

**project: syntropy (Germany / Sweden / Shanghai-Singapore-Taiwan)** creates AV technologies and solutions for professional simulation- and training environments, interactive, immersive media based attractions, flying theatres, planetariums as well as multimedia experiences. Many years of development and over one 150 projects world-wide have resulted in highly scalable turnkey fulldome cinema attractions.

**Project**

**Technical University Braunschweig:**

**ICG Dome - turnkey immersive real-time**

**3D-Stereo fulldome research environment**

**Customer**

Technical University Braunschweig,  
Institute of Computer Graphics, Computer Graphics Lab.

**Project**

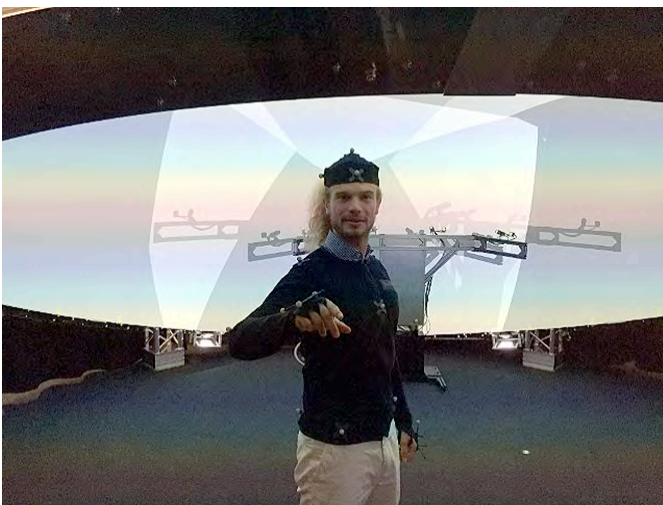
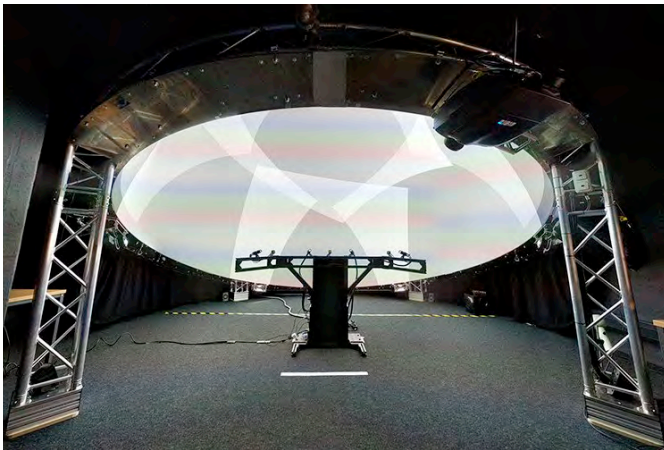
Turnkey 5m fibre glass fulldome solution mounted on a steel truss comprising 6-channel WQXGA active 3D 120Hz stereo projection system, 6+1 render cluster w. Nvidia Quadro graphics boards, full body motion- and eye- and gaze tracking systems, domeprojection.com ProjectionTools autocalibration and domeprojection NWarp for real-time dynamic warping.

**Project Details**

We have won the tender for the fulldome projection system of the Technical University Braunschweig, a project funded by the German Science Foundation as “ICG-dome”, by offering our proven turnkey fulldome solution as the most cost-effective but also most powerful system possible at the time and budget, which no competitor was able to deliver.

We designed and built a turnkey fulldome system mounted on a steel truss featuring a 6-channel WQXGA active 3D 120Hz stereo projection system offering more than 10 megapixels resolution for an extremely competitive price and optimized for rapid assembly at optimum image quality. The lightweight 5m fulldome comprises eight 2.5m long fibre glass segments mounted on a truss for easy setup (and dismantling and transportation, if required).

