KISSsoft Changelog Version 03/2017 - Service Pack 6

KISSsoft - 3D geometry (STEP interface)

SP 6 - **Tooth end chamfer is not correct in 3D model**
The tooth end chamfer is not modeled correctly in cylindrical gear 3D model when the chamfer angle is not equal to 45 degrees.
This is fixed.

SP 6 - **Crash when generating 3D model of cylindrical gear with tooth end chamfer**
In some cases, especially for high number of teeth, crash problem occurs when generating 3D model of cylindrical gear with tooth end chamfer. It is caused by memory overflow in the Parasolid kernel.
Now the problem is fixed.

SP 6 - **3D geometry of the pinion in face gear calculation is wrong in some cases**
The tip diameter of the 3D geometry of the pinion in face gear calculation was using upper tolerance, not tolerance from the selected tolerance field.

KISSsoft - Bearing calculation

SP 6 - **TIMKEN thrust spherical roller bearings had wrong C, C0 values**
The thrust spherical roller bearings from TIMKEN had inverted C and C0 values. This is fixed now.

SP 6 - **Fixed implementation of Table 7 in ISO 281:2007(E)**
The method which handles the factor f_c for roller bearings (Table 7 in ISO 281:2007(E)) contained an error that would not allow to approximate the inner geometry of certain roller bearings.

KISSsoft - CAD interface

SP 6 - **Creo: Small inner gears with US customary units**
Small inner gears with US customary units (inches) can't be generated in Creo.
We added an extra dll for small inner gears with US customary units to the ProEngineer-folder.
If you have small inner gears with US customary units please do this:
- rename the file 'i_kiss_ext_i.dll' to 'i_kiss_ext_i_origin.dll'
- rename the file 'i_kiss_ext_i_smallGears.dll' to 'i_kiss_ext_i.dll'
Additional there are files for small outer and inner gears for metric units.

SP 6 - **Siemens NX: Interface to NX 12.0.1**
Siemens changed in patch 12.0.1 header files and libraries in NX, so we had to compile the interface with newer source files.
The KISSsoft interface is from now on available for NX 12.0.1 and higher versions.

SP 6 - **Autodesk Inventor: Interface to Autodesk Inventor 2019**
Interface to Autodesk Inventor 2019 implemented.

KISSsoft - Gear calculation

SP 6 - **Bevel Gear Fine-sizing**
Bevel Gear Finesizing was producing inaccurate results, when the outer reference diameter is used as input (instead of the mean normal module). When selecting a variant in the result table, then the bending safety in the main window was slightly different.

SP 6 - **Convert tip radius functionality for racks**
Convert tip radius functionality (Tab Modifications) was not working correctly for racks. The functionality is disabled in 2017 version. It is available again in 2018 version.

SP 6 - **Jump in path of contact**
In contact analysis, for some cases - e.g. internal gears with tip relief on the pinion - the contact analysis produced jumps in the path of contact around the end of the correction.

SP 6 - **Temperature dialog for worm gears**
In the temperature dialog for the worm gears, it was not possible to enter the ambient temperature. Furthermore, if you set an own value for the lubricant temperature, it was always overwritten with the calculated values. This is fixed.

SP 6 - **Problem calculating contact ratio of planet/rim meshing in contact analysis**
In case of planetary systems, the contact ratio (epsilon alpha/beta/gamma) was calculated wrong in the contact analysis report for planet/rim meshings. This lead to unrealistic epsilon gamma results and is fixed. Further Information: Epsilon alpha is calculated as maximum value along the facwidth. The resulting epsilon beta is the difference of epsilon gamma and alpha.

SP 6 - **Tooth form of the inner gear with modifications**
In some special cases (high profile shift, ...), the tip diameter of the inner gear changed, when the modifications were applied. This is now fixed.

SP 6 - **Wrong gap in case of unequal facewidth and planetary systems**
In case of unequal facewidth in planetary gears and planet-pin deformation, the gap was calculated wrong. This is fixed. Important: All missalignments defined for planetary systems in the dialog 'Axis missalignment' are based on the common facewidth, only the pin missalignment is defined for the planet facewidth.

SP 6 - **Hobbing cutter selection from the table**
In some cases, when the hob parameters in the table differed only slightly (in hprP0, alphaPr0, hFfP0, alphaKP0 and topping), it was not possible to select the hob from the table. This is now fixed.

SP 6 - **Measurement grid report for root fillet**
The measurement grid report for root fillet surface is not working properly in some cases, especially when the space gap in the root is big and thus the bottom land has arc shape in large portion. This is now fixed.

SP 6 - **Special report 'Detailed data for profile, flank line modification and tooth form'**
It was not possible to generate detailed data for profile, flank line modification and tooth form report (special report) when using English language and imperial units. This is now fixed.

SP 6 - **hamc in Bevel gear geometry according ISO23509**
The formula (215) for mean chordal addendum height, hamc1/2, has an error in the standard. This is fixed in the software and will be communicated in the next corrigendum of ISO.

SP 6 - **Height of the rack in the tooth form graphics**
Height of the rack in the tooth form graphics was not correct, if the tip diameter tolerances were applied. This is now fixed.

SP 6 - **Tab final machining not visible**
In some cases when opening a 2016 file (with the tab Final machining open) in 2017 version, the tab Final machining was not automatically shown.
This is now fixed.

SP 6 - **Circular reference with shaft/gear calculations**
When trying to perform the contact analysis calculation on a gear file that referenced a shaft file which again referenced the same gear file, the corresponding circular reference was not properly suspended.

SP 6 - **Calculation using Dressing Wheel data (dressing wheel - grinding worm)**
In case of the dressing wheel with the linear tip relief, the angle of the tip relief (if format is 1ø45' or 1°45') was not read correctly from the DressingWheel.dat file. Additionally, the calculated corrections using the Convert modifications module were slightly wrong. The problem is partly fixed in 2017 version and completely fixed in the 2018 version.

SP 6 - **Duty cycle calculations of planet stages**
A problem is fixed for planet stages having a given secondary speed with a duty cycle. If the duty cycle of the main speed had plus and minus speed factors, the load number NL was sligthly wrong.

