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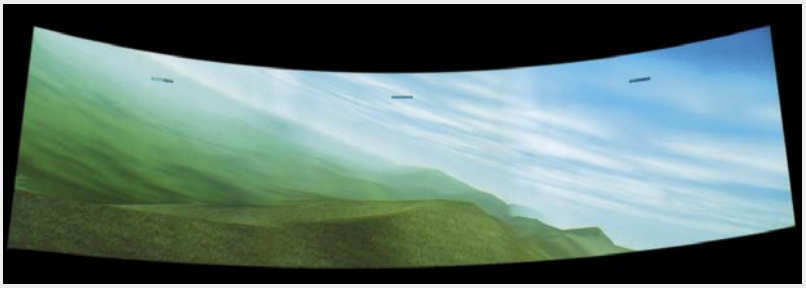
viception GmbH & Co. KG

openWARP



warped and blended Image

openWARP

VICEPTION openWarp system is a hard- and software system for image correction and compositing.

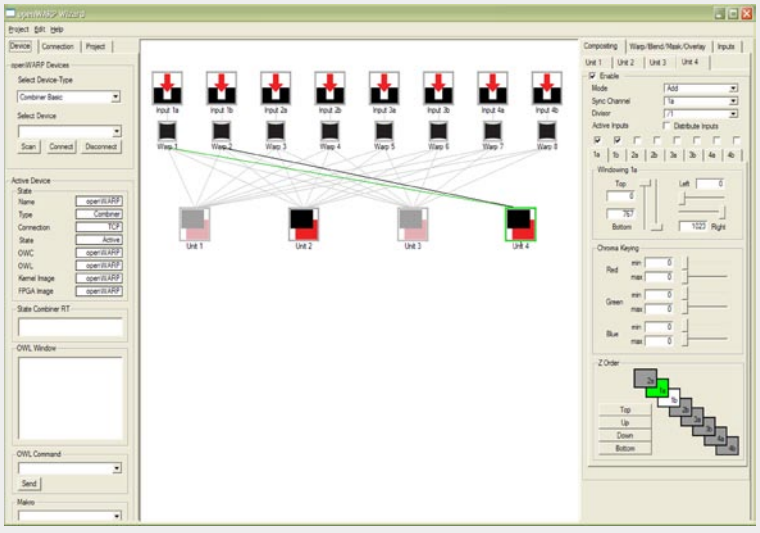
Characteristics:

- External box with eight Input- and four Output-channels
- Resolutions up to HDTV
- Warping (image correction e.g. on curved screens) on all channels
- Warping in realitme (delay below 8 ms)
- Compositing functions such as Overlay, Blending, Keying,...
- One 2D Software Interface for all different versions

The system is thought as an external extension between image sources and projectors, to keep free of restrictions while using in-projector warping systems.

The system allows the user to feed up to eight DVI-channels in the system and - after image correction and compositing - feed four arbitrary projectors (analogue or DVI). The system allows resolutions up to HD and smaller VESA-Resolutions. Further custom resolutions can be employed.

Although there are different versions existing (see below), there is only one, easy to use, Graphical Interface (openWARP Wizard) treating all devices. The user is enabled to easily create projects which he can simply upload to a device without re-adjusting each time. As well he can load only parts (e.g. warpmaps) of other projects, which allows easy handling of different setups.



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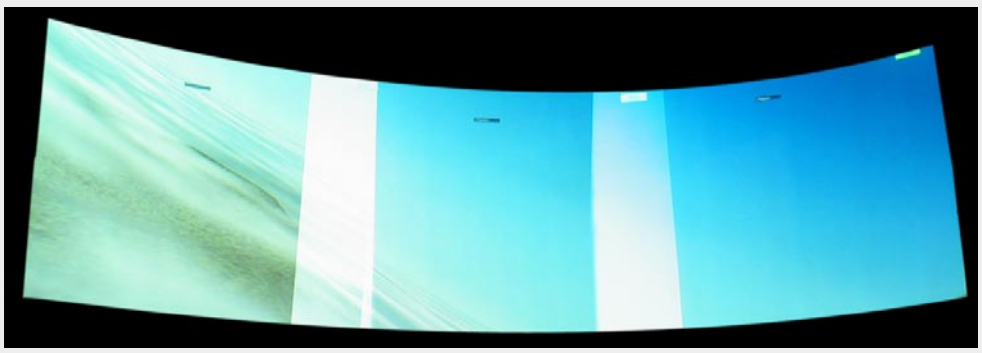
The system provides the following basic functions:

Warping:

Warping is the process of image correction (or distortion) pertaining to curved screens or domes. While normally a straight projection onto a curved screen leads to image distortions, it is possible with openWARP to correct these distortions by creating a grid which reflects the deviation of a projection onto a planar screen.



