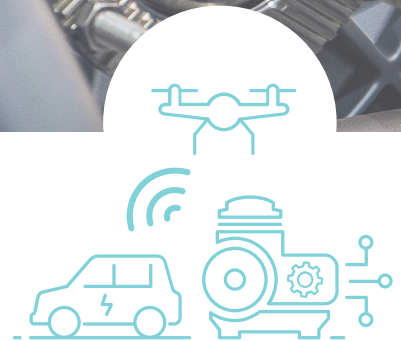**MOTION PRODUCTS**

DESIGN AND PROTOTYPING OF TRANSMISSIONS

Flanders Make supports companies with the optimisation, characterisation and integration of drivetrain transmissions to improve their performance.
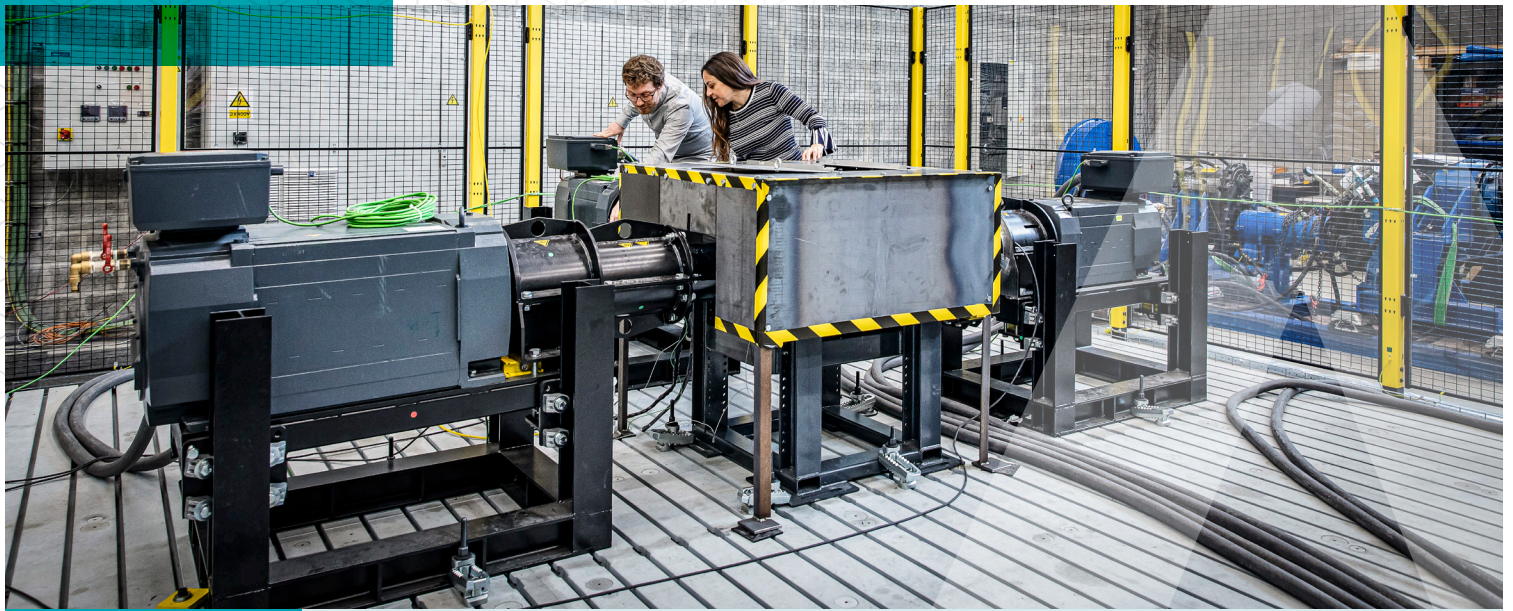
Thanks to our winning combination of modelling expertise and a unique validation setup (multi-load drivetrain test cell), we can offer modelling, simulation and experimental validation of (prototype) transmissions through:

- detailed characterisation and validation measurements of transmission components, including vision-based teeth monitoring, loss models, efficiency maps etc.;
- numerical and experimental modelling and characterisation of tribological effects (e.g. friction, lubrication, wear) in transmissions, incl. CFD and fluid-structure interaction methods;
- system level modelling of mechanical transmissions, incl. Continuous Variable (toroidal and belt) Transmissions (CVT), Electric Variable Transmissions (EVT), planetary gears, belt and differential transmissions, hydraulic transmissions;
- sizing optimisation of components (gears and clutches) of gear boxes;
- optimisation of clutch actuation control.

We use various unique software and hardware tools in this process:

- In-house developed parametrised transmission models in MatLab/Simulink;
- In-house developed tools for lubrication and erosion/abrasion modelling;
- Tango Toolbox combining ABAQUS and ANSYS Fluent for fluid structure interaction;

www.flandersmake.be

For more information, please contact
services@flandersmake.be

FLANDERS
MAKE

Physical design tool for optimisation of drivetrain and gearbox

PROBLEM

The design process of hybrid drivetrains is becoming ever more complex

SOLUTION

A computational design method consisting of 3 steps:
- Modelling components and expert knowledge
- Automatic generation and evaluation of concepts with automatically sized components
- Providing designers with a set of new driveline components or systems that can be used as a basis for the final design.

CUSTOMER VALUE
- Decreased design effort
- Faster time-to-market
- Transmission design knowledge captured in models
- Reduced Total-Cost-of-Ownership (TCO)