SP 6 - **Planetary system contact analysis was overwriting face load factor results**
The planetary system contact analysis was overwriting face load factor results according to ISO 6336-1, Annex E. This is fixed.

SP 6 - **Contact analysis had changing results**
Contact analysis with nominal load and shafts had changing results depending on load spectrum is used or not for nominal calculation. This is fixed

SP 6 - **Proportional axis misalignment of planetary system problem**
Proportional axis misalignment of planetary system was calculated with the wrong carrier torque in case of ISO 6336-1 Annex E calculation with load spectrum. This is now fixed.

KISSsoft - General

SP 6 - **Use of temporary databases**
The use of temporary data bases to facilitate the maintenance of the data bases in larger work groups didn't work properly.

SP 6 - **File names in projects**
For files that contained "." characters in the filename beyond the extension (e.g. from KISSsys _O.Gearbox.Shaft1.Shaft1_calc.w10), the corresponding file name was not shown correctly in the KISSsoft project tree.

SP 6 - **Crash in info dialog fixed**
The info dialog crashed if it contained text and the user tried to scroll with the mouse wheel.

SP 6 - **Copy-Paste in 2D graphics did not work**
Copying a 2D graphic with Ctrl+C did not work at all.

KISSsoft - Proof of strength with local stresses

SP 6 - **FKM: formula in multiaxiality for the equivalent stresses was wrong**
The formula to calculate the equivalent stresses for ductile materials in the multiaxiality (multy axial stress) check was wrong.

KISSsoft - Root stress FEM calculation

SP 6 - **Problem with outer diameter fixing of the rim**
When the outer diameter of the rim of internal gears was selected as the fixing region, the calculation could not proceed. This is now fixed.

SP 6 - **2D FEM, single point contact at the tip**
There were cases where the single point contact was at the tip of the gear, but the FEM modeler could not find it, due to numerical accuracy issues. This is solved now.

SP 6 - **The angle of the applied load was not calculated correctly in some gear chain calculations.**
In some cases of gear chain calculations the angle of the load applied in the FEM model was not correct for the last gears in the chain. This is now corrected

SP 6 - **Correction in the load application angle and maximum stress calculation in FEM root stress calculation of rack models.**

The load application angle and maximum stress in FEM root stress calculation of rack models was not correct. This is now fixed.

KISSsoft - Shaft calculation

SP 6 - **Correction in the characterization of modeshapes.**
The characterization of modeshapes (type and whirl) was sometimes wrongly reported. This had an effect on the Campbell diagram calculation.

SP 6 - **Spline selection in the table for a free cross section**
It was not possible to select a spline from the table for a free cross section.

SP 6 - **Graphic shaft with load distribution and tooth trace**
The shaft was not positioned correctly in the graphics in some cases.

SP 6 - **Speed match error in shaft module when reading from cylindrical gear chain**
When reading from a cylindrical gear chain file, the speed would only properly match for the first gear element. This is now fixed to match also intermediate gear elements.

SP 6 - **Shaft calculations referencing three- or four gear chains**
Fixed that reading the speed from an intermediate wheel of a three- or four gear chain file to a shaft calculation failed.

SP 6 - **Element editor update issue**
A change in the element position was not taken considered the calculation if the calculation button was pressed right after entering the value in the element editor.

SP 6 - **Connecting support (joint) positioned at edge position of a shaft**
When a connecting support (joint) was positioned at the left edge position of a shaft, the torque balance was not calculated properly.

SP 6 - **Campbell diagram lines were mixed in some problems.**
The lines of the Campbell diagram were mixed in some models, due to wrong characterization of the respective eigenmodes. This is now fixed.

KISSsoft - Splines calculation

SP 6 - **Splines: Sizing functionality of the nominal torque wasn't correct**
If you click 2 times on the sizing button for nominal torque Tn, you receive different results. This is fixed.

SP 6 - **Splines : Select a position in the profile table wasn't possible**
In the table with the profiles it wasn't possible to select a position.

SP 6 - **Concentricity allowance for diameter > 200 mm was wrong**
In the table of the DIN 5480 for diameter in the range >=200 to 500 mm the concentricity allowance is now 80 mym.
Before the concentricity allowance was 60 mym.

SP 6 - **Convert tip diameter allowance dialogue for splines**
In some cases, the tip diameter tolerances were not calculated correctly for splines when using the conversion dialogue from the Tab tolerances. This is now fixed.

SP 6 - **Spline calculation stopped working**
In some cases for splines with low number of teeth (<11) and profile shift exactly 0.05, the calculation stopped working. This is now fixed.

KISSsoft – Gear body FEM calculation

SP 6 - **In the gear body deformation hub thicknesses h1 and h2 were switched**
Hub thickness h1 was used in place of hub thickness h2 and vice versa. This is now crorected.

KISSsys - General

SP 6 - **KISSsoft graphics list did not work**
When adding a graphic to the graphics list in KISSsoft, the graphic was added in the background but not shown in the user interface. The problem occured only when KISSsoft was started from KISSsys but was working correctly for KISSsoft itself.

SP 6 - **Import of housing stiffness matrices with UNIX-type file format**
Import of housing stiffness matrices with UNIX-type file format was leading to problems. This is corrected now.

KISSsoft Changelog Version 03/2017 - Service Pack 5

KISSsoft - 3D geometry (STEP interface)

SP 5 - **3D model: Face gear system positioning**
The face gear system with axial offset and helix angle was not positioned correctly.

KISSsoft - Bolt calculation

SP 5 - **The dynamic strength value for bolts rolled after heat treatment (ND < 2*10^6) was wrongly calculated**
The dynamic strength value σASZG for bolts rolled after heat treatment (SG) (ND < 2*10^6) was wrongly calculated.
(Equation 174, VDI 2230 part 1, 2015)

KISSsoft - Gear calculation

SP 5 - **IMPROVEMENT: Root fatigue data added for Kuraray materials**
Root fatigue data was added for the following Kuraray materials:
Genestar N1000A
Genestar N1001A
Genestar N1002A

SP 5 - **Number of teeth of pinion cutter in graphics**
The maximum number of teeth of the pinion cutter was limited to that of the corresponding gear in the 2D graphics.

