

At a Glance

Areas of Application

- Trade show booths
- Show stages
- Multiplexes
- Planetariums
- Theme parks
- Product presentations
- Simulators

Features

Configurator:

- Projections on any size or shape of surface
- Very wide range of projector combinations
- Automated calibration of projector images
- Real-time image distortion and stitching

Showplayer:

- User-friendly compilation of shows from existing material
- Integration of various media formats (videos, still frames, text, sound, animations)
- Preview of photo, audio, and video material
- Control of external devices (lighting, fog machines)
- Real-time playing without prior computing
- Timeline-based presentation

Technical Specifications

Standards:

- Standard video formats: MPEG2 to 1080 pixel, WMV to 1080 pixel, VOB, AVI
- HD video formats: MPEG2 with resolution of 4096 x 4096 pixel at 30 HZ
- Picture formats: JPG, PNG, DDS, TGA, BMP, HDR
- Audio formats: WAV, MPA, MP3, AC-3, WMA, AU, AIFF, SND
- Maximum number of clients: 128
- Maximum screen resolution: 2048 x 1536 pixel
- Color scale: RGB Alpha (32 bit)
- Audio output: stereo 5.1, stereo 7.1
- Timecode control: SMPTE
- Network: 1000 mbit
- Control protocol: DMX, MIDI, Serial



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Surround Vision

Projection and
Reproduction Technology
by Fraunhofer FIRST



Fraunhofer Institute
Computer Architecture
and Software Technology

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Size up your field of vision!



Surround Vision

People experience their surroundings with a horizontal field of vision of almost 180 degrees. Yet this huge potential is scarcely tapped when it comes to cinemas, trade fairs and other social and business functions. Most visualization installations just use a rectangular or flat screen which only offers a limited viewing experience. Alternatives to flat screen surfaces are mainly being pioneered in planetariums and 3-D movie theatres where panoramic and dome projectors give audiences the feeling of being right in the thick of the action. Yet novel visualization technologies can open up a new dimension of exciting possibilities for trade fairs, exhibitions, and

conferences as well – multimedia content projected on any size or shape of screen add a new dynamism and enhanced expressiveness to stage sets and trade fair booths. As a quick and simple solution for presenting multimedia shows on uneven and curved surfaces, Fraunhofer FIRST in conjunction with Carl Zeiss has developed an innovative media control unit consisting of a Configurator and a Showplayer. The Configurator controls projections by automatically blending images from a group of projectors to form one single seamless moving picture configured to fit the screen. The Showplayer combines various disparate media formats to stage a show which plays out in real-time and high resolution.

One single seamless moving picture

Large-format and wide-angled projections need special equipment or the image has to be distributed across a set of projectors. The Configurator enables synchronized steering of such projector clusters. The overall image can be configured in real-time to fit any shape or form of projection surface. A virtual screen model is first used to set its shape so that with a few mouse clicks the individual projectors can be configured to fit the model and distorted to give a seamless and distortion-free overall screen picture. At the same time the positions of individual projector images are recorded by digital cameras so that image-

recognition algorithms can fully automatically calibrate single images and align them with one another exact to the last pixel. Even if a projector should slip, its image can be re-configured to fit the overall picture in just a few seconds. In principle any kind of projector can be controlled by the Configurator, from standard devices to special projectors like the planetarium projectors by Carl Zeiss or Sony's 4K-projectors.

Create and Play Shows in Real-Time

The Showplayer offers a simple means of compiling and playing multimedia shows. Like a video editing program, it can combine various media formats like film, freeze-frames, and banners and also allows for the integration of peripheral equipment. The status of work can be monitored at any time using a preview window that presents the show pre-configured for the geometry of its particular screening surface. What is unique about the Showplayer is that unlike traditional editing programs it outputs content in real-time. This saves time as the show no longer needs elaborate computing before it is streamed in full

quality, and it also means that changes can be introduced right up to the moment of rendition. What's more, up to a resolution of 4K x 4K there is no longer any need for elaborate slicing – distribution of visual data across several projectors – as the partial images are directly generated during actual projection. The Showplayer uses a timeline for presenting the show. This means that the presenter can instantly recognize the exact spot the show has reached and jump forward or back to any other place as required.