



PC·DMIS[®] 2012 MR1

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PC-DMIS® 2012 MR1 Enterprise Metrology Solutions

- Release Notes -

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1. Recommended System Requirements

- PC-DMIS® 2012 MR1 operates under 32-bit and 64-bit Vista and 32-bit and 64-bit Windows 7. No other operating systems are supported.

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

- 2 GHZ or higher Duo-Core processor.
- 4 GB of RAM or higher. (4GB 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 affects 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.
- 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.

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.

- 1GB of video RAM.
- DVD drive.
- High-performance hard disk drive, such as an SAS HDD 10K RPM or a high-end SSD-HDD. The best solution is two drives in RAID 0 mode.
- 2 USB ports.
- 2 Ethernet ports. (This is only required for specific machine controller communication needs, such as CMM systems.)
- Microsoft .NET 4.0.
- 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 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.

Flashing Issue when the F9 key is pressed for the Edit a Loadprobe command

An issue was found with PC-DMIS where the OpenGL setting error flashes when the F9 key is pressed for the Edit Loadprobe command.

This has been determined to be a hardware issue when two video cards are simultaneously enabled on the system running PC-DMIS.

To resolve this issue:

- Update to RDS 3.3
- Ensure firmware is version 1.2
- Disable Intel (onboard) graphics
- Update NVIDIA driver.

2. Installing PC-DMIS

To install the application follow these steps below:

Step 1: Check System and Hardware Requirements

Ensure your computer system meets the minimum system requirements before you attempt to install a new PC-DMIS version, ensure that you meet the system and hardware requirements. You must also have a USB portlock for the installation to work. Your IT person can help you with this.

- 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: Login as an Administrator

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

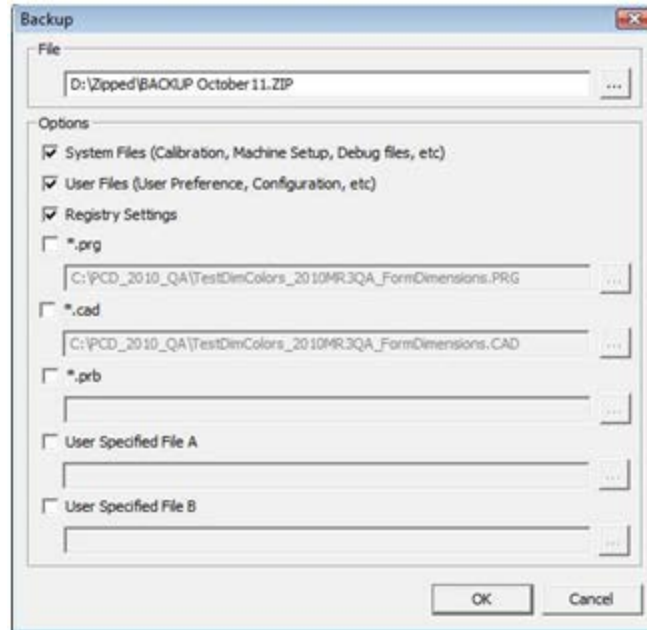
Step 3: Back Up Existing Settings and Layout Data Files

Backup your settings and layouts files from your previous version.

- *If your current version is earlier than version 3.5*, back up your pcdlrm.ini file. This file found in the Windows system directory (either WinNT or Windows). Save a copy of the file in a safe place.
- *If your current version is greater than version 3.5*, back up your PC-DMIS Settings Editor data.

To do this:

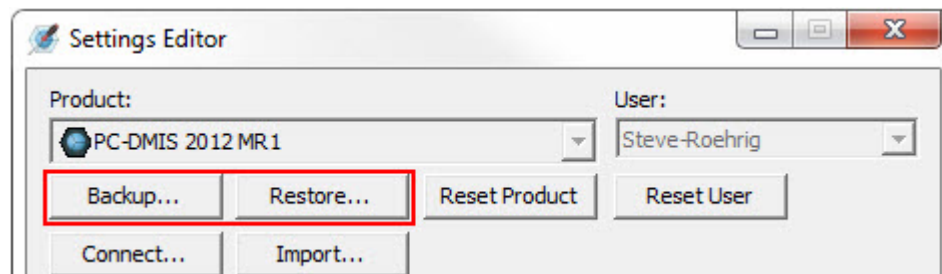
1. Access the PC-DMIS Program Group for your existing version and start the **Settings Editor**.
2. Click the **Backup** button (or **Export**). The **Backup** dialog box appears:



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 is greater than version 3.5, also backup the files that control the layout of PC-DMIS as well. These files will be in the \PCDMIS*

By default, PC-DMIS will attempt 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 pcdln.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:

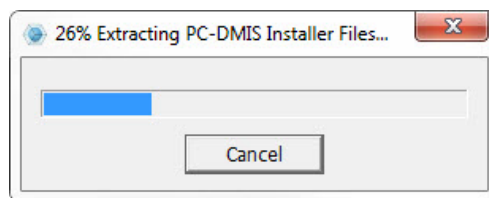


See the help file for the Settings Editor if you need more information on the backup and restore functionality.