SP 5 - **Applying tip rounding in the normal section**
In some gears with high helix angle (crossed helical gears, cylindrical gears), the tip form diameter was not calculated correctly. This is now fixed, additional message is displayed in the report.

KISSsoft - General

SP 5 - **Database: If you set an UNC-path as UDBDIR the idx-files were written in the wrong folder**
If you set an UNC-path as UDBDIR in the kiss.ini, the idx-files (index) were written in the wrong folder.
That means for hidden set data entries or own defined data entries the order was wrong in the database.

SP 5 - **Chinese texts in portuguese language version**
In some Portuguese KISSsoft surfaces were Chinese texts.

KISSsoft - Root stress FEM calculation

SP 5 - **FEM root stress: Tooth bending of internal gears**
The amount of tooth bending of internal gears was not calculated correctly. This affected also the singular tooth stiffness reported from the FEM root stress calculation.

SP 5 - **FEM-Root stress: Gear selection for 3- and 4-gear chains and planetary systems**
The information on the gear that was selected to be analyzed was not passed correctly to the calculation, for the cases of 3- and 4-gear chains and planetary systems.

KISSsoft - Shaft calculation

SP 5 - **The consistent flag was not always updated**
The calculation was not always set to inconsistent when changing the data of an element in the element editor or changing the position of an element by mouse move.

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KISSsoft - Bearing calculation

SP 4 - **Legend not shown for subsurface stress**
In the graph of the subsurface stress of the inner geometry bearing (W051) and shaft (W010) module, the legend was not shown when activated.

SP 4 - **Error in calculation of the relative eccentricity of journal bearing (angular span 180°) according DIN 31652**
The iteration to get the relative eccentricity according the standard DIN 31652 was wrong for a journal bearing with an angular span of 180°.

SP 4 - **Journal bearings: New lubrication arrangement according DIN 32652:2017 added**
We added a new lubrication arrangement according the DIN 31652:2017 to the list.

SP 4 - **Journal bearing: The stiffness was calculated wrong in some cases**
The stiffness and clearance, which can be transferred to the shaft calculation, were documented wrong in some cases.

SP 4 - **Bug in elastic ring user interface**
The unit conversion in the elastic ring tables (calculation module W051, tab "Inner ring" or "Outer ring") was not working properly.

KISSsoft - CAD interface

SP 4 - **NX: Actualize expressions didn't work**
You can define variables in the file 'Z10Gear?CAD.rpt' which are written in the CAD as expressions. This didn't work correctly.

SP 4 - **Autodesk Inventor: Interface to Autodesk Inventor 2018**
Interface to Autodesk Inventor 2018 is implemented.

SP 4 - **SolidWorks: Interface to SolidWorks 2018**
Interface to SolidWorks 2018 is implemented.

SP 4 - **Siemens NX: Interface to Siemens NX 12.0**
Interface to Siemens NX 12.0 is implemented.

KISSsoft - Gear calculation

SP 4 - **Manufacturing error was not applied correctly for contact analysis of planetary systems**
Manufacturing error was not applied correclyt for the contact analysis of planetary systems. The contact analysis was always calculating wit the +/+ case. This is fixed.

SP 4 - **Center distance tolerance of planets was not considered in contact analysis**
The center distance tolerance of each planet was not considered in contact analysis of planetary systems and therefore had no effect on the load distribution factor Kγ. This is fixed.

SP 4 - **Speed warning for gear calculation with shafts**
In some cases, warning appeared that speeds are not matching when using gear calculation with shafts. This only appeared in cases when read gear data from file was activated in the shaft files. This is now fixed.

SP 4 - **Updating tooth form in fine sizing of worm gear**
When a solution is selected in the fine sizing of worm gears, the tooth form is not updated correctly in the tooth form graphics.
This happens only if the fine sizing is done while the tooth form graphics is open.

SP 4 - **Measurement grid report for beveloid gear**
The measurement grid report for beveloid gear was not working.

SP 4 - **Power update for rough and fine sizing of worm gear**
The power condition was not updated automatically for the rough and fine sizing of worm gear, when the user entered the power condition and opened the sizing window without redoing the main calculation.
Thus, the error message pops up and the calculation can't start. Now the problem is fixed.

SP 4 - **Contact analysis for gears with axial offset bv and flank line modifications**
Contact analysis and annex E results were not correct for gears with applied axial offset bv and flank line modifications (crowning, eccentric crowning, helix angle modification, end relief, topological, triangular end relief). This is fixed.

SP 4 - **Gear pump calculation was not working in some cases**
In the case of 'nominal center distance' set for 'center distance tolerance' in tab 'Contact analysis' the gear pump calculation was not working. This is fixed.

SP 4 - **Planetary system axis alignment graphic**
In the graphic that showed the axis alignment for planetary gears, the misalignment caused by proportional deflection was not shown.

SP 4 - **Converting tooth thickness allowance for racks**
Converting tooth thickness allowances for racks from MrK (measurement over ball) was not working. This is now fixed.

SP 4 - **Error in consideration of planet pin dtp in ISO 6336-1 Annex E for planetary calculation**
In some cases, when shaft files are defined for carrier and planet pin, the deflection dtp was not considered correctly in case of ISO6336-1 Annex E calculation for planetary systems. This is fixed.

SP 4 - **Tooth form calculation of face gears**
In some cases the 2D tooth form calculation for face gears was crashing. The calculation and the 3D are unchanged and give the same results as before without crashing.

SP 4 - **Annex E calculation for planetary gear set with shafts**
If the module specific setting *Don't abort when geometry errors occur* was checked, then annex E calculation of the planetary gear with shaft was not calculated through (calculation was inconsistent). This is now fixed.

SP 4 - **Pressure angle can't be varied in fine sizing of planetary gear**
The pressure angle can't be varied in fine sizing of planetary gear if all of the cutters lists are set to own input.
Now it's fixed.

KISSsoft - General

SP 4 - **Sorting of tables was changing when data was reset**
The data tables had switched to the default sorting whenever the data was reset. This was happened for example after running the calculation or after selecting an entry.

