect when a PLANE/PLANE/PLANE alignment was active.
- PCD-53276 - Fixed issues where GD&T created profile dimensions that had measurement units different from the part program's measurement units, 0.0000 appeared in the OUTTOL (out-of-tolerance) field of the report, and the Edit window in Summary mode indicated "PASSED", but the dimensions were actually out of tolerance.
- PCD-53362 - Fixed an issue where a "64 bit loss of Resolution Error" message appeared when **File | Printing | Report Window Print Setup** was selected to open the **Report Print Options** dialog box; a report's file name was entered in the **File** box, and the **Rich Text Format (RTF)** and **Overwrite** options were selected; the Report window was opened; and the PRINT/REPORT command was executed.
- PCD-54110 - Fixed an issue where a PC-DMIS Laser part program stopped executing when corrupted X, Y, and Z data was passed to the feature extractor.
- PCD-54118 - Fixed an issue where the actual scanning speed did not match the speed that was defined in the part program.

As a result of this fix, the `UseScanSpeedAsBasis` registry entry was added to the Settings Editor application.

- If the registry entry is set to False (the default), and the **Display absolute speeds** check box on the **Part/Machine** tab in the **Setup Options** dialog box (**Edit | Preferences | Setup**) is cleared, PC-DMIS uses the setting for the `MaxSpeed` registry entry as the full speed for scanning (100%) when it calculates the scan speed.

- If the registry entry is set to True, PC-DMIS uses the setting for the **scanSpeed** registry entry as the full speed for scanning (100%) when it calculates the scan speed.

The **scanSpeed** registry entry sets the maximum speed of a scan regardless of how the **UseScanSpeedAsBasis** registry entry is set.

- PCD-54258 - Fixed an issue where the results for an Angle dimension did not update when F9 was pressed on the dimension.
- PCD-54271 - Fixed an issue where the measured and nominal values were incorrect for a 2D angle on the new workplane when the workplanes were changed and "Yes" was selected for the message "Do you want to update dimensions with the new workplane?".

Release Notes - 2013 MR1 SP4

- PCD-4734 - Fixed an issue where an "Attempting to save data for probe: <name> from program <name>." message appeared when a part program for a dual-arm machine was executed and then saved.
- PCD-41297 - Fixed an issue where a "Calibration Math Error" message randomly appeared when PC-DMIS calibrated scanning probes in a multiple arm configuration.
- PCD-43310 - Fixed an issue where PC-DMIS stopped working when a looped part program with pointclouds was executed and then **File | Quit** was selected to close the program.
- PCD-43317 - Fixed an issue where PC-DMIS stopped working when **File | Quit** was selected after a part program with a laser cone auto feature was executed.
- PCD-45569 - Fixed an issue where the second nominal angle vector for a SQUARE SLOT feature in an imported DES file was incorrect.
- PCD-47851 - Fixed an issue where Arm 2 on a dual-arm machine moved to a wrong coordinate after an iterative alignment when the part program contained a MOVE/POINT command.
- PCD-48202 - Fixed an issue where the data in an imported DMIS file was incorrect when a parameter in the file contained a blank character.
- PCD-52389 - Fixed an issue where the data in an imported DMIS file was creating a DIAM command incorrectly.
- PCD-48599 - Fixed an issue where PC-DMIS stopped working when it performed internal, language-specific comparisons of strings, especially in the Turkish translation.
- PCD-49216 - Fixed an issue where the calculated A and B angles that appeared in the **Wrist Angles Matching Requested Vector** dialog box were inappropriate when the **Auto Wrist Toggle** icon was used to choose the best wrist position.
- PCD-49709 - Fixed an issue where PC-DMIS stopped working when part programs, especially part programs with CAD models, were edited and executed multiple times a day.
- PCD-50642, PCD-51742 - Fixed an issue where PC-DMIS would only run by a user with administrator access by changing the C:\ProgramData\WAI\PC-DMIS\2013 MR1 folder in Windows Vista/7/8 from administrator access to standard user access.
- PCD-51101 - Fixed an issue where a part program with one or more pointcloud operators increased in size when the part program was executed and saved multiple times.
- PCD-51107 - Fixed an issue where a Position dimension's planar tolerance zone values for a cylinder feature were incorrect when the planar zone direction was X or Y, and the datum reference frame was Primary.
- PCD-51198 - Fixed an issue where the animation of the path lines on a CAD model for a probe head rotation displayed only part of the probe rotation angle.
- PCD-51585 - Fixed an issue where a serialization error occurred for a COP/OPER,EXPORT command in a part program with subroutines.
- PCD-50882 - Fixed an issue that occurred during installation where the CLM Tools component failed to install with a message of "A failure occurred attempting to install CLM Tools (x86)."

PC-DMIS 2013 MR1 Release Notes

- PCD-49734 - Fixed an issue where a parameter set that was changed with the UseParameterSet command in a part program running on a machine with a Leitz B3-controller resulted in the error message: 'The "" command is not supported by the currently active "Analogue Contact" probe.'
- PCD-45643 - Fixed an issue where a constructed alignment plane that was mirrored resulted in incorrect data in the dimension deviations.
- PCD-42764 - Fixed an issue that occurred when manual hits were taken using a star probe without a wrist, and the theoretical probe offset was used to evaluate the hit position instead of the calibrated probe offset, resulting in an incorrect hit position.
- PCD-51500 - Fixed an issue where a Zeiss manual machine was unable to work with the 64-bit version of PC-DMIS.

Release Notes - 2013 MR1 SP3

- PCD-8256 - Added the following reporting parameters:
 - FlipCROView method: Flips the CAD Reporting Object (CRO) either horizontally or vertically.
 - FlipCROViewByAxis method: Flips the CRO view along the axis passed.
 - Offset property: Returns/Sets via point data object the Offset location of the CAD Reporting Control.
 - ScaleFactor property: Returns/Sets via a double the scaling factor of the CAD Reporting Control. A value of 1.00 = 100%.
 - Rotation property: Returns/sets via dmis matrix the transformations/rotation on the CAD Report Control.
- PCD-19489 - Fixed an issue where the **Specify theos** check box in the **Construct Point** dialog box (**Insert | Feature | Constructed | Point**) was selected after it was cleared and an Inspection Plan (IP) was imported.
- PCD-25649 - Fixed an issue where the features in a GROUP / ENDGROUP command block did not get deleted in Command mode when either the GROUP or ENDGROUP command was selected and then Delete was pressed. To delete the GROUP / ENDGROUP group command and its features in Command mode, ensure that you do the following:
 1. Hide all the features in the group.
 2. Select the GROUP and ENDGROUP commands (ensure that you select both commands).
 3. Press Delete.
- PCD-26130 - Fixed an issue where the values in the Position axis did not match the values on the PC-DMIS report when **File | Export | Generic** was selected to export a generic text file after the measurement was completed.
- PCD-37705 - Fixed an issue where the ID of a VWMP feature that was referenced in a construction or dimension did not update when the ID was changed.
- PCD-38245 - Fixed an issue where PC-DMIS stopped working when the F9 key was used to edit a COP/DATA command in the Edit window.
- PCD-39625 - Fixed an issue where the Z value for an RMEAS command was incorrectly set to NONE when an IP was imported and a laser probe was active.
- PCD-39711 - Fixed an issue where the radius for a generic circle was divided by two when it was entered in the Edit window, and the size was set to radius instead of diameter.
- PCD-47007 - Fixed performance issues when the ANALYSISVIEW command was executed in the Edit window.
- PCD-40929 - Fixed an issue where the name of an exported file was replaced with the full path of the last file that was entered when the part program was reopened.

