



HEXAGON

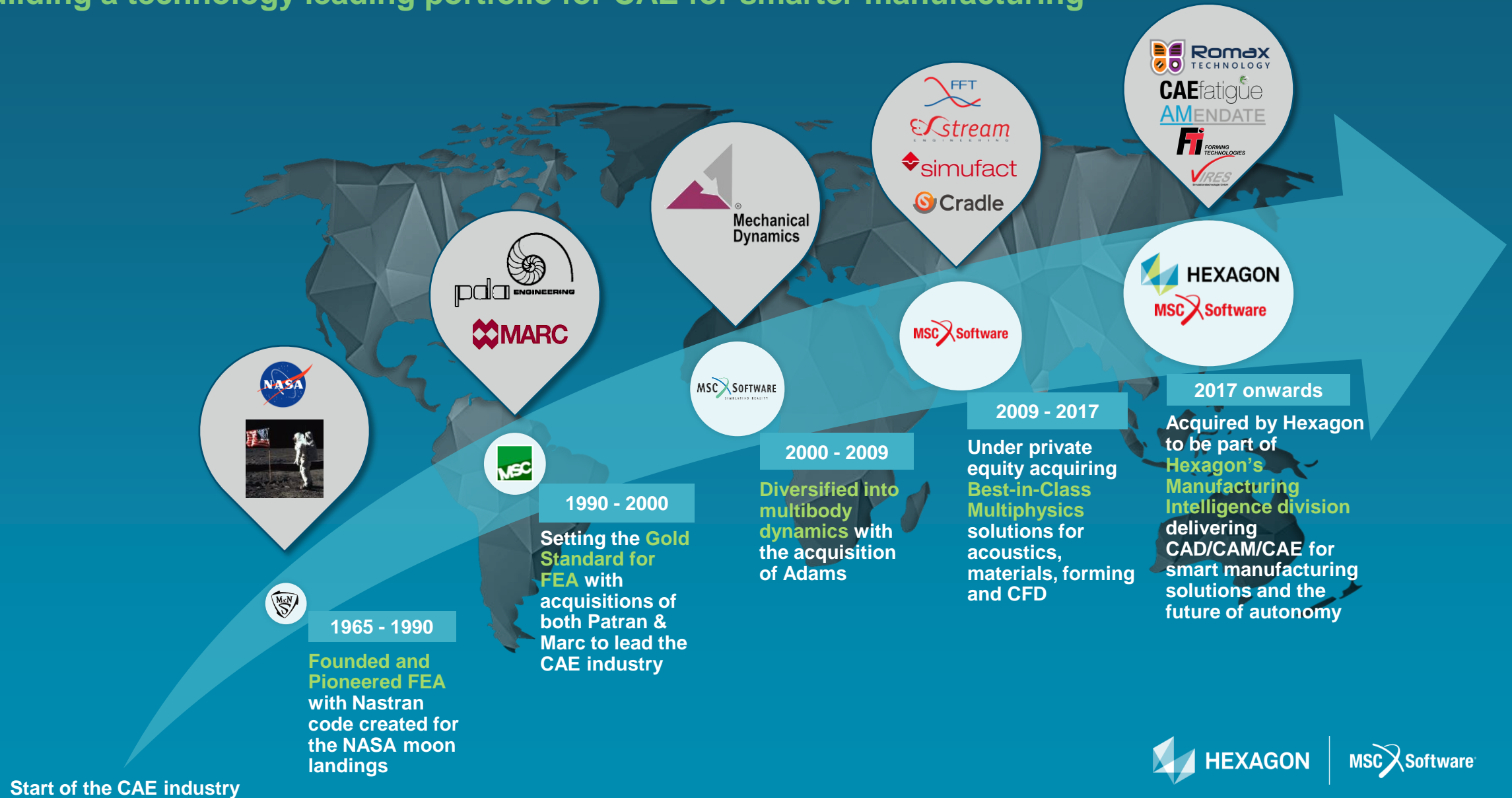
MSC Software

MSC Software, Design & Engineering for Smart Manufacturing

HEXAGON

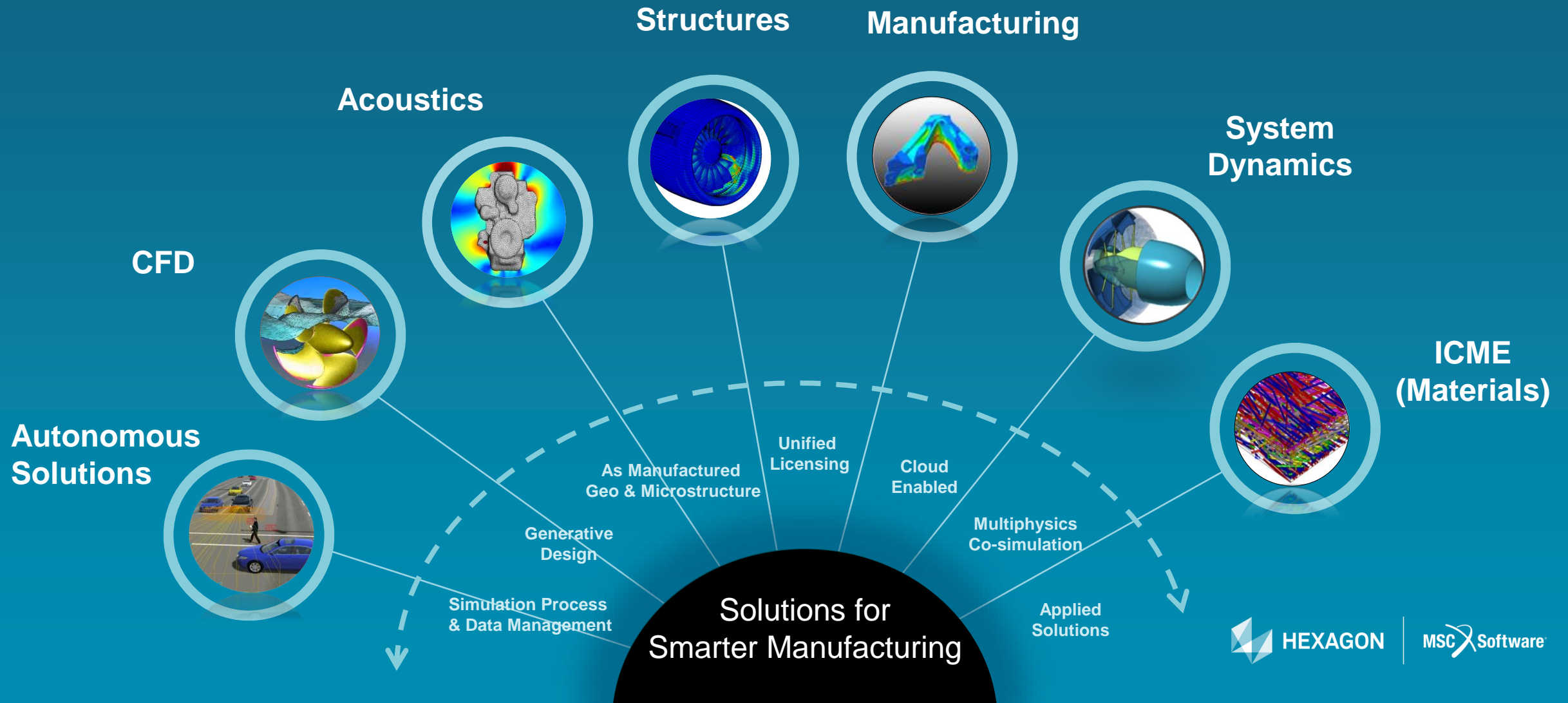
MSC Software, Pioneered Computer-Aided Engineering

Building a technology leading portfolio for CAE for smarter manufacturing



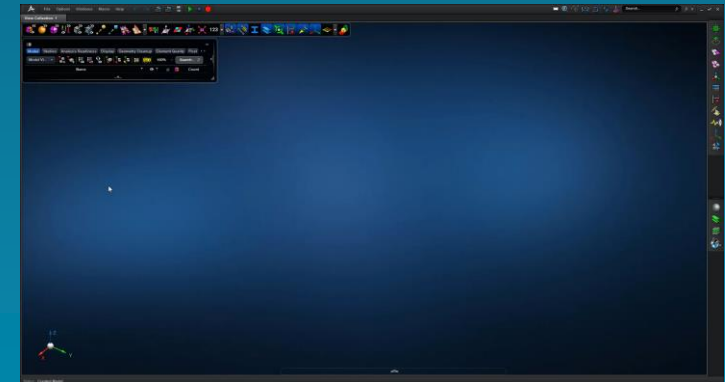
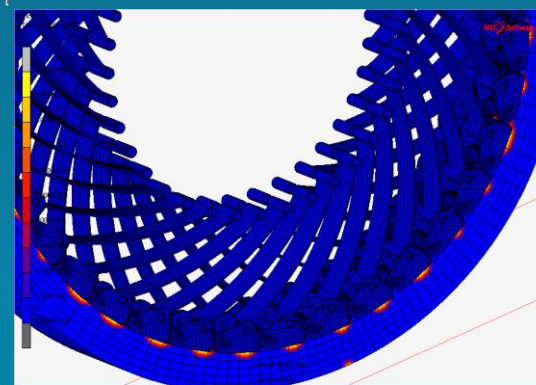
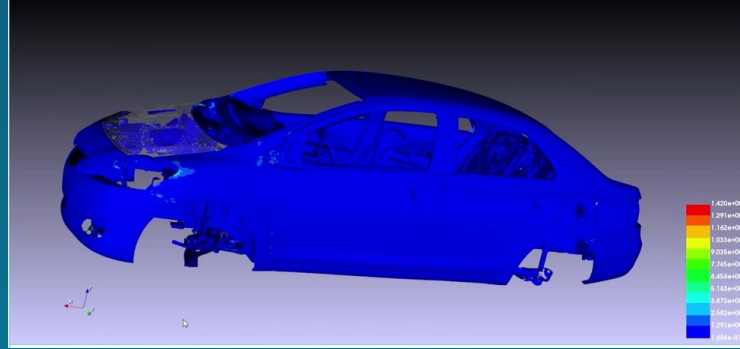
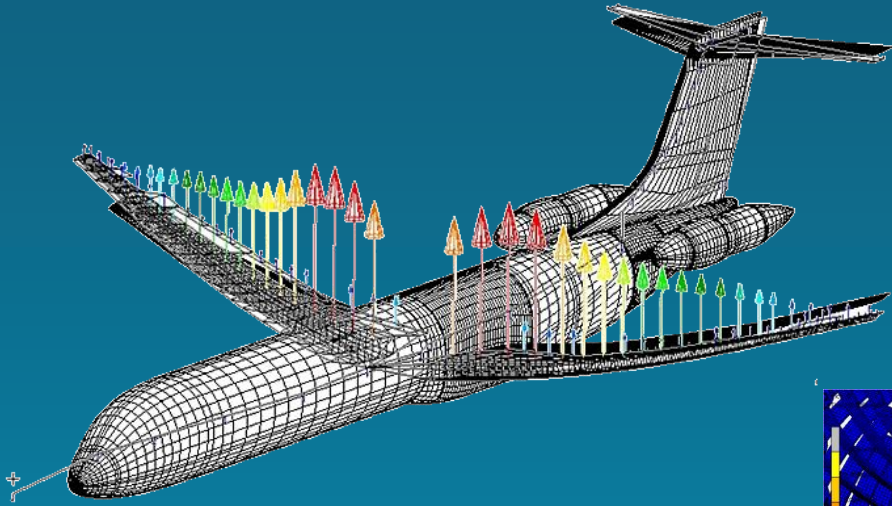
MSC's portfolio of technology, software & subject matter expertise