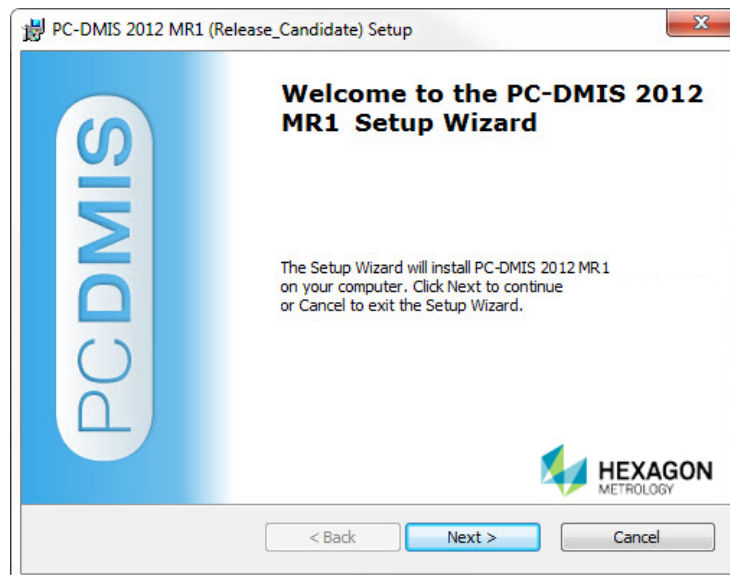
Step 4: Install PC-DMIS

The following steps run you through a typical installation. Your installation screens may differ depending on whether or not you have an existing version of PC-DMIS. In addition, your USB portlock might be configured with different options.

1. Ensure 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.
3. Double-click on the exe file to begin the installation process. If presented with a security warning, click Run.
4. The files will be extracted to a temporary directory:



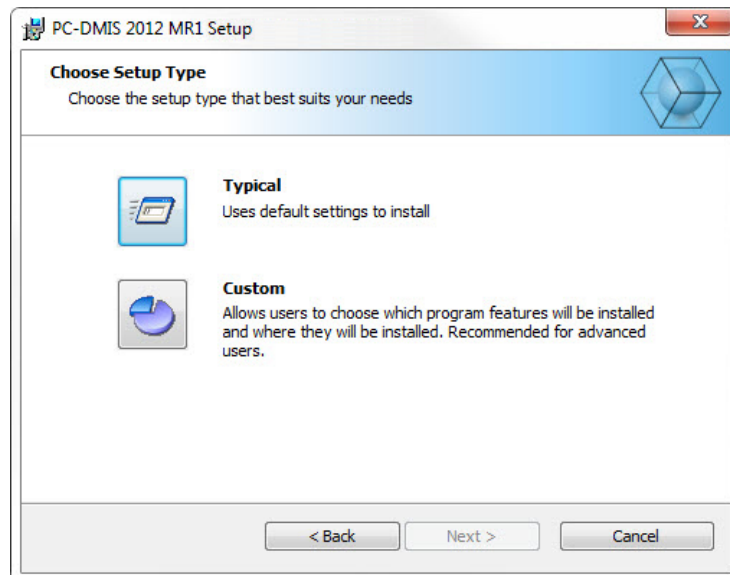
5. The main setup interface then appears. Click the **Next** to start the installation.



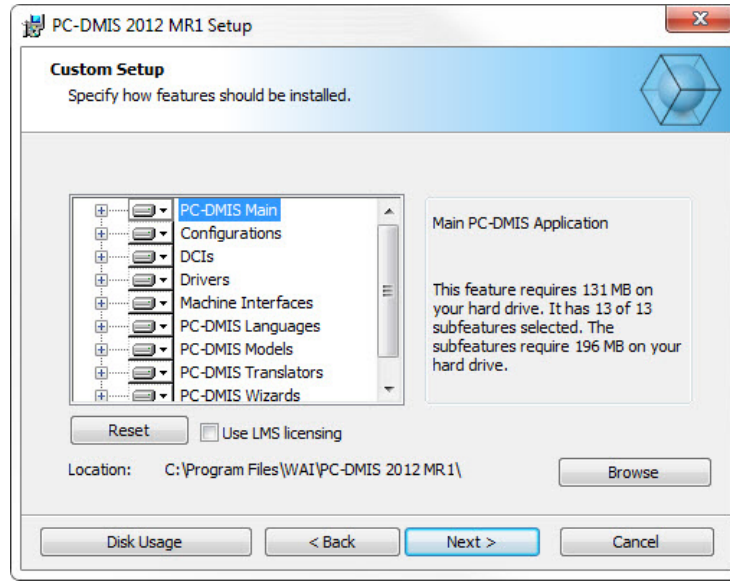
- The license agreement then appears. Read and accept the license agreement, and then click **Next**.



