Simulation Solutions

Air traffic control
Flight simulation
Homeland security
Medical simulation

Mission training
Ship bridge simulation
Vehicle simulation

CHRISTIE®

High-performance real world simulation solutions

In the world of high performance simulation, the goal is to create an image that is at "eye-limiting resolution" to properly and accurately simulate the real world. An array of projectors must be deployed to accomplish eye-limiting resolution over a wide field of view.

Diverse simulation applications offer a variety of issues and challenges and Christie provides high-performance "real world" visual display solutions for simulation. Factors such as geometry, image blending and warping, resolution, color and brightness uniformity, and latency are key criteria that must be addressed when designing simulation display solutions.

Each simulation environment brings its own set of requirements. As one of the industry's key technology providers, Christie has identified these technological problems customers face and developed solutions to resolve and eliminate these issues. Christie understands each project is unique, and has developed a proven approach that puts our customers at the center of the process.

As your partner in simulation, our world-class sales engineers, project managers, design and mechanical engineers and integration experts work together to deliver the most advanced, functional, and intuitive simulation display solutions. Christie delivers application-specific solutions. Our customers are at the center of our decision-making process. We have developed proven fulfillment methodologies to meet the unique requirements of our customers in any given application. Once integrated, you can expect consistent, repeatable performance without worry as Christie's high product reliability enables extensive, consistent use with minimal downtime.

Where will you find Christie?

Christie provides purpose-built technology that spans a wide spectrum of today's leading organizations including government and educational institutions, industries such as automotive and aerospace, as well as research and development. The possibilities are as limitless as your imagination.

▲ Air traffic control

▲ Defense – Flight Safety International (FSI) Wide Angle Single Pilot V (WASP-V)

High quality reliable solutions

With a customer-centric approach to providing application-specific visual displays, Christie has a long history of delivering high-quality, reliable solutions and unprecedented levels of customer service and support for simulation customers worldwide.

Aerospace

As a pilot, you want the best training possible on the ground before you climb into the cockpit. However, learning 'on the job' may be cost-prohibitive or simply too dangerous to be a viable option. Christie's visual display solutions for flight simulation provide you with out-the-window realism and allow you to repeatedly, consistently practice a task or rehearse a scenario. With accurate, true-to-world flight simulation environments based on Christie visual display solutions, you have the opportunity to safely learn during training, the way it should be.

Defense

National defense is training for today while preparing for tomorrow. Whether in a full mission simulator or a part-task trainer, learning 'on the job' isn't the optimum choice, Christie offers the best training option for Army, Navy, Marine Corps, Air Force or Coast Guard personnel.

With Christie's visual display solutions for military and defense simulation, you have the best of both worlds. Train on dangerous tasks and missions in an accurate, true-to-world simulated out-the-window environment while being in a safe environment. Learn from your mistakes through rehearsal and preparation, and be ready for any scenario in the real world by utilizing cost-effective simulation technology.

▲ Vehicle operation scenarios

◄ Defense – US Air Force A-10 Full Mission Trainer program

Transportation

Imagine a training system that allows for real world learning without the cost or danger of a real world environment. Christie's visual displays for simulation allow the opportunity to repeatedly perform a task or practice skills that can't be safely executed. For the transportation industry, simulation and training permits real-world learning for driver trainees, train engineers, construction and heavy vehicle operators and air traffic controllers.

Christie's "true-to-life" high-performance visual display simulation solutions for transportation markets offer innovative technology for cutting-edge training, reliability and stability, all the while offering low maintenance.

Education and training

A simulated training environment allows for safe skill practicing by creating an opportunity to learn during training. In a safety-critical system, simulation can be used to show the eventual real effects of alternative conditions and courses of action, or to simulate technology for performance optimization, safety engineering, testing, training and education. It's the best of both worlds – a real world simulated environment for optimal training.

Christie provides high-performance visual display solutions that can enhance any training task by creating realistic experiences for trainees. With cutting edge technology and industry-leading innovation, Christie's simulation solutions are just the answer you've been searching for.

Government and infrastructure

For government and infrastructure, simulation creates an opportunity to test out new technologies and innovations in a realistically simulated environment. Imagine being able to better understand the interactions of system components within systems, but not as separate entities. With simulation's holistic point of view, it's possible. Agencies often make use of simulation to achieve performance optimization, enforce safety engineering and aid with testing, training and education because it can show the eventual real effects of alternative conditions and courses of action.

Christie can help you to improve your systems with innovative, cutting-edge display solutions specific to your needs. Plus, enjoy an industry-leading low cost of ownership.