Our **Centers of Excellence** give leverage to our customers with solutions to their D&E needs



MSC Software's Structures Solutions

Delivering tried, trusted, industry standard and state-of-the-art structural analysis solutions



MSC Nastran | Marc | MSC Apex

- MSC Nastran is the de-facto standard for aero-structure design, automotive NVH and the solver of choice for linear and mildly nonlinear problems
- Marc is the proven solver for complex nonlinear problems!
- We are taking our structural simulation software to the next level in terms of accuracy, performance and user experience

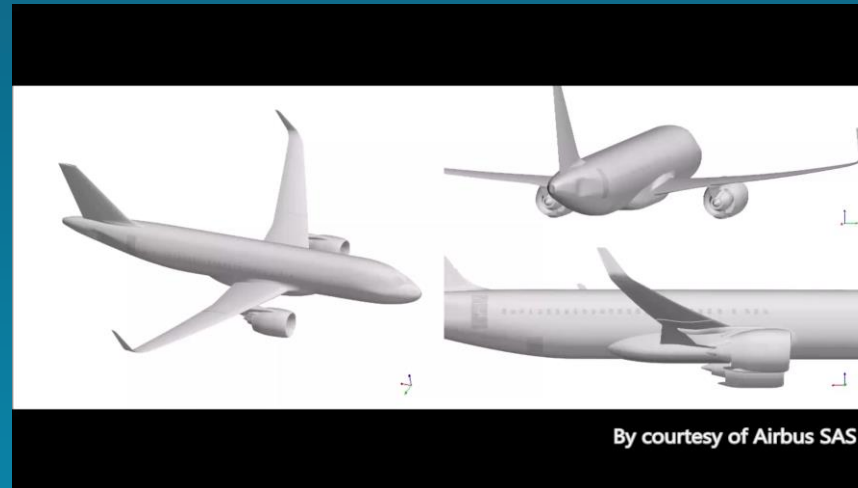


HEXAGON

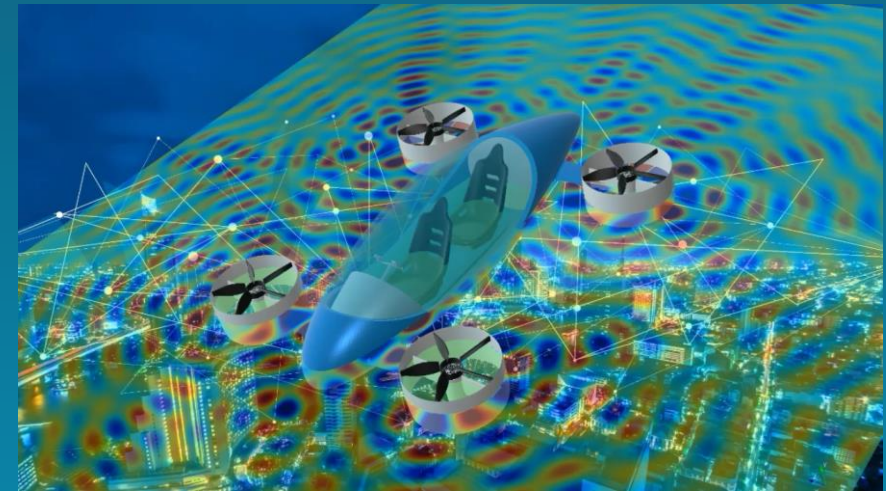
MSC Software

MSC Software's **Acoustic** Solutions

Solving the most challenging noise simulations in the world



Actran



- Actran is the premier solution for vibro-acoustics & aero-acoustics simulation
- Actran helps automotive, aerospace and other customers across industry comply with acoustics regulations, reduce noise pollution, improve comfort and engineer sound for pleasure and brand recognition

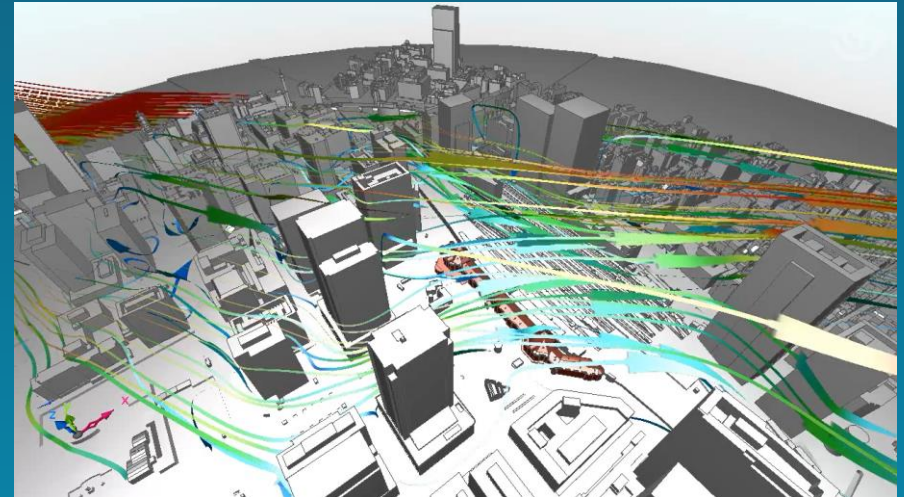
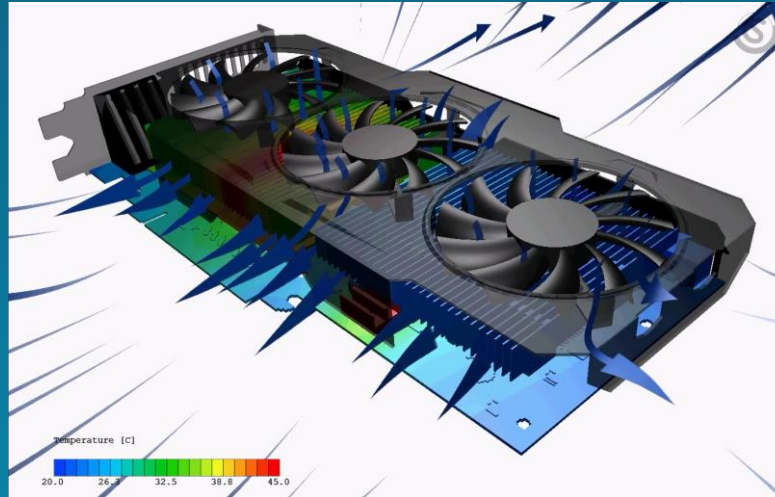


HEXAGON

MSC Software

MSC Software's Computational Fluid Dynamics Solutions

Delivering robust, fast & accurate multiphysics-focused CFD with great user experiences



Cradle CFD

- Robust, fast & accurate general purpose computational fluid dynamics software
- Unique solutions for electronic cooling and the construction industry
- Strong capabilities for multi-physics focused CFD co-simulation



