Origin APPS

CHANGES, ENHANCEMENTS, BUG FIXES

Note: Version is all changes that have happened since the last Check for Update Release V1236 –

Version 1053 and older not changed.

Calypso (see table below for supported entities)

Version 1236

Enhancements (see CMEngine enhancements also)
- Characteristic (tolerance) Uuids captured when loading Calypso program.
- removed over zealous circular reference suppression which caused certain coordinate systems to be missed
- >64 character label handling changed to keep rightmost, rather than left most, portion
- coordinate system names with "-Start" now considered synonymous with coordinate system without "-Start" (like the base system with "-BS")
- post alignment offsets now transformed to current coordinate system
- #rotationDistance now supported for offset line construction in alignments
- if pre-alignment base coordinate system does not exist, base alignment is recalled
- support added for free form surface construction from plane with recall-points

Bug Fixes

Version 1053

Enhancements
- added support for indirect construction of free form surface from single BF feature
- improved handling of range references like Circle1 (1-18)
-added support constructed circle from cone-cone intersection
- added support for nested features (free-form surface option quirk?)
- free form surface measurements use nominal path definition. Actual Calypso path can be quite different particularly near sharp corners.
- all scans on cones are now curve scans
- move holes and slots to surface switch forced to off.
- patterns with features not flat to the pattern defining plane are checked against
  actual and rotated to the nearest 5 degrees.
- attempt to create base alignment is done after each feature measurement until
  successful, previously base alignment must be explicitly referenced
- cone TOL/POS now 3D instead of 2D
- patterns with features not flat to the pattern defining plane are now rotate-copied
  around the pattern instead of just being copied.
- added CAL file per feature option
- RETRIEVE construction of circles from circles are now BF points
- text element now use text body if the text object element name is
  the default TextElement#, otherwise the name is used. If the comment is
  populated it is used.

- tolerances which reference the base alignment will cause the base alignment to be created (if necessary), the base alignment is taken to be the alignment with name ending in –BS
- TOL/POS on cylinders and spheres now 3D
- #OMCFProfileOfALine now supported TOL/PROFL instead of TOL/PROFS
- MAXDEV modifier added for TOL/PROFS and TOL/PROFL
- Default angle tolerance of ±99 now in degrees, not radians
- detection of need for feature redefinition for CORTOL improved
- 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 support for constructed sphere
- 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

Bug Fixes

- problem with line-scanned cylinder outer touch point approach direction being flipped fixed
- CONST...THRU now makes sure directional feature precedes point deducible feature
- added support for self-referenced EXTREM construction, caused output like:
  CONST/F(POINT1),EXTREM,MIN,FA(PLANE1),FA(PLANE1)
- TOL/POS on planes is converted to TOL/PROFS
- added support for 2-point distance tolerance
- PATH/ARC vectors now do not snap parallel or anti-parallel to feature vector unless they are within 5 degrees
- fixed recursion problem with Calypso surface option
-construction of line from circle/circle/line explodes to circle/circle/circle/circle
-removed reordering of constructions to ensure first feature was a feature actual for LK, Modus and derivatives (feature actual is created from feature nominal)
- fixed issue with projected direction vector auto-detect for features not in coordinate systems aligned to the base alignment (CAD world)
- Fixed issue with machine speeds being corrupted
- INNER/OUTER missing from some feature redefinitions fixed
- CORTOL correction re-instated, somehow lost when EVAL change made
- corrected fault with dummy tolerance like +/-999 coming in as +999/-99
- corrected issue with touch point measurements being output as scans if touch pointpath was preserved
- corrected fault with plane measurements with single scan

QIF

Version 1236

Enhancements (see CMEngine enhancements also)

      - added Metrologic CSV (.txt) loader and output
      - added QDAS output
      - enhanced QDAS loader to handle non-K-code results
      - Metrologic CSV loader defaults to distance for unrecognized tolerance types
      - new feature type and tolerance markers added