- Choose a setup type from the **Choose Setup Type** screen:




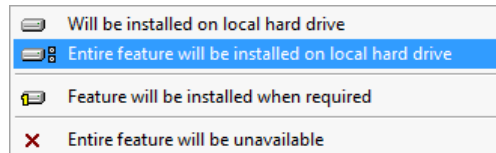
- Typical:** This option sends the file to this default installation location: C:\Program Files\WA\PC-DMIS 2012 MR1\.
- Custom:** This option lets you specify what components to install as well as the installation location. You'll see a screen similar to the one below:



If you have been issued an LMS Entitlement ID instead of a physical Portlock, check the **Use LMS licensing** check box. When checked, this will install the FLEXnet Licensing Service which is required when using LMS licenses.

Overview of customize 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 small drop-down icon  next to the component to exclude. You'll see a drop down list.



Choose the desired option:

- **Will be installed on local hard drive** - The selected feature will be installed.
- **Entire feature will be installed on local hard drive** - The entire feature will be installed. This means sub-features of the selected feature will also be installed.
- **Feature will be installed when required** - The feature will only be 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 excludes the component from installation.

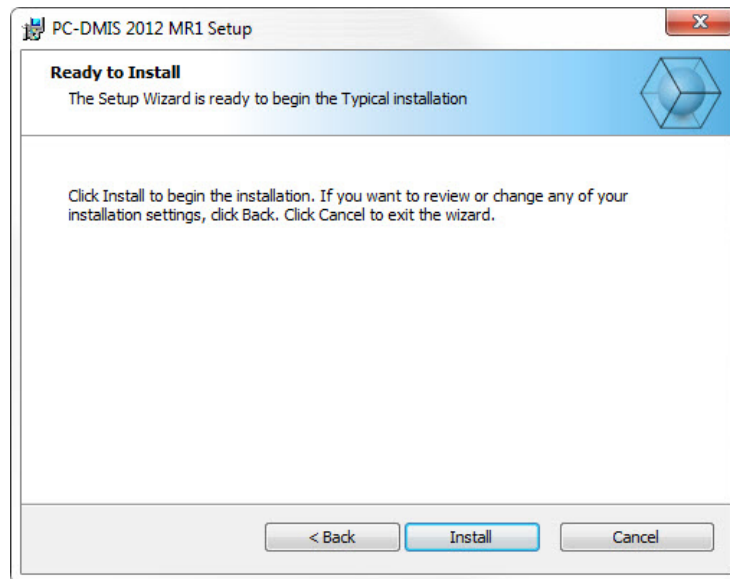
Click **Reset** at any time to reset the items to the default selection.

Customize Installation Location

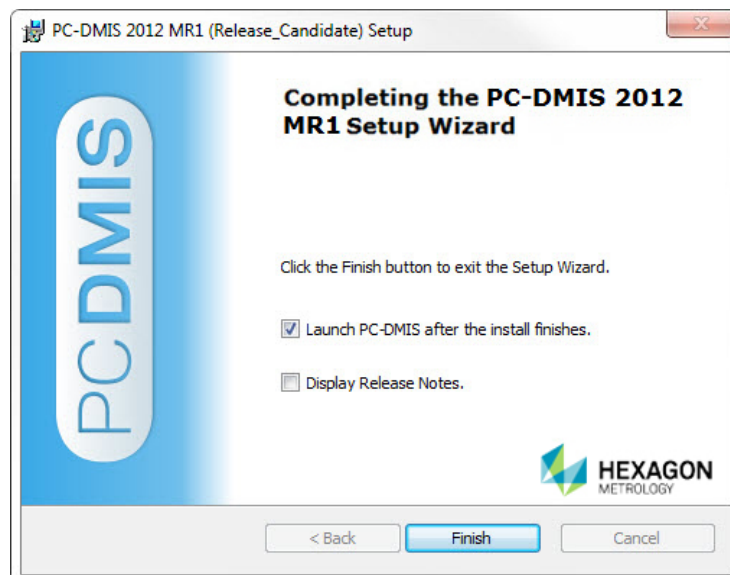
By default, the program installs to this location "C:\Program Files\WAI\" under the "PC-DMIS 2012 MR1" directory. To change the default location, click the **Browse** button and navigate to the directory on your computer you want to hold the program files. When you click **OK** the **Location** field will change to show the selected location.

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

8. Once the installation has all the information it needs, you'll see the **Ready to Install** screen:



9. Click **Install** to proceed with the main installation.
10. Once installation finishes, you'll see this final screen:



- **Launch PC-DMIS after the install finishes** - Marking this check box launches the application once you click **Finish**.
- **Display Release Notes** - Marking this check box displays a simple PDF file showing what's new or changed in this release once you click **Finish**.

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

Administrator Privileges Explained

PC-DMIS versions earlier than v2012 require that you run PC-DMIS as an administrator because some system settings (for things such as last probe used, wrist angles, etc.) 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, PC-DMIS's settings mechanism 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 username and password of an account with administrator privileges.

Once 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 (as shown in the above image) 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 below.