SP 4 - **COM Interface: Error when accessing with standard python**
The access to CallFuncNParams failed when using the standard python implementation (CPython, python.org).

SP 4 - **Deactivate reactivate issue in data base tool**
After deactivating (deleting) data sets in the data base tool and reactivating some of these sets the order column was no longer consistent. This also occured during data base updates form older versions.

KISSsoft - Graphics

SP 4 - **Cyrillic letters not displayed in 3D Diagrams**
Some letters were shown as "?" symbols, due to the inability to display Cyrillic letters in 3D. Instead, the English text is shown.

SP 4 - **Error in graphic 'Heat development'**
In case of contact analysis calculating with slices, the specific graphic 'Heat development' was calculated wrong. This is fixed.

SP 4 - **Worm gear 2D drawing**
In the 2D drawing in worm gear calculation, the wheel was not always drawn with the correct thickness.

KISSsoft - Plastics Manager

SP 4 - **Ultimate and yield tensile strength**
In previous patch a small error was introduced which prevented the use of Ultimate and yield tensile strength in the graphics and in the DAT files. This is now fixed.

KISSsoft - Root stress FEM calculation

SP 4 - **Correction in the use of linear mesh for exporting results.**
The FEM root stress results were exported on the linear mesh and not on the quadratic one used for the calculation. This is now corrected and the results are projected on the quadratic mesh, resulting in a bit higher accuracy of the output. The difference is expected to be very small.

SP 4 - **Correction of the applied load, when the transverse contact ratio is greater or equal to 2.**
When the transverse contact ratio is greater or equal to 2, the whole load was applied on a single tooth. This is now corrected and it is assumed that the applied load is halved.

SP 4 - **Wrong representation of circumferential groove in shaft editor**
The shape of the circumferential groove in the shaft editor is wrongly displayed because the depth and height values are swapped.
The problem is only related to the graphical representation; the main calculation is correct.

SP 4 - **T beam is not available so far**
The T beam element is not yet implemented but the icon was already shown. Pressing it caused a crash.

SP 4 - **Correction in the use of distributed masses in the calculation of eigenfrequencies with gyroscopic effects**
Distributed masses were not taken into account correctly in the eigenfrequencies calculation, when gyroscopic effects were considered.

SP 4 - **Improvement in Campbell diagram characterization (legend)**
There were cases where the characterization of Campbell diagram lines was not correct (mixing of modes). This is now corrected.

SP 4 - **Strength calculation: Number of keys wasn't considered**
The number of keys (1 or 2) had no influence on the strength calculation according DIN, FKM.
We fixed that in the sizing strength functionality and in the main calculation.

SP 4 - **Bending moment (Maximum) was displayed wrongly**
The element Bending moment (Maximum) was showing the value of the element Tension/Compression force (Maximum) in the element editor for cross sections.

SP 4 - **Use of bearing data saved with a KISSsoft file**
Change of behavior: If in the module specific settings the flag 'Save user defined bearings in calculation file' is set, then, when a W10 file is loaded, which contains saved bearing data, this data is read in from the W10 file and not from the user own bearing data base.
This will avoid, that a W10 file loaded by an other user with an other own bearing data base, will contain wrong bearings.

SP 4 - **IMPROVEMENT: Display of rope sheave/belt/chain in shaft editor**
The display of rope sheave/belt/chain is improved and is now correctly set by the sheave diameter.
There is no change in the strength calculation.

SP 4 - **Correction in the bearing lifetime sizing, keeping fixed correctly the inner or outer diameter of the bearing**
The information of the bearing setup (inner or outer ring selected for sizing) was not passed correctly in the bearing lifetime sizing function (only when called from within the shaft calculation).

SP 4 - **Check of strictly ascending order of the data entered in a user defined bearing stiffness file**
In case the deformation or tilting data in a user defined bearing stiffness file is not in a strictly ascending order, the resulting calculated stiffness can be wrong. This is now checked.

SP 4 - **Type of gear (Bevel or Hypoid) was not read correctly from bevel gear files**
The type of gear (Bevel or Hypoid) was not read correctly from file for bevel gear force elements.
The issue pertains the user interface only, the calculation was already working correctly.

KISSsoft - Splines calculation

SP 4 - **Root form diameter calculation for splines with protuberance**
Root form diameter for splines with protuberance was not calculated correctly in some cases. This is now fixed.

SP 4 - **Tooth thickness tolerance field for splines**
The default setting for Tooth thickness tolerance field for splines was changed from Mean value (Effective) to Mean value (Actual).

SP 4 - **Conversion from Space width to actual Tolerances**
Splines: The Conversion in the sub-window from Space width to Actual tolerance was wrong for the hub. This is fixed.

SP 4 - **Selecting hobbing cutter from a standard**
Selection of hobbing cutter from a standard (DIN 3972, ...) was not working for splines. This is now fixed.

KISSsoft – Gear body FEM calculation

SP 4 - **Gear body FEM: Error in the calculation of recess width k2.**
The recess width k2 is a factor of the hubwidth, but it was treated as a factor of facewidth. This is now corrected. This leads to differences only in the case the facewidth is not equal to the hubwidth.

KISSsoft Changelog Version 03/2017 - Service Pack 3

KISSsoft - 3D geometry (STEP interface)

SP 3 - **IMPROVEMENT: Option to set constant tooth thickness allowance for 3D model of bevel gear**
A new option is added to set constant or variable tooth thickness allowance for 3D model of bevel gear in module specific settings.

KISSsoft - Bearing calculation

SP 3 - **Small error in moment calculation of ball bearings (inner geometry)**
There was a small error in the calculation of the moment arm for each rolling body force (radial ball bearings). The expected changes in the results are smaller than 2%.

KISSsoft - CAD interface

SP 3 - **Creo: not all path separators for CADDIR were supported**
The path for the CADDIR which is set in KISSsoft can have different path separators ('/' or '\'), until now only the '\' was supported.
The temporary files for the interface will be saved in this directory (CADDIR).

KISSsoft - Gear calculation

SP 3 - **Selection of tool in reference profile**
The selection of a hobbing cutter or a pinion type cutter was not possible if there were other tools with the same module and pressure angle in the same dat file.

