

project: syntropy (Germany/Sweden/Shanghai-Singapore-Taiwan/USA) creates technologies and solutions for professional simulation and training environments, interactive immersive media based attractions, xD theatres, planetariums and multimedia experiences.



Project

Visual Display System for the Falcon 2000LX ISTAR Fixed Base Research-Simulator, DLR e.V.

Customer

DLR e.V., Institute of Flight Systems, Department of Flight Dynamics and Simulation, Braunschweig/Germany

Project

Turnkey Visual Display Solution comprising a 4.5m dome, 3-channel 4k solid state projection system and domeprojection.com ProjectionTools Auto-Alignment System for the ISTAR fixed-base flight simulator in DLR's AVES (Air Vehicle Simulator) simulator centre.

Project Details

We won the public tender for the visual display system for the fixed base flight simulator ISTAR (In-flight Systems and Technology Airborne Research) at the AVES (Air Vehicle Simulator) Simulation Center, which is operated by the DLR (German Aerospace Center) Flight Dynamics and Simulation Department in Braunschweig, Airport.

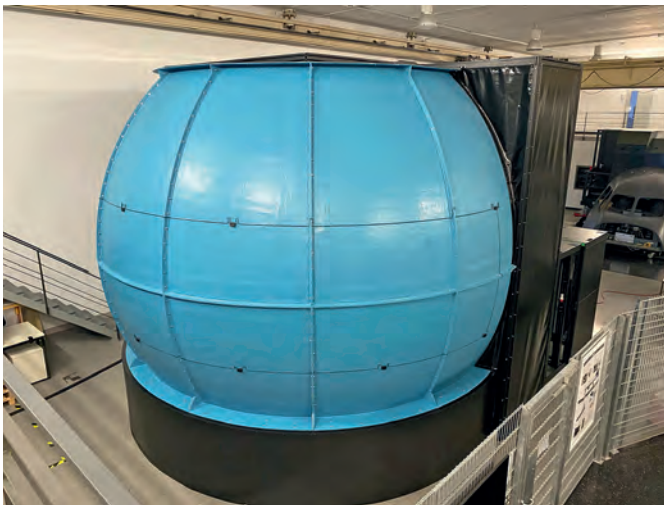
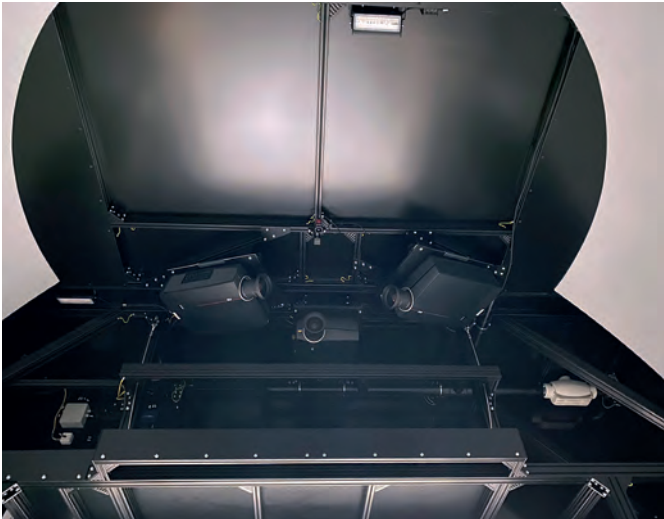
Our work included the technical system design of the new visual display solution for the fixed base simulator as well as the installation, integration and initial calibration of the entire projection system comprising the 4.5m high dome, which provides an H-FOV +100/-100° and V-FOV +25/-25°.

The visual system was designed in such a way that both the ISTAR and the A320 cockpit of the motion simulator - whose visual system we also upgraded in another project - can be brought in and easily exchanged.

The virtually maintenance-free, yet cost-effective visual display system includes a high-resolution 3-channel 4k solid state laser phosphor projection and the latest version of domeprojection.com's ProjectionTools with color calibration.

About DLR ISTAR

Since 2020, the DLR has been using its Dassault Falcon 2000LX ISTAR research aircraft, which will be able to assume



Leading Provider of Next Generation Visual Display Systems

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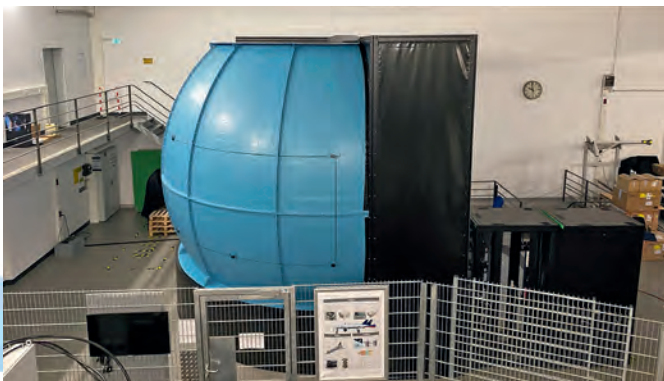


the flight characteristics of other types of jets, including larger ones, from around 2027. By means of the so-called experimental system, which allows access to all control surfaces and the engines via an interface, experimental pilot interfaces (e.g. inceptors, mode control panel, ...) and monitoring systems, as well as systems for data acquisition, data processing, data recording and data transmission (Up & Down Link) and the experimental fly-by-wire system (FBWS) can be tested and optimised. The complete digitalisation of the aircraft from the aerodynamic description to new virtual certification methods is also planned. The software to be implemented in the experimental system will be tested in ground simulation with the AVES ISTAR cockpit simulator before each flight test.

About the Simulator Centre Braunschweig

The DLR Institute of Flight Systems in Braunschweig/D works on the dynamic characteristics of aircraft and their interaction with the cockpit crew. For this purpose, the institute applies different research methods from theory through experiments in high fidelity flight simulators in real flight.

The expert group on Simulation Technology is capable in the construction and operation of real time simulators, the development of new soft- and hardware concepts, the development and operation of visualisation techniques for displays and synthetic outside view. The group is involved in the continuous optimisation of the existing simulation technologies, e.g. the motion simulation. Operating the simulation centre AVES as well as smaller simulation systems, like the gyrocopter simulator, is part of the group's tasks. In addition to the flight test preparation for the test vehicles A320 ATRA and FHS, the real time simulators are offered to be used to explore further scientific issues such as the evaluation of active operating devices or the human-machine interaction, by internal and external clients.



project: syntropy's visual display solutions for

- FMS FULL-MISSION-SIMULATORS
- FFS FULL-FLIGHT-SIMULATORS
- CT COCKPIT SIMULATORS
- HELICOPTER SIMULATORS
- TARGET SIMULATION
- JFST ACTION TRAINERS
- JTAC TRAINERS
- ATM TOWER SIMULATORS
- DRIVING SIMULATORS
- SHIPS BRIDGE SIMULATORS
- INDUSTRIAL SIMULATORS
- RESEARCH SIMULATORS
- CAVE Automatic Virtual Environments

full-service for S&T visual display solutions

project: syntropy offers turnkey solutions and full-service throughout your entire project:

- CONSULTING
- CONCEPT AND DESIGN
- APPLICATION DEVELOPMENT
- CONSTRUCTION AND INSTALLATION
- ADVANCED SOLUTIONS FOR NVG STIMULATION
- FULLDOME SYSTEMS
- TURNKEY DIGITAL CINEMA
- AFTER SALES SERVICES
 - training
 - maintenance and support
 - tailored service-level-agreements (SLA)
 - spareparts supply

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