PIERO RELEASE NOTES

Welcome to the PIERO 21.2 Release Notes. Please read this document to find important information on areas of PIERO that may not be covered in the User Guide.

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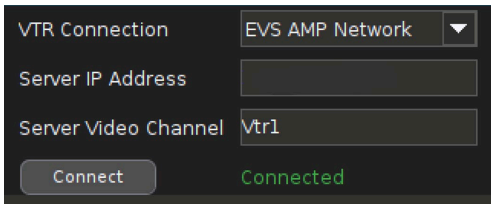
VERSION HISTORY

VERSION 21.2 – October 2026

WHAT'S NEW

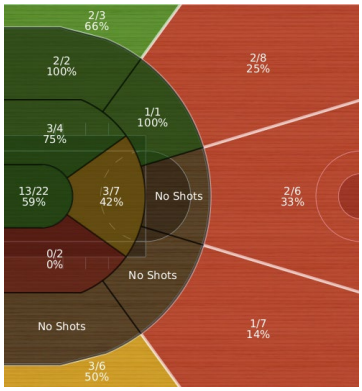
AMP IMPLEMENTATION FOR EVS

- PIERO can now connect to EVS video servers using the dedicated EVS AMP protocol over Ethernet. Once the EVS server and PIERO connections are configured, users can browse available clips, cue clips on the EVS server, and add them to the PIERO timeline.



BASKETBALL DATA MODULE

- Data Shot Zones have been added to the Basketball Data Module, allowing the visualization of player/team shot data from specific court zones.
- The Basketball Data Module now supports WNBA data.
- Support for the SMT NBA data feed has been implemented, replacing the previous NGSS feed.



VOYAGER STADIUM EFFECT

- The Voyager Stadium Effect allows a custom stadium to be visualized and controlled using the Voyager/Unreal PIERO plugin and its SDI/NDI output into PIERO.

IMPROVEMENTS

- **CALIBRATION**

  One-click realignment improvements have been implemented to work while using textures or stabilization.

- **LICENSING**

  Clearer messaging has been added as part of the maintenance license expiration notification.

- **NHL DATA MODULE**

  Support for NHL DISH data has been implemented, providing end position coordinates for shots taken in-game.

- **OPERATING SYSTEM**

  - PIERO Ubuntu systems are now compatible with Canonical's Ubuntu Pro security updates service, providing access to the latest security updates.
  - Ubuntu security updates no longer auto-download and update without user approval.

- **PIERO RESOURCES**

  A new desktop shortcut has been introduced as part of the PIERO installation process, providing quick access to a range of PIERO support resources, including PIERO University, PIERO Communities, and Ross Video Support.

- **PITCH ZONE EFFECT**

  The Pitch Zone Effect now supports two lines of text.

- **PROJECT LOADING**

  Performance improvements have been made to the project loading process, providing additional safeguards against frame drops.

- **VIDEO EFFECT**

  The ability to “snap” the Video Effect to chosen positions has been introduced, allowing users to quickly place the video at common ground/floor positions on the field of play.

- **WNBA BASKETBALL**

  A WNBA overlay image has been implemented, enabling users to create custom Virtual Stadium court designs.

BUGS ADDRESSED

- **CALIBRATION**
  - Fixed a bug where loading a newly saved KLT Cable Cam calibration caused PIERO to crash.
  - Fixed a bug in the KLT Cable Cam calibration that caused PIERO to become unresponsive.
- **PITCH ZONE EFFECT**

  A fix to the right-click functionality when positioning zone text has been implemented.

VERSION HISTORY

VERSION 21.1 – August 2026

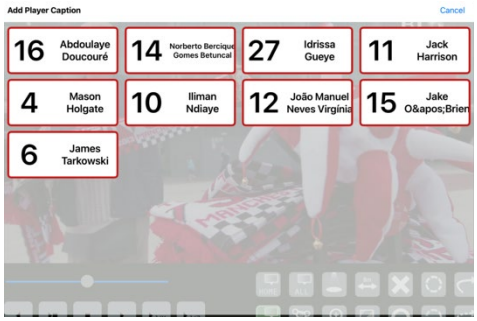
WHAT'S NEW

ARROW (STRAIGHT) EFFECT

- Multiple Straight Arrows can now be added and adjusted independently, using the same drag interaction as the Freehand Arrow Effect.
- **Note:** Straight Arrow presets created in previous versions are not compatible with PIERO 21.1 and will need to be recreated.
- A new "No Text Arrow" preset has been added to the Distance Effect, allowing users to create a single Straight Arrow using the previous two-handle interaction.

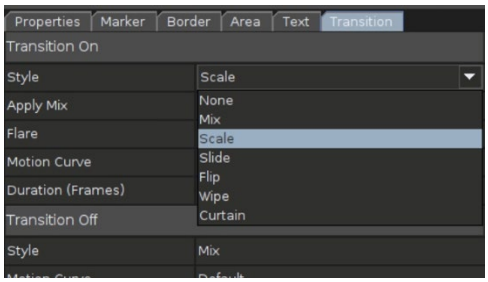
CAPTION TRACK PLAYER SELECTION

- In the PIERO Touch iPad app, new player selection functionality has been added for the Caption Track. Users can now select a player from a single Caption Track control before placing the Effect, reducing the number of individual player buttons required.



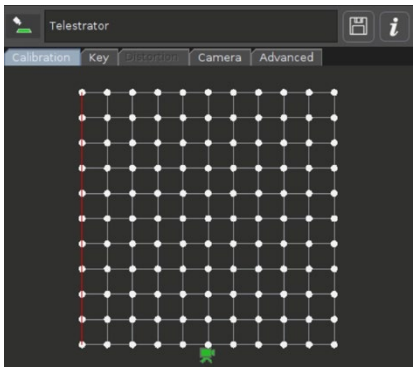
EXPANDED EFFECT TRANSITIONS

- Effect transitions introduced in PIERO 21.0 have been extended to all Effects, providing a greater range of options for transitioning graphics.



GENERIC TELESTRATOR

- Camera posing is now available when using the Generic Telestrator.



