KISSsoft Changelog Version 2019 - Service Pack 6

KISSsoft - Bearing calculation

SP 6 - **Better interpretation of the diagramm to define the oil bath resistance variable VM (SKF)**
Implemented a better interpretation of the diagram to define the oil bath resistance variable VM (SKF-Katalogue) to calculate the friction MDrag.

KISSsoft - Gear calculation

SP 6 - **Meaurement grid report for fillet surface gives zero values**
Measurement grid report for fillet surface gives zero values if the permissible deviation of the tooth form calculation is high.

SP 6 - **Improvements: Added profile shift values at side I and side II for bevel gears**
Added profile shift values in addition to the other coefficients at the side I and side II for bevel gears.

SP 6 - **Contact analysis results not shown correctly on the rack tooth**
Contact analysis results were not shown correctly on the rack tooth. The issue is now fixed.

SP 6 - **Gear selection for shaft misalignment was not consistently working for Z015/Z016**

SP 6 - **Twist and manufacturing twist modifications**
Twist and manufacturing twist were not applied correctly to the tooth form. The issue is now fixed and affects the 2D and 3D geometry as well as the contact analysis results.

SP 6 - **Contact analysis did not set the correct part load torque in shaft calculations referenced for multiple meshings**
The contact analysis did not set the correct part load torque in shaft calculations referenced in case these shaft calculations contained gears with multiple meshes.

SP 6 - **Wrong info value of the effective pressure angle for the pressure angle modification**
The effective pressure angle in the info field for the pressure angle modification was slightly wrong for helical gears. Now it's fixed.

KISSsoft - Hertzian pressure

SP 6 - **Some info pictures were missing**

KISSsoft - Shaft calculation

SP 6 - **Maximum deflection and maximum stress shown in the results window could be wrong in case of using load spectrums**
To determine the maximum deflection and maximum stress shown in the results window, the nominal case was used also with load spectra. Now worst case of all bin's is presented.

SP 6 - **Mass of shafts with non-circular profiles (e.g rectangular profile) is not calculated**

correctly
Mass of shafts with non-circular profiles (e.g rectangular profile) is not calculated correctly

KISSsoft Changelog Version 2019 - Service Pack 5

KISSsoft - 3D geometry (STEP interface)

SP 5 - **Cutter shaft angle change for the worm wheel 3D geometry**
The cutter shaft angle change (input in the tab 'Generation of 3D' in the module specific settings) for the worm wheel 3D geometry was wrongly applied. Now it's fixed.

SP 5 - **Wrong position of the 3D Geometry of beveloid gear system model**
The 3D Geometry of beveloid gear system model has the wrong position when saving the model.

SP 5 - **The 3D Geometry of single toothed internal cylindrical gear can't be generated**
The 3D Geometry of single toothed internal cylindrical gear could not be generated.

KISSsoft - Bearing calculation

SP 5 - **Roller bearing calculation acc. to ISO/TS 16281 could fail when importing from shaft calculation**
In the Roller bearing calculation module according to ISO/TS 16281, the bearing data can be imported from an existing shaft calculation. While the import based on displacement worked well, the import based on bearing load failed for some specific cases.

SP 5 - **Input field for outer ring raceway curvature radius was missing in the data base editor**
Input field for outer ring raceway curvature radius was missing in the data base editor.

KISSsoft - Bolt calculation

SP 5 - **Resilience for plates were incorrectly calculated for tapped-thread joints (TTJ)**
Resilience for plates were incorrectly calculated for tapped-thread joints (TTJ), we correct the formula according VDI 2230 paper 1: 2015.

KISSsoft - CAD interface

SP 5 - **Siemens NX: Interface to NX 1926**
Interface to Siemens NX 1926 added.

KISSsoft - Gear calculation

SP 5 - **Module changes wrongly in Gleason data sheet conversion window**
In the 'Convert from Gleason data sheet window' of bevel gear calculation, the module changes to the previous value when the flag for "mean circular thickness" is checked.
This is fixed.

SP 5 - **Axial expansion of the 3D model**
The 3D model of axially expanded gears was slightly off, since the helix angle was not recalculated

correctly. The issue is now fixed.

SP 5 - **Normal vector in the measurement grid report was wrong**
The normal vector in the measurement grid report of the cylindrical gear was wrong since 2019 patch D. Now it's fixed.

SP 5 - **Failure in 3D geometry of worm when the tip rounding is applied**
In some cases, the 3D geometry of worm can't be generated when the tip rounding is applied for the worm with the single number of teeth.

SP 5 - **Value for the right flank tip rounding/chamfer for asymmetric gears**
When opening a 2019 asymmetric gear file in 2019 version, then the right flank rounding/chamfer was not set correctly. This is now fixed.

SP 5 - **3D model could not be generated when using modification for wire erosion**
In some special cases when both profile and flankline modification was applied in combination with modification for wire erosion, the 3D model of the gear could not be generated. This is now fixed.

SP 5 - **Tooth form operations using pinion type cutter and displaced generation**
Tooth form operations using pinion type cutter and displaced generation on internal gears resulted in wrong manufacturing profile shifts. This is now fixed. Currently the profile shift is calculated based on the base tangent length. In case of different base diameters, the tooth form should be checked graphically.

SP 5 - **Confirm message from shaft module is shown multiple times when called from KISSsys gear calculation**
-

SP 5 - **Messages from the shaft calculations were shown in the gear calculation where they should have been hidden**
Some unnecessary messages were shown in the gear calculation.

SP 5 - **The stress in the hardened layer for gears was incorrect**
The stress in the hardened layer was incorrect, in the formula to calculate the stress is the half of the width should be used, until now we took the full width for a calculation.

SP 5 - **Relative surface factor Y_RrelT**
Relative surface factor Y_RrelT was not calculated correctly for GG, GGG, NT and NV materials according ISO 6336:2006. There was a typing error in the ISO 6336-3:2006 eq.60. Factor 0.0058 was used instead of 0.0050. The error is now fixed.

