



What's New in 3DCS?!

3DCS Variation Analyst

7.7.00 - 2020

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7.7.00 - March 2020

Below are a list of changes, enhancements and resolved issues based on the entire 3DCS suite or a specific CAD system available with 3DCS. Please review the list of changes and don't hesitate to ask about a specific change.

Any text written with a teal highlight refers to any Simulation Output change. In other words, some calculation changes were made to either a distribution, a measurement output or DLL result. This could result in minor changes to a previous Model Simulation output.

Enhancements

Results Display Changes: The developers have made a lot of changes to the results display: Updated the Analysis window result page to display the results in a Table view, moved GeoFactor to the results page as its own results called GeoFactor Analysis and added GeoFactor to the Contributor Analysis results.

- **Monte Carlo Analysis:** Added new statistic: Recommended GD&T Value. It is the value that should be used when comparing the 3DCS model output to GD&T drawings.
- **GeoFactor Analysis:** Moved to the same dialog as the Monte Carlo Analysis. GeoFactor Analysis shows the results based on the tolerance range limits instead of a Gradient Step.
- **Contributor Analysis:** Previously called Sensitivity Analysis, we changed Contributor Analysis to use the GeoFactor algorithm. Each tolerance will now be set to their Median, rather their nominal.

GD&T Measure creation: Create measures based on Assembly GD&T. Users will be able to extract Assembly GD&T, defined in the CAD system, as GD&T Measures in 3DCS. These new type of measures will check the features, holes or pins deviation, defined by their datums.

GD&T Checker and Relationship Wizard: is a tree and validation dialog for validating Features and Points that are used in/with other MTMs, Features and Points. The GD&T Checker checks each generated or 3DCS defined GD&T for Syntax, DRF, zone type and surface type.

Feature Groups: Organize sets of Features and MTM data into different groups. Groups will allow users to add organization to their 3DCS tree, move important or non-important 3DCS features and reduce large model tree structure.

Visualize Effect: is a tool that allows users to graphically see the impact of a single tolerance or float in the model.

Alias Display

- All features using Dominate Direction will use the Abbreviation File setup. (66256)
- GD&T Alias Display now properly shows "Position", "Surface Profile", "Perpendicularity", "Angularity", "Parallelism", or "Concentricity" for the GD&T Measure sub type. (66273)
- Added new GD&T Features to the abbreviation file: "Angle Size = AS"; "Torus Minor Diameter Size = TMDS"; and "Dimensioning Location = DL" (66695)

Information

- Updated parts of the Information dialog for Features, Points and Tolerances. (63020).

Model Variants

- Fixed a crash caused by Model Variants. (64925).
- The top two title rows are now frozen rows. When scrolling up or down, left to right, the title rows will remain at the top. (64581).

Points

- The Offset Points function is now available for all platforms. Offset Points allows users to offset one or more points along a specific direction (Two Point, Normal, From Point Direction, Associated Direction, etc). (62482)
- Static point renamed as Coordinate Points in Alias display. (58192)

- Replace function in the Points Dialog now uses the set Units defined in CAD Platform or in the 3DCS Preferences. (66434)

Measures

- The Circle Interference measure now has an editable direction. (If required to use another direction). (62633)
- Removed the Nominal function from Two Point list. (66898)

Simulation

- Using Take Measure DLL, with a Combination measure, 3DCS will take the data used in the Take Measure. Results may change if the desired measure being used with the Take Measure is before or after the Combination Measure. (After the Combination measure will recalculate the results). (65003)
- A limit of -90/+90 has been added to the Line-Plane Angle measure. If the Line deviates past 90, the results will only show between 0 and 90, and display the correct symbol ('+' or '-'). (65196)
- Adjusted the Estimated High and Low, and Mean value's precision display in the Histogram window. (65282)
- Simulation-Based Sensitivity (SBS) now supports diametrical Composite Position tolerance. (63008)
- Cleared up the results for Arc Tolerance in the Monte Carlo Simulation, when using a distribution other than Constant. (Default distribution for Arc Tol is Constant). (62312)
- Removed Feature Tolerance from the Tolerance List. (65606)
- The GFactor is now displaying the correct value for perpendicularity contributor with range zero. (64765)