IMPROVEMENTS

- **CALIBRATION**
  - When using line-based calibration, lines that have already been used are now visually identified on the field, court, or rink model, making it easier to see calibration progress.
  - The color of calibration lines can now be selected in PIERO Settings, allowing operators to choose a color that provides better visibility for their production.
- **ICE HOCKEY**

  Performance improvements to optical tracking and calibration have been implemented for Ice Hockey.
- **LAYERED SEQUENCES**
  - Additional components from the Dynamic Formation, Player to Player, and Border Renderer Effects can now be customized through the Asset Manager, providing greater customization options.
  - The Line Effect within the Player to Player Effect has now been enabled to use layered sequences.
- **LICENSING**

  License information in the PIERO Launcher has been updated to provide clearer status information regarding license expiry and when an internet connection is required to keep a software license active.
- **MAINCONCEPT**

  Underlying MainConcept improvements and security updates have been included.

- **VERTICAL GRID**

  The Vertical Grid Effect now supports additional positioning and orientation options. Laser Grids can be placed and moved on the vertical plane, and the grid can be oriented across or along the playing surface.

- **ZOOM EFFECT**

  Zoom percentages can now be entered manually when keyframing the Zoom Effect, allowing users to set precise values for one or more keyframes without relying solely on mouse-wheel adjustment.

BUGS ADDRESSED

- **CAPTION EFFECT**
  - Text now displays correctly when the Caption Effect background is set to None.
  - Speed and distance values now update correctly when a Caption Effect is linked to a Track Spline.
- **COUNTER EFFECT**

  Resolved an issue in PIERO Touch where Counter animations could intermittently fail to update.

- **DYNAMIC FORMATION / PLAYER TO PLAYER**

  Transition behavior has been improved for Dynamic Formation and Player to Player Effects in Video I/O, including more consistent timing, marker transitions, and flare behavior.

- **PRESETS**

  Preset warning icons now display correctly when multiple presets have the same name.

- **TRACKING**

  Fixed an issue affecting additional frame delay when using Tracking and AI Player Tracking in File I/O.

- **VIRTUAL STADIUM (TENNIS)**

  Fixed an exception that could occur when using the Tennis Virtual Stadium.

VERSION 21.0 – June 2026

WHAT'S NEW

AI ZERO CLICK CALIBRATION

- Zero Click Calibration for soccer significantly decreases calibration time and has been extended to support left and right cameras. It can also be installed directly from the Asset Manager. (M9 or equivalent hardware required).

AI PLAYER TRACKING

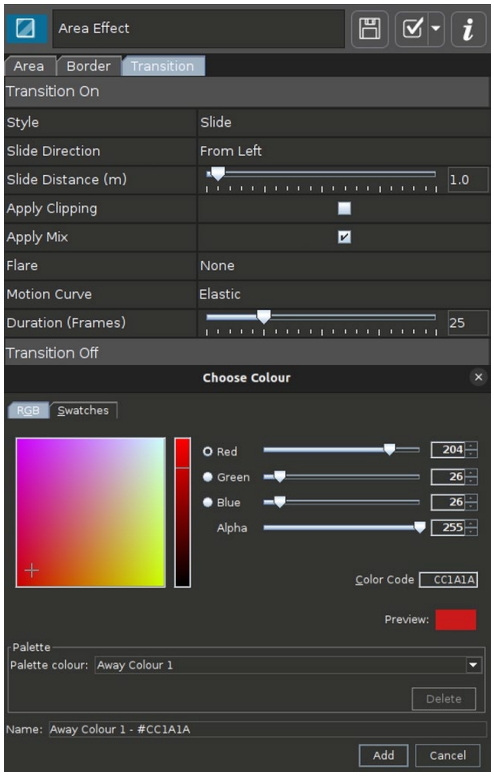
- In Soccer, players can now be tracked with a single click, using AI tracking, instead of manually placing individual keyframes. (M9 or equivalent hardware required).

EFFECT TRANSITIONS

- New Effect transitions have been introduced for a number of Effects, increasing the variety of options when transitioning Effects on and off. Different types of transition flares can also be added per effect

COLOR PALETTES

- Color Palettes can now be edited on the fly within the main PIERO UI.
- New color palettes can be edited or generated using the new Palette Editor within the Asset Manager, which supports multiple color standards.

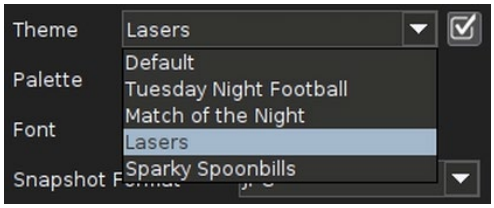


ICE HOCKEY DATA

- The new Ice Hockey Data Module enables the integration of NHL data via DataLinq, allowing for quick creation of Ice Hockey Data Driven Graphics in PIERO and the PIERO Voyager plugin.

THEMES

- The new Themes engine allows the rapid selection of groups of PIERO presets which can then be applied to your project at the press of a button.



ARROW (STRAIGHT) EFFECT

- Multiple Straight Arrows can now be added and adjusted independently using the same drag interaction as the Freehand Arrow Effect.
- Existing Straight Arrow presets are not compatible with this update and must be recreated. Other Effect presets are unaffected.
- A new “No Text Arrow” preset has been added to the Distance Effect, allowing users to create a single Straight Arrow using the previous two-handle interaction.

IMPROVEMENTS

- **ADVERT EFFECT**

  Presets can now be created for the Advert Effect within the Asset Manager.

- **AMP CONNECTION STATUS**

  AMP connection status can now be viewed in the PIERO Settings UI.

- **CIRCLE EFFECT**

  The Circle Effect can now be linked to tracks.

- **ICE HOCKEY VIRTUAL STADIUM**
  - The crowd can now be toggled on and off in the Ice Hockey Virtual Stadium.
  - Other aesthetic improvements to the Ice Hockey Virtual Stadium have been made.

- **MAINCONCEPT**

  MainConcept has been updated to version 16.0.1.

- **NDI 6 UPGRADE**

  PIERO's NDI I/O implementation has been updated to NDI 6.3.

- **OUTPUT OVERLAY FOR OFF AIR MODE**

  Text stating 'editor mode' when off-air, can now be overlayed in the video window and output.

- **RIO INTEGRATION**

  Ross RIO video replay server integration has been introduced, including compatibility with the new RIO control panel.

