



TrackVision - FDL

Sensor-free "first down line" system

TrackVision FDL's graphic enhancements package turns any football broadcast into an exciting viewer experience. TrackVision FDL uses revolutionarily image processing tracking technology to superimpose virtual graphics over the playing field. The overlaid graphics remain tied to their exact position regardless of camera motion.

TrackVision FDL provides the broadcaster with a flexible and cost effective solution for both venue and MCR broadcasts. By operating on the live feed, TrackVision FDL can be stationed in the production truck or in the studio. It can be used similarly for post production. TrackVision FDL consists of one 3U rack mountable system which requires only one operator, making it particularly versatile, portable and cost effective.

Dynamic first down lines

Drawing the first down line is undoubtedly the most important enhancement feature for football games. With TrackVision FDL, the first down line is instantly drawn as it automatically detects which camera is used and places the graphics in the right perspective.

In addition to drawing the first line down, TrackVision FDL can draw the scrimmage line, and current down number and down distance. The down and distance can be drawn on the field as still graphics or as an animated sequence, with simple controls over the position of the graphics.

Game enhancement tools

TrackVision FDL can measure the speed of any moving object on the field, and show the speed on the screen. In addition, the yards passed and the distance between any two objects can be measured as well.

TrackVision FDL can also superimpose tied to the field team logos and game scores, any object on the field can be highlighted, and game statistics can be imported from external databases.

Advanced sponsorship options

TrackVision FDL offers the possibility to easily sponsor all enhancements. Using a simple and intuitive user interface, each enhancement can be attached with a graphic logo, thereby whenever one of the enhancements is shown on air the sponsor's logo is shown as well, generating a new revenue stream from every broadcast.



Courtesy of MTN , USA

State of the art technology

TrackVision FDL system is Orad's patent-pending football graphics enhancement tool. At the heart of the TrackVision FDL system rests Orad's revolutionary image analysis tracking technology. By monitoring the video feed, TrackVision FDL analyzes the live signal and extracts with precise accuracy the tracking information, negating the need for any physical installation on the camera. TrackVision FDL analyzes the direct program out feeds and does not require a dedicated "clean feed" for its operation.



Courtesy of CBC , Canada

Simple operation

Operating TrackVision FDL is extremely fast and simple. With TrackVision FDL, enhanced graphics can be displayed from the three main cameras as well as from the end zone cameras, providing a perfect angle for drawing the enhancements.

With its simple graphic user interface, the user can easily control all graphic parameters such as: line colors, intensity, height, width, logos, and textures.



Courtesy of CBC , Canada

TrackVision FDL supports both HD and SD productions with all major HD formats supported. Another key advantage of TrackVision is its embedded chroma keyer that allows the graphics to be perfectly displayed on the pitch even in difficult lighting conditions.

Working with TrackVision FDL means minimal setup and calibration time, so in the span of few minutes the system is ready to use. This is particularly important in live productions where preparation time may be limited.



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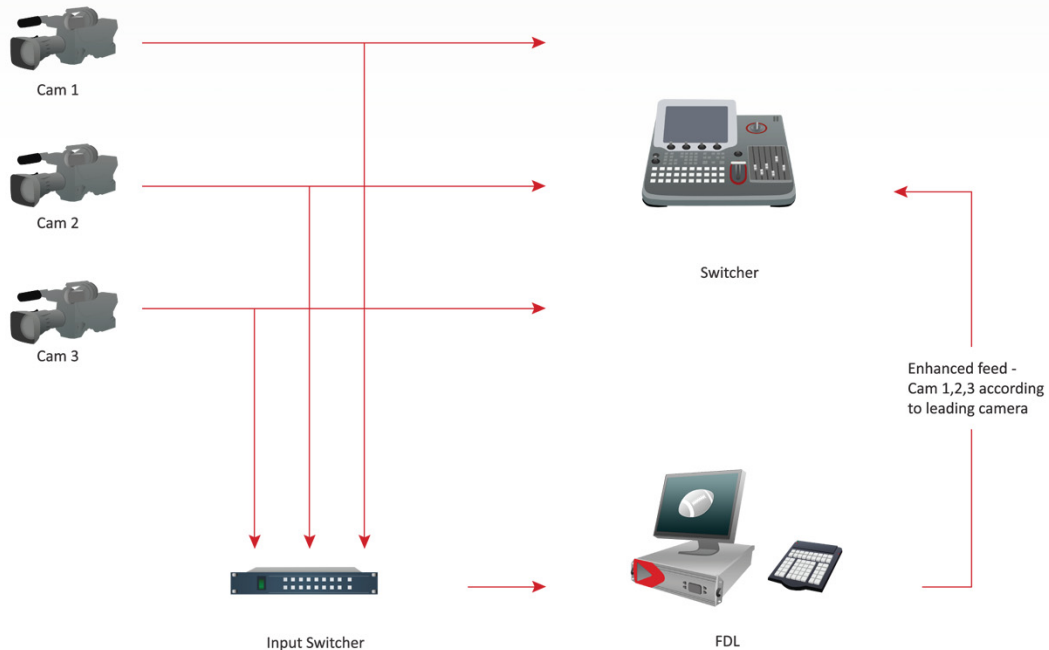
Features

- Superimposes virtual graphics during football games
- Draws first down lines and scrimmage lines
- Draws "down & distance feather"
- Superimposes tied to the field, team flags and scores
- Measures players speed, or ball speed
- Measures distances between any two objects on the field
- Sponsorship option for all enhancements
- Field crown graphics adjustment
- Supports multi cameras
- Ideal for both production trucks and studio productions
- No mechanical installation on the camera is needed
- Extremely fast operation
- HD and SD compatible
- Minimal setup time - less than 10 minutes
- Embedded chroma key designed for outdoor production
- One unit 3U rack mountable system
- Only one operator
- Minimal delay - 2 frames

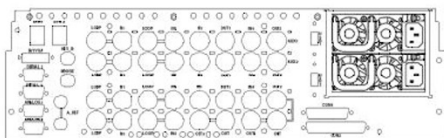


Graphic user interface

Diagram



Hardware Specifications



Turnkey System Specifications (constant):

- 2.4 GHz Intel Core Xeon Westmere
- Operating systems: Linux
- RAM: 6 GB
- Internal storage: 160 GB system disk optional RAID1 with additional HDD
- Ethernet: 2X 1000 BASE-T (RJ-45)
- Ports: 2 serial RS-232 (DB9); 4 USB 2.0 (2 front 2 rear)
- Control interfaces: PS2 keyboard, PS2 mouse, VGA/DVI

Physical Dimension:

- Height: 130 mm
- Width: 443 mm
- Depth: 631 mm
- Weight: 22 kg (approximately)

Redundant Power Supply:

- 100-240 V
- 47-63 Hz
- 2 X 460W (max)

Supported Video Standards:

- HD: SMPTE 260, SMPTE 295, SMPTE 274, SMPTE 296
- SD: SMPTE 259 ITV-R BT.601

Video Output:

- 2/4 SDI outputs
- Internal chroma and linear keyers
- 2 monitor outputs: 10 bit component YUV (SD/HD); SVHS, composite (SD only)

Video Reference:

- Bi/Tri level Sync with passive loop

ANC Data:

- Preservation of all VBI data through downstream keyer
- Preservation of Dolby E, 32 KHz and 44.1 KHz PCM embedded audio through downstream keyer