Sensitivity

- When the Sensitivity analyzes a hole-pin float, most common range, offset, and distribution combinations are now supported. (66447)
- Show Contributor type added to the Result page to display the contributor with Tolerances or Feature. (65252)

GD&T

- Fixed an issue with Profile tolerance with an internally defined direction. (67030)

- The 6 Plane deviation methods for Feature Move and GD&T are now considered obsolete. These move types are still supported in later versions of 3DCs, but editing the moves or preexisting GD&T will change to the default setting. (Ls 6Plane, Ls 6Plane HighPoint, and Nominal 6 Plane).
- Improved the GD&T and GD&T Measure dialogs. If a GD&T or GD&T Measure had the same name, a rename dialog will open. The user will need to define a new name. (67050)
- Prevented GD&T Datum Features from allowing user to select Feature Slot/Tab as a Datum Target. (67031)
- Removed "Change Type" from the GD&T dialog.
- Copying a Datum from GD&T will remove all features and datum target points. (65358)
- Added Envelop setting to Excel Create and MTM Global setting. (65318)
- Fixed how Datum Targets were defined in 3DCS, which changed how MTMs performed, if used in a MTM. (65175).
- The Feature Cloning option will remain activate after selecting and applying. (65152).
- Creating a position GD&T will now have the diametric zone set as default. (65014)
- The GD&T Summary page will now display the DRF information correctly. (65218)
- The Cylindricity will not have any DRF linked in the GD&T. (65203)
- The newly added GD&T using Add Frame will always add the GD&T to the bottom of the list in the Tree. (64867)
- Only allow diametrical zone for Concentricity GD&T. Automatically switching zone if old models have incorrect zone. (64047)
- Removed Datum Reference Frame settings that are not allowed for certain GD&T Types. (64424)
- Changing Datum Target Points to Coordinate Points is now supported. (64596)

- Can now Paste all GD&Ts in a part after using 'Copy' in the right-click menu of the 'GD&Ts' node of the Model Navigator. (64651)
- GD&T datum reference frames will no longer appear in search results of Find/Replace. (64971)
- Composite and Feature Clocking options are removed from the GD&T Dialog for ISO Standards. (65153)
- Surface Profile without datum, Line Profile without datum, Flatness, and Straightness only show the unit basis setting in the GD&T Dialog. (65143)
- The Datum Target will now be displayed in a separate tab inside Datum Feature Dialog. (65040)
- Feature Clocking will only be available only in ASME standard for Position Composite GD&T. (65374)
- Slot\TAB detection from two planes coming from different parts has been fixed in GD&T. (65696)
- The Slot and Hole feature will deviate correctly for orientation GD&T. Also added a warning in the slot dialog if the features selected have bad direction. (65388)
- Removed Angle Random (Rand 2) settings from the GD&T dialog. (65344)
- Fixed deviation direction of Dimensioning Location when Cur Direction is set. (63849)
- Size GD&T in Sensitivity results will no more be grouped for multi features, instead will display the actual feature contributing. (65989)
- Curve Direction option in the GD&T Options tab was updated to make it easier to add directions, similar to other Change Direction dialog for Points. (65094)
- GD&T grouped by feature in a single GD&T dialog, will only show if the related GD&T is active. (65677)
- For the position GD&T, whenever the zone shape is changed the distribution will be set to the default in Preferences/MTM Defaults/Tolerances, depending on the zone type:
 - Planar and spherical: Linear default
 - Cylindrical: Circular default

