

We are well-versed in:

Machine and Factory Simulation

Coupling between real CNC and virtual machine model – ranging from optimization of NC programs to real-time collision prevention of machine tools

Augmented Reality

On the job and training support via innovative visualization techniques of process and production data within the real working environment

Functional Visualization and Virtual Reality

Development and creation of functional visualization models for Virtual Reality, video and web-based applications, including innovative interaction and navigation concepts

Virtual Technologies for Medical Engineering

Visualization, data handling and interaction concepts for medical applications, e.g. surgical planning, surgical navigation and scanning of anatomical structures



Augmented Reality – Process Data
Directly at the Assembly Line

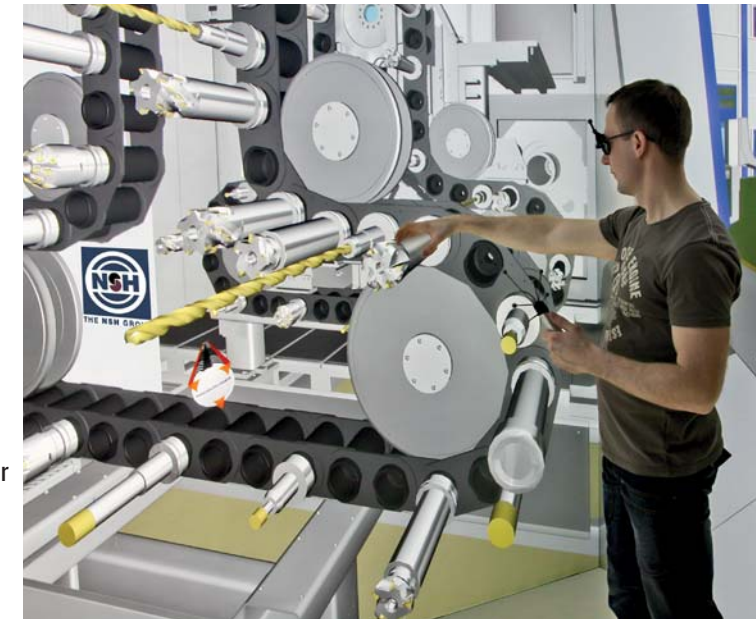


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Division Process Informatics and Virtual Product Development



Immersive Machine Visualization

...more than just colorful images

Our interdisciplinary team works on innovative virtual techniques and their use in industrial and university applications.



VR model of a spindle press to visualize manufacturing processes

We offer:

Visualization and Presentation

- VR-based marketing:
 - VR models for trade shows, incl. process visualization
 - Functional and visual model upgrading
- Web-based presentations
 - Flexible presentation structures for complex technical projects, products and processes
 - 3D model as central presentation element, enhanced with PowerPoint slides, pictures and videos
- Rental of mobile VR system moVE
- Augmented Reality: user friendly, nearly real-time visualization on mobile devices

Human-Machine-Interaction

- NC-VR machine simulation
 - NC/PLC commissioning, NC program verification, collision detection, anti-collision software
- Augmented Reality
 - Integration of tracking-, camera-, machine- and control data
- Human-Robot interaction

Development Support for Mechanical and Plant Engineering

- VR-supported Design Reviews, risk assessments and ergonomic analysis
- Integration of simulation data
 - Coupling of adaptive FEM method with VR
 - Visualization of the results of the experimental modal analysis

3D Data Capturing

- Laser scanning of factory halls and building structures, incl. data processing
- Motion capturing

We are equipped with:

Visualization Systems

- 5-sided CAVE
- VR lecture hall (180 seats)
- Seminar room with Powerwall
- Mobile VR system moVE
- VR-supported workplace for human-robot interaction
- Two 3D TVs

Software

- Fraunhofer IGD instantreality
- ESI IC.IDO
- Autodesk 3ds Max
- LIVINGSOLIDS
- AR-Framework
- Unity

Supplementary equipment

- FARO 3D laser scanner
- XSSENS MVN motion capture suits
- visTABLE planning table
- Oculus Rift DK2 HMD
- Leap motion and kinect
- Tablets, smart phones and see through glasses



Visualization of the Process Chain Press Hardening