STUDIO TECNICO Zocca

MECHANICAL ENGINEERING DESIGN FEM ANALYSIS PROTOTYPES





STUDIO TECNICO ZOCCA.

OUR BACKGROUND

For over a half century the Studio Tecnico Zocca has focused on the planning, analysis, calculation, design and construction of machines and components for the mechanical engineering field.Throughout every decade we have employed the most advanced technologies available.

Originally founded in 1954 by Enrico Zocca, the company is now headed by his son Alessandro. Staffed by ten technicians with an advanced level of preparation, the Studio has the skills to pinpoint solutions for a wide range of applications, from the project phase right through the final product.

Studio Tecnico Zocca's history speaks for itself: we boast decades of work at the service of prestigious brands, which are points of reference in the respective segments of mechanical engineering. All this has contributed to creating a wealth of experience and reliability that enables the Studio to develop technically on a constant basis.

But that's not all. The team's remarkable creative talents are the motivating force behind our search for innovation, a main factor in our ability to set ourselves apart and compete in an increasingly globalized market.

INNOVATIVE SOLUTIONS FOR OVER 50 YEARS

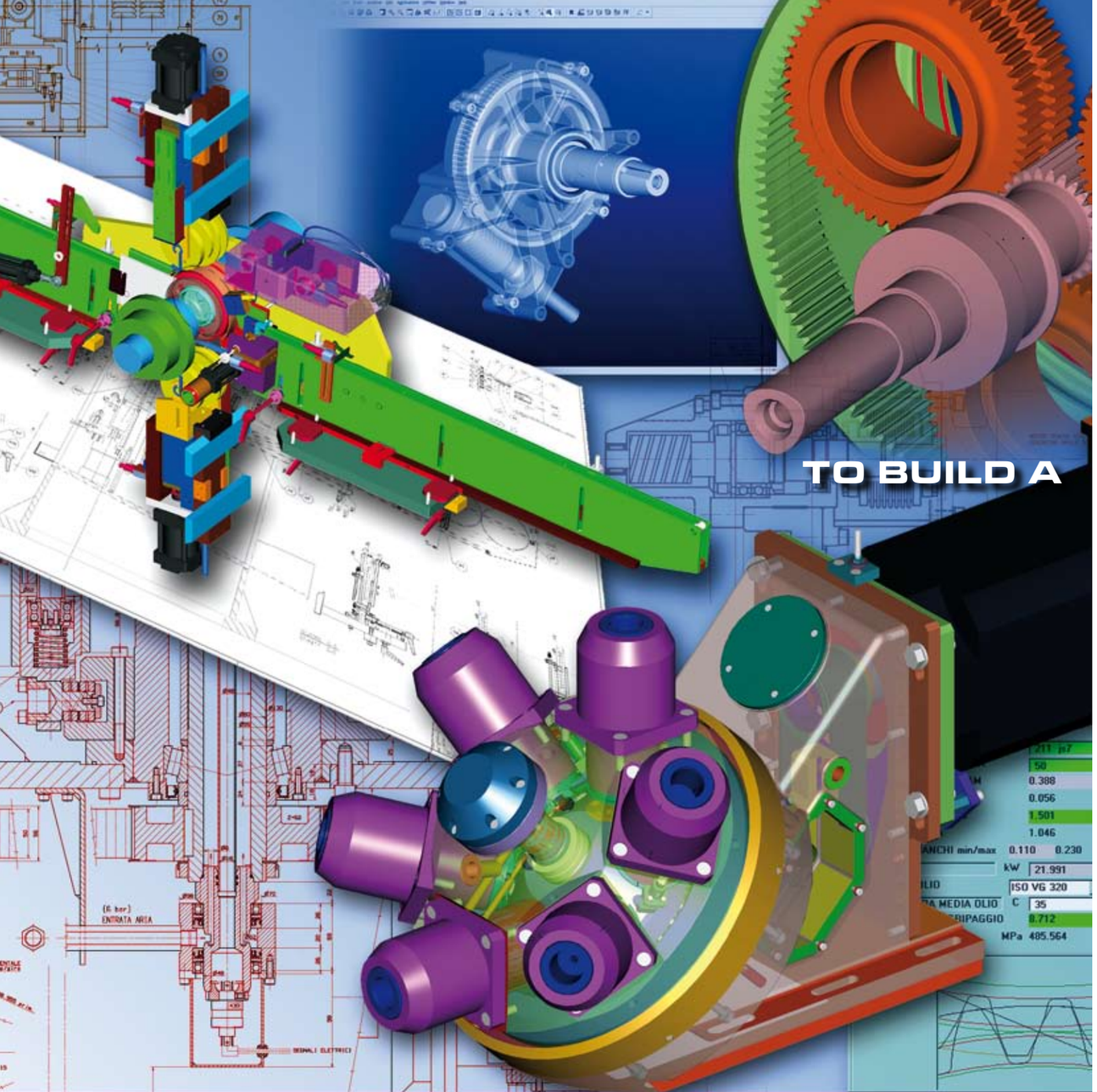


SECTORS OF ACTIVITY

- Automotive
- Marine propulsion
- Gearboxes for turbomachines
- Reduction gears
- Automatic machines
- Machine tools
- Layout and structural steelwork for mechanical and plant engineering
- Units for special applications
- Assembly and test benches

INSTRUMENTS USED

- Cad 3D/2D
- Finite element and MBD calculation software
- Data acquisition software
- Dedicated calculation software



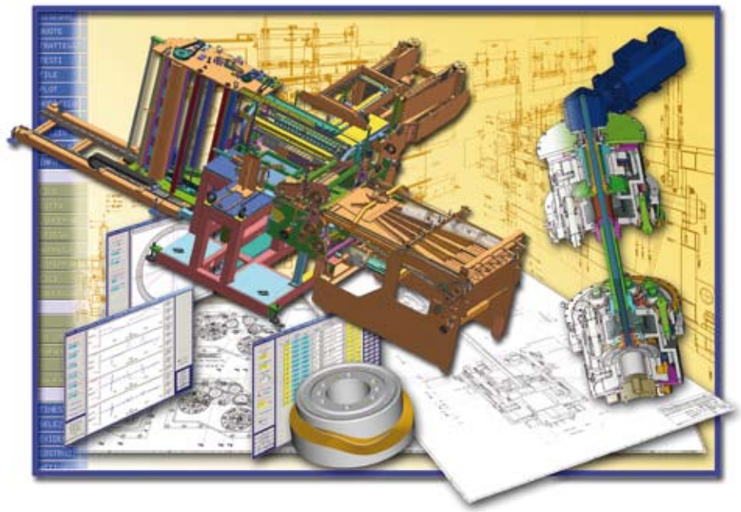
CAD 3D MODELING, 2D DESIGN, REVERSE ENGINEERING, RENDERING AND ANIMATION

It all begins with a face-to-face discussion with the customer. During the preliminary planning phase, it is essential to understand and define with precision the specifications of the object of study. During the study phase, we use parametric solid modelers and other modelers to optimize the geometry of the mechanical components. The study of style parts also involves powerful surface modelers with rendering and animation tools useful for the project's presentation. Data is communicated to production by laying out the individual components and assemblies together with bills of materials obtained from the corresponding solid models.

In addition, Studio Tecnico Zocca has the capabilities to perform reverse engineering on sample parts.