SP 3 - **Center distance allowance for pinion with rack**
In some cases the upper/lower center distance allowance was transposed resp. had the wrong sign for pinion with rack.

SP 3 - **In some cases dtp was considered wrong for planetary face load factor calculation.**
The face load factor calculation of planetary systems considered the tilting of the bolt relative to planet carrier axis, dtp, wrong if shafts where used for planet carrier and planet bolt. This is fixed.

SP 3 - **Root safety factor using AGMA calculation**
In some cases when using AGMA strength calculation and special setting for the Tooth form factor Y (External toothing: AGMA908, Internal toothing: Graphical method), the root safety factor for the internal gear was not calculated correctly for the initial calculation. If the same calculation was repeated, then the correct safety factor was calculated. This is now fixed.

SP 3 - **Conversion between °C and °F in the tab Operating backlash**
In the tab Operating backlash calculation, the conversion between °C and °F of the permissible temperature difference [ΔT=TR-TC] was wrong.
Due to the fix, the input value might be changed when the calculation file was saved in release 03-2017 up to Patch B with the US customary unit.
The user is requested to check the input value again in this case.
The files in earlier versions up to 03-2016 are updated correctly but the result will change slightly.

SP 3 - **Convert addendum coefficient dialog for pinion type cutter in the tab Tooth form**
Tab Tooth form: Displayed diameters in the Convert addendum coefficient dialog for pinion type cutter were not correctly calculated when normal module and pressure angle were not the same as defined in the tab Basic data. This is now fixed

SP 3 - **IMPROVEMENT: Measuring circle shown for cylindrical gears**
Measuring circle in transverse section is shown in the Tooth form graphics for symmetric cylindrical gears.

SP 3 - **Adding tip rounding to the tooth form**
In some special cases when the tooth form was produced with the topping tool, tip rounding was not applied correctly. This is now fixed.

SP 3 - **Root diameter change when adding profile modifications**
In some special cases (min/max/nominal tolerance field selected for diameters, small module, ...), root diameter was changed when the profile modifications were added. This is now fixed.

SP 3 - **Dynamic factor KV according AGMA2001-B88 adapted for LTCA**
Dynamic factor KV according AGMA2001-B88 is <= 1. Therefore in load factors as wm*KA*KV used in LTCA and KHb calculations, instead of *KV now *1/KV must be used. This is fixed now.

SP 3 - **Bevel gear modification sizing**
Bevel gear modification sizing was not executed when a load spectrum was involved in the contact analysis.

SP 3 - **Convert button dialog for Addendum coefficient in reference profile gear**
Convert button dialog for Addendum coefficient in reference profile gear (for Hobbing cutter and Pinion type cutter) was not correct for splines, crossed helical gears, face gears, worm gears and beveloid gears. This is now fixed.

SP 3 - **3 and 4 gear train calculation with shafts**
For the 3 and 4 gear train calculation using shafts, in some cases (3 gear train calculation: shaft defined on gear 2. 4 gear train calculation: shaft defined on gears 2 and/or 3) the speeds between gears and shafts were not matching and a warning message was produced. This is now fixed.

KISSsoft - General

SP 3 - **IMPROVEMENT: User interface on high resolution screens**
Parts of the layout of the user interface were corrupt on high resolution screens.

SP 3 - **Search for help fixed in english version**
Searching in the english manual did show some results, but did not open the topic when clicking on it.

SP 3 - **Unify path separators to save the directories in the user settings**
We use now always the path separator '/' to save the paths for the directories in the user settings. Before we had a mixture of the separators '/' and '\' and some windows operating system are taking that automatically as two separator '//' or '\\', if you choose a path.
So now, when we read in a path, the separator is automatically set to '/'.
Just for UNC paths we use \\servername This is correctly working.

SP 3 - **Database tool did not always list the modifications table**
The database tool did not list the modifications table for most license numbers as well as it did not list the user specific tables for the entitled users.

SP 3 - **Crash due to wrongly defined dat files solved**
Reading dat files for tables crashed if there was less data defined in the dat file than the software expected.

KISSsoft - Graphics

SP 3 - **Wrong tooth flank shown in planet/rim face load factor graphic**
Gap and Lineload graphic of face load factor calculation was showing the wrong tooth flank in contact of planet/rim meshing. This is fixed. Results are not changing.

KISSsoft - Plastics Manager

SP 3 - **Writing material to the database**
Writing material (with no Rm and Rp values defined) to the KISSsoft database did not work in the Plastics Manager. This is now fixed.

SP 3 - **Conversion between °C and °F in the tab Test data**
The conversion between °C and °F was not correct for 'Merge temperature deviation' and 'Group temperature deviation' in the tab Test data. This is fixed.

KISSsoft - Root stress FEM calculation

SP 3 - **Error in the maximum stress calculation when the position is very close to the root diameter.**
There were some cases where the maximum root stress was not derived correctly even though in the report the correct stresses were given. This was present only in cases when the maximum stress

was very close to the root diameter.

KISSsoft - Shaft calculation

SP 3 - **Pressure point of axial tilted roller bearings**
The pressure point of axial tilted roller bearings was ignored when the axial fixation was selected as "Fixed bearing adjusted on left side" or "Fixed bearing adjusted on right side". Effectively the pressure angle was ignored (used 0° instead of 45° or 60°).

SP 3 - **IMPROVEMENT: Memory footprint of shaft calculation**
The internal memory footprint (MB used) of the shaft calculation has been reduced by a factor of almost 4x. This also has an effect in the calculation time, which is reduced by almost 70% in some cases. This is mostly noticed in calculation files that have many coaxial shafts and/or many load bins.

SP 3 - **Unbalance mass force split between axes in forced response calculation.**
The unbalance mass force was not split correctly between the X and Z axes. This is now fixed, resulting in smaller shaft deformations due to the unbalance mass in forced response calculation.

SP 3 - **Notch effect of limited cross section was not always updated**
The notch effect of a limited cross section was not updated when elements were deleted at its specific position.

SP 3 - **Element tree and element editor are visible in report mode**
The element tree and the element editor are visible while the report viewer is open.

