

ROSS Robotics



Studio Robotics

ROSS
Production Technology Experts



Ross Robotics: Precision Robotics You Can Trust

Ross Video has the most complete studio robotics offering available, whether you are looking for the unparalleled smoothness of a track-based system, the unbeatable flexibility of a free-roaming pedestal, or the simple efficiency of a standalone pan/tilt head. All Ross robotic systems are designed, developed and manufactured in-house, using state-of-the-art technologies that provide industry-leading accuracy, precision, and payload capacity.

IMPROVE YOUR LOOK

Deliver more compelling productions with superior tools and technologies that make your productions come to life and help capture and hold your audience's attention.

AUTOMATE PRODUCTIONS

Dramatically increase production efficiency, while delivering superior quality and consistency with accurate and repeatable robotic recalls. Integrate with Ross OverDrive, or other third party automated production control systems, to fully realize the benefits of studio automation.

AUGMENT REALITY

Rely on accurate and repeatable tracking data from our integrated tracking systems, and combine with XPression and/or Frontier real-time 3D graphics to create stunningly realistic Virtual Sets and Augmented Reality.

Capture the Best Shots with the Best Equipment

SUPERIOR PERFORMANCE

Ross robotic systems have been engineered to outperform offerings from other suppliers, providing more flexibility, better workflows, and more consistent productions.

- Ross robotic systems offer the largest payload capacities in their class, permitting deployment of a wider range of camera, lens and teleprompter configurations.
- Derived from decades of industry experience, our unique technologies deliver industry-leading accuracy and repeatability that ensure reliable and consistent preset recalls resulting in higher quality productions.

VIRTUAL READY

Ross robotic systems were designed with virtual and augmented reality in mind, making them easy to install and operate in virtual environments. They provide a reliable and consistent connection between real world camera movement and virtually rendered graphics to produce stunningly realistic virtual effects.

Integrate with your existing third party render engine or enjoy the peace of mind of a total Ross solution - the industry's only single vendor Virtual and Augmented Reality solution. This solution combines our tracking-enabled robotics with our UX Virtual Control Platform, XPression or Frontier Graphic Engines, Acuity or Carbonite Production Switchers, and openGear Signal Processing products.

MODERN CONTROL ARCHITECTURE

All Ross robotic solutions were designed to communicate natively over internet protocol (IP) from day one, using a flexible and open control interface. This makes connecting, sharing and controlling our robots easy to implement and manage, simplifying installation into new and existing studios. Our IP-based network architecture enables you to consistently deliver the same visual results, whether controlled locally, remotely over a high speed network, or via automated control software.

GLOBAL DEPLOYMENTS - GLOBAL SUPPORT

With over 2500 robotic systems deployed around the world, few suppliers have more experience with installing, commissioning and maintaining robotic systems than Ross Video. As with all Ross products, you will enjoy the industry's best support, which is legendary for a customer-oriented approach. In addition to comprehensive maintenance and hardware warranty plans, Ross offers all of its customers free 24/7/365 worldwide telephone support. This ensures that your systems will always be there, delivering the shots you need, when you need them.



Robotic Pan/Tilt Heads

The heart of every robotic camera system is the pan/tilt head, which directly supports and positions the camera, and controls zoom and focus on the lens. The ability of the head to manage the payload (which often includes much more than just the camera and lens), move everything smoothly and quietly from one position to another, and accurately return to each position, is critical to the performance of the system.

The requirements for the head in terms of speed, payload capacity, and size can vary greatly depending on the application. With a wide range of pan/tilt heads, Ross Robotics has a model suitable for just about any application, from extremely large payloads of up to 90 kgs (200 lbs) to ultra-quiet compact heads that are perfect for mounting in smaller studios where space is at a premium; all with industry-leading pan/tilt speeds.



FAST, REPEATABLE MOVES

The 500, 600 and 700 series pan/tilt heads have special gearboxes that eliminate backlash, producing precise and highly repeatable movements. Combined with high-resolution servos, they provide the ultimate in smoothness and control, minimizing the need for manual adjustments to compensate for inaccurate robotic recalls.

These heads also offer the fastest pan/tilt speeds in their class, permitting quick and precise camera repositioning for the next shot.