- GD&T Options unavailable in DVM. (66089)
- Editing one of the GD&T features, if anything that is beyond four that is usually listed in the same dialog, will show as a separate GD&T. (66281)
- GD&T DRF Creation is updated with a new "Edid DRF Dialog". (66176)
- Prevented GD&T Datum Features to allow to select Slot/Tab features as a Datum Target. (67031)

GD&T Cases

- Improved a GD&T case with four features defining a Datum. A Profile tolerance back to the datum will not cause over variation. (66653)

Tolerances

- Changed the Triangle distribution adjustment parameter = $\sqrt{1.5}$ (66747)
- Dual and Triple tolerance will show their respective Range, with their respective measure direction. (65270)
- Dual and Triple tolerances now calculate and display contributions for each range. (38475).
- Fixed the Arc Tolerance display in the Graphics (64893)
- Linear size of a slot feature will no more be split up into 2 feature while displaying contributor per Feature, which was doubling the WCR Value. (66915)

Preferences

- The GD&T Standard setting will now set and keep the correct standard. (65248).
- Removed the setting "Independent Mesh nodes in Contributor Analysis" (Also know as "Detailed Sensitivity"). Users can now use "Per Tolerance" or "Per Feature", available in the Table dialog or Histogram/GeoFactor dialogs. Per Feature will display multiple features/point nodes used in the tolerance. (66586)
- Detailed HLM/GF setting is renamed to "Detailed Sensitivity" in the Preference Dialog. (65789)
- Removed the setting "HLM Run at Median" from Preferences. The current changes made to GeoFactor and Contributor Analysis will always run at Median. (65789)
- Added a preference setting for displaying Warnings in MTM dialog when "Ok" or "Apply" is selected. (66840)

Dialog

- Measure dialogs will correctly re-open after editing vector directions. (65708)
- Added arrows in the MTM Dialogs to reorder the Entities. (63669)
- Feature selection from both tree and graphics can be done from the Measure Generator Dialog. (64697)
- Running SBS will no more crash the software when other actions are tried to perform (64854)
- Added the Direction information in the summary dialog for Xplane and Autobend. (62310)
- Alias Name will now be displayed in the measure drop down list from the analysis dialog. (65071)
- The progress bar will correctly close and complete after reading from Excel. (65191)
- The Auto direction will no longer be available for Measures and Tolerances. Any Measure or Tolerance using Auto direction will automatically change to Type-In. (64002).
- Measures will no longer be allowed to use change type from the Measures Dialog. (64896)
- Change Type function for Moves will be available to all moves, except for Feature Move and Iteration Move. (64896)
- Run Log has been updated to show in a dialog similar to validate instead of Notepad. (65259)
- Added check boxes to turn off spec limits in measurements. Previously, had to set spec limits to a value over 1 million away from nominal to turn them off.(65149)
- Enhanced the Find/Replace Dialog with better searching options. (65667)
- Fixed a display issue converting GD&T range to Inches or Millimeters, between the GD&T dialog and GD&T List dialog. (67015)
- Renamed "Max Move Num" to "Loop following moves" in iteration move dialog. (65818)
- Renamed STD to sigma in all the dialogs. (65843)

- The Text box next to Find Function button in User DLL Dialog is now editable. (65859)
- Removed "Check Duplicates" option under "Validate" as it no longer needed. (66084)
- Removed the auto direction type from the measurements dialog . (66284)
- GD&T measure moved to the top of the measures drop down. (66271)
- Added icons and tool tips for Join Optimization to all platforms. (66233)
- "Failed Builds" renamed to say "No Builds" in the Run Analysis Dialog (66608)
- Fixed the warning message with Converting CAD Points. (65931)
- HLM Level will be hidden from all MTM dialogs. If the distribution type is set to Step or Modal, the box will appear labeled "Step Level" or "Modal Level". (65790)
- Dialog Tab focus is implemented for all the fields in DCS Dialog. (66759)