- PCD-42937 - Fixed an issue where the "Do you want to update nominal of related dimensions?" message appeared when the **Create** button was selected in the **Auto Feature** dialog box (**Insert | Feature | Auto**) even though the feature did not have any dimension-related information.
- PCD-43828 - Corrected the tabbing order in the **Pattern Offsets** dialog box (**Edit | Pattern**). When the Tab key is pressed in the **Angle** box, the cursor now moves to the **Number of times to offset** box. When the Tab key is pressed in this box, the focus moves to the **Use default prefix** check box. Pressing Tab again moves the focus to the **OK** button.
- PCD-44176 - Fixed an issue where PC-DMIS crashed when **File | Import | CATIA** was selected and a hexblock with embedded GD&T symbols was imported; the **Toggle GDT Items** option on the **Graphic View** toolbar, and the **GDT Selection Mode** option on the **Graphic Modes** toolbar, were enabled; a callout was selected in the Graphic Display window (**View | Graphic Display Window**); and then the **Xact Measure GD&T** dialog box was closed.
- PCD-45236 - Fixed an issue where the values for the HIT/BASIC command changed incrementally each time F9 was pressed for a FEAT/CIRCLE command, the **Regenerate hit targets** check box in the **Measured Circle** dialog box was selected, and then the **OK** button was selected.
- PCD-46917 - Fixed an issue where the constructed features for Arm 2 changed when, for Arm 1, the F9 key was pressed for a FEAT/CIRCLE command, a nominal value in the **Measured Circle** dialog box was changed, the **Regenerate hit targets** check box was marked, the **OK** button was clicked, and then either **Yes** or **No** was clicked for the "Do you want to update nominals of related dimensions?" message.
- PCD-45279 - Fixed an issue where PC-DMIS sent the probe type for Arm 1 to the controller instead of the probe type for Arm 2 when the probe was changed to Arm 2.
- PCD-45280 - Fixed an issue where a probe collision occurred when a part program with a tool change operation was manually stopped.
- PCD-45313 - Fixed an issue where the probe collided with the part when a recall alignment ID for an ALIGNMENT command was missing, and the warning message indicating that the ID was missing did not appear.
- PCD-46065 - Fixed an issue where PC-DMIS crashed when a part program with an auto circle and location dimension was opened, **File | Reporting | New | Custom Report** was selected, a location was added to the custom report, and then the report's "Commands" property for the **PCDMIS Command Objects** check box was clicked.
- PCD-50112 - Fixed an issue where the **Dimension Info** box in a custom report did not get updated during part program execution.
- PCD-46564 - Fixed an issue with the Angle dimension where PC-DMIS recalculated the measured angle to the wrong quadrant when the evaluated angle from the Y axis or line to line and nominal angle was slightly over 90 degrees (such as 90.5).
- PCD-47370 - Fixed an issue where the I++ Server requested a manual probe change instead of a DCC probe change when it received a ChangeTool command and the probe changer contained a probe.
- PCD-47920 - Fixed an issue where the import and serialization of IGES files took an unacceptable amount of time compared to PC-DMIS version 2010 MR3.

- PCD-48024 - Fixed an issue where a Location dimension reporting a minimum inscribed circle calculation was incorrect after the part program was executed.
- PCD-48574 - Fixed an issue where nominal values may have been incorrect for a plane-line-point alignment (with CAD) when the points were measured offline using a reflector, and the **Find Nominals From CAD Mode** button on the **Probe Mode** toolbar (**View | Toolbars | Probe Mode**) was enabled.
- PCD-48910 - Fixed an issue where IJK vectors did not appear in the external file during the EXPORT operation for a pointcloud (**File | Export | Pointcloud | XYZ**).
- PCD-49142 - Fixed an issue where a "DLL Failed to Load Interfac.dll" error message appeared when PC-DMIS was upgraded for a LEICA Tracker.
- Fixed these laser wrist mapping issues:
 - PCD-37973 - When F9 was pressed on an Arm 2 LOADPROBE command in the Edit window, PC-DMIS incorrectly marked the **Use wrist map if available** check box in the **Probe Utilities** dialog box (**Insert | Hardware Definition | Probe**) even though the Arm 2 probe was not mapped.
 - PCD-41204 - PC-DMIS incorrectly used 90 degrees as the maximum and minimum wrist values for angle A instead of the values in the probe file.
 - PCD-41326 - When the laser wrist mapping process was interrupted, PC-DMIS incorrectly calculated the number of angles needed to complete the process.
 - PCD-41328 - When the laser wrist mapping process was interrupted, PC-DMIS continued the process from an incorrect ABC angle instead of the angle at which the process was interrupted.
 - PCD-41819 - After a successful wrist mapping process, noncalibrated angular positions instead of self-calibrated angular positions were incorrectly added to the probe file for a mapped probe.
- PCD-39197 - Fixed an issue where the **Execution** dialog box (**File | Execute**) stayed open when a part program with a CMS probe for a laser auto feature that was directly measured offline was executed.
- PCD-41604 - Fixed an issue where PC-DMIS modified the XYZ target values for laser auto features when an alignment was modified.
- PCD-47144 - Fixed an issue where "out of volume" errors appeared when a CMS laser probe was auto-centered in inches.
- PCD-47893 - Fixed a CMS calibration issue where a CMS laser with a 90 degree adapter positioned at A-90 or larger could not be calibrated due to excessively large clearance moves during calibration.
- PCD-47990 - Fixed an issue where the accuracy of a mapped wrist was incorrect when a matrix for a wrist with a CMS 106 configuration was created.
- PCD-47839 - Fixed an issue where the "CAMERA:NONE" message appeared in the Live View window in a DC environment when PC-DMIS Vision was configured with a CMM-V probe and was changed to use a touch trigger probe (TTP) or scanning probe, and then was changed back to a CMM-V probe.
- PCD-49372 - Fixed an issue where PC-DMIS Vision stopped working in online mode each time **File | Close** or **File | Exit** was selected.

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- PCD-50011 - Fixed an issue where PC-DMIS deleted commands in the Edit window when a part program was partially executed and then **No** was selected for the "Equally space the hits" and "Make this ID as default" messages.
- PCD-50106 - Fixed an issue where PC-DMIS stopped working when the Report window was opened (**View | Report Window**), the **Text and CAD** template was selected on the **Reporting** toolbar, the **Edit Object** item on the shortcut menu was selected for a CadReportObject with only one distance dimension, the **At two features for distance check box** in the **Label Layout Wizard** was selected, and then the wizard's **OK** button was selected.