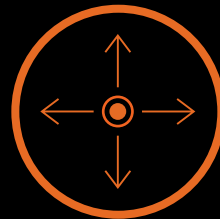
VIRTUAL TRACKING

The VR-series heads provide accurate tracking data for the pan and tilt axes, as well as the lens zoom and focus position. This makes them perfect for integration into virtual sets or for adding augmented reality elements to traditional productions.



VERSATILE MOUNTING OPTIONS

Ross heads are available with a variety of mounting options that allow them to be placed on top of tripods or pedestals, hung upside down from the ceiling or trusses, or bolted to a desktop or alcove. This provides the flexibility to place them just about anywhere to get the shots you need.



LOCAL, MANUAL CONTROL

Sometimes it is nice to have an operator step behind a camera and take control manually. For this purpose, the 520PT, 600PT and 700PT offer an optional Local Control module that provides a local interface for releasing robotic control of the head, and permitting it to be positioned using manual PanBars. Additional controls permit the user to adjust the drag on the pan and tilt axes, or independently lock either axis. Returning to remote robotic control is as easy as flicking a switch, and does not require homing to re-establish the accuracy of presets.



A Complete Portfolio of Robotic Pan/Tilt Heads

VR100



700PT

LARGE PAYLOADS

The 700PT has the highest payload in the industry at 90 kgs (200 lbs). This makes it the only head capable of supporting the largest studio cameras and lenses, as well as prompters, monitors, and all the other accessories that get attached to these camera rigs. The 700PT is truly the king of the mountain when it comes to robotic pan/tilt heads.



600PT

MID-SIZED PAYLOADS

The 600 series head is the perfect studio workhorse, accommodating payloads of up to 57 kgs (125 lbs). This makes it ideally suited for today's typical studio camera configurations, consisting of an ENG or box camera and lens, with a full-sized prompter and talent monitor. It is available in two versions: the 600PT and the VR600, where the VR600 adds virtual tracking.



VR600

LIGHT PAYLOADS

Ross Robotics offers two models for smaller payloads, the VR100 and the 520PT. The VR100 has a max payload of 20 kgs (44 lbs), and includes absolute encoders on all axes for accurate tracking data in Virtual and Augmented Reality applications.

The 520PT is a compact head that has the highest payload capacity in its class at 32 kgs (70 lbs), enabling it to support a full size teleprompter along with an ENG or box camera and lens.



520PT

Furio SE Studio Poetry in Motion

Furio track-based systems are used in top productions around the world to deliver dramatic and compelling moving shots, while also providing industry-leading accuracy and repeatability for automated and / or virtual productions. As a modular system, the improved Furio SE is available in a variety of configurations (Live or Studio) with a silky smooth 3-stage lift, or a fixed column. The Furio SE Studio systems are paired with either a VR100 or VR600 pan/tilt head, depending on the payload requirements.

The Furio SE takes the world's leading rail-based camera robotic system to the next level, delivering unmatched performance, a wealth of intelligent features, and a safer, more robust design.