Display

- Updated vector direction display for Iteration and other User-DLL Moves. Users will see the vector on the part, or at 0,0,0 coordinates if no parts are specified. (65316).
- GD&T is now listed before tolerances in the Navigation Tree since the GD&T is applied before tolerances. (57556)
- Improved the Model Navigator loading speed. (65227)

Visualize Effect

- Added Visualize effect option to visualize the contributor individually. (63727)

Moves

- Pattern Move has changed to work with the new Monte Carlo Simulation and Contributor Analysis. (62873):
 - **For Monte Carlo Simulation and Nominal Build:** Use the first three non-coaxial pairs (1 or 2 pairs supported) for aligning the axis. Only during Nominal Build at its nominal position.
 - **For Contributor Analysis (HLM, GeoFactor) and Deviate to Offset:** Float to fit the pattern pairs if nominally does not fit; this initial float is treated as the Offset (Median).
 - **For Animation:** Build to the Offset position.

- **Pattern Move with Align Plane active:** First object axis aligns with the pattern direction (66756)
- Improved the Feature Move and GD&T move cases to apply the correct Case. (This case was set for parallel anti-rotate. Instead it should be rotation touch). (66623)
- The 6 Plane move methods for Feature Move and GD&T are now considered obsolete. These move types are still supported in later versions of 3DCS, but editing the moves or preexisting GD&T will change to the default setting. (Ls 6Plane, Ls 6Plane HighPoint, and Nominal 6 Plane).
- The accuracy of the Pattern Move (all types) Sensitivity results has been improved. (66865)
- The Pattern Rigid move now also checks relative hole and pin sizes when determining if a build has failed. (57736)
- A new Pattern move type, Floating-Pin-Fastener, has been added.(51935)
- Multiple Features can now be selected from the object and Target field in the Pattern Rigid Move dialog. (66755)

Validation

- Removed validation messages caused from Profile tolerances on non-planar features. (66972)
- Removed messages from Validate and GD&T Checker, if a Position tolerance is created on planar features. (ISO Standard). (66953)
- Reduced the unnecessary errors/warning from Applying/Accepting the changes in the GD&T dialog. (66986).
- **Validation Message added: "DirTypePickPt does not have point".** Direction calculation changed to be consistent. (If no point is added in a future release, 3DCS will consistently find the same direction). Validation error in dialog prevents user to apply no point for direction. (66775)
- Limited the Run Log writing errors to a limit of 3000. Once it passes 3000 errors, a second Run Log file will be created in the Log folder called: Run_Log_2.txt. (66429)

- Moved the Run Log viewer information (No Build amount, Max hole size, etc.) to the top of the list. (66901).
- Fixed an issue that prevented the Run Log from displaying errors for the Pattern Rigid move after running a Simulation. (66735)
- Validation error in dialog prevents user to apply no point for direction. (66775)
- Added an error message when using a Dimension between two surfaces with the same vector direction. ("Invalid size feature directions")
- Added a warning when a Validating a model with Range-Control is set in the Preferences. (65976).
- Dialogs will now report a warning for items that are displayed in Validate. This can be activated or deactivated in the Preferences under the Validation tab.
- Added warning messages to confirm "Clear Measure" and "Remove" in the Measure Generator Dialog. (64696)
- Added a log message if an associated feature is selected from any MTM dialog. Dialogs will automatically select the Master surface. (64713)
- Added Validation settings from Preferences to the Validate dialog. (64474)
- Prevented creating duplicate names even if spaces are used instead of underscores. (64768)
- Added check for feature points in GD&T.
- Corrected the Validation Error to say "Null" measurements if the Combination and User- Dll measures are missing Measure list. (64879)
- Added Validation warning for all MTMs. Improper/Invalid MTM creation will now pop up a validation warning when "Ok" is clicked in the dialog. (65303)
- In the 6-plane move, the first 3 target points cannot be co-linear. Added validation\runlog checking warning "TGT1-TGT2-TGT3 cannot be colinear". (65309)
- The Run Log includes the name of the contributor that causes Geo Factor or Sensitivity to fail.(64706)
- Warning message will now be displayed from all MTMs dialog if the point direction is not selected in the dialog.(65945)

