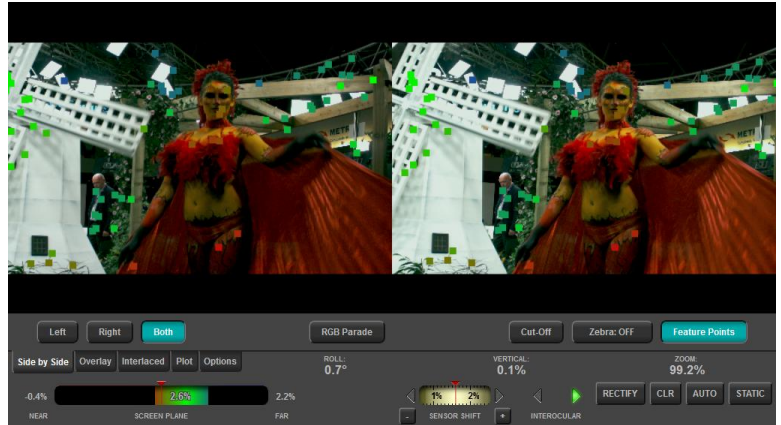


Application Note

Stereoscopic 3D in Live Production: DVS Follows New Paths in Stereo Production



CASE SUMMARY

Need: Shooting live in 3D is a major challenge since many parameters like stereo baseline, color, geometry or camera distance from the object change from scene to scene. Also, high image quality with a low compression is a requirement for 3D live and post production.

Solution: Equipped with STAN (Stereoscopic Analyzer), VENICE supports camera operators and production staff in setting the decisive stereo parameters and adds high-quality recording in just one turnkey system.

INTRODUCTION

VENICE is DVS's multi-channel video server for broadcast environments. Based on sophisticated DVS technology, VENICE provides quick and convenient processing of various compressed and uncompressed formats. On top of being a solid server for ingest, content play-out and transcoding, it also has secure and quickly accessible RAID storage. VENICE's latest highlights include an extended channel-grouping feature, dynamic playlists, real-time scaling as well as simulcast, the parallel play-out of HD and SD videos.

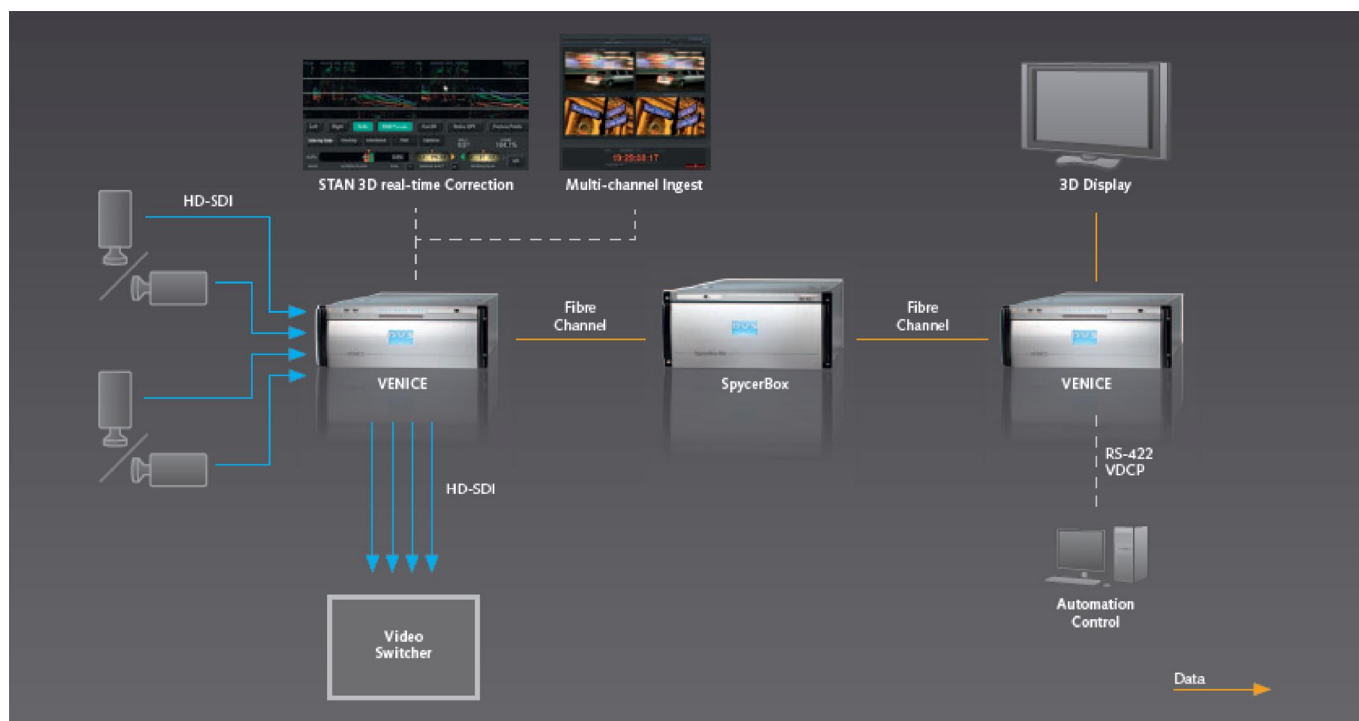
The integrated STAN (Stereoscopic Analyzer) software was developed as an assistance system for stereo shooting and 3D production. In order to optimize

camera alignment and lens settings directly at the set, an image-based scene analysis estimates the stereo geometry of the two cameras in real time. Thereby, all undesired keystones, vertical and geometrical disparities are automatically erased. Moreover, it allows for exact object positioning in the scene, e.g. by reaching the ideal stereo baseline and alerting when irritating 3D artifacts or synch issues appear. STAN assists the production team regarding the framework of stereo production grammar while shooting in 3D. VENICE and STAN together help setting all required and critical stereo parameters and enable high-quality stereo recording in a single turnkey system.

SOLUTION

Thanks to its powerful hardware, VENICE with STAN captures, analyzes and corrects stereo images in real time. Corresponding feature points in the scene are matched automatically to determine the given disparity range, and to compute stereo calibration data. Furthermore, residual distortions in stereo geometry can be adjusted using real-time correction. Basic stereo parameters like convergence planes can be adjusted manually.

The corrected images are delivered by HD-SDI to a connected video switcher for live production. For further post production, the corrected video is recorded to VENICE's internal storage system or a connected storage such as the DVS SpycerBox. VENICE uses NLE-friendly MXF file formats like DNxHD® up to 185 Mbit/sec or even uncompressed formats like DPX for high-quality post production



WORKFLOW EXAMPLE

Find a typical workflow example above. Two separate cameras of a 3D rig capture the material. Via HD-SDI the video is fed into VENICE. Together with STAN, the stereoscopic parameters are individually set, allowing for real-time optimization of the files. The corrected images are recorded to disk.

Using another HD-SDI channel, the now processed material is transferred to an external video switcher for live production. Stereographers, camera teams and production staff benefit from a simple process that allows them to double their creativity – thanks to VENICE's flexibility.

BENEFITS

- **Time savings:** Real-time correction of geometric distortions
- **State-of-the-art equipment:** High-quality stereo recording
- **Flexibility:** NLE-friendly file formats and metadata recording for post production
- **Small form factor:** No need for extra 3D processing equipment



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