CREATE DISTINCTIVE SHOTS

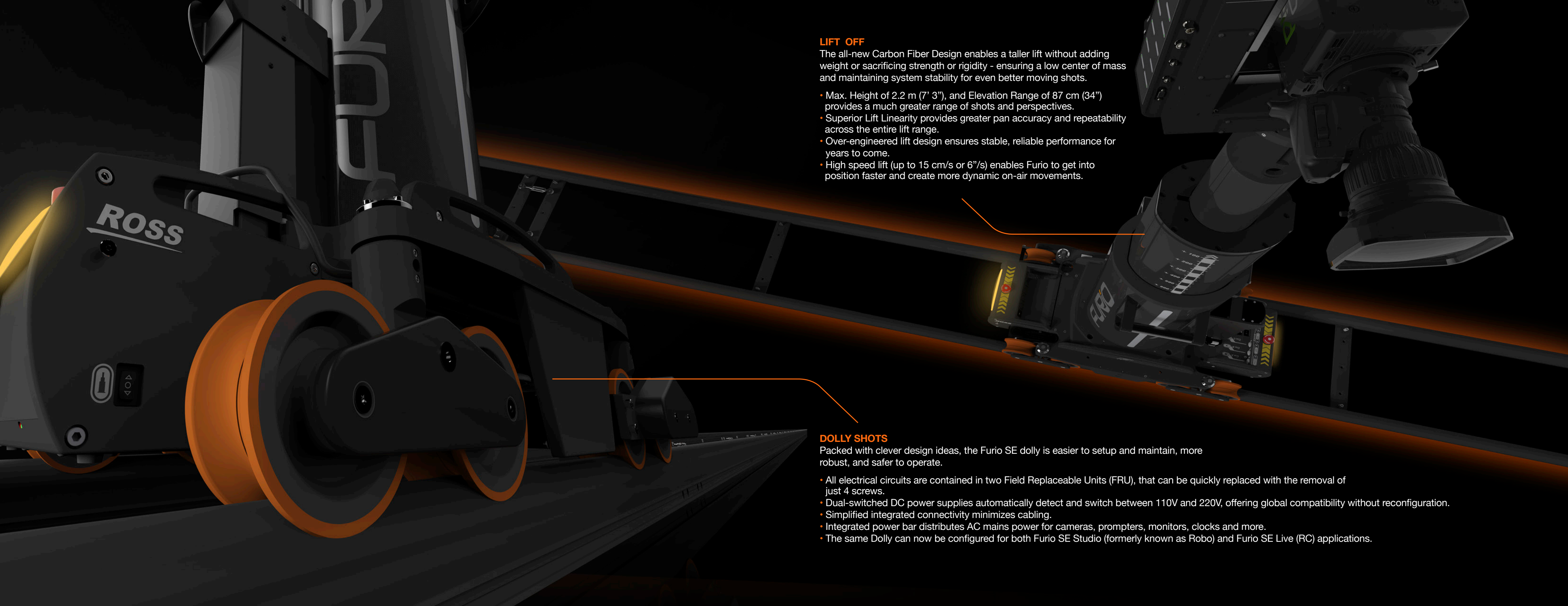
Furio is a unique creative tool for improving the visual appeal of your productions. By providing more precise and dynamic control over the camera's movements, Furio introduces more fluid and dramatic visuals to every production - and consistently reproduces them day after day, after day.

Furio Moves enable sequences of presets to be joined together to create signature moving shots not possible with conventional robotic systems or manual cameras.

ADVANCED AESTHETICS

Furio's eye-catching aesthetics exude technology leadership, adding a cutting edge look to your program, whether creating great shots or starring in them.





LIFT OFF

The all-new Carbon Fiber Design enables a taller lift without adding weight or sacrificing strength or rigidity - ensuring a low center of mass and maintaining system stability for even better moving shots.

- Max. Height of 2.2 m (7' 3"), and Elevation Range of 87 cm (34") provides a much greater range of shots and perspectives.
- Superior Lift Linearity provides greater pan accuracy and repeatability across the entire lift range.
- Over-engineered lift design ensures stable, reliable performance for years to come.
- High speed lift (up to 15 cm/s or 6"/s) enables Furio to get into position faster and create more dynamic on-air movements.

DOLLY SHOTS

Packed with clever design ideas, the Furio SE dolly is easier to setup and maintain, more robust, and safer to operate.

- All electrical circuits are contained in two Field Replaceable Units (FRU), that can be quickly replaced with the removal of just 4 screws.
- Dual-switched DC power supplies automatically detect and switch between 110V and 220V, offering global compatibility without reconfiguration.
- Simplified integrated connectivity minimizes cabling.
- Integrated power bar distributes AC mains power for cameras, prompts, monitors, clocks and more.
- The same Dolly can now be configured for both Furio SE Studio (formerly known as Robo) and Furio SE Live (RC) applications.

SMART EVOLUTION FROM START TO FINISH

A long list of design enhancements guarantees the system is easy to setup, operates flawlessly, and requires minimal servicing over its lifespan.