SP 5 - **Error messages for the worm gear facewidth was wrongly shown**
Some of the error messages concerning worm gear facewidth was shown caused by the wrong checking conditions.
Now it's fixed.

SP 5 - **Virtual number of teeth of a helical gear approximation**
For the calculation of force application angle according ISO 6336-3:2006, a simplified equation 22

was used to calculate the virtual number of teeth for helical gears. Now the more precise equation 21 is used. This change will affect the root strength calculation.

SP 5 - **Saving a load spectrum failed in some cases**
Saving a load spectrum did not write the data correctly directly after running the calculation.

SP 5 - **Tooth root radius for internal gear acc. VDI 2737**
Tooth root radius for internal gear acc. VDI 2737 when using premanufacturing with form grinding was not calculated correctly, which resulted in too low safety factors. The issue is now fixed.

KISSsoft - KISSdesign

SP 5 - **Diameter change bug in move mode fixed**
Changing diameters in move mode did not deselect correctly.

KISSsoft - Root stress FEM calculation

SP 5 - **2D root stress FEM does not work when Z < 10**
When the number of teeth is small, the FEM mesh cannot be generated. This is fixed.

SP 5 - **Problem with 30/60 degrees max stress line in some 3D FEM root stress models.**
The 30/60 degrees max stress line could not be generated in some 3D FEM root stress models. This is now corrected

KISSsoft - Shaft calculation

SP 5 - **The unit system was not applied to the section element editors**
The element editor for the sections did not apply the imperal unit system.

SP 5 - **Some small tasks fixed for the SKF bearing module calculation**
Some small tasks fixed for the SKF bearing module calculation:
- report fixes
- change messages
- check special cases

SP 5 - **The import of shaft contours from ktx files in shaft editor did not work anymore**
Importing ktx files containing the shaft contour failed. This was fixed.

KISSsoft Changelog Version 2019 - Service Pack 4

KISSsoft - 3D geometry (STEP interface)

SP 4 - **The planets are not positioned correctly in the planetary gear 3D models**
The planets are not positioned correctly in the planetary gear 3D models.
This is fixed.

SP 4 - **The positioning of the 3D system model of double helical pinion and rack was wrong**
The positioning of the 3D system model of the double helical pinion and rack was wrong. This is fixed.

KISSsoft - Bearing calculation

SP 4 - **The friction power losses in the report incorrectly printed in kW**
The friction power losses were displayed in the report in kW instead of W

SP 4 - **Wrong handling for elastic ring calculation in bearing module**
Depending on the input settings, some errors were not shown for the elastic ring calculation in the bearing module.

SP 4 - **Added a flag to introduce the bearing ring outer- or inner diameter in the elastic ring calculation**
When importing the bearing data from a shaft calculation, it was not possible to edit the bearing inner or outer diameter. Since this is one of the major input values for the elastic ring calculation in the bearing module, a flag was added to make it editable as own input.

KISSsoft - CAD interface

SP 4 - **The direction of the helix angle for gear 2 was wrong for special cases in the 3D model**
The direction of the helix angle for gear 2 was wrong for special cases in the 3D model.

SP 4 - **Siemens NX: Interface to NX 1899**
Interface to Siemens NX 1899 added.

SP 4 - **Wrong values for partial cone apex inside and outside**
Wrong values for partial cone apex inside yi and outside yo for the cad export are fixed.

SP 4 - **Autodesk Inventor: Large bevel gears couldn't be generated**
Large bevel gears (with much teethes) couldn't be generated.

KISSsoft - COM

SP 4 - **Changed speed was not considered correctly in contact analysis with COM-Interface**
If the speed of gears was changed, with COM-Interface, the newly set speed was not considered inside contact analysis CalculateCAStep COM-Interface function.

KISSsoft - Gear calculation

SP 4 - **Factor for minimum diameter difference in fine sizing calculation**
Factors for minimum difference between the root form diameter and the active root diameter (or the base diameter) were not considered correctly in fine sizing in case if 'Permit undercut' was selected. This is now fixed.

SP 4 - **Problem with contact analysis in small load condition**
The contact analysis was crashing in case of generating kinematic graphic in the contact analysis report with small load condition. This is fixed.

SP 4 - **Wrong license check for tooth flank fracture calculation**
In case of a static strength calculation, the license check for the Tooth flank fracture was not made correctly. This is now fixed, the results are not affected.

SP 4 - **dFf not calculated correctly in case of undercut and multiple gears**
In some special cases, the root form diameter was not calculated correctly. The cases are limited

only to some geometries with undercut and it only occurred on the middle gear (for a 3 gear configuration, also planetary) and on both middle gears for a 4 gear configuration. The problem is now fixed.

SP 4 - **Center distance did show wrong unit in tab contact analysis**
In some cases of different units in the file and software settings, the center distance did show the wrong unit in tab contact analysis.

SP 4 - **Reading a load spectrum from a file**
Reading a load spectrum from a file (and if at the same time the option 'link with file' is selected), the load spectrum was not working correctly in cases that input was set to power and speed factor was not 1.The results will change with this fix.

SP 4 - **Generating a gear with an asymmetric read in pinion type cutter**
Generating a gear with an asymmetric read in pinion type cutter resulted in a wrong tooth form of the gear. This is now fixed.

SP 4 - **Tooth form graphics using splines**
In some special cases, the tooth form could not be generated when using splines as an approximation curve. This also prevented the 3D FEM to be used. The problem is now fixed.

SP 4 - **Measurement data for the worm**
Measurement data was not shown for the worm in case the worm was not of type ZI. The values are now shown also for different types of worm.

SP 4 - **Fixed number of teeth in bevel gear fine sizing**
When the "Fixed number of teeth" option is selected, the number of teeth of the pinion takes the wrong value.