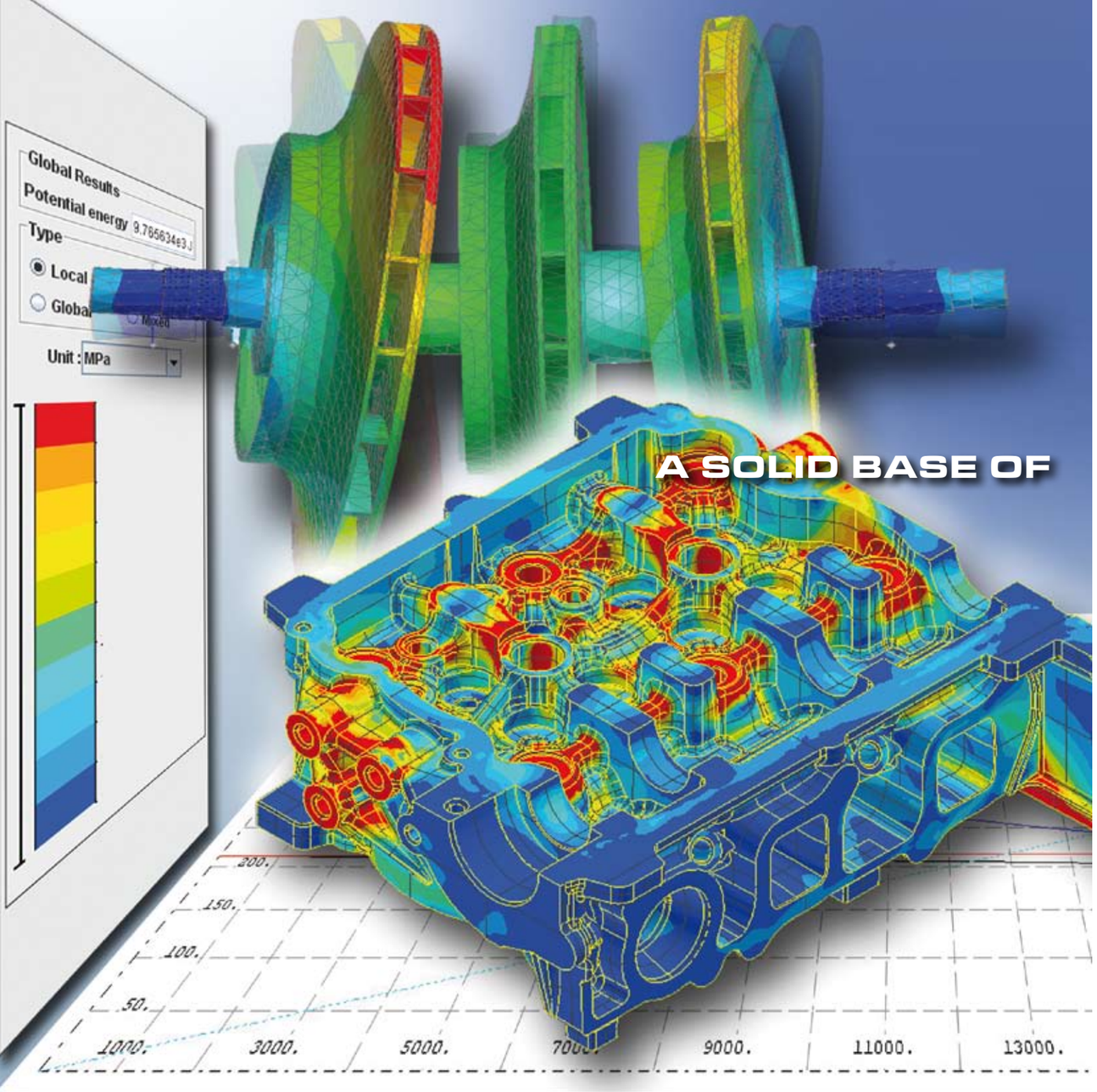
PRODUCT WE HAVE TO IMAGINE IT FIRST



SOFTWARE DESIGN FOR SPECIFIC REQUIREMENTS

We design and create systems and software applications using a development environment that allows the use of Java or C# leading languages and the most common databases such as SQLServer, Oracle, Db2, Postgres,
MySql on Windows or Linux platforms.

We create applications to optimize collaboration among engineers, the automation of phases of plant engineering, costing, production management and company logistics.