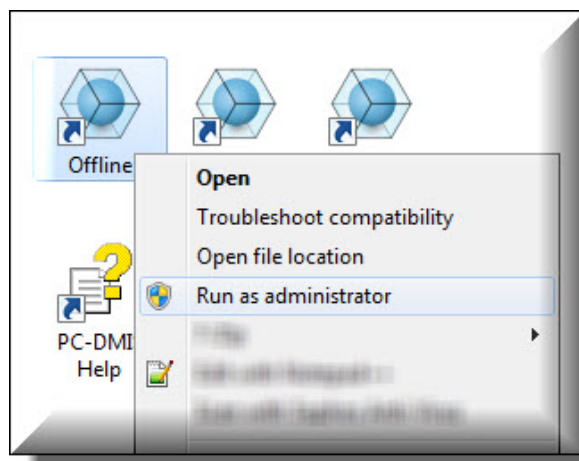
Step 5: Copy Files after Installation

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

- downl.oad
- sysparam.dat
- comp.dat
- toolc.dat
- Any other machine compensation files that are in your old PC-DMIS folder.

Step 6: Launch PC-DMIS for the First Time

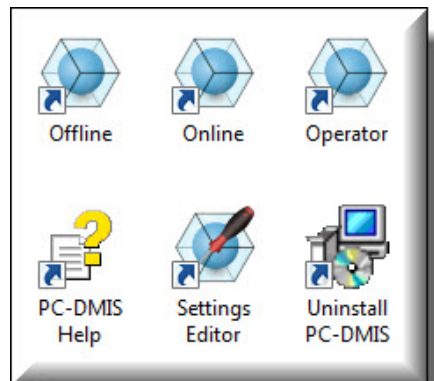
1. When running this version of PC-DMIS for the first time, choose **Start** then **All Programs**, then **PC-DMIS 2012 MR1**.
2. From the list of shortcuts, right-click on either the **Online** or **Offline** icon then select the **Run as Administrator** option (only required if the **Launch PC-DMIS after the install finishes** check box wasn't checked at the end of installation).



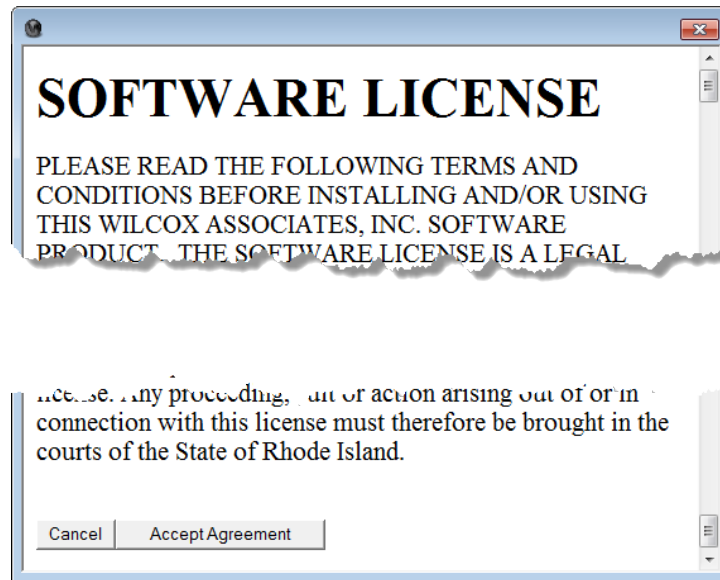
3. This allows the program to write needed machine-specific settings.
 - *If your previous version was earlier than 3.5*, PC-DMIS will ask if the settings in your PCDLRN.INI file should be used as your registry settings. Click **Yes** at the prompt. Otherwise PC-DMIS will load in the factory defaults.

- *If your previous version was version 3.5 and later, 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 running the usual **Offline** or **Online** shortcut.

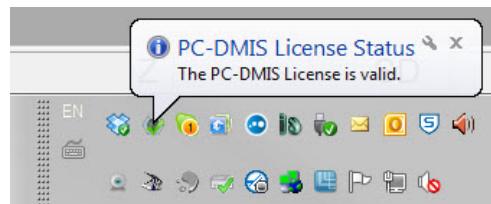


Once PC-DMIS starts, you'll be presented with a license agreement. Read and click **Accept Agreement** at the bottom to proceed:

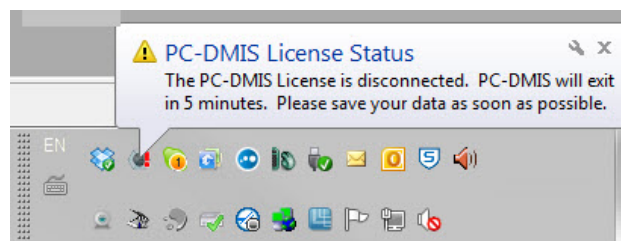


PC-DMIS will then load.

Once PC-DMIS is running, the following System Tray icon will be displayed. If the PortLock is programmed correctly, the icon will display a green check mark as shown below.



If the PortLock is not connected or not programmed correctly, the icon will have a red exclamation point overlaid on it and a pop-up message will be displayed as shown below. When PC-DMIS is in this state, it will continue to function normally, but after five minutes it will automatically close. Data should be saved immediately before this occurs.



3. Information about this Release

We at Hexagon Metrology are proud to bring you this new version of PC-DMIS 2012 MR1. 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 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 installing PC-DMIS 2012 MR1, 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 "6. Contact Hexagon Metrology" below 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 2012 MR1 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.