F18 Cockpit

◄ Government (research and development) –
Carleton University's ACE Lab

▼ Defense – First Person Shooter –
3D for dismounted infantry

▲ Defense – Boeing Apache Longbow Crew Trainer

▲ Ship bridge simulation – CSC Fort Eustis Theater
Support Vessel simulator (TSV)

Christie high performance simulation solutions

Christie simulation solutions are comprised of leading-edge display technology and world class system integration expertise. Our solutions can produce images in any size or shape, front or rear projected, spherical, cylindrical, conic or flat screen, from small-team scale screens to large scale dome configurations.

Whether it's a fully integrated simulation solution, or the inclusion of industry-leading Christie projectors, the world's leading organizations trust Christie to provide the right solutions for their needs.

Customized, customer-driven simulation solutions

Christie delivers complete visual solutions for sophisticated simulation systems. Built on a proven approach that takes you from upfront project consultation and needs analysis to post-installation service and support, Christie's team of integration and installation experts will work with you every step of the way.

ISO9001 certified custom project process – from concept to reality:
Needs analysis
Feasibility studies
Design
Project management
Systems integration
Installation
Training
Professional services
Remote monitoring and control
Christie Comprehensive Care

Christie comprehensive care

Our commitment to you starts the moment you start doing business with us. We offer customer-centric service and support regardless of where you are located. Christie has years of extensive experience in high profile and mission critical 24/7 applications.

Christie professional services

Our professional services offer every level of support to meet our customers' expectations for continuous, reliable product performance. The capabilities of Christie professional services include remote monitoring, configuration, preventative servicing, on-site emergency response, critical spares replenishment programs and more.

Technology leadership

A worldwide company and technology innovator, Christie is also a manufacturer, providing a superior advantage from our large experience base of technology and people. Our expertise in the market along with our understanding of the context of how simulation systems are used and what customers will need to do with the display means that Christie understands the big picture.

Christie is a true innovator in the simulation and training industry. Encompassing a variety of tried and true technologies, engineering strength and integration know-how, we offer turn-key or completely customized simulation display solutions. Christie's exceptional products, knowledge and expertise are an integral part of the entire integrated solution.

Christie® MicroTiles™

Accurate information is essential for effective communication, collaboration and decision-making. We know that every single pixel on a display provides information that can be vital to making the right decision at the right time. That's why we engineered Christie® MicroTiles™ to deliver the highest resolution possible, with virtually invisible seams and image quality that is second-to-none.

Breadth of solutions

The Christie Matrix line employs two alternative illumination technologies: arc-lamps and LEDs. The Christie Matrix Series of projectors are the best choice for simulation applications where the key requirement is real world visual displays for the purpose of simulated training.

LED-based illumination – Christie Matrix StIM™

Our award-winning Christie Matrix StIM™ features RGB LEDs as well as an IR LED to stimulate Night Vision Goggles (NVG), and self-adjusts in real-time for a seamless display and true-to-life depiction of day, night and stimulated NVG images.

ArrayLOC™

The Christie Matrix StIM is an intelligent image display that features Christie ArrayLOC™ – the real-time processing and calibration technology that enables individual projectors to become intelligent display nodes in a larger arrayed system.

Christie ArrayLOC self-adjusts in as little as two seconds. It synchronizes and balances the color and brightness levels, reducing the amount of time, labor and costs associated with maintaining a simulation display.

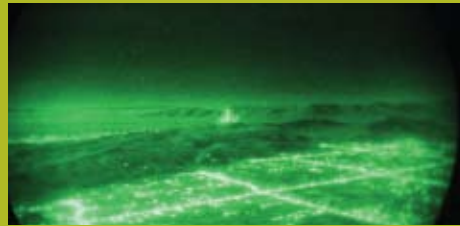▲ ArrayLOC constantly monitors and adjusts in real-time for color and brightness levels.

▲ In as little as two seconds, ArrayLOC self-adjusts to ensure a consistent, uniform arrayed display.

Leadership in NVG

The Christie Matrix StIM™ enables a new level of training by utilizing both visible light and IR. Through Christie InfraScene™, the unique capability of processing and displaying infrared content, true-to-life NVG stimulation is achieved for realistic and relevant training in difficult conditions like limited visibility environments and nighttime operations.

