CheckMate14 for SOLIDWORKS® changes

GENERAL

Version – 1283

Enhancements - General

- New utility for viewing a face name, and applying a QIF id as a face name: /#CMU,FACENAME.
- Productivity enhancement for loading large results files (without balloon tolerances). 9000 point sample went from 22 min to 1 min.
- The network stats logging now includes the CheckMate version and revision number
- The folder that CheckMate stats gets saved to can be set with the environment variable or registry entry CHECKMATE_NETSTATS_DIR
- Added a single click on a CheckMate Feature in the graphics area to highlight it in blue (select it) as if it was single picked in the cmbrowser.

Bug Fixes - General

- Implements workaround for broken API calls in SW2022.
- The "reference surface" code was fighting with the "body" code, causing /#sfsa,face to fail.
- Fixed existing tooltips
- Had troubles losing CMB license when performing simulation.
- Fixed some general issues with decimal place capture input/output
- System was crashing after passes import diagnostics (as a water tight solid) there is an edge attached to only one face causing the system to crash
- SW not completely closing leaving "splash" in the task manager.
- CheckMate installer path was accidentally not added
- removed the call to get DisplayMode to test for crash.
- CM12.1->CM14 CMX import of constructed circles producing shaded, red circles instead of yellow, hidden-line style circle.
- Fixed Issue with mouse cursor going into wait mode for no reason.
- Work around in place for that nasty SW2020 SP1 mouse event OpenGL transformation matrix bug.
- fixed crash occurring when CheckMate is unloaded while the browser is open.
- View changing on file load
- Box from /HOT+,BOX etc. was not disappearing
- Occasionally Origin Software keys were not being read in Windows 8 or newer.
- Annotations always reappearing after some CheckMate commands like label dragging
- Some CheckMate toolbars/flyouts removed to eliminate the SOLIDWORKS startup errors.

Versions up to 780

Enhancements-General to 780

- Did more work on fine tuning the import/export of Layouts from CM12.1
- /DISP,FIT has a new modifier 'TIGHT' to fit the image tighter to the viewport edges.
- INFOFITS report is now scriptable
- Also new choices for hot+ with unhide, and hot+ of visible only.
- Add cheat sheet button to AutoMeas area of browser.

Bug Fixes-General to 780

- Modified toolbars to prevent SW start up crashing.
- CheckMate commands stopped working after cancelling out of a CheckMate command.

- When importing 12.1 Layouts into CheckMate 14, the file opens in Model Layout and the paperspace levels should be turned off.
- When importing 12.1 Layouts into CheckMate 14, the CMMtext cannot be moved around with the shift-click feature.
- Issues with multi-threaded accessibility analysis.
- Fixed some internal code that would causing random memory crashes.
- Issue with red becoming white on CMX import.
- Loading of IGES/STEP/etc. with 3D Interconnect enabled.
- Random features turning hot randomly
- Issues with probe colour saturation when using multiple viewports.
- Issue with layers being purged when groups were deleted.
- Fixed issue with multiple selections in pop-up dialog. (the /hot-,lev would only hide the one level)
- CheckMate 14 desktop icon target fixed including SOLIDWORKS version number.
- Scan Data loader broke for scripting.
- Scripting multiple part fits and then running single parts on multiple part fits in a script not supported.
- Bug in our command processor that causes construction (and a few other) commands not to work depending on modifier order (what should have been arg[i] was arg[1] in several places, almost invisible in the font used in Visual Studio).

PROGRAMMING

Version – 1283

Enhancements- Programming
- New option for Auto Section: "3D chained". It sorts section fragments into sections by joining them end to end, reversing as necessary
- QIF2SEG - Added support for datum labels like DATUM-A and DATUM-B.
- QIF2SEG - The QIF loader now handles datums created from plane (as opposed to point) datum targets. This required a new CheckMate place construction type OFFSETPTS which creates an offset plane using the measurement points from the plane datum targets (this addresses the "DATUM-B" error screen grabs, 3 of them).
- Added 6+/6+ picking to CMTRANS (SoftOrient style).
- PC-DMIS loader: implementation of ASME_TOLERANCE_COMMAND begun with profile of a line.
- When importing a program, place magenta probe rotations closer to their actual location.
- CMM-Manager changed from "Nikon" to "QxSoft" is user interface and program comments.
- CMM-Manager DMIS flavored to SAVE/RECALL DA instead of D, and passthrough FEDRAT are suppressed.
- Add support for START_ANG/END_ANG in PC-DMIS loader.
- PC-DMIS PROGRAM ADVANCED LOADER NEW SWITCH - For converting partial AUTO and CONTACT circles into CheckMate arc measurements.
- PC-DMIS PROGRAM ADVANCED LOADER NEW SWITCH - for making PC-DMIS AUTO and CONTACT features auto-mode in CheckMate (disallows partial circles unless they are converted to arcs via switch above.)
- MLB output - ON ERROR RESUME NEXT and ON ERROR GOTO 0 bracket input from SYNCHFIL.TXT for MLB SoftOrient to avoid "read past end" error.
- Can now clear the Balloon# field globally.
- New logic for MCosmos probe positions that doesn't require the underbar character to be ASCII hex5F.
- PCDMIS loader:

- o a) /AUTOCORRECT parameter causes sample hits on trims to be projected to nominal depth.
- o b) /AUTODISTB parameter causes TOL/DISTB tolerance nominals to be recalculated from feature nominals (default behavior is that nominal is taken verbatim from .BAS file)
- o c) Superfluous TEXT/OPEN,' ' statements removed
- METROLOGIC CSV loader/QDAS output:
  - o a) Feature label suffix _1, _2 interpreted as cylinder top/bottom only on XYZ values.
  - o 4-point width measurement support added. Significant coordinate is one with deviation, deviation is the maximum over 4 points. Feature label for XYZ values must include "width" (case insensitive)
  - o b) Rectangular position (with repeated feature labels) now have label suffix _X, _Y, or _Z based on significant coordinate axis.
  - o c) Only 1 significant axis is associated with position, unless /1DIS2D parameter is used in which case a second axis with all results at nominal, if available, zero otherwise, is associated.
  - o d) XY/YZ/ZX deviation to position deviation correlation (to handle mismatched feature labels) improved. All reported missed cases not handled. Mismatched form tolerance label "breaking chain" now tolerated.
  - o e) Cone with 2 coordinate position and 3rd coordinate tolerance now supported.
- Auto approach/retract in place for QIF parallel planes.
- Tolerance UUIDs preserved during Calypso program import.
- Enhanced AutoMBD with Assemblies.
- CMEXPORT now allows only checked segments to be exported.
- "Export CheckMate Database" now supports outputting only the checkmarked segments.
- "Enter operator instructions" default comment no longer appears in programming browser Comment column (this column can be used to view original Japanese language feature and tolerance names)
- Text changed for composite tolerances in defaults and edit dialogs.
- Verbose messages for CMEngine QIF2QIF DMIS/PPG import (in terms of DMIS+QIF keywords so no regionalization required).
- MeasALL - The "Min height/width" column implemented. "Min height/width" looks at the four corners of a face and if the distance between any two corners is less than the "Min height/width" then the face is skipped. It's smart enough to realize that the corners of cylindrical faces can touch and doesn't check that distance. This is used to prevent measurement on small planes (like those inside a logo) and short cylinders, for example.
- GD&T balloon styles fully implemented and set up in Programming Defaults.
- New "CAD Ass'n" column in CMBrowser
- MeasALL now supports sheet metal mode where it will measure all selected features on a picked face.
- AutoMBD now supports Threaded PMI modifiers GG(LSQ Association Criterion), GX(MAX-INSCRIBED Association Criterion), GN(MIN-CIRCUMSCRIBED Association Criterion), SX(Maximum Size), SN(Minimum Size), SA(Average Size
- CMTHICK now support the use of HOT existing surface points to do multiple occurrences of CMTHICK checks.
- Creating Datum labels now only requires 1 pick
- Implement 'moves holes/slots to surface' for LKCamio, on output program screen.
- CMTHICK now support the use of multiple existing surface points (by picking the yellow tieline) to do multiple occurrences of CMTHICK checks.
- Features that are Hot AND Selected are Magenta colored. Features that are Selected are Orange colored
- QIF2Segment Added the justify INNER/OUTER thing a switch.
- QIF2Segment Added a switch to flip all faces.