- Struts and wiredraw have been integrated inside the lift tube, reinforcing the gorgeous minimalistic design.
- Internal Linear Guides maintain superior column alignment over the life of the system – with zero maintenance.
- Internal magnetic encoder is immune to potential interference with cables while accurately tracking absolute lift position.
- Ergonomic top and bottom handles facilitate lift installation, where the exterior profiles have been carefully sculpted to ensure that cables never catch as the head or lift are repositioned.
- Integrated cable management features permit cables to be neatly and safely secured to the lift.

INDUSTRY'S SAFEST RAIL SYSTEM

Safety is designed into all aspects of the Furio SE, from eliminating pinch points and preventing derailments, to adding motion indicators and Electronic Stops (E-Stops).

- On-board Front and Rear E-Stop Buttons or optional remote E-Stops immediately cut power to the dolly, lift and head in order to ensure maximum safety.
- Failsafe brake keeps lift in position during power loss (when an E-Stop is triggered), ensuring the camera does not drop if on-air, while unique regenerative braking brings the dolly to a rapid but controlled stop.
- Safe-T-Glide wheels prevent the dolly from tipping without introducing any additional rolling resistance or noise during normal operation.
- Gently flashing front and rear light bars provide visible indicator that system is in motion.

STAY ON TRACK

The Furio SE dolly rides on precision extruded aluminum rails that are custom built to your exact specifications. Available in curved or straight sections, their narrow 36 cm (14") track width makes them perfect for small sets where space is at a premium, and there simply is not enough room for a camera operator. With a low profile and matte black finish, Furio rails can be tightly integrated into the studio floor to create unique and inspiring set designs.

A collision avoidance module permits two dollies to safely share the same track for increased flexibility. Dolly position is tracked by an absolute wiredraw encoder that avoids any errors caused by wheel slip or other momentary disturbances, ensuring that the Furio SE always knows exactly where it is.

Furio's SilentWheels™ split wheel design incorporates high precision ball bearings that allow the inner and outer surfaces of the wheel to rotate independently, eliminating wheel squeal through curves. The custom laminated wheels feature smooth, shock-absorbing rubber surfaces that deliver excellent traction, and whisper-quiet movement.

Combined with absolute encoders in the lift, head and lens, Furio SE provides accurate and reliable 7-axis tracking data in multiple formats, making it the perfect solution for Virtual Sets and Augmented Reality. Integrate with an existing third party render engine or enjoy the peace of mind of a total Ross solution - the industry's only single supplier Virtual and Augmented Reality solution.



CamBot Free Roaming XY Pedestals

With the addition of the CamBot 600XY models, the CamBot range of free-roaming pedestals now offers three distinct choices to suit a wide variety of studio applications and capital budgets. All three members of the series are built on the same proven pedestal base. This base features the industry's best accuracy and floor repeatability, fast and easy targeting, and a straight-forward design that provides years of reliable, low-maintenance operation.

600XY-S2

With its breakthrough entry-level price-point, the new 600XY-S2 enables a whole new segment of users to take advantage of the flexibility and versatility of free-roaming robotic pedestals. Multiple fixed-position cameras can now be replaced by a single roaming pedestal for less money.

The 600XY-S2 combines the 2-stage lift from the CamBot 600PTZ with a 600PT head. With a net payload of 57 kgs (125 lbs), the 600XY-S2 can handle most of today's studio camera configurations, including ENG/EFP-style cameras and lenses, with full-sized teleprompters, talent monitors, clocks and tally lights.

600XY-S3

The mid-range 600XY-S3 combines the price benefits of the smaller payload 600PT head with a 50% increase in elevation range (i.e. difference between min and max elevation) over the 600XY-S2. By mounting the 600PT head on the heavy-duty 3-stage lift from the flagship 700XY, a wider range of shots is achieved, including the ability to more naturally cover both standing and seated talent positions.

700XY

At the top of the range sits the market-leading 700XY, whose payload capacity, accuracy and reliability are unmatched in the industry. With a 90 kgs (200 lbs) net payload, the 700XY can support some of the largest box lenses and studio cameras still in use today.

