NTB
Interstaatliche Hochschule für Technik Buchs
FHO Fachhochschule Ostschweiz

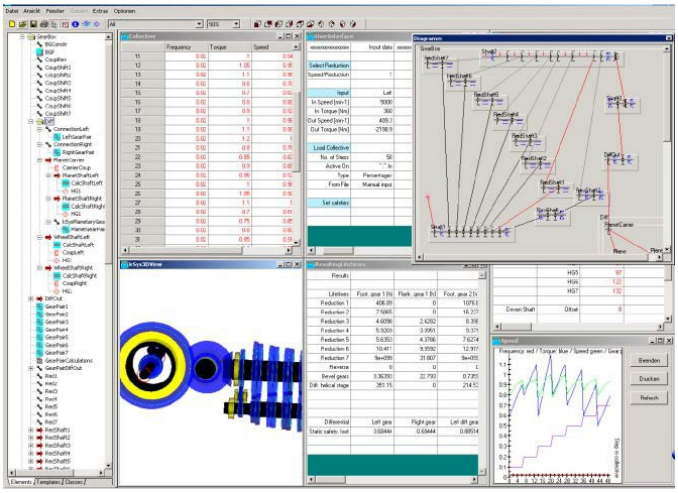
Gear Specification

How Requirements from Formula 1 Are Taken Into Account

In this project, concepts and software were developed that allow machine systems to be modeled, machine element calculations to be managed, and both system-level and machine element-level computations to be performed.

Problem Statement

Kisssoft has been developing and selling machine element calculation software since the 1980s. The issue was that identical boundary condition data had to be entered repeatedly for different calculations.



Concept

In KISSsys, systems composed of individual components are assigned corresponding machine element calculations. At the system level, power flows and resulting component loads—represented as forces and torques—are calculated.

These calculated forces and torques are then used as input for the individual machine element calculations. Only additional boundary conditions need to be defined in those calculations. A large portion of the data is therefore passed directly from the system definition into the machine element computation.

Once a machine system has been fully designed, it can be optimized through simple parametric adjustments.

Applications

- Modeling transmissions and drivetrains for strength calculations
- Automatic calculation of power flow and loads
- Linking individual transmission components with their corresponding calculations
- Rapid evaluation of design variants
- Load spectra at the system level with automatic translation to individual components
- Built-in programming language provides maximum flexibility

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