SP 3 - **Error with documentation point outside the shaft boundaries**
The addition of a documentation point outside the shaft boundaries, resulted in wrong results in the shaft calculation. This is now corrected, the documentation point is ignored and a warning message is given.

SP 3 - **Diameter of shaft did not always update in free cross section when moving the position**
When moving the position of a free cross section to a shoulder, the diameter of shaft was set to 0.

SP 3 - **Iteration error in life time calculation**
The initialization of the cross sections was wrong in some cases and gives error in iteration of the life time.

SP 3 - **Status after deleting sub elements of outer geometry elements**
The calculation was not set to inconsistent after deleting a sub element of an outer geometry element.

KISSsoft - Shaft-hub-connections

SP 3 - **Material dialog resizing fixed**
Some of the material dialogs could not be resized.

KISSsoft - Splines calculation

SP 3 - **IMPROVEMENT: The allowances for the measurements over 2 rolls were added for the gauges**
For the calculation of gauges the maximum and minimum values for the measurements over 2 rolls

are added.
The values are shown in the special report for the gauges.

SP 3 - **Errors in the calculation when the method was ANSI (with inches as units)**
For the splines module ("Spline {strength}", M2C), there was an error in how the table data (in inches) were communicated from the user interface to the internal calculation. This is fixed now, but the existing files which are saved with the ANSI method need to be recreated.

KISSsys - General

SP 3 - **Handling of housing initial offsets in load spectrum calculation.**
The user defined initial offsets of a housing element were not handled correctly when the housing calculation was included in a load spectrum calculation. This is now fixed.

SP 3 - **Housing stiffness matrix (NASTRAN format)**
The system of units of a housing stiffness matrix saved with the NASTRAN format was not read in correctly.

SP 3 - **Examples and GPK models**
The Examples and GPK models were updated to make sure the variable CA_ShaftSource and CA_TorqueSource in cylindrical gear calculations have the correct expression in the definition.

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KISSsoft - Gear calculation

SP 2 - **KHbeta report in the contact analysis report**
If KHbeta was calculated using Annex E for 3 gears and 4 gears train, the contact analysis report always contained the KHbeta report for the last gear pair. This is now fixed.

SP 2 - **Generating IGES file for FEM analysis for asymmetrical tooth form**
In some additional cases, tooth form for FEM analysis could not be generated for tooth forms with asymmetrical teeth. This is now fixed

SP 2 - **Improved: Report for cylindrical gear according AGMA**
In the report, now the Bending/Pitting strength power rating Pat, Pac AND the allowable transmitted power for bending/pitting Patu, Pacu are shown.
The formulas used are according AGMA2001-D04 / AGMA2101-D04.

SP 2 - **Worm Gears : Radial load and meshing efficiency**
Improvement: If in the settings, the flag 'Improved calculation with enhanced formula' is used, then the radial force and the meshing efficiency are calculated according to the literature ("Maschinenelemente 2", Schlecht, Pearson Studium).

SP 2 - **Problem with two specific columns in result table of rough sizing**
Results table in rough sizing dialog of pair and planetary systems didn't show the columns i_epsilon and hunting correctly. This is fixed now.

SP 2 - **Crash in material table search function fixed**
The application crashed in some cases when searching in the material table.

SP 2 - **Tab torsion in axis alignment diagram for planetary gears**

Tab torsion was incorrectly deactivated if axis alignment was set to "From shaft calculation" for all the gears. This is now fixed.

SP 2 - **Generating rack with read-in pinion type cutter**
Generating a gear with read-in pinion type cutter was not working. This is now fixed.

SP 2 - **IMPROVEMENT: Coordinates of the worn-out tooth form written to tmp folder**
Coordinates of the worn-out tooth form (x and y) are written to the tmp folder. The file is written if "Wear along the tooth flank" graphic is opened in KISSsoft.

SP 2 - **Root stresses in contact analysis with wear iteration**
If contact analysis was performed with iterative wear calculation, the text for the results of the tooth root stress was not correct in the results window. In this case, Shear stress (not bending stress) is calculated and displayed. This is now fixed. The calculated results were correct.

SP 2 - **IMPROVEMENT: Maximum root rounding warning for the constructed involute**
The warning is shown if the root rounding for the constructed involute is too big (if the calculation is not run from the tab Tooth form).

SP 2 - **Tooth thickness modification factor in worm gear calculation**
The tooth thickness modification xs factor was not correctly used in the tooth form calculation of the worm gear module.

SP 2 - **Worm gear module settings fixed**
In the worm gear module, the visibility setting for normal module, axial module, Normal Diametral Pitch and Transverse Diametral Pitch was not correct.

SP 2 - **IMPROVEMENT: Effective helix angle by helix angle modification**
When the helix angle modification is defined, the conversion from the modification value to the helix angle deviation is now using the transverse pressure angle instead of the normal pressure angle. Thus, the effective helix angle will be slightly different.

SP 2 - **IMPROVEMENT: Additional settings to suppress or adapt validation between gear and shaft calculation**
In case of face load factor or contact analysis calculation including shafts, the user can now suppress all validations (checks made concerning torque, facewidth, helix angle, etc.) between gear and shaft calculation. Additionally, the user can adapt the validation with a deviation allowance. Both settings can be found under tab 'Factors or Contact analysis' -> 'Dialog Define axis alignment' -> 'Axis alignment'.
Additionally, in case if shaft and gear calculation are using load spectra, the same bin of the gear and shaft load spectrum is now used. (Before the shaft was always calculated with the nominal torque.)

SP 2 - **Importing rack data from dxf**
Importing rack data (in the tab Tooth form) was not working for half tooth dxf's. This is now fixed.

SP 2 - **IMPROVEMENT: dxf file names with UNICODE characters**
dxf file names with UNICODE characters were not supported. This is now fixed.

SP 2 - **Bevel gears: Mass is calculated**
Mass (kg) of bevel gears was always 0; this is fixed.

SP 2 - **Tooth form using pinion type cutter with chamfer**
In cases, where no tip rounding was defined on the pinion type cutter, sometimes the tooth form was not calculated correctly. This is now fixed.

