



Wilcox Associates, Inc.

PC-DMIS® Version 2011 MR1 Enterprise Metrology Solutions - Release Notes

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1. General System Requirements

Minimum Requirements:

- PC-DMIS® 2011 MR1 operates under 32-bit and 64-bit XP; 32-bit and 64-bit Vista; and 32-bit and 64-bit Windows 7. (See info below on XP support. No other operating systems are supported. Note, however, that these PC-DMIS Vision hardware components do not support a 64-bit operating system:
 - Matrox Framegrabber
 - CMM-V probe
- Pentium-IV or higher processor is suggested.
- 2 GHZ XEON or Intel processor.
- 2 GB of RAM is recommended but significantly more may be required if working with large CAD models.
- 1 GB of free hard drive space minimum for the application.
- SVGA capable monitor.
- DVD drive.
- USB port available.
- The computer must have a graphics card that supports OpenGL shading. We cannot specify an exact graphics card since every user has varying needs. However, Nvidia is the preferred graphics vendor for PC-DMIS.
- Nvidia GeForce video cards are not recommended for use with PC-DMIS.
- This is defined as a "gaming" card according to Nvidia Engineering.
- Supports a screen resolution of 1280 x 1024 or higher.
- RTF file output requires Microsoft Word to be viewed.
- Microsoft® .NET 3.5.
- Internet Explorer versions 6, 7, or 8 (IE 9 contains a known issue where links to certain embedded files in the help file cause a crash).

Recommended Minimums:

- PC-DMIS® 2011 MR1 operates under 32-bit and 64-bit XP; 32-bit and 64-bit Vista; and 32-bit and 64-bit Windows 7. (See info below on XP support.) No other operating systems are supported. Note, however, that these PC-DMIS Vision hardware components do not support a 64-bit operating system:
 - Matrox Framegrabber
 - CMM-V probe
- 2 GHZ or higher Duo-Core processor for improved performance.
- 4 GB of RAM or higher. More RAM may be required if working with large CAD models. You should have RAM equal to 8 times the size of the largest CAD file you will use. (For example, if you use an IGES model of 250 MB, then 2 GB RAM is recommended.)
- 2 GB of free hard drive space plus allocated Virtual Memory of 8 times the largest CAD file used.
- SVGA graphics card that supports OpenGL shading and that has WHQL certified drivers. On board video card memory should be based on the size of CAD file being used.
- For use without CAD models, 64MB video memory.
- For small to medium CAD files (50-100 MB), 128 MB video memory. |
- For large CAD files (> 100 MB), 256 MB+ video memory. WHQL (Microsoft Windows Hardware Quality Labs) video drivers can be downloaded automatically when using the Windows Update software.
- SVGA capable monitor.

- DVD drive.
- 2 USB ports available.
- Internet Explorer version 8 (IE 9 contains a known issue where links to certain embedded files in the help file result in a crash).

NOTE: Depending on your specific needs, the recommended system specifications for this version of PC-DMIS may be much higher. A more substantial computer system may be required to accommodate part programs using Automation or complex Reporting objects. Be sure to consult with your PC-DMIS distributor to find out the type of computer system you will need in order to run this software at its optimum capability.

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 v2010 MR1, we are starting to phase out our support of the Windows XP operating system. While this version likely runs fine in XP, it was not explicitly tested in XP.

2. Information about this Release

We at Wilcox Associates are proud to bring you this new version of PC-DMIS® 2011 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 PC-DMIS® Laser, PC-DMIS® NC, as well as the established PC-DMIS® Pro, PC-DMIS® CAD, and PC-DMIS® CAD++ platforms. Also included with this release is PC-DMIS® ONE, a simplified shop-floor DCC inspection package developed in cooperation with Brown & Sharpe.

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, WAI 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.

Unfortunately, there will inevitably be machines to which we do not have access and that cannot be fully tested in this manner. To this end we have made an effort at closing this gap by partnering with our customers through the Beta Test Program. On our web site you will find an application for this program here: http://www.wilcoxassoc.com/usersarea/beta_test_application.php. We urge you to consider signing up for the program as it provides the mutual benefit of helping us create the best product possible for you, our customer.

Should you experience problems with your system after installation of PC-DMIS® 2011 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. Should such a problem materialize, you will be given the highest priority for correcting these problems. Please call Tech Support immediately to report any integration problems.

For existing users of PC-DMIS who currently have earlier versions of PC-DMIS® installed, it is advised that PC-DMIS® 2011 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.

3. New Product Information

NOTE: EMS products remain in Early Adopter stage until formal release of each is announced.

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

Important 2D Distance Change: In PC-DMIS v2010 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.

Major Enhancements

2011 Minor Release 1 (MR1)

No major enhancements for this version. See the "2011 Minor Release 1 (MR1) Updates (October 01, 2011)" topic below for a listing of all enhancements.