- **ROSSTALK**
  - Multiple RossTalk systems can now be controlled simultaneously.
  - TEMPLATEDATA XPression command added.
  - GPI commands added to control PIERO.

- **ST 2110**
  - For timecode input, the scan mode used for ANC streams can now be specified.
  - HDR full range video signals are now supported.

- **SUB FOLDERS FOR PRESETS**

  Effect presets can now be organized into folders.

BUGS ADDRESSED

- **ASSET MANAGER**
  - Fixed exceptions affecting adverts and palettes.
  - Issues affecting sport directory functionality have been fixed.
  - Exporting and importing assets now functions correctly across all sports.
  - Fixed a bug where creating new strips did not function correctly.
- **KEYING**

  Fixed an issue where keying could fail with specific Effect renderers when the Effect was not active on the timeline.
- **SPEED EFFECT**

  Fixed a File I/O issue causing incorrect 75% speed correction in the Speed Effect.
- **TEXT**

  Fixed an exception where 2D Text properties were not correctly saved when saving a Track Effect as a preset.

VERSION 20.6 – February 2026

WHAT'S NEW

DATA MODULE INSTANT TEAM CREATION

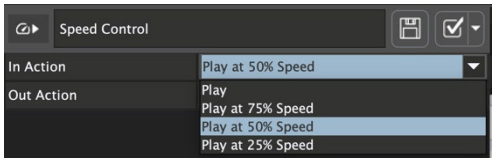
- It is now possible to instantly export teams and player names directly from the Opta soccer and NBA basketball data modules, to quickly create Team Line-Up Effects for any supported league (including World Cup Soccer).

DYNAMIC FORMATION EFFECT CUSTOM IMAGES

- Custom image fills are now available for all area effects including the Dynamic Formation and Arc Effects.

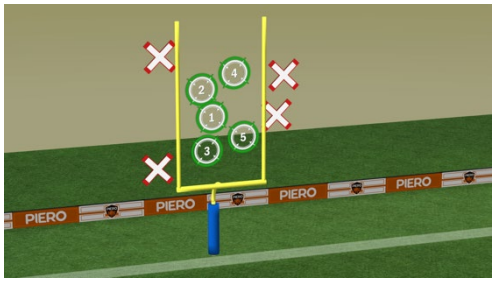
SPEED CONTROL EFFECT

- A new Speed Control Effect has been added for use in both File mode and with Video IO to allow more granular playback speed control.



VERTICAL GRID EFFECT IN MORE SPORTS

- The Vertical Grid Effect has been extended to work with a wider array of sports.



IMPROVEMENTS

- **AUSSIE RULES FOOTBALL**

  Reintroduction of Mark & Kick and Goal Zone Effects for Aussie Rules Football.

- **CALIBRATION**
  - The ability to record backwards has been introduced.
  - WNBA has been added to the available Basketball calibration models.
  - Keybinds have been added for Basketball calibration.
- **DATALINQ INTEGRATION**
  - DataLinq tree feed property selection has been added to PIERO Effects.
  - The Basketball Data Module now allows UI selection of DataLinq feeds.
- **SDI AUDIO PASSTHROUGH**

  SDI audio passthrough has been updated to support all 16 audio channels.

- **TEAM LINE-UP GRAPHIC**

  A Team Line-Up graphic has been added to the Soccer and Basketball Data Modules, allowing lineup data to be imported directly via PIERO Data Modules.

BUGS ADDRESSED

- **ASSET MANAGER**

  Arabic text is now correctly supported in the Asset Manager.

- **AUDIO**

  Fixed an audio export issue when exporting H.264 files.

- **BASEBALL**

  Fixed a bug causing misaligned Effect icons in baseball.

- **CALIBRATION**

  Fixed an issue where saved selections were not retained in Key tab.

- **CIRCLE EFFECT**

  Fixed a bug causing the Circle Effect to incorrectly clip when using the ‘Image’ area style.

- **DATA MODULES**

  It is now possible to send complete data projects for use in PIERO Live.

- **DISTANCE ARROW EFFECT**

  Fixed property-saving issues related to text size.

- **DYNAMIC FORMATION**

  Fixed an exception when adding Live XY Dynamic Formation in Live mode.

- **LASER EYE EFFECT**

  Missing properties fixed and animation transition improved.

- **LAUNCHER**

  Fixed an issue causing the new version notification to not function consistently.

- **MAGNIFIER EFFECT**

  Fixed an exception causing incorrect keyframe positioning in File I/O.

- **NDI**

  NDI libraries updated on Windows 11 to improve stability.

- **OFFSIDE LINE**

  Fixed issues affecting foreground keying when using the Offside Line.

- **PRESETS**

  Fixed a bug affecting Effect In/Out transition presets.

- **RUGBY DATA MODULE**

  Resolved various bugs affecting stability and functionality within the Rugby Data Module.

- **TEXT EFFECT**
  - Fixed a crash occurring in the Text Effect.
  - Fixed a bug affecting ‘Lock Background Width’ option.

- **TOUCH APP**
  - Fixed a bug causing movie files to continue playing in background.
  - Exceptions causing the Touch application to crash fixed.
  - Inconsistent Undo behavior fixed.
  - A bug causing panels to lock in standby mode fixed.

- **UI**

  Fixed issue with long filenames causing folder icon to disappear.

- **US FOOTBALL**
  - Fixed issues affecting the image property for End Zone, Field Goal and Red Zone Effects.
  - Crowned Area Fill for Down & Distance is now fixed.
- **VIDEO EFFECT**

  Fixed a bug where keying failed after changing Environmental Luminance.
- **VIRTUAL BALL:**
  - A bug causing PIERO to hang while using the Virtual Ball has been fixed.
  - Fixed Ball Track preset compatibility errors with pre-19.6 versions.
  - Fixed right-click functionality issues.
- **VIRTUAL CAMERA**

  Fixed an issue where Virtual Camera views were misplaced in Baseball.
- **VIRTUAL PRESENTER**

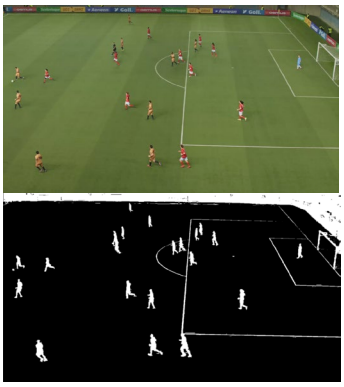
  Exceptions causing PIERO to crash when using the Virtual Presenter in 10bit mode have been fixed.
- **WORKFLOW**
  - Fixed memory consumption issues occurring during some copy/paste operations.
  - Fixed exceptions causing PIERO to hang when copying or pasting some Effects.
- **ZOOM EFFECT**

  Fixed a bug causing errors with mouse middle button functionality.