Bug Fixes

Version 1053

Enhancements

      - added -MOVENOM command line parameter which preprocesses a .PPG GeoDMIS program moving nominal information for measurements in front of the measurement. This can result in cleaner translations for programs making extensive use of the MEAS_DIR statement.
      - added -VERBOSE command line parameter which will output extensive messages in English only to the translation LOG. For use with problem programs to generate a LOG file for Origin to examine.
      - added language support for program loaders defined in CSV files in \Users\Public\Documents\
    Origin International Inc\CMEngine\CMEQIF2QIF:
    "Calypso messages.csv" for Zeiss Calypso (actuals, inspection, geoactuals)
    "DMIS messages.csv" for DMIS (*.DMI, *.DMS) and GeoDMIS (GeoMeasure) (*.PPG)
    "PC-DMIS messages.csv" for PC-DMIS Visual Basic script files (*.BAS)
    The first row of the file defines the language mnemonic (e.g., EN, FR, SP) used in the LANG:<mnemonic>
    command line parameter. Column A is populated with the set of English messages which need to be translated into other languages. If there is a "%s" in the English message, there must be a "%s" in the non-English message. "%s" is a placeholder for a string like a feature or tolerance name. Similarly If there is a "%d" in the English message, there must be a "%d" in the non-English message. "%s" is a placeholder for an integer that indentifies the location in the source code triggering the error.
      - added -NOLOG command line parameter to suppress creation of LOG file
      - added -QIFHEAD command line parameter to cause inclusion of the <Header> element in the QIF document
      - added -QIFPROD command line parameter to cause inclusion of the <Product> element in the QIF document
      - added -QIFTRAC command line parameter to cause inclusion of the <PreinspectionTraceability> element in the QIF document

- added -QIFKEY command line parameter to cause inclusion of the
<KeyCharacteristic>/<CharacteristicDesignator> element in the QIF document
- added -QIFCMX command line parameter to cause a CMX CheckMate database export file
to be created (for debugging purposes)
- added -FS:<standard> command line parameter to override the default ASME Y14.5 2009
formal standard. For example, -FS:Legacy
- a CMX CheckMate database export file is created (for debugging purposes)
- <u>DMIS loader changes</u>:
    - implied DRFs from current coordinate system for legacy position and profile
    tolerances using   these rules:
    - if a feature controls all 3 origin axes it is primary, leveling feature is secondary,
rotation feature is tertiary
    - else if the rotation feature controls an origin axis then the leveling feature is primary,
the rotation feature is secondary, and the third feature is tertiary
    - else if the rotation feature does not control an origin axis, the leveling feature is
primary, the third feature is secondary, and the rotation feature is tertiary
    - datum label extracted from feature label (if possible), otherwise assigned A, B, C, etc.
    - target points are corrected to feature nominal for planes and lines
  - approach direction for measure points on planes and lines corrected to nominal
  - depth is captured when target points are corrected to feature nominal for circles
    - LOG file is more verbose
    - support added for PCD_AUTO_CIRCLE_607 macro
    - QIF nominal target points are offset by depth
    - QIF support for best fit constructions added
- <u>PPG loader changes</u>:
    - supported added for FEAT/GCURVE from CRV file (must be in same folder as PPG)
    - program splits on detection of RECALL/D(FCS_x), separate QIF document produced
    for second FCS
    - support added for point defined curve and point defined surface

PPG loader transforms to first coordinate system with 6 dof
- support added for DSTNCE and ANGLE features
- added QIF references to actual component for features and characteristics
- added DMIS report load by NONE support for FEAT/ARC
- added DMIS report load by NONE support for DATDEF
- capture and report features used in DISTB and ANGLB

Bug Fixes

- reworked handling of duplicate features: features are renamed internally so that
  CheckMate relationships remain valid, features revert to original duplicate name
  in QIF document
- fixed issue with "01" being appended to point-defined curve and surface names
- GeoMeasure distance betweens with respect to the origin, an axis, or a major plane
  become coordinate, position, or profile tolerances:
    origin pt2pt - profile
    origin along axis - coordinate
    axis pt2pt - position
    axis along axis - coordinate
    plane regardless - coordinate

- connection between GeoMeasure GCURVE tolerance and tolerance now made like this:
F(GSCN_2)=FEAT/GCURVE,'C:/MEASURE-6000/SCANDATA/yzl.crv'
                            ****

MEAS/GCURVE,F(GSCN_2),9

...