2011 Major Release

- Flush & Gap AutoFeature
- FDC Interface (Firmware Distributed Controller)
- Bi-Directional XML Support

See the "2011 Major Release Updates (April 01, 2011)" topic below for a listing of all enhancements.

4. Release Notes

Version 2011 MR1 of PC-DMIS is a significant development release of the software.

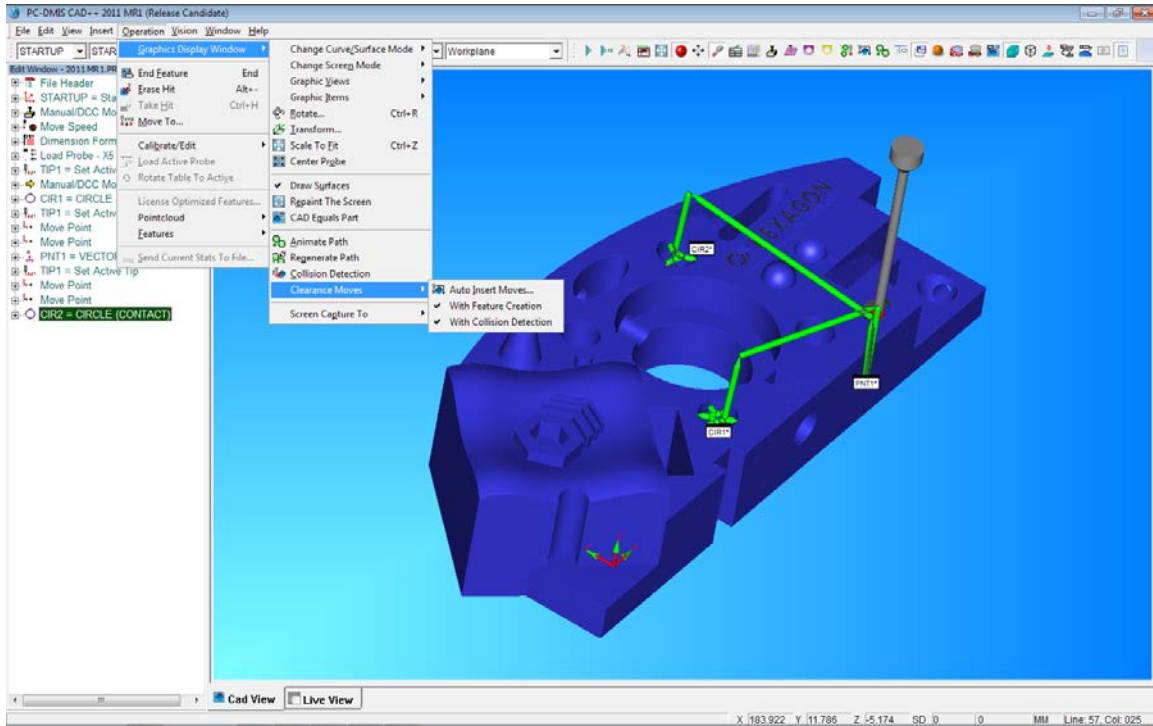
Initial Release Date: October 01, 2011

**** Prior to the release of PC-DMIS Version 2011 MR1, Version 2011 was last official release of PC-DMIS by Wilcox Associates, Inc. and the Brown & Sharpe Metrology Group of Hexagon Metrology.

2011 Minor Release 1 (MR1) Updates (October 01, 2011)

Enhancements

Animate Path



- PC-DMIS can automatically insert all necessary move functions before creating Auto Features with the ability to apply enhanced collision detection for worry free inspection routines.

Auto Feature

- A new toggle samples around a hole and projects measured data down to the nominal plane created by the point and vector.
- PC-DMIS now switches to Surface Mode when the Flush and Gap dialog is open