SP 4 - **Axial section in the tooth form graphics**
In some special cases, the axial section in the tooth form graphics could not be generated when using splines. This is now fixed.

SP 4 - **Manufacturing twist**
The formula used to calculate the manufacturing twist (for generation griunding of helical gears with flank line crowning) was - due to a problem in the definition of twist - giving values which are 4 times to big. The formula we used is correct, and can also be found in the dissertation of Hellmann (Aachen). Up to now the resulting value was applied as C (see KISSsoft help) on the tip on side I according our definition of twist. But Hellmann and ISO 21771 are using a different definition, called Sα, for the twist. Sα is equal 4*C. This is now fixed and documented in the comment field of the modification tab.

SP 4 - **Crossed helical gears 'self locking message'**
Self locking message was never shown for crossed helical gears, if the worm wheel was the input and axis angle was bigger than 50°. This bug was introduced in 2019 Patch C, and is now fixed.

SP 4 - **Rough sizing of planetary gears**
In special cases (when ratio of facewidth to sun reference circle was set), rough sizing of planetary gears was not working. This is now fixed.

SP 4 - **Axial AGMA measurement over 3 pins not calculated for worm gear with 1 tooth**
Axial AGMA measurement over 3 pins was not calculated for worm gear with 1 tooth. This is now added.

SP 4 - **2D-FEM calculation with own input of load application data**
For helical gears only, if 2D-FEM calculation with own input of load application data is activated, than the load application diameter should be introduced for the real gear. But the conversion of this diameter to the diameter on the equivalent gear was erroneous. Additionally it was not really clear for the user which diameter has to be introduced. So now, still the load application diameter on the real gear [den] has to be introduced, but the load application diameter on the equivalent gear [den.eq] is also displayed.

SP 4 - **Root form diameter using pinion type cutter and premanufacturing**
The root form diameter, when using pinion type cutter and premanufacturing, was not calculated correctly. This is now fixed.

SP 4 - **dCa and dCf not shown in the profile diagram in imperial units**
dCa and dCf markers were not shown in the profile diagram if imperial units were used. This is now fixed.

SP 4 - **Worm grinder and dresser calculation**
For the crowned dressers with linear tip relief, the value of the tip relief from crowning was not calculated correctly. This is now fixed.

SP 4 - **Material DAT file for Ultramid Advanced N4H**
Material DAT file for Ultramid Advanced N4H is now available without any restrictions.

SP 4 - **Tool when applying asymmetric profile modifications**
In some cases, the tool was not calculated correctly, if asymmetric profile modifications were applied. This is now fixed. The gear tooth form was not affected.

SP 4 - **Problem with modification sizing of planetary systems**
The result table of the modification sizing in case of planetary systems was not correct. The factor and value fields have been mixed up. This was not effecting the calculation results and is fixed now.

SP 4 - **VDI2737 Faktor f modifyed**
In edition 2016 factor f for increase of the yield in the pressure range is 1.05 (former 1.10); this is corrected. Additionally documentation in the report was enlarged.

KISSsoft - General

SP 4 - **Applying chamfer on racks**
Chamfer did not start at the right position when applied on the rack. This is now fixed. The tooth form might change slightly.

KISSsoft - Graphics

SP 4 - **Problem with 3D-Graphic export as data matrix**
The export of 3D-Graphic results as a data matrix (*.dat) was not working. This is fixed.

SP 4 - **Empty scuffing graphics with bevel gear contact analysis**
The scuffing 2D/3D-Graphic of the contact analysis with bevel gears were empty in some cases. This is fixed.

KISSsoft - Root stress FEM calculation

SP 4 - **2D root stress FEM calculation, combined with AGMA strength calculation, error with helical gears fixed**
For helical gears, the 2D FEM calculation is performed with the equivalent spur gear according the approach described in ISO6336-3. When using an AGMA strength calculation, not all necessary inputs for the FEM root stress calculation were exact (i.e. load application point and angle). This now fixed.

SP 4 - **Load application diameter limits for inner gear in FEM root stress calculation**
The acceptable load application diameter limits, when calculating the FEM root stress, were erroneous; so the error message was wrong.

SP 4 - **Correction in the FEM root stress report for US-units**
The results table in the report of FEM root stress is not updated correctly when US-units are used.

SP 4 - **Correction of the 2D FEM root stress results for the case of contact ratio greater than two.**
When the contact ratio is greater than two, the load used in the 2D FEM root stress calculation was not correct.

SP 4 - **2D-FEM calculation combined with AGMA strength calculation**
AGMA standards do not use the equivalent spur gear for the calculation of the tooth root stress, as it is used in ISO6336 and in the 2D-FEM. So, when cylindrical gears are calculated according AGMA, then the load application angle proposed in the 2D-FEM tab was wrong. This is fixed. Now in all cases the proposed load application angle and diameter are based on the point of single tooth contact (HPSTC) of the equivalent spur gear.
The same problem happened if DIN3990 with YF according method C is used.

KISSsoft - Shaft calculation

SP 4 - **Pressure angle was drawn wrong for spherical thrust roller bearings**
In the shaft editor, the pressure angle was drawn wrong for spherical thrust roller bearings.

SP 4 - **Miner consequent calculated with a wrong miner sum**
Miner consequent method calculated with a slightly wrong miner sum in the past, therefor resulted some small differences in the strength calculation with load cycles.

SP 4 - **Force center point offset did not work in case of multiple counter gears**
In case multiple counter gears were enabled for the cylindrical gear in a shaft model, the force center point offset was not taken into account.

SP 4 - **Hybrid bearings caused the campbell diagram calculation to crash in case ISO/TS 16281 bearing calculation was activated**
Hybrid bearings caused the campbell diagram calculation to crash in case ISO/TS 16281 bearing calculation was activated.