4. New Product Information

- WAI Toolkit allows for the creation of custom commands in PC-DMIS.

Major and Minor Release Enhancements

2012 Major Release

- ClearanceCube – Adds protective envelope around the part for single-arm machines

2012 MR1 Minor Release

- Windows XP Operating System no longer supported
- Implementation of the WIX installer which provides over-the-Internet updates and patch capabilities.

See the "Enhancements - 2012 Major and 2012 MR1 Minor Release Updates" topic below for a listing of enhancements for the PC-DMIS 2012 Major release and the 2012 MR1 Minor release.

5. Release Notes

Versions 2012 and 2012 MR1 of PC-DMIS are significant development releases of the software.

Major Release Date: May 1, 2012

Minor Release Date: December 15, 2012

Service Pack 1 Release Date: January 18, 2013

Service Pack 2 Release Date: March 5, 2013

Service Pack 3 Release Date: August 13, 2013

Prior to the release of PC-DMIS 2012 MR1, version v2012 was last official release of PC-DMIS.

2012 MR1 Service Pack 3 Fixes and Changes

- Fixed a problem where a color map on the CAD model changed colors during rotation in the Graphics window
- Fixed a problem where MOVE/POINT, NORMAL, MACHINE and MOVE/POINT, NORMAL, PART were behaving exactly the same
- Fixed a problem with a Profile dimension for a point feature where the profile dimension was incorrect if the point had a negative form error
- Fixed a software crash related to marking and unmarking
- Fixed a software crash related to the Edit window
- Fixed a problem where with an alignment change, the nominal values for a legacy Position dimension tolerances did not update properly
- Fixed a problem where a machine (Leitz PMM-C / LSP-s2 / B4) started the part program by picking up an incorrect probe
- Fixed a problem where a part program with a CALLSUB command wouldn't execute online properly
- Fixed a problem where PC-DMIS was not correctly signed for the Unigraphics Direct CAD Interface (DCI) licensing, preventing usage of the Unigraphics DCI
- Fixed a problem where applying a point-cloud surface color map for a CAD model results in a software crash
- Fixed a problem where a point-cloud alignment of COP to CAD was freezing during execution
- Fixed a GDI issue that resulted in an application crash
- Fixed three application crashes related to using HyperReports
- Fixed an "exceeding array bounds" issue that resulted in an application crash

- Fixed a problem where executing a part program created in version 4.2 resulted in a physical probe collision if executing a portion of the program starting from the MODE/DCC command
- Fixed a problem in a XactMeasure GD&T Position dimension where the Position calculation wasn't considering some marked check boxes
- Fixed a selection problem where holding down Shift and selecting another feature in the Dimension and Construction dialog boxes was not selecting the range of features
- Fixed a problem where the Probe Settings for an AT401 machine had Time Delta and Distance Delta options grayed out
- Fixed a problem where deleting commands from a part program with thousands of points resulted in a software crash
- Fixed a problem where a circle feature did not generate correctly in PC-DMIS if it was created from a Unigraphics NX5 model and used with Direct CAD Interfaces (DCI)
- Fixed a problem where a part program with a wireframe CAD model was not displaying that model in CAD Only and Text and CAD reports
- Fixed a problem where a Best Fit 2D alignment was adding more than the requested ROT ONLY (Rotation Only).
- Added the ability to upload macro programs directly to Mazak machines

2012 MR1 Service Pack 2 Fixes and Changes

- Fixed a timing issue with the PREHIT/RETRACT command that led to collisions
- Fixed a problem where executing a UserParameterSet command resulted in a "Command Not Supported by an UNKNOWN probe" message
- Fixed an intermittent problem where some Adaptive Circle Scans were migrating defaults, losing their settings
- Added a new registry entry UpdateExtAlignmentDepCommandsDuringFileOpen to handle a problem with the "External Alignment File Has Changed! Update Dependent Commands?" message appearing at times when it shouldn't
- Fixed the M00_694_106_000_5WAY probe in PROBE.DAT so it now shows up in PC-DMIS
- Fixed a problem where the Use Gauge Scan Filter check box used in some Auto Feature measurement strategies was missing
- Fixed an application crash related to calibration
- Fixed an application crash related to constructing a feature with multiple inputs
- Fixed a problem where only some of the axes were being reported when using the PlainTextLegacyDimension.lbl
- Fixed a problem where if an offset force was greater than 100 newtons (defined in the Opt. Probe tab of the Parameter Settings dialog box), it caused an application crash when Adaptive Scanning was selected

- Fixed a problem where changing CAD coordinate systems moved the CAD points off of the part in the Graphics window
- Fixed a problem where if PC-DMIS were installed on an FDC-SLC controller installed, it instead installed as if on a standard FDC controller, not copying and renaming the appropriate DLLs as it should
- Fixed a problem where the FDC Machine completes initialization before the Zoom cell has homed, resulting in an application crash
- Fixed a problem where adaptive circle scans did not project to the nominal plane when a Depth parameter is specified
- Fixed a problem where adaptive circle scans did not properly apply outlier removal when the circle lay in a workplane other than the ZPLUS/ZMINUS workplane
- Made numerous localization fixes