VERSION 20.5 – Nov 2025

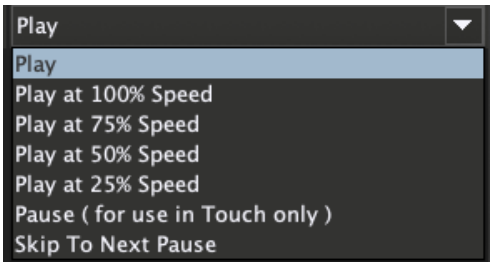
WHAT'S NEW

FILL AND KEY VIDEO OUTPUT



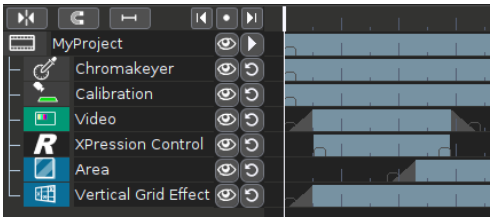
- PIERO can now produce native Fill and Key outputs for live workflows, allowing graphics and alpha to be delivered to downstream switchers and devices.
- Supported on both AJA and Matrox hardware.
- Fill and Key mode currently supports 2D Effects only.

FILE IO PAUSE



- The Pause action in File IO has been updated to improve slow-motion playback and prevent frame jumps, ensuring smoother in/out transitions.
- Entering a duration of '0' allows a slow-motion without a pause.

XPRESSION CONTROL IN ANALYSIS



- The XPression Control Effect is now available in Analysis, allowing XPression RossTalk commands to be triggered directly from Analysis animations.

IMPROVEMENTS

- **BASKETBALL COURT MODELS**
  - A new 3 vs 3 court model has been added for Basketball.
  - A new US High School court model has been added for Basketball.
- **ASSET MANAGER**
  - The Asset Manager file browser now filters by supported filetypes, simplifying the selection of valid assets when importing.
  - The Advert Effect has been added to the 'Add' tab in the Asset Manager, with a template builder to enable custom advert positioning.

BUGS ADDRESSED

- **DOWN AND DISTANCE:** Fixed a bug causing the Down & Distance property sheet tabs to appear blank when first loading a saved project in Live mode.
- **LUCID TRACK CAMERA FEED:** Fixed a bug causing glitches in the Lucid Track camera feed. A new **Drift Tolerance** property has been added to improve stability across different network conditions. *Note, this tool is used for aligning Lucid Track.
- **OVERHEAD CAMERA:** Fixed an issue where keying remained active in Overhead Camera mode. Overlays, such as logos, now display correctly in non-keyed areas.
- **SHAPE ALIGNMENT TOOL:** Fixed multiple issues with the former Multi Shape effect in Live, including distortion handling, preset saving, invalid grid values, color blending, and stability. The Effect has been improved and renamed the **Shape Alignment Tool**.

VERSION 20.4 – Oct 2025

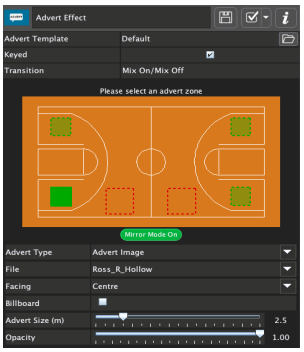
WHAT'S NEW

OVERHEAD CAMERA

- A new Overhead Camera tool has been added to the center-bar array of tools, allowing users to place graphics from a top-down perspective, simplifying the process of placing Effects outside what is in shot.

  Available in both PIERO Live and Broadcast.

NEW EFFECT: ADVERT EFFECT



- PIERO now has a dedicated Effect for advertising content, allowing "advert" assets to be placed on court in symmetrical patterns.
- Currently available only for basketball in Broadcast and Live. Support for other sports is coming soon.

TEXT SHADOWING AND TEXT OUTLINES

- Additional customization for the Text Effect, allowing users to add shadows and outlines to text, has been added.
- These options are also available in other Effects using text, such as the Caption and Down and Distance Effects.

VIRTUAL STADIUM OVERLAY CONTROLS

- The ability to customize the Virtual Stadium playing surface with an overlay, has been added to PIERO.

IMPROVEMENTS

- **PIERO CONTROL VIA ROSSTALK**
  Control of PIERO via RossTalk simplifies Voyager + PIERO workflows and enhances usability for a range of other workflows.
- **DATALINQ**
  DataLinq icons now illuminate yellow to warn of network issues and disconnections.
- **DOWN & DISTANCE**
  The Down & Distance timer image now defaults to "Generic Timer" for both home and away.
- **EFFECT HANDLES**
  A new slider has been added for Tracking Effects, allowing users to customize the handle line width.
- **IPAD APP IMPROVEMENTS**
  A new version of the Piero iPad app will be available soon, via the App Store, including several new features and improvements:
  - VTR controls enable navigation between markers points and jump to video clip start.
  - User Profiles have been introduced, allowing button configurations to be saved for different users.
  - An accessible high-contrast icon theme has been added.
  - A new setting to turn off high frame rate video, helps reduce battery and network usage.
- **GLOWING FREE THROW LINE**
  Following the introduction of the glowing three-point line in basketball, the glowing line style has now also been added for the free throw line.
- **PIERO PLUGIN**
  An ability to lock the PIERO Remote from sending commands has been added, preventing PIERO from sending unwanted commands to Voyager when PIERO is not in use (in Voyager + PIERO integrations).
- **PROJECT LOADING**
  The default behavior of project loading in file mode has been improved. Instead of loading at the previous time code, projects will now load at the start of a clip, enabling faster Touch workflows in live scenarios.
- **VIRTUAL STADIUM (BASKETBALL)**
  The crowd can now be toggled on and off in the Basketball Virtual Stadium.
- **ZOOM EFFECT**
  When keyframing the Zoom Effect, transitions between keyframes have been smoothed.