- AutoMBD now supports viewing Output Tolerances as original names as well as numbers, controlled by rightclicking CMB settings.
- AutoMBD now supports commas and decimal places in the PMI.
- AutoMBD now supports not creating measurements for surpressed DimXpert PMI
- AutoMBD Suffix setting using ".1" format stopped working.
- AutoMBD After supressing PMI, AutoMBD caused a SW crash.
- QIF2Segment enhancement to support circle outers that had a centre point and vector like a circle inner.
- Added new option in CMBrowser in the title area called "Display Tol Balloon Numbers in Place of Tol Names".
- Interaction among virtual features, virtual segments, and after the fact constructions cleaned up
- There are right click on column switches for highlighting faces or annotations on selection (highlighting annotations on selection is also now an option in the programming browser too.)
- Implemented CMTRANS differential scaling in CM14 and it can be used to scale actual STL files.
- When SHpic dragging a feature we get a Live readout of current mouse location.
- On 'Edit Picked' screen, you can change the x or y or z nominals and then hit the 'Project' button next to them to get correct vectors.
- QIF2Segment We no longer rely on the QIF of the face for checking cone and cylinder inner/outer, we use the whole CAD model.
- QIF2Segment We no longer rely on the QIF of the edge for constructions, we examine all edges for one with the same parameters as the QIF features (location, vector, size)
- Implementing Sim Spheres
- AutoMBD Was creating strange measurements on 1 particular file.
- AutoMBD and QIF2Segment now support ++/ tolerances
- You can create a virtual feature segment. This segment will be used to create virtual datums for the GTM via a flavor of /#SFI,FAKE.
- ++/ tolerances are supported for diameters (as per ISO limits and fits). Currently, this is programming only. Reporting will need to be updated. Both MBD and QIF loaders support ++/ diameter tolerances. In the programming browser, tolerances are now displayed as ± or /+ instead of the old +/
- QIF2Segment - Much work in place to handle incorrect INNER/OUTER for QIF cones, conical segments, and cylindrical segments. Some require the QIF id to be on the SW face in order to work.
- QIF2Segment - QIF lines are measured along the middle third
- QIF2Segment- QIF circle constructions in place. Not 100% reliable, there are no QIF hooks between the circle and the face edge. If no construction can be determined (like currently for lines), then the 2D feature is measured
- /#CMS,PATH creates a simulation path (SIMULATE01) and a line path (SIMULATE) with red=rapid, yellow=measure. What is new is instead of the SIMULATE group being hidden, its level (SIMULATE) is turned off
- /#CMS,SPHERES creates a simulate path (SIMULATE01) and a set of spheres at each touch point (SIMSPHERES). Its level is turned off (SIMSPHERES). We need to come up with a user interface for switching between program view, SIMULATE view, and SIMSPHERES view
- Balloon numbers and tolerance names are now separate. Both MBD and QIF loaders support this
- The programming browser now displays Reporting only DRFs (previously it only showed the DRF if it was enabled for programming). Reporting only DRFs have an "R" suffix
- ENT   UV grid setting looks more accurate on circular faces

- AutoMBD Low probe rotations now higher. Minimum depth for probe rotations beside part is now one half of part height @A0B0. Probe rotations above part will be higher.
- This update preserves the location of an initial coordinate system. Any autogenerated sub coordinate systems will be aligned to that initial coordinate system.
- Implement 'moves holes/slots to surface' for Renishaw Modus, on output program screen
- QIF2Segment create a forced coordinate system at the beginning of the program that could be checked/unchecked to switch between car body and tooling coordinate systems
- The PCDMIS loader has been adjusted to explode these weird multireference FCFs for concentricity, parallelism, perpendicularity, etc.
- Place Datum Labels on the datum Feature for AutoMBD and QIF2SEG
- Add the Feature Replacement Capability as the last pick of a Measurement command
- the normal/raw points setting in the output dialog does not affect DMIS outputs
- Size of a constructed plane to be based on the features used to construct it.
- now implements meta data capture and output
- added a switch to the radius tolerance dialog box to calculate the radius from nominal center at each point measurement.
- Metrologic CSV output added (/#SFO,MCSV)
- QDAS output added (/#SFO,QDAS)
- Bidirectional tolerances can now be min only and max only (need to implement for SW and QIF too)
- All 10 SW symbol library balloon numbers are recognized by MBD loader, no need to add them as user defined. Only the number is captured regardless of the state of the number only switch on the MBD loader.
- MBD loader support composite position and profile
- MBD loader captures number of decimal places from SW annotations
- First implementation of SW DimXpert balloon numbers for AutoMBD.
- beginning to implement Support for MBD Reference Planes
- Added support for PCDMIS CONST_WIDTH3D_FEATURE command. This command does not appear in the PCDMIS documentation we have. It appears to be a FEAT/PARPLN type feature constructed from 2 planes. DMIS does not support this so I went with a CONST/PLANE,...MIDPL.
- Created a new Probe builder application that supports multiple configuration to support probe changers
- AutoMBD "Use SOLIDWORKS Inspection balloon numbers" on MBD loader screen is now a tristate button to chose between normal and shared balloon numbers
- AutoMBD Shared SOLIDWORKS Inspection balloon numbers become X.1, X.2 etc
- Added probe movement, probe selection, and Accessibility Analysis internal to a feature
- Added Multiface GSURF capabilities
- Support to use SOLIDWORKS Inspection balloons as characteristic labels
- Enhancement to the output of A1/A2 angles. Changed the DMIS output to create both a +axis and axis nominal features so that the "(supplemental)" never appears, you will still get "(absolute)"
- Added more Enhancements for Autocreating a Coordinate system from two Datum Pattern features
- implemented support for "imported curves" which is how those cross sections
- user interface for setting tolerance # of decimals
- QIF # of decimals captured
- # of decimals preserved in DMIS output
- composite profile comes out as 2 profiles in Calypso
- Forced coordinate system only update Calypso program transformation if it is the first element in the program segment.

- For QIF2Segment Our interpretation of the "small end distance" on cone measurements was too literal resulting in the cone measurements not being on the face. We took the distance to be along the vector, it's just a nondirectional distance either up or down the vector.
- For QIF2Segment partial cone measurements implemented.
- For QIF2Segment When a datum points at more than one cylinder we now check if these are different or the same cylinder (same location/axis/diameter/length) and if the latter we construct a cylinder instead of creating a pattern
- Completed the fine tuning of GSURF/Constructed GSURF editing.
- For constructed GSURFs I've got the point drag updating, point remove updating, and CMCREM/CMCADD updating in place.
- Improvements to collision avoidance; the probe path around the bounding box containing the collision zone has been reworked.
- Now change cylinder measurement depths during Accessibility Analysis
- for AutoMBD a new choice for multiface surfaces: Per face tol'd.
- for AutoMBD add the ability to have ballooned tolerances sorted numerically at the end of the program.
- for AutoMBD added the ability to have output as ballooned tolerances at the end of the program.
- for AutoMBD first cut at adding the ability to have output as ballooned tolerances at the end of the program.
- Simplified the questions asked during creation of Probe Configurations.
- CheckMate now allows coordinate systems to be created from just 2 datums if the secondary is a pattern feature. The MBD loader now pays attention to the Duplicate/A/_A/.A/_1/.1/… switch with or without SolidWorks Inspection balloon numbers.
- The tangency dimXpert dimensions are now ignored.
- The SolidWorks Inspection balloon numbers are now associated with a 3D oblate spheroid location strategy to help find balloons out of the annotation plane.
- Improved perface multisurface measurements in MBD program loader.
- Added Joined/Perface/Exploded Gsurf measurements in MBD program loader.
- Redefined nominals are output before LOCATE coordinate system for Metrologic
- PPG nominal point vector is taken from GOMEASURE/MEAS_DIR over FEAT definition
- User interface added for circular GOTOs.
- User interface for projected tolerance zone added for (cylinder/parpln) position and orientation tolerances (parallelism, angularity, perpendicularity.
- Work around in place for picking on sketch entities imported from IGES (STEP?) where SW killed the property manager page (action line interface) for no reason.
- DISPLY/ and VFORM/ statements removed, DMESW/COMAND,'FILE/STORE... in place for MCOSMOS targeted DMIS so settings in Pure DMISPAK translator don't matter as far text results file are concerned.
- TOL/PROFP has datum reference frame suppressed for MCOSMOS targeted DMIS so it isn't suppressed by Pure DMISPAK translator.
- CheckMate detects when the action line property manager page is dismissed by SOLIDWORKS (for reasons unknown) rather than by the user and restarts it transparently. This situation was found to occur when picking sketch entities from a particular imported IGES file.
- Improved simulation (AA and CD) or probe rotations. Beginning enhancement for moving the rotation of the probe itself into the kinematic simulation.
- QIF Loader Improvements Boundary scans no longer have first and last points near each other.

