

EnginSoft is a premier consulting firm in the field of Simulation Based Engineering Science (SBES) with a global presence. It was founded in 1984, but its founder and initial employees had been working in SBES since the mid '70s. Throughout its long history it has been at the forefront of technological innovation and remains a catalyst for change in the way SBES and CAE technologies in general are applied to solve even the most complex industrial problems with a high degree of reliability.

Today, EnginSoft is comprised of groups of highly qualified engineers, with expertise in a variety of engineering simulation technologies including FEM Analysis and CFD, working in synergic companies across the globe. We are present in Italy, France, Germany, the UK, Sweden, Turkey and the U.S.A. and have a close partnership with synergetic companies located in Greece, Spain, Israel, Portugal, Brazil, Japan and the U.S.A.

EnginSoft works across a broad range of industries that include the automotive, aerospace, defense, energy, civil engineering, consumer goods and biomechanics industries to help them get the most out of existing engineering simulation technologies.



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DATA SHEET

MASTA

System Design - General



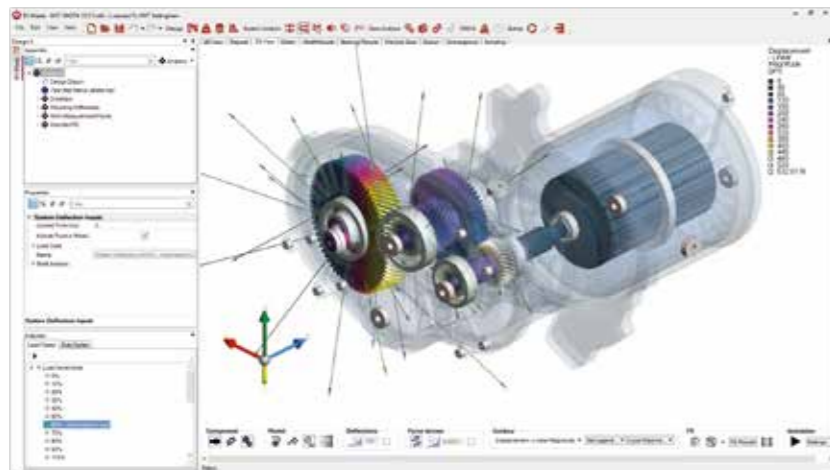
From basic concept models to fully detailed transmission systems, MASTA provides users with simple and intuitive modelling tools. Users can generate and assess concept transmission layouts in a matter of minutes or model existing transmission layouts with ease from engineering drawings or 3D CAD models in SpaceClaim.

It is easy to incorporate components from all corners of the transmission industry within a full system model simulation.

