Automated camera-based alignment software

Auditoriums  Giant screens & dome theaters  Projection mapping
Casinos, cruise ships & hotels  Live events & conferences  Rental & staging
Enterprise venues & boardrooms  Museums & cultural attractions  Sports venues & theme park rides

Multi-projector arrays, projection mapping and complex screen shapes and surfaces require expert image configuration, alignment, warping and blending – processes that can take hours of painstaking work. Christie® Mystique™ is an automated camera-based alignment and recalibration solution that lets you quickly stage, install, align, calibrate and maintain multi-projector systems.
Up and running in no time. Perfectly aligned, day after day.

Christie® offers four editions of Mystique™. Each edition is designed for specific screen types and applications.

**Essentials Edition**
Projection stacking and simple blending on flat screens and surfaces.

**Pro Venue Edition**
Projection stacking and blending including easy alignment on flat and cylindrical screens and surfaces such as stages, basketball courts and ice rinks.

**Premium Edition**
Projection stacking, blending and alignment on large-screen applications which require more than one camera to capture the entire screen. Screens can be flat, curved or custom shaped, including domes and 360-degree screens.

**Large Scale Experience Edition**
Projection stacking, blending and alignment on large-screen applications which require more than one camera to capture the entire screen. Screens or surfaces can be flat, curved, custom-shaped or domes. Ideal for applications like theme park dark rides, flying attractions, giant screens, dome theaters and 3D projection mapping on buildings, landmarks or objects.
# Christie Mystique

## Automated camera-based alignment software

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* Supports up to 12 projectors in a 2 high x 3 wide configuration, double-stacked
** Number of projectors limited by capable resolution of the single camera
*** Screens include primitive shapes including flat, curved or dome shapes, or by importing a screen model. Custom screen shapes should be smooth, continuous screens
Camera selection

Christie® Mystique™ offers a variety of cameras and lenses which are pre-calibrated as a pair to ensure maximum image quality.

The number of cameras depends on both:

› Where they can be placed in relation to your projection surface
› The resolution of the screen in relation to the camera

You can use the Christie Mystique camera calculator to estimate if a single camera and lens combination is sufficient for your screen.

Christie can help you design a layout that works for multi-camera systems.

Example of a single-camera configuration

Example of a complex, three-camera configuration
Supported screen types

Christie Mystique works with screens and surfaces of all shapes and sizes.

Flat and cylindrical screens

For flat and cylindrical screens and surfaces, Christie Mystique Essentials and Pro Venue Editions provide easy-to-deploy, single-camera solutions to quickly warp, blend and stack projectors.

Complex screens and dome theaters

Christie Mystique Premium and Large Scale Experience (LSE) Editions are ideal for complex and smooth screen shapes, including wave shapes, domes, or toroidal screens. Using integrated primitive screen shapes or imported 3D models of your screen shape, Christie Mystique can support the most complex projection layout, with any number of projectors.

Buildings, landmarks, objects and other surfaces

Christie Mystique LSE Edition provides automatic, multi-camera-based recalibration for 3D projection mapping without the need for marker points. This reduces complexity and costs by saving hours of labor-intensive manual alignment and blending. LSE Edition also automatically corrects for projection drift ensuring visual quality stays optimized. A robust tool, LSE Edition is indispensable for inexperienced and highly-skilled projectionists alike.
Recalibration features

Manual recalibration

Recalibration is applied by manually adjusting screen points within the Christie Mystique software and running the calibration process. Typically, this involves repositioning the corner and curvature points within the camera image.

Automatic recalibration (screen markers)

Screen marker recalibration is typically required for systems using multiple cameras or complex screens. You can realign a system with a single click. It requires embedding a series of LED or laser marker reference points around the projection surface. The marker reference points help against slight movements of projector or cameras.

Automatic recalibration (camera-based)

Camera-based automatic recalibration is ideal for single-camera, flat screen applications which do not require screen markers. You can realign the system with a single click and automatically adjust for slight movements of the projectors or camera.

Christie Guardian

Christie Guardian constantly monitors a blended projection system for any misalignment. If Guardian detects a misalignment, it automatically calibrates the image in real-time, quickly, invisibly, and without interruption. Because Guardian eliminates the need for visible structured light patterns, audiences are unaware of any problem. Unique to Christie, Guardian is supported by Christie D4K40-RGB, Boxer 4K30, Boxer 4K20, Crimson Series, Mirage 304K, Mirage HD25, Mirage WU25 and Mirage SST projectors.