**TOPOLOGICAL OPTIMIZATION,
LINEAR AND NON-LINEAR CALCULATION
OF FINITE ELEMENTS, RIGID OR FLEXIBLE BODY DYNAMICS**

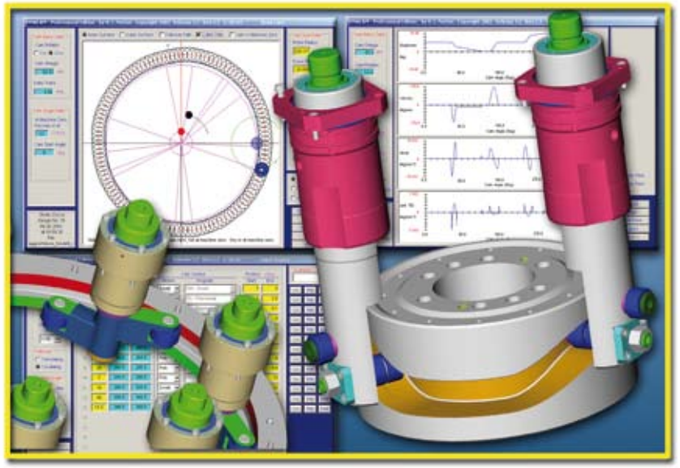
During the study of the components with imposed mass or rigidity specifications, we use parametric or topological optimizers that indicate the best distribution of material in the component analyzed.

Verification of the project is carried out using finite element calculation tools that can operate in the linear and non-linear field whether geometric or material.

For simulation of whole groups of machines we use MBD software, which resolve the dynamics of rigid or flexible bodies in movement by analyzing stress, deformation and acceleration of the operating parts.