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- PCD-44006 - Enabled Windows 8.1 support in PC-DMIS, starting with version 2013 MR1.
- PCD-39127 - Added the **CAD** check box for the plane auto feature to the **Feature Based Clipping** area on the **Feature Extraction** tab in the Laser Probe Toolbox (**View | Probe Toolbox**) for all laser probe types. Previously, it was available only for the CMS and Perceptron probe types.
- PCD-4073 - Fixed an issue where the "Calibration Math error: qualify the current probe orientation" message appeared when Arm 2 was calibrated in Scan mode on a dual-arm machine, and the **This computer relays commands from the primary computer** option in the **Multiple Arm Setup** dialog box (**Edit | Preferences | Multiple Arm Setup**) was enabled.
- PCD-21425 - Fixed an issue where PC-DMIS stopped working when **View | Other Windows | Preview Window** was selected to open the **Preview Window** dialog box, the **View** button was clicked to open the Analysis window, **Options | Edit Dimension Colors** was selected to open the **Edit Dimension Color** dialog box, and then the **Close** button (in the upper-right corner) was clicked to close the **Edit Dimension Color** dialog box and then the Analysis window.
- PCD-34632 - Fixed an issue where a "gp threw DictionaryGetException with type_of_point=NUM_ROWS" exception error appeared during automated dimension tests.
- PCD-37301 - Fixed an issue where the **Planar Zone** button did not appear on the **Feature Control Frame** tab in the **XactMeasure GD&T - Position Dimension** dialog box (**Insert | Dimension | Position**) when the F9 key was pressed in the Edit window (**View | Edit Window**) to edit a Position dimension that was originally created in version 2013.
- PCD-44269 - Fixed an application crash that occurred when features were randomly selected from the **Features** list on the **Feature Control Frame** tab in the **XactMeasure GD&T - Position Dimension** dialog box.
- PCD-44733 - Fixed an issue where the **Planar Zone** button did not appear on the **Feature Control Frame** tab in the **Xact Measure GD&T** dialog box for Perpendicularity, Parallelism, and Angularity dimensions after the diameter symbol was removed.
- PCD-41948 - Fixed an issue where PC-DMIS stopped working when the **Create** button was selected in the **Feature Location** dialog box (**Insert | Dimension | Location**) for a part program with an extracted stud.
- PCD-39303 - Fixed an issue in the Touch application where a round slot auto feature was solving perpendicular to its expected orientation when hits were probed on the slot.
- PCD-44007 - Fixed an issue where PC-DMIS reported values as out-of-tolerance for a legacy Profile dimension when the **UseISOCalculation** registry entry in the Settings Editor application was enabled.
- PCD-39500 - Fixed an issue where an "Unhandled exception" error message appeared whenever an Inspection Plan text file was imported into a part program that had a CMS laser probe (**File | Import | Inspection Plan**).

- PCD-45540 - Fixed an issue where the surface vector of a laser auto edge point feature was equal to the edge vector when an Inspection Plan containing that feature type was imported.
- PCD-41366 - Fixed an issue where a custom report for a part program could not be opened when the **Custom Report Selection Dialog** icon was used to open the report in the Report window (**View | Report Window**).
- PCD-39050 - Fixed an issue where the vector of a line changed to 0,0,0 instead of the defined vector when a 3D constructed line was imported.
- PCD-30554 - Fixed an issue where the **Arm 1 Execute Mode Options** dialog box remained open after the **Test** button was selected in the **Auto Feature** dialog box (**Insert | Feature | Auto**) for an auto flush and gap feature on a dual-arm machine.
- PCD-39444 - Fixed an issue where the probe collided with the part when an auto cone feature was scanned and the **Avoidance move** option was enabled on the **Contact Auto Move Properties** tab in the Probe Toolbox in the **Auto Feature** dialog box.
- PCD-44745 - Fixed an issue where PC-DMIS did not automatically update surface vector points in Polar mode when the A (Angle) was modified in the **Auto Feature** dialog box.
- PCD-45449 - Fixed an issue where the value in the **Depth** box on the **Contact Path Properties** tab in the Probe Toolbox in the **Auto Feature** dialog box for a circle auto feature changed to the previous setting after the value was modified and then other tabs in the toolbox were selected.
- PCD-44084 - Fixed an issue where an Auto Cone stopped calculating the centroid value from its Start Point.
- PCD-44177 - Fixed an issue where measurement results were incorrect for a point when the **Snap** list in the **Auto Feature** dialog box was set to **Yes**.
- PCD-45332 - Fixed an issue where PC-DMIS snapped to a surface on the inside of a bore for an auto vector point when the X position in the **Auto Feature** dialog box was changed and the **Find Nearest CAD Element** button was selected.
- PCD-40371 - Fixed an issue where computation, hit sequence, and start/end angle values were wrong when the method of manually detecting points for an auto feature was used.
- PCD-44580 - Fixed an issue where the mouse pointer changed to the Move pointer when the cursor hovered over a hidden label in the Graphic Display window (**View | Graphic Display Window**).
- PCD-41222 - Fixed an issue where PC-DMIS entered Manual mode when it measured a plane feature while the Status window (**View | Status Window**) was open.
- PCD-41820 - Fixed an issue where the I++ Server could not handle two requests sent to PC-DMIS when the client was configured to work with a Renishaw server.
- PCD-43630 - Fixed an issue where PC-DMIS stopped working in I++ mode when the last version of Holos used the AlignTool() command.
- PCD-43350 - Fixed an issue where the Leica.dll file did not load if the 2008 C++ Redistributable package was not installed due to an outdated TrackerErrorsDll.dll file.

- PCD-44372 - Fixed an issue with programs that were created using the Tracker interface in version 2013 where the measured value changed to be the center of the probe when location dimensions were created after the part program was opened.
- PCD-44950 - Fixed an issue where the WCompens32.dll and WCompens32_2.dll files did not install in the 64-bit version of PC-DMIS.
- PCD-43634 - Fixed an issue with a CW43 wrist on a DEA native controller where wrist angles increased by one each time a wrist was selected through ChangeTool in Holos settings.
- PCD-43689 - Fixed an issue where materials and their corresponding coefficients did not appear in the **Material Coefficients Editor** dialog box when the MaterialCoefficientsEditor.exe utility was run in the 64-bit version of PC-DMIS.
- PCD-45318 - Fixed an issue with RSx arms where probe files became corrupted when the part program used inches as the unit of measurement.
- PCD-45403 - Fixed an issue where Arm 1 and Arm 2 executed sequentially instead of at the same time on a dual-arm machine.
- PCD-45313 - Fixed an issue where an active alignment from version 2010 MR2 became corrupted and no longer had a reference ID when the PC-DMIS version was upgraded to version 2012 MR1, resulting in an unintended collision with the part.
- PCD-43996 - Fixed an issue where the colors on a point cloud colormap were different, and some surface spots were no longer visible, after the colormap was reset.
- PCD-45884 - Fixed an issue where colormap results were incorrect when an alignment was refined in the **Pointcloud Operator** dialog box (**Insert | Pointcloud | Operator**) for the FACE COLORMAP operator.
- PCD-39617 - Fixed an issue where the execution of a laser scan part program in online mode stopped and could not be continued from the **Execution** dialog box (**File | Partial Execution | Execute Feature**) when the part program started with an empty point cloud COPOPER command.
- PCD-43747 - Fixed an issue where measured values were incorrect when a sphere was constructed from a COPOPER/SELECT command.
- PCD-36504 - Fixed an issue where the "Attempted an unsupported operation" message appeared in English in all language translations of the PC-DMIS user interface when **File | Operations | Mirror** was selected to open the **Choose part to mirror** dialog box, and then the ... (Browse) button in the **Reference part** area was selected.
- PCD-45277 - Fixed an issue where the **Temperature Compensation** dialog box did not appear during part program execution after the **Temperature Compensation Enabled** check box was marked and the Manual compensation method was selected.
- PCD-46128 - Fixed an issue where measurements were wrong when the TEMPCOMP command was used in a part program in the German translation of the PC-DMIS user interface.
- PCD-46226 - Fixed an issue where an "Input string was not in a correct format" exception error appeared when the F9 key was used to edit an extended contact feature for the Adaptive Circle Scan strategy in the French version of PC-DMIS.