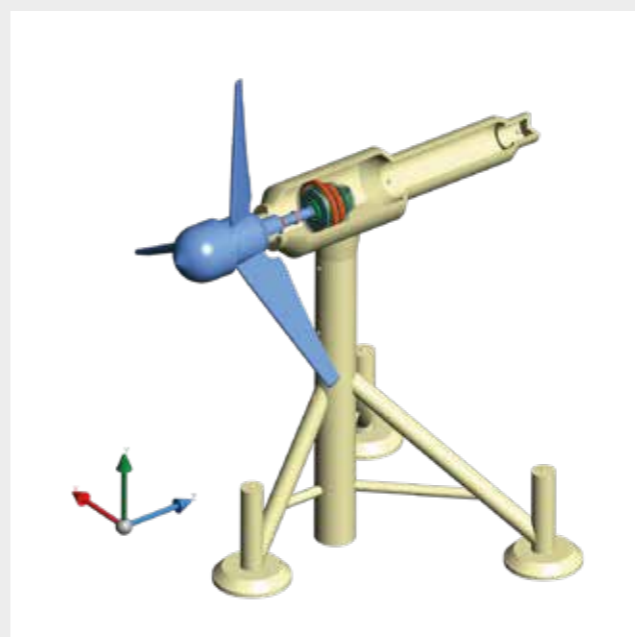
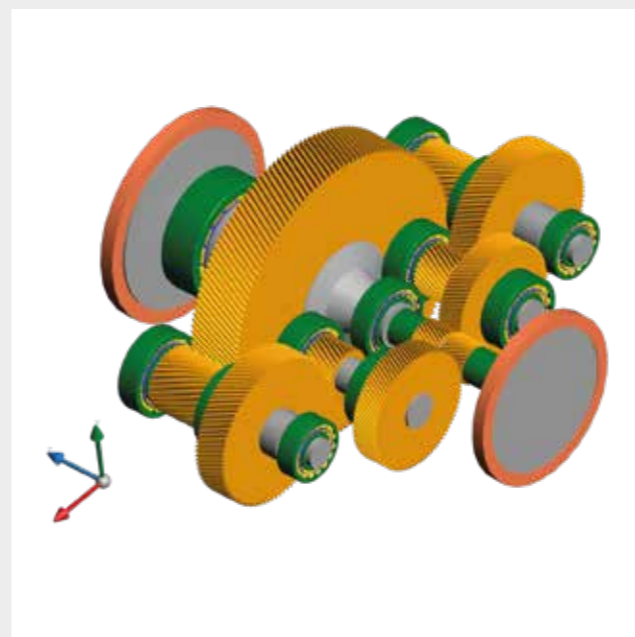
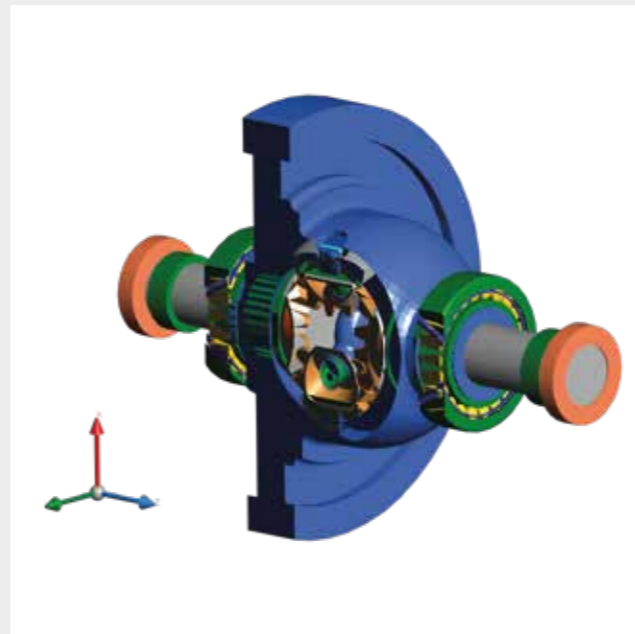
From CVT's and torque converters to Asymmetric gears and cycloidal drives, MASTA has you covered.

Going deeply with investigations on geared system transmissions, users can include critical components such as detailed housings or complex shafts as FE components for accurate calculation of system stiffness.

Once modelled the complete transmission or part of it, it is easy to explore changes in transmission layout, component design, materials and manufacturing processes in the convenience of a user-friendly virtual environment.



Masta is a product
SMT



System Design General

Concept Modelling

- ✓ Fast and intuitive, MASTA's concept modelling capabilities are unrivalled.
- ✓ MASTA's user friendly drag-and-drop modelling system allows components to be created, connected and positioned in a single click.
- ✓ Choose your level of detail. MASTA provides a completely flexible component system, allowing the user to select how much detail is required in a concept model.
- ✓ Concept bearings with user defined stiffness values OR fully detailed bearing selections either from existing manufacturer catalogues or custom specifications.
- ✓ Auto-repair gear set tools facilitating rapid creation of viable torque transmitting gear designs OR fully defined macro geometry, micro geometry and gear cutters.
- ✓ Intuitive shaft profile modelling system allowing fast paced shaft axisymmetric profile development OR where applicable replace MASTA shaft geometry with fully detailed FE designs.

Detailed System Modelling

- ✓ Create MASTA components directly from 3D CAD geometry.
- ✓ Import 2D engineering drawings to be used as an interactive guide or reference images in a MASTA model.
- ✓ Incorporate finite element versions of complex components such as housings, planet carriers, flexible ring gears or asymmetric shafts for high accuracy system stiffness modelling (see the Imported FE section for more details)

Imported FE

- ✓ Create MASTA compatible FE components (transmission housings, planet carriers or asymmetric shafts) directly from 3D CAD and without leaving the software
- ✓ Import mesh data files generated by all major FE packages for seamless linking to MASTA generated components.
- ✓ Generate stiffness matrices using external FE software packages and import to MASTA within seconds.
- ✓ Verify FE components before committing them to the system model by performing static and modal analysis in isolation.

Loading Conditions

- ✓ Import spectra or time series data as individual loads or compress to simulate full transmission life cycle
- ✓ Create load cases with detailed condition settings such as;
 - ✓ Component temperature specification and thermal expansion
 - ✓ Efficiency calculation
 - ✓ System performance due to fitting tolerances
 - ✓ Manufacturing error specification
- ✓ Generate comparative cases with design changes.