Intuitive. Versatile. Adaptable.

The KISSsoft® System Module is a versatile tool used in various scenarios including:

- **Designing new products** based on key requirements.
- **Modifying legacy systems** for new conditions.
- **Re-engineering reference designs**.
- **Analyzing existing designs** documented through drawings.
- **Managing and comparing design variants** with the same topology.
- **Creating databases of gearbox series** with different ratios for different torque ranges.
- **Visualizing, explaining, and promoting concepts**, proposals, and preliminary designs.
- Elaborating on concepts for costs, mass, and size to **enable quotations**.
- **Connecting, managing, and safeguarding KISSsoft files** used for modeling individual components.

Working Modes

With KISSsoft, the user can choose between three working modes:

1. **Component Level Only**: This mode involves using KISSsoft modules other than the System Module. It's a detailed, low-cost, and time-saving approach suitable for less complex systems where calculations for individual components are done independently from each other. This mode is ideal for projects requiring maximum speed, efficiency, and simplicity.

2. **System Level**: This mode integrates components into a holistic system, combining power flow analysis, spatial and collision-free arrangement, and top-level requirements-driven conceptual design. It is highly

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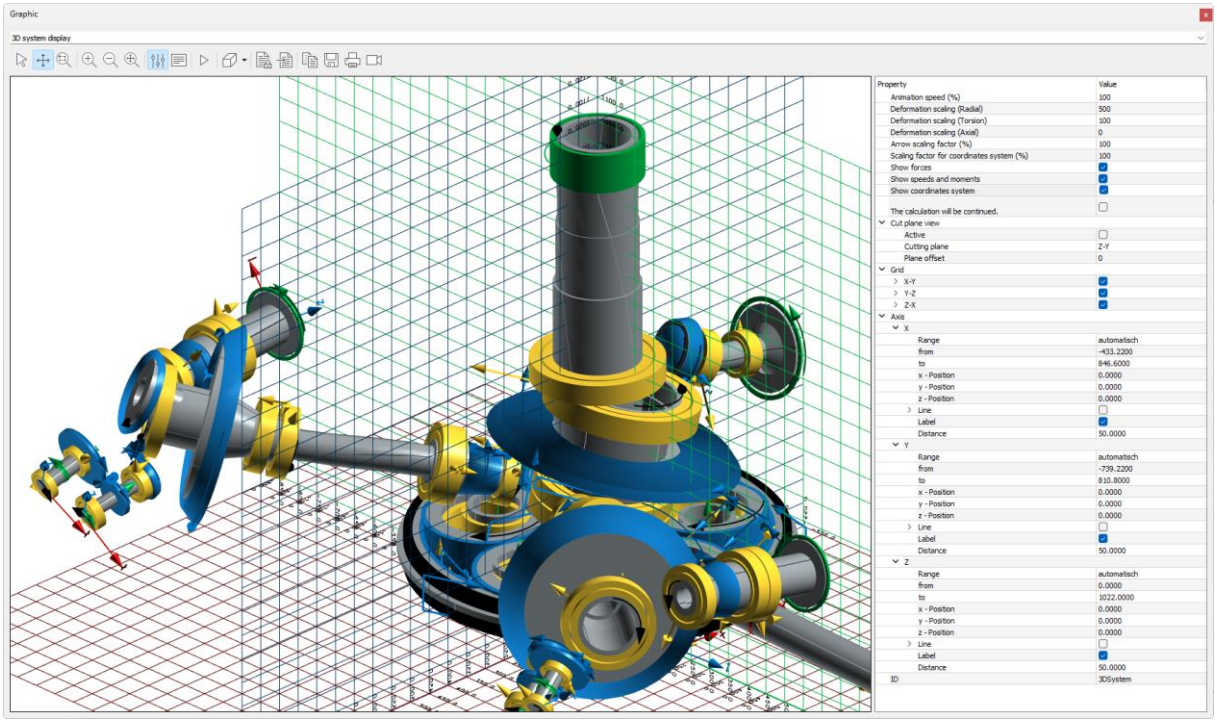
efficient for experienced designers with a deep understanding of all aspects of gearbox or transmission design. It is the mode of choice for most licensees globally.