SF(SF_8)=SCNFNC/GENCUR,FA(SSLEFT-020), 'C:/MEASURE-6000/SCANDATA/A_YZL.crv'
               **********   *******

EVAL/FA(SSLEFT-020),T(TCRV2)
  under the hood, the measured GSCN_2 is renamed to SSLEFT-020 when the connection
  between the nominal yzl.crv and actual A_YZL.crv is made.
- fixed issue with correction of target points to nominal on lines with no defined
  nominal
- DATSET on plane will tidy up approximate nominal (from target points) and
  correct target points (while capturing original target points for optional
  re-output)
- fixed issue with INTERNAL/EXTERNAL on circles
- fixed issue with nominals being transformed to PCS (QIF is single CS)
- nominal target points from DMIS can be included in the QIF document either corrected,
by using   the -NPT command line argument, or uncorrected using the -NPT2 command line
argument
- units issue with target point depths fixed
- PC-DMIS import reassigns datum labels for legacy geometric tolerances
sorting of features/between tolerances fixed to ensure feature exists before between
tolerance
- units in DMIS input corrected to use UNITS/ statement
-QIF units match DMIS input units
- line actual corrected to populate Direction element instead of Nominal element
- fixed issue with empty feature ids set
- fixed distance between label issue
- OVERWRITE on command line will overwrite existing QIF document of same name
 - extension for QIF Results now QIF instead of XML

PC-DMIS

Version 1236

Enhancements (see CMEngine enhancements also)
- multi-line prompt and operator instructions become single statement
PROMPT/PROMPTSTR and TEXT/OPER,PROMPTSTR with
  PROMPTSTR=ASSIGN/CONCAT('line1',CHR(10),CHR(13),'line2',CHR(10),CHR(13),...)
- F_DEPTH on circle-outers flipped to be up nominal instead of down normal
- datum reference D1/D2/D3 size tolerance support added as prior EVAL/ DIAM or WIDTH.
WARNING message issued if
  datum is MMC/LMC and size tolerance is missing in .BAS (PC-DMIS bug)
- var.INPUTVALUE from YES/NO prompt used in IF_BLOCK converted to equivalent of
var.INPUT. For example var.INPUTVALUE<>0 will
  become IF/(var .NE. "NO"). Note var.INPUT from YES/NO prompt will have values
'YES'/'NO', var.INTPUTVALUE will be 1/0.
- COMMENT_TYPE 3 (INPUT) now has a variable declaration
- improved handline of .INPUT and SYSTEMTIME/SYSTEMDATE in ASSIGNMENT commands

- support added for IF_GOTO_COMMAND, IF_BLOCK_COMMAND, ENDIF_COMMAND command
- support added for THEO_RADIUS and MEAS_RADIUS
- support added for SET_COMMENT formats 6 as TEXT/OUTFIL
- support added for SET_COMMENT formats 5 as PROMPT
- TRACE_FIELD changed from PROMPT/ to TEXT/OUTFIL with HLL support
- source BAS file line numbers added to warning and error messages
- warning and error message added to loaded CheckMate program/DMIS output as passthrough comments
- added warning for ASSIGNMENT commands that need manual editing of the DMIS ASSIGN/
- FA() datum feature references replaced by DATSET and DAT() in TOL/POS
- VFORM setting available on main defaults screen
- VFORM options now include,PLOT
- missing SLOTVEC_I,J,K handled by looking at features used in a construction
- TOL/WIDTH...LONG can be used for MMC on a slot if TOL/WIDTH...SHORT not available