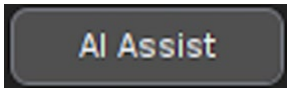
BUGS ADDRESSED

- **ASSET MANAGER:** A bug causing intermittent exceptions when importing assets has been fixed.
- **GLOW SPLINE:** Inconsistencies when applying the glow line style, for certain Effects, have been fixed.
- **IPAD APP:**
  - The Settings panel no longer disappears when users press outside the panel. Users should now press “Done” to save and close the panel.
  - Fixed a bug causing button configurations to be lost when app was used with no wi-fi connection.
- **RANGE EFFECT:** The property sheet now correctly displays all parameters.
- **VIRTUAL STADIUM:** Virtual stadium lines being too thin have now been addressed with the addition of a “Line Width” property.

VERSION 20.3 – Aug 2025

WHAT'S NEW

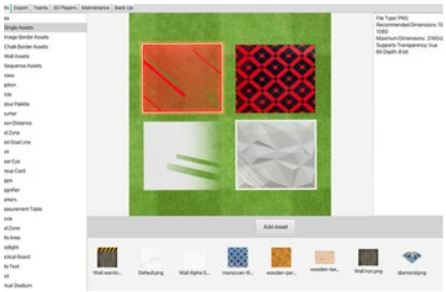
AI-ASSISTED CAMERA POSITIONING



AI Assistant Button PIERO

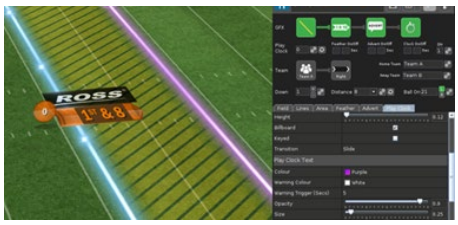
- For soccer-football, PIERO can now utilize AI technology to calibrate the field of play (using only the central camera position).
- AI camera positioning is an optional feature, installed separately from the PIERO application and can be accessed by contacting PIERO Support

NEW ASSET MANAGER


The New Asset Manager UI

- The new Asset Manager features locally animated previews.
- The Importer validates asset files to meet PIERO's requirements.
- Even more effect components are customizable.

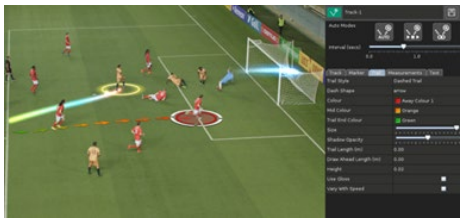
DOWN AND DISTANCE IMPROVEMENTS



Down and Distance Improvements

- 3rd Down Line color for CFL.
- Line Thickness customization.
- Advert Playlist/Rotation and Feather Advert placement have been introduced.
- Text Drop Shadow color customization.

TRAIL FADE


Multi Color Track Fade

- Trails such as those featured on the Track Effect and Virtual Ball, can now utilize three color sections and also be shortened to a customized length.

IMPROVEMENTS

- **1080P 29.97**
  PIERO now supports 1080p 29.97 video files.
- **BASKETBALL DATA MODULE**
  The Basketball Data Visualisation Module now supports NCAA data.
- **KEYFRAMES**
  Improvements have been made to tracked effects utilizing new style handles, with users now able to select a track handle even if it overlaps with the currently selected track handle.
- **LASER WALL IMPROVEMENTS**

  The Laser wall can now be flipped to be used up and down the field.
- **MOVIE EFFECT**
  The Animated Layered Asset effect style is now available for the Movie Effect. Speed, colors and fill area are customizable within PIERO.
- **NEW DEFAULT TEAM LINE-UP PLAYERS**
  Updated player portraits have been added to the example team for the Team Line-Up Effect.
- **PIERO VOYAGER/UNREAL PLUGIN**
  - Player number visuals for each player appearing in a Team Line-Up has been added in the Piero/Voyager plugin.
  - Support added for Unreal Standalone Game mode.
- **SPOTLIGHT EFFECT**
  The Spotlight Effect base is now independently customizable, with the option to add custom assets.
- **TIME OF DAY IN TIMER EFFECT**
  The Timer Effect can now display time of day timecode in both File IO and Video IO.
- **VERTICAL BALL EFFECT**
  For the Vertical Ball Effect, a Shadow Opacity property has been added to the Trail tab for the 'Glow Line' and 'Tube' styles.
- **VERTICAL GRID EFFECT**
  Now available in Rugby, Tennis, Badminton, Beach Volleyball, Volleyball and Pickleball.
- **VIRTUAL STADIUM EFFECT**

In the Basketball Virtual Stadium, a new 'Basket Draw Order' property has been added, allowing Shot Trails to be drawn over or beneath the basket.

BUGS ADDRESSED

- **2D FREEHAND LINE**

  A memory leak causing crashes has been fixed.

- **ANIMATE ON/OFF DELAY**

  PIERO Live will now account for the delay time from the effect animate on/off.

- **CALIBRATION KEY ON MULTIPLE VIDEO INPUTS**

  PIERO now shows the correct key when using multiple video inputs.

- **iPad Connection issue**

  Inconsistent behavior when the iPad connects to PIERO, has been fixed.

- **Laser Eye Effect**

  The "Return to Home" feature in the Laser Eye Effect has been reinstated.

- **Model Marker Clipping**

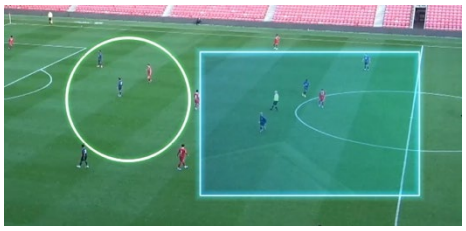
  An issue where the Model Marker clips with other effects in the stack is now fixed.

- **Trackless Caption Crash**

  A crash occurring while using the Caption Effect without track, has been fixed.