Report

- Combination Measures and User-DLL Measures that use other measures will show that used parts in report images. (30732)
- Enhanced creating a report with "=" or "#" in any of the Part, MTM names, or in the Descriptions. (61771)
- Imported AAO File will now be shown in the Report. (64263)

Results

- Normalized Right-Skew distributions from Float and Positional tolerances. (66087)
- Added the information to the RSS file: GeoFactor, Estimated Worst Case Range (EWCR), and σ -Sigma. (66167)
- Improved the RSS File by adding UTF-8 support to allow for 8-bit and double-byte characters show the characters correctly. (#65872)

Excel

- Added Progress bar for Read and Write Excel Functions. (64878)
- Part Name cases will no longer effect the Excel Import. (65255)
- Excel Import with "replace" setting will now no more remove the moves and measure list from the model.(65279)
- Fixed an Issue with Excel Import, when measure dialog is set to N/A. (65277)

User DLL

- The X-Plane DLL can utilize Floats. (62100)
- Slots and Tabs are now supported in the X-Plane move. (64868).
- (CMMDev) DCSDb2 files with different amounts of deviations or samples, will not prevent points in the file from deviating in the Graphics or show in the measure results. (67009).
- Changed the WorstCaseDLL name to SimuBiModal. (66504)
- Updated StatRow DLL reading the title cells to allow for double-quotes (3DCS export change) and non-quote names (Excel saving) to be used. (66581)
- Fixed the dcu_PolyFloat.DLL routine to work correctly with the current release. (65451)

- Vector Directions can now be used in an equation in Measure Equation routine. (64408).
- Users can now apply a Scale to the dcs_Feat2FeatMinMs routine, in the Xform DLL. (65183).
- Added a new User DLL Routine dcs_MSProjFeattoFeatMax. This will measure the max gap between the 2 selected feature. Soon the existing feature measure dialog will use this routine to measure the MAX Gap. (58959)
- Added new user DLL Move, dcsMvPositionEvaluatingPtsInMeas from the dcu_Xform.dll. This DLL will display the measurement points and Feature Locators for Feature Measure, Two Point List and Circle Interference.
- Fixed an issue where Multiple points selection for Auto-Feature Point Creation dll was not available. (65357)

Issues Resolved for 3DCS - CREO:

Display

- Using the Clone feature in a Move will correctly display the new part in the Tree. (64810)
- Added "Show Preselection Mesh" function in Creo which will display the MTMs in the Graphics when Mouse Hovered from the Model Navigator.
- Added Parts list to the Model navigator which list the number of parts under each assembly level. (64784)
- Mesh will no more blink on Sweeping. (60554)
- Compliant Deformation of Solids are now available in Creo. (59248)
- The Arrow display in Creo has been improved.(65106)
- Deviation speed for the model is improved with mesh and point display On. (65686)

File IO

- 3DCS Data will be saved If the model saved in built Position.

Points

- The Point Description in the point dialog will now tell if the point is feature or Coordinate Point.(61562)
- The Feature info dialog will now tell if the point is Feature or coordinate point. (64124)
- 3DCS Coordinate Points, Dynamic Mid Point and Center points can now be converted to Creo.(65310)
- Center point creation display had been improved in Creo. (65294)

Features

- Torus feature support added (65194)

Moves

- Fixed a crash when selecting Search in the Feature Move's Move Part list. (65449).
- Constaints and Joints Names from Creo will now get extracted. (66891)

Dialog

- Added an option in the 3DCS Preferences to hide or show Part's sub-trees in the Model Navigator. (66049)