3. **Collaborative Approach**: The System Module supports a team-based design process. Domain experts work on individual components using independent KISSsoft instances, performing detailed sizing, optimization, and analysis. Iterative design improvements are uploaded into the system model, enhancing its fidelity step-by-step.

Switching between these modes is seamless, with data exchange enabled through KISSsoft files as well as bespoke and neutral formats (e.g., Gleason GAMA, GEMS, GDE, REXS).

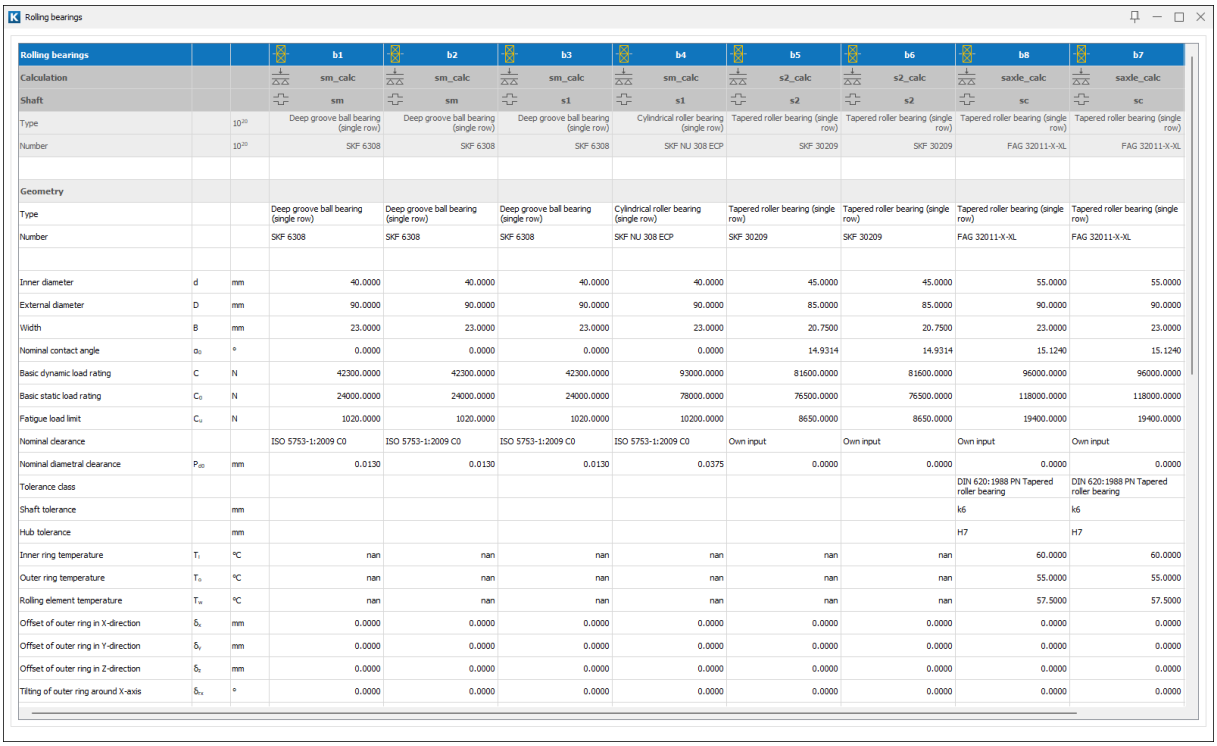


Target Users

Gear and Bearing Experts: The module provides an environment for managing all single components within their expertise. Components are sized, optimized, and rated in familiar KISSsoft modules, and once optimized, they can be integrated back into the system model with a single click.

System Architects: These users focus on ratios, design space, power flow, system reliability, operating conditions, and comparing design variants. They need a clear, communicable design description for stakeholders and are concerned with team-wide access to consistent product data, managing design iterations, and ensuring design survivability under different load regimes.

The software's user interface is tailored to the needs of both experts and system architects, allowing each to view the work in their preferred way without imposing an unfamiliar perspective.