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- PCD-46714 - Fixed an issue where PC-DMIS stopped working when a part program with a Blade Scan command or ValveSeat command was opened in an earlier version of PC-DMIS.
- PCD-46967 - Fixed an issue where the automation code failed to call the probe with the Part.Probes.Item property.
- PCD-47558 - Fixed an issue where during probe calibration, a contact probe moved up and then immediately back down to collide with the calibration sphere.
- PCD-48103 - Fixed an issue where a VWMP toolkit module part program with few features required an unacceptable amount of time to open.

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- PCD-36426 - Implemented CW43 probe changer qualification for a modified CMS station. As part of this change, the following registry entries were added to the Settings Editor application:
 - **CW43LThirdAxisTCSlot** - Tells PC-DMIS how to perform load and unload operations for a CW43 probe changer that has an old three axis slot (a slot capable of storing a three axis probe) where the third axis lies horizontally.
 - **CW43LThirdAxisTCVerticalSlot** - Tells PC-DMIS how to perform load and unload operations for a CW43 probe changer that has a new three axis slot (a slot capable of storing a three axis probe) where the third axis lies vertically.

The default for these registry entries is -1, which means that a three axis slot is not available on the probe changer.
- PCD-42172 - Modified the CMS station for the CW43 probe changer. As part of this change, the **CW43LThirdAxisTCLeftToRightLift** registry entry was added to the Settings Editor application. This entry specifies the slot cover lift direction for the probe changer. The default is True (the slot cover lift direction is from left to right).
- PCD-36428 - Modified the Leitz interface to support the modified CMS station for the CW43 probe changer.
- PCD-43250 - Updated the file information in [step 5](#) of the installation procedure in this Readme document.
- PCD-41741 - Fixed an issue where PC-DMIS stopped working in Windows 8 when Microsoft Office 2013 was installed on the computer, and Windows Explorer dialog boxes were opened in PC-DMIS (such as **Open** and **Save As**).
- PCD-40897 - Fixed an issue where PC-DMIS with FDC-SLC Vision did not work in 64-bit Windows.
- PCD-29193 - Fixed an issue where PC-DMIS did not save the number of dimension color tolerance zones that were entered in the **Edit Dimension Colors** dialog box if the number was changed to 21 or more. As part of this fix, the range of color values that can be specified for the **DimensionColorTo1** registry entry in the Settings Editor application was changed from 1-10 to 1-20.
- PCD-30489 - Fixed an issue where PC-DMIS ignored the ClearanceCube motion when with a probe changer defined, the probe command that was executed in the part program did not match the probe attached to the CMM.
- PCD-42309 - Fixed an issue where a part program did not exit a ClearanceCube on the first feature before it attempted to move to a second feature that did not have an active ClearanceCube.
- PCD-35037 - Fixed an issue where PC-DMIS used the wrong probe when the **Test** button in the **Auto Feature** dialog box was used to execute an Auto Feature.
- PCD-41382 - Fixed an issue where the start and end angles for a sphere Auto Feature strategy were incorrect after a mirror operation was performed with a Paste with Pattern command.
- PCD-41458 - Fixed an issue where the avoidance move point for an adaptive plane Auto Feature strategy was incorrect when the vector of the plane was not Z+.

- PCD-38440 - Fixed an issue where the adaptive circle Auto Feature strategy mistakenly tried to create path lines for a measurement. In addition, a "Failed to find hole" message appeared when F9 was pressed in the measurement, and the find hole operation failed to scan the circle.
- PCD-42693 - Fixed an issue where the machine moved to an incorrect location when the X value for an auto circle was changed by a small distance in the **Auto Feature** dialog box, the **Measure Now Toggle** icon was turned on, and then the **OK** button was selected.
- PCD-39339 - Fixed an issue where graphics could not be resized by right-clicking in the Graphic Display window when the part program contained an auto plane, measured plane, or constructed plane feature.
- PCD-39172 - Fixed an issue where points did not appear in the Graphic Display window when a linear scan was executed with a touch-trigger probe.
- PCD-35366 - Fixed an issue where text box labels could not be moved in the Analysis window.
- PCD-37889 - Fixed an issue where PC-DMIS stopped working when the **Teach** button was selected on a Starrett joystick.
- PCD-38234 - Fixed an issue where PC-DMIS locked up when the **Run** button in the Basic Script Editor was selected after a script command was changed.
- PCD-38577 - Fixed an issue where a CAD file that was created with the UG DCI did not appear when it was loaded on a non-DCI machine.
- PCD-42428 - Fixed an issue where a CAD file took an unacceptable length of time to load in ProE DCI.
- PCD-40536 - Fixed an issue where the "CAD verify" operation did not pierce the CAD model.
- PCD-38678 - Fixed an issue where PC-DMIS did not execute a part program when it was placed in DCC mode and a Load Probe command followed the DCC mode command in the Edit window.
- PCD-26951 - Fixed an issue where the **Edit | Find and Replace | Replace** menu option found and replaced only the first occurrence of the matching text in a string in the Edit window and then skipped to the next line.
- PCD-41506 - Fixed an issue where the points in **Move Point** commands in a block of commands changed from local coordinates to CAD coordinates when the block was copied and then pasted into the Edit window.
- PCD-38990 - Fixed an issue where the last clearance plane command in a part program caused PC-DMIS to keep running after the **File | Exit** option was selected in PC-DMIS.
- PCD-38995 - Fixed an issue where an actual value was not completed when a cross section was created.
- PCD-39413 - Fixed an issue where tolerances lines crossed on a 2D profile.
- PCD-39867 - Fixed an issue where PC-DMIS stopped working when it attempted to open data (.dat) files whose created/modified/accessed dates became corrupted when they were restored from a backup of the Settings Editor application before the change to Daylight Saving Time.

- PCD-40048 - Fixed an issue where PC-DMIS used the previously-used zoom setting in the part program instead of the calibration's zoom setting.
- PCD-40544 - Fixed an issue where a mouse's wheel would rotate a 3D part drawing around a feature only when the pointer was near the feature.
- PCD-42764 - Fixed an issue where PC-DMIS used the theoretical probe offset instead of the measured (qualified) offset to evaluate the manual hit position when a star probe without a wrist was used to take manual hits.
- PCD-42170 - Fixed a scanning issue between Arm 1 and Arm 2 where the probe calibration on Arm 2 was incorrect.
- PCD-18719 - Fixed an issue where the center of a common sphere measured with CMS probes that were qualified using the scanning option was off by 0.5 mm on Arm 2.
- PCD-41297 - Fixed an issue where a "Calibration Math Error" message randomly appeared when PC-DMIS measured spheres in a multiple arm configuration.
- PCD-41384 - Fixed an issue where the shank vector did not update when a different arm in a multiple arm configuration was assigned to a TIP command.
- PCD-42695 - Fixed an issue where the "64 bit loss of resolution" message appeared when a subroutine was selected.
- PCD-42953 - Fixed an issue where the "64 bit loss of resolution" message appeared when commands were selected in the **Supported Command Types** dialog box for a new label template.
- PCD-42881 - Fixed an issue where PC-DMIS did not display the control points for a basic scan command in the Edit window.
- PCD-42832 - Fixed an issue where additional control points did not appear in the **Blade Scan** dialog box when it was closed, F9 was used to re-open it, and then the **Advanced** button was selected.
- PCD-43135 - Fixed an issue where PC-DMIS did not properly compute the parallelism and perpendicularity between two features.
- PCD-43971 - Fixed an issue where the features used in a Feature Control Frame did not display when the first feature that supported the Position dimension was selected.
- PCD-44084 - Fixed an issue where an auto cone stopped calculating the centroid value from its Start Point.
- PCD-44238 - Fixed an issue where PC-DMIS used default values when creating a dimension instead of remembering the previously-used values for that dimension type.
- PCD-44302 - Fixed an issue where PC-DMIS incorrectly calculated a constructed offset line in a non-Z work plane.