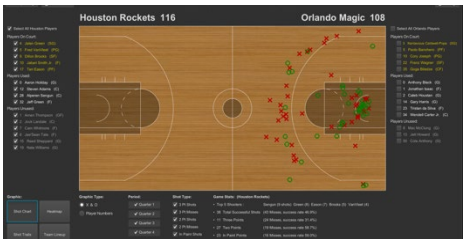
VERSION 20.2 – April 2025

WHAT'S NEW



Circle and Area Effect with 2D enabled

- **2D & Key Properties**
  - Relevant Effects can now be used in 2D mode via the '2D' property in the property sheet. Additional 2D touch effects have also been added.
  - The 'Keyed' property has now been expanded to a wider array of Effects to control keying. This property replaces any height based control of keying.



The NBA Data Visualisation Module

- **NBA Data Module**
  - A new basketball data module has been introduced, enabling integration for NBA data-driven graphics.
- **PIERO to XPression RossTalk Commands**
  - PIERO can now send RossTalk commands, to remotely control XPression, simplifying the control of XPression graphics within PIERO.

IMPROVEMENTS

- **SMPTE 2110 support for PIERO Analysis**

  IP SMPTE 2110 video inputs are now supported in PIERO Analysis as well as PIERO Live
- **Ice Hockey Virtual Stadium**

  Overhead left and right camera presets for the Ice Hockey Virtual Stadium in Touch, have been updated.
- **Figure Skating Data Integration**
  limited support for figure skating data has been implemented via DataLinq.
- **Trial Licenses**
  A new trial license option has been added to grant more flexibility in trials, testing and training.

BUGS ADDRESSED

- **Graphic Borders**

  Fixed an interaction bug between graphic borders and the pitch edge, when the graphic height is set to 1.1m or higher.

- **DataLinq**

  Input timecode is now used when the DataLinq timecode option is in use.

- **Moveable Players**

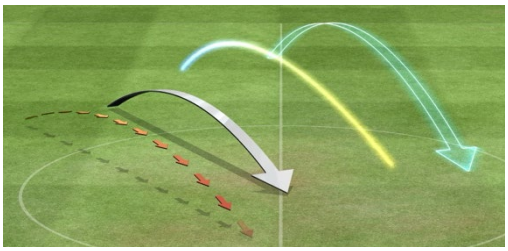
  Fixed a bug where Moveable players did not draw, when used with the default key.

- **Virtual Ball**

  A bug causing the 3D Virtual Ball to render black in some sports has been fixed.

VERSION 20.1 – February 2025

WHAT'S NEW



Curved Arrow Effect

Lacrosse Two Point Zone

Text Manager for Markers

- **AR Player Effect for all Sports**
  - The AR Effect has been added to all sports in both Analysis and Touch, enabling users to move player cutouts across the timeline.
- **Curved Arrow Effect for Analysis**
  - The previously Live-only Curved Arrow Effect has been introduced in Analysis.
- **Updated Lacrosse Graphics**
  - A new 2pt Arc Line has been created for the Lacrosse Pitch Zone Effect.
  - The Distance to Goal Effect has been added for Lacrosse.
- **Text Manager for Markers**
  - Text can now be added to markers.
- **Vectorscope Keyer**
  - The Vectorscope Keyer Effect has been added in Analysis for all sports, providing a more robust key in significant lighting changes.

IMPROVEMENTS

- **Down & Distance / DataLinq**

  Parsing for Down & Distance DataLinq fields have been improved, allowing for downs formatted as 1, 1st or first.
- **Editing Handles**

  Editing handles have been enabled to work with custom plane angles, improving use for Effects like the Vertical Grid.
- **Magnify Tool Keyboard Shortcuts**

  + and **–** (or **–** and **=** on reduced keyboards) can now be used to control the Magnifier Effect.
- **Sub-units for Measurement Table**

  The Measurement table now supports sub-units for greater precision and flexibility.

BUGS ADDRESSED

Arc Effect

PIERO no longer hangs when using the Arc Effect uplight border.

Arrows

Fixed an Arrow animation issue, causing intermittent stutters during transition on.

Asset Manager

Asset requirements for the Asset Manager updated for better clarity.

Basketball:

- Fixed a bug causing 3pt line area presets to not load correctly.
- Fixed a bug where the NBA model calibration's 3pt line did not load consistently.
- Ability to remove outer lane lines and use inner lane lines, in the NCAA court model, has been fixed.

Caption Track

General refinements and fixes made to the Caption Track effect.

Calibration

- Fixed a bug causing Calibration overlay to disappear when on air in PIERO Live.
- Exceptions in Texture Tracker Calibration, when deleting Area effects, fixed.

Keying

- Key tab bug causing dropped frames, when double line-finding, fixed.
- Updating the key in the calibration, from a key in the stack, no longer causes dropped frames when on air.

Launcher

When File I/O and NDI is selected in the (Ubuntu) PIERO Launcher (when video card is absent) PIERO now correctly starts.

Magnifier**:**

- Bug fixed when using Magnifier Tool to zoom with Apple Mac trackpad.
- Using the scroll wheel now only changes the size of an Effect, instead of size and magnification level.
- Using the scroll wheel no longer affects the selected Effect's properties.

- Fixed a bug where using multiple Magnifiers broke the background.
- PIERO no longer hangs when using older Touch Magnifier presets, through the Touch API.

Moveable Player

- Moveable Players no longer cause color artifacts when used with monochrome filters.
- When using the Moveable Player, the removed player now correctly mixes on/off during animate on/off transition.
- Moveable Players Effect interacts better with the pitch's outer lines.

Pause Effect

Adding a new preset in the Pause Effect no longer causes an exception.

Range Effect

Fixed a visual glitch caused by redrawn properties, when dragging the Range Effect through the screen.

Rugby League

Data module option removed in Launcher when choosing Rugby League.

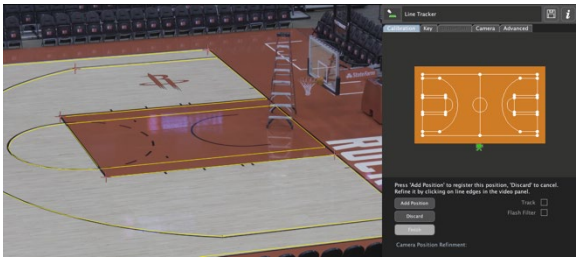
Text Effect

Text Effect positional property names have been updated for greater clarity.