Christie Mystique Operate Lite

Christie Mystique Operate Lite provides a simple, browser-based experience for initiating a camera-based or screen marker recalibration run. It supports a REST API, which allows third-party applications to trigger the recalibration process.
Wallpaper (basic)
Ideal for systems using a matrix projection layout, this mode is used for simple projection set-ups with a common overlap between each section and will support stacked projection systems. Users must provide a horizontal and/or vertical blend overlap expressed as a percentage or as pixels.

Fields of view
This is an advanced projective layout mode used in simulation of other real-time content solutions, where content is rendered from a single eye-point. Content channels are defined by providing the frustrum details (yaw, pitch, roll and field of view settings) along with the eye-point. It can accommodate complex projection layouts with irregular overlaps and other features.

Projector centric
This mode is ideal for projection scenarios where content is pre-rendered based on the planned position of each projector channel. It can minimize the amount of warping applied to each channel on subsequent alignment runs. Christie Mystique can apply small warp adjustments to account for discrepancies between the planned projector position and the actual projector position. Projector centric mode is often used with theme park dark rides.

Wallpaper (advanced)
Designed for complex blended or stacked display types. Typically used for flat or curved (single axis) displays. For each content channel, the user provides left, right, top and bottom channel extents.

Fields of view (collimated)
Fields of view (collimated) mode is primarily used in simulation scenarios where the user is looking at a spherical mirror showing a reflected image of the display. Content channels are defined by providing the frustrum details along with the eye-point. The system defines the placement and size of the mirror.

UV Map layout
Use this feature for 3D projection mapping when a 2D image needs to be projected to a 3D model's surface to act as a texture map. UV map layout mode is only available for Mystique LSE Edition.
Christie 3DLP projectors

Christie® Mystique™ works with the complete lineup of Christie 3DLP® projectors, including the Christie D4K40-RGB and Roadie 4K40-RGB pure laser projectors and the Christie Boxer, Mirage and Crimson Series.

Christie 1DLP projectors

For a more cost-effective solution, the following HS Series 1DLP laser projectors are compatible with Mystique: 4K7-HS, 4K10-HS, D16HD-HS, D16WU-HS, D20HD-HS and D20WU-HS.
Christie Mystique integrates directly with Christie Pandoras Box Version 6, enabling automated camera-based alignment and calibration for large-scale projections, regardless of the projector you use.

Christie Mystique provides fast, repeatable camera-based alignment for any multi-projector scenario when you use Christie Pandoras Box as a media server.

- The optional Christie Guardian feature is not supported by Christie Pandoras Box systems
- Stacked projection systems require a dedicated Christie Pandoras Box output
- Blend quality depends on projector quality and cannot be guaranteed for non-Christie 1DLP and 3DLP projectors
Alignment for surfaces with fixed markings

This feature is ideal for applications such as live stage performances and court or arena projection mapping. Content aligns to a surface with known, measured markings. You can define screen shape and aspect ratio by importing an image that represents the projection surface. That image is then overlaid into the correct location on top of the camera image. This is helpful where content must align to markings or when screen corners are not easily identifiable, such as a hockey rink, where face-off circles can be used as alignment points.

Dual-screen mode

Ideal when content is pre-rendered to a single model and displayed across multiple screens or venues. Dual-screen mode, working in conjunction with projector-centric layout mode, allows you to define two screen models. Using both models, Christie® Mystique™ attempts to correct for error in the physical model by mapping content to the intended location.

Alignment for 3D projection mapping

Users benefit from one-touch, automatic, camera-based, multi-projector alignment and blending on 3D surfaces such as buildings, landmarks and objects. With a single click, you can detect any changes in projector or camera position and automatically correct the blended image. This feature uses markerless calibration for 3D projection mapping, eliminating the time-consuming and often costly need for screen or object markers.

Rear projection support

Christie Mystique supports configurations using a rear projection screen, where cameras are often positioned in front of the screen. If cameras are placed behind a rear projection screen, results are dependent on the screen material producing an expected image on the rear side of the screen, and extra steps may be required.
Christie Mystique is used in the setup of the 3D projection mapping of the iconic Christie wolf head.