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For detailed information and videos tutorials regarding the enhancements, log on to www.pcdmis.com.

Featured Items

New Adaptive Free Form Plane Scan Strategy

Use this new Auto Feature measurement strategy to scan a plane by moving along a path defined by a set of points. The scan path can be continuous, contain a break, or contain move points. Break and move points in the scan path can help to scan a face as one single plane even if the path is not continuous due to any reason. The path of the scan can be dynamically read from a text file when you run the program. This can help to scan the plane on variations of the part where the shape of the face being scanned is changed between variants.

You can also filter the points that the B4 Leitz Controller returns with a point quality of 9.

To use the strategy, select the **Adaptive Free Form Plane Scan** option in the list on the **Measurement Strategies** tab for the Plane auto feature.

New Blade Nominals Editor Command

The new Blade Nominals Editor toolkit module command allows you to create a Nominal file as required by the Blade Analysis application; the Nominal file describes the sections on a blade. The command enables you to:

- Create a Nominal file from the CAD model in PC-DMIS
- Define the type of trailing edge (TE) and leading edge (LE) ends (full, partial, or square)
- Define the index for the TE and LE points
- View the blade Nominal file

To use the command, select **Operation | Modules | Blade Nominals Editor**.

New Blade Report Command

The new Blade Report toolkit module command enables you to create a Report file (RPT) directly from PC-DMIS based on scans performed by the Blade Scan command. The Blade Analysis application reads this file to analyze blade data and report on blade parameters and plots. The command outputs the Report file in the coordinate system that is currently active. To use the command, select **Insert | Modules | Blade Report**.

Support for Defined Path Scan

You can now use the Blade Scan toolkit module command to perform a defined path scan and return ball center points. To set the path, select the DEFINED option in the new **Scan type** list in the **Blade Scan** dialog box (**Insert | Modules | Blade Scan**).

Refreshed Execution and Collision Detection Dialog Boxes

The name of the **Execution Mode Options** dialog box was changed to **Execution**. The buttons in the dialog box were changed to icons, and the drop-down lists were redesigned. The items in the **Collision Detection** dialog box were also redesigned. To identify the purpose of an item, hover your mouse over it to display a tooltip.

Implementation of Microsoft 6.0 Common Controls

The appearances of common controls in the dialog boxes throughout PC-DMIS and the Planner application now use Microsoft 6.0 Common Controls. For example, the background color of tabs is white, buttons are rounder, and active buttons have a blue border.

Service Pack Updates for SMA Customers

If you have a Software Maintenance Agreement (SMA), you can now receive Service Pack updates even if your SMA has expired. This service applies to Web Updater, WiX, and the internal checks that PC-DMIS performs to determine its build date. Service Pack updates include items that address the stability of the software.

Support for Optiv Multi-Sensor CMM with FDC

The Chromatic White Light Sensor (CWS) scanning capability is now supported on Firmware Distributed Controller (FDC) for Optiv Multi-Sensor machines.

Improved Auto Focus Performance

The speed performance and overall focus repeatability of the Auto Focus feature is improved in the Vision application.

New Focus Position Option

The **Move to focus position** check box was added to the **Setup Options** dialog box (**Edit | Preferences | Setup**) for the Vision application. If you select this check box, the machine moves to the focus position after a focus scan is executed. Otherwise, it stays at the last position of the focus scan. You can also set the value through the existing `FocusMoveToFocusPosition` registry entry in the Settings Editor application.

New Single Click Execution for Manual Targets

To improve programming speed performance, the **One click manual target** area and the **Enabled** check box were added to the **Live View Setup** dialog box (**Edit | Graphic Display Window | Live View Setup**). Selecting this check box enables the new Manual Targets Single Click Execution feature. If this feature is enabled at execution time, a crosshair cursor (instead of a pointer) appears in the Live Image View display. Now (during execution), instead of dragging and dropping a manual target to a desired location on a feature, position the crosshair to the targeted location and click the left mouse button. If the **Enabled** check box in the **Snap to edge** area is selected, PC-DMIS automatically performs edge detection to snap the crosshair to the edge.

Support for LSPX1C, LSPX1H, and LSPX1SF Probe Changers

You can now calibrate LSPX1C, LSPX1H, and LSPX1SF probe changers. To calibrate a probe changer, select **Edit | Preferences | Probe Changer**.

New Continuous Wrist Mapping for CMS Sensor

Continuous wrist mapping for the CMS Sensor is now available. You can use this feature to obtain accurate qualification matrices for each triplet of ABC wrist angles.

Alignments

- PCD-20696 - Made the process of creating a new alignment in the **Alignment Utilities** dialog box less restrictive. PC-DMIS now does the following:
 - *When rotating the alignment by a specified angle about a selected axis:* When you select a feature, enter a value in the **Offset angle** box, and click **Rotate**, PC-DMIS first creates a `ROTATE` sub-command to the selected feature. It then creates a `ROTATE_OFFSET` sub-command with the value in the **Offset angle** box.
 - *When moving the origin by a manually specified offset distance:* When you select a feature, enter a value in the **Offset distance** box, and click **Origin**, PC-DMIS first creates a set of `TRANS` commands to translate to the selected feature based on the selection state of the **X**, **Y**, **Z**, and **Auto** check boxes. It then creates a set of corresponding `TRANS_OFFSET` commands using the value in the **Offset distance** box.
- PCD-26722 - Added the **Don't ask me again** check box to the "All features of <best fit alignment> skipped during execution!" error message (where <best fit alignment> is the name of the alignment). To hide the message the next time this best fit alignment error occurs, select the check box.

Auto Features

- PCD-21971 - Improved point selection for auto spheres so that it can be executed without modification. GD&T selection creates both legal and logical commands.
- PCD-26256 - Redesigned the messages that appear during execution time if the **Read position** check box is selected on the **Contact Find Hole Properties** tab in the **Auto Feature** dialog box, and the "find hole" operation fails. PC-DMIS displays one of the following messages:
 - *If the **Find hole** option is unavailable, or if it is set to DISABLED:* "Read new probe position?"
 - *If the **Find hole** option is available:* "Read new probe position? Press YES to read position and re-measure. Press NO to skip."
To use the current tip position as the target value for measuring the feature, move the tip to the desired position and then click **YES**. To skip the next command displayed in the **Machine Commands** list, click **NO**.

CAD

- PCD-19824 - Added the loop designator (with brackets) to the CAD ID in an exported IGES file.