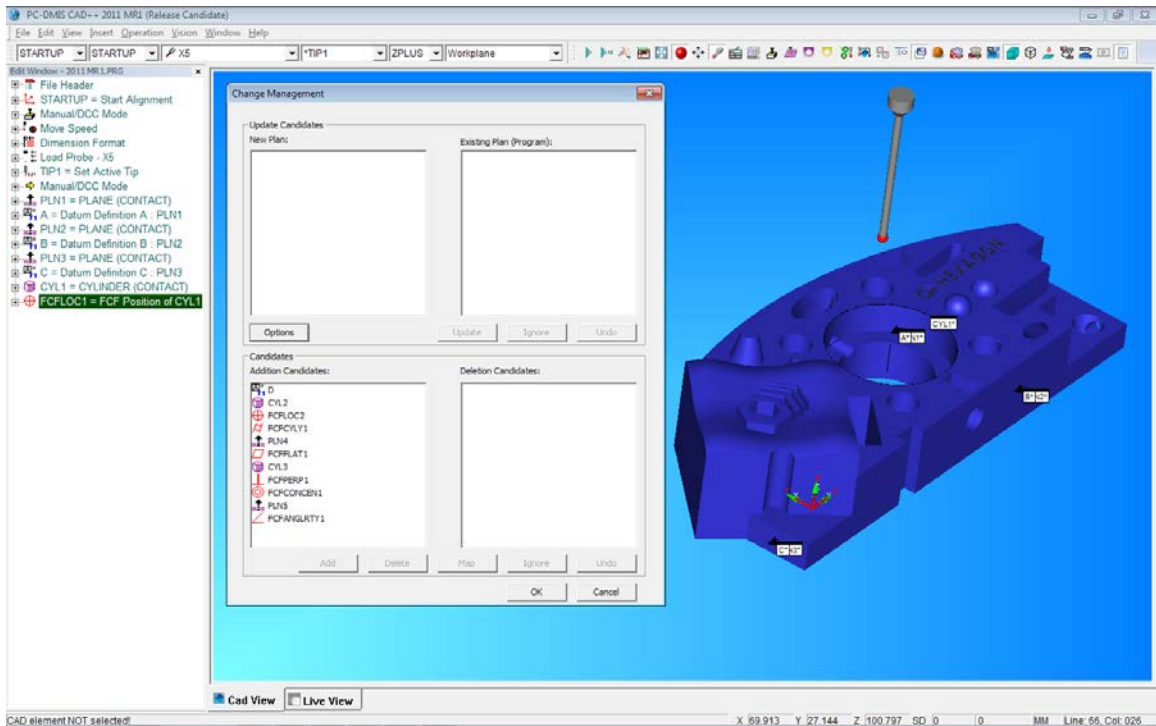
Automation

- Added the PCDMessageBox object. Added these events: OnOpenExecutionDialog() OnCloseExecutionDialog() OnPCDMessageBoxOpen() and OnPCDMessageBoxClose()
- Created an initial framework for an automation test tool
- Added automation calls to support new version-specific path and registry access
- Added automation calls to support version display: MajorVersionNumber, MinorVersionNumber, and ReleaseType

CAD

- Implemented a GD&T translator with the CT Technologies translator
- Implemented UG / eTool interface

Change Manager

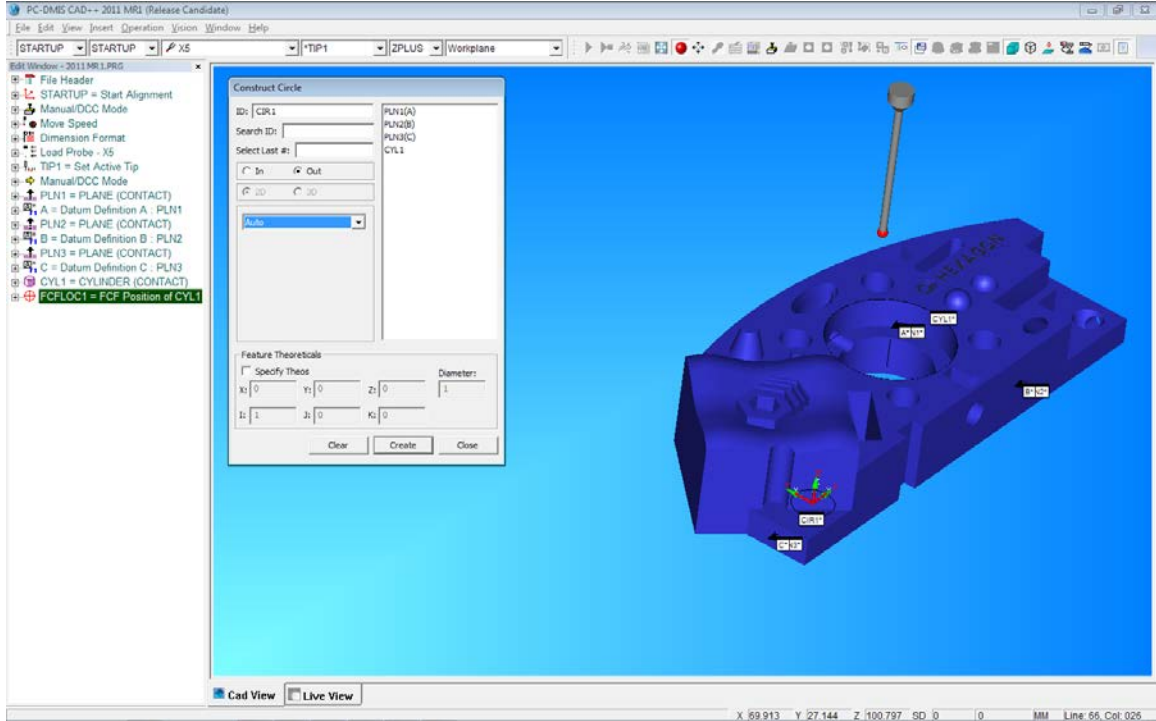


- Added Icons to Change Manager to identify feature types

Configuration

- Added a machine tool model for a 5 axis machine

Constructions



- Modified the Construction dialogs so they are smaller and will fit on a screen with a Y resolution of 900