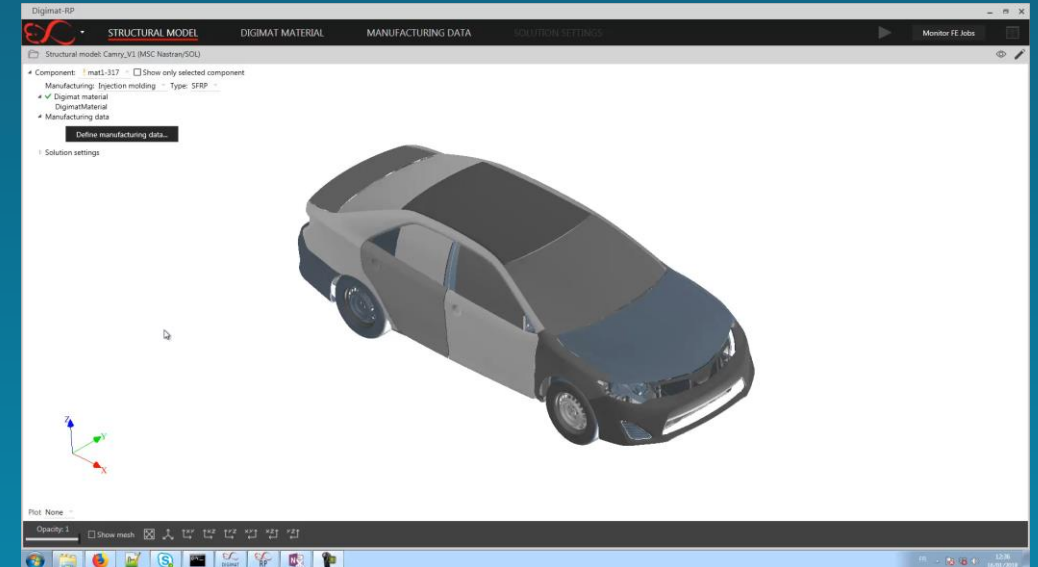
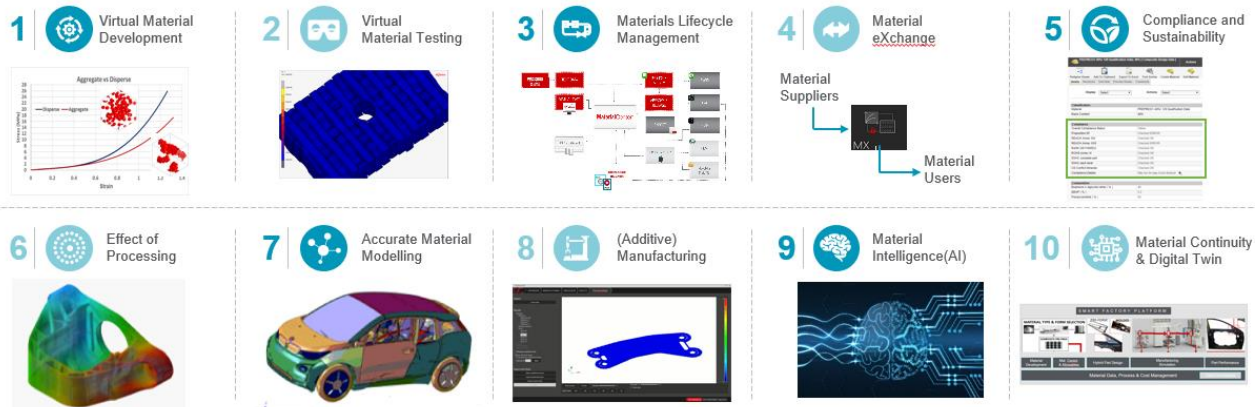
HEXAGON

MSC Software

MSC Software's ICME (Materials) Solutions

Delivering quality solutions for multi-scale material simulation & management

The Hexagon 10x ICME Solution



- Digimat is the platform for multi-scale modeling of materials & structures
- Combined with material data management, manufacturing and structural simulation, we provide the most advanced ICME solution on the market
- Integrated Computational Materials Engineering helps our customers with more efficient & effective use of materials to innovate, to lightweight and to improve performance, cost and quality

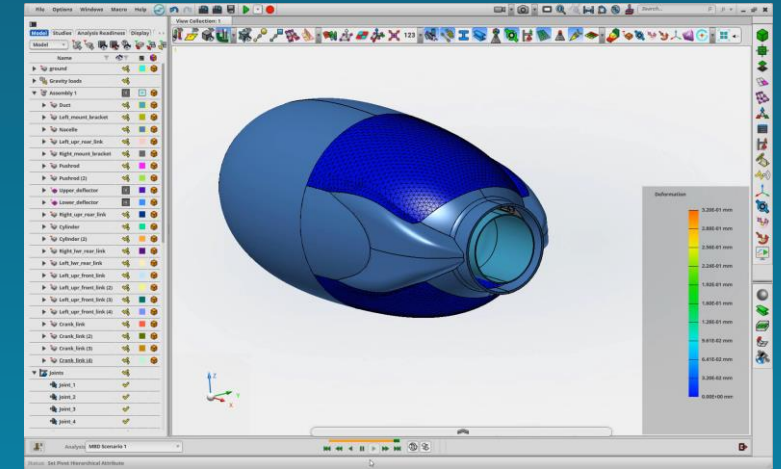
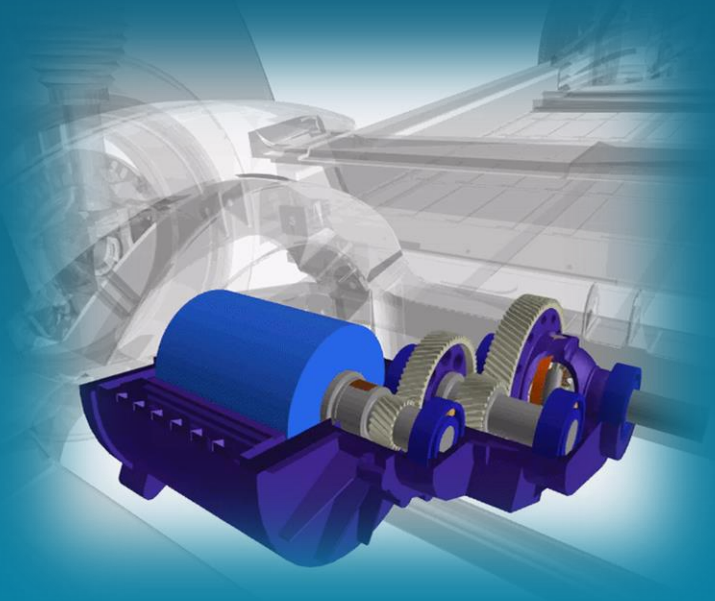
Digimat | MaterialsCenter

MSC Software's **System Dynamics** Solutions

Market leading multibody dynamics, systems simulation & electro-mechanical drivelines



Adams + VTD



Adams | Romax

- Adams is the gold standard in multibody dynamics simulation today
- Romax is the global leader in the design and analysis of gearboxes, drivetrains and bearings
- System dynamics software and applied solution team can help our automotive, aerospace and other industries in developing e-mobility and autonomous solutions

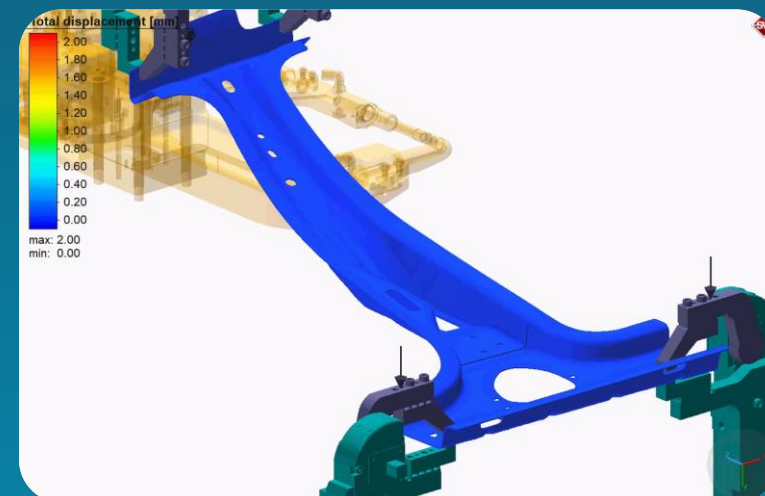
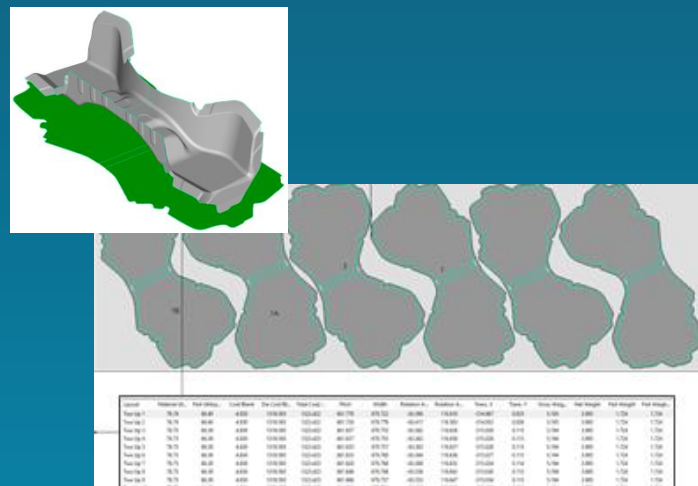


HEXAGON

MSC Software

Quality forming, welding, additive manufacturing and costing solutions

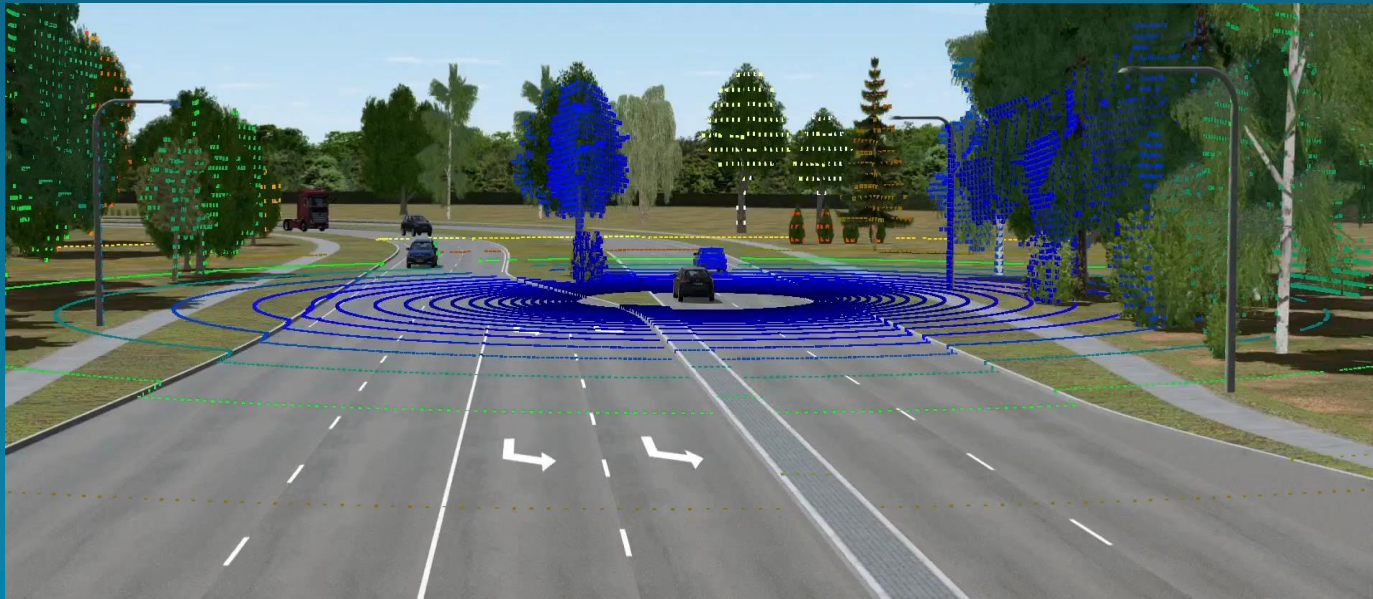
Quality forming, welding, additive manufacturing and costing solutions