Rolling bearings			b1	b2	b3	b4	b5	b6	b8	b7
Calculation			sm_calc	sm_calc	sm_calc	sm_calc	s2_calc	s2_calc	saxle_calc	saxle_calc
Shaft			sm	sm	s1	s1	s2	s2	sc	sc
Type		10^{20}	Deep groove ball bearing (single row)	Deep groove ball bearing (single row)	Deep groove ball bearing (single row)	Cylindrical roller bearing (single row)	Tapered roller bearing (single row)	Tapered roller bearing (single row)	Tapered roller bearing (single row)	Tapered roller bearing (single row)
Number		10^{20}	SKF 6308	SKF 6308	SKF 6308	SKF NU 308 ECP	SKF 30209	SKF 30209	FAG 32011-X-XL	FAG 32011-X-XL
Geometry										
Type			Deep groove ball bearing (single row)	Deep groove ball bearing (single row)	Deep groove ball bearing (single row)	Cylindrical roller bearing (single row)	Tapered roller bearing (single row)	Tapered roller bearing (single row)	Tapered roller bearing (single row)	Tapered roller bearing (single row)
Number			SKF 6308	SKF 6308	SKF 6308	SKF NU 308 ECP	SKF 30209	SKF 30209	FAG 32011-X-XL	FAG 32011-X-XL
Inner diameter	d	mm	40.0000	40.0000	40.0000	40.0000	45.0000	45.0000	55.0000	55.0000
External diameter	D	mm	90.0000	90.0000	90.0000	90.0000	85.0000	85.0000	90.0000	90.0000
Width	B	mm	23.0000	23.0000	23.0000	23.0000	20.7500	20.7500	23.0000	23.0000
Nominal contact angle	α_0	°	0.0000	0.0000	0.0000	0.0000	14.9314	14.9314	15.1240	15.1240
Basic dynamic load rating	C	N	42300.0000	42300.0000	42300.0000	93000.0000	81600.0000	81600.0000	96000.0000	96000.0000
Basic static load rating	C_0	N	24000.0000	24000.0000	24000.0000	78000.0000	76500.0000	76500.0000	118000.0000	118000.0000
Fatigue load limit	C_u	N	1020.0000	1020.0000	1020.0000	10200.0000	8650.0000	8650.0000	19400.0000	19400.0000
Nominal clearance			ISO 5753-1:2009 C0	ISO 5753-1:2009 C0	ISO 5753-1:2009 C0	ISO 5753-1:2009 C0	Own input	Own input	Own input	Own input
Nominal diametral clearance	P_{d0}	mm	0.0130	0.0130	0.0130	0.0375	0.0000	0.0000	0.0000	0.0000
Tolerance class									DIN 620:1988 PN Tapered roller bearing	DIN 620:1988 PN Tapered roller bearing
Shaft tolerance		mm							k6	k6
Hub tolerance		mm							H7	H7
Inner ring temperature	T_i	°C	nan	nan	nan	nan	nan	nan	60.0000	60.0000
Outer ring temperature	T_o	°C	nan	nan	nan	nan	nan	nan	55.0000	55.0000
Rolling element temperature	T_w	°C	nan	nan	nan	nan	nan	nan	57.5000	57.5000
Offset of outer ring in X-direction	δ_x	mm	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offset of outer ring in Y-direction	δ_y	mm	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offset of outer ring in Z-direction	δ_z	mm	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tilting of outer ring around X-axis	δ_{rx}	°	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