VERSION 20.0 – November 2024

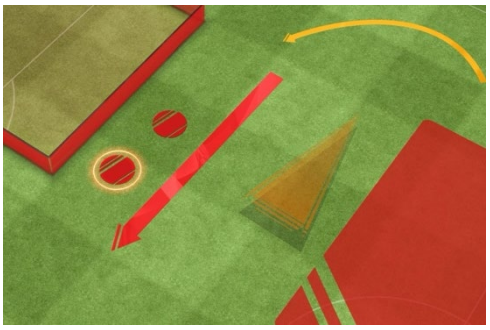
WHAT'S NEW

- **Live Basketball Optical Tracking**
  - PIERO is now optimized for live basketball optical tracking.
  - Optimization for the Shot Clock Effect and advert placement has been introduced.
  - A new Keyer has been introduced for Calibration.



Live Basketball Optical Tracking

- **ST-2110 Support for PIERO Live**
  - PIERO Live now supports ST-2110 video as an input. Compatible hardware required.
- **New Default Asset Themes**
  - Two sets of default graphical assets have been added for users to freely use: Flat Lines and Alpha Stripes
- **New Effect Handles**
  - New and improved Effects handles make it easier for users to manipulate effects and find buried effects.



Flat Lines Asset Theme

IMPROVEMENTS

- **Caption Effect (Touch)**

  Options for both tracked and non-tracked caption effects are available in Touch.
- **OPTA Data Visualization**
  - Added Support for Competition IDs in OPTA Plugin granting access to new leagues.
  - Added AFC World Cup Qualifiers to OPTA Plugin.
- **Line Tracker**

  Under-the-Hood improvements to optimize Line Tracking.
- **PIERO Voyager/Unreal Plugin**

Team Lineup player numbers can now be added in the PIERO Voyager plugin.

- **Presets**
  - Graphical indications on Effects presets will specify if presets are unable to load correctly.
  - Improved error reporting when invalid presets are loaded.
- **Virtual Grid Effect**

  It is now possible to 'select all' markers on the Vertical Grid Effect to edit simultaneously.

Select All in Virtual Grid Effect

- **MainConcept**

  Upgraded to 15.1.

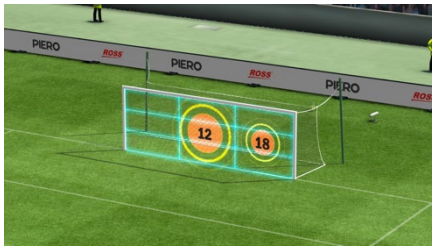
BUGS ADDRESSED

- American Football: bug fixed where FCF field model caused discrepancies with other field models.
- Batter Plate Calibration: fixed a bug where incorrect elements were displayed in the Advanced Tab.
- Incorrect Help/Info details updated.
- Key Tab: fixed a bug where selections weren't being correctly saved.
- KLT Cable Cam: exceptions when deleting the KLT Cable Cam calibration from the stack fixed.
- Texture Tracking: fixed tracking anomalies in the Texture Tracker.

VERSION 19.7 – October 2024

WHAT'S NEW

- **Vertical Grid Effect**
  - The Vertical Grid Effect allows vertical analysis both inside and outside the goal.
  - Supported by the PIERO/Voyager plugin.
  - Supports OPTA data for Soccer/Football.
  - Available currently for Soccer/Football and American Football.



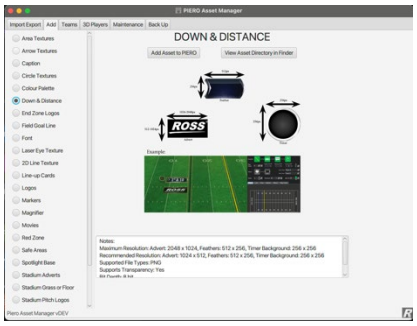
In Vertical Grid Effect

IMPROVEMENTS

- **Down & Distance Effect**
  - TGA Sequences can now be used to animate D&D Feathers, utilizing looping points.
  - DataLinq network handling improvements have been implemented.
  - Red Zone Effect improvements:
    - A new 'Auto Animate' function enables automatic on/off animating of the Red Zone, according to ball-on yardage in the Down & Distance Effect.
    - New Red Zone Perimeter Line functionality draws a line around the perimeter of the Red Zone, when enabled.
  - Auto text field selection has been added to the D&D text UI properties to speed up data entry.
  - Advert Logging has been added to log the duration adverts are animated on air.
  - Down and Distance Live Shortcut: F8 will now select the Down and Distance Effect in PIERO Live.

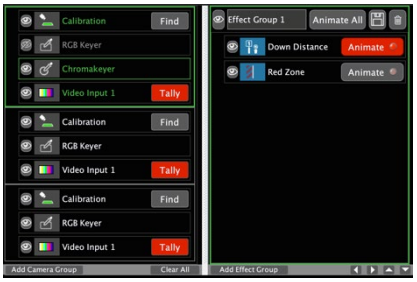
Animated Feather

- **Asset Manager**
  - Calibration Preset support: The Asset Manager can now backup calibration presets.
  - The 'Add' tab has been updated to make file requirements clearer.
  - Asset examples are illustrated, to better convey how an asset is used.



Asset Manager UI Improvments

- **PIERO Live**
  - An 'eye' icon has been added for all effects in the Live UI, to hide individual effects within groups while live.
  - Calibration rows can be moved to different camera groups.
  - Improved PIERO Live Keyboard Shortcuts: Improvements to calibration shortcuts and in/out transitions. See "Shortcuts" help page in the PIERO Settings tab for details.
  - Improved default positions added for Virtual Camera.



Live Interface Improvements

- **Dual Text Lines**

  Text Effects including Range and Timer can now have an additional line of text.

- **Marker**

  Anti-clockwise rotation has been reinstated for all Marker types supporting spin speed.

- **Virtual Ball**

  Keyframe navigation has been added for the Virtual Ball.

