PIERO
Live

Real-time live graphics

ROSS

Real-time live graphics

At a glance

PIERO Live is a real-time graphics system built on an industry-leading sports graphics and analysis engine. Designed for studio applications, the system adds sophisticated data visualizations and augmented reality elements in real time.

Built for broadcast

PIERO Live was created by broadcasters for broadcasters, and it engages audiences by using groundbreaking graphics and tracking technology to tell a clearer, more compelling story. With the PIERO Touch solution, presenters can interact with the graphics directly using touch screens while live on the air.

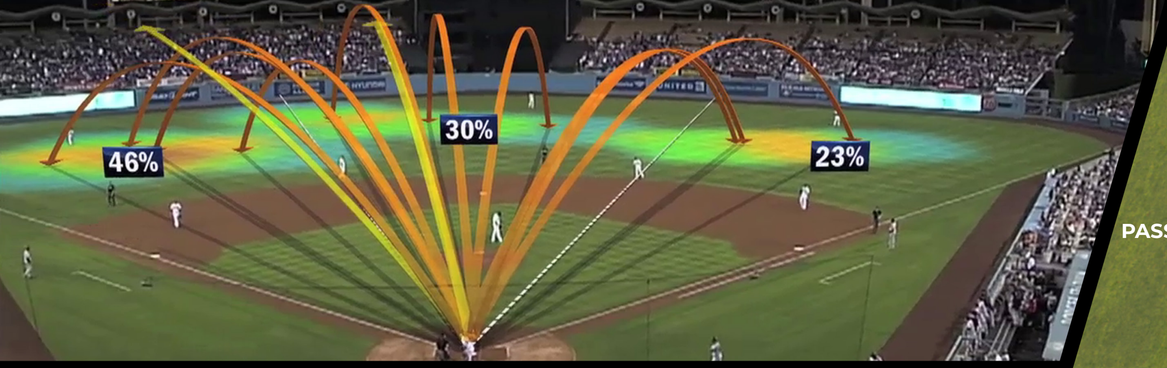
Cutting-edge technology

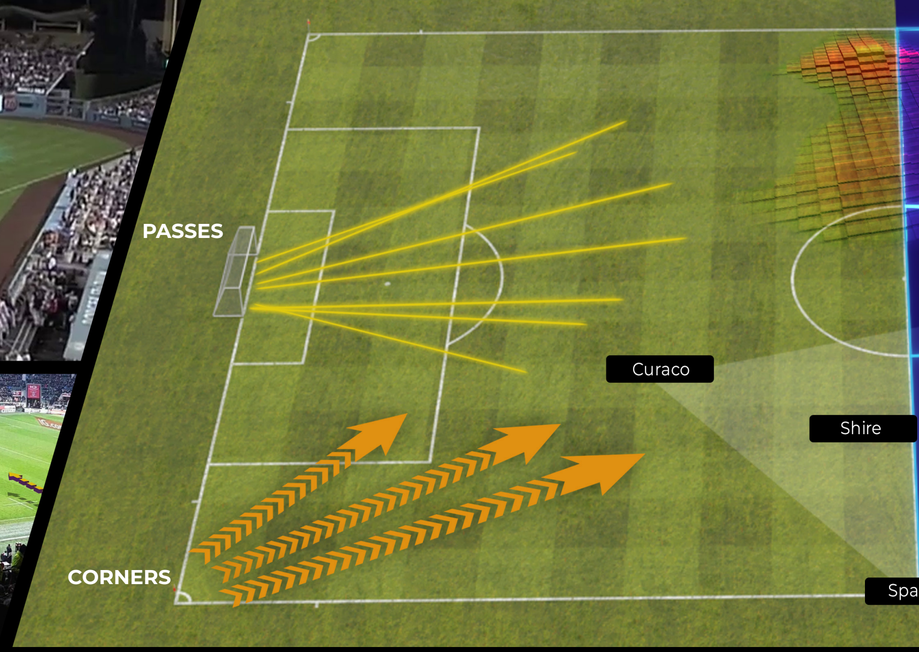
All graphics in PIERO Live are applied in real-time using optical tracking or third-party encoded camera solutions. Graphics can be customized freely, and workflow is optimized for speed. Additionally, the system offers full integration with leading third-party data providers.

