

Case Study

UK Sports Fans Feel the Power and Potency of 3D Image Conversion



Elegant standards converter from Snell ensures quality conversion of live 3D content for theater screenings of RBS 6 Nations and other high-profile sports events.

The Customer

SIS is one of the world's leading companies in the television broadcasting industry today. It is the foremost supplier of television programming and data services to the UK and Ireland betting industry. The company's broadcast business, SIS LIVE, offers a complete broadcasting solution from on-site outside broadcast facilities through to global distribution and IP provision. The company covers 100,000 hours of live events worldwide each year, including Formula One, The Wimbledon Championships, UEFA Champions League football, and European Tour Golf, and delivers approximately 80 percent of live news feeds across the UK.

The Challenge

SIS LIVE operates the largest satellite uplink fleet in Europe and is the largest outside broadcast provider in the UK. The

company needed technology to enable 3D conversions from high definition (HD) feeds during live event broadcasts. In particular, SIS LIVE was supporting the O2-sponsored UK national screening of the RBS 6 Nations Rugby tournament at 40 cinemas across the country.

The 3D conversion system needed to ensure smooth conversion of left- and right-eye video from the 1080i 50 production standard to the 720p 60 standard required to reduce flicker and ensure high viewing quality on theater screens.

The Snell Solution

Key Snell systems feature enhancements that are targeted to the requirements of 3D production and transmission. By integrating smoothly with other best-of-breed systems, meeting a high performance standard, and contributing valuable functionality to the 3D workflow, the Alchemist Ph.C – HD and other Snell products simplify delivery of quality 3D content.

“Snell has developed a well-earned reputation for delivering superior-quality conversion with the Alchemist product line,” said Julian Boden, head of engineering at SIS LIVE. “At the last minute, in order to deliver our 3D rugby feed into the UK cinema network, we needed signals formatted in 720p 60. Past experience with Snell products led me to suggest to the engineering team that Alchemist would neatly solve the problem and deliver the required quality to the end customer. We were able to take our 1080i 50 output directly through the Alchemist to fulfill this requirement. The Snell solution bolted straight into our workflow and worked right out of the box.”

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Snell's Alchemist Ph.C – HD conversion system is among many across Snell's award-winning product portfolio that are 3D-ready and already being used to support 3D production around the world. Equipped to support image processing, live production, automation, workflow control, and distribution within the 3D environment, Snell's 3D-capable systems allow broadcasters to leverage powerful, familiar tools in meeting the rising demand for 3D content.

The product of extensive research into the exacting demands of HD frame-rate standards conversion, the new Alchemist Ph.C-HD yields converted images of unparalleled quality and clarity so that even the most dynamic content is delivered with stunning detail, free from artifacts and virtually indistinguishable from the original HD input.

The Alchemist brand has dominated Motion Compensated Standards conversion for over 15 years. Powered by the unique Ph.C technology from Snell, no other company can offer this technology or its performance. This has been globally recognized since 1992 when Ph.C was first launched and has since won four Emmy Awards guaranteeing that the Alchemist Ph.C-HD integrates the best quality motion measurement technology.

Key Alchemist Ph.C – HD features

- Ph.C motion compensated HD and SD standards conversion
- Multi-rate HD/SD SDI inputs & outputs
- Advanced format conversion (up, down & cross)
- Automatic Aspect Ratio Conversion including AFD authoring
- CleanCut™ technology
- Two SDI inputs, switchable
- Two independent video outputs

- AES and embedded audio
- DolbyE transcoding (option)
- Intuitive touch screen control
- RollCall® networked control and management system
- SNMP control and monitoring
- Dual redundant power supplies
- Timecode (option)
- Noise reduction
- Gamut legalization

The Results:

SIS LIVE integrated the Alchemist Ph.C – HD into the 3D delivery workflow and provided both the satellite uplink and OB facilities for the RBS 6 Nations Rugby tournament. Arqiva provided the downlink at Odeon and Cineworld cinemas.

During the event, produced by 3D specialist Inition, seven 3D cameras (both mirror and side-by-side rigs), along with a number of 2D cameras, captured the action. The 1080i 50 output from the switcher was converted to 720p 50 and then the separate left and right streams were compressed by a SENSIO encoder into one 720p 50 side-by-side stream at 1.5 Gbps. The resulting signal was converted to 720p 60 by the Alchemist Ph.C – HD and distributed to cinemas. Dolby D audio was successfully passed through the Alchemist Ph.C – HD in data mode and delivered along with video.