The ability to provide practical and pertinent training is captured in the mantra "train like you fight." For today's military personnel, this means training for difficult conditions where visibility is limited. This same type of training is increasingly important and valuable for operations like first-responders, where lives are at stake. In addition to the standard Red, Green, Blue components typical of most projection technologies, the Christie Matrix StIM provides a separately-controlled near-infrared (NIR) illumination source that directly stimulates actual NVGs. This allows for optimizing the balance between the visible and the NIR images without having to compromise one for the other.

InfraScene™

◀ The Christie Matrix StIM's unique dual channel inputs create the ability to display visible light (left) and a stimulated IR display[1] (right) simultaneously and independently.

System solution experts

By understanding our customers' problems, we leverage our exceptional products, knowledge and team experience to provide a complete integrated solution that's reliable, effective and sustainable. We can produce images at any size or shape, on virtually any surface for true-to-life simulation displays.
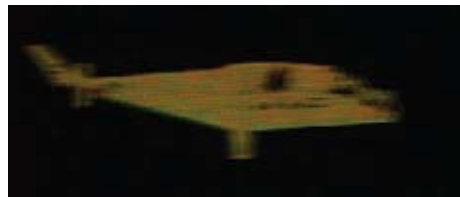
Christie's integrated simulation solutions are comprised of innovative display technology. The complex nature of today's simulation applications offers a variety of display and image challenges. In cooperation with key industry experts we collaborate on integrating visual display system solutions. Our display solutions provide you with tools that scale to eye-limiting resolution with manageable projector arrays.

Anti-smearing for fast simulation

Christie AccuFrame™ accurately displays high-speed simulation content for the most true-to-life displays. An industry first, Christie AccuFrame was developed specifically for the simulation market. It is able to nullify image artifacts (such as smearing or double image perception) in high speed simulation.
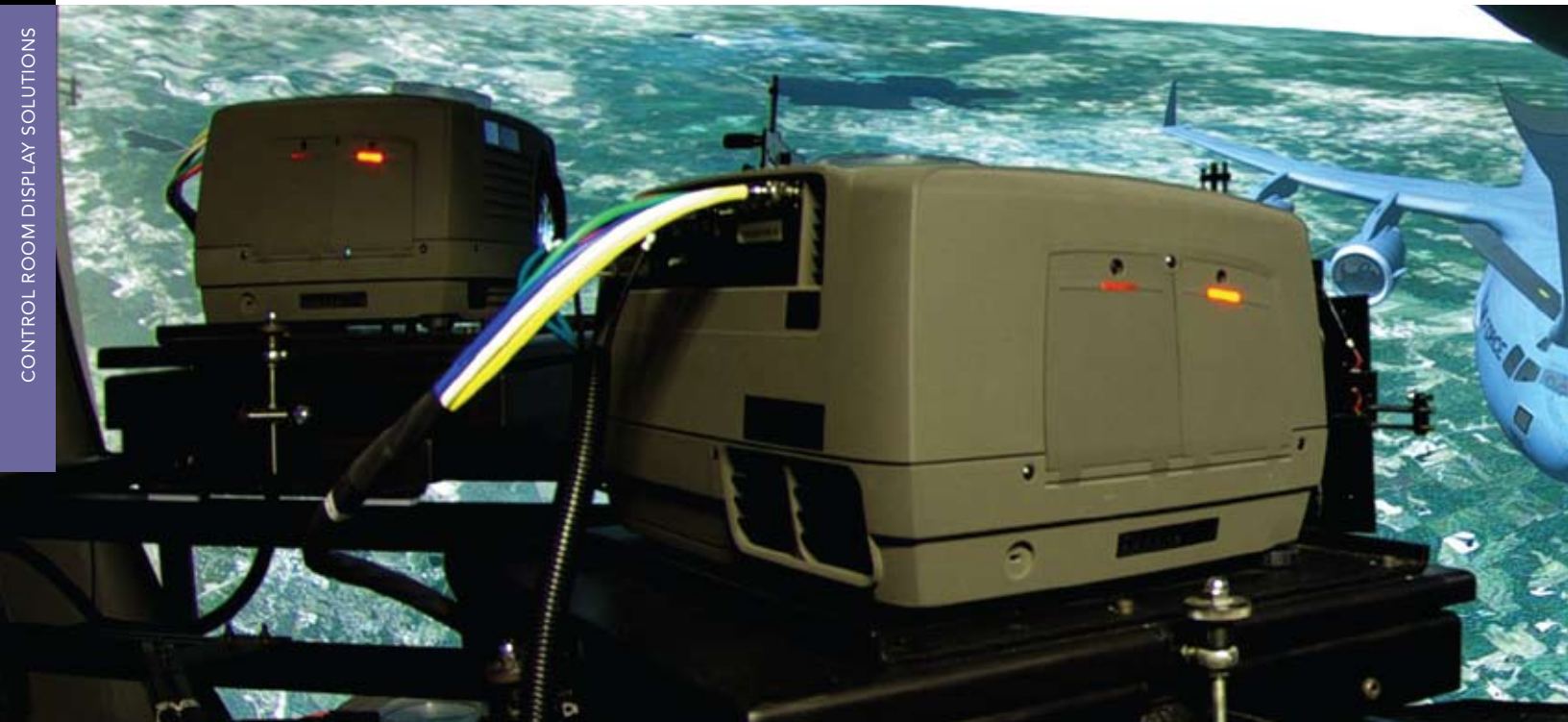
▲ With AccuFrame