- QIF Loader Improvements Loader know pays attention to minspacing parameter for surface and plane. (UV Settings for surface/plane) Points closer together than this minimum spacing are discarded.
- QIF Loader Improvements If only one point remains on a surface measurement after filtering, it is moved to the center of the face.
- QIF Loader Improvements Arcs on cylindrical segment features are now centered along the length of the cylinder
- AutoSection Previously a section name (with open segment for each section) like "Section %d" would result in segment names "Section 1", "Section 2", etc. Also, previously a section name like "Section %d of %d" would result in segment names "Section 1 of 5", "Section 2 of 5", etc. NEW is a section name like "Section %.0f" will result in segment names "Section 800", "Section 850", etc. and a name like "Section %.2f" will result in segment names "Section 1.25", "Section 1.550", etc.
- Torus measurement corrected for interactive measurement
- QIF output of constructions more filled out (not complete)
- QIF input tolerance indirection via generic features handled
- Beginnings of implementation of multilanguage notsupported logs for PCDMIS, DMIS, Calypo import.
- Convert multipoint surface measurements to scan mode, by selecting 'Change Mode' after right clicking on the feature in the Programming Browser.
- Modus Output from CM14 to report True Position at CMM & adjust CM14 loader accordingly.
- Torus Inner measurement now has a Torus outer movement to get around a post.
- for Calypso Output corrected start point/sweep for lefthanded arcpaths.
- for Calypso Output Created utility to poke step/points to measure 10+ points on line scans and 20+ points on arc scans. Also in the same utility to condense GTOL marked tolerances into one.
- for Calypso Output FEAT/PATERN datum explode to 2 datums for complete DRF in TOL/PROF.
- for Calypso Output constructed intersection points from line and arc scans with nominal planes for TOL/PROF.
- for Calypso Output for arc/line plane put all paths in one PAMEAS statement
- Multiface or single face radius measurements (AutoMBD) with tristate selection: checked = all faces, greyed = first face only.
- New MCosmos load button on probe dialog. When prompted, select all PRB_ASC.00# files you want to import angles from (they get sorted numerically by filename)
- BF,F(label)[index] flavored for CMMManager to raw points + FA(label_PT1) etc. CMMManager flavoring FEAT/ARC output as FEAT/CIRCLE
- Other Nikon CMMManager flavoring (mostly suppression of valid DMIS 3.0 commands not supported by CMMManager)
- Enhancements to MBD Loader Added 'automixed' to plane/surf strategy.
- Enhancements to MBD Loader Added 'Ignore BASIC Dimensions' checkbox.
- Enhancements to MBD Loader Added ' Measure radius dimensions as arcs' checkbox.
- Calypso Program Loader Datum Labels are now derived from the Calypso feature label.
- Calypso Program Loader A feature referencing a coordinate system created from itself does not cause said coordinate system to be created.
- Added ability to change the CMM Mode on selected items in the CMBrowser
- Added Hotlist and % values to the 'filter' option of /#cmu,augedit
- New "Model OR def" switch in cmdef
- /#cmu,augedit to filter/sift/etc. augmented lines (scan measurements)
- DMIS load button for probe angles in place

- PCDMIS HLL fixed
- PPG loader enhancements
- Modified the Calypso Output to add support for partial circle scans
- Modified the PCDMIS program loader to add support for Generic Constructions
- Enhanced Metrolog output GSurf being constructed from Lines, which Metrolog is saying that the line is not point reducible
- Enhanced Metrolog output cylinder constructions with no FA() being passed into the construction
- Modified the PCDMIS program loader to add support for point measurements in polar coordinates
- Modified the PCDMIS program loader to add support for when not specified, workplane wakes up as the XY plane
- Enhancement added vnew mixed strategy option(Plane/surf) in QIF loader (for internal testing)
- QIF Loader Added a setting for ignoring features with a face less than a certain size
- QIF Loader A LOG file is created in the same folder as the input QIF with the same name and _LOG.TXT appended
- QIF Loader The LOG file will display after the import by selecting the "display after input"Switch
- QIF Loader Torus and Toroidal segment features use the face to override the INNER/OUTER setting if appropriate
- QIF Loader Cylinders with a limited sweep appear off part is fixed
- Simulation/fixture colors are brighter and match SW colors more closely
- Picking a face over a facet model now keeps most up screen vector of face or facet model
- PCDMIS Loader This update addresses the PCDMIS N_HITS issue. If N_ROWS is present then the number of hits is now N_HITS x N_ROWS
- QIF Loader The QIF loader captures the part number (if present) from the QIF document and populates the header default and sets the CMM report switch automatically
- A forced coordinate system will transform nominals in a "bare minimum" Calypso DMIS program. No coordinate system rotations or translations are sent to the CMM. The forced coordinate system will properly transform CMM results back into CAD space.
- Hovering over MBD annotation in graphics area highlights associated tolerance or datum in programming browser.
- Can pick a tolerance in the dimXpert tree to measure in auto measure mode
- Old fashioned trim edge picking in place
- Picking a CM entity will select it in the browser
- Added new convert functions: Cylinder to Circle, Cylinder to 2 circles, Cylinder to 2 circles + Cyl Construction, Cylinder to Line.
- Convert a cylinder into a circle
- Added ability to inherit tolerance values but not labels from a feature. (NOTLABS option to /#CMINHERIT,TOLSONLY… /#CMINHERIT,TOLSONLY,NOTLABS will inherit tolerance values but not tolerance labels)
- Added support for 2D and 3D best fit alignments as LOCATE/SoftOrient coordinate systems.
- PCDMIS Program loader. Added support for input flavor of comment as DMIS PROMPT statement
- PCDMIS Program loader. Added support for variable assignment as DMIS ASSIGN statement
- Added $$ var=ASSIGN/expression passthrough command (requires user editing)
- PCDMIS Program loader. Added support for generic feature construction (requires user editing)
- Preliminary support for QIF>scan mode measurements.
- Enhancement to the Zeiss Calypso loader to handle the naming resulting from DMIS file import.

- Added the Intersecting of 2 cones to get a circle.
- Enhance AutoMBD with datum pattern support, just like 'QIF2Segment'.
- Completed the enhancement of adding a UUID column to the programming browser.
- Option added for curve scan with turnaround breaks.
- Added new Selection Dialog Box to the right click menu of the CMBrowser.
- Added in the Browser the ability to Uncheck all dependent Features when unchecking, hold the SHIFT key down to automatically uncheck additional items that use that feature (balloon tols, datum labels, cs's, etc etc)
- Added ability to select program entities based on reporting entities
- Endpoints trimmed off of AutoMeas flow and mid.
- On the Output program screen, the switch to "move holes/slots to surface" now works for Modus output.
- Performance issues addressed along with memory management improvements, any issues are output to Log file.
- AutoSection/AutoMeas recognizes splines.
- New simulation with view manipulation.
- Added support to load the OpenDMIS FEAT/GCURVE actual point data format
- Added support for CheckMate Fixtures.
- OpenDMIS flavoring: All GSURF and GCURVE forced to GCURVE…PTDATA
- OpenDMIS flavoring: Approach vector on PATH/ARC but not on PATH/CURVE
- OpenDMIS flavoring: SCNSET/DRAG,DIST at beginning of program
- TOL/DISTB on GCURVE now uses whole feature (all DMIS flavors)
- New flavoring for OpenDMIS: Translate to point coordinate system needed MEAS with 0 points
- New flavoring for OpenDMIS: PARPLN is output as 2 planes with a midplane construction and distance between for the width
- The material conditions on datum references are turned off if the feature isn't a feature of size, in the particular case of OpenDMIS a reference to a PARPLN datum at MMC is set to RFS because a constructed plane becomes the datum. (all DMIS flavors)
- Support added for using CMM models for simulation.
- Add ability to program constructed GSURF and GCURVE.
- Enhanced the command to Assign a Datum Label allowing all datum labels to be picked in one command execution.
- Added support for "unlessotherwisespecified tolerances" notes.
- Added support for Solidworks Inspection balloon numbers
- Added Construct cone from measured cone (making a TR copy)
- Output scanned cones with scanned surfaces as well as scanned arcs
- Can drag planar surface measurements up and down the perpendicular vector.
- Can drag individual levels of multilevel features (such as measured cylinders and cones)
- When dragging an individual hit of a multilevel feature (such as measured cylinders and cones), using the right shift key will force the same measurement on the other level(s) to be moved to the same location.