CNC / NC

- Added Auto PH9 with NC Server
- Added Automation back into NcSiemens interface

Graphics Animation

- Added rotary table animation

Inspection Plans / IP Translator

- Added ability to export Comment commands when exporting to an Inspection Plan
- GD&T FCFs embedded in a CAD model can be selected and imported into a Part Program
- Added PC-DMIS naming routines for the features generated by GD&T selection
- Enabled an Add button to the GD&T Selection: dialog
- Added ability to show GD&T Selection dialog when adding a single GD&T
- Added ability to orient cylinder and sphere features from GD&T Selection to point toward current CAD viewpoint
- Added horizontal scroll bar to GD&T Selection dialog
- Added color highlighting when selecting and importing ebedded GD&T callouts
- Added automation deletion of newly added GD&T FCFs when 'Cancel' button clicked on GD&T Selection dialog
- Added automatic Editing of an existing part program command if user attempts to add the same GD&T FCF again
- Added support to import and export all comment types to and from inspection plans.
- Added a function that returns a list of CIPCommands from the current part program.
- Removed 'IP Translation started?' and 'IP Translation ended' comments when adding features using GD&T selection

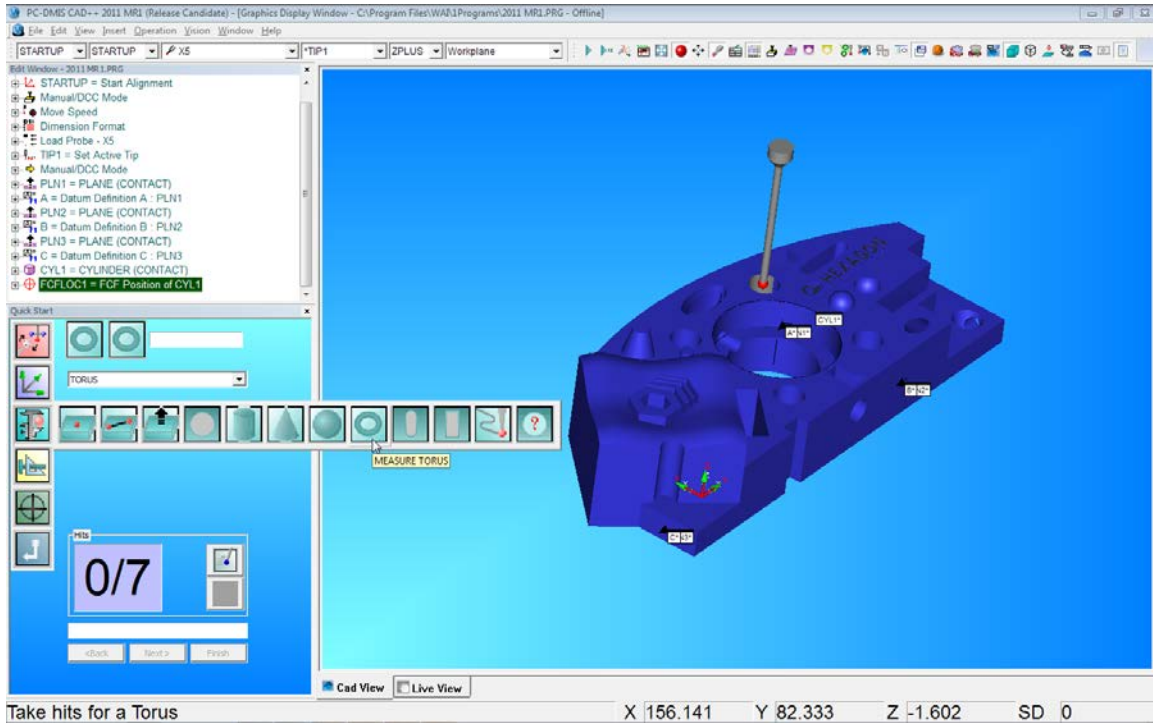
Interface

- Supported the Gemodek implementation of Leitz protocol
- "Optiv FDC : Created an HSI for use on the Optiv with FDC, SCL, and zoom controller" interface
- HMV : Added ability to select the sensor head number with PRECITEC 'CHRcodiles'
- Added [LongStatus1] in config to control delays and resending time-out (important for C98 ZEISS controller which uses UDP)