▲ Without AccuFrame

Christie Twist™

Christie Twist™ is a powerful, easy-to-use option to manage arrayed projectors that allows users to display virtually any image, anywhere.

Pixels can be mapped to any projection surface with proper geometry and perfect pixel to pixel alignment. Christie Twist provides the enhanced warping and expert blending required for arrayed projectors to operate as a single, uniform display.

[1] Actual image through Night Vision Goggles (NVG).

▲ BOWST – Boom Operator Weapon System Trainer

Christie TrueIMAGE™ integration tools

In today's world, diverse and highly technical visual solutions are applied to solve some of the key issues and challenges facing global scientific and manufacturing communities. Because each and every application is different, we developed Christie TrueIMAGE™ integration tools. The result is customizable, reliable and efficient tools designed to meet the most demanding requirements of blended projection arrays.

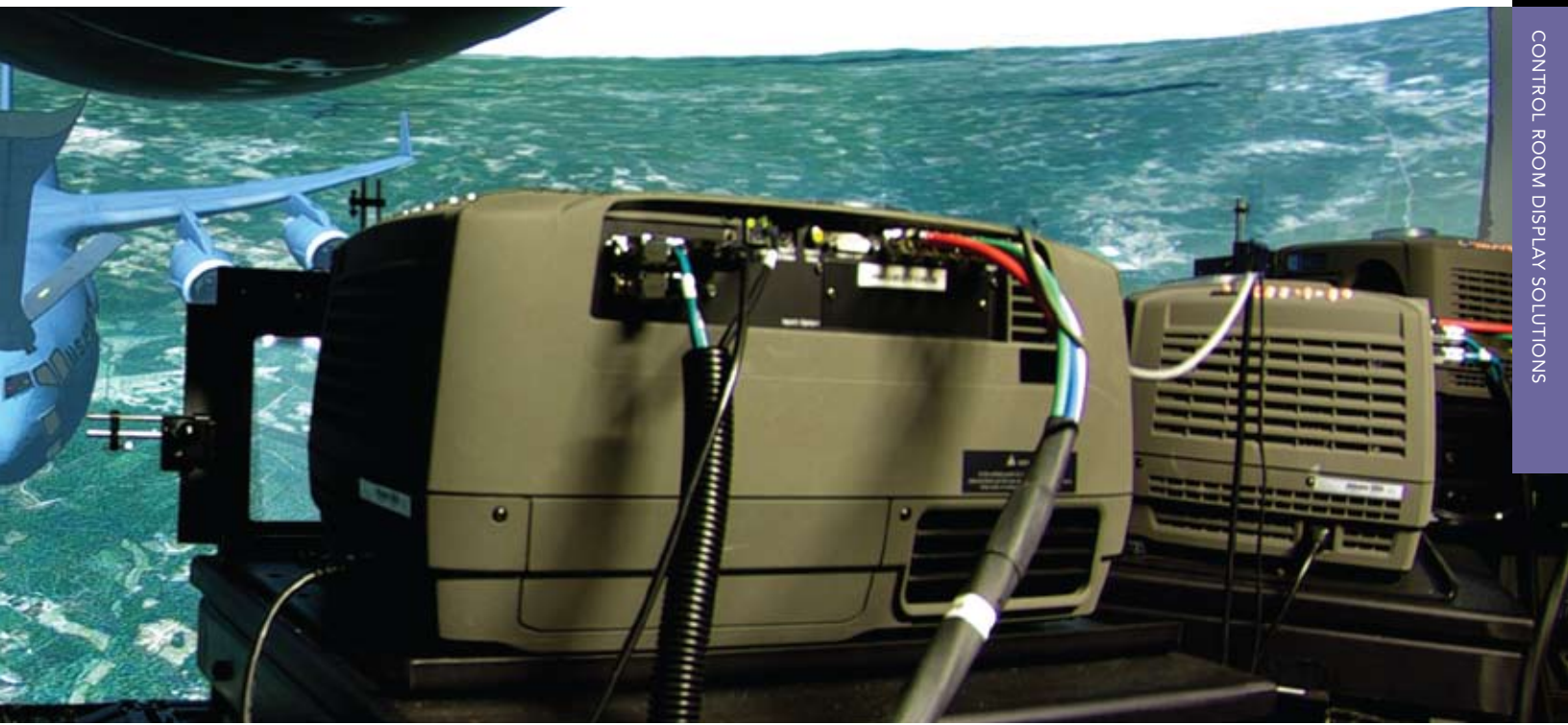| Christie TrueIMAGE integration tools offer: |
| --- |
| Reduced location resource requirements |
| Increased customer independence in terms of display maintenance |
| More realistic displays |
| Enhanced visual performance of the complete system |
| Optimized displays |