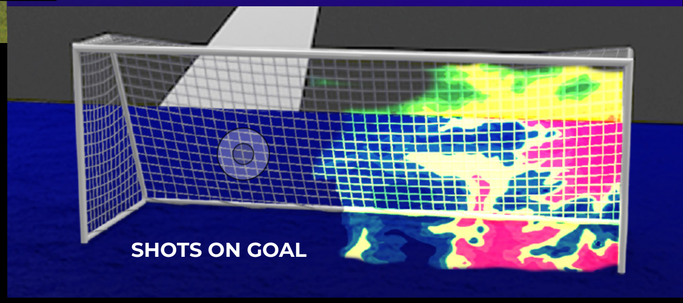
Soccer, Rugby and AFL productions

In Soccer, graphics for offside lines, laser offside walls, free kick circles, and distance to goals can be pushed to air in seconds. For Rugby, try conversions frequently rely on the distance to posts, and AFL productions can take advantage of graphics like mark and kick, live scores, and distance to posts.

PIERO Live







Bringing data to life

Advanced analysis
Using PIERO's powerful graphics engine, PIERO Live creates 2D and 3D real-time visualizations in the studio and on top of live footage. The graphics provide rich insights into the patterns of play by teams and individual players, which creates more opportunities for on-air game analysis.

Data visualization
PIERO Live is compatible with market-leading third-party data providers, including OPTA, TracAB, 2nd Spectrum, STATS and StatCast. Events and live data can be used in real-time, in the studio and at the venue. PIERO's remote API is also open to data science teams, and this allows for easy integration of any geo-based data or custom datasets.

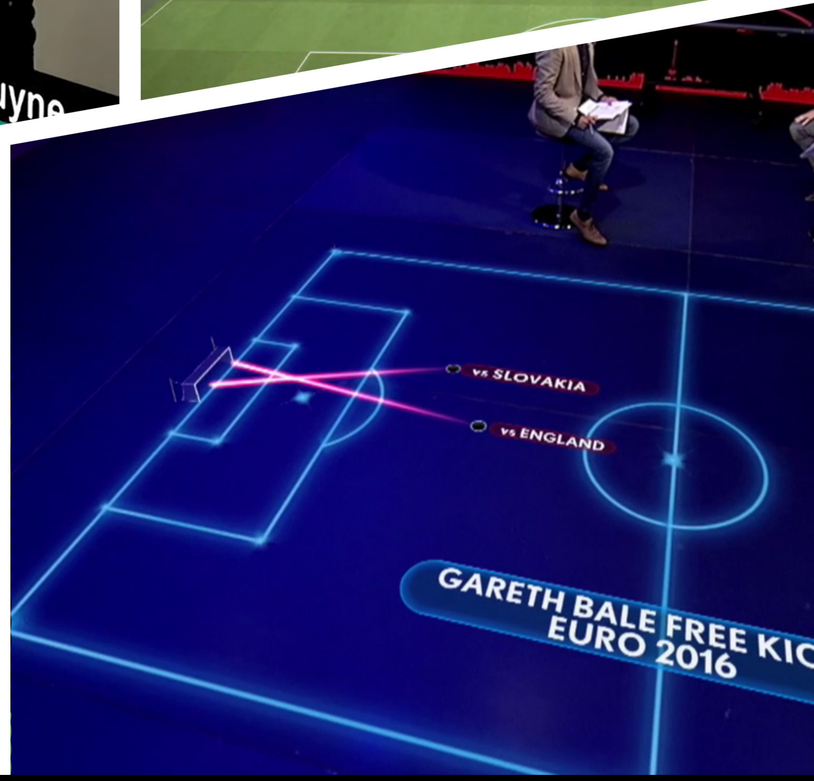
Event graphics
Geo-based event data can be ingested via PIERO's open remote API or using the PIERO Data module for fast data parsing and filtering. Some examples of data-based event graphics include pass maps between players, shots on goal, free kicks, heatmaps, historical shot maps, touch maps, attack profiles, line-outs and corner kicks.