- Editing points from the Edit Part dialog, will correctly close the Edit Part and open the Points list dialog. (65724)
- Filter and search options are now added to the Analysis Result Window. (62065)
- Removed Units setting from Preference. Respects the CAD Units. (65764)
- Fixed a Crash in Find Replace Dialog. (65356)
- Added a New function to extract the parameter Naming Convention from Creo. Giving the Parameter name in the "Contributor Name to use" field in the Preference dialog will extract its value as 3DCS Part Name. (66602)
- Fixed the Link button in the Tree Linking Wizard Dialog. (66921)

Reports

- Fixed a crash on Generating Report. Taking images for MTMs on Parts with no CAD will no more Crash.(65224)
- Fixed an issue when a part is hidden in one pattern, all the instances of the same parts go hidden in all other patterns where ever its used when taking a report. (64923)

GD&T

- Fixed a display issue with Datum Targets. The points will refresh correctly after using Nominal Build. (65828)
- Datum Target points created with Annotations and Annotation Feature will now get extracted correctly. (62688)
- Datum Targets created using GD&T Adviser will be correctly extracted and linked to features. (64043)
- Added the option to Push Back GD&T in the Update GD&T selection Dialog. (63369)

Measures:

- Creo Measurements can now also be extracted into 3DCS (64812).

Issues Resolved for 3DCS - NX:

Display

- Improved the Model Navigator selection. Selecting a part or the Root, while editing a Move, Tolerance or Measure from the Model Creation toolbar, allows for easier selection. (64127).
- Improved the Deviation and Animation speed on bigger models (61930)
- Using the Clone feature in a Move will correctly display the new part in the Tree. (64810)
- Switching workbench in NX when the model is in build position, returning to 3DCS workbench requires Update Model, this will now Separate the Model correctly as the message says.(64939).
- Features will only be picked through the selection dialog from any MTM dialog and the features selected in previous will not be selected automatically and added. (64955)
- Added Parts list to the Model navigator which list the number of parts under each assembly level. (64784)
- Fixed issue where changing the V coordinate of a center feature point would give an incorrect position on the hole or pin.
- The NX Header Name is fixed to display "NX - 3DCS". (64885)

Measures

- Measurement created in NX can now be extracted into 3DCS as Feature Measure. (64813)

Points

- Improved acquiring the vector direction when converting Points from NX. (64934).
- The Point Description in the point dialog will now tell if the point is feature or Coordinate Point.(61562)
- The Feature info dialog will now tell if the point is Feature or coordinate point. (64124)

Dialog

- Added an option in the 3DCS Preferences to hide or show Part's sub-trees in the Model Navigator. (66049)
- Editing points from the Edit Part dialog, will correctly close the Edit Part and open the Points list dialog. (65724)
- Filter and search options are now added to the Analysis Result Window. (62065)
- Removed Units setting from Preference. Respects the CAD Units. (65764)
- Replaced the term "Pick Feature" with "Pick Component" in several dialogs. (66228)

Moves

- Fixed a crash when selecting Search in the Feature Move's Move Part list. (65449).
- Users will be prompted to Fully Load a part or sub-assembly, when using Cloning in a move to a new part and a sub as the parent. (64467)

GD&T

- PMI Dimension Name from NX can now be extracted into 3DCS. (64119)
- The UZ value from NX 12 will now get extracted as Offset value correctly. (64915)
- Fixed memory access violation after adding a datum feature GD&T and updating model.(65166)

Issues Resolved for 3DCS - SOLIDWORKS:

[3DCS supports Solidworks!](#) 3DCS is now available with Solidworks versions 2016 - 2019.

Issues Resolved for 3DCS: CATIA V5:

PCDB

- The PCDB has been updated to support UTF-8 (8-bit characters) when linking to Excel (CSV) and to 3DCS. (65935).

Simulation

- Fixed unit support for axis scale of histogram in Catia.