KISSsoft - Shaft-hub-connections

SP 4 - **Depth in shaft and hub for the keyseat was wrong for ANSI B17.1 profiles**
The calculated depth in shaft and hub for the keyseat was wrong for ANSI B17.1 profiles.

KISSsoft - Splines calculation

SP 4 - **Prining error in the report concerning 'Flank centered'**
In some cases in the report flank centered was printed, but the profile wasn't flank centered.

KISSsoft Changelog Version 2019 - Service Pack 3

KISSsoft - 3D geometry (STEP interface)

SP 3 - **Face offset is not correct when saving the 3D system model of cylindrical gear**
The face width offset was set in the opposite direction when saving 3d system model of cylindrical gear.
This is now fixed.

SP 3 - **Negative crowning is not correct for 3D geometry of bevel gear**
Negative crowning is not correctly applied for 3D geometry of bevel gear.
The problem is solved now.

KISSsoft - Bearing calculation

SP 3 - **Focus of input type rpm or angle was not correct when selecting a shaft file w10 as reference**
In the ISO/TS 16281 module (W051), the focus of the input type rpm or angle was not correctly updated when selecting a shaft file w10 file as reference

SP 3 - **Roller diameter of needle cage assemblies was sometimes considered wrong due to a numerical precision effect**
For needle cages, the diameter of the roller must fit to the designation of the inner and outer diameter. Due numerical precision effects it could happen that this check would claim that the inner geometry details do not fit. This was fixed

KISSsoft - CAD interface

SP 3 - **Siemens NX: Interface to NX1872**
Siemens NX: Interface to NX1872 added

SP 3 - **Bevel gears couldn't be generated with Solid Edge ST10 MP12 and newer versions**
Bevel gears couldn't be generated with Solid Edge ST10 MP12 and newer versions. It is fixed now.

SP 3 - **SolidWorks: Interface to SolidWorks 2020**
Interface to SolidWorks 2020 added

KISSsoft - COM

SP 3 - **Sizing root rounding did not work**
The function SizeToolTipRadius did always size the tool tip radius for gear one. Any index passed via COM was not considered.

SP 3 - **Planetary system contact analysis was crashing with unequal facewidth**
The planetary system contact analysis was crashing in case of unequal facewidth, this is fixed.

SP 3 - **Wrong unit for moment of inertia (J) in the gear user interface**
The unit for the moment of inertia (J) was not correct in the user interface (Tab Rating->Details). The unit is now corrected to kg*cm^2. The results were not affected.

SP 3 - **New Warning/Error Message shown if contact analysis is called with wrong center distance**
In case that contact analysis is called with a center distance smaller then the minimum allowed center (free of backlash) distance, a confirmation message with a warning is appearing: "Der Achsabstand im Tab 'Kontaktanalyse' ist kleiner als der spielfreie Achsabstand %5.3f (Klemmen). Dies wird zu Fehlern in der Kontaktanalyse führen. Möchten Sie fortfahren?". In case of a center distance exceeding the maximum allowed center distance (a >= (da1/2 + da2/2)) a error message is shown and the calculation is aborted: "Der Achsabstand im Tab 'Kontaktanalyse' ist grösser als der grösstmögliche Achsabstand. Die Zahnräder berühren sich nicht mehr (a >= da1/2 + da2/2)"

SP 3 - **Hardening depth graphic not shown correctly in imperial units**
Hardening depth graphic was not shown correctly for imperial units (using measured points from a DAT file). This is fixed, the results were not affected!

SP 3 - **Improvement: line breaks in the modifications tab**
A flag has been added to the modifications tab to show long text either truncated or with line breaks. The layout of the modification part of the report was also improved.

SP 3 - **KISSsoft stopped working when opening manufacturing drawing**
KISSsoft stopped working when opening manufacturing drawing (under the 2D graphics), when the face width of a gear was set to 0. This is now fixed.

SP 3 - **Not possible to select cutting tools in 4 gear chains**
It was not possible to select cutting tools (hobbing cutter, pinion type cutter) from the database in the tab reference profile. The problem was limited only to the 4th gear. This is now fixed.

SP 3 - **Wrong VHJ approximation for bevel gears with shafts**
The bevel gear contact analysis with shafts was approximating wrongly the VHJ misalignment. This is fixed.

SP 3 - **Measurement grid report for fillet surface gives error when using very high number of rows**
Measurement grid report for fillet gives an error when using a very high number of rows.
This is now fixed, but it's still recommended to use a reasonable number of rows.

SP 3 - **Worm wheel measuring grid calculation**
In some cases, the worm wheel measuring grid calculation resulted in inconsistent warning messages. This is now fixed.

SP 3 - **Self locking warning message**
In some special cases (axis angle <> 90°), the self locking warning message was not shown correctly for crossed helical worms. This is now fixed.

SP 3 - **Load bins and damage accumulation curve not shown in the SN curve graphics**
Load bins and damage accumulation curve were not shown in the SN curve graphics in cases when:
*Check both cases and document unfavorable case
and/or
*Check both cases and document the more realistic case
were selected in Tab rating-> Details. This is now fixed.

SP 3 - **Operating pitch line in the meshing graphics**
Operating pitch line was not shown in the meshing graphics in case that gear 1 was a worm. The issue is fixed now.

SP 3 - **Problem with gear body deformation of first gear in contact analysis**
The gear body deformation of the first gear (input as .resu file) was considered in the wrong Y-direction of the contact analysis. This is fixed.

SP 3 - **Problem with H and J misalignment in bevel contact analysis**
The bevel gear contact analysis was calculating the gear offset due to H and J misalignment wrongly. This is fixed.

SP 3 - **Factors ZR and ZV according ISO and DIN**
According ISO6336 and DIN3990 for factors ZR and ZV the sigHlim-value of the softer material has to be used. Up to now, the lower sigHlim was used. This corresponds in 99.9% of the cases also with the material having the softer surface. This is now changed, the sigHlim-value of the softer material (in terms of HB, HV or HRC) is used.