- PC-DMIS to target DMIS configuration added
- Command line operation added with following optional parameters:
  -DMISMD output program as MACRO in DMIS module
  -AUTOMAP map PC-DMIS probe names to native target format (so far only Metrologic implemented)
  -MANALIGN add manual alignment based on first 6-degrees-of-freedom coordinate system
    -EQUATE use first 6-degrees-of-freedom coordinate system to EQUATE to CAD
- in dialog mode operation G.U.I. added to control above behaviors
- **SAMPLE_HITS now captured and output in RMEAS blocks
- RMEAS_TYPE remeasure implemented for circle, cylinder, slot and cone
- DEPTH for slots implemented per DMIS 3.0+
- **PTBUFF points from RMEAS used for level to plane
- RMEAS enabled for Metrologic output
** these may require re-working based on Metrologic capabilities

Bug Fixes
- TOL/PROFP problem with planes fixed. Now TOL/PROFS.
- ORGX1 typo in slot constructed from two circles DMIS HLL output fixed. Now ORGX2.
- fixed issue with FCF tolerances not captured
- fixed issue with MMC implied TOL/DIAM not being added to OUTPUT statement
- fixed issue with CheckMate old version updates affecting CMEngine (always version 2.0)

Version 1053

Enhancements
- Redundant feature references are removed from best fit alignment
- assignments are moved as necessary to be after features they reference
- Added support for 2D and 3D best fit alignments as LOCATE/SoftOrient coordinate systems
- Added support for input flavor of comment as DMIS PROMPT statement

- Added support for variable assignment as DMIS ASSIGN statment $$ var=ASSIGN/expression passthrough command (requires user editing)
- Added support for generic feature construction (requires user editing)
- added switch for transforming CAL data to single coordinate system (old default behavior) new default behavior is leacing CAL in original coordinate system (this forces CAL file per feature to ON)
- added support for BASIC_SCAN_OBJECT as a stand-alone entity (if it has an ID)
- added simplified defaults dialog
- added support for reverse line construction

Bug Fixes

- fixed issue with coordinate system recall
- fixed issue with measured line approach vector not being transformed
- fixed issue with recall of internal coordinate systems acting like recall of external coordinate systems
- fixed issue with loss of identifier (label) on feature control frame tolerances

  - ASSIGNMENT processed as commented-out $$ var=ASSIGN/expression passthrough command
  - BF2D_ALIGN and BF3D_ALIGN become LOCATE/SoftOrient
  - GENERIC_CONSTRUCTION becomes point/line/plane/circle with construction method "GENERIC", DMIS code requires hand editing
  - SET_COMMENT type 3 becomes var=PROMPT/'text'
  - fixed issue with 0 length and width on contact slots

  - circle measurements now corrected by removing extraneous beginning points if number of target points greater than the N_HITS value

  - trailing spaces are now stripped from all "ID" and "REF_ID" labels because of extraneous mismatched caused by trailing spaces in one but not the otherD.

CMEngine

Version 1236

Enhancements

- PCDMIS loader: /AUTOCORRECT parameter causes sample hits on trims to be projected to nominal depth
- PCDMIS loader: /AUTODISTB parameter causes TOL/DISTB tolerance nominals to be recalculated from feature nominals (default behavior
 is that nominal is taken verbatim from .BAS file)
- PCDMIS loader: Superfluous TEXT/OPEN,' ' statements removed
- METROLOGIC CSV loader: feature label suffix _1, _2 interpreted as cylinder top/bottom only on XYZ values.
    - METROLOGIC CSV loader: 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)
    - METROLOGIC CSV loader: rectangular position (with repeated feature labels) now have label suffix _X, _Y, or _Z based on significant coordinate axis

- METROLOGIC CSV loader: 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
- METROLOGIC CSV loader: 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.
- METROLOGIC CSV loader: Cone with 2 coordinate position and 3rd coordinate tolerance now supported