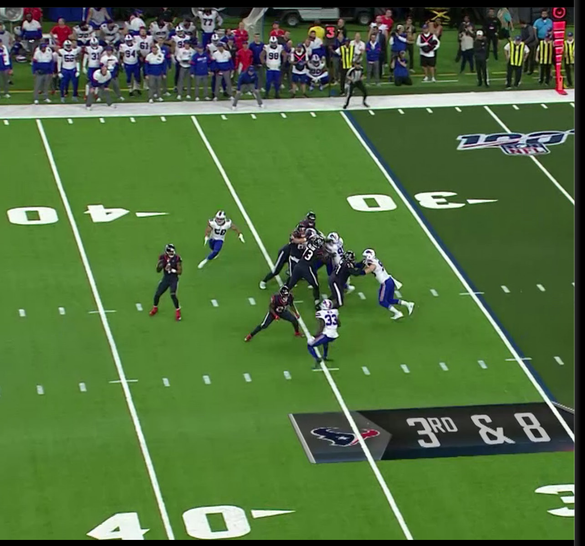
Augmented and Virtual Reality

PIERO Live comes with a Voyager plug-in to render graphics in the Unreal Engine.
This allows green-screen virtual studio and augmented reality effects on the studio floor or on the presenter table. PIERO and Voyager enable live interaction with AR/VS visuals through iPad and touchscreen. It is possible to use a PIERO touchscreen directly under the graphics or in the studio next to the AR elements.

Displaying data in AR is a great way to reduce cuts to pre-rendered full-screen clips. The non-scripted and interactive workflow is reactive to the presenter's analysis.

Third-party camera heads are supported via Ross Video's Lucid Studio control platform.





Down and distance

At a glance
PIERO Live offers a broadcast-quality Down & Distance (1st & 10) solution for American Football which supports field crowning, lens distortion and adjustable keying.

The solution works with both optical and mechanical camera tracking and offers an operator workflow that has been engineered for maximum flexibility and simplicity.

Graphics including feather, lines, play clock, 3rd down fill, field goal target line and red zone are easily user-customized and can be tied to existing scoreboard data feeds. Adding graphics for virtual advertising is as simple as importing logo files.

Features

- Internal keyer
- 3 inputs, 1 output
- Ghost preview before effect animations
- Remore input selection via RossTalk protocol
- Group animation
- Red zone and field goal line insertion
- Play clock insertion
- Pitch crown deformation support

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Specifications

PIERO Live operates on a single 2RU server. The system connects to a tracked camera feed over TCP/IP or uses its own optical tracking algorithm to track camera movements. It is UHD capable and burns the effects on the SDI output (no Key and Fill). Thirdparty data can be accessed from the internet. Data filtering and graphics are controlled by the PC software operator.

System

Hardware

1RU server with Nvidia RTX A4000 ADA running on Linux Ubuntu. AJA and Matrox cards supported for HD-SDI / 12G-SDI connectivity.

Software

Piero Live is based upon the Piero Broadcast engine with Live mode workflow only. It requires a licensed USB dongle or a software license.

Data modules

Data feed reader and visualization filter. PIERO Live is compatible with OPTA, TracAB, STATS, StatCast and DataLinq. Subscription to data feed not included.card. HD 1980x1024 resolution.