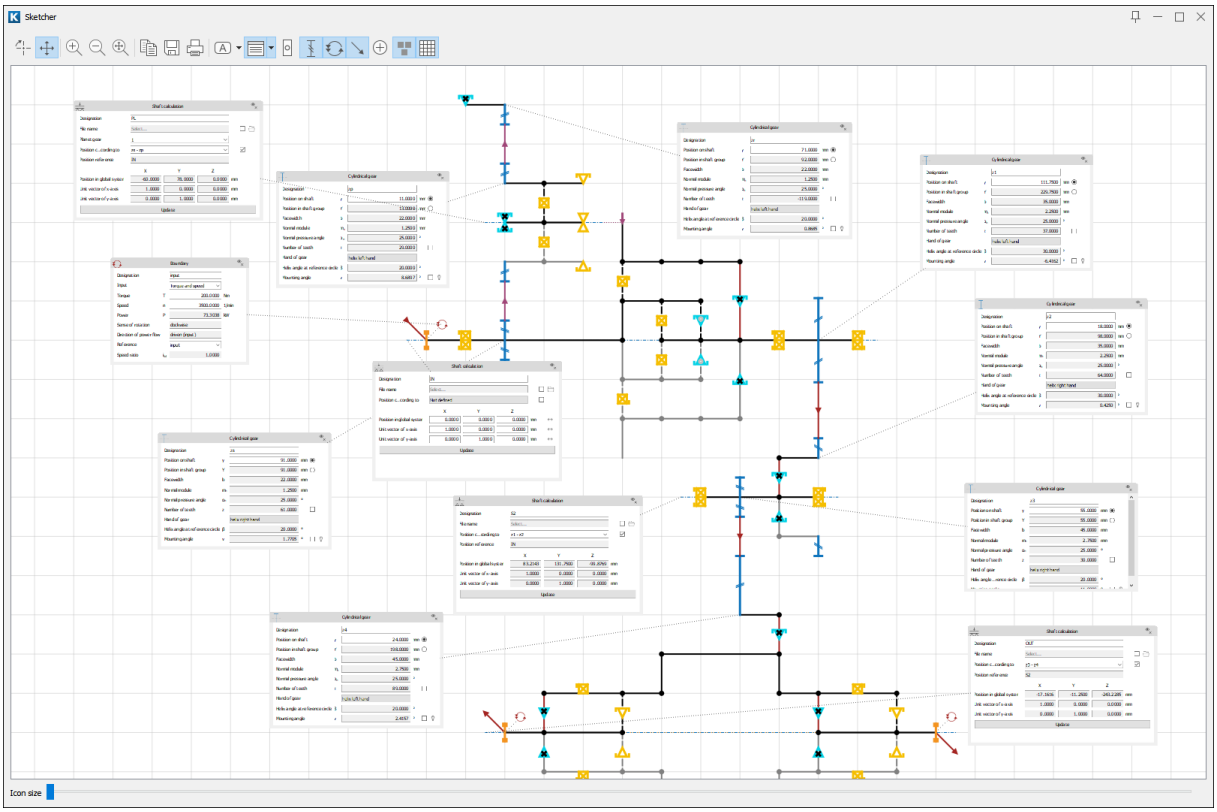
Learning Curve and Required Skills

Learning Curve: Familiarity with KISSsoft modules significantly reduces the learning curve. The user interface and sketcher are intuitive, leveraging common mouse and keyboard operations. New users can grasp the basics within a day and model complex systems within a week.

Required Skills: Users need to master transmission design complexities, including load cases and spatial and performance conditions. Familiarity with tree structures, context menus, tables, tabs, multiple windows, and standard engineering terminology is essential.

The highly specific **terminology used in KISSsoft** is typically based on ISO, DIN and AGMA standards. Familiarity with these is a requirement to correctly understand the intention, purpose and limitations of menu options, fields and buttons. To choose settings sensibly, assume derating factors properly, select calculation methods appropriately and use reasonable ranges for e.g. lubrication temperature, tolerances values or required lifetime, the user must have a thorough **understanding of e.g. gear theory** and methodology implemented in KISSsoft.

In summary, the skills and knowledge needed to make most of the System Module are **engineering domain specific, not software specific**.



Return on Investment

The System Module's **parameter-based design approach** manages the numerous parameters of gearbox and bearing design efficiently, reducing errors from manual data transfer. Experience from hundreds of projects confirms that the module accelerates project timelines and reduces errors, even for basic projects. Once engineers become proficient, they consistently rely on the **System Module for its efficiency and accuracy**.

The **promise is simple and bold**: Once an engineer has access to the System Module and knows how to use it, he will **always use the System Module**, for every projects.