CMS / CMM

- PCD-23411 - Implemented continuous wrist mapping for the CMS Sensor. For more information, see "[Featured Items](#)".

Comments

- PCD-20946 - Added buttons that you can use to insert often-used ASCII characters, such as the degree symbol (°), into comment text in the **Comment** dialog box.

Constructed Features

- PCD-22958 - Added the ability to construct a Translated Plane feature from another input plane feature. PC-DMIS moves the translated constructed plane from the input plane in the direction of the input plane vector based on the calculation method that you select (maximum deviation or standard deviation).
- PCD-30755 - Added the ability to construct a Width Feature through automation.
- PCD-31543 - Added the ability to use the **Cast** option in the **Construct Round Slot** dialog box to construct a cast round slot. You can also use the **Cast** option in the **Construct Square Slot** dialog box to construct a cast square slot.

Custom Probe Builder Utility

- PCD-22025 - Added the ability to use Connection Points to define the faces of a polygon that will be used to attach components to when building an assembly. This feature gives you more control over your assembly.

Dimensions

- Enhanced the Width feature as follows:
 - PCD-22877 - Added support for using polar coordinates to measure Width features.
 - PCD-22915 - Added the ability to use 2D and 3D Width features as datums at Maximum Material Condition (MMC) and Least Material Condition (LMC).
 - PCD-28457, PCD-31470, PCD-31471, PCD-31472 - Added support for using the Width feature in True Position, orientation tolerances, and distance and angle measurements.

Fixturing

- PCD-25523 - Changed the table in the **Points** area in the **Create/Modify Fixture** dialog box to display 60 or fewer columns. Previously, it displayed 26 or fewer columns.
- PCD-25537 - Made the following changes:
 - Removed the obsolete **Rulers** check box from the **View Setup** dialog box. If this check box was selected, PC-DMIS turned on rulers in all views.
 - Removed the obsolete **Draw Rulers** check box from the **Printer Setup and Output Options** dialog box. If this check box was selected, PC-DMIS printed any rulers you may have displayed on the Graphic Display window.

The 3D Grid provides the same functionality, plus additional features.

Help / Documentation

- PCD-19005 - Added the **Need Best Practices?** heading and a link to the HexagonMetrologyU website. These items are located on the "Welcome to PC-DMIS 2013 MR1 Release" introductory page in the PC-DMIS help documentation. Click this link to find PC-DMIS training opportunities.
- PCD-29606 - Added the calibration procedures for these probe changers to the PC-DMIS documentation:
 - PCD-29606 - LSPX1
 - PCD-29762 - TESASTAR-R
- PCD-32441 - Updated the documentation for the Total Station Interface and Total Station Menu features in the Portable application.
- Documented the solutions for these problems in the "Troubleshooting" section in these release notes:
 - PCD-27200 - Resolving a slow startup
 - PCD-33024 - Resolving an error that appears when a firewall is blocking a software update
 - PCD-33646 - Resolving strange behavior when installing on top of an existing version

Installation

- NGMA-860 - Added the ability to separately install LMS licensing tools so that individual applications can share them.
- PCD-12819 - Added the ability to view the changes that are in a software update before you download it, so that you do not unnecessarily update all of your systems for no benefit. To see the changes, select **Help | Check for Updates**. If an Information icon appears next to the name of the update, hover over it or click it to display a list of the changes that the update addresses.
- PCD-17365 - Removed Remote Panel from the installation.
- PCD-20092 - Updated the installation splash screens for the PC-DMIS, Planner, Gear, Blade, and NCGage applications to match the new corporate branding. The screens include a refreshed company logo.
- PCD-21422 - Added the ability to receive service pack updates even if the SMA has expired. For more information, see "[Featured Items](#)".
- PCD-32002 - Added the following command line switches: **/q** (silent mode) and **/qb** (basic silent mode). These switches provide LMS licensing information to the installer from the command line. For more information, see "[Providing LMS Licensing Information to the Installer from the Command Line](#)" in Appendix A in these release notes.

Laser / Cloud of Points

- PCD-28552 - Updated PC-DMIS to CMS Toolkit v.4.0 for VS2012.

License

- NGMA-778 - Once LMS licensing is completed and PC-DMIS has been installed, PC-DMIS checks for license updates on startup and every eight hours of running. If a license update is available, a notification message appears. For complete information, see "[Step 4: Install PC-DMIS](#)" in these release notes.

Machine Interface

- PCD-17870 - Changed the default setting for ByPassX3forMH to TRUE upon initial installation or registry reset.
- PCD-21542 - Added support for the 4.2 driver version of IDS for uEye digital cameras.
- PCD-29818 - Removed the obsolete Federal, Garda, Omnitech, and Theodolite machine interfaces from the PC-DMIS x64 version.
- PCD-32193 - Added the **Scale Bar Check** and **Angle Check** options for the AT401 to the **Tracker | Tracker Pilot** menu in the Portable application.
- PCD-33338 - Removed the obsolete Federal, Garda, Omnitech, Profitech, and Theodolite machine interfaces from the PC-DMIS x64 and x86 versions. Also removed the following interfaces from only the x64 version:
 - B & S Backtalk
 - B & S Embedded
 - GOM
 - Metrocom
 - Mitutoyo GPIB
 - Mitutoyo Manual
 - Mora Manual
 - Numerex
 - Omnitech Manual
 - Zeiss Manual

Point Clouds

- The point cloud engine was enhanced as follows:
 - PCD-29988, PCD-30006, PCD-30081, PCD-31215 - The COPLIB engine was changed to 3DReshaper SDK toolkit.
 - PCD-30125 - The new engine provides faster point cloud processing and more functionality for existing point cloud operator methods compared to previous versions.
 - PCD-30339 - Real-time display when scanning based on the new non-contiguous data storage was implemented.

- The cross section operation was redesigned as follows:
 - PCD-30010 - Added the ability to create a section cut with and without CAD by using a better algorithm to interpolate all of the points exactly on the cut plane. The profile dimension makes your point cloud section visible with a fixed distance density.
 - PCD-30046 - Added the ability to use the mouse to resize the cut plane while moving the border lines from the cut planes.
 - PCD-30057, PCD-30104 - Implemented IGES and XYZ export functionality for cross sections.
 - PCD-30097 - Added the ability to define the cut plane direction with only two clicks. After the direction is set up, all of the sections are drawn at each step until the end of the section.
 - PCD-30117 - Added the ability to rotate the cut plane while dragging the corner points of the section planes.

Portable

- PCD-21782 - Added the **Cancel** button to this message:

The probe you are using does not match the active probe in the part program
Would you like to insert new LOADPROBE command?
No will modify the current LOADPROBE command.

To cancel the operation instead of changing the existing probe or adding a probe, click **Cancel**.

Probes

- PCD-22562 - Added the ability to calibrate the LSPX1C, LSPX1H, and LSPX1SF probe changers. For more information, see "[Featured Items](#)".

Quick Fixturing

- PCD-22013 - Changed the name of the **QuickFix** dialog box to **Quick Fixture**. You can now resize this dialog box.
- PCD-22052 - Added these Swift-fix baseplates:
 - 300 mm x 400 mm x 12 mm
 - 400 mm x 600 mm x 12 mm
- PCD-25272 - Highlighted quick fixture components in red in the Graphic Display window to show the fixtures that were selected for removal in the **Displayed fixtures** list in the **Quick Fixture** dialog box.
- PCD-25273 - Added the **Delete Object** option to the **Quick Fixture** shortcut menu. You can use this option to delete the currently selected quick fixture object.