2012 MR1 Service Pack 1 Fixes and Changes

- Fixed a problem where the TESASTAR-M with a 200mm extension could not pick up LSPX1M or LSPX1S probes from a TESASTAR-R probe changer
- Fixed a problem where a Basic Circle scan could not be programmed from the CAD.
- Fixed a problem where Clip Planes was not working with some models
- Fixed a problem where a TP20 module is dropped off on probe changer on a Sharpe interface and it failed to load the next tip, resulting in an with an Unexpected probe hit message
- Fixed a problem where a Concentric Cylinder adaptive scanning strategy strategy inverted the vector resulting in a cylinder center created above the nominal point

Enhancements - 2012 Major and 2012 MR1 Minor Release Updates

Log onto www.pcdmis.com for detailed information and video tutorials regarding these enhancements.
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Alignments

- Implemented Pass/Fail tolerance for best fit alignments
- Implemented Pause Execution during Best Fit Alignment computation to allow evaluation and adjustment of alignment
- Extracted the deviation results from candidate features of the best fit alignment for presentation to the user
- Implemented the display of the results of a Best Fit Alignment in the Alignment setup dialog
- Implemented the ability to not use features defined in the Best Fit alignment as part of the computation
- Added the ability to do a Pointcloud Best Fit alignment with an offset

Autofeatures

- Implemented Contour Point BA

- In an Extended Edge point, the snap to the coordinate that the user typed in now respects the direction of the clicked CAD edge
- In an Extended Edge point, the behavior has changed so that the Safe Distance combo box only updates on the lost focus event
- Redefined basic items in the Auto Feature dialog to give a simpler look
- Made the Snap list in the Auto Feature dialog's Measured Properties area available for the Auto Circle dialog to provide the ability to sample around a hole and have the measured data projected back down to the nominal plane created by the point and vector
- In an Extended Edge Point, the VW counter now supports 4 digits
- Opening an Auto Feature dialog box in basic mode now shows the Probe Toolbox attached if the probe toolbox was previously open

Automation

- Added a CommentInputDialog object with OnCommentInputDialogOpen() and OnCommentInputDialogClose() events
- Error Message dialogs in Universal Jog Box (UJB) can now be handled through automation a new PCDMessageBox object and HasShutDownButton property and PressShutDownButton method
- Modified the GD&T standard to be a Dtype so it can now be set by Automation

CAD

- Upgraded to DataKit V6.8 libraries
- Implemented Planner's CAD change manager in PC-DMIS
- Added the ability to remember the current translation of an assembly component, allowing you to replace the assembly component with a new, updated CAD file without having to reposition it to the desired location
- For the Optiv FDC, added focus motion calibration support and latching
- Plane features are now exported in IGES the way they appear in the graphics window so that a triangle representation of a plane is exported as a triangle bounded plane and an outline representation is exported as a convex polygon
- PC-DMIS now allows negative depth for flanged feature types (flanged hole, flanged round slot, and flanged square slot) in Chrysler DataLog file when using the Datalog import translator
- Updated the Optimize Path feature so the option to not sort inside groups and have the group treated as a single feature is implemented
- Updates to display distance dimension items such as DCI or DCT so the correct symbol is displayed
- Updates to evaluate GDT items using DCI
- Updates to prevent dimension information from being drawn inside the boxes
- Updates to ignore the information related to the large copyright/general company info page that is getting loaded by the DCI
- Implemented the ability to display female angles on cylinder extensions
- Updates to display the connectors on cylinder extensions
- Updated the probe connection list
- Updates to translate the characteristic ID through the DCT (Datakit)
- Implemented Custom Probe Builder feature
- Generated a statement of translator accuracy for CAD translators that can be shown to customers

ClearanceCube

- Added the ability to create a ClearanceCube around the part to provide an alternate way of moving a probe around a part
- Added collision detection to ClearanceCube motion for articulating head
- Created a ClearanceCube toolbar for the ClearanceCube functionality

Change Manager

- Made CAD Change Manager dialog resizable and gave them minimum sizes
- Implemented Planner's CAD change manager in PC-DMIS

CMS / CMM

- Implemented automatic self-centering of the tool sphere during qualification when the sphere has been moved
- Upgraded CMSkit libraries to version 3.0
- Improved precision and repeatability in the qualification algorithm by calculating sensor qualification based on continuous scan data
- Implemented the Fixed Head CMM from Leitz ability to use distance before and after tool change and have it available in the UI for other probe types
- Created a document that describes the procedure to follow so the user can fully understand all aspects of the commands and how to implement a changeable (x5.3, S8, etc.) temp sensor probes in part programs
- Implemented the AUTO INSERT MOVE functionality for VWMP Toolkit Features

CNC

- Constrained the path generated for Lathes to be all at $Y = 0$ (no C axis Rotation)
- Allowed the Vector Point option to use Surface Sample Points normally enabled on a CMM
- Modified label numbers, feature id handling, and probing distance parameters to work with older controllers
- Implemented a method that incorporates external work offsets with rotary tables