Bug Fixes- Programming

- Dragging internal probe moves with rotation drops rotation.
- Forced coordinate system randomly changed when looking at it in the edit picked window and then hitting OK.
- QIF2SEG - Arc measurements created off the part.
- Camio DMIS output now adds the list of FA()s after the BUILD minor word when a compound feature or pattern is constructed (this address the "too few parameters" error screen grab).
- There was a bug in the code that was supposed to disable circles are thread measurements when checked on the QIF2Seg screen.

- Fixes the issue with face highlighting and constructed datum features.
- PC-DMIS loader: warning issued in LOG and DMIS if surface and edge vectors on edge point are parallel.
- PC-DMIS loader: target points for AUTO and CONTACT circles repositioned based on nominal center and probing directions.
- PC-DMIS loader: probe info file name used to deduce probe diameter if name ends ##X##, first number is probe size, second is extension length.
- Metrologic DMIS output: issue with turndown of approach and retract on slots fixed.
- Metrologic DMIS output: SAVE/D() and RECALL/D() are now SAVE/DA() and RECALL/DA().
- A balloon position tolerance was marked as old-time but had new-style datums sort of. You can now edit it.
- programming browser glitch, old-time datums were being ignored in the FCF.
- Fixes issue with trim surface vector being cleared to 0,0,0 and so defaulting to 0,0,1
- Fixed some issues with projected tolerance zone display in FCF frame text.
- PC-DMIS loader: addressed argument error with contact line, different number of points and number of vectors now handled.
- PC-DMIS loader: PERM_HITS with SetToggleString now handled with 1 (false) resolving to 0, and 2 (true) resolving to 1. Interpreting 1 as 1 was causing false positives for RMEAS/VECBLD.
- PC-DMIS loader: EVAL of datum size only coming out for tertiary datum, fixed for primary and secondary.
- Metrologic DMIS output: CORTOLS on LINEs cause nominal midpoint to be projected to the actual line creating a new point to which the CORTOL is applied, Metrologic does not support CORTOLs on lines.
- Metrologic DMIS output: sample hits examined and if three hits have non-matching vectors, the one hit that doesn't match the other two is kept and a reference point is used in place of a reference plane for RMEAS. PC-DMIS relative measure of an edge point using one point on surface and two points on edge has no DMIS counterpart.
- QIF2SEG was giving an error when trying to process the first cylinder.
- Metrologic issue with distance between two planes, it was forcing the axis to PT2PT.
- Fixes some reported issues with limit tolerances using QIF2SEG.
- Improved accessibility analysis: probe now extruded between approach and touch instead of being snapshot at either end.
- Balloon Tols not handling limit tols correctly.
- QIF2SEG parallel planes feature INNER/OUTER switching.
- QIF2SEG - limit tolerances on ballooned tols incorrect.
- QIFSEG substitution crash.
- Adds support for some PC-DMIS HLL like ELSE, ELSE IF, JUMPTO.
- Adds support for PC-DMIS measured polygon, 6 sided only, 7 or 12 measurement points only (covers all sample programs we've seen)
- CMM-Manager DMIS flavored to handle HLL reference to constructed GSURF (which isn't supported) by redirecting to first feature in construction.
- CMM-Manager DMIS flavored to nominal reference features like Modus does: F()=FEAT + FA()=FEAT and then treat all references as FA instead of F.
- Undeclared variable from PC-DMIS import fixed.
- Re-declaration of variable from PC-DMIS import fixed.
- GSURF and GCURVE forced to non-PTDATA format for CMM-Manager.

- CONST/GSURF commented out for CMM-Manager (unsupported) (MCosmos as well).
- TOL/PROFS from a constructed generic surface causes TOL/PROFP from all point features used in construction (MCosmos as well).
- Fixes A PC-DMIS loader crash, support added for GOTOs with less than 3 coordinates.
- Fixes A PC-DMIS loader found caused by polar points no longer having an XYZ placeholder in the BAD file
- Really Fixes PC-DMIS loader issue with extraneous before and after GOTOs if feature has internal circular GOTOs
- Fixes PC-DMIS loader issue with extraneous before and after GOTOs if feature has internal circular GOTOs
- Fixes crash Cecil encountered with Modus DMIS output
- Outputs DMESW/COMAND,'FEDRAT/RETRACTION=###' for MCosmos manual measurement retract distance
- Doing Edit Picked and clearing the Balloon number field doesn't work if there is a value in the Tol Name Field.
- Shift-del of whole segments with circular references now works (previously, /#CME would block because of dependencies).
- Issue with programming browser Prb. Acc. column background color bleeding into other columns fixed.
- Issue with FCF font being used in other programming browser columns.
- There is no hook between datums A,B, or C and a feature in that QIF file. That's why simulated datums were created. But then, the datum targets (which are hooked to features) were used to deduce a datum feature. So you ended up with two As, two Bs and two Cs. FIXED.
- "save-as-PRB" issue was on the CheckMate side. The first (and only) rack position being 2 instead of 1 was the root cause. Now handled.
- Probe definition in the output program for LK DMIS showed 0mm probe diameters.
- A not created from A Targets in QIF2Segment.
- QIF Datum A Targets were being created as nominal features.
- REL1PT slots should not be using CPARLN for MCosmos DMIS.
- Cylinder Length code incorrect for MCOSMOS PURE DMISPAK 3.017.
- Cylinder syntax error for MCOSMOS PURE DMISPAK 3.017.
- All slots forced to expanded mode for MCOSMOS PURE DMISPAK 3.017.
- Issue fixed with mapping between CheckMate CS names and MCosmos CS numbers when duplicate CS names used for PURE DMISPAK 3.017.
- All slots forced to Expanded for Pure DMISpak 3.017 output.
- QIF loader and output improvements regarding segmented features and spherical characteristics.
- All lines now forced to be bounded for MCOSMOS PURE DMISPAK 3.017.
- PC-DMIS/Metologic DMIS translation issues fixed.
- Glitch in auto(AutoMBD/QIF) loaders where tolerance source setting ignored unless DEFAULT group already existed fixed
- QIF2Segment distance between with odd number of features now handled (previously not handled, in x1206 caused crash)
- Coordinate systems using PARPLN features fixed
- MBD profile tolerance on features that don't have on-feature profile tolerance capability now become ballooned tolerances
- Japanese feature and tolerance names converted to English equivalent to prevent duplicate feature/tol names
- QIF2 Segment - Distance between on Hex features now work.
- QIF2 Segment - Cone measurements flipped.

- QIF2 Segment - file was producing constructed planes instead of measurements.
- AutoMBD - general cylinder measurement issue, causing measurement to be out in space.
- CAD Ass'n for trims now displays correctly.
- Fixed pick locations on picked sketch arcs.
- fixes the MEAS-ALL slots as trims issue.
- fixes the Modus supplementary angle output issue
- Having trouble extract rep ent from a colmap from an imported Calypso SAB & Segment
- Issue with datum reference frame enable flag from position and profile conflicting fixed (defaults and global edit affected)
- Rotation angles for forced coordinate system edit fixed (were negative of actual values)
- The scan data loader PTS constructions for cylinder/cone/sphere/plane/line/parpln have been reworked to explicitly grab the loaded geoactuals for the features used in the construction. Scan data loader PTS constructions for circle/ellipse have been added.
- LK CMES output now specifies the number of points in the sphere measurement.
- Global Editing of feature DRF's doesn't stick.
- undesired results when converting cylinder to circle outer.
- QIF2Segment - Mysterious datum/material conditions appearing in QIF loads
- QIF2Segment - Messed up tolerance labels on cone included angles
- QIF2Segment - issue with FW temp folder QIF documents
- Addresses the Vicivision loader change requested by Net-Inspect
- Reworks the dependency checking, moving conflicting position and profile tolerances from on-feature to ballooned to avoid circular references where possible. Segment may still issue a warning about a possible circular reference (features flip-flopping), but segment still sorts.
- QIF2Segment - issue with all the grey augmented lines on edges when loading QIF with the Plane/Cyl/Cone/Torus option.
- Fixes an issue with PC-DMIS FCF tolerances.
- Fixes QDAS K2009 tolerance type typos.
- QDAS cylinder position output in now split into base and end.
- QDAS all tolerances have a node defined.
- Fixed crash with weird, copied datum targets fixed.
- issue with cylinders one end outside of part fixed.
- QIF2Segment - Units on distance betweens at bottom of program. Fixed by finishing implementation of QIF optional linearUnit attribute support.
- QIF2Segment - Plane measured in space. If grid measurement fails, mixed-strategy is tried (*new*), before falling back on PolyLine definition with default outer stepback.
- QIF2Segment - Inaccessible full, feature outers on connections. Added a new switch to QIF loader to measure these as half-features based on most perpendicular machine axis:
- TLAB "Tolerance Prefix" radio button, in programming defaults, was not working and not sticking.
- Features that are Selected were red not orange colored
- Loading a probe was causing performance issues.
- AutoMBD the mbd for the slot length and width was all one line. as you can see on the left. Even adding balloon number at 2 spots, it still came out as the first number in checkmate browser.
- AutoMBD datum and tolerance leader lines going way off part.
- The DMIS loader has been adjusted to collect actual features from previous OUTPUT/FA statements and insert as needed after OUTPUT/FA,TA statements that only output TA and not the associated FA