- /SILENT command line parameter implemented for all program outputs in all configurations
- Modus output with HLL in FEAT/ containing "/expression" becomes "*(expression)**-1", i.e., division becomes multiplication by reciprocal because "/" was being erroneously interpreted as a delimeter
- QDAS output meta-data K fields mapped to per-measurement/non-catalogued values K0054-K0063
- Metrologic CSV (MCSV) loader now handles position after coordinate values even if it has a different label by comparing the coordinate deviations to the true position actual
- (MCSV) Rectangular position records with the same name now recognized as separate features
- (MCSV) Rectangular position records with one coordinate have second coordinate at 0.0 added X->XY, Y->YZ, Z->ZX
- Metrologic CSV format loader parsing of part name from file name enhanced to handle French format
- Serial number, CMM name, and measurement date captured from French format file name
- Metrologic CSV/QDAS output label size limit increased from 64 characters
- QDAS coordinates associated with true position K2020/K2021 fields now 1/1 instead of 0/0
- QDAS output ignores NOTE type features from Metrologic Text/Value fields
- Metrologic CSV loader trigger strings for foreign language now end at "Comment" column
- Metrologic CSV loader now handles semicolon as delimiter in addition to comma
- Metrologic CSV loader now handles comma as decimal point in addition to period
- Calipso program loader support added for caliper distance
- (max) number of decimal places from input PC-DMIS file for xyz, etc. and ijk separately in DMIS output.
- added support for PC-DMIS BEFORE and AFTER moves with different distances
- added workaround for bogus Y value in first sample point
- cleaned up clearance moves for RMEAS/CIRCLE
- .TL and .L use OBTAIN index 14 instead of 15
- CLASSIFICATION meta data added to Metrologic CSV loader
- QDAS out: K2001 record data now transmitted via K2002 record, K2001 record not output
- command line parameter added -LEXT:<ext> to define report file listener extension, e.g., -LEXT:RTF

- command line parameter added -LPATH:<path> to define report file listener path, e.g., "-LPATH:C:\My Data\" (remember to use quotes when spaces in path)
- command line parameter added -LPROC:<path> to define report file listener path for processed files, e.g., "-LPROC:C:\My Data\Processed\" (remember to use quotes when spaces in path)
- PC-DMIS hit point index syntax has changed from "label.HIT[..]" to "label.HITS[..]". Either is now handled.
- Things like HITS[12..12] are interpreted as HITS[12]
- Labels like [ITEM 113] now have both square brackets stripped.
- Polar construction definitions (without corresponding Cartesian definition placeholder) now supported
- PC-DMIS ARRAY() operator now stripped.
- MAX now converted to MX, and MIN to MN.
- OBTAIN index for TOL/DISTB actual corrected to be 4
-QDAS corrected characteristic type K2009 for position, others
- all characteristics become root nodes (except for reference characteristics for position/diam)
- cylinder positions are output twice at BASE and END
- QDAS position tol is parent node for XYZ, diameter tol is parent node for diameter2 if it exists
- QDAS actual/nominal decimal places at least 6 places
- PC-DMIS loader added support for DISPLAYPRECISION as number of report decimals
- PC-DMIS loader: now traps for "empty" best-fit constructed (features that do not reference
  any features) and does not create them. Error message added to LOG file
- DMIS/MLB output: added support for PC-DMIS angle-between using a point reducible feature (point,
  circle, sphere). A line is constructed from the origin to the feature and that used as a
  replacement feature.
- MLB output: PC-DMIS "canned" features like "XAXIS", "YAXIS"... now supported in angle between
  tolerances.
- DMIS output: relative circle has clearance move between pland and circle measurement
- DMIS output: relative circle measurement
- added MLB output support for PC-DMIS best-fit cylinder from circles (instead of points)
- added MLB output aupport for PC-DMIS cast point construction
- if a menu file has a path then that path is used in place of the default folder
  \users\public\documents\origin international inc\CMEngine\CMEngine