Reporting

- PCD-17482 - Added the ability to use the **Features use dimension colors** option in combination with Best Fit Alignment without re-execution.
- PCD-22888 - Added the **Save/Print the Report** icon to the Report window's **Reporting** toolbar. You can use this button to save and print a report only after you verify that the report is correct.
- PCD-22931 - Added the ability to use the **Print report** icon on the Report window's **Reporting** toolbar to generate a DMO file in the same manner as generating an RTF file.
- PCD-22980 - Added the GETPROGRAMINFO string function. This function returns the part program's information based on the parameters passed in: GETPROGRAMINFO(<String>, <Optional String>) so that the information can be saved to a file created in the format.
- PCD-24452, PCD-33460 - Added the icons for these new templates to the **Reporting** toolbar:
 - **CAD Out of Tolerance** - Produces a text and CAD report that shows the out-of-tolerance dimensions.
 - **Form Plot** - Produces a report that is similar to the graphical analysis report, except that it produces a larger output and displays one form analysis per page.
 - **Default** - Produces a raw text (legacy) report.
- PCD-26264 - Removed the obsolete **DML output** check box from the **Report Print Options** dialog box.
- PCD-32273 - Set up the new Excel engine to use the P2X file configurations from the existing Excel wizard.
- PCD-33492 - Added the **MostRecentFileList** registry entry to the Settings Editor application. You can use this system-wide setting to set the number of entries (from 0 to 15) that appear in the most recent file list, which is located in the bottom half of the **File** menu. The default is 4 entries.
- PCD-23715 - Implemented support for Optiv Multi-Sensor machines, including CWS. For more information, see "[Featured Items](#)".

Toolkit

- PCD-24984 - Added the Blade Nominals Editor command. This new command enables you to create a Nominal file as required by Blade Analysis software. For more information, see "[Featured Items](#)".
- PCD-24987 - Added the Blade Report command. This new command enables you to create a Report file (RPT) directly from PC-DMIS based on scans performed by the Blade Scan command. For more information, see "[Featured Items](#)".
- PCD-28360, PCD-32068, PCD-35765 - Added the Adaptive Free Form Plane Scan strategy, plus the ability of the strategy to filter the points that the B4 Leitz Controller returns with a point quality of 9. This strategy replaces the Freeform Plane toolkit module. For more information, see "[Featured Items](#)".

- For the Blade Scan command, you can now do the following:
 - PCD-22494 - Measure a blade placed in a horizontal position; this clearance height can now be defined in the direction of X, Y, or Z.
 - PCD-27944 - Perform a defined path scan and return ball center points; for more information, see "[Featured Items](#)".
 - PCD-28756 - Use control points with the B4 controller.

Translation

- Translated these commands and strategies into 16 languages:
 - PCD-28071, PCD-32159 - Blade Nominal Editor and Blade Report commands
 - PCD-28583 - Use Parameter command
 - PCD-28584 - Move Feature command
 - PCD-28587 - Adaptive Circle Scan strategy
 - PCD-28588 - Cylinder Centering Thread Scan strategy
 - PCD-28589 - Adaptive Sphere Concentric Circle Scan strategy
 - PCD-28590 - Adaptive Cylinder Line Scan strategy
 - PCD-28591 - Adaptive Cylinder Spiral Scan strategy
 - PCD-28592 - Adaptive Cone Line Scan strategy
 - PCD-28593 - Adaptive Cone Concentric Scan strategy
 - PCD-28594 - Adaptive Plane Circle Scan strategy
 - PCD-28595 - Adaptive Plane Line Scan strategy
 - PCD-32159 - Blade Scan command

User Interface

- PCD-18747 - Added these Windows checks:
 - PC-DMIS warns if the **Adjust for Best Performance** option (which gives a higher GDI limit) on a Windows XP computer is not set when you start PC-DMIS. If desired, you can set the warning to not show again.
 - PC-DMIS checks the available GDI resources on the computer in 60 seconds. If 80% or more of the available GDI resources are used up, PC-DMIS displays a warning message about closing part programs.
- PCD-19860 - Added the Vento_70-15-24_ARM1 Virtual Machine.
- PCD-20440 - Added "(Service Pack #)" to the **About PC-DMIS** dialog box for a service pack release. The # symbol represents the specific service pack number.

- PCD-21166 - Re-enabled the ability to display the **Probe Utilities** dialog box (by pressing Ctrl+Alt+P) when PC-DMIS is in Protected Mode to ensure measurement accuracy. In the **Probe Utilities** dialog box, only the options that are needed to view the calibration results and to calibrate the selected probe in the part program will be available.
- PCD-26508 - Added the DEA Mercury 30-14-16 Virtual Machine.
- PCD-29688 - Incrementally named the new parts that are added to an assembly (for example: New Part.2, New Part.3, and New Part.4).
- PCD-29710 - Updated the appearances of common controls (such as buttons and tabs) in the dialog boxes throughout PC-DMIS and PC-DMIS Planner to use Microsoft 6.0 Common Controls. For more information, see "[Featured Items](#)".
- PCD-31434 - Added the DEA Mercury 60-16-25 and 120-16-25 Virtual Machines.
- PCD-31996 - Changed the name of the **Execution Mode Options** dialog box to **Execution**. Also redesigned the items in the **Execution** and **Collision Detection** dialog boxes. For more information, see "[Featured Items](#)".
- PCD-34086, PCD-34154 - Enhanced CAD-related items as follows:
 - Changed the default background color for graphics from gray to blue and green. (This change does not apply to the Portable application.)
 - Changed the default color of a selected item on a CAD from red to blue.
 - Changed the color of the trihedron that appears on a CAD and on graphics to white.
 - Changed the background color of the **Quick Start** dialog box from gray to white and gray.
 - Changed the appearance of the icon for the **Trihedron Colors** option on the **Graphic Display Window** menu.
 - Changed the **Coordinate System** icon on the **Graphic Modes** toolbar to match the new white trihedron.
 - Changed the appearances of the icons on the **CAD View**, **Live View**, and **Laser View** tabs in the Graphic Display window.

Vision

- PCD-23574 - Added the **Gage Overlay** button to the **Live View** tab. You can use this button to toggle the display of the currently selected gage overlay. When you select the button's drop-down arrow, the **Gage Selector** toolbar appears underneath the button. Use this toolbar to display a different type of gage.
- PCD-23583 - Added the **Zero Readouts DXYZ** option to the shortcut menu in the **Probe Readout** window. You can use this option to independently zero the DX, DY, and DZ values when a gage is active. To display the shortcut menu, right-click in the **Probe Readout** window.