- Simufact | FormingSuite | CostOptimizer

MSC Software's **Autonomous** Solutions

Open simulation platform for the testing and validation of ADAS and autonomous vehicles



- VTD is our open simulation platform for the testing and validation of ADAS and autonomous vehicles
- VTD helps our customers develop Advanced Driving Assistance Systems (ADAS) and autonomous vehicles faster and cheaper by providing them with a realistic test drive environment in which they can accumulate billions of test miles

VTD | VTD Scale

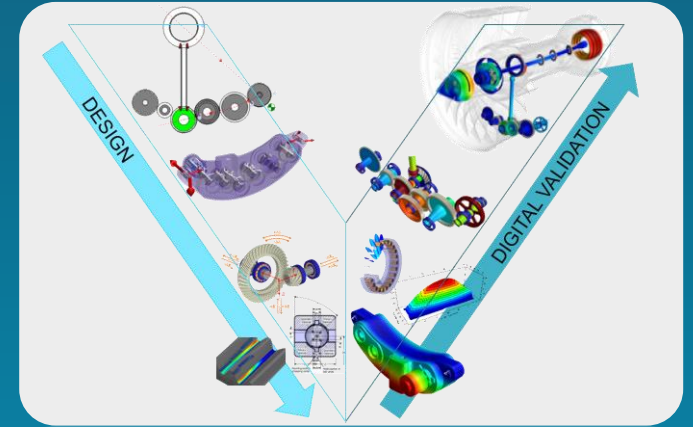
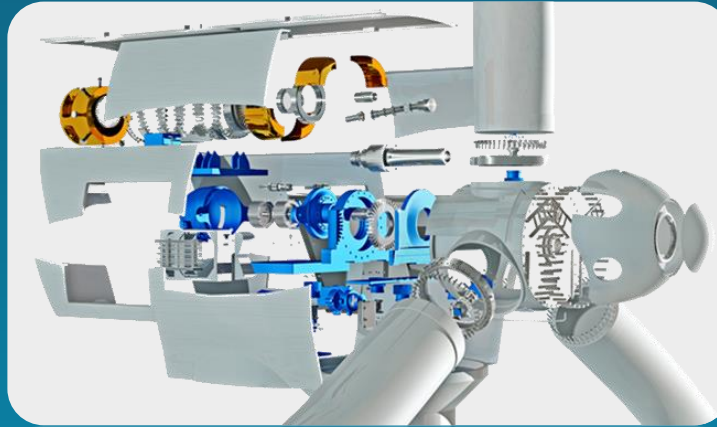
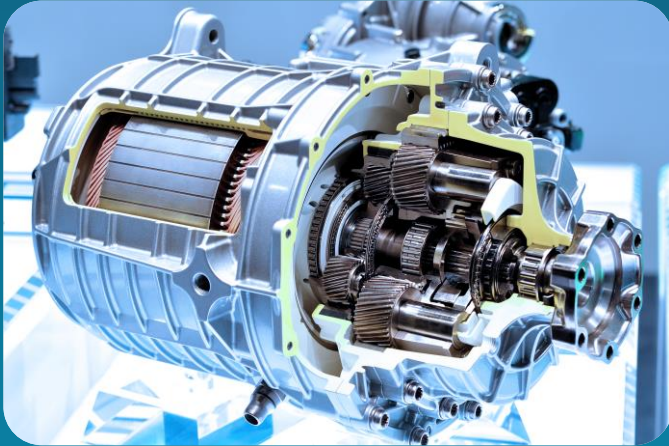


HEXAGON

MSC Software

Design & Engineering **Applied Solutions**

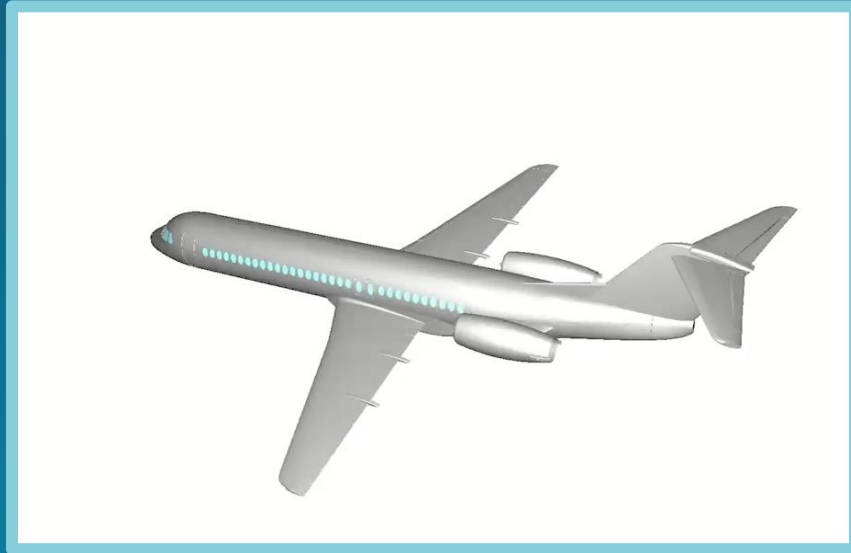
Turnkey engineering services solution provider for CAE and smart manufacturing



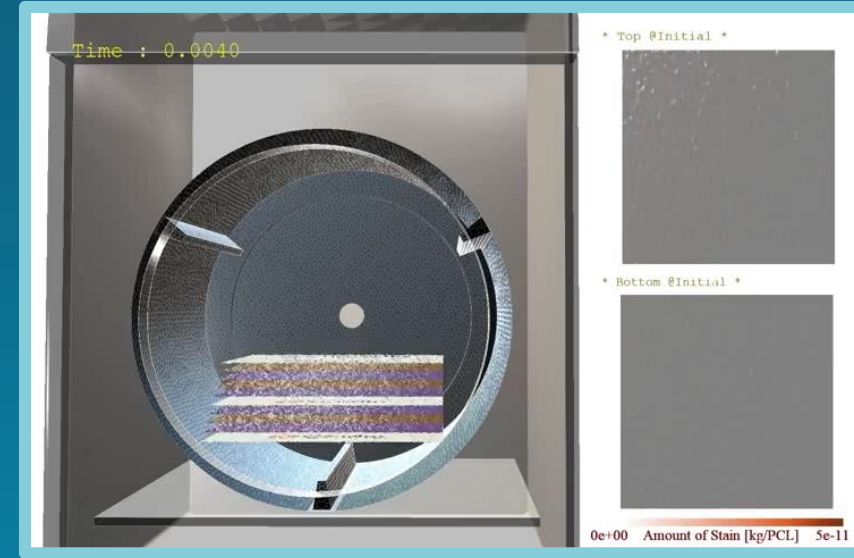
- A team of experienced engineers using Hexagon's & 3rd party technologies to design and engineer to develop rotating systems, e-mobility and smart manufacturing solutions
- The objective is to offer our customers in Automotive, Aerospace & Wind Energy the knowledge and resources to bring innovative solutions to market faster and cheaper

Unique multiphysics Co-simulation across the MSC Software portfolio

Fluids-Structure-Acoustics-Motion all in one simulation for predictive accuracy!