Dialog

- The MTM dialogs will now set to default minimum size to show all the buttons. (63709)
- Fixed the Find Function field in the Load User-DLL dialog. (66009)
- Fixed a Crash in CATIA V5 when the second item is selected without selecting the first item in object or target list in the Move Dialog. (64778)
- Fixed display of Arc Tolerance not showing the correct direction. (64193)
- New warning added to the GD&T dialog if the selected feature is not within the Parent. (64783).
- The Feature Locator will now use the units set in CATIA's Options (Millimeters or Inches). (65209).
- Added missing "Show Unit" option to preferences to match other platforms. (66230)

GD&T

- The Unequal Bilateral (UZ) value from CATIA (for ISO Standard) will now be extracted as the Offset value. (65186)

Point

- Fixed bug where diameter of center point of sphere was not saving.(65111)

Validation

- 3DCS will notify users when pasting a Measure into parent that does not contain all entities. (65156)

Display

- Added Hide/Show MTM functionality to GD&T. (64822)
- Updated the display of non-features of size Coordinate Points to also show the 0 and 90 degree directions. (63896)

- Fixed bug in Catia where magenta labels were always transparent.(63065)
- Simulation Label is turned off by default when the software is opened.(66798)

DLL

- Fixed an issue where loading multiple DLLs was crashing the Software.
(65652)

Issues Resolved for 3DCS for 3DEXPERIENCE:

PCDB

- The PCDB has been updated to support UTF-8 (8-bit characters) when linking to Excel (CSV) and to 3DCS. (65935).

Simulation

- Fixed unit support for axis scale of histogram in CATIA.

Dialog

- The MTM dialogs will now set to default minimum size to show all the buttons. (63709)
- Fixed the Find Function field in the Load User-DLL dialog. (66009)
- Fixed display of Arc Tolerance not showing the correct direction. (64193)
- New warning added to the GD&T dialog if the selected feature is not within the Parent. (64783).
- The Feature Locator will now use the units set in 3DEXPERIENCE Options (Millimeters or Inches). (65209).

GD&T

- The Unequal Bilateral (UZ) value (for ISO Standard) will now be extracted as the Offset value. (65186)

Validation

- 3DCS will notify users when pasting a Measure into parent that does not contain all entities. (65156)

Point

- Fixed bug where diameter of center point of sphere was not being saved. (65111)

Display

- Added Hide/Show MTM functionality to GD&T. (64822)
- Updated the display of non-features of size Coordinate Points to also show the 0 and 90 degree directions. (63896)

Issues Resolved - Multi-CAD:

Display

- Fixed an issue with Color Contour displaying Measured Lines with Comma Delimiter. The lines will show with the correct color deviation. (66430)
- Using the Clone feature in a Move will correctly display the new part in the Tree. (64810)
- Added Parts list to the Model navigator which list the number of parts under each assembly level. (64784)

Analysis

- Resolved issue where angular dimensions produced large 6-sigma results in GeoFactor. (66502)
- Resolved issue where certain assets would be missing from the HTML report if "Monte Carlo Simulation" wasn't selected. (65902)

Features

- Two non size and non co linear edges will be treated as plane instead of axis. (65029).

Importing/Exporting

- Fixed an issue with importing CATIA V5 geometry with FT&A. (65250).

Points

- The Point Description in the Edit Point dialog will now tell if the point is feature or Coordinate Point. (61562)
- The Feature info dialog will now tell if the point is Feature or coordinate point. (64124)

Moves

- Fixed a crash when selecting Search in the Feature Move's Move Part list. (65449).

Dialog

- Added an option in the 3DCS Preferences to hide or show Part's sub-trees in the Model Navigator. (66049)
- Editing points from the Edit Part dialog, will correctly close the Edit Part and open the Points list dialog. (65724)
- Filter and search options are now added to the Analysis Result Window. (62065)

Preferences

- Removed the Configuration saving method in the 3DCS Preferences under the Configuration tab. Settings will be automatically saved after closing 3DCS.
- Add preference setting for units of force in MC. (65881)

Saving/Loading

- Added a message when using Load Management and typing a name of a part that doesn't exist in the folder. (55783)
- Resolved .fbx export scaling issue. (64780)