Live View

- PVG : Added the ability to zero the rotary axis when performing a Rotary Table alignment
- Optiv FDC : Added sending of PRBTYPE VIS command to the FDC.DLL controller
- Optiv FDC : Added trigger generation to Eagle framegrabber for FDC controller for every measurement frame captured
- Optiv FDC : Added trigger generation to uEye cameras for measurement frames
- Optiv FDC : Added a registry option to force manual focus during pixelsize calibration
- Optiv FDC: Added ability for CMM-V probe to work on the new FDC
- Optiv FDC: Disabled speed override during focus move
- PVG : Changed auto focus to always move to the focus point at the end of auto focus if it is the last item in the execute list
- PVG : Made it so the on-line execute next delay defaults to zero on all Vision systems
- Changed scale mark so it isn't overwritten from ring lamps overlay
- UKCO : Added registry option to disable the automatic taking of manual hits when releasing the mouse
- PVG : Allowed Multi-Sensor Machine to run just as tactile by not looking for framegrabber when Optics is set to None
- PVG : When fixed optics is used hide the magnification button

Measured Feature



- Created the CPCDtorus_feature command
- Created the Measured Torus edit window command
- Created the Measured Torus dialog box
- Added the measured torus to the Quick Start interface

Miscellaneous

- Moved graphics methods out of part program
- Added ability for basic part program archiving so that copies of part programs are created before saving and before loading part programs
- Added ability to turn on or off the part program archiving

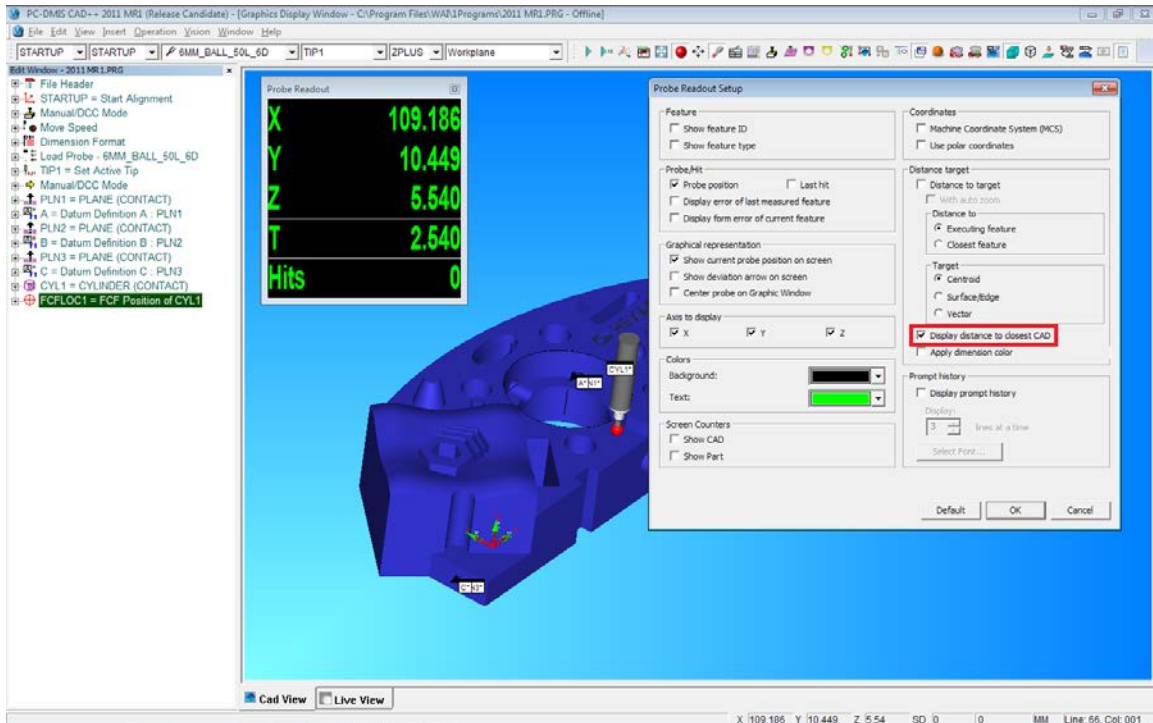
Non-Contact / Laser / PointCloud

- Added Tactile Plane measurement to the CMS Plane Calibration routine
- Added the 'On Error' functionality for Laser features at execution time
- WaiFE: Added the ability to generate an extended log to go more deeply into the evaluation functions, logging more info needed to investigate feature calculation issues.
- Calculated gap value based on the deepest scan points in the neighborhood of the theo point
- Improved extraction processing speed for Flush and Gap
- WaiFE: Provided the possibility to also pass the COP using a contiguous array of XYZ to improve data compatibility
- Added ability to send pointcloud data through a TCP/IP link to a third party package
- Added registry entry MaximumNumberOfPointsToUseInDimensions to make creating profile dimensions from pointcloud data more efficient
- Implemented Histogram and Matrix dialogs for the pointcloud/cad alignment
- Allowed selection of desired alignment for importing/exporting pointcloud data
- Added ability to store the normals for the points when importing STL point clouds