BUGS ADDRESSED

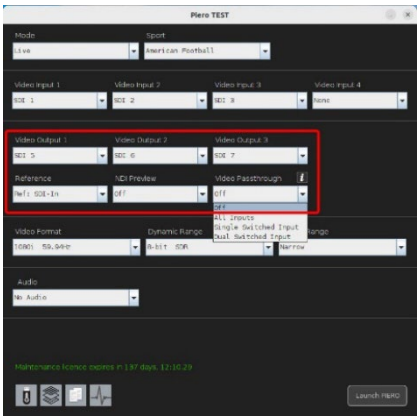
- Fixed an issue on AJA systems where an intermittent color bars flash was introduced to the SDI video stream.

- Caption Track: bug causing Caption Track to not display on output in HDR (Slog3) fixed.
- Caption Touch Effect: unresponsive properties within the Caption Touch Effect fixed.
- Non-fatal exception caused when setting effect IN point shortcut fixed.
- Laser Spline and Spotlight interaction artifacts fixed.
- Text Effect: fixed a bug where text size unintentionally changed when updating preset.

VERSION 19.6 – August 2024

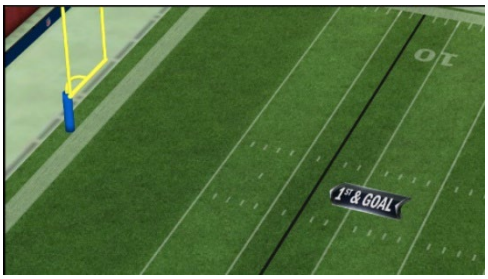
WHAT'S NEW

- **3 in 3 out Video I/O**
  - Users can now have three video inputs and three video outputs on supported hardware. Video passthrough is now available too.



3 in / 3 out

- **Down & Distance (American Football)**
  - Advert per down change' has been added to the "Advert Type" property of the Down & Distance effect. This new property changes the advert every time the down number changes.
  - Auto-switch to "Goal": If ball yardage to the end zone is ten yards or less, the feather distance has been automated to read "Goal", whether set manually using the Down & Distance property sheet, or via DataLinq.
  - Calibration click-find: In the live calibration effect pressing the 'D' key will automatically select a point on the model, based on the ball-on yardage value of the Down & Distance effect.

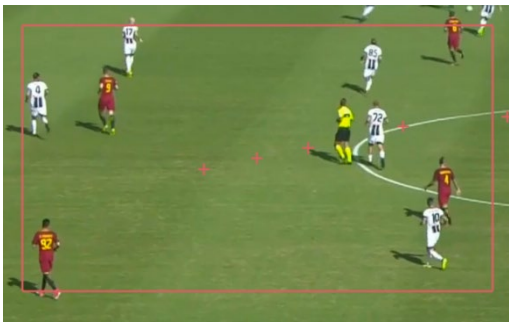


Auto-switch to "Goal"

- **Pause Effect change**
  - A 'Duration property has been introduced for the Pause effect, which allows the duration to become pre-settable in both file IO and video IO (SDI).

- **Quick Start Guide**
  - In the Documentation shortcut in the Launcher, a new PIERO Quick Start Guide can be found to help new users learn their way around PIERO.

- **Zoom Effect Keyframing**
  - It is now possible to keyframe the position of the zoom effect as the user wishes.



Zoom Effect Keyframing

BUGS ADDRESSED

- Fix for when live NFL calibration click find causes the pitch to sometimes disappear
- Fixed bug where using certain obscure characters passwords prevented the use of sync setup
- Fixed invalid Texture bug when using layered graphics on Movable Players.
- Fixed an issue where Matrox users could not use the Launcher shortcut to access new PIERO Releases.

VERSION 19.5 – July 2024

WHAT'S NEW

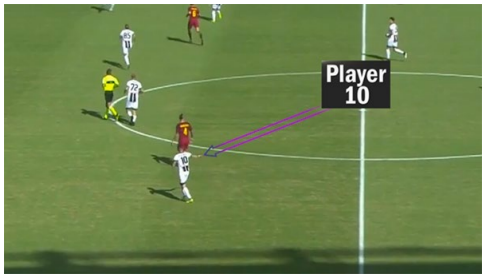
- **All New M9 Platform**
  - The New M9 1RU Hardware brings increased performance to PIERO as well as providing options for both SDI-3G and SDI-12G.

M9 Hardware

- **Baseball Rounding Effect**
  - The Caption Effect now offers a 2D arrow to provide more creative flexibility. The Caption Effect also supports TGA animations now.

Baseball Rounding

- **New and Improved Caption Effect**
  - The Caption Effect now offers a 2D arrow to provide more creative flexibility. The Caption Effect also supports TGA animations now.



Caption Effect

- **Effect Parameter Slider**
  - A new and improved Effect Parameter Slider provides the ability to manually input values.

Effect Parameter Slide

PERFORMANCE IMPROVEMENTS

- TGA loop properties are now available for the following effects: Area Circle, Layered Area, Laser Eye, Magnifier, Layered Arrow, and all animated Markers.
- The Magnifier Effect can now be keyframed.
- The following PIERO Keyboard shortcuts have been added for marking in and out:
    - Ctrl + I Set the current effect in Time
    - Ctrl + O Set the current effect out timecode
    - Ctrl + Shift + I Set the current effect IN Transition time
    - Ctrl + Shift + O Set the current effect OUT Transition Time
- Pickle Ball is now an available sport in PIERO.

BUGS ADDRESSED

- Launcher: A fix for PIERO Launcher logging on Ubuntu has been implemented.
- Movie Effect: Fixed a bug where the Movie Effect did not consistently resize correctly.
- Opta Module: Fixed an issue leading to Opta Module discrepancies in PIERO.
- NDI: Fixed a bug causing a Transport Control crash when using NDI as a main source NDI optimization also applied.

GETTING HELP

- After-sales service and technical support is provided directly by Ross Video personnel.
- During business hours (Eastern Standard Time), technical support personnel are available at the numbers listed below.
- After hours and on weekends, customers will automatically be put through to the technical support person on call. For serious issues which need urgent attention and tracking, please ensure you are given a ticket number and refer to this in future communications.

TECHNICAL SUPPORT: (+1) 613-686-1557

TOLL FREE TECHNICAL SUPPORT:	1 833-859-0499 (North America) +800 3540 3545 (International) 1 300 007 677 (Australia)