DIRECTV'S RED ZONE CHANNEL® SCORES WITH NVIDIA® QUADRO® AND HEGO

Diehard football fans don't passively watch their favorite games; they live, breathe, and consume them. Paying a premium for TV sports channels, fans expect an extra-ordinary experience in return. Knowing this, TV broadcasters compete ferociously for fans' attention and involvement – and their dollars – against not only other TV networks, but also a wide array of Internet-based alternatives.

In this hard-driving market, broadcasters must be at the forefront of adopting technologies that merge digital TV broadcasting capabilities with the latest advances in computer graphics, animation, video, and user interfaces. The goal is an optimal combination of technologies creating dynamic, HD live-type experiences that make fans feel part of the action and feed their need for football – keeping them coming back for more. That's why they turn to solutions based on NVIDIA.

DIRECTV's RED ZONE CHANNEL, a service for NFL SUNDAY TICKET subscribers, has done just this with its use of innovative interactive broadcast graphics. DIRECTV is the first network to offer football fans a total-immersion, host-directed real-time ride through eight simultaneous games, delivering the fast pace and comprehensive coverage viewers crave. Taking advantage of a massive 103-inch touchscreen monitor and a Hego AKI GS2 multi-touch graphics server, powered by the NVIDIA® Quadro® Digital Video Pipeline, DIRECTV brings real-time football action and stats directly to its viewers.

"Ensuring that fans never miss a play from inside the 20 yard line—the area of the football field also known as the 'red zone'—is our core mission," says James Crittenden, Coordinating Producer of DIRECTV's RED ZONE CHANNEL . "The pure essence of the RED ZONE CHANNEL is live: as much live football as we can show. Our goal is to drive the information as quickly as possible. You essentially don't miss a critical play when you're watching the RED ZONE CHANNEL."
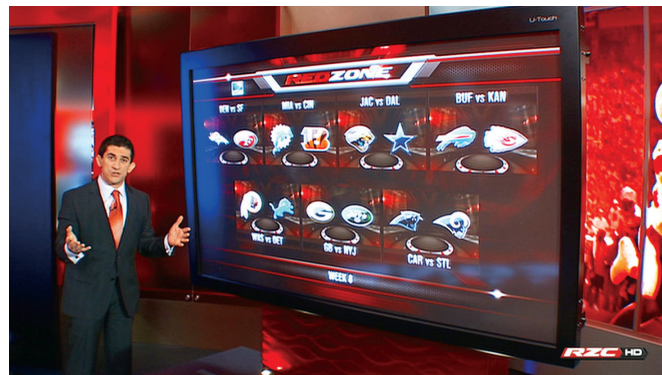

Image courtesy of Hego

Kicking off a new way to watch football

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. In redesigning its weekly RED ZONE CHANNELNFL program, DIRECTV decided to mimic the look and feel of its NFL Mix Channel, another feature available to NFL SUNDAY TICKET customers, that allows viewers at home to navigate among eight cells of live video of football games and expand each cell to a full-screen image.

On the RED ZONE CHANNEL, on-air host Andrew Siciliano and a team of researchers, statisticians, and highlight producers assume responsibility for navigating among the various live cells on the 103-inch touchscreen. During the six-hour show each week, NFL SUNDAY TICKET provides live look-ins and real-time highlights from every NFL game being played that day, with complete fantasy football updates including up-to-the-second scores, updates, and all the highlights.

To transform the Red Zone with this compelling approach, DIRECTV turned to the Hego Group, a technology and production company expert in live sports broadcasts. Hego,

with headquarters in Sweden, first gained prominence in the late 1960s as an official timing company for sports events such as the Olympics and Formula 1 car racing, and it was one of the first providers of timing clocks for live TV. Over the years, Hego has developed and enhanced 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 AKI GS2 Multi-Touch graphics server, which is powered by the NVIDIA Quadro graphics solution and serves as the control system for DIRECTV's new touch-enabled studio.

"Using this new system, Red Zone's host interacts directly and simultaneously with eight live HD video streams of NFL games, moving quickly and easily to wherever the action is taking place, in real time," says Peter Aragon, Director of Operations for DIRECTV Entertainment and Sports. "NVIDIA's graphics solutions and the Hego software controller 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."

The technology behind the scenes
"From a technical perspective, we had two simple and very high priorities for the Red Zone redesign: The system had to be easy to use on camera, and it had to have very low processing latency, to minimize delay in two-way interviews with remote talent," says Aragon. "It also had to be completely accurate, especially for fantasy football participants who track detailed statistics on multiple teams and players each week, and who could win or lose bonus points on the difference, for example, between a 49-yard and a 51-yard field goal."

Hego and NVIDIA worked together to create for DIRECTV the world's leading live-video interactive solution. The complex system integrates several modules to produce the final broadcast. The first is a real-time graphics engine that renders 3D scenes in OpenGL. During a Red Zone broadcast, the Quadro-powered Hego real-time 3D graphics engine integrates graphics, statistics, and eight live HD feeds pulled from the NFL. The second module makes the video and data available. It also controls how host Siciliano's touchscreen gestures trigger animations in the renderer for display on the huge screen.

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 and two outputs to each GPU card while keeping the GPU processing power fully available for rendering graphics. The DIRECTV solution uses two Quadro capture cards, which

allows Siciliano to move on-screen among up to eight live NFL games (four live feeds per card) – all with NVIDIA technology's high reliability and low latency.

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In addition to the visuals, the NVIDIA GPU also enables the touchscreen system to process audio effectively, both to emphasize interactive gestures and to keep audio feeds in synch with the visuals. As a result, the system avoids awkward delays in conversations and makes sure speech and lip movements are coordinated.

Empowering without overpowering
"It's very important that as an on-air host of a live broadcast, Andrew Siciliano maintains control without the technology getting in the way of his ability to keep the show flowing smoothly," says Crittenden. "The NVIDIA-powered interactive broadcast system achieves this fine balance: empowering Siciliano without overpowering him with too many technology options."

The success of the NVIDIA-powered Hego solution can be seen in the effortlessness with which Siciliano navigates the system and the confidence with which he tells viewers: "You just sit back and watch; we'll be your remote control."

DIRECTV uses NVIDIA to score points
The Quadro-based technology helps DIRECTV save time and money in production while also sharpening its competitive edge.

"We equate our old workflow and technical systems to a bicycle, and the new system to a Ferrari," says Crittenden. "We now have a technical infrastructure in place that is limited only by our creativity, and that's a great place to be competitively."

"The new technology allows us to brand our content with modern-looking graphics while drastically simplifying the workflow," says Aragon. "We are very happy with the results and look forward to rapidly expanding the technology into a variety of sports broadcasts. We expect to quickly move from the NFL football settings right to NASCAR settings, for example. The system can easily latch onto external data sources enabling us to make changes on the fly, all running through the Quadro-powered Hego system."

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