PIERO Broadcast is a real-time 3D sports graphics and analysis system from Ross. Created for broadcasters, PIERO engages audiences by using cutting-edge graphics and tracking technology to tell a clearer, more compelling story.

**WORLD-LEADING SPORTS GRAPHICS ANALYSIS SYSTEM**

**ADVANCED ANALYSIS**
PIERO is built on a proprietary line and texture tracking algorithm that was co-developed with the BBC’s Research and Development department. The technology creates a seamless blend of graphics and video which maintains perspective and keeps graphics tied to the game as the camera moves.

**WIDE FEATURE SET**
PIERO’s wide feature set is compatible with over 20 different sports. You can mark players, track runs, add speed and distance, show movement, and much more. PIERO allows you to engage your audience by creatively adding graphics and providing new, interesting views of the action.

**NEW ANGLES & TRANSITIONS**
PIERO’s virtual stadium feature can create 3D replays that show plays from new, previously unseen angles. The Multicam effect can smoothly transition from one camera to another, and both modes can be used to show data feed visualizations through a touchscreen.

**FAST & EASY TO USE**
PIERO is fast – clip creation time varies between just seconds for simple clips up to 15 minutes for the most complex thanks to PIERO’s rapid workflow. You can source external video servers from a Mira+ chassis or work from pre-recorded video files.

**REAL-TIME, ACCURATE GRAPHICS**
PIERO’s advanced line and texture tracking technology follows the position of the camera even when it’s moving. This ensures that graphics are always shown in the proper perspective for the field of play.

**BETTER COMMENTARY**
PIERO’s wide range of effects helps producers, presenters, and commentators analyze the incidents on the sports field more effectively. The system is also able to ingest and analyze data from various sources to generate impressive visualizations.

**FITS YOUR WORKFLOW**
PIERO provides a wide range of modes to support all types of workflows. From in-depth discussion to quick annotation, PIERO makes analysis easy. For highlights, the system can create them during the game and then air them at half-time, after the game, or later.
SPEED
PIERO is easy to deploy and use. Fast clip creation and turnaround guarantee high-quality on-air results even in time-constrained productions.

QUALITY
PIERO’s simple workflow and outstanding Ross customer service make it a joy to work with. Its graphic quality and ease-of-use are regularly praised by customers around the world.

REACH
PIERO is the world leader in sports graphics analysis, with an extensive global customer base. PIERO’s graphics can regularly be seen during coverage of high-profile international sports events such as the FIFA World Cup and the Olympics.

REVENUE
PIERO offers the capacity for additional sponsorship opportunities for broadcasters. The system’s effects and graphics can be customized to achieve maximum brand visibility for sponsors.

TRUST
PIERO’s development has been and will continue to be a collaborative process. As an industry leader in live video production, we at Ross understand the importance of understanding, working with, and building strong relationships with our customers.

SCOPE
Ross is continuously investing in research and development of sports graphics to deliver groundbreaking analysis features. PIERO is constantly evolving with new features and effects.
PREMIUM MODULES
PIERO is a modular system with optional Data Visualization and Touchscreen features. The ‘Data Visualization’ module generates graphics from game data supplied by third-party providers. The ‘Touch & iPad’ module allows remote control via touch-screen and tablet through a simplified user interface.

DATA VISUALIZATION
PIERO works with Event and Tracking data. The data-driven graphics provide rich insights into the patterns of play by teams and players. PIERO’s data visualization module creates graphics such as shot spray charts, passes between players, heatmaps, automated tracks for all players, historical set plays, and more. The data is easily filtered by date, game, and player before it is visualized in perspective on the real camera shot. Since PIERO renders graphics in real-time, it is possible to overlay meaningful information on the opening shot of a soccer 2nd half or whilst a baseball player gets ready to bat.

The PIERO remote API is open to all customers, it allows clients’ internal data science teams to use PIERO as a renderer to visualize their key performance indexes.
TOUCHSCREEN

PIERO's touchscreen interface provides a simple and interactive way to add graphics to a video clip. The intuitive and fully customizable user interface adapts to any screen size, location, and production style. Presenters can move a fielder to a different position, highlight a space, reveal distances, cue pre-made clips, and use them to speed up workflows using video analysts based in different locations.

The system is portable and easily extended thanks to its simple TCP/IP connection. Multiple devices can connect simultaneously, making it a great choice for remote production.

PIERO has been designed to allow producers and analysts to make changes up until the last minute and still make it to air!

Compatible with iPads and a variety of other touchscreen devices.
With over ten years of experience in sports graphics, PIERO has crafted an unrivalled palette of effects to help you analyze the action. PIERO works closely with clients to develop new styles and customize existing effects. Effects can be used in both real and virtual settings and can blend seamlessly between the two.

- OFFSIDE LINE
- 3D OVERHEAD
- ARROWS
- TIME LAPSE
- VIRTUAL STADIUM
- SCORES & BADGES
- PLAYER GLOW
- LASER WALL
- VIRTUAL PLAYER RUN
- TACTICAL BOARD
- GOAL ARC OVERHEAD
- FREE KICK CIRCLE
- 3D VIRTUAL REPLAY
- REMOVEABLE PLAYERS
- PLAYER LINE-UP
- MAGNIFIER
- MARKERS
- PLAYER DRAG
- TIMER
- TRacked FORMATION
- SPotLIGHT
- VIEWPOINT
- CAPTION TRACKER
- VIRTUAL PRESENTER

TRACKED SPEED
SPORTS
PIERO's system supports 20 of the world’s major sports, and the list continues to grow. With PIERO, you can bundle as many sports modules as you need without requiring additional software.

- AMERICAN FOOTBALL
- AUSSIE RULES FOOTBALL
- BADMINTON
- BASEBALL
- BASKETBALL
- CRICKET
- FIELD HOCKEY
- GAELIC FOOTBALL & HURLING
- HANDBALL
- HORSE RACING
- ICE HOCKEY
- KABADDI
- LACROSSE
- NETBALL
- RACING FORMULA 1 MOTO GP
- RUGBY UNION & LEAGUE
- SOCCER
- TENNIS
- TABLE TENNIS
- VOLLEYBALL BEACH & INDOOR
PIERO operates on a single PC running Linux, and the software is licensed annually and verified by USB dongle. PIERO provides the machine, software and dongle. The touch interface can run on any Windows platform or iPad (not supplied).

PIERO SOFTWARE

OPTIONAL MODULES
Data module and touchscreen module.

SPECIFICATIONS

SYSTEM
HARDWARE
2RU server with Nvidia Quadro and AJA card running on Linux CentOS. 5+ years product lifecycle.

PIERO SOFTWARE

OPTIONAL MODULES
Data module and touchscreen module.

FILE MODE
HD SDI to recording device (video server or other)
SDI remote control
iPad
File output:
HDMI, JPEG2HD, XDCAM, MPEG
Touchscreen
Movie Files

HD SDI to recording device (video server or other)
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.