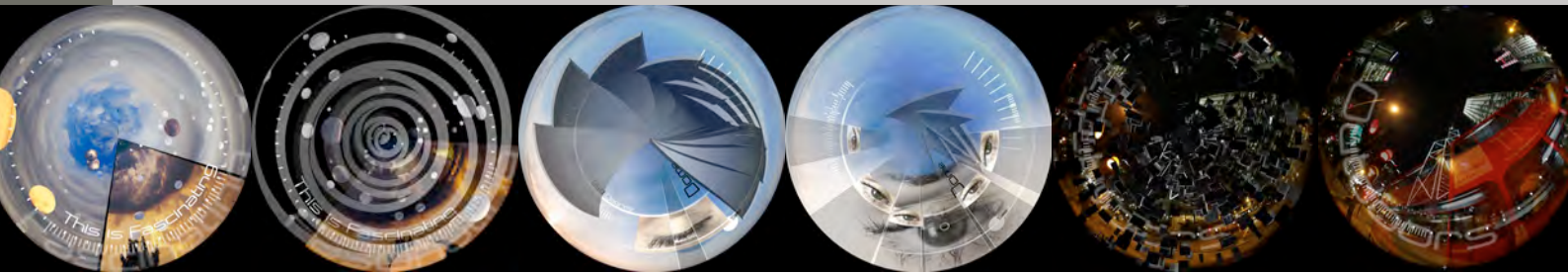
We also delivered and integrated a 6+1 render cluster with powerful Nvidia Quadro graphics boards connected to each projector, a real-time full body motion- as well as eye- and gaze tracking systems.



*Leading Provider of Next Generation Immersive Fulldomes*

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A domeprojection.com ProjectionTools autocalibration system ensures seamless edge-blending and automatic geometry correction for an ultimate image quality. domeprojection.com also provided their dynamic frustum alignment: the dynamic virtual camera frustum keeps its origin aligned with a viewer's head position to enable free movement with real-time motion parallax.

**The Computer Graphics Lab of the Technical University Braunschweig and the ICG dome**

The Computer Graphics Lab of the Technical University Braunschweig uses the ICG dome for research in peripheral visual perception, to devise comprehensive foveal-peripheral rendering strategies, and to explore multi-user immersive visualization and interaction.

Our turnkey fulldome research system enables the researchers

- a. to systematically and comprehensively explore and quantitatively model the perceptual properties of our Human Visual System for computer graphics applications;
- b. to develop and evaluate novel gaze-contingent rendering techniques that take the entire field of human vision into account;
- c. to develop and evaluate novel multi-user interaction paradigms for immersive visualization environments in which the audience takes center stage.



**Turnkey Visual Solutions for Simulation, Training and Media Based Attractions**

project: syntropy offers turnkey projection solutions, tailor-made systems and full-service throughout the entire project.

- CONSULTING
- CONCEPT AND DESIGN
  - creative
  - interactive
  - media
  - engineering
  - application
- DEVELOPMENT
- ENGINEERING
- CONSTRUCTION AND INSTALLATION
- AFTER SALES SERVICES
  - training
  - maintenance and support
  - tailored service-level-agreements (SLA)
  - spareparts supply
- MEDIA BASED ATTRACTIONS
  - XD FLYING THEATRES - XD 360° & 720° ATTRACTION DOME
  - CINEMAS & GLOBES - INTERACTIVE VISITOR ATTRACTIONS
  - MOTION THEATRES - DARK RIDES - PLANETARIUMS -
  - MEDIA FACADES - IMMERSIVE TUNNELS & IMMERSIVE ENVIRONMENTS - PROJECTION MAPPING - GUN SYSTEMS
- SYNTOUCH MULTITOUCH MULTIUSER & RADAR
- MIXED REALITY ENVIRONMENTS & TRACKING TECHNOLOGY DEVELOPMENT
- VISUAL SOLUTIONS FOR SIMULATION & TRAINING
  - FMS FULL-MISSION-SIMULATORS - FFS FULL-FLIGHT-SIMULATORS - CT COCKPIT SIMULATORS - HELICOPTER SIMULATORS - TARGET SIMULATION - JFST TRAINERS
  - JTAC TRAINERS - ATM TOWER SIMULATORS - DRIVING SIMULATORS - SHIPS BRIDGE SIMULATORS - INDUSTRIAL SIMULATORS - RESEARCH SIMULATORS - CAVES

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