- Collision detection was creating collisions after a probe rotation. fixed.
- Drag Animation disappeared fixed
- Hard Crash during Access. Analysis fixed
- SHpic drag animation disappeared.
- x,y,z's looked good in RepBrowser but not Text Report on 1 particular file.
- CMMOVETIGHTEN working now
- if the slider on the bottom of the programming browser window isn't all the way to the left P,A,M switches don't work.
- /#CMD,REPLACE,LABEL (FEATURE REPLACEMENT) did not change the regular surface measurement into the required gsurf
- CADpick issue should be edgepick.
- PCDMIS Program/Results loaders add support for half angle of cones
- Distance between from AutoMBD not producing the correct feature
- AutoMBD sets the second level of cone outer measurements too low
- Untoleranced distances now gwt interpretted at BASIC dimensions.
- CMWORKVIEWALL now funtioning correctly
- Cone problem with a 0radius circle error.
- The large diameter tolerances where cause by special tolerances being set to ±999mm.
- CMAUGBREAK was causing the new broken pieces to lose associativity to Constructions/ballooned Tolerances.
- Syntax issue with Calypso output of constructed line back to Datum Ref Frame.
- AutoMBD needed to use the "HARDDIST" mechanism to force the SW nominal as the CM nominal. (All program loaders use that mechanism.)
- AutoMBD Support added for dimXpert intersection planes.
- AutoMBD Support added for that distance arc end condition business. No change to the DMIS output other than the nominal is calculated differently.
- File with an 8 plane pattern was not being measured. It's now measured as 4 parallel planes features and the tolerances stick.
- fixes the issue where starting the Reporting Browser before the GTM messes up datum C.
- fixes the missing C datum issue and duplicate label issue
- Simulation was freezing with "Simulate with view manipulation" turned on
- QIF2SEGMENT was having problems with multiple parallel plane datums.
- Added /#COLMAP to scripting.
- Added /#COLMAP to scripting.
- weird "Pick next connector" behavior with auto connector off
- "Can only delete from open segment" issue with multiple documents
- GeoMeasure DMIS output issue with BFPROJ circles
- QIF2SEG no output on Gsurfs
- MLB output crash fixed
- DirectInspect output error left file handle open, had to quit out of SW. Fixed.
- Measurements not being placed on the correct faces when dealing with surpressed faces
- MLB Angle tolerance fixed
- QIF2SEG radius tolerance was applied to a surface
- AutoMBD Issue with FA(HOLE_PATTERN2_2) being used as datum fixed

- AutoMBD Issue with distance betweens missing features fixed (dimXpert label now used for hooking distance and angle between together instead of tolerance name which could be a SOLIDWORKS Inspection balloon number
- COLLISION DETECTION A very important minus sign went missing. The probe moves were correctly added to the inmemory probe path, but not to the CheckMate segment. So the inmemory path said everything was okay
- COLLISION DETECTION Bookkeeping issue with adding internal moves between existing internal moves
- AutoMeas Boundary/Edge crashing
- Multiface GSURF issues with AA, optimization, add moves/rotates, and CD corrected
- Outputting a program to Calypso cause a software crash.
- QIF 2 Faced code was being activated when it shouldn't have been.
- Composite profile created by the QiF loader was not being output into the resulting DMIS Program.
- Some attributes were left around on SFORIGIN and CMMPROGxx so that if you ran the MBD loader a second time on the model, DISTBs could be missed.
- Star Probe not working correctly in Collision avoidance code.
- Not all unballooned annotations were being processed.
- Constructed GSURF was not removing points when the original Gsurf points were deleted.
- MBD program loader created some cylinder measurements with the depths right next to each other.
- Fixed some Collision detection issues.
- fixed the disparity between the singlethread and multithread collision avoidance.
- Fixed redefinition of CPARLN (slot) nominal
- Fixed issues with defaults on various GD&T tolerances (cylindricity springs to mind)
- Output for probe changes without a probe rack for MCosmos was incorrect.
- Circle construction between Spheres&Cylinders and Spheres&Cones now works.
- Fixes to Accessibility Analysis and Colision detection that were giving different results between single threaded and multiplethreaded processor settings.
- measurement/construction of torus fixed.
- Construction of a slot from 2 circles output code for Modus giving 'not enough points' error message.
- QPId only allows stringent format, CheckMate UUID allows anything, default to string attribute when format isn't legal.
- Trim SProf was getting a double _SRF placed into the label name.
- AutoMBD went into an infinite loop and never came back.
- MLB bug in slot extra save construction command that didn't belong needed to be removed.
- Corrected code for depth settings for Holes output to Modus.
- Edge Points feature names changed in an Inline Soft Orient Alignment. Had an extra illegal suffix on the feature name.
- Measuring circle inners with defaults set to 4 points pick in face, result is a 4 point half circle measurement.
- did a lot of work fine tuning Arc Entities and Partial circles.
- When measuring a circle inner (default # points is set to 4), Pick on edge and everything looks fine...Pick on the inside face and all 4 points are spread out among 180 degrees. Fixed inside face picking.
- Circle (arc) measurement on toroidal faces fixed.
- did some tweaks to the surface/plane MBD autostrategy.
- Cleaned up Accessibility Analysis problems with Single Threaded vs MultiThreaded giving different answers.

- Output to DMIS now supporting Probe configuration lengths correctly.AutoMBD not finding DimXpert datum labels the first time.
- hard crash when when using AutoMeas on flowlines.
- INFILL did the first measurement, ignored (and left on the hotlist and gave an error) the rest of the measurements and locked up CheckMate.
- could not change PROG mode to SCAN mode using cmbrowser.
- Removed "Model OR def" option from AutoMBD screen
- New "Model OR def" switch in cmdef was stuck on
- AutoMBD creating full Arcs. should have been partials
- MBD feature numbering fixed
- pcdmis loader issues
- CMINHERIT not inheritting TLABS
- Adding a measurement at end of collision free program causes new collisions
- After running Collision Detection on highlighted items, CheckMate continues to perform ColDet starting at the beginning of the segment
- Using x948 outputting a program from CheckMate 14, GIVES a SOLIDWORKS hard crash
- Measure ALL missing partial cone and some out of place probe moves
- SHDEL on an open segment folder returns the error message that the segment must be open,even when the segment is open
- SOLIDWORKS hard crash when outputting programs
- Issue with interrupted simulation path generation which causes accessibility analysis to fail
- QIF basic angle for angularity now loaded
- The template CMX loader was overwriting existing groups
- If you prepicked features with the right click popup menu item "Pick+" and then did a construction you got a PTS method, instead of a BF method
- There is a new switch on the DMIS output to cause a fake feature and tolerance to appear in the CALYPSO DMIS program to transmit the part number to the _CHR.TXT file
- Weird auto coordinate systems created when no datums defined
- Measure All If cylinders are measured as circles then only 360° holes are measured
- Measure All Annoying warning messages on small hole suppressed.
- Measure All Size filtering improved
- Edge/boundary automeas functions stopped working
- PCDMIS BAS loader coordinate system recall fixed
- Auto MBD re program leaves unresolved collisions 14.0.919
- AutoMBD giving different (poor) results with workviews other than #1
- Cylinders can have negative lengths for PCDMIS 4.2 output.
- Issue with Datum C targets not being measured correctly when imported from QIF file.
- When Probe Move/Rot. button is selected on the Global Edit screen, SOLIDWORKS crashes
- Calypso PROGRAM loader fixes.
- DMIS loader improvements.