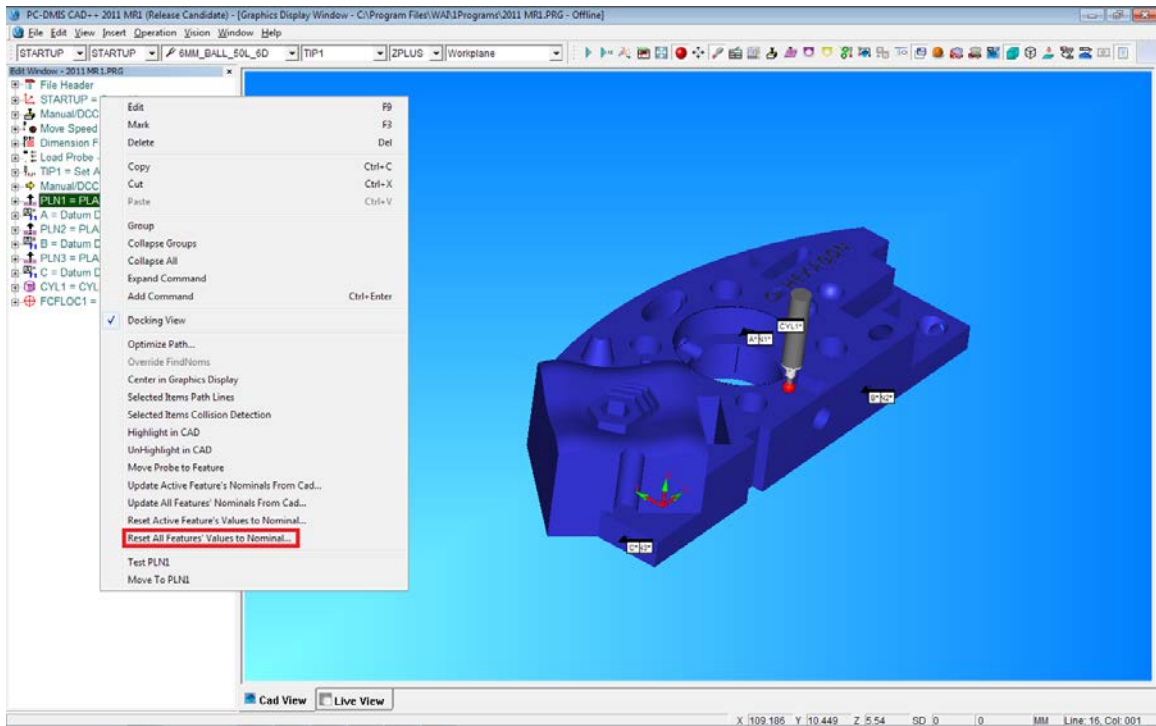
- Made PointClouds able to be unmarked
- Improved the export speeds of xyz and psl pointclouds
- WaiFE: Forced PC-DMIS to only use the WaiFE.
- Improved the WAI Feature Extractor to speed up the calculation of AF laser features
- WaiFE: Enhanced the 2D features calculation (circle, slots, polygons) and also improved their execution performances
- Improved Edit COP dialog box behavior and layout

