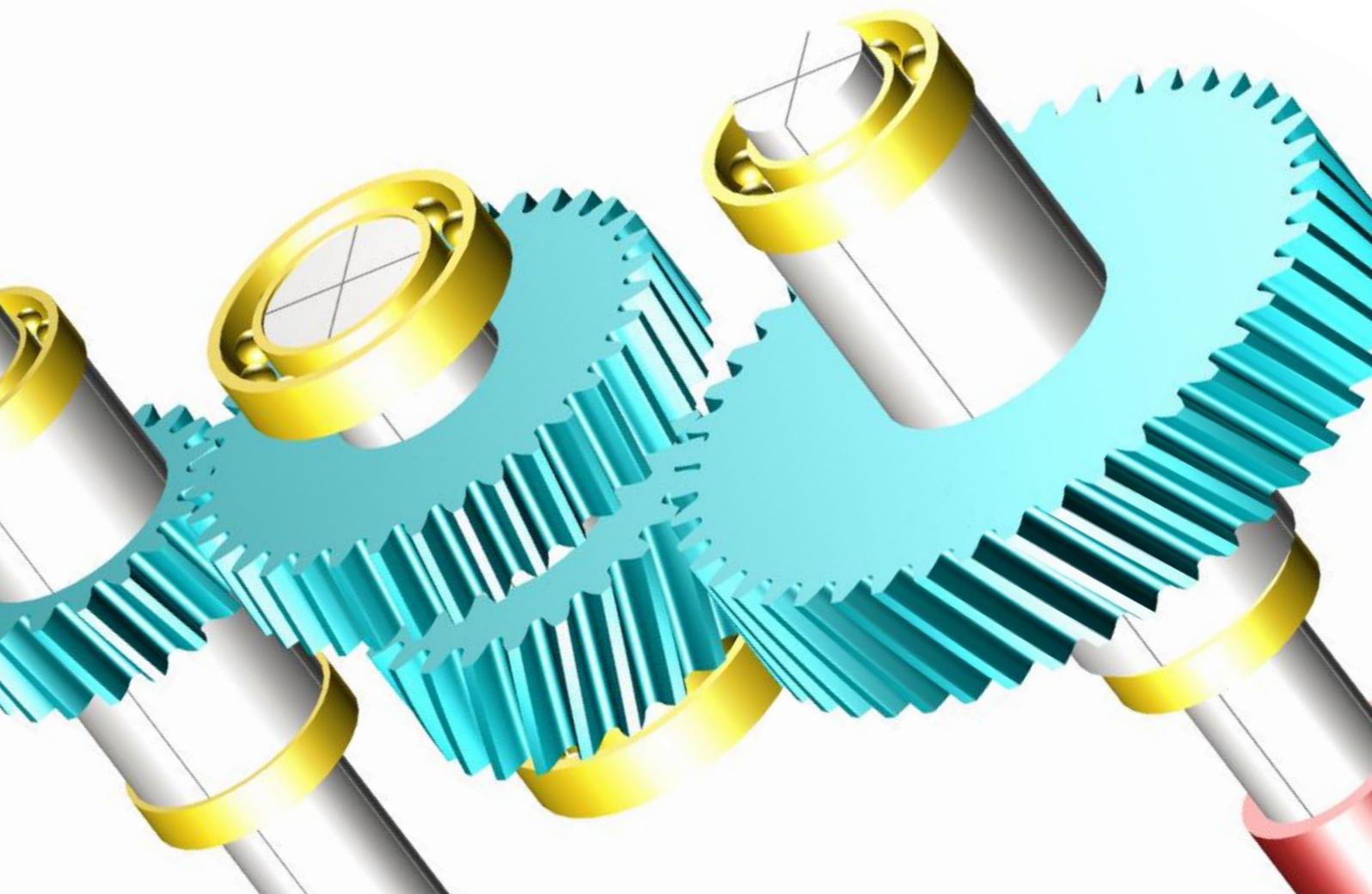# KISSsys Live Stream Training

Basic: Modeling Gearboxes

March 22-24, 2022

The below schedule is shown in time zone CET 02:00 pm – 06:00 pm (Brussels)

Session 1:   March 22, 2022

2:00 – 2:15 pm	Welcome
2:15 – 3:25 pm	Introduction to KISSsys
3:25 – 3:40 pm	Break
3:40 – 6:00 pm	Modeling of a two-stage gearbox
Exercises	**Modeling single shaft gearboxes**

Session 2:   March 23, 2022

2:00 – 2:10 pm	Exercise follow up
2:10 – 3:40 pm	Special kinematic cases, power split
3:40 – 3:55 pm	Break
3:55 – 6:00 pm	Gearbox with shifting elements
Exercises	**Special kinematics**

Session 3:   March 24, 2022

2:00 – 2:10 pm	Exercise follow up
2:10 – 3:40 pm	Modeling a planetary stage
3:40 – 3:55 pm	Break
3:55 – 6:00 pm	Adding additional stages to a planetary stage
Exercises	**Modeling a complete gearbox**

