project: syntropy (Germany / KSA / Sweden / Singapore)
creates AV technologies and solutions for professional simulation- and training environments, XR-CAVEs, XR-Spaces, interactive immersive media based attractions, xD dome theatres and planetariums.
25 years of experience and over 250 projects world-wide have resulted in highly scalable turnkey media based attractions.

Project

Media Based Attractions for Science Centre DYNAMIKUM, Pirmasens/Germany

Customer

Science Centre DYNAMIKUM, Pirmasens/Germany.

Project

Four interactive Mixed-Reality Environments (interactive floor, interactive walls) with seamless multi-channel projections, person-, motion- and object tracking systems, custom-built media technology for interactive exhibits and show control system.

Project Description

DYNAMIKUM in Pirmasens (Saarland/D) opened its doors to the public. The Science Center aims to explain and demonstrate physical phenomena on the topic motion. Having 4.000 sq m exhibition space and 150 hands-on exhibits the DYNAMIKUM can compete with the most important Science Centers in Germany. The one-of-a-kind attraction of the exhibition are the four interactive Mixed Reality (MR) Environments which have been conceived by the attraction designers studio klv and designed, developed and installed by project: syntropy.

MR Environment ‘Room of Planets’

In the ‘Room of Planets’ visitors will be turned into a fixed star so that they – with some patience – can force orphanly meandering planets into an orbit around oneself, which will then be visualized. The gravitational field of the visitor as a fixed star is simulated and affects the planets, while he/she is moving around in the room. The animation and behaviour of the planets and the suns as well as the complete environment are modeled using real physics.

The installation of the ‘Room of Planets’ was realized with four projectors for the seamless floor projection and an infrared person tracking. It allows to be used by several persons at the same time, which usually leads to people trying to steal planets or fixed stars from each other and results in a lot of fun.

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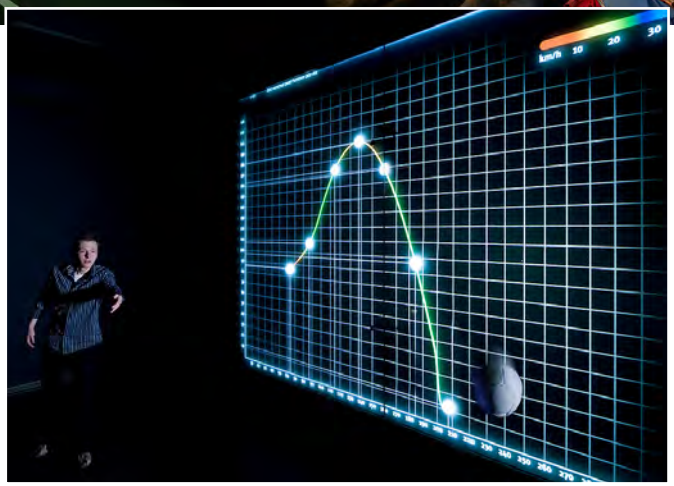
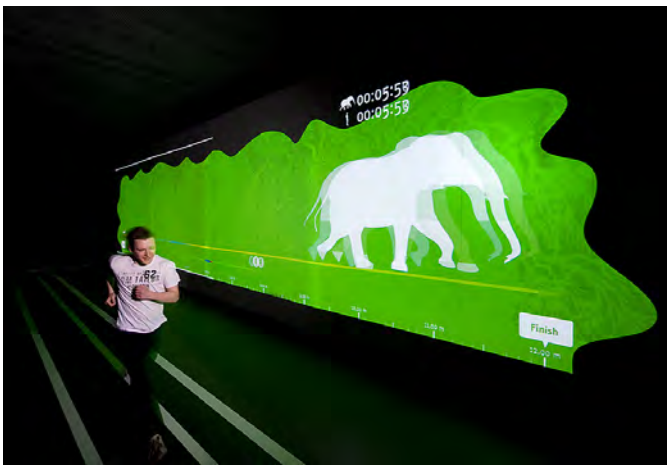
project:**syntropy**





MR-Environment ‘Trajectories’

This MR Environment demonstrates, that the trajectory of an object (ball) is always parabolic, no matter how high or wide it is thrown.