KISSsoft - General

SP 2 - **Database: Some Koyo Bearings were set hidden for deep groove roller bearings**
6 Koyo bearings were set hidden for deep groove ball bearings in the database, now they are activated again.
(Koyo 60/530, Koyo 60/560, Koyo 60/600, Koyo 60/630, Koyo 60/670, Koyo 60/710, Koyo 60/750, Koyo 60/800)

SP 2 - **Database: UDBDIR can't set anymore under Extras/Settings**
Because there are some problems with the UDBDIR, which was set under 'Extras/ Settings' and then saved in the personal settings, we decided to kick out this possibility to set the path from the udb folder.
That means that from now on, the UDBDIR will always get the path from the 'kiss.ini' file.
Please check if the UDBDIR is set correctly in the 'kiss.ini'.

SP 2 - **IMPROVEMENT: User can select if curves are drawn outside of the graph's range**
The user can now select if curves are drawn outside of the graph's range or not. The setting can be found under Graphics->Settings. By default, curves are drawn outside of the graph's range.

SP 2 - **Crash whitin writing KISS.ini solved**
Closing the software caused a crash when the user had edited the graphic settings and no CAD-Systems where available.

SP 2 - **CheckBoxes and RadioButtons on high resolution screens**
Some of the check boxes and radio buttons were drawn too small on high resolution screens.

SP 2 - **Tables on high resolution screens**
Tables showing data from a source file were not readable on high resolution screens.

SP 2 - **Memory leaks corrected**
Two memory leaks cases were found and corrected. One was related to all calculation modules (User Interface-related variables were not removed) and the other one had to do with all bearings treated with inner geometry. These leaks did not affect the calculation results, only the performance and responsiveness of the system, especially after extended hours of operation or lengthy calculations (eg. KISSsys).

KISSsoft - Root stress FEM calculation

SP 2 - **Optimize mesh refinement in FEM analysis of gear root stress calculation**
The mesh refinement in critical areas (tooth profile and holding area) are better optimized based on the defined user input for mesh density. This increases both stability and accuracy.

KISSsoft - Shaft calculation

SP 2 - **Editor zooms automatically when adding elements**
When adding elements, the shaft editor automatically zooms to show the new element. This is now stopped.

SP 2 - **Correction in forced response versus length**
In case the forced response versus length of the reference shaft was calculated, the boundary conditions at the right end of the shaft were not satisfied. This is fixed now.

SP 2 - **Modal analysis for shafts with distributed masses**
Correction in the way that the distributed masses are taken into account in the modal analysis of shafts.

SP 2 - **Several problems with copy/paste in the shaft element tree solved**
The element tree had several problems within its copy/paste mechanism. When working with short cuts, elements could be placed in the wrong section and the software crashed in some cases.

SP 2 - **Adding connections only possible if more than one shaft exists**
It was possible to add connections even if the parent item for connecting elements was disabled.

SP 2 - **Deleting elements in the shaft editor did not set the flag to inconsistent**
Deleting elements in the shaft editor did not set the status of the calculation to inconsistent. Therefore the do-you-want-to-save question did not show up if the calculation was closed.

SP 2 - **Selection behaviour in element list**
The selection behaviour in all the element lists was not as expected. Several items were showing a blue color.

KISSsoft - Splines calculation

SP 2 - **Gauges calculation: the tolerance values for ring gauges were in some cases wrong read from the table**
The tolerance values Ltn, Fr, Fp, fp, Fα for ring gauges were in some cases wrong read in from the table 7 (DIN 5480-15).

SP 2 - **Crash in dialog 'Convert tip diameter allowance' solved**
The application crashed when the radio selection in dialog 'Convert tip diameter allowance' was clicked.

KISSsys - General

SP 2 - **Error in the export of model coordinates (ExportSystemModelData function)**
Correction in the calculation of the coordinates of origins of shafts, bearings, connections and gears in the "ExportSystemModelData" function.

SP 2 - **Element tree and element editor did not close in shaft calculation**
When closing the shaft calculation from KISSsys, the element tree and element editor stayed open when they where in floating mode.

KISSsoft Changelog Version 03/2017 - Service Pack 1

KISSsoft - 3D geometry (STEP interface)

SP 1 - **IMPROVEMENT: Possible to set coordinate system when saving a 3D model of bevel gear**
The user can set the coordinate system according to Klingelnberg or Gleason machine type when saving a 3D model of bevel gear.
The setting can be selected from the module specific settings.

KISSsoft - CAD interface

SP 1 - **Solid Edge: Interface to Solid Edge ST10**
Interface to Solid Edge ST10 is implemented.

SP 1 - **Creo 3: Small gears with US customary units**
Small gears with US customary units (inches) can't be generated in Creo 3.
We added an extra dll for small gears with US customary units to the ProEngineer-folder.
If you have small gears with US customary units please do this:
- rename the file 'i_kiss_ext_e.dll' to 'i_kiss_ext_e_origin.dll'
- rename the file 'i_kiss_ext_e_smallGears.dll' to 'i_kiss_ext_e.dll'

KISSsoft - Gear calculation

SP 1 - **Unable to match gears on shaft in case of bevel contact analysis**
In case of bevel gear contact analysis with shafts, the calculation was not able to find the matching gear on the shaft. This is fixed.

SP 1 - **Error while loading old planetary stage calculation files**
Axis misalignment was not correct read in while loading a planetary stage calculation file from an older version. This is fixed.

SP 1 - **Contact analysis for internal gears with asymmetric modifications**
If asymmetric modifications were applied to the internal gear, they were not considered correctly in the contact analysis (left and right flank were swapped). The issue is fixed.

SP 1 - **Error in dialog of tip diameter allowance conversion**
The dialog of tip diameter allowance conversion (tab 'Tolerances') had an error when the dialog converted the proposed values.

SP 1 - **Swapped stiffness weakening in contact analysis for helical gears**
The stiffness weakening of the border slice for gear 1 and 2, in case of right helix angle, was swapped in contact analysis. This is fixed now.

SP 1 - **Profile modifications with grinding worms/dressing wheel**
If pre-manufacturing was set only on gear 2 (and not on gear 1), then the displayed results in the convert modifications window were not correct. Also when transferring the calculated modifications with the grinding worm to the tab Modifications, the displayed corrections were always linear tip relief (and never curved tip relief, even if the dressing wheel had curved tip relief applied). This is now fixed.