Versions up to 780

Enhancements- Programming to 780
- Added option to QIF loader for Pris3D, Pris2D, and Sheet Metal

- /@AUTOCLR2 has been replaced by /@AUTOCLR3. /@AUTOCLR3 relies on accessibility to be run.
- Calypso program loader implementation of radial patterns. We were assuming the pattern and the features were all coplanar. No longer matters now.
- Add Sheetmetal Audit Utility to automatically flip and change material side based on workview.
- AutoMBD to provide options for Prismatic3D(cylinders), Prismatic2D(Circles), and Sheet Metal(Holes)
- RightClicking a feature in a command now gives a third option to 'pick as connector' allowing items to be inserted at beginning of segment.
- CMCORDSUBMCS creates a sub coordinate system aligned to closest machine axes without prompting.
- QIF loader support added for twotier composite profile and position callouts.
- Add ability to program 3point slot measurement
- AutoMBD uncheck features that can't be measured due to CMM Setup.
- DATSET (creating a coordinate system) now works with features in addition to datums.
- Side to side clearance moves in for parallel plane outers modified to work without using SW call.
- More AutoMBD enhancements towards a collision free path first go.
- AutoMBD enhanced towards a collision free path first go.
- PCDMISIN Loader missed the length and width on "contact" slots.
- PCDMISIN loader improvements.
- Equator output now has CAL file per feature support.
- PCDMISIN Loader enhanced to handle 'not seen before' format for surface measurements.
- Enhanced AutoMBD to reduce the number of probe rotations using a penalty factor.
- Enhanced AutoMBD to uncheck unmeasurable features.
- AutoMBD now supporting more than 4 Datum A targets.
- FIXED slow left click followed by a fast right click (to delete a feature from CMBrowser) causes a SOLIDWORKS crash.
- /#CMU,PVCOPY to copy vectors from one feature to another.
- CMTRANS 2pick with coordinate systems.
- Now able to snap/pick on CheckMate WCSs for the purpose of CMTRANS.
- Added new measurement type "Edge Point" for creating 'trim' style measurements on non perpendicular edges. Procedure is the same as measuring a Trim Point, except the result is 2 surface measurements.
- Now able to select the internal and external angle for an all TOL RIBBON angle measurements.
- Output screen settings now saved on a per user basis.
- The RC Browser rightclick menu items now refer to "Fit Method" rather than
- "Fitting Type" for consistency with the fit method column name.
- Program loader support for parentheses inside single quotes now ignored when determining () nesting level correcting problem found with unpaired () in HLL if statements
- Added support for OMGeoRadialPoint as a single point surface measurement
- Added shortkeys on numeric keypad ('/'=flip measurement normal, ''=adjust material setting down the normal,'+'=adjust material setting up the normal, and '*'=flip feature normal and then adjust material setting up the normal.)
- AutoMBD needs to be able to read Inspection Dimensions
- For constructed local coordinate system added the ability to edit the parameters.
- Added Selection box for MBD/QIF Strategies
- Moved algorithm assignment so feature algorithm at measurement is based on the first tolerance output, not the first tolerance definition encountered
- At output the original Calypso nominal is compared to the feature nominal and if different the feature is redefined before output of a TOL/CORTOL (learn mode programming leading to differences in feature nominals and tolerance nominals?)
- Use EVAL/FA instead of EVAL/FA(),T() for algorithms changes
- Added option for onfeatureprofile, or groupprofile for MBD
- Added support for #OMCFRunoutAxial (previously assumed to be #OMCFRunoutTotal)
- Added modifier support for INNER/OUTER for constructed cylinders/cones/circles/ellipses/tori/spheres

- Migrated Calypso path splitting used for cylinders to planes
- Added support to Edit IJK on surface and trims
- Added Grouptol,legacy and leaderloc modifiers to the AutoMBD command string.
- Can now pick points on the workplane directly above the part.
- Measure MBD When a prismatic feature (plane, cylinder, cone or sphere) has only a profile callout, it is measurement as a surface, if it has no profile callout it is measured as a prismatic feature, new is that if it has profile AND other tolerances then it is measured as a surface and the prismatic feature is constructed from the points of the surface measurement.
- PCDMIS bas program loader Added RMEAS support.
- Measuring a thread. Using the circle command and picking the helical edge and programming the pitch and diameter automatically.
- Added Collision detection using faceted models.

Bug Fixes- Programming to 780

- A few of the corner radius cylinders not on part for QIF to Segment.
- Symmetry and total runout because loading Calypso DMO file not loading symmetry.
- Simulation/accessibility analysis/collision detection pays attention to manual probe rotations.
- QIF cone target points corrected
- Handling when datum B feature is a pattern of multiple hole measurements and the pattern is also used as datum C, controlling the secondary direction.
- AutoMBD not using the correct feature names from the DIMXpert tree.
- Sot measurements not being created when using AutoMBD
- DMIS loader not importing Modus angle betweens.
- Auto moves disabling an inaccessible feature but didn't pick it first.
- AutoMBD not making datums from Parallel Planes.
- Incorrect cone angle nominals.
- Auto coordinate creation not finding all Coordinate Systems.
- Trouble getting Modus Coordinate Systems angle info.
- WorkView 'Part Orientation' setting not sticking.
- When doing a QIF load, a warning message now pops up if the WorkView has not been set.
- Clearance moves before/after probe changes causing collisions.
- Auto Probe change plane tightened up.
- After the Coordinate Systems is created, it should be saved (Renishaw Modus Output)
- AutoMeas Pris3D should be creating cylinders, not circles.
- Improvements to auto probe moves and rotations.
- 5 point slot giving cparlin error in Modus. Now CheckMate forces a 6 pt slot at output time.
- Fixed some issues with PCDMIS Auto Mode of lengths of cylinders.
- Collision detection says no collisions, but Accessibility analysis says inaccessible.
- SLOT has length and width enabled but not outputting it in the DMIS file for Modus.
- REALLY Auto Insert Probe Moves/Rotations cause a slot measurement's normal to get changed.
- Auto Insert Probe Moves/Rotations cause a slot measurement's normal to get changed.
- Problems with Autosection creating a grid on a particular style of surface faces.
- Modus output now forces FEAT/GCURVE to add PTDATA regardless of the CheckMate setting
- Fixes the MMC and missing carriage return before the MEAS issues.
- AutoMBD was having trouble putting profile measurements on an inside groove feature.
- Spacing with midline won't get smaller than native spacing.
- Issues with SMAUDIT missing some features and flipping others that shouldn't have.
- The ? short key button was broken because the short key file was renamed.
- Fixed /@AUTOCLR3 bugs
- Viewport scale issue effecting imported programs to appear to be very tiny.

- Code that justified arcs was only firing in Pris3D and 'Sheet Metal', not Pris2D.
- QIF2SEG Prismatic 2D causing a feature to be measured as a circle outer but be marked as a cylinder outer causing SOLIDWORKS crash.
- Prismatic 3D Lines and planes graphics look like they are not using approach/retract default settings.
- Compare statements come out in the Renishaw Modus Output. Compare statements should only be for Renishaw Modus for Equator.
- Trim error "not a point" when outputting and running 2D trim on Renishaw Modus.
- AutoMBD 'Prismatic' Cylinder inner became a Hole Inner in 'Sheet Metal' and should have been a circle outer.
- File names creating folders with extensions.
- The QIF segment loader was having trouble with some partial cylinders.
- Issue with /#CMU,JUSTIFY,ALPHA,OPTIMIZE going in circles after previous /#CMU,JUSTIFY,ALPHA (QIF loader, probably MBD loader too)
- AutoMBD unchecked features were unchecked in the cmbrowser, but graphically they were still yellow.
- PCDMISIN loader enhanced for cones when we get two diameters and a length.
- Not capturing the CMTRANS(INVERSE) for the CMX file for scripting.
- Cylinders instead of hole measurements being created when 'sheet metal' is selected for AutoMBD.
- Add ability to copy and paste vector (and point) info from edit screens.
- SOLIDWORKS crash when selecting 'inches' from the AutoMBD screen.
- PCDMIS bas loader to handle construct reverse line (CONST_REV_LINE).
- Fixed a crash issue in flow line auto measurement.
- CMu,input Calypso, not generating commands correctly.
- Editing multipoint surface not updating associated reporting entities.
- Probe rotate based on a feature not selecting the suggested angle from the list.
- cmu,input causing SOLIDWORKS to crash.
- Material condition defaults not sticking with CPROFS
- CORTOL correction reinstated, somehow lost when EVAL change made.
- Corrected issue with touch point measurements being output as scans if touch point path was preserved
- Corrected fault with plane measurements with single scan
- Fixed units issue with scan path splitting in DMIS output
- Implemented popup CAD selector to select the CAD tied to a particular DimXpert Nominal Plane.
- Display of basic angle between fixed.
- Measure MBD Angle between wasn't working.
- Measure MBD Units issues with all angle tolerances.
- Measure MBD Multiframe GD&T callouts fixed (like perpendicularity + position, was getting two perpendicularity callouts called Perp1 and Pos1 and no position tolerance.
- Measure MBD Cylinder measurements could fail because auto picked point was outside trim boundaries.
- PCDMIS bas program loader uses a weird thing called a CONST_ORIG_POINT that we were handling as a constructed point. It should have been handled as a nominal reference point.
- 'Bare Min Output' for Calypso (on the output program screen) still had probe moves in the output code.
- When adding AB angles, if the B angle was negative, the angle created was 7.5 degrees less than what was selected in the dropdown.
- When doubleclicking a feature in browser to edit, the sensor and checking tabs were missing.
- Make construction features work even if first and last points of the measurement are the same.
- Fixed an introduced bug with the DMIS loader changing the way variable:value was handled from variable value.