CALCULATION IN SUPPORT OF THE DESIGN

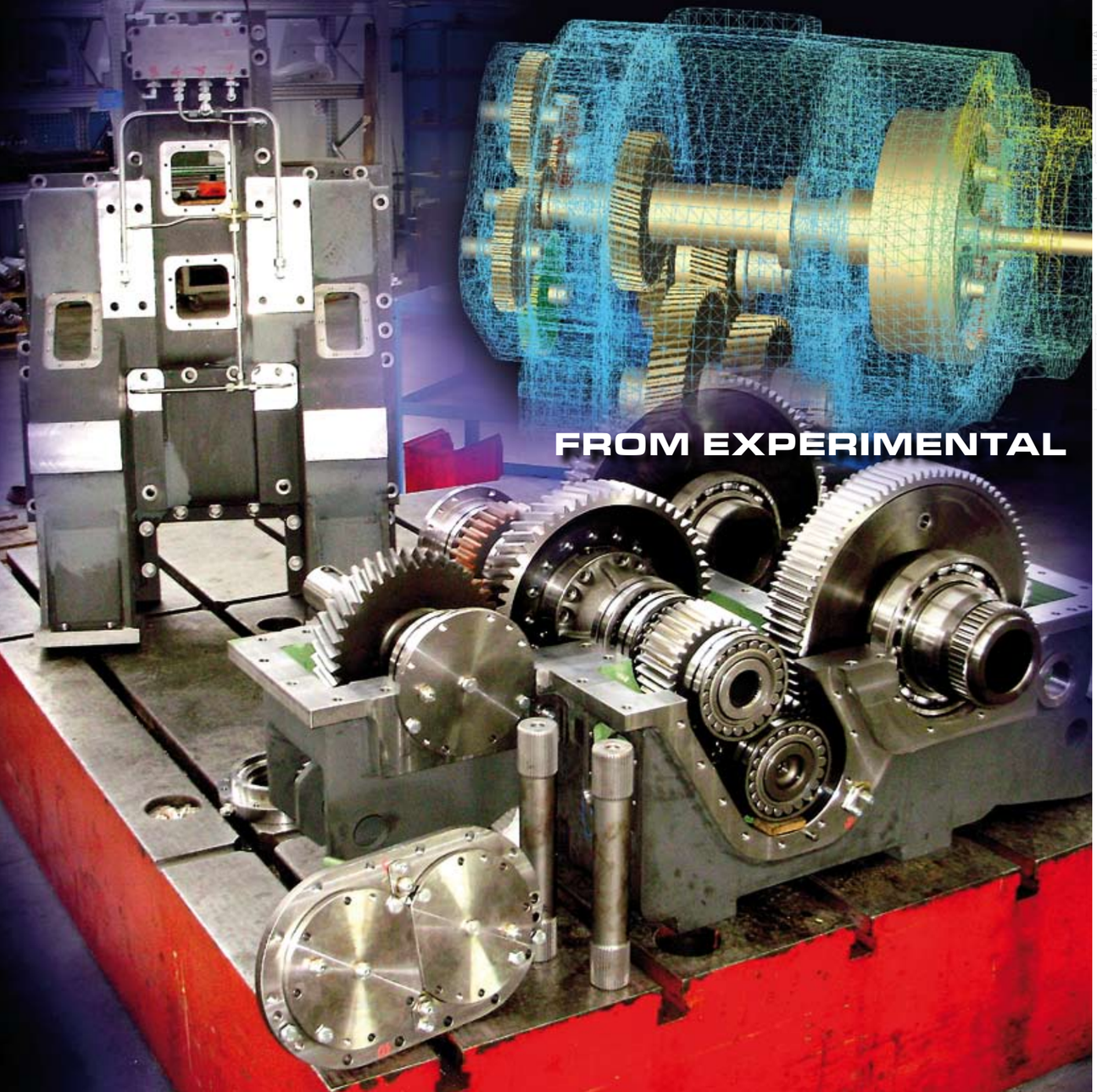


**CALCULATION OF GEARS,
CAMS AND ROTODYNAMICS
USING DEDICATED SOFTWARE**

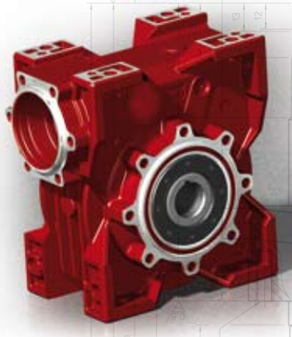
Gear calculation is based on DIN, ISO and AGMA standards for cylindrical, conical, face and worm screw. For this process, we use dedicated software, also available for direct sale to our customers.

Calculations of cams, including desmodromic cams, is performed with dedicated software with result of profile coordinates.

Calculation of single or multiple rotors uses FEM software which calculates the number of critical rpm and resolves the model with analysis in the domain of time and frequency.

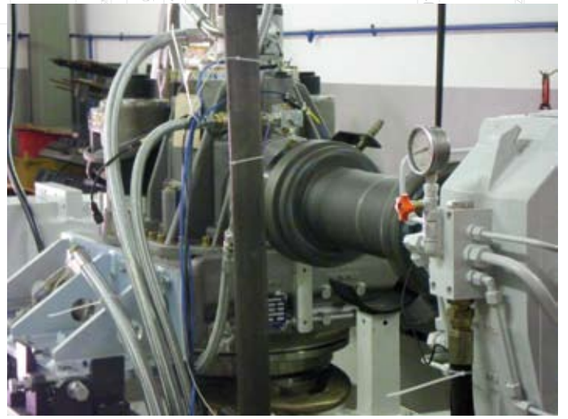


FROM EXPERIMENTAL PROTOTYPE TO "TURNKEY" PRODUCT



RAPID PROTOTYPING IN ABS PLUS

When the complexity of the geometry or the process of creating the component requires it, we use the 3D printer to obtain directly from the 3D CAD the model in ABS Plus.
This plastic material allows the use of the component also in the simulation phases of the assembly.