Portable

- Added T-MAC Probe to the Probe Utilities dialog



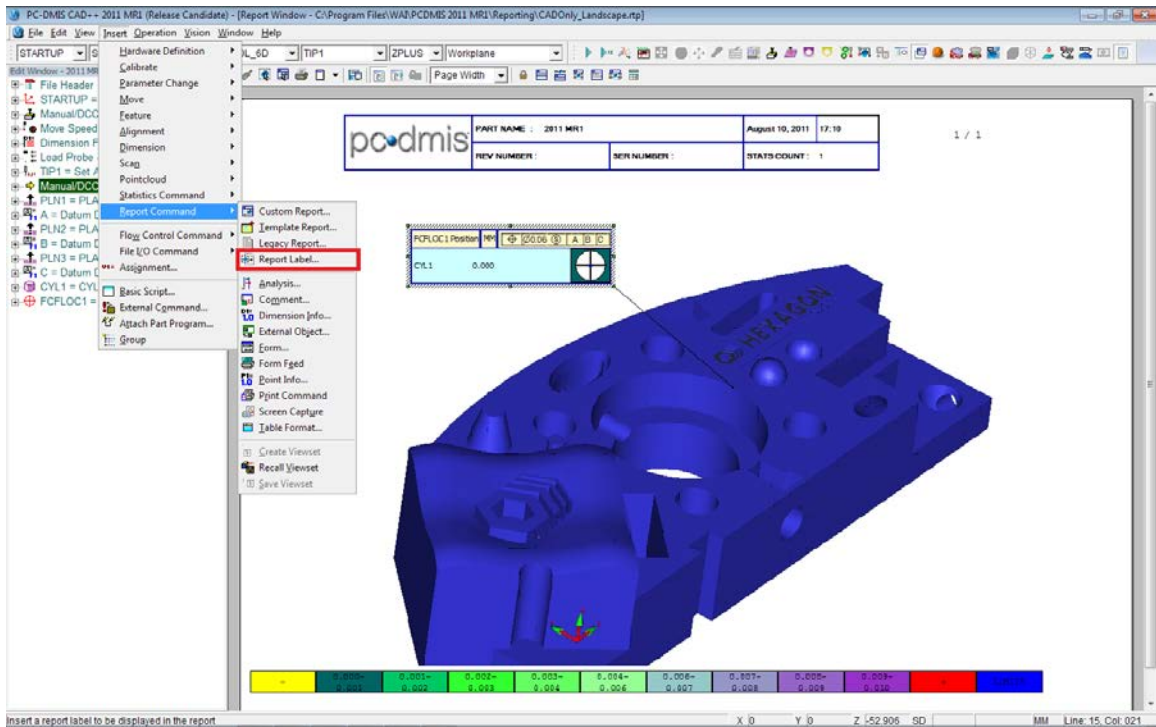
- Added T value (distance from probe's center to the closest point on a feature's vector) to the Probe Readout window
- Implemented Pin Nest usage for taking points
- Improved the Sound Events tab in the Setup Options dialog
- Added ability to use/keep measured point if FindNoms fails



- Added 'Reset All Features Measured Values to Nominal' to flush out all measured data in the Graphics Display window
- Improved the /portable:XXX command line switch so it works for offline only portlocks
- Improved 'Update Active Feature's nominals from cad' to support Auto Features
- Implemented ability to read part temperature from Leica meteostation and use it in the Temperature Compensation dialog box

Reporting

- Custom Report: Added a checkbox to PC-DMIS Commands dialog box to filter out invalid commands
- Added an update by ID option to the xml import



- Added a REPORT/LABEL command
- Added a GETTEMP() function to display temperature information on report header
- Added a 'Do Not Show Me Again' check box to the 'Could Not Open File' message that occurs when a label isn't found
- Added a COMMANDDATA expression to calculate or display information from the feature referenced by the command object from the Report Data event; for example, you can use the "RMS" string to calculate the Root Mean Square value of the feature.

Tool Changer

- Added a registry entry to allowed arbitrary slot increments during PMM-C Rack calibration

Toolkit

- Modified strategies so they have their own values for Prehit and Retract
- Created a threaded port command that measures a bundle of features (threaded hole, plane, and two cones)

User Interface / UI- Dialogs

- Changed probe display so it appears in machine coordinates on the screen prior to an alignment
- Added the ability to launch an alternate user interface
- Added locked folder option for CAT when opening part programs
- Created a new machine model for Lambda 50-25-20

XML

- Added a YES/NO toggle allowing XMLSTATS command to export CAD deviations to the XML file

2011 Major Release Updates (April 01, 2011)

Enhancements

- Added ability for user to save work before PC-DMIS exists when a network shuts down.
- Added a method to allow Sales/AEs to easily disable unwanted options on their locks based on the current demo or training needs.
- Made changes to solve problems from a new OGP software structure which no longer uses a separate dsp.out file
- Fixed so the VW reference part imports correctly to PC-DMIS and Planner
- Implemented a feature extraction library able to work with all the non-contact sensors supported by the company
- Implemented the control for Extrusion
- Implemented a feature extraction library where users can work with all the non-contact sensors supported by the company. Added the CONE element.
- Implemented a feature extraction library able to work with all the non-contact sensors supported by the company
- Changed CONE parameterization
- Optimized the tip change when angle does not change.
- Added HSSDAT improvements.
- Extended Edge Point and added RMeas info to the internal commands.
- Removed 'Shutdown' button from the Error dialog box.
- Added basic object hierarchy (PartProgram, Commands, and Command) for Automation 2.0
- Divided the Pointcloud Alignment dialog box in two screens for easier alignment in COP and CAD.
- Deleted the rough alignment arrows when exiting from the Alignment dialog box to improve the manual pointcloud best fitting routines.
- Added RS232 support to the new LK-Direct interface.
- Created IPCommand(s) from the selected CAD GD&T.
- Modified the appearance of the Pointcloud Alignment dialog box.
- Created a menu item for the Pointcloud Alignment dialog box inside the Insert Alignment menu.
- Built a skeleton of a dialog-based server to 'talk' CMM-OS.
- Redesigned the Flush & Gap creation process to update CAD selection and parameters definition.
- Corrected DLL for use in VW benchmark on manual machines.
- Changed title to 2011 and updated information.
- Migrated to Datakit's Version 6.6 libraries.
- Simplified Scan RDV procedure by adding a secondary calibration option in the Measure Probe dialog box.
- Added Cylinder Strategy to perform a centering scan on a thread.
- Added ability to change tips with same A/B angles during toolkit DoExecute.
- Applied the latest NMATH changes from the related surfer library.
- Limited the points used by the Wai Feature Extraction module to evaluate the feature to a maximum of 20 thousand.
- Added the ability to query a part's temperature via automation's ExecuteCustomCommand.
- Improved Automation Creation Tool to work directly with PC-DMIS Source Code.
- Added more startup log entries and permanently enabled logging.
- Added the ability to handle scan data in different units.
- Installed CTOV exe generator if SRM installs and added two shortcuts inside the licensing folder.
- Changed language handling so new installs of a version will reset the language for a user.
- Removed GreenKey warning message.
- Added calibration option to DCC measure sphere even if it has moved, assuming the same approximate location as before.
- Provided code to test the presence of HASP with EDM bit set in .NET.