REPORTING

Version – 1283

Enhancements- Reporting

- Adding position/profile/composite after-the-fact to existing loaded results.
- Add support for projected tolerance zones - for Reporting/Fitting.
- Enhancements to P@N whiskers allowing box, circles or points instead of the X that is at nominal location.
- Elongated cylinder output added to QIF export.
- Added switch to collapse all tolerances.
- implements /#SFO,PLOT,FIL,?\PREVIEW_ALL.BMP
- 4 new Calypso loader switches (/#CMU,INPUT,CALYPSO)
- - delete INSPECTION group after loading
- - delete geoactuals (_APTIN) groups after loading
- - treat comments from Calypso program as balloon numbers
- - start datum labels at "A" or "TA"
- when the length of a cylinder is known, a label target plot now shows both ends joined by a line X-[].
- Implemented long descriptors as defaults, and in 2 new CSV formats
- Trouble loading Modus DMIS results file of3D curve scan data.
- RepBrowser - Click on label template to select the feature in the reporting browser and adjust the rep browser window to see it. (right now it just highlights on hover)
- Constructed spheres now have a defined vector for use in Target Plots
- Metrologic CSV input added (/#SFI,MCSV)
- QDAS input updated for a few new K-fields (/#SFI,QDAS)
- New loader for the QDAS ASCII transfer format. This is a characteristiconly loader suitable for Excel reports, netinspect export, and the reporting browser, NOT 3D graphical reports or fitting.
- Enhancement to the DMIS Loader. MCOSMOS probe names were being lost because the MCOSMOS DMIS Export module lost the original names
- Enhancement to the DMIS Loader. MCOSMOS DMIS program had circle features with zero diameter causing errors during the DMIS load in CheckMate
- # of decimals preserved in Std_Gdt column of Excel output
- Pp/Ppk, Cp/Cpk, Cpm colored in RootCause and Reporting browsers. Red means unstable process, amber means stable but noncentered, green means stable and centered.
- Pp/Ppk, Cp/Cpk, Cpm colored in graphical labels. Red means unstable process, amber means stable but noncentered, green means stable and centered.
- ±3sigma, min/max colored in graphical labels based on their high/low/intol status
- Increased the width of the field for Layout Names
- Change Modus Output from CM14 to report True Position at CMM & adjust CM14 loader accordingly.
- Rep Browser complete width is now included in a PDF Report.
- Added ability to edit an actual diameter onto a virtual feature by doubleclicking the actual field in the reporting browser.
- Simplified prompts that come up in the excel production layout form for each layout.
- PCDMIS results loader now supports ARCS

- Colored Target plots do not support cylinders
- When importing a PCDMIS BAS file add a prompt to have probe positions from the program overwrite the existing positions, not append to the list
- Support for Unicode text files added
- Add colored dot report
- Implemented Digital Twin Color Face reports
- Colored dot reports has been added as a flavor of whisker reports: C@N (circle at nominal)
- Added descriptions for all whisker flavors P@A = point at actual, LFN = line from nominal, etc. Updated CMDUMP to show fill and flattoscreen anchor information
- Implemented new CheckMate Labels with colored backgrounds
- Added ability to update a Calypso _CHR.TXT with fitted results.
- Added ability to move nominal/actuals for lines/cylinder/planes so that they match
- QIF output improvements for Capvidia.
- Calypso results loader and 3D position improvements.
- Added support for keyin dimension to PCDMIS results loader (CME/netinspect)
- Implemented CMMTEXT to place text on a Layout.
- EXCEL enhancements including new Title block Portrait/Landscape Templates.
- EXCEL enhancements including placing multiple images on one sheet, up to 5 sheets.
- Add additional rows to the graphics tab on Excel Defaults screen.
- Scan data loader intermediate file operations removed, point cloud sorting speed improved.
- Image Rotation added on the Excel Defaults Graphics Tab.
- Added support for model views (layouts) in CMX import/export.
- Scan data loader now supports SWL scan files.
- Added loader support for MCosmos ASC reports.
- Added comprehensive support for identifiers containing an octothop (#),affects both ASCII loader (actuals file) and Calypso loader (inspection file.
- Improved NetInspect loader
- Added CMMLBIN support for SELECT CASE
- Added support for Tutor (CMTUTORIN) High Level Language
- Added support to output a CM text report with an AUTO modifier to append existing CMM reports.
- You can now define the Report output path for Scripting by going to <SetupReporting Defaults> and in the lower right corner.

Bug Fixes- Reporting
- Composite Tols not showing correct Label name/number in Excel Reports.
- The whisker scale dialog got broken during tooltip implementation.
- Fine tuning of QIF results export.
- Leader line on left hand labels with DRF out of location.
- Colored background box for labels not big enough to fit DRFs.
- t-labs not showing up in Excel report even though the excel defaults are set to use the tol names.
- A1/A2 loader problems.
- Fixes the left-hand label leader line issue (only occurred when feature name was turned off in label settings).
- Excel reporting Defaults not being saved.
- Excel Defaults screen not saving defaults
- Excel Defaults screen not saving defaults.
- Excel Defaults screen not saving defaults.
- MAX and MIN colors were not taking into account the bonus on the position tolerance

- Issue with sign on OOT values in RepBrowser fixed
- generic load-by-order bug which included the scan data loaders.
- I also fixed an RC Browser crash which may have turned up as a system instability.
- PC-DMIS slot loader issue
- surface profile/generic surface hookup
- Issue with the mergetoexistingQIFMBDfile process where the DRF table wasn't populated with existing DRFs so a new one was created (but not added to the table)
- Prompt for digital twin tolerances said 'whiskers'
- Correct colormap syncing between the RCB and the "Adjust Color Map Defaults" screen.
- Colormaps not syncing between the RCB and the "Adjust PCM Settings" settings.
- Modus RES file loader fixed.
- Digital twin painting green when it should have been painting red.
- Excel 9102 was giving a merge error when Multiple sheets were selected.
- Cannot Label the surface profile on an Edge Check from the Programming Browser.
- Digital Twin Facecoloring not coloring a couple faces correctly.
- The slot length does not import into CheckMate loading Modus reports.
- bug in the check for tolerance function introduced in x968
- Slot length from modus loaded into CheckMate but did not output to excel reports.
- Bug in the check for tolerance function introduced in x968
- Slot length from modus loaded into CheckMate but did not output to excel reports
- Getting an excel com interface error when trying to start up the excel reporting
- Some reporting browser results not showing up
- Fixed bad excel build in X928
- Disappearing label leader lines/arrowheads
- Excel reports not compensating for material condition
- Colored Dot Reports having inconsistent fill
- This addresses the colored label fill not displaying in front of the overall background (SW2018+ only)
- In/out of tol status for cylinders with true position was always intol (causes face color reports to be green)
- There was a blow up in multiple label drag if you picked nothing instead of a label entity.
- Reporting entities not being created for constructed parallel planes
- Label width on dimension only tolerances (nongeometric tolerances) too narrow
- Doubling of names on lefthand preinspection labels
- Filled label background not moving when dragged
- CMSFQ with facecolor reports
- Orientation of rectangle filling on flattoscreen labels fixed
- Extents of background rectangle on stats labels fixed
- Coloring of stats line in label now suppressed (added SR to color min/max/±3s based on tolerance, and Cp/Cpk/Cpm/Pp/Ppk based on thresholds)
- Filling of balloon backgrounds fixed for flattoscreen
- Fixed flattoscreen ellipse display (angled tolerance circle for canted holes)
- Frames forced to ON for tolerancelabels (/#SFL,TOLLAB) when background enabled
- Dragging of flattoscreen labels fixed

- Fixed crash with regenerate picked labels. The command /HOT,ALL/HOT+,PIC/#SFL,REG called the action line twice and this caused the crash. Still work to do to get multiple calls to the action line working but it no longer crashes.
- Right clicking on segment name clears the segment selection list making deselect useless.