SP 3 - **Problem with number of load spectrum bins in modification sizing.**
Number of bins of load spectrum was not correct if considered in modification sizing. This is fixed.

SP 3 - **Convert tooth thickness allowance deactivated for globoidal worm wheels**
Convert tooth thickness allowance from tooth thickness at reference diameter is now deactivated for globoidal worm wheels. This is affecting the Asn convert button in the Tab Tolerances.

SP 3 - **Radius of curvature of a read-in tooth form consisting of splines**
Radius of curvature of a read-in spline tooth form consisting of splines was not displayed correctly for external gears. This is now fixed.

SP 3 - **Conversion from Gleason data not working in special cases**
In some special cases, when mean circular thickness was an input, the conversion from Gleason data was not correct for bevel gears. This is now fixed.

SP 3 - **AGMA 6015 check for limitations were not correct**
Check for AGMA 6015 limitations was not correct for the diametral pitch limit. This is now fixed. Now even if the limitations are not fulfilled, the warning message is given and the calculation runs through.

SP 3 - **Problem with planetary systems with unequal facewidth**
Contact analysis of planetary gears with unequal face width was not considering the unequal face width correctly. This is fixed.

SP 3 - **Geometry part of cylindrical gear report reworked**
The geometry part of the cylindrical gear report was resorted and reformatted to give an easier access to the data presented.

SP 3 - **Sabic material LUBRICOMP RFL-8036/RVL36**

Sabic material LUBRICOMP RFL-8036/RVL36 was renamed to VERTON RFL-8036/RVL36. The calculation data did not change!

SP 3 - **MrK and MdK were not calculated correctly from the tooth form**
In some cases, the MrK and MdK was not calculated correctly from the tooth form (they were set to 0 or a small value). This is now fixed.

SP 3 - **Profile shift coefficient conversion of master gears was not working**
Profile shift coefficient conversion of master gear was not working. This is fixed.

SP 3 - **Rough sizing was ignoring own input of b/mn, and similar, sizing ratios.**
The rough sizing of gears was always setting back the ratios, such as b/mn, to predefined ratios defined in tab 'Sizing' of dialog 'Module Specific Settings' in case of 'Area of use for the gear' is set to 'Own input of b/mn, b/a, b/d1'. This is fixed

SP 3 - **The final machining setting was not stored in calculation file**
The final machining setting in tab 'Manufacturing' was not stored in calculation file. This is fixed. There was no impact on the results.

SP 3 - **Static root safety factor sigS/sigF in results window for 4 gears**
Static root safety factor sigS/sigF was not shown correctly in the results window for the last gear in a 4-gear chain. This is now fixed.

SP 3 - **Sound pressure level according to Masuda**
Sound pressure level according to Masuda: In equation 5 of the paper Teruo Masuda, Prediction Method of Gear Noise Considering the Influence of the Tooth Flank Finishing Method, the power W in the term '20 log(W)' was used in HP according equation 1 from Kato. But in eq. 5, W should be used in kW. This is now fixed, the dB values acc. Masudo are now a bit lower.

KISSsoft - General

SP 3 - **Toothed belt PG 14mm Power Grip had wrong data for the power**
The toothed belt PG 14mm Power Grip HTD from Gates had some wrong data for the power in the Z091-011.dat file.

SP 3 - **Graphic property font size was not restored**
For graphics that have a font size property, the value was not stored after a recalculation.

KISSsoft - Graphics

SP 3 - **Wrong order of line load in load distribution graphic of planetary system contact analysis**
The "Normal force distribution on Tooth (Line Load)" graphic for planetary contact analysis was showing the planet load in the wrong order. Because of this, the graphic was showing load on planets where no load was. This is fixed.

SP 3 - **Lineload and gap graphic was showing wrong curve when 'Always calculate transmittable torque (utilization)' option is used**
The lineload and gap graphics have been showing 4 curves instead of the one correct line in case of 'Always calculate transmittable torque (utilization)' option is used. In case of load spectrum the lineload and gap graphic is deactivated. This is fixed.

SP 3 - **Empty graphics in bevel gear contact analysis**
Graphics capable of showing evaluation (available for e.g. hertzian stress 3D of bevel gear contact analysis) have been empty. This is fixed.

SP 3 - **Pitch point C added to gear pump graphics**
The pitch point C was missing in gear pump graphics. This made the gear pump results a bit unclear and is fixed now.

KISSsoft - KISSdesign

SP 3 - **Delete in calculation view versus shaft view**
Deleting elements (for example gears) from the calculation view (clicked on the respective gear element, and pressed the “Delete” button on the keyboard) is deleting the gear** from the model. However, only the reference of the given gear to the calculation should be removed.

SP 3 - **Rough sizing did crash on cancel**
Canceling the rough sizing did cause a crash in cases where shaft calculation related data had been changed.

SP 3 - **Merging bug in sketcher**
Dropping an axis onto a dot did merge the shafts instead of making them coaxial.

SP 3 - **Fix for center distance transfer from KISSdesign rough sizing to gear calculation**
The rough sizing data from KISSdesign was not properly transferred to the gear calculation sub module (for ex. center distance). This is now fixed.

SP 3 - **Fix for recurring message when coming back from shaft calculation to KISSdesign**
When coming back from shaft calculation to KISSdesign, a message informing the user that elements could not be added directly in the shaft calculation was always popping up if the model had some connection elements. This is now fixed and should only happen when necessary.

SP 3 - **Fix for planetary animation and bearing representation in 3D view**
In the 3D view, the initial planet was not rotating, and the planets connection bearings were not properly represented (creating two normal bearings for inner and outer shafts instead of just one connecting bearing). This is now fixed.

SP 3 - **Fix 3D animation of planetary gear sets**
The original planet of a planetary gear set was not rotating around the carrier axis in the 3D view, this is now fixed.