Configuration

- Added 3509, 3510, 3511 & 3512 GM probe components to Installer
- Added Optiv Machine Model 442
- Added OptivScan Model 663
- Added UG, CATIA V5, and Solidworks hex block models to the PC-DMIS install
- Added new LSPX1_H probe
- Added the virtual CMM for DEA BRAVO NT 60.15.24
- Added the virtual CMM for DEA VENTO R 60.16.26
- Added LSPS2_PMMG probe to the probe.dat file
- Added ALPHA_25-50-10 and ALPHA_25-100-10 based off of ALPHA_25-50-15 machine that already exists

Constructions

- Feature lists are now sort-able making it easier to find the desired feature in a long list

Dimensions

- Added a ClearExecutionListPriorToProgramExecution registry setting for the File | Reset Execution List option to speed up part program start up time

Direct CAD Interfaces

- DCI support added for PTC Creo 1.0
- Added DCI support for SolidWorks 2012 parts

DMIS

- Added DMIS support for new Torus feature
- Added Edge Point support to DMIS v4 and above
- Added the LegacyDMISExportNonZeroTolerance registry entry so that posting out a zero tolerance in legacy DMIS actually outputs as a small non-zero value so that CogniTens system can accept dimensions with a zero tolerance
- To support the export of legacy DMIS to the CogniTens software, part programs exported out in legacy DMIS 0.0001 tolerances are adjusted to 0.001

Fixturing

- Added the possibility to choose whether or not to use CAD coordinates in Center calculation

Graphics

- Graphic View toolbar buttons have changed to not do a scale to fit; instead they maintain the center point on the screen and do a fluid rotation animation to new view orientation
- Added the ability to display surface boundaries with shaded surface
- Added the ability to rotate GD&T labels so they're normal to the graphic view
- Implemented a way to specify a list of surfaces that will be used to limit the box selection of features, so only the surfaces in the list will be looked at when finding features

I++ Server

- Implemented support for CMS trigger point feedback

IGES

- Added support to the Name Property element so that IGES elements can now have labels longer than 8 characters

Installation

- Updated the installer to include later RDS version, v3.2
- Integrated the new WIX installer

Interface

- Allowed for customized max/min and default last parameters for HIS Laser probe
- Added machine type for Serein SVM2020 DCC
- Implemented the Leica Reset dialog
- Added support for Laser Probes in the FDC interface
- Allowed query to ZeissCMM for all options in driver_query_capabilities
- Added 'Cone' boundary support to linear scan

- Made Search distance for scans the same value as the PRG
- MEI: Added the ability to preheat halogen lamps
- For the Optiv FDC, added focus motion calibration support and latching
- Added support for the LSP-X1H probe to FDC interface
- Made the probe automatically appear correctly in a Zeiss interface so it can be used without having to edit it
- Made FDC interface support variable slot positioning for tool changes handled by the firmware

License

- Added new portlock options for GD&T Selection and Toolkit
- Added CLM utilities to PC-DMIS install

Multiple Arm

- Allowed a runtime stripe to draw during scan and Auto Feature measurement with laser (CMS - Contour) on Arm2

Non-Contact

- Exposed functions supporting the sensor qualification positioning to other applications
- Improved NCSensorModel debug file to include needed info (SetQualSphereInfo, SetTheoWristTransform, and so on)

Path Optimization

- Added a Minimum conical angle option so that a hit is not taken directly coincidental to the probe body thereby helping to reduce stress on probe bodies
- Updates to the Optimize Path feature so the option to not sort inside groups and have the group treated as a single feature is implemented

Point Cloud

- Improved Pointcloud Point Information dialog behavior and layout
- Added the ability to limit how much of a part a given section cut uses
- Added the ability to automatically define the clipping regions around features when defining a laser plane

Portable

- Added the ability to take a picture with the camera in the new 6 axis Absolute arm from within the Comment dialog
- Improved the Summary Text to show measured value and multiple reference features
- Added Probe Comp On/Off button to the Portable toolbar for Arms

Quick Start

- Added compensation properties to the Quick Start functionality for 401 and 901 devices, similar to what we already do for TDRA
- Added Math type selection to sphere construction
- Added the ability to repeat the reference plane creation sequence before measuring each feature in the Quick Start dialog
- Improved the Single Click Select measurement functionality in the Quick Start dialog

Reporting

- Added a Print Black and White setting into the Report Print Options dialog
- Added the ability to select multiple report templates to the Template Selection dialog by holding the SHIFT or CTRL keys and selecting the templates
- Added registry settings to export outgoing data to an xml file when STATS/ON command sends data to DataPage+
- Added a Remove Object Modifications shortcut menu to remove the pan/zoom/rotate modifications made to a CADReportObject
- Added a PlaneView property to the AnalysisWindowObject to allow a 3D (ISO) view of cylinders
- Added a "T" string to be passed to COMMANDDATA expression to get the T value of a feature
- Improved custom report so that Labels are mirrored when a part program is mirrored
- Added the BEST_FIT_ANALYSIS_NO_GRAPHICS.LBL to the install set

Summary Mode

- Improved Summary Mode's summary line of text so that it contains additional information like measured value and diameters