FEATURES & BENEFITS

FEATURES	BENEFITS
UNIQUE DIFFERENTIAL STEERING	The CamBot's unique two-wheeled design eliminates the wheel-scrubbing that results in the rapid accumulation of floor-error that plagues caster-based designs. Unlike external bolt-on floor-positioning systems, it requires no external markers (other than a single 33 cm x 39 cm (13" x 15.5") floor target) or sensors, yet still provides the best accuracy in the industry.
LOCAL / MANUAL CONTROL	CamBot's local control module allows an operator to convert the system to a manually operated pedestal and pan/tilt head at the flick of a switch. Because the motors and encoders remain engaged at all times, the robot continues to track its position, eliminating the need for re-homing once it is returned to full robotic control – again at the flick of a switch. It is the simplest, most convenient manual control solution available today.
RAPID, ACCURATE TARGETING	Targeting is based on optical pattern recognition technology that provides millimeter accuracy and takes less than a second to complete.
VIRTUAL TRACKING DATA	All CamBot XY-pedestals offer high resolution virtual tracking data on all seven axes, which combined with its unbeatable floor accuracy, makes it ideal for adding augmented reality to existing hard sets, or for use in full-blown virtual sets. Because the pedestals always know where they are, even when in local mode, they also continue to send accurate tracking data on all axes (including XY) when operated manually.
SIMPLE, LOW MAINTENANCE, ROBUST DESIGN	The CamBot design is beautiful in its simplicity, minimizing the number of belts, gears and motors, and eliminating the need for pressurization. CamBot is the most reliable, low maintenance free-roaming pedestal in history. As so many customers have said: it just works.
UP TO 57 KGS (125 LBS) OR 90 KGS (200 LBS) NET PAYLOAD	The CamBot free-roaming pedestals were designed with heavy payloads in mind, supporting from 57kgs (125 lbs) on the 600XY up to a whopping 90 kgs (200 lbs) of cameras, lenses, prompters and fixtures on the 700XY. No other robotic pedestal currently available can support a payload this massive.

Pedestals of Power

The PTZ (Pan/Tilt/Z-axis Elevation) Pedestals combine robotic elevation with a pan/tilt head for cameras that are typically left in the same floor position for the duration of a show. They provide a cost-effective alternative to the Furio SE Dolly or the CamBot free-roaming XY pedestal systems, while providing greater flexibility and efficiency than a fully manual tripod.

The CamBot 600PTZ two-stage pedestal provides unbeatable value in a high payload PT-elevation system and is an excellent alternative to conventional manual pedestals.