KISSsoft - Proof of strength with local stresses

SP 3 - **FKM method, local stress: The roughness value wasn't set correctly**
The roughness value Rz wasn't set correctly, the value was always the same.

KISSsoft - Root stress FEM calculation

SP 3 - **3D FEM root stress cannot be calculated when modifications are applied.**
The 3D FEM root stress calculation stopped when some modifications were applied. This is fixed.

KISSsoft - Shaft calculation

SP 3 - **Required fatigue safety had no influence in the graphic display of usage**
Required fatigue safety had no influence on the usage. Now the curve for the usage is calculated with 100*SDreq/SD.

SP 3 - **Distributed mass element in eigenfrequencies calculation.**
When a distributed mass element extends over many different geometrical elements, there are cases where the mass is not taken correctly into account.

SP 3 - **Input for load spectrum did not work for bevel gears**
The input for the load spectrum of a bevel gear did not work.

SP 3 - **Bearing service life factors report was not shown for connecting bearings**
In case of connecting bearings in a shaft calculation, the bearing service life factors report is not shown.

SP 3 - **Bearing factors were shown with wrong unit in bearing service life factors report**
Bearing factors X, Y, X0, Y0 were shown with unit N in the bearing service life factors report although indeed non-dimensional.

SP 3 - **Fixed inaccurate formula symbol in the bearing sizing dialog**
In the bearing sizing dialog, the bearing rating life was shown as Lh instead of Lnh.

SP 3 - **Added confirm message box to cancel calculations in case a bearing type does not support ISO/TS 16281**
In case a model is configured to be calculated using ISO/TS 16281 but some bearing types are not supported in KISSsoft with this calculation method, a confirm message is shown before starting the calculation.

SP 3 - **Exporting general supports to plain journal bearing calculation files was not disabled and failed**
As of Release 03-2018, plain journal bearings are a separate element in the shaft calculation. General supports should not be used anymore to model journal
bearings, however exporting them was still listed as an option that however failed on execution. The export of general supports to plain journal bearing calculation files was thus disabled.

KISSsoft - Shaft-hub-connections

SP 3 - **Backlash values in the individual shaft/hub reports**
Backlash values in the individual shaft/hub reports didn't make much sense. Instead, the effective jtv and jnv (for the use with gears) values are now shown.

KISSsoft - Splines calculation

SP 3 - **Tolerance fields for Flat Root Side Fit according ANSI B92.1 corrected**
Tolerance fields for Flat Root Side Fit according ANSI B92.1 corrected

KISSsys - General

SP 3 - **Windows layout issues in KISSsoft when called from KISSsys**
KISSsoft did not show the last windows layout when it was called from KISSsys. Somethimes the W010 element tree was missing or graphic windows where randomly positioned.

SP 3 - **Fix for working pressure angle set in shaft calculation with effective profile shift**

In cylindrical gears, when calculating with operating center distance and manufacturing profile shift, the resulting working pressure angle set in the shaft calculation was wrong. This is now fixed.

SP 3 - **Fix for transferred center distance when effective profile shift is set**
When the effective profile shift was set in the gear calculation, a wrong center distance was communicated to the system. This is now fixed.

SP 3 - **New button in GEMS interface to calculate the bevel deviations**
A new button was added in the GEMS interface template to directly calculate the deviations of the current gear set.

SP 3 - **Fix stepped planetary gear pair churning losses calculation**
Stepped planetary gear pair churning losses calculation were not considered properly because there is no real proposition in the ISO TR 14179. We adapted the calculation of standard planetary churning losses to give a more consistent result taking into account carrier rotation.

KISSsoft Changelog Version 2019 - Service Pack 2

KISSsoft - 3D geometry (STEP interface)

SP 2 - **The 3D system model of bevel gear had wrong position when saved with H, J, V misalignment**
The 3D system model of bevel gear had wrong position when saved with H, J, V misalignment. This is fixed.

KISSsoft - Bearing calculation

SP 2 - **Pressure angle of FAG thrust angular contact ball bearings**
The pressure angle of FAG thrust angular contact ball bearings was 0° instead of 60° in the KISSsoft database.

KISSsoft - CAD interface

SP 2 - **SolidEdge: Interface to SolidEdge 2020**
Interface to SolidEdge 2020 implemented.

KISSsoft - COM

SP 2 - **Improvement: Additional LTCA Results availiable via COM-Interface**
COM-Interface provides now access to sliding velocity, normalized sliding velocity, specific sliding and sliding factor.

SP 2 - **Calculating contact analysis step wise via COM was crashing**
The calculation of contact analysis via the CalculateCAStep method of the COM-Interface was crashing in case of unequal facewidth of the involved gears. This is fixed.

KISSsoft - Gear calculation

SP 2 - **Improvement: Double Planet Stage: Position of Planet-2**
In the Sub-Window of the 4-gear stage, where double planet stage can be activated, an additional input is available: Now the position of Planet2, if on the right or on the left side of Planet1, can be defined. This affects the 2D and the 3D display.

SP 2 - **Active tip and root diameters in the meshing graphics**
The setting for the form diameter calculation (module specific settings) is now considered when calculating/displaying the active tip and root diameters in the meshing graphics (no load condition).

SP 2 - **Bevel Gears according AGMA2003, change to static calculation eliminated**
In Bevel Gears according AGMA2003, an automatic change to static calculation happens, if load cycles were lower than 1000 cycles.
This is not wrong but may be confusing, and in AGMA2001 for cylindrical gears we do not do it.
This is now eliminated.

SP 2 - **Improvement: Worm Gear according EDIN3996**
Worm Gear according EDIN3996 is available, and last printing errors in the document were discussed, corrected and added in KISSsoft.

SP 2 - **Problem in 'Generate cylindrical gear with the read-in pinion type cutter'**
Center distance check was wrong when using the tooth form operation 'Generate cylindrical gear with the read-in pinion type cutter'. The problem only occurred for helical gears. This is now fixed.