- Items missing in RepBrowser after Importing DMIS and RTF from Modus
- The loader can now handle disenabled surface profile on some trims after outputting the program and before loading the results.
- After loading a PCDMIS report, Slot position data being extracted from the RC and Rep browser were erroneously being marked as diametrical.
- Fixed problem with SETA,LAYOUT in a script causing /DISP,FIT,UNLOCK not to fire correctly.
- Excel Report Images not updating before creating report.

Versions up to 780

Enhancements- Reporting to 780
- Excel Trace utility added to CheckMate
- Internal for sfi sim using different group name.
- Internal for sfi sim to have a user definable deviation spread.
- enhanced the merging of results with QIF MBD file
- UUID column added to the reporting browser.
- Added abilityto generate CSV files from fitted section point data.
- New QIF Program loader setting to explode large GSURFs into pieces for probe accessibility.
- Leading decimal places in label names now supported when loading reports into CheckMate.
- Enhancements to line thicknesses.
- /DISP,FIT,UNLOCK will unlock a layout, fit, and then relock the layout
- Enhanced the /#SFO,NUM report to have the option to display the outoftolerance amount rather than the deviation.

Bug Fixes- Reporting to 780
- CSV Report being output as mm regardless of units setting.
- Layouts not being saved/restored.
- "Delete this subgroup" in reporting browser was greyed out and non functional.
- General EXCEL fine tuning all Templates.
- /#SFO,NUM,OFF,VEC numbers are no longer upside down for left hand text.
- /#sfo,plus making things on hidden levels hot
- pcdmis loader not handling labels with double quotes
- SetActiveLayout call would only work if the Levels browser tab existed, now works with or without causing the excel graphic pictures to be the same.
- Parallel Planes not loading into RCBrowser.
- After loading in an LK Cameo res report, all true positions showing zeros
- Loading in an LK Cameo report loads in (mm) because there is a (mm) at file beginning even though the entire program is run as inches. NOW CheckMate sets the unit to whatever units are seen the most frequent.
- Moved Buttons down lower on the Excel Defaults Graphics Tab, accommodating more rows of fields.
- When using regen on some legacy labels a long string of numbers appeared in the label nominal field.
- Scan data loader with an STL file and a transformation now working.
- CM14 Layouts now export to CMX.
- Excel reports not compensating for material thickness correctly.
- Cannot edit a single keyed in value in the rep browser. multiple yes, single no.

- Trouble loading in MCosmos ASC file with no segment,
- Calypso reporting entities for Curve with profile not setting probe compensation
- Corrected fault with dummy tolerance like +/999 coming in as +999/99.
- Images doubling up on the Excel Defaults Graphics Tab.
- CMX loader was not running correctly with MODELVIEW data.
- Problems with Excel Sheet/Layout not functioning correctly.
- Excel failure using an old demo file.
- Errors preventing Excel from opening an Excel report upon creation.
- CMXport not supporting spaces in Layout and Level names.
- Image Rotation not working on the Excel Defaults Graphics Tab.
- Incorrect scaling of xyz's in SODL.

GEOMETRIC TOLERANCING MANAGER

Version – 1283

Enhancements- GTM
- The GTM color transfers to the face i.e., red/yellow/green; untoleranced are magenta.
- The digital twin updates as you scroll through the report list.
- Implemented the GTM related group/file naming and fit name.
- The GTM wakes up with the "use" button on.
- Colormap/digital twin greying out reworked to be picked GTM item and all children.
- GTM "mobile datums" changed to "associated datums" so that all datums for a DRF are in the GTM. This controls whether datums are included in the colmap/digital twin.
- Selection a DRF from GTM updates the colormap to show only faces related to that DRF.
- Added Concentricity and Symmetry to GTM.
- "Comment" column added to GTM to display tolerance comment
- The GTM @RFS column is now fully implemented
- The multi-part statistics are functional in the GTM
- Parallel planes features as sorted out in both the GTM and RC browsers
- There is now an as-measured graphic column available
- dev/as-meas and graphic/as-meas-graphic columns resize as pairs
- "Tol Name" column added to GTM
- There is a lock-out in place to prevent any new RC browser groups being permanently added to a GTM_ fit. Any new fit using the GTM_ fit as a starting point will remember the new RC browser groups
- The lock-out to prevent a user from naming a fit group GTM something is in place
- Added updating of the GTM on report load/delete
- alignment bug in the GTM_ALN_... fits
- Added NEW the GTM

Bug Fixes- GTM
- GTM values not transferring to the digital twin.
- Fixes some major deficiencies found in the GTM and its being hooked to the Reporting Browser.
- GTM column widths being saved correctly.
- "Use Geo Tol Manager results in all reports" flashes on GTM startup
- Cleans up issue with incorrect alignment fit creation.
- GTM/Rep-Browser mismatch fixed.
- Units/Decimal places not updating in GTM.

- Weird startup (prompts) when Rep Browser active.
- Fixed error that was showing erroneus results from 1 particular part
- OOT diameters flagging feature as OOT even though the position was good
- fixed some bad readings in GTM.
- GTM
- Tol Name Column kept repeating and not turning off.
- issue with the Reporting Browser not initializing with GTM deviations.
- FAKEY_MCFAKEFACE is now GTM_SUBSTITUTE
- The datum slot width tolerances were not displaying in the GTM correctly.
- Bonus wasn't being taken into account for the graphic on the summary line.
- The fit feature list wasn't cleared so the set of features from a GTM_DRF_ fit were transferred to the next GTM_ALN_ "fit"
- When switching to a GTM_ALN_ "fit" the RC browser was not clearing
- The tolerance is now the group name in the RC browser instead of Tol1, Tol2
- bug in the GTM->RootCause group setup.
- GTM line item storage bug which effected system stability
- GTM Error message
- GTM Not filling
- GTM Not filling
- GTM READY FOR INTERNAL TESTING

SOFTFIT SOLVER

Version – 1283

Enhancements- SoftFit Solver

Bug Fixes- SoftFit Solver
- Coding issues with the stacked fit ironed out.
- Invert Selection in the SHOW list in the RCBrowser was not working correctly.
- some faces were not being analyzed.
- COLMAP not updating when a fit is performed.

Versions up to 780

Enhancements- SoftFit Solver to 780

Bug Fixes- SoftFit Solver to 780
- Repent columns in RCB showing x's when results have been loaded.
- After changing the name of a fit from the "Display Fit Results" Dialog box, the new fit names make the fits Unusable.
- SoftFit not fitting correctly on a cylinder measurement.
- Root Cause Browser 'datum' fit method was not firing on the first press of the fit button.

POINT CLOUD METROLOGY

Version – 1283

Enhancements- PCM

- Colormap scan data loader 2D feature facet filtering improved (where facets are derived from measurement-CAD association). Facets included in a line must be under the line and between the line endpoints. Facets included in a circle/arc/ellipse must be at the depth and within 1.5 radii of center (to filter in cases like an arc on a torus). This prevents lines and circles/arcs/ellipses from using all facets on the associated face.
- Averaging over several measurements in a nominal facet
- Sheet-metal edge measurements
- ColMap Legend now displays what fit/DRF is being displayed.
- fine tuning of the colmap loader

Bug Fixes- PCM

- Issue with Vertex-colored mesh being loaded from file caused crash.
- PCM facet bookkeeping issue fixed which was causing the cylinder and hole data to be way off
- colormap loader skipping BFPROJ circles
- Colormap bug with single part fit fixed.
- Bug related to colormap displaying unmeasured as measured fixed.

Versions up to 780

Enhancements- PCM to 780

- Preprocess point cloud/STL to autodetect units.
- PCM Legend text now same as Label Template color.
- Speed improvements to colormap loader with STL (x2 faster), /#SFI,COLMAP and /#SFI,SCAN with STL.
- Added mechanism for setting units only for duration of results file or point cloud load.

Bug Fixes- PCM to 780

- Loading an STL colmap causing SW crash.
- Deleting a fit used by the colmap makes the colmap colors go crazy.
- When adjusting the colmap tolerance it updates once but never again.