Optional camera tracking

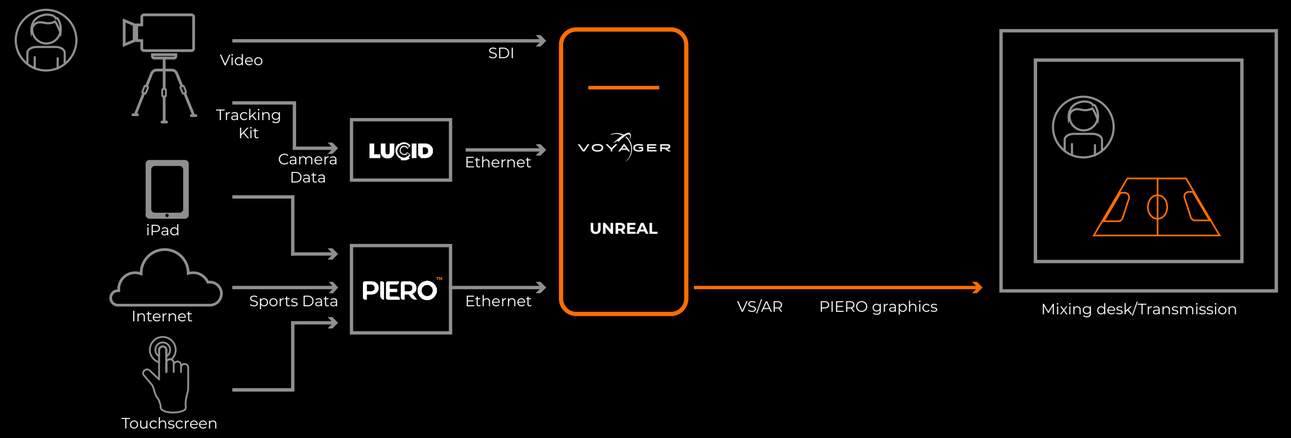
This solution offers a 4in 1out up to 12G SDI UHD. The operator controls and renders 1 SDI feed at a time. Camera tracking is based on PIERO internal texture tracking algorithm co-developed with BBC R&D. This solution offer easy deployment, minimum setup time and cost efficiency.

Encoded camera heads

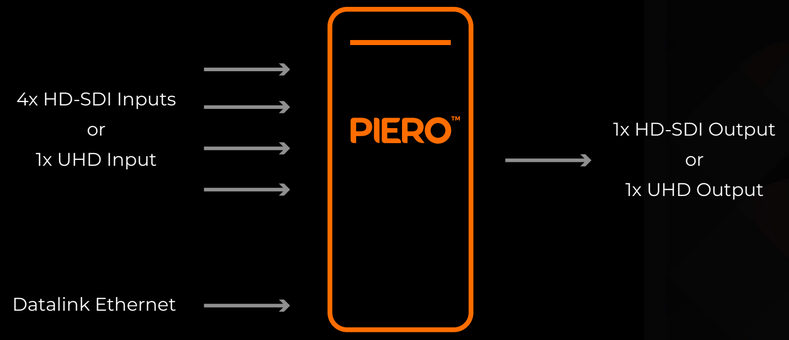
PIERO Live supports camera heads through Lucid Track. Using camera heads provides increased tracking reliability and faster camera selection during live coverage. Other manufacturers are compatible through Ross Video UX VCC. Using camera heads provide an increased tracking reliability and faster camera selection.

Typical configuration in the studio

This diagram shows a typical AR configuration using the Stype camera tracking kit.



Typical configuration in venue



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Ross Video has a complete range of technical services available to ensure that your PIERO installation is a success.

Operational Training can be provided at Ross Video, on-site, or on the web. Experienced Ross operators will teach your staff to get the most out of your new system and enhance your productions.

Commissioning is a service to help get your production system properly configured, connected, and installed. This service is performed by factory-trained Ross technical staff.

Technical Training can be provided at Ross Video, on-site, or over the web. Technical training will teach your engineering staff the technical details of the system you have purchased. System configuration, interfaces, databases, and routine maintenance procedures are some of the topics covered.

PIERO comes standard with a 1 year comprehensive warranty. Extended Warranties on hardware and software maintenance are available for an annual fee.

Technical advice is available on-line, by telephone, or email to Ross Video – Included for the life of your system.

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