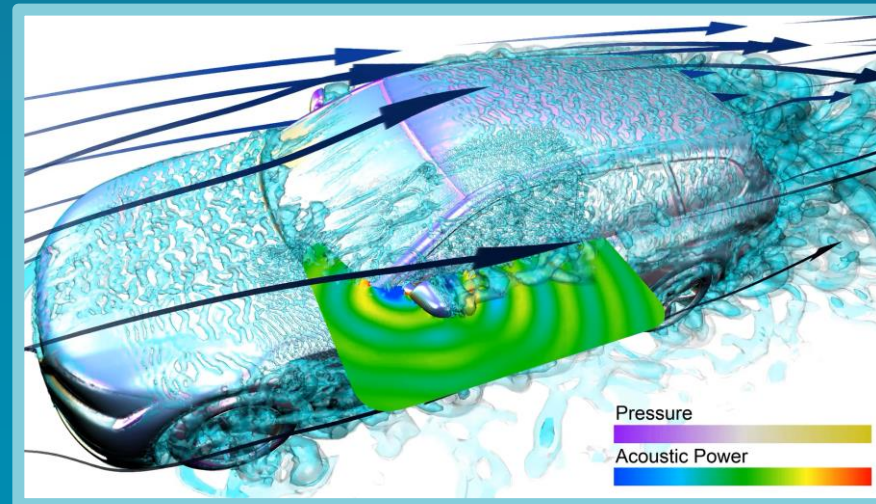


Cradle CFD
Adams
Marc
Actran

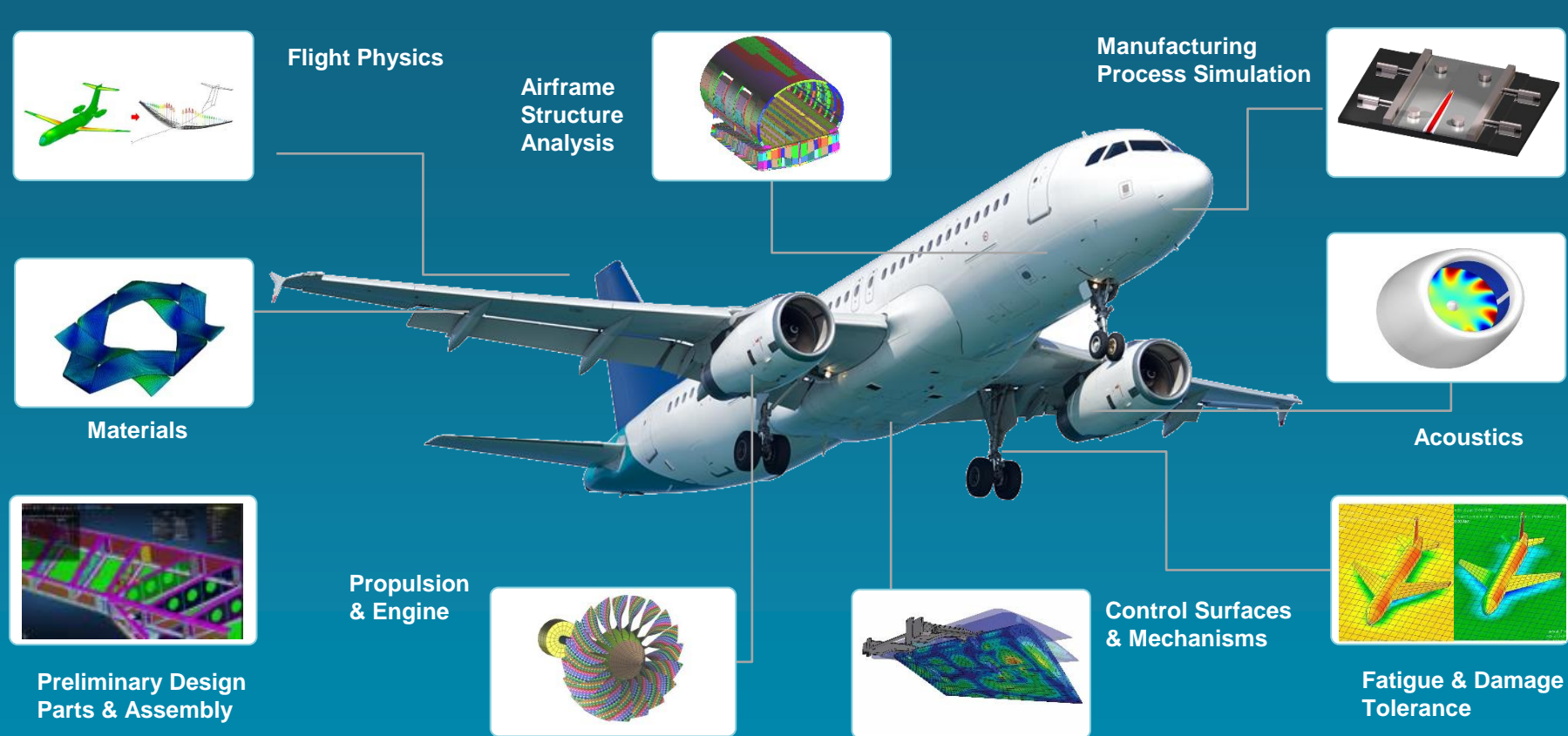


Cradle CFD
Adams
Marc

Cradle CFD
Actran



MSC Software's Aerospace & Defense Solutions



- Reduce Development Time & Costs
- Comfort, Safety & Durability
- Environmental Regulations

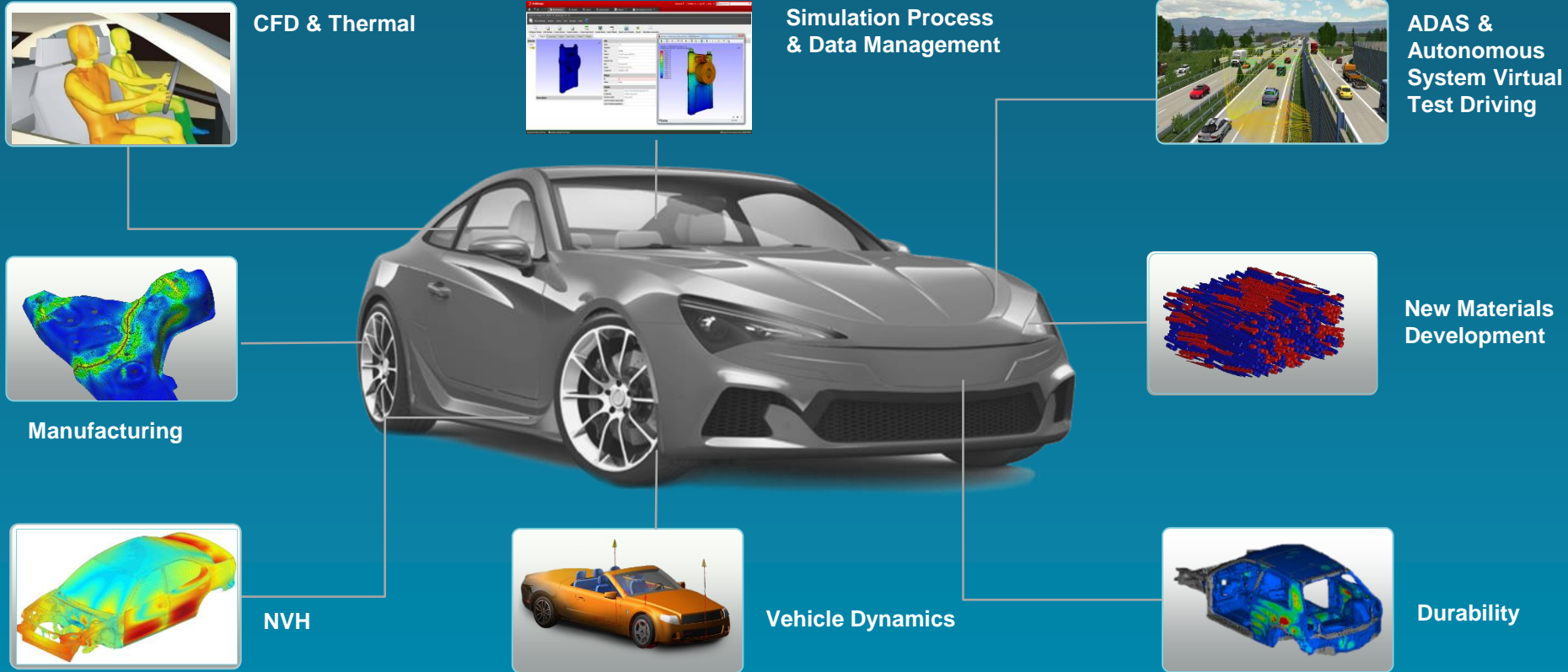
- Lightweighting & Additive Manufacturing
- Virtual Testing & Advanced Simulation
- Smart Manufacturing



HEXAGON

MSC Software

MSC Software's **Automotive** Solutions



- Reduce Development Time & Costs
- Comfort, Safety & Durability
- Autonomous Driving

- Environmental Legislation & Fuel Efficiency
- Lightweighting & Smart Manufacturing
- Electrification & e-Powertrain