One of the four walls of the room features a rear projection, which traces and visualizes every movement or throw of the ball in real-time. The colours of the virtual trajectory graphics also represent the measured speed of the moved/thrown object. An evaluation screen finally freezes one throw and its trajectory after a countdown and gives information about the speed of the throw measured in cm/sec. at several points.

The installation ‘Trajectories’ was realized using a rear projection system and infrared object tracking.

MR-Environments ‘Race Tunnel / Rain Race’

The third MR Environment features two alternatingly usable installations equipped with infrared person tracking. Four projectors constitute a seamless 13 m wide projection wall, which either shows an abstract jungle landscape or a rainy forest. In the installation ‘Race Tunnel’ the visitor has to overtake a randomly selected animal (elephant, dachshund, millipede a.o.). From start to end the speed of the runner and the virtual animal is measured in real-time and the results are displayed. Once the race is finished additional information about the particular animal is displayed.

In the installation ‘Rain Race’ the visitor needs to run with the optimal speed to get wet as little as possible. A virtual representation of the visitor is generated as a shadow on the screen, which slowly fills itself with rainwater. The result is displayed in ml together with a hi-score.

Videolink: https://youtu.be/d4LcfsHQnYw
https://youtu.be/EZp5HsFKxCs

Our Work

- Planning and Technical Management
- Development of Object- and Person Tracking
- Programming of interactive RT-Applications
- Development of manual Video Control
- Development of Web-Uploadmodule
- Development of the RFID-controlled Video Installation ‘Dance Room’

Leading Provider of Next Generation Media Based Attractions

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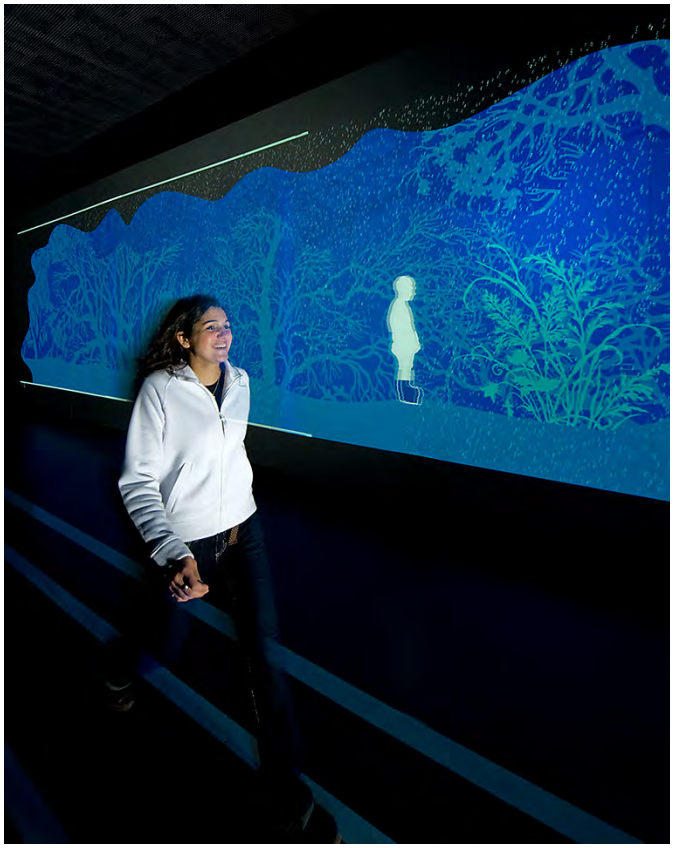
- Installation of Media- and IT-Hardware as well as the Development and Installation of Show Control
- Providing the controlled operation by remote monitoring and remote troubleshooting
- Maintenance and Update



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

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