SP 2 - **Profile modification on the flank of asymmetric gears changed without warning**
In some cases for asymmetric tooth forms, the flank of the profile modification was changed from left to right without warning. This occurred in cases when there was an error in the tooth form calculation. This is now fixed.

SP 2 - **Worm gear, Start under load modified**
The calculation of the torque to start under load is not part of the standard, but based on a note in the Niemann book.
The indication in Niemann applies for driving worm. We extrapolated the driving gear case until now, but this is not really approved in practice.
We eliminated now this case and indicate that most probably the set is self-blocking.

SP 2 - **Problem with tooth stiffness calculation in case of force close to root fillet and high pressure angle**
In case of gears with high pressure angle and load close to the root fillet, the bending lever of the Weber/Banaschek based contact analysis is negative. In such a case the stiffness calculation was wrong because only hertzian, normal and shearing deflection should be considered. This is fixed.

SP 2 - **Measurement data for worms**
Radial single-ball measurement MrK (min and max value) for worms was not calculated. Additionally, measurement data (except MdK and MdR) for worms was not correct in case if the worm had more than 3 teeth. This is now fixed.

SP 2 - **Nominal transmission ratio in rough sizing overwritten**
User defined nominal transmission ratio was overwritten (with initial value) in the rough sizing when the calculation was performed. This is now fixed.

SP 2 - **Asymmetric gears calculation**
If creating a "fresh" KISSsoft calculation file, and then converting it to asymmetric gear, the calculation was not working. This is now fixed.

SP 2 - **Tab modifications info text**

Tab modifications info text for Helix angle modification (parallel - arc minute) and Pressure angle modification (parallel - arc minute) was not correct. This is now fixed.

SP 2 - **Splines DIN 5482 example**
Shaft-hub connection DIN 5482 40x36 e9_H10 example had the wrong profile shift in the DAT file. This is now fixed.

SP 2 - **Fine sizing of Planetary stages**
Added a Message, when Planetary stages with all elements (sun, carrier, ring) rotating are used, to better use the ratio definition with the 'z3/z1 option'.

SP 2 - **Profile modification sizing was calculating same face load factor for different loads**
The profile modification sizing dialog was calculating always the same face load factor for different load cases. This is fixed.

SP 2 - **Runout in the operating backlash calculation**
Own input of the runout error was not possible in the operating backlash calculation. This is fixed now.

SP 2 - **Absolute speed value for bevel gears with carrier speed in the report**
In the rpt template for bevel gears, the absolute speed calculated from the teeth ratio was using the virtual cylindrical number of teeth instead of the real bevel number of teeth. This is now fixed.

SP 2 - **Woehler line display for planets**
In some cases, the Woehler line for the planets was not drawn correctly. This is now fixed. It was purely a graphical error, so all the results are unchanged and correct.

SP 2 - **Path of contact in the meshing graphics (for worms)**
Path of contact in the meshing graphics was not drawn to the base diameter of the worm. This is now fixed.

SP 2 - **Wrong face load factor due to inconsistent shaft calculation**
In some cases the face load factor and its respective line load was calculated wrongly because the shaft calculation wasn't consistent after calculating the shaft bending line. This is fixed.

SP 2 - **Estimation of collision between tool shaft and gear for the power skiving checks improved**
In addition to checking for collisions between the tool shaft and gear when power skiving, the critical inner offset length, that an inner gear can be manufactured at, is calculated and displayed in the report.

SP 2 - **Modification sizing for bevel gears**
Headers in the modification sizing dialogue (tab results) for bevel gears was not shown correctly. This is now fixed.

SP 2 - **Bending of the shaft and flank line modifications in the operating backlash calculation**
Option 'Take into account the bending of the shaft and flank line corrections' was not considered correctly in the operating backlash calculation. This was limited to special cases, when load spectrum with more than 1 bin was defined, but 'Don't consider load spectrum' or 'Only take 1 bin into account' was selected in tab Rating. This is fixed now.

SP 2 - **Grinding notch factor calculation for internal gears using form grinding**
In special case, the grinding notch for the internal gear was not calculated correctly. This only appeared for the form grinded gear, using VDI 2737 for the form factors calculation. The issue is fixed now.

SP 2 - **Alternating bending factor according ISO6336-3, annex B, for plastic materials**
ISO6336-3, annex B, is only applicable to metals. For plastic materials the Mean stress ratio is approximated. We added now a warning message, if plastic gears are calculated.

SP 2 - **Conical expansion of internal gears was considered wrongly**
The face load factor calculation according to ISO 6336-1, Annex E, and the contact analysis was considering the conical expansion of the internal gear, due to load, wrongly. This is fixed.

SP 2 - **Generate cylindrical gear with read-in pinion type cutter**
In some special cases, the generated cylindrical gear with a read-in pinion type cutter was not correct. This is now fixed.

SP 2 - **Power skiving check result was sometimes not correctly listed in the fine sizing**
Sometimes the result of a power skiving check in the gear fine sizing was listed as "not checked" instead of "not possible".

SP 2 - **Uploading load spectrum from file did not set the inconsistent flag**
The inconsistent flag was not set when a load spectrum has been read in from a file in tab rating.

SP 2 - **Wrong speed in results table of contact analysis in some cases**
The speed documented in the results table of contact analysis was wrong in case of a speed < 1m/s. This is fixed.

SP 2 - **Number of digits increased in tool export rps report**
Number of digits increased in tool export rps report from 3 to 8.

SP 2 - **Report of Duty cycles**
Improvement: The Duty cycle definition in the report is changed into table format.

SP 2 - **3D model not correct**
In some cases, when modification with value of 0 µm was applied, the 3D model was not correct. This is fixed.

SP 2 - **GDE export for single gears**
In the module single gears the GDE menu point for the export was missing.