- Fixed the Extended Edge Point so the TK commands don't update when tolerances get changed in automation.
- Added IgnoreSkippedFeatureRule registry entry to allow the users to ignore the SKIP rule.
- Changed Portable Laser so it will scale to fit while scanning.
- Added the ability to update Measured feature nominals from CAD AFTER the feature has been measured.
- Replaced the WAI Feature Extraction method for logging the clouds from a text file to a faster bin format.
- Added another menu item under Import | Pointcloud for STL so the user can import an STL file directly into the pointcloud object.
- Removed the ability to log under NCSensorsLogs for third party applications.
- Added ManualScan for Laser probes on DCC machines. Implemented the ManualScan Command.
- Added the possibility for the application bin2xyz to abort during conversion.
- Added Methods functionality to automation creation tool so users can create new functions or connect to existing functions as part of the bridge.
- Animated the rotary table.
- New icon added to GD&T selection button.
- Made feature-based laser alignment split the screen in 2 views: one for CAD and one for the COP.
- Removed the Move to Feature from the move rotary table dialog box.
- Reduced the amount of time the target and points are displayed on the screen.
- Removed the Feature Name text from the Live View when Multi-Capture is active.
- Added an option to show or hide the Live View positional text on the screen.
- Added the ability to change the Font Size for the text in the Live View.
- Added a Scale Marker to the Live View.
- Added a UI option where the user can set the point size or marker type for the measured point display.
- Added an option so the user can select if PC-DMIS will automatically guess the edge strength required.
- Implemented Freeform Line using the Freeform Plane as a basis.
- Added the Flush & Gap calculation feature.
- Fixed in Extended Edge Point - AudiExtendedEdgePoint MakeInternalCommands exception.
- Fixed in Extended Edge Point : EEP increasing the PRG file size by about 1 MB.
- Fixed in Extended Edge Point: The outer EEP feature now shows in the PC-DMIS dialogs.
- Allowed crashdump to be switched off from command line.
- Implemented new 'Clearable Error' flag in Emscon.
- Added Event Creation Handling to the new Automation Creation Tool.
- Enabled Pointcloud Box Selection for Cylinder, Cone, and Flush & Gap features.
- Fixed broken builds of ZEISS interface for older version of PC-DMIS.
- Created Licensing Scheme for Toolkit Modules.
- Added automation to Universal Jog Box (UJB) Project to signal when PC-DMIS dialog and message boxes are closed.
- Installed Zeiss upgrade / Caterpillar FR.
- Changed the current MultiCapture combo box to a check box.
- Changed large crosshair check box to a combo box with None, Small, and Large options.
- Added LEGACY_DIMENSION_RMS.LBL file to install.
- Added support for Auto Feature creation from automation to select alternative measurement strategies.
- Upgrade to Datakit v6.7 libraries to provide support for Catia V5 r20.
- Made Exposure changes available during calibration.
- Added support for Ring Gage Scan Calibration.
- Added support to allow writing/reading stripe information in pointcloud xyz files.
- Made the clearance distance on the qualification set by probe.
- Added CylinderCenteringThreadScan to BaseToolkitStrategies.
- Added correct reference to WAIToolkit.dll for Audi.

- Tidied up live image changes.

5. Contact Hexagon Metrology

For further information regarding this release of PC-DMIS® 2011 MR1, please feel free to contact sales@wilcoxassoc.com or visit www.pcdmis.com.

Hexagon Metrology Technical Support can be reached by calling (800) 343-7933.