SP 1 - **IMPROVEMENT: Convert tooth form from curves to points**
Additional option **Use point (not curves) for the definition of tooth form** was added to the user specific settings. The user now has the possibility to convert tooth form to points in tooth form

calculation.

SP 1 - **Wear calculation according to Pech - plastic/plastic combination**
Grease temperature and wear according to Pech for crossed helical gears were not calculated correctly for plastic/plastic combinations. This is fixed.

SP 1 - **Addendum angle gear 2 for bevel gear**
Any value entered for the addendum angle gear 2 for bevel gears was set back by the calculation.

SP 1 - **Tip rounding in transverse section**
In some special cases (when profile modifications were applied), tip rounding was not applied correctly, This is now fixed.

SP 1 - **Minimum tip clearance calculation in Tab operating backlash**
Minimum tip clearance calculation in Tab operating backlash did not consider runout of the gears (if activated). This is now fixed.

SP 1 - **IMPROVEMENT: Mass of worn out material calculated in the CA**
Mass of worn out material is calculated and displayed in the CA results.

SP 1 - **FEM root stress calculation using quadratic spline for the tooth form**
Artificial stress concentrations were present when the polygon approximation was used for the tooth form extraction used in the FEM root stress calculation. This is corrected by always using locally a quadratic spline approximation of the tooth form.

SP 1 - **Z080: Material list for worm gear wasn't set correctly**
The material list for worm gear wasn't set correctly.

SP 1 - **Generating IGES file for FEM analysis for asymmetrical tooth form**
In some special cases, tooth form for FEM analysis could not be generated for tooth forms with asymmetrical modifications applied. This is now fixed.

SP 1 - **Opening old file with generation grinding (flank only)**
Old files having generation grinding (flank only) set were not converted correctly to the 2017 version. This is now fixed.

SP 1 - **Error in setting correct working flank when usind a load spectrum with contact analysis or face load factor calculation**
When calculating face load factor or contact analysis, with load spectrum, the working flank was set wrong in case, that the load spectrum had bins with negative torquefactors. This is fixed.

SP 1 - **Misalignment of sun in contact analysis was ignored in seldom cases**
In cases where only the sun, of a planetary system, has a proportional axis misalignment defined, the misalignment was ignored in contact analysis. This is fixed now.

SP 1 - **Imported gear did not get the tooth thickness allowances**
The import function for a single gear into an other gear calculations did not transmit the tooth thickness allowances.

SP 1 - **Torque layout with duty cycles**
Torque layout with duty cycles, when KHb was calculated according ISO6336 annex E, was not working properly.

KISSsoft - General

SP 1 - **Position of colored 2D surface fixed**
Colored surfaces in 2D graphics where not positioned correctly in all cases. The wrong behaviour occured in the shaft calculation graphic 'Stress distrubution on raceway'.

SP 1 - **Text orientation of vertical diagram markers**
The text orientation of vertical markers in 2D diagrams was horizontal. Therefore the texts overlapped when serveral markers where set next to each other. The text orientation is now changed to vertical.

SP 1 - **Report in gear calculation damaged in demo version**
Due to the demo message in the report, the cylindrical gear reports are were the first column of the weibull parameter table.

SP 1 - **Data base: a tapered roller bearing had wrong value**
Tapered roller bearing "SKF_JM511946/910/Q" had the wrong C0 value.

SP 1 - **Info graphics fit the window automatically**
The info graphics fit the info window and zoom via mouse wheel is added.

SP 1 - **Unit setting was not restored**
In some cases the user specific unit setting was not restored when starting the software again.

SP 1 - **3D graphic windows docking error**
3D graphic windows did show contents when the window was floating but did not when the window was docked to the main window.

KISSsoft - Graphics

SP 1 - **Change in ISO 6336-1, Annex E graphic**
Gap and line load curves, when the contact is on the right flank, are represented now as a curves below the 0.0-line in the respective ISO 6336-1, Annex E graphic. Curves, when the contact is on the left flank, are always above the 0.0-line (in the +area).
This is added, so that now it is easy to see, if left or right flank is making contact.

KISSsoft - Shaft calculation

SP 1 - **Correct line load distribution for gear body deformation, inside flank line modification**
The correct line load distribution along the face width in now taken into account for the calculation of the gear body deformation (flank line modification calculation). This applies to the case where an FE stiffness matrix is defined for the gear body.

SP 1 - **Deleting shafts in shaft editor**
Error in shaft editor is fixed: The views were not fully updated when deleting a shaft.

SP 1 - **Error in stress ratio values in Tab 'Strength'**
The stress ratio values and the load factors (static/endurance) in tab 'Strength' were mixed up.

SP 1 - **Error when deleting elements in the shaft editor solved**
The element tree was not always updated corretly when deleting elements.

SP 1 - **Bevel gear in 3D viewer was not shown**
The bevel gear was not shown in 3D model viewer in the shaft calculation and in the kSysGL3DViewer in KISSsys.
Now the problem is fixed now.

SP 1 - **Handling element selection and result window improved**
The selected element stays selected when running the calculation, but the result window is coming to front anyway.

KISSsoft - Shaft-hub-connections

SP 1 - **Input fields added to M02C**
Missing input fields for data of a spline added to the spline (strength) calculation and number of decimal places in table fixed.

KISSsys - General

SP 1 - **Planetary modeled with gear pairs in KISSsys**
When modeling a planetary stage as a system of gear pairs, in the gear calculation, all speed related variables (speed, driving/driven, clockwise/counterclockwise) have to be entered with the relative values and not the absolute ones. The user sees then the local values in KISSsoft, different from the global ones in KISSsys. In order to run the contact analysis, all these changes are also applied in the temporary generated shaft files from KISSsys. But the shaft files from the model remain unchanged.

SP 1 - **Database: Klübersytnth GEM 4 synthetic oil based on polyalphaolefin**
The type of the oils Klübersynth GEM 4 was corrected to synthetic oil based on polyalphaolefin.