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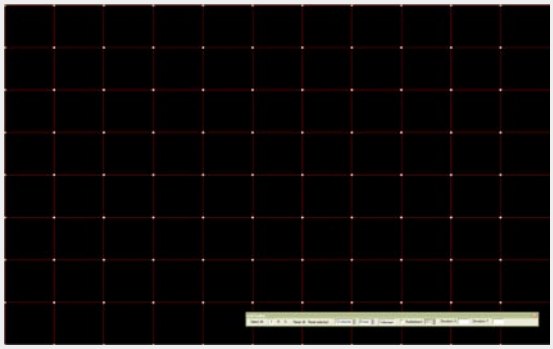
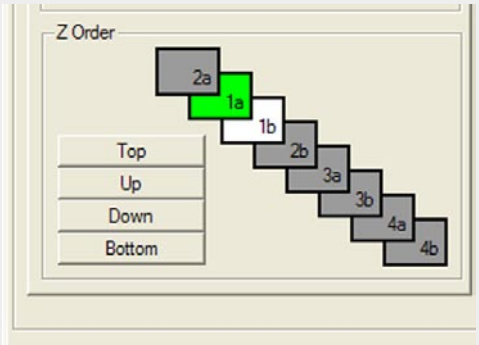
The Graphical Interface provides an easy to use wizard to adjust any projection onto nearly every surface.



Overlaying and Keying:

As any well known overlaying function, openWARP allows to overlay arbitrary images in z-order in up to eight levels (one level/ Input-Channel), but on each Output-Channel independently.



Combined with the keying function, which allows the user exclude certain colours from a source image, it is possible to assemble different parts of different sources to a new image.

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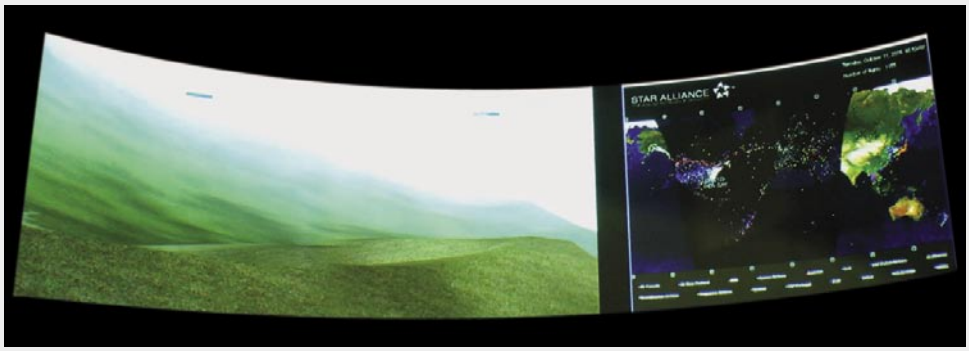
Masking:



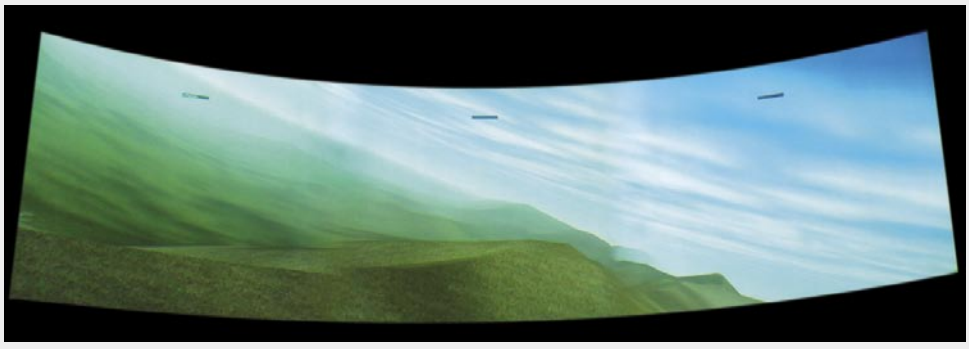
It is also possible to mask certain areas of an image, using a bit mask which the user can modify, either by using the Graphical interface or by using a predefined bitmap.

Blending:

Another very important function, since using different projectors, is the blending function. The blending function allows the user to define smooth areas where two projectors overlap. Because the blending, in this system, is defined independently from the projectors, exchangeability is provided very easily - which shows yet another major advantage of the system.

Windowing:

Windowing allows the user to cut out a certain rectangular area of the input signal. This enables the user to exclude areas such as borders. In combination of all these functions offer an incredible independence to either create well-fitted solutions to any task, or as well to creatively manipulate images.



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The following systems are existing:

openWARP ST - for standard edition:

The standard version delivers all functions mentioned above, using the approach to adjust a system to a task in the first step and then, afterwards, driving it multiple times.

openWARP RT - for realtime edition:

The realtime version of the openWARP system allows the user to interactively exchange settings on the systems, which are performed immediately. In respect of the warping function this means that one can exchange the geometry of an image interactively as well. This leads e.g. to the possibility to adapt viewpoints of a spectator with respect of his position to the wall (e.g. flight simulators on hexapods). Theoretically it is possible to allow the user to move the projector in front of the wall or inversely. This demonstrates a further step of independence the user gets using this system.

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Contact information:

viception GmbH & Co. KG
Magirus-Deutz-Str. 9
D-89077 Ulm
phone: +49 (0) 731 550 17-0
fax : +49 (0) 731 550 17-11
e-mail: info@viception.com
web: www.viception.com

...for the successfull introduction and usage of virtual and augmented reality technologies we provide more than soft- and hardware!