DISPLAY UPGRADES
Dome & Collimated, Fixed & Motion

3D
perception

3D perception specializes in visual display system upgrades for all flight simulator types. From basic FTDs to full motion flight simulators, 3DP provides solutions to:

Extend system life: Update aging and obsolete lamp-based projection to solid-state technology

Minimize downtime: Simplify maintenance and increase system reliability

Increase fidelity: Upgrade resolution and refresh rate for more immersive, authentic training

Independence - Powered by Northstar

3DP's modular and extensible Northstar technology platform is projector agnostic, requires no integration with the user's Image Generator, and offers:

• Camera-free, post-IG and pre-projection based image auto-alignment and calibration
• Technologies designed to be easily spared, swapped, and upgraded in the field
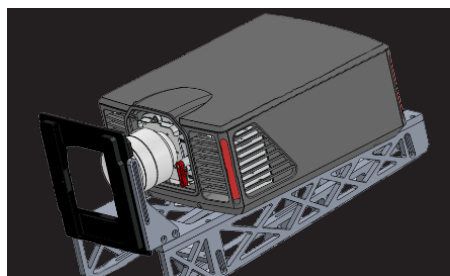• Integrated system operation and maintenance software, requiring no subscription or service agreement

From optical and mechanical design and production, through installation, testing, and support, 3DP can offer a tech refresh tailored to individual system and budgetary needs. With an extensive world-wide past-performance record, 3DP is positioned to meet the demands of any upgrade initiative.

NORTHSTAR™
SIMULATION DISPLAY SOLUTION

⚙ DISPLAY PROCESSING AND MANAGEMENT
♻ PROJECTION AND IMAGE OPTIMIZATON
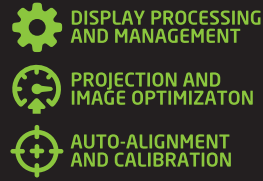◎ AUTO-ALIGNMENT AND CALIBRATION

Seamless. Focused. Performance.

• Industry-leading solid-state automatic image alignment and calibration ensure simulator uptime
• Seamless image through all times of day with full image contrast and dynamic range via electronic-optical hybrid blending

• Image Generator and projector independence makes integration easy and future-proof
• Light closeout options and support for Night Vision Goggles
• Centralized system control via unified interface
• Since 1997, proven expertise with hundreds of global deliveries

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USA • NORWAY • UK • MIDDLE EAST • ASIA

ISO 9001-215 QMS, MANUFACTURING & SERVICES

NORTHSTAR TECHNOLOGY

Northstar™ is 3D perception's integrated simulation display solution, providing industry-leading display processing and management, projection and image optimization, and precision automatic image alignment and calibration, all under a centralized system interface. Due to it's modular, extensible, and open architecture, Northstar is an ideal platform for visual system upgrades and tech refreshes, and supports long term sustainment planning.

Display Processing & Management

Independence is achieved with post-IG display processing and management via **nBox™** hardware processors, or **WarpSync Direct™** which takes advantage of the warp and blend processing capabilities built into some projectors. **WarpLite™** is offered as an IG-integrated software-based path. All Northstar technologies are managed as a unified system under the **nControl™** software.

Projection & Image Optimization

The combination of **Northstar Certified Projectors™** with **Eclipse™** optical blenders results in a seamless image at all times of day - including night vision goggle (NVG) scenarios - while maintaining full image contrast and dynamic range.

Auto-Alignment & Calibration

Fast, precise, and easily repeatable automatic image analysis and alignment is enabled via screen embedded **WarpSync™** sensors. The **StarScan™** laser alignment scanner can be optioned for an easy upgrade path for dome display upgrades, rear projection, and collimated displays. **ChromaSync Direct™** enables automatic color and luminance calibration between projectors.

ENGINEERING & INTEGRATION SERVICES

Optical Design

3DP's engineers combine technical expertise, field experience, and an advanced display design software to ensure performance. **nDesigner™** is used to design, analyze, and previsualize any type of projection display system, while adhering to performance requirements. nDesigner accounts for a multitude of variables such as projector model, lens selection and settings, eyepoints, and screen size, shape, and surface gain.

Mechanical Design & Validation

3DP designs and produces mechanical mounting components needed to integrate new projectors and other equipment onto existing simulators. Finite element analysis services can be supplied to ensure the upgrade is safe and can withstand the required forces.

Project Management & Integration

3DP employs worldwide teams of expert project managers, field engineers, installers, logisticians, documentation and quality assurance staff. The company is certified to ISO 9001:2015 standards.

Support

3DP deliveries come with long-term support and sustainment options, including remote and on-site maintenance and repair, spare parts provision, training, and updates. Service Level Agreements are offered for securing constancy, uptime, and dependability.