HEXAGON

MSC Software

Comprehensive CAE Solutions for Electric Vehicles and eMobility

Electric motor



Body Structure



Cabin interiors



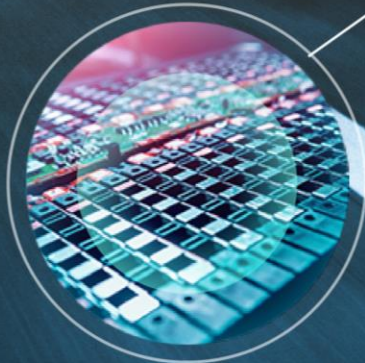
Exterior and
aerodynamics



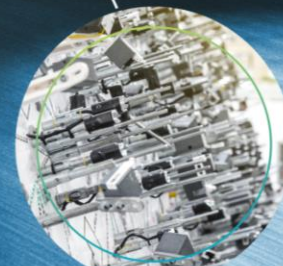
Drivetrain



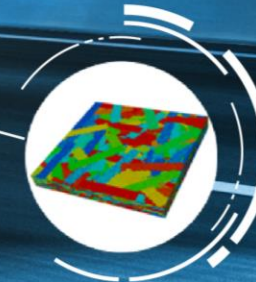
Battery and
fuel cells



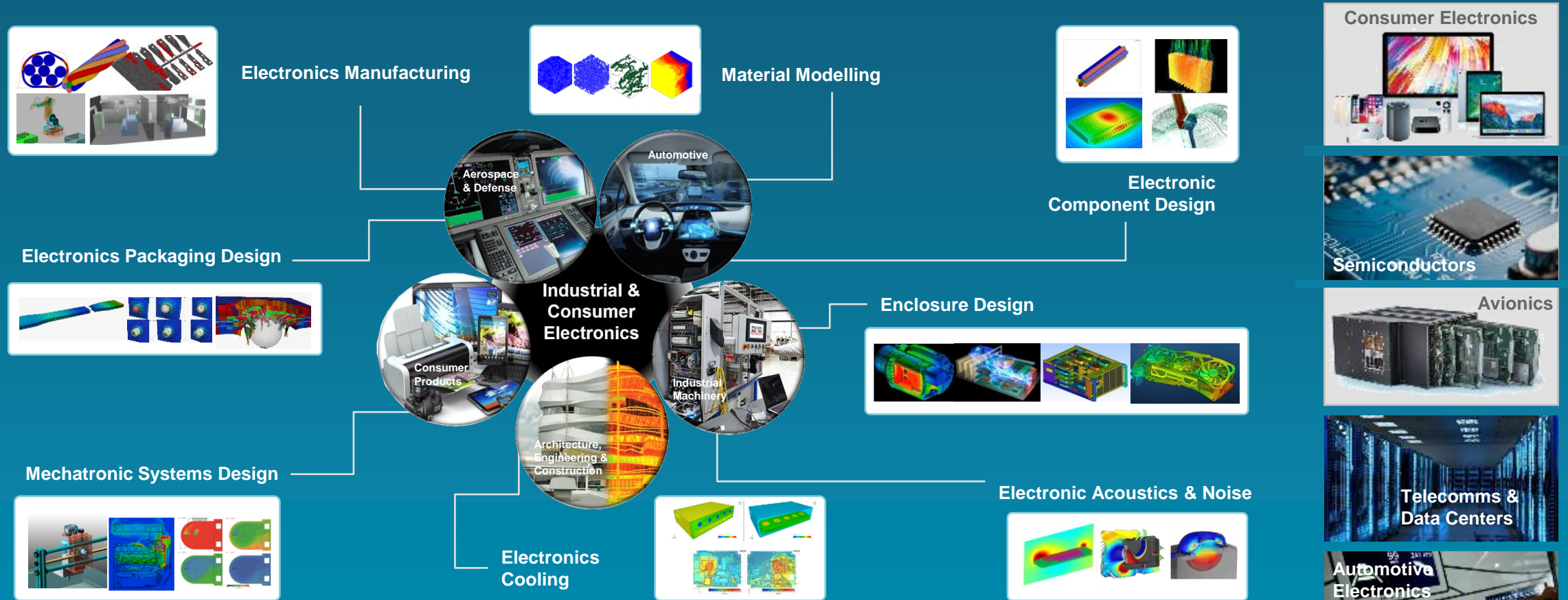
Power
Electronics



New materials
development



MSC Software's **Electronics** Solutions



- Reduce Development Time & Costs
- Warranty & Recall Costs
- Environmental Legislation

- Advanced Simulation & Virtual Testing
- Health, Safety & Reliability
- Smart Manufacturing

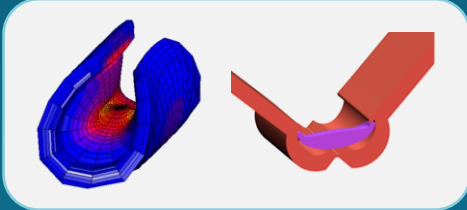


HEXAGON

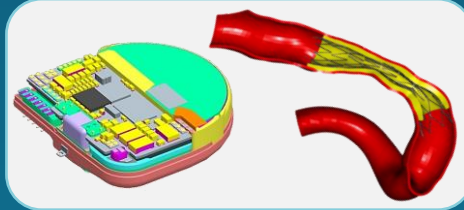
MSC Software

MSC Software's Life Sciences Solutions

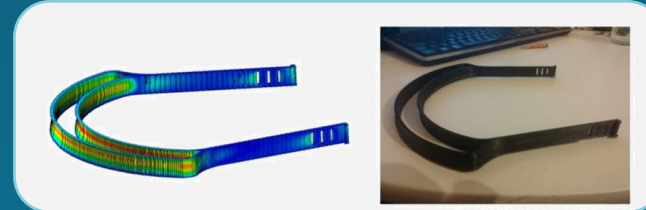
Ophthalmic



Cardiovascular Devices



Personal Protective Equipment

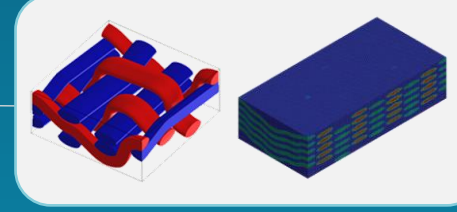


Medical Devices

Surgery & Hospital Equipment



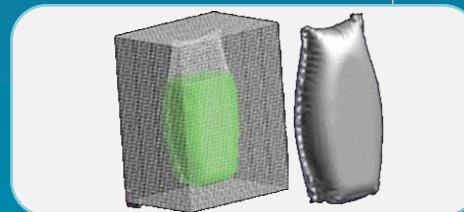
New Materials & Fabrics



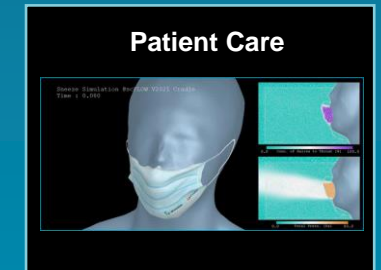
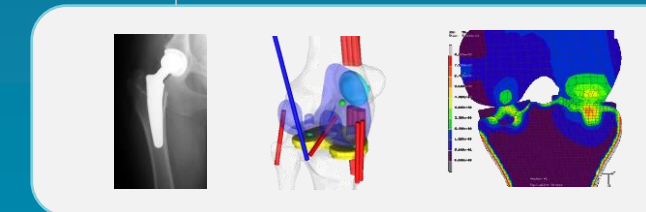
Pharmaceuticals



Medical Packaging



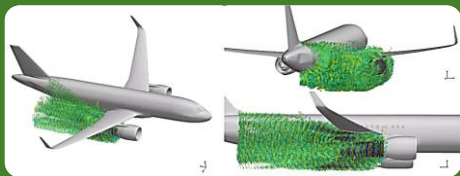
Custom Orthopedic Implants



Patient Care

- Virtually prototype new concepts
- Reduce development time & costs
- Mitigate new product development risk
- Ensure regulatory Health & Safety compliance
- Assess physics impact before testing
- Achieve higher quality and productivity

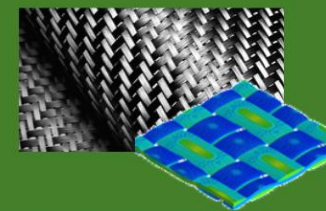
MSC Software CAE Design for Sustainability Solutions



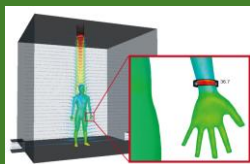
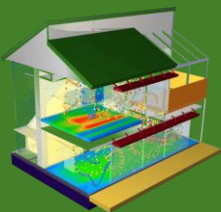
Noise
Pollution
Abatement



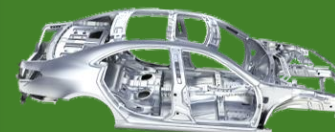
eMobility



Integrated
Computational
Materials
Engineering



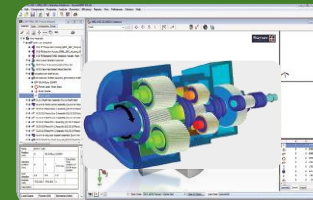
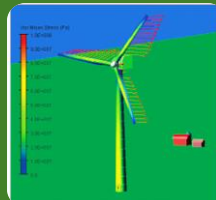
Energy
Efficient
Buildings



BIW &
Electronic
Materials
Waste



End2End
Additive
Manufacturing



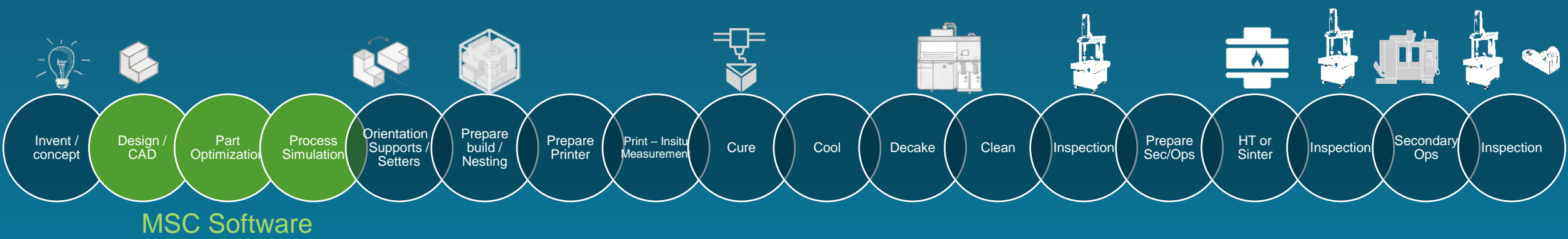
Wind Power
& Renewables



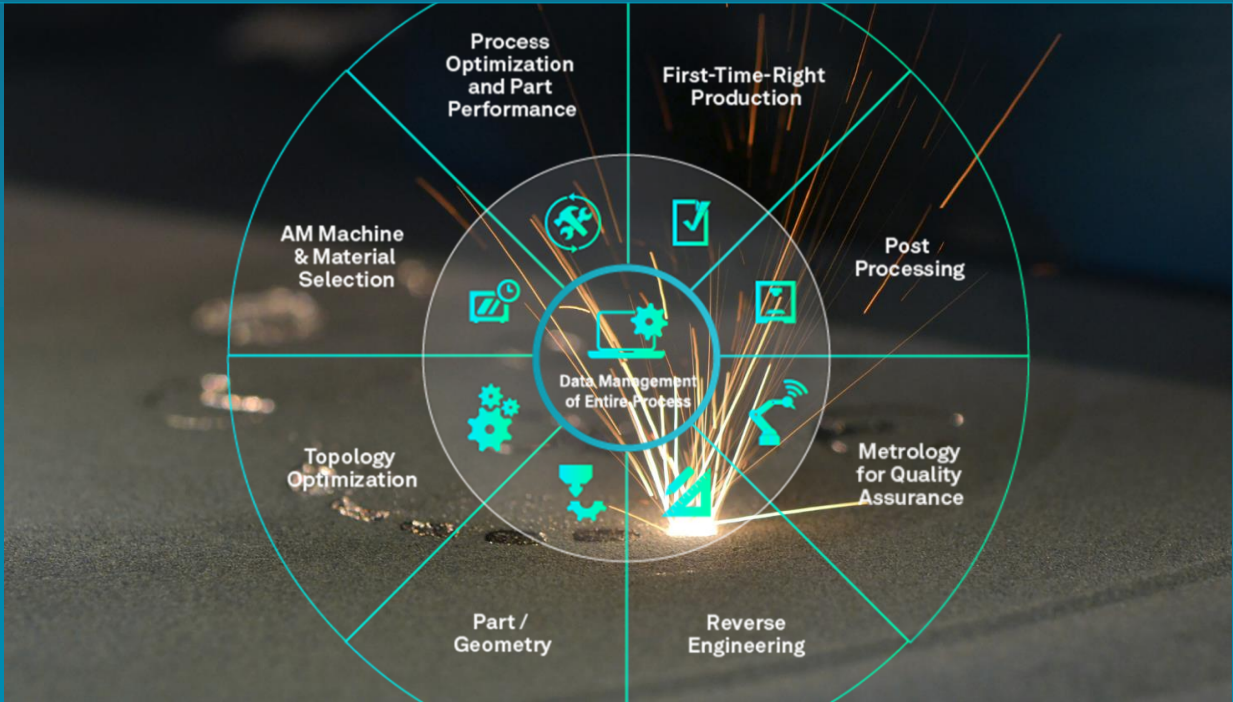
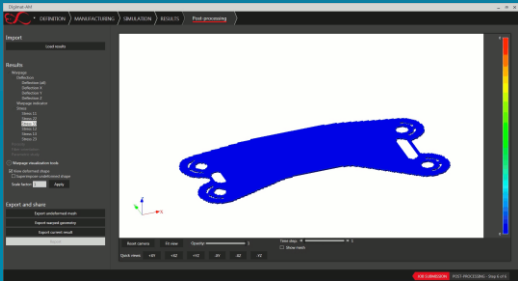
HEXAGON

