



project: syntropy (Germany / KSA / Sweden / Singapore)
 creates dvLED- / projection-based visual technologies and solutions for professional simulation and training environments, immersive XR environments, XR-CAVEs, media based attractions and much more.

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

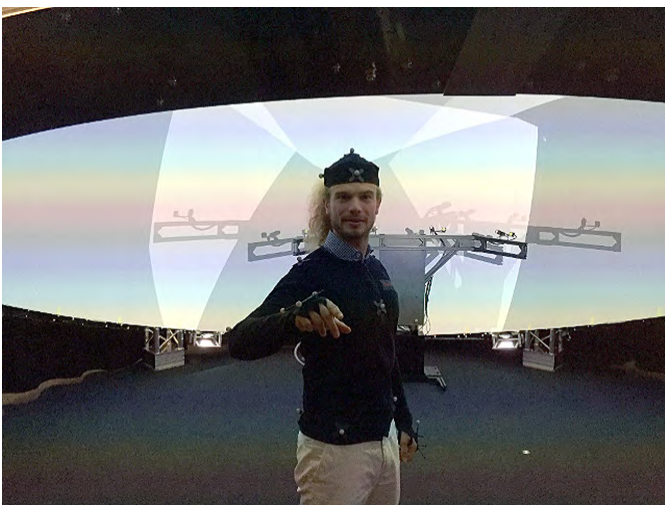
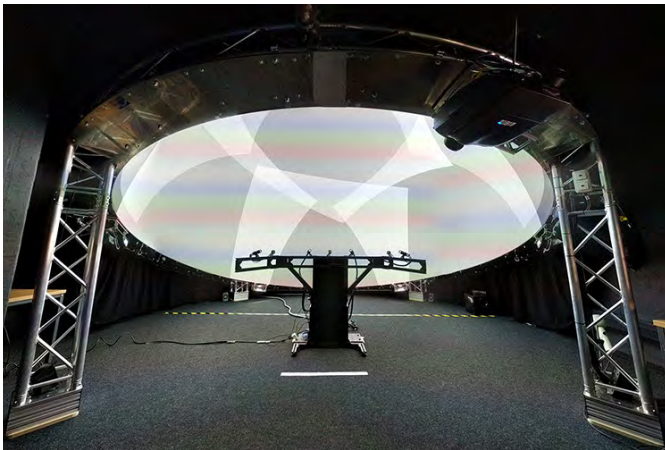
Turnkey 5m fibre glass fulldome solution mounted on a steel truss comprising 6-channel WQXGA active 3D 120Hz stereo projection system, 6+1 render cluster w. Nvidia Quadro graphics boards, full body motion- and eye- and gaze tracking systems, domeprojection.com ProjectionTools autocalibration and domeprojection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

project: syntropy GmbH
 D-39112 Magdeburg/Germany, Klausenerstrasse 47
 T: +49 (0) 391 63 60 66-44 | Fax: +49 (0) 391 63 60 66-45
 M: syntropians@project-syntropy.de <http://www.project-syntropy.de>

project:syntropy



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 Display Solutions for Simulation, Training, Immersive XR-Spaces, XR-CAVES, Media Based Attractions

project: syntropy offers turnkey projection / dvLED-based display solutions, tailor-made AV systems and full-service throughout the entire project:

- PROJECTION- OR dvLED-BASED SYSTEMS
 - DEVELOPMENT
 - ENGINEERING
 - CONSTRUCTION AND INSTALLATION
 - AFTER SALES SERVICE
 - Training
 - Maintenance and Support
 - tailored Service-Level-Agreements (SLA)
 - Spare Parts Supply
- VISUAL SOLUTIONS FOR SIMULATION & TRAINING
 - FMS FULL-MISSION-SIMULATORS - FFS FULL-FLIGHT-SIMULATORS - CT COCKPIT SIMULATORS - HELICOPTER SIMULATORS - COMBAT SIMULATION - JFST ACTION TRAINERS - JTAC TRAINERS - ATM TOWER SIMULATORS - DRIVING SIMULATORS - SHIPS BRIDGE SIMULATORS - INDUSTRIAL SIMULATORS - RESEARCH SIMULATORS
- MEDIA BASED ATTRACTIONS
 - XD FLYING THEATRES - XD 360° & 720° ATTRACTION DOMES, CINEMAS & GLOBES - INTERACTIVE VISITOR ATTRACTIONS - MOTION THEATRES - DARK RIDES - MEDIA FACADES - IMMERSIVE TUNNELS & IMMERSIVE ENVIRONMENTS - PLANETARIUMS - PROJECTION MAPPING
- DIGITAL TWIN XR-SPACES (e.g. UDT Urban Digital Twins)
- XR-CAVE - XR VOLUMES
- SYNTOUCH MULTIUSER RADAR TOUCH
- MIXED REALITY ENVIRONMENTS & TRACKING TECHNOLOGY DEVELOPMENT

Leading Provider of Next Generation Immersive XR-Environments

project: syntropy GmbH
 D-39112 Magdeburg/Germany, Klausenerstrasse 47
 T: +49 (0) 391 63 60 66-44 | Fax: +49 (0) 391 63 60 66-45
 M: syntropians@project-syntropy.de <http://www.project-syntropy.de>

project:syntropy