Auto calibration

With Christie AutoCal™ you have expert image display adjustment capabilities at your fingertips. A simple check box interface makes interaction user-friendly, allowing users to re-calibrate both geometry and blending with unequalled accuracy. Christie AutoCal calibrates virtually any arrayed projection display, from flat to cylindrical to spherical, and adjusts it to its optimized viewing configuration to deliver the results you require.

With Christie AutoCal you have expert image display adjustment capabilities at your fingertips. And a stabilized, consistent display with reduced system maintenance and downtime will achieve increased productivity.

Advanced color matching

Christie Advanced Color™ is a user-assisted tool that enables advanced color matching from simple to complex arrays, regardless of the level of experience.
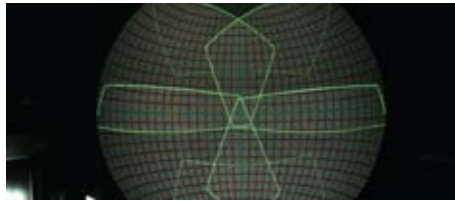
Using a precision light meter, computer and software with an easy-to-use user interface, the operator is automatically guided to point the meter at the screen and data is fed into the computer. The computer performs the calculations and places the color mapping information on the projectors – that information stays on the projector until you choose to re-tweak the system.
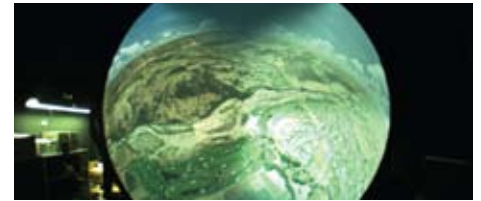
Motorized optical blending

Day or night, dark or light applications, why compromise your display system? Developed using our extensive experience with dynamic content, Christie MotoBlend™ helps maximize the best of both worlds when it comes to life-like images and DLP® based displays and environments, including system contrast and optimized dark scene applications.

Christie's motorized optical blending ensures your dark scene content (such as nighttime training applications) is evenly maintained across the entire display, without any residual light distractions or artifacts.

▲ Without Christie AutoCal

▲ With Christie AutoCal

▲ Without Christie Advanced Color[1]

▲ With Christie Advanced Color[1]

▲ Without Christie MotoBlend

▲ With Christie MotoBlend

[1] These images illustrate a two-projector blended array.

Corporate offices

Christie Digital Systems USA, Inc
USA – Cypress
ph: 714 236 8610

Christie Digital Systems Canada Inc.
Canada – Kitchener
ph: 519 744 8005

Independent sales consultant offices

Spain
ph: +34 91 633 9990

Italy
ph: +39 (0) 2 9902 1161

South Africa
ph: +27 (0) 317 671 347

Worldwide offices

United Kingdom
ph: +44 (0) 118 977 8000

Germany
ph: +49 2161 664540

France
ph: +33 (0) 1 41 21 44 04

Eastern Europe and
Russian Federation
ph: +36 (0) 1 47 48 100

United Arab Emirates
ph: +971 (0) 4 299 7575

India
ph: (080) 41468941 – 48

Singapore
ph: +65 6877 8737

China (Shanghai)
ph: +86 21 6278 7708

China (Beijing)
ph: +86 10 6561 0240

Japan (Tokyo)
ph: 81 3 3599 7481

Korea (Seoul)
ph: +82 2 702 1601

For the most current specification information, please visit www.christiedigital.com

CHRISTIE®