MSC Software

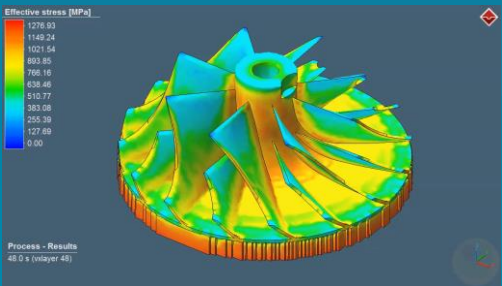
Hexagon's unique Additive Manufacturing End2End Solution



Polymers



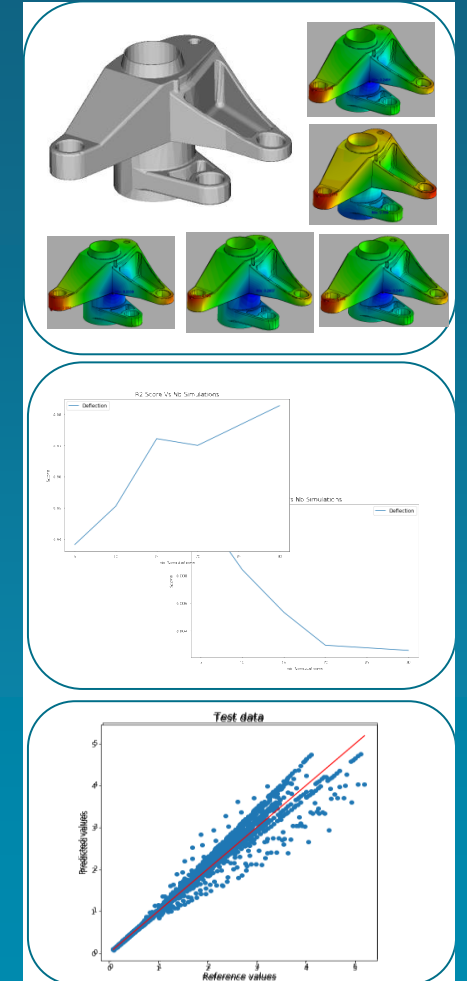
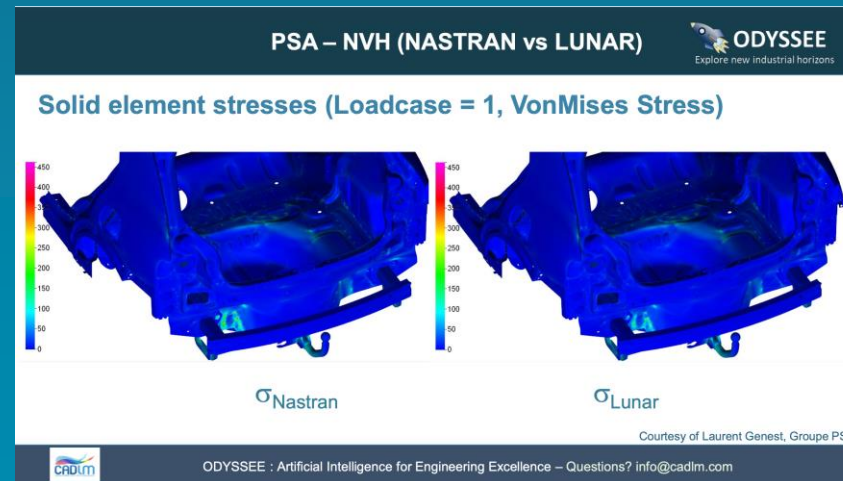
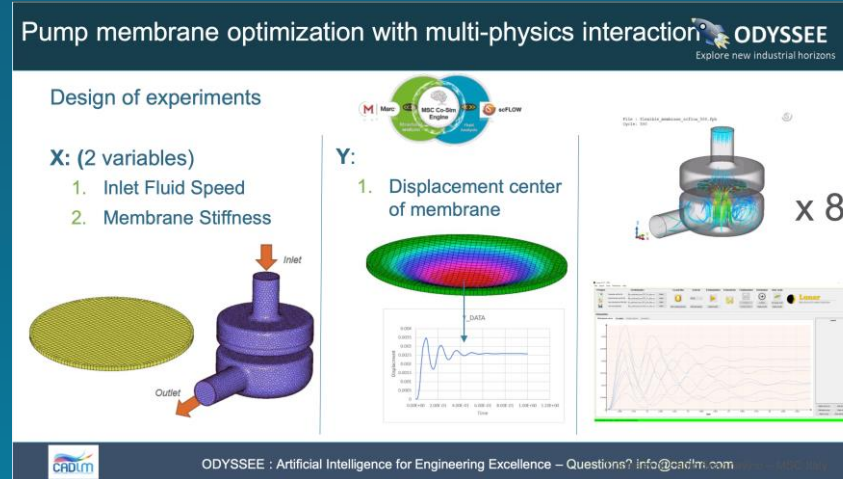
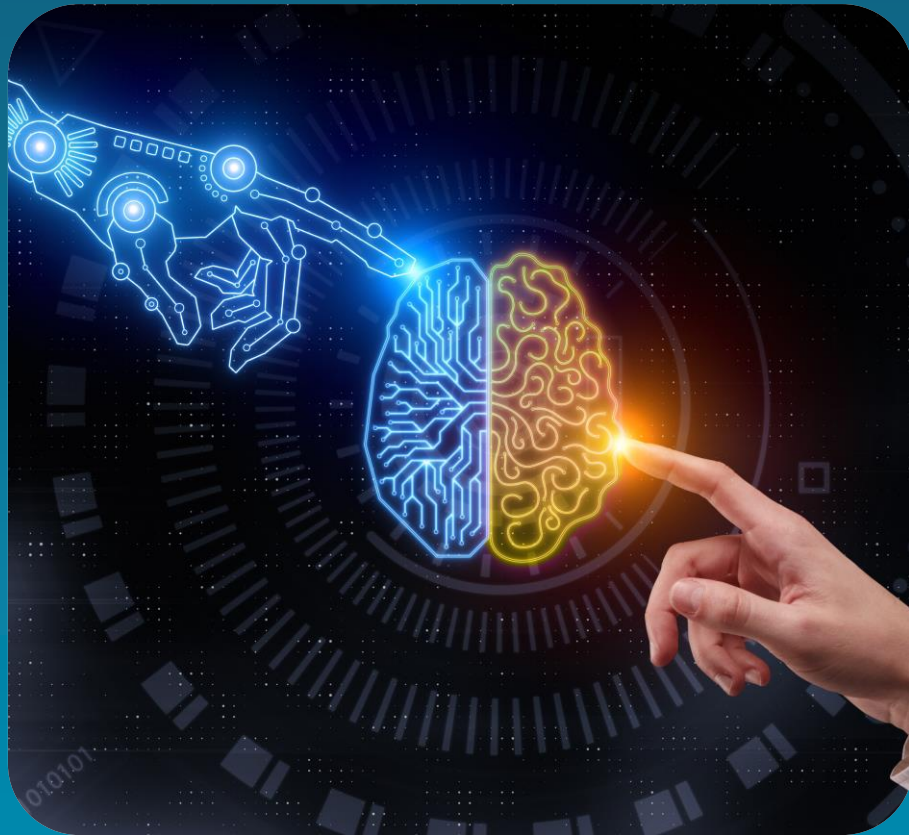
Metals