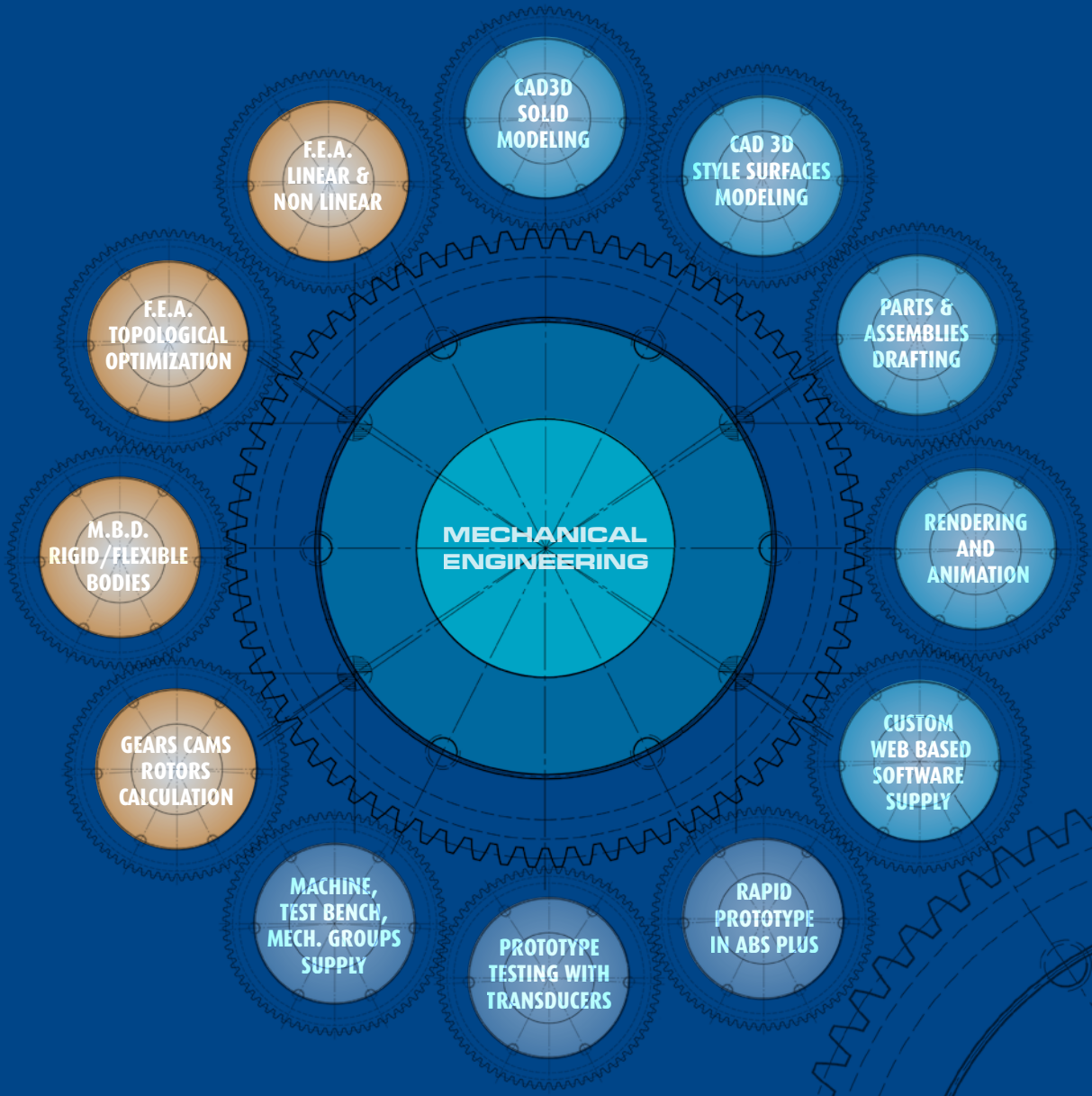
DATA ACQUISITION ON PROTOTYPES

We perform the collection, acquisition and processing of experimental data obtained with the instrumentation applied to the prototype.

COMPLETE SUPPLY OF TEST BENCHES, PROTOTYPE BENCHES AND PRE-SERIES BENCHES

What has been designed and calculated is then constructed. With delivery of entire machines or test benches, of single units or pre-series components. Work then continues with field assessments of physical parameters, such as accelerations.

Studio Tecnico Zocca offers the customer a "turnkey" product.



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