Introduction to KISSsys

- Key benefits
- Important settings
- User and administrator mode
- User Interface and functionalities
- Terminology
- Using existing models, GPK models
- Communication with KISSsoft modules for
 strength analysis

Introduction to Modeling

- Plan the model
- Calculation of kinematics / power flow
- System based calculations regarding safeties, lifetime, weight and cost
- Generate user defined tables

Modeling with Single Shafts

Examples of modeling a two-stage industrial gearbox and a bevel gear stage gearbox

- Creating a proper sketch
- Building the model with different methods
- Calculating and defining the kinematics
- Geometry definition of machine elements in KISSsoft Interfaces
- Sizing of gears, positioning of shafts and bearings
  according to the requirements
- Generating a User Interface table with variables for
  system information (operating data, safeties, lifetimes)

Exercise to build a simple industrial gearbox and use the sizing functionalities.
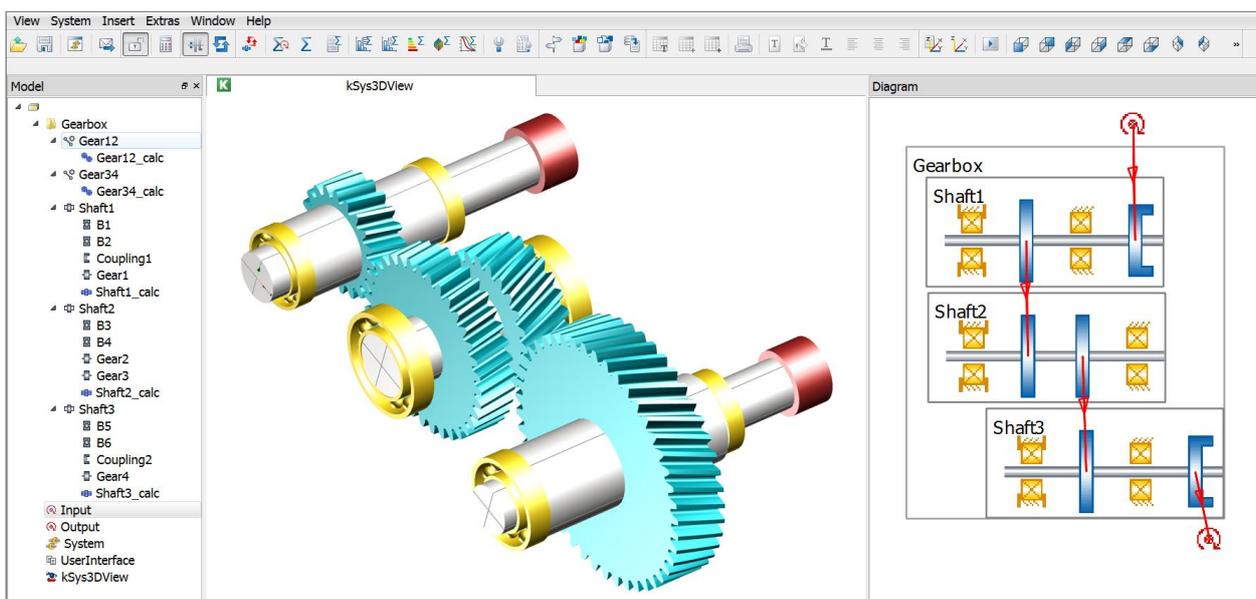
Special Kinematic Conditions
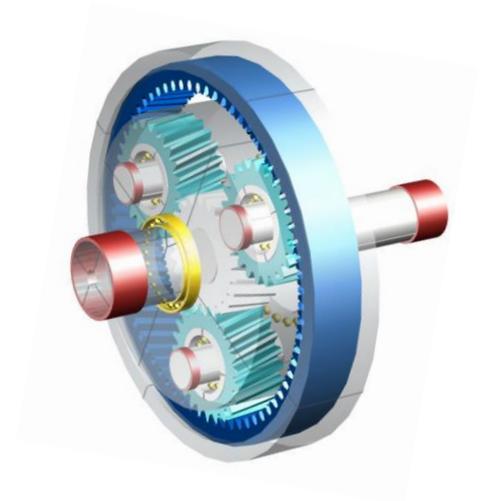
Models with One Input Two Outputs
- Definition of boundary conditions
- Controlling power distribution

Gear Chain with Three Gears
- Handling of KISSsoft calculations
- Setting alternating bending factors

Overdefined Kinematics
- Model with powersplits
- Using of gear activation method

Coaxial Shaft Modeling

Planetary Stage
- Important notes on the sketch
- Generation of the model, kinematics calculation
- Definition of the geometry in KISSsoft
- Modifying the positions of the groups
- Implementing of simple functions into a table
- Realization of multiple stages with spline connections
- Combination of single and coaxial shafts in one model

Summary of the first two days with a complete gearbox as an exercise.