HEXAGON

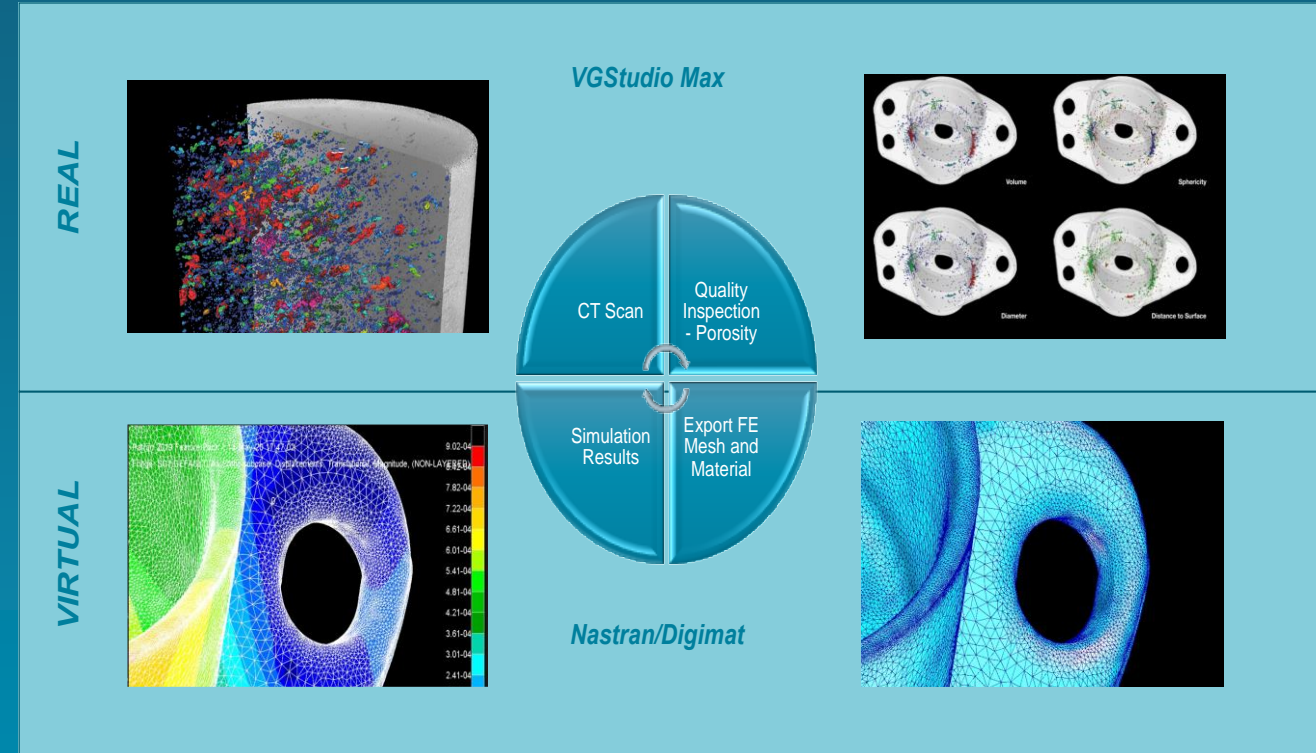
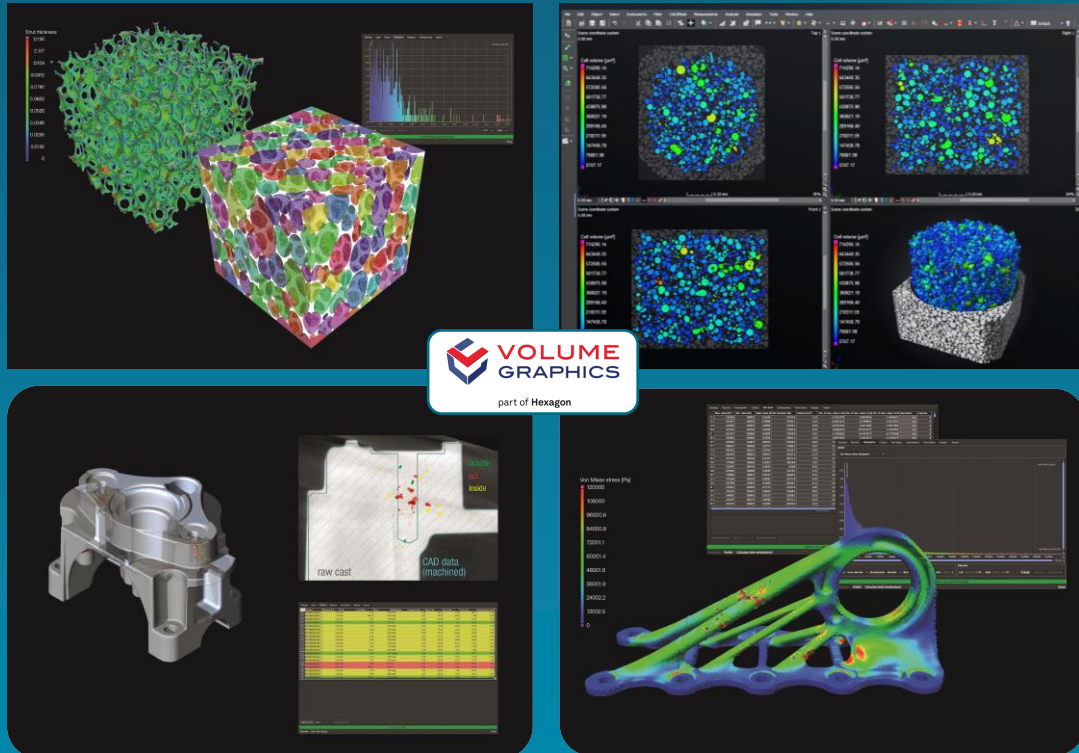
MSC Software

Deploying Artificial Intelligence and Machine Learning in CAE



Hexagon Manufacturing Intelligence's unique **Sensing Capabilities**

CAE simulation of as-manufactured parts and systems from scanned geometry & microstructures



CT-Scan of cavities and material interstices
to feed into CAE simulations

Token Based Delivery from our unique MSCOne system

Explore a smarter way to access our extensive CAE simulation software portfolio



Accelerate innovation in your product line by taking advantage of tools that your company did not have access to previously



Improve productivity and create a flexible environment, as your project and CAE needs mature or change



Reduce financial risk with the ability to increase or decrease capacity as your engineering needs change



Reduce cost and access infrequently used CAE applications that might otherwise be difficult to justify commercially. Consolidate your CAE software needs to most effectively stretch your limited budget



MSCOne

Unlock the world of engineering simulation with our portfolio token system.

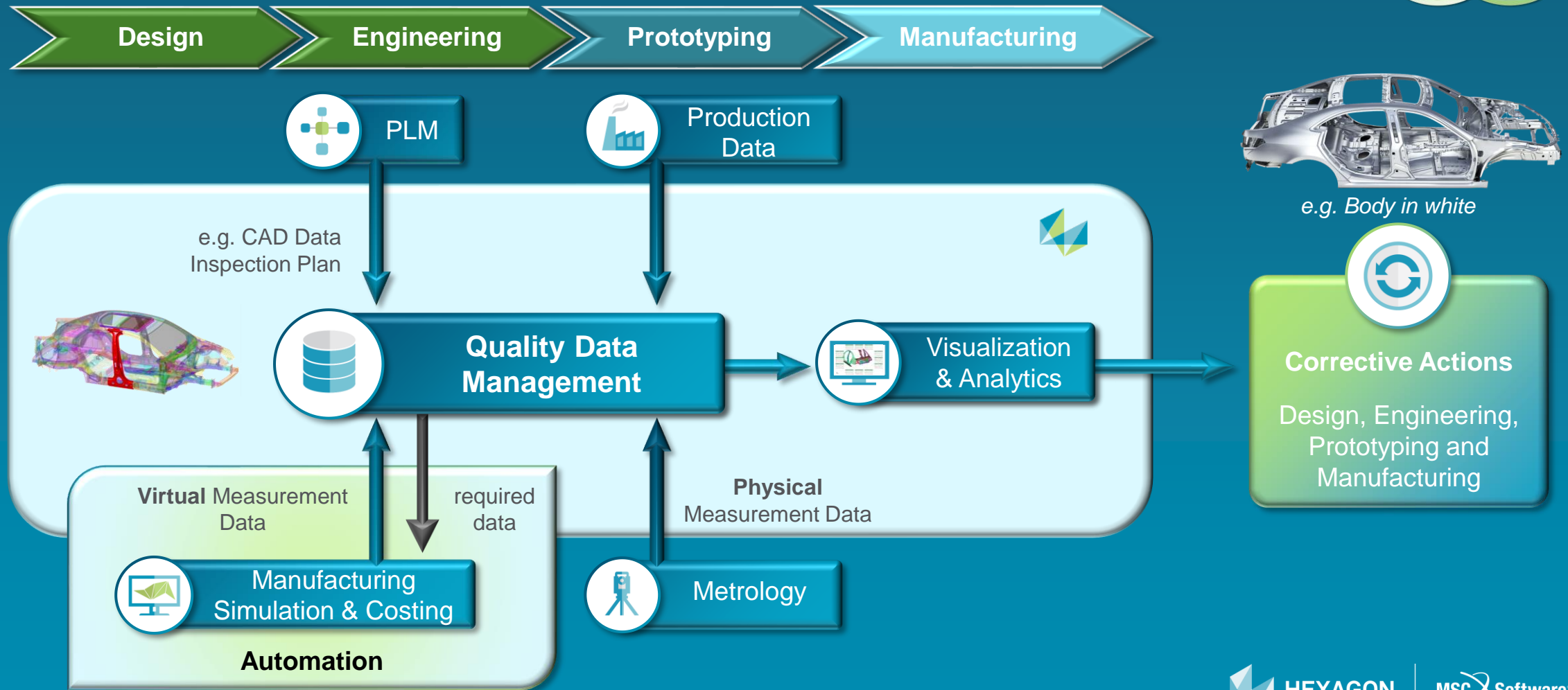


HEXAGON

MSC Software

Hexagon's **Smart Factory (SFx)** Solution Apps

Compress your design & manufacturing workflows with **Virtual Lifecycle Manufacturing**



MSC Software's Technology Partnership Ecosystem

Best-in-class partners to provide toolchains and solutions that benefit our customers



We partner with the world's leading computing technology suppliers and engineering software and services providers

- **Performance Partners** – those whose hardware and software technologies empower MSC products to perform better
- **Software Community Partners** - those who build and market products that incorporate or interface to MSC technology
- **Software Solution Partners** - those whose software technology is incorporated inside products built and marketed by us
- **MSCOne^{XT}** is our token system partner solution extension program allowing our users easy access to meet all their simulation needs



MSC Software's Academia Ecosystem

MSC Software has a range of academic engagements to further the CAE needs of students and professors

- **MSC Academic Learning Center** is a comprehensive industry-standard CAE learning platform
- **MSC Software's Student Editions** will give you the advantage you need to be successful in today's job market
- **Free Software for Student Competitions** & sponsorship opportunities
- **Joint Consortia** opportunities for governmental and regional funded co-development programs
- CAE Industry **Career Portal**
- **Funded Research** collaborations



HEXAGON

MSC Software

Thank you.



HEXAGON

empowering an autonomous future