Bug Fixes
- QDAS output issue with K2020/K2021 fields with YZ positions fixed
- Issue with day in measurement date fixed (first digit doubled, last digit missing)
- fixed issue with tolerance decimal places defaulting to 0 with some report loaders (e.g., DMIS)

- Kotem cylinder patterns support added to "Metrologic" format CSV
- Profiles now properly captured with "Metrologic" format CSV
- Width differentiated from Distance (despite XML) with "Metrologic" format CSV
- ±999 and empty tolerances ingored for "Metrologic" format CSV, except for XYZ on positions
- QDAS 2D cylinders no longer need to be exactly up axis, uses 0.00001 as threshold
- QDAS issue with 3D cylinders fixed
- _TP label on Metrologic source cylinders fixed
- corrected issue with Zeiss UMESS CMM mode being output in MLB
- implemented ballooned width and length toleraces for PC-DMIS source slots in MLB
- implemented CAST constructions for plane/line/circle/cylinder/cone/slot
- automatically flip features for cylinder/cone-plane intersection circle construction
- added support for best fit web/cparlnf/cparlnr (BW, BX) for PC-DMIS source slots in MLB
- added support for arbitrary ordering of line/plane in intersection point construction
- Metrologic CSV loader PartName/PartNumber issue fixed
- corrected ordering of partname and partnumber from Metologic CSV results
- now handles nested {} in Metologic CSV results
- input source (Kotem, Metrologic) logged to preserve 1/2 and BASE/END labeling from Metologic CSV results
- partname extracted from file name if it isn't specified in Metologic CSV results metadata
- non-zero low tolerance on position used to indicated MMC and actual bonus in Metologic CSV results
- QDAS output of MMC cylinders is now RFS+XYZ, then BONUS, and then MMC with bonus from midpoint of tolerance zone
- added K8500, K8501 to indicate AIAG subroup size of 1, which is really a moving range over adjacent samples

Version 1053

Enhancements
- the unlock code REG file can be specified in a command line parameter instead of being installed in the registry
- help about now shows build date and maintenance expiry
- all failed to start messages now include revision number and build date
- polar coordinate tolerances now output for features measured as Cartesian

Bug Fixes
- added support for OGP MeasureMind reports
- added -OUTNAME parameter to be followed by name of output file as next parameter, otherwise the output file name is based on input file name
- instability with respect to ARC/GSURF/GCURVE DMIS algorithms fixed
- addressed issue with locking under Windows 10
- corrected issue with LK/Nikon/Modus radius results loading
- fixed issue with respect to processing PC-DMIS results columns (array overrun)

Calypso supported Entities.

Supported nominal types:	Supported tolerance types:
OMGeoPlane	OMCFDistanceRec
OMGeoPoint	OMCFRunoutRadial
OMGeo2Planes	OMCFRunoutAxial
OMGeoCylinder	OMCFabsolute
OMGeoSlot	OMReadUniToleranceLen
OMGeoFreeformSurface	OMCFPosition
OMGeoSphere	OMCFAngle
OMGeoTorus	OMCFRoundness
OMGeoLine3d	OMCFFlatness
OMGeoCone	OMCFProfile
OMGeoCurve	OMCFPerpendicularity
OMGeoCircle	OMCFParallelism
OMGeoSpacePoint	OMCFDistance2d
OMGeoSteppedCylinder	OMCFSpaceNetPoint
OMGeoCons	OMCFAngularity
OMTextelement	OMCFCoaxiality
OMDefineFitFromFreeformSurface	OMCFConcentricity
	OMCFCurveForm
Supported construction types:	OMCFCylindricity
OMGeoTheoretical	OMCFZoneFlatness
OMGeoRecallPoints	OMCFStraightness
OMGeoRecall	OMCFProfileOfALine
OMGeoSym	
OMGeoProjection	
OMGeoIntersect	
OMGeoPerp	
OMGeoVectorOffset	
OMGeoConeAdd	
OMGeoMaxPoint	
OMGeoMinPoint	
OMGeoMaximum	
OMGeoMinimum	