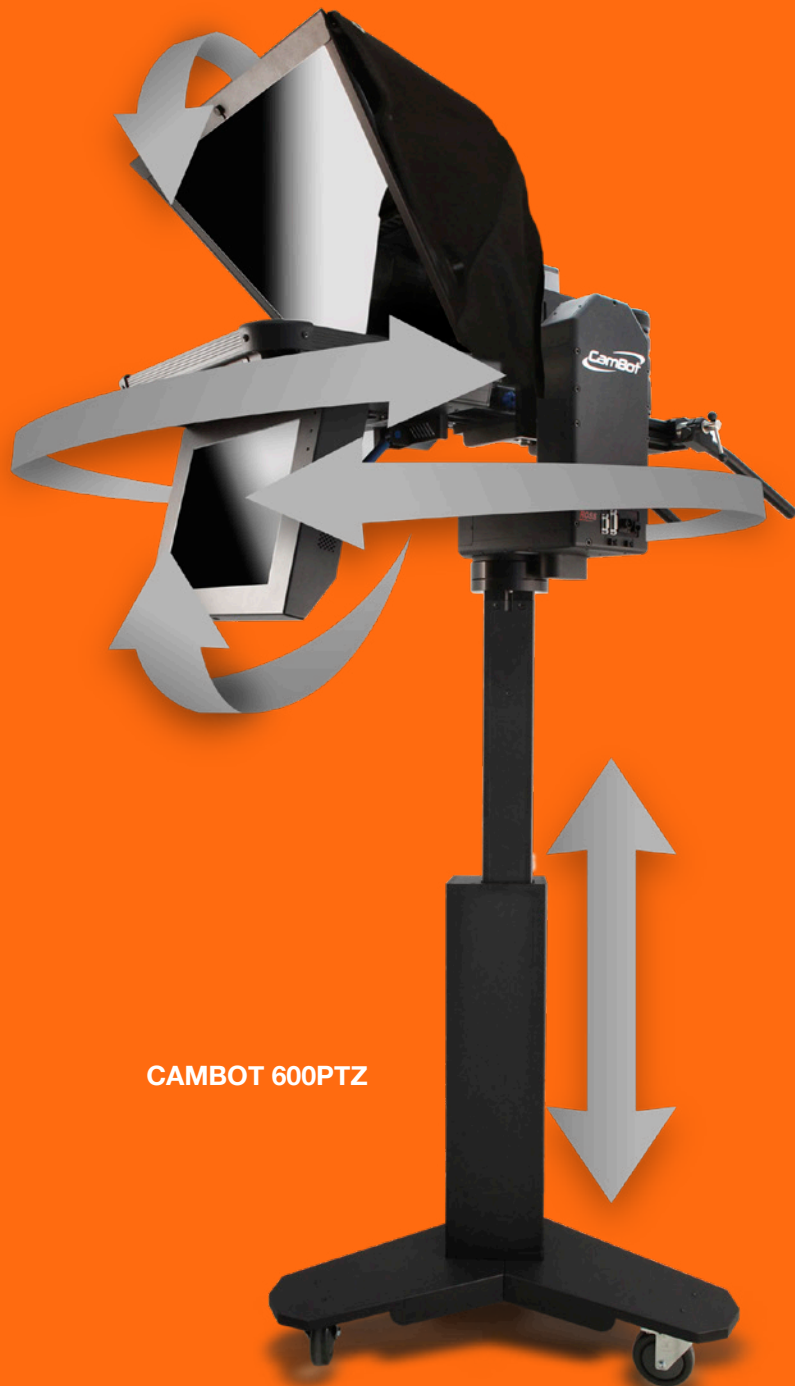
One step up, the high-performance Furio SE BlackBird pedestal can be configured with either the VR100 or VR600 head, depending on payload requirements.

BLACKBIRD FEATURES:

- Three 12.7 cm (5") diameter dual-casters ensure smooth, quiet movement across the studio floor.
- Combines with high performance 3-stage Furio SE lift to provide a wide array of camera angles and shots, while offering the ability to add silky smooth vertical movement to on-air moving shots.
- Each caster features adjustable cable guards to prevent cable snags, while foot-activated brakes simultaneously lock both wheel rotation and caster rotation, securely locking the pedestal in position on the floor.
- Two unique outrigger feet prevent tipping, while permitting the base to maintain an 81 cm (32") width, narrow enough to fit through a standard office door.
- Stabilizing weights in the pedestal base combine with the outriggers to prevent tipping even at full height and maximum payload, making this the most stable elevation system in the industry. Weights can be removed to simplify packing for transport.
- Includes alignment features to ensure that the pedestal can be accurately re-positioned in the same floor location over and over again, ensuring each shot is accurately recalled every time - making it particularly convenient for VS/AR applications.
- Integrated absolute encoders for VS/AR tracking