Toolkit

- Migrated valve seat dimensions to become internal dimensions
- Added Probe stiffness calculations
- Added PassThruToController command to FDC
- Added BasePCDMISScanStrategy
- Toolkit features and strategies have been enhanced to take their default values from the feature or strategy of the same type
- Allowed MessageBoxes in Custom Commands to be controlled from jogbox Done button - OK YES and NO (same as PCDMessageBox in PCDMIS)
- Created an Adaptive Cone scan strategy
- Added ability to Adaptive Scan: Circle, Line, Cylinders with circles, Cones with circles, and Planes with circles
- Changed Probe Stiffness calculation to be an average of all three axes
- Added ability to update path lines in the Graphics Display window if a property value changes in VWMP-CA for these properties: Actl Thickness, Safe Distance, Long spacer, Short spacer, Long depth, Short depth, or Start angle
- For VWMP features, added the ability to display the comment for a skipped Toolkit command in the report
- Added a check for the Blade Measurement command to ensure that the attached portlock is programmed with PC-DMIS Blade
- Added automatic menu registration capability to Toolkit Commands so users don't automatically have to insert items into menus

Toolkit : Adaptive Scanning

- Implemented the PlaneLine strategy
- Implemented the CylinderLine strategy
- Implemented the ConeLine strategy
- Implemented the CylinderSpiral strategy
- Replaced non-Adaptive strategies with their Adaptive equivalents

- Embedded Cylinder Threaded Axis Scan into main Probe Tool Box strategy area and re-worked the dialog controls to parallel the layout already implemented in other Adaptive Scanning Advanced tabs
- Updates to make the Cylinder Centering Thread Scan Strategy dialog parallel to the Adaptive Scanning advanced tabs that are already implemented in other dialogs

User Interface

- Moved the OpenGL menu item in the Edit | Graphics Display Window menu
- Sorted the menu items in the Edit window's context menu
- Added toolbar icon to display boundaries with shaded surfaces
- Updated Collisions dialog changing Cancel button to Close
- Added an Auto Void button to calculate spaces in a feature (such as a key slot in a hole)
- Modified the PCD2Excel wizard to include an option to output zeroes instead of empty strings when a field is blank
- Added ability to move Overlays with the mouse even when locked to part
- Hid Greyscale button if a color camera is not being used
- Added a Use part coordinates check box that when marked displays the position of the overlays
- Added a SensiFocus option to the right-click menu to focus with ROI centered on the clicked position
- Moved the Auto Freeze Frame button from Live Image View toolbar onto the Live Image View Setup dialog
- Hide the Laser option on Live Image View toolbar when no laser is available
- Changed the amount of machine motion required before the UI updates
- Hide all buttons other than DCC/Manual from the Probe Mode toolbar if vision probe is active
- Expanded the feature coverage to have a number of zone as well as a percentage
- Made it so magnification is changed at the time of execution to be within the required magnification range
- Created an image processing algorithm to detect and generate box-selected features in the FOV
- Expanded the Schema drop down list in the Save As dialog so you can now read the whole contents of the list box
- Made New Part Program dialog more aesthetically pleasing
- Made common dialogs and the About dialog more aesthetically pleasing
- Implemented the ability to copy and paste multiple groups in Edit Win Summary Mode

Vision

- For the Optiv FDC, added focus motion calibration support and latching
- The Continue button on the Execution dialog is now disabled whenever PC-DMIS performs a focus
- For the Optiv FDC, added support for TESTPOS common controller command
- Implemented support for OpenGL to fix display problems in Win7 operating systems and added support for future capabilities
- Added support for the 12x Navitar Zoom Cell for the new classic 443
- Added support for LampAdjust and AutoLampAdjust
- Implemented Egon Temperature Compensation

6. Contact Hexagon Metrology

If you are participating in the *technical preview* of PC-DMIS 2012 MR1, 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 2012 MR1 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 (800) 343-7933.

Appendix A

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: C:\ProgramData\WAI\PC-DMIS\<>version>
Where <version> is the PC-DMIS version.

Shared Data Files [Hidden]

Types of Files: Calibration Files, Setup Files, and so forth.

- Vista/7: C:\ProgramData\WAI\PC-DMIS\<>version>
Where <version> is the PC-DMIS version.

Shared Program Files

Types of Files: Part Programs, CAD, Probe Files, and so forth.

- Vista/7: C:\Users\Public\Documents\WAI\PC-DMIS\<>version>
Where <version> is the PC-DMIS version.

User Data Files [Hidden]

Types of Files: Toolbar and Menu Layout Files; Lighting and Materials; Settings, and so forth.

- Vista/7: C:\Users\<>username>\AppData\Local\WAI\PC-DMIS\<>version>
Where <username> is your window's login user name and <version> is the PC-DMIS version.

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

User Program Files

- Vista/7: C:\Users\<>username>\Documents
Where <username> is your window's login user name.

NOTE: In addition, functionality was added into the PC-DMIS Settings Editor that allows you to backup, 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.

Appendix B

2012 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 Expressions" topics in the help file for more information.

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