



HEGO SCORES A TOUCHDOWN AT DIRECTV WITH NVIDIA® QUADRO®

HEGO
CASE STUDY

TV broadcasters compete intensely for diehard sports viewers and the financial rewards they represent. These fans pay a premium for TV sports channels, and expect an extraordinary experience in return. In this hard-driving market, broadcasters must be at the forefront of adopting technologies to provide their demanding viewers with the best that live TV has to offer.

Each significant leap in production, graphics, audio, or broadcast technology improves viewers' experience of watching live sporting events, so they become more immersed in and connected to the action unfolding on the screen. Inventive broadcasters are harnessing the latest developments in digital TV, computer graphics, animation, video, and user interfaces to merge live action with easy-to-absorb data, statistics, and other information, to create the most compelling sports-watching experience possible.

The Hego Group, a live production and technology company with headquarters in Sweden, supports the broadcast and sports industries in their efforts to create and enhance live production content. Hego first gained prominence over 40 years ago as the official timing company for sports events such as the Olympics, downhill skiing, and Formula 1 car racing, and the company was one of the first providers of timing clocks for live TV. From these simple graphics beginnings Hego has continued to develop and enhance its live graphics solution offerings, with today seeing a portfolio of some of the most advanced software tools in the world. This includes Hego's latest AKI GS2 Multi-Touch real-time 3D graphics and interactivity engine, which is powered exclusively by NVIDIA® graphics solutions. It is an extension of Hego's broadly adopted AKI GS2 broadcast graphics engine which is already deployed in hundreds of broadcast installations worldwide to seamlessly manage a multitude of on-screen graphics during live broadcasts, to intensify viewers' connection with live sports events.

An excellent example of Hego's success is DIRECTV's NFL Sunday Ticket RED ZONE CHANNEL®, a service for NFL SUNDAY TICKET. This action-packed DIRECTV show offers sports fans the world's first total-immersion, host-directed, real-time ride through eight simultaneous football games, delivering the fast pace and comprehensive coverage viewers crave. During each RED ZONE CHANNEL program, the Quadro-powered Hego AKI GS2 Multi-Touch graphics server controls a 103-inch Panasonic touchscreen monitor with U-Touch sensor array, enabling on-air host Andrew Siciliano to interact directly and simultaneously with up to eight live video streams of NFL games, moving quickly and easily to wherever the action is taking place, in real time.



Image courtesy of Hego

"The NVIDIA Quadro Digital Video Pipeline, which is unique in the industry, is essential to the success of the DIRECTV Red Zone program," says Ian Wray, Group Sales Director for Hego. "It's what makes it possible to power this performance-hungry and limit-pushing solution."

Technology that makes it look easy

DIRECTV, the largest satellite TV provider in the U.S. and broadcaster of the most HD channels to its subscribers, already has established itself as a leader in the digital TV

technology revolution. Its RED ZONE CHANNEL uses the Hego-controlled touchscreen technology to enhance its core mission: ensuring that football fans never miss a play from inside the 20 yard line, the area of the football field also known as the “red zone.”

From a technical perspective, DIRECTV had a few simple and very high priorities for the redesign of its RED ZONE CHANNEL. First, the system had to be easy to use on camera. Second, it had to have very low processing latency, to minimize delay in two-way interviews with remote talent. Third, it had to be completely accurate, especially to meet the needs of fantasy football participants, who track detailed statistics on multiple teams and players each week, winning or losing bonus points based on precise details in scoring, passing, rushing, or tackling statistics.

“The NVIDIA graphics solutions and the Hego GS2 server are the technical linchpins of the entire system, allowing us to set the bar very high in terms of the look and performance of our graphics- and statistics-driven show, and the increased level of audience engagement,” says Peter Aragon, Director of Operations for DIRECTV Entertainment and Sports.

“Hego and NVIDIA have worked together to create the world’s leading live-video interactive solution,” says Hego’s Wray.

During a RED ZONE CHANNEL broadcast, the Quadro-powered Hego real-time 3D graphics engine first renders 2D scenes in OpenGL, then integrates graphics, statistics, and eight live HD feeds pulled from the NFL. A second module of the Hego system makes the video and data available and also controls how host Siciliano’s touchscreen gestures trigger animations in the renderer for display on the huge touchscreen.

The Quadro Digital Video Pipeline is the industry’s only GPU-accelerated solution for real-time acquisition, processing, and delivery of high-resolution video across both standard and 3D video broadcast environments. In addition, it is the only platform to deliver four HD-SDI video inputs to each GPU card while keeping the GPU processing power fully available for rendering graphics. Hego’s DIRECTV solution uses two Quadro cards, which is what allows Siciliano to move among up to eight live NFL games on-screen.

“The Quadro’s ability to process four very high-bandwidth HD video inputs and two outputs on a single card, all at low latency; coupled with its extreme ease of integration,



cost-effectiveness plus NVIDIA’s legendary reliability, all adds up to make Quadro an indispensable aspect of the complete solution,” says Wray.

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“Empowering without overpowering”

The NVIDIA-powered Hego interactive broadcast system for DIRECTV achieves this fine balance: empowering on-air host Siciliano without overpowering him with too many technology options. During the RED ZONE CHANNEL program, Siciliano controls the technology naturally, using it as a choreography tool to bring together graphics, video, and animation sequences as he needs them.

The interactive broadcasting graphics technology made possible by the Hego GS2 Multi-Touch graphics engine and the Quadro GPUs enhances Siciliano’s delivery and conversation – so he can take charge of the flow of the live TV program, comfortable that the technology will respond to his direction.

Setting a course for the future of broadcast sports

Of course, football isn’t the only sport that could benefit from a broadcast’s ability to move interactively and in real time among live feeds, graphics, and statistics. In fact, DIRECTV already plans to extend the NVIDIA-powered Hego interactive broadcast solution to its NASCAR coverage.

“Lots of companies can make graphics that look nice on-screen, but Hego stands apart in designing graphics solutions for demanding environments where adaptability, flexibility, speed, and accuracy are all important,” says Wray. “All of our systems are specifically optimized for NVIDIA graphics solutions, ensuring a reliable interface between our engine and the GPU.”

“Collaborating with NVIDIA on the touchscreen technology for DIRECTV has provided a rewarding proof of concept,” continues Wray. “We look forward to working with NVIDIA, DIRECTV, and other networks to enable sports-loving audiences of all kinds to enjoy the immersive rush of high-performance, real-time interactive HD television.”

To learn more about NVIDIA Quadro, go to www.nvidia.com/quadro

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