COMPARISON TABLE FOR PTZ PEDESTALS

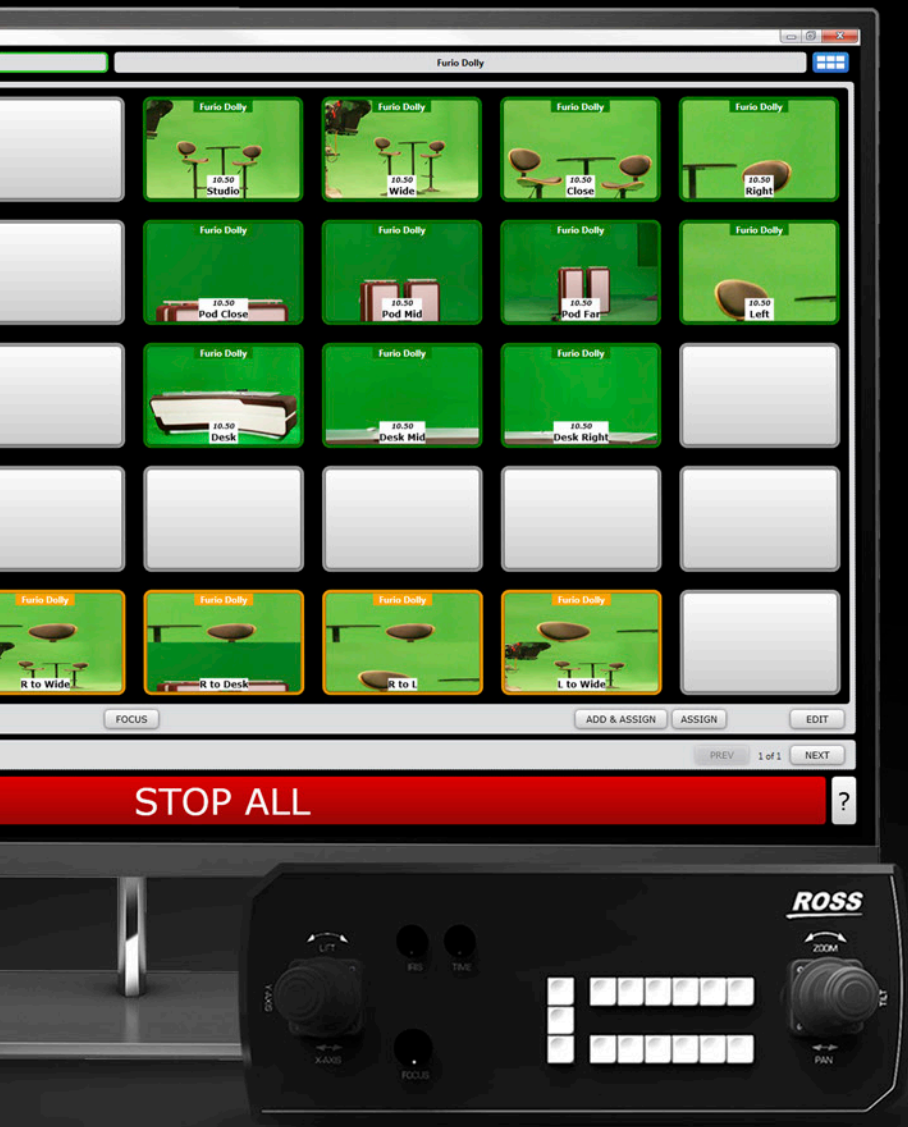
	CAMBOT 600PTZ	FURIO SE BlackBird
Lift	2 Stage	3 Stage
Lift Range	50.8 cm (20")	87.1 cm (34.3")
Compatible PT Heads	600 PT	VR100, VR600
Wheels	4" (100 mm) Single Lockable Caster	5" (125 mm) Performance Dual Casters
Caster angle	Freely rotating	Freely rotating, 6 locking positions
Caster locks	•	•
Adjustable Cable Guards on all wheels	•	•
Fits through standard 81cm (32") office door	•	•
Outrigger feet to prevent tipping		•
Virtual tracking data (Pan, Tilt, Zoom, Focus, and Elevation)		•
Hand Wheel		•
Integrated VS/AR alignment features for accurately aligning base to floor marks		•
Integrated power supply for PT head	•	•
Field-Replaceable Unit (FRU) for power and control electronics		•



CAMBOT 600PTZ



FURIO SE BLACKBIRD



SMARTSHELL CONTROL PANEL

SmartShell Control System

All Ross robotic solutions can be controlled from a flexible, intuitive user interface that can be scaled to suit both large and small installations.

The SmartShell 4 Control System combines a touchscreen interface with an ergonomic joystick control panel. So, whether you have Furio dollies, free-roaming CamBots, PT heads or PTZ pedestals, all of your Ross robotic systems can be controlled by a common control system using a centralized Ethernet-based architecture.

POWERFUL CONTROL PANEL

The SmartShell control panel combines high quality joystick controls with direct access to key functions in a polished, ergonomic unit. Available in both single and dual joystick configurations, the more cost effective single joystick model is perfect for simple pan/tilt environments, while the higher end dual stick model is required for systems that include tracks or pedestals.

Configuration menus in the SmartShell GUI allow for complete customization of every axis, allowing each user to tailor the joystick performance to their own personal preferences.