- PCD-23608 - Added the ability to single-click on the gauge for the **Transparency** control, **Magnification** control, or **[Top/Bottom/Aux] Light** buttons to move the gauge's slider to the right or left. The gauge remains visible until the cursor is moved away. You can also continue to move the slider to the right or left by dragging it; when you drag it, the gauge remains visible.
- PCD-23629 - Improved the speed performance of the Auto Focus feature and overall focus repeatability. For more information, see "[Featured Items](#)".
- PCD-23652, PCD-25684 - Added the **Use legacy 2D Profile** check box to the **General** tab in the **Setup Options** dialog box. You can use this option to toggle between the legacy version of the Profile 2D (selected check box) and the latest version of the Profile 2D (cleared check box). The latest version has these capabilities:
 - **Live View Selection** - You can program a Profile 2D feature by double-clicking near the edge of the feature in the Live View. PC-DMIS Vision automatically traces around the edge of the feature, moving the machine stage on a DCC machine if necessary.
 - **CAD View Selection** - You can program a Profile 2D feature by selecting **Yes** or **No** in the **Closed** list in the **Measurement properties** area of the **Auto Feature** dialog box.

You can edit targets after you create the new 2D profile in Live View or CAD View by right-clicking within the target to display a menu. Select or clear the **Edit Nominal Segment(s)** option to turn nominal segment editing on or off. This feature enables you to adjust or delete existing targets or insert additional targets.

The latest version of the Profile 2D does not have the **Matching Edge** and **Under Scan** options, which are available for the legacy version of the Profile 2D.

- PCD-23666 - Added the **One click manual target** area and the **Enabled** check box to the **Live View Setup** dialog box. For more information, see "[Featured Items](#)".
- PCD-23685 - Added the **Move to focus position** check box to the **Setup Options** dialog box. For more information, see "[Featured Items](#)".
- PCD-23713 - Extended the Sensor Light Control (SLC) interface to allow 12 segment ring light support for FDC.

Wizards

- PCD-25948 - Added the "TP" and "DF" IDs to the AXES column for non-legacy dimensioned part programs. These IDs appear when you export Feature Control Frame (FCF) True Position dimensions in Microsoft Excel or CSV format.

Contact Hexagon Metrology

If you are participating in the *technical preview* of PC-DMIS 2013 MR1 Release, please post your feedback in the appropriate technical preview forum located at <http://www.pcdmisforum.com/forum.php>. Please do not contact Technical Support for technical previews.

If you are using the *commercially released version* of PC-DMIS 2013 MR1 Release and would like further information or technical support, please feel free to contact <http://hexagonmetrology.us/contact-us> or visit www.pcdmis.com. Hexagon Metrology Technical Support can also be reached 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 (**/qb**), and the correct information is provided, everything runs without user interaction. The command switch **/qb** displays the progress bar and handles installer errors, while the **/q** 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 **Choose License Type** dialog box.

A description of the parameters follows, along with examples:

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).

ENTITLEMENTID="<entitlement id>" - This parameter and value are useful on a new system where no LMS license was previously installed. It indicates that the user wants 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 speak 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="<username>" - 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**.

LMSFNOURL="<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.

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

```
/qb ENTITLEMENTID="99999-88888-77777-66666-55555"
```

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

```
/qb USELMSLICENSING
```

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

```
/qb LMSLICENSESERVERS="123.12.134.42"
```

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

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

Appendix B

Understanding File Locations

The default file locations (path locations) for various user-specific settings and other files have changed in PC-DMIS 2010 MR2 and later in order to comply with newer operating system standards. Previously, much of this information was stored inside of the install directory of PC-DMIS.

The following shows where these files are now stored, based on each file's role:

System Files [Hidden]

- Vista/7/8: C:\Windows\System32

Shared Data Files [Hidden]

Types of Files: Calibration files (such as comp.dat and compens.dat), setup files (such as tool.dat, toolc.dat, and usrprobe.dat), and other files.

- Vista/7/8: C:\ProgramData\WAI\PC-DMIS\

Where <version> is the PC-DMIS version.

Shared Program Files

Types of Files: Part programs, CAD, probe files, and other files.

- Vista/7/8: C:\Users\Public\Documents\WAI\PC-DMIS\

Where <version> is the PC-DMIS version.

User Data Files [Hidden]

Types of Files: Toolbar and menu layout files, lighting and materials, settings, and other files.

- Vista/7/8: C:\Users\

Where <username> is your window's logon user name and <version> is the PC-DMIS version.

Also see "Understanding the .DAT Files" in the PC-DMIS help for more specific information on data files.

User Program Files

- Vista/7/8: C:\Users\

Where <username> is your window's logon user name.

NOTE: In addition, in 2010 MR2 and later, functionality was added into the PC-DMIS Settings Editor that allows you to back up, restore, or clear user-specific files and settings. Rather than manually deleting or restoring individual files on your own, we recommend that you use the tools provided in the Settings Editor instead. See the "PC-DMIS Settings Editor" documentation for additional information.

Required User Access Rights

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

File System

Windows XP

- C:\Documents and Settings\All Users\Application Data\WAI\PC-DMIS\2013 MR1
- C:\Documents and Settings\All Users\Documents\WAI\PC-DMIS\2013 MR1
- C:\Documents and Settings\User Name\Local Settings\Application Data\WAI\PC-DMIS\2013 MR1
- Any user-specified folder locations for storing Part Programs, Probes, Subroutines, and so on

Windows Vista/7/8

- C:\ProgramData\WAI\PC-DMIS\2013 MR1
- C:\Users\Public\Documents\WAI\PC-DMIS\2013 MR1
- C:\Users\User Name\AppData\Local\WAI\PC-DMIS\2013 MR1
- Any user-specified folder locations for storing Part Programs, Probes, Subroutines, and so on

Registry

All of these versions have their own registry settings, stored in a version-specific Key. The items shown below are for the 2013 MR1 Release.

X86 OS

- HKEY_LOCAL_MACHINE\SOFTWARE\WAI\PC-DMIS\2013 MR1 Key and all sub keys
- HKEY_CURRENT_USER\Software\WAI\PC-DMIS\2013 MR1 and all sub keys
- HKEY_USERS\.DEFAULT\Software\WAI\PC-DMIS\2013 MR1 and all sub keys

X64 OS

- HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\WAI\PC-DMIS\2013 MR1 Key and all sub keys
- HKEY_CURRENT_USER\Software\WAI\PC-DMIS\2013 MR1 and all sub keys
- HKEY_USERS\.DEFAULT\Software\WAI\PC-DMIS\2013 MR1 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 installed. For this to work, PC-DMIS needs to run with administrator privileges the first time you run it. During the installation, if you mark 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\WAI\FxtServer
 - HKEY_LOCAL_MACHINE\SOFTWARE\WAI\PC-DMIS\NCSENSORSETTINGS
 - It may be easier to just apply create/read/write privileges to the HKEY_LOCAL_MACHINE\SOFTWARE\WAI\ key and all sub keys to cover these also.

Appendix C

2D Distance Change

Important 2D Distance Change: In PC-DMIS 2010 and later, the 2D Distance dimension and the DIST2D expression have changed somewhat; they no longer use the workplane as part of the calculation when the third argument is set to a plane and the distance is being calculated perpendicular to the third argument ("perpendicular to" is always used by the DIST2D expression).

See the "2D Distance" and "Pointer Functions" topics in the PC-DMIS documentation for more information.

Profile Calculations

In PC-DMIS 2009 and higher, FCF Profile with formonly takes size into account. A new registry entry called `usesizeForProfileDimensions` in the Option section of the Settings Editor enables you revert to the V42 and earlier behavior for legacy profile dimensions only. This registry entry defaults to 1 (TRUE), so you must use the PC-DMIS Settings Editor to change it to 0 (False). If set to 0, legacy Profile formonly ignores size. However, the FCF profile always takes size into consideration.

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