KISSsoft - General

SP 2 - **Collison check for double planet stage in 4-gear chain**
Collision check was not correct in all cases for double planet stage in 4-gear chain configuration. This is fixed now.

SP 2 - **Improvement: file name info added for KUI tabs and dialogs**
The name of the file that defines a tab or dialog can now be looked up with the KUI element info

system.

SP 2 - **Editor improvements**

- Can use Ctrl-F to start searching
- Pressing enter in the search field continues search
- If search text is changed/new, start searching from start of document
- Search wraps around after reaching the end
- Found items when searching are now using a darker selection color to be more visible
- Fixed font size changing when changing font
- Fixed font not updating when loading a new document
- Plain text files use a monospace font by default

KISSsoft - Graphics

SP 2 - **Bevel gears: Problems with V misalignment in contact pattern graphics**
The contact pattern graphics was showing wrong results in case of V misalignment for contact analysis with bevel gears. This is fixed.

SP 2 - **Missing graphics added to contact analysis report**
Missing hertzian pressure and root stress graphic added to contact analysis report.

SP 2 - **Wrong maximum sliding velocity in comment field**
The contact analysis graphic 'Kinematic' was showing the wrong maximum sliding velocity in case of unequal facewidt. This is fixed.

KISSsoft - KISSdesign

SP 2 - **Improvement: Group modelling offers 2 types of adding cylindrical gear pair**
The group modelling can now add cylindrical gear pairs in 2 ways: as a connection between 2 additionally added shafts and as a stand alone pair.

SP 2 - **Improvement: Messages include their source information**
It was not possible for the user to identify whether a message was coming from the system calculation or from one of the systems sub modules.

SP 2 - **Improvement: Power flow table show the boundary name**
The power flow table did only show the name of the boundary, now it shows the name of the coupling too.

SP 2 - **Improvement: keyboard short cuts for new dots activated**
The user can press a key while he adds a new dot or connection to distinguish the item type. Supported keys are B (bearing), R (carrier), S (switch), C (coupling), G (cylindrical gear), V (bevel gear).

SP 2 - **Crash in REXS import fixed**
The REXS import crashed in case existing elements should be overwritten.

SP 2 - **Improvement: extended drag-and-drop in KISSdesign sketcher**
- Possibility to connect planetary stages and gear chains directly in the sketcher by drag-and-drop added

- Merging shaft calculations in sketcher by drag-and-drop one axis on the other added
- Moving one shaft to another shaft calculation by drag-and-drop added

SP 2 - **Improvement: visual feedback for drag-and-drop in trees**
Dragging elements in the trees gives a visual feedback if dopping will be possible or not.

SP 2 - **KISSdesign sketcher graphical issues**
It was not possible to select connections if they were directly sitting over an axis.

KISSsoft - Shaft calculation

SP 2 - **Bearing rating life for non-rotating but loaded bearings was infinity**
For non-rotating but loaded bearings, the corresponding bearing rating life resulted in infinity. This was fixed and for such cases the bearing rating life is now set to 1e10 h.

SP 2 - **Automatically setting critical cross sections sometimes caused misleading results**
In some cases, the functionality to automatically set the critical cross sections of a shaft resulted in cross sections with wrong positions.

SP 2 - **Missing low eigenfrequencies**
In some very few shaft examples a low (normally below 10Hz) eigenfrequency was missing.

SP 2 - **Drawing for angular contact thrust ball bearings in shaft editor**
All angular contact thrust ball bearings in the KISSsoft database have a pressure angle at the order of 60°. The drawing did not reflect this fact.

SP 2 - **For larger groove width diameters, the notch factors for the shaft strength calculation are not considered correctly**
In some models that had larger groove width diameters, parts of the surrounding shaft section were also considered as groove instead of just a smooth shaft section.

SP 2 - **Crash in element tree fixed**
KISSsoft crashes when removing notch elements of a shaft and adding another cylinder afterwards via context menu. This is fixed.

KISSsoft - Shaft-hub-connections

SP 2 - **Radial bearing stiffness was not properly calculated in some cases**
The radial stiffness which is shown in the bearing report was not correct for some cases.

KISSsoft - Splines calculation

SP 2 - **Splines manufacturing drawing**
Table with spline data in the manufacturing drawing was drawn over the profile and flankline diagram data. This is fixed now.

KISSsoft – Gear body FEM calculation

SP 2 - **Bug in the generation of stiffness matrix files from the gear body calculation**

module
The generation of the stiffness matrix in the gear body calculation module is not possible in some cases. This is now fixed.

KISSsys - General

SP 2 - **Improvement: New methods to show or hide elements in the 3D view**
With a right click on an element, the user can now Show3DElement, Hide3DElement for individual elements, and ShowAll3DElements, HideAll3DElements for a shaft or a group.

SP 2 - **Fix in efficiency template, user defined oil level**
The oil level could not be defined by the user anymore, only calculated. This is now fixed.

SP 2 - **KISSsys crashes in some cases, when calculating Campbell diagram**
In some KISSsys models, KISSsys was crashing when performing the Campbell diagram calculation.

KISSsoft Changelog Version 2019 - Service Pack 1

KISSsoft - CAD interface

SP 1 - **Autodesk Inventor: Interface to Autodesk Inventor 2020**
Interface to Autodesk Inventor 2020 implemented.

KISSsoft - General

SP 1 - **Example for user defined tab comment added.**
A file comment.dui is provided under /ext/dui_example folder as an example on how to build a user defined comment tab.
The user can copy the file into /ext/dui folder to create the comment tab in cylindrical gear pair calculation.

KISSsoft - Shaft calculation

SP 1 - **Added possibility to specify the coefficient of friction for hypoid gear meshes in shaft module**
In past KISSsoft versions, the coefficient of friction for hypoid gear meshes in shaft module was set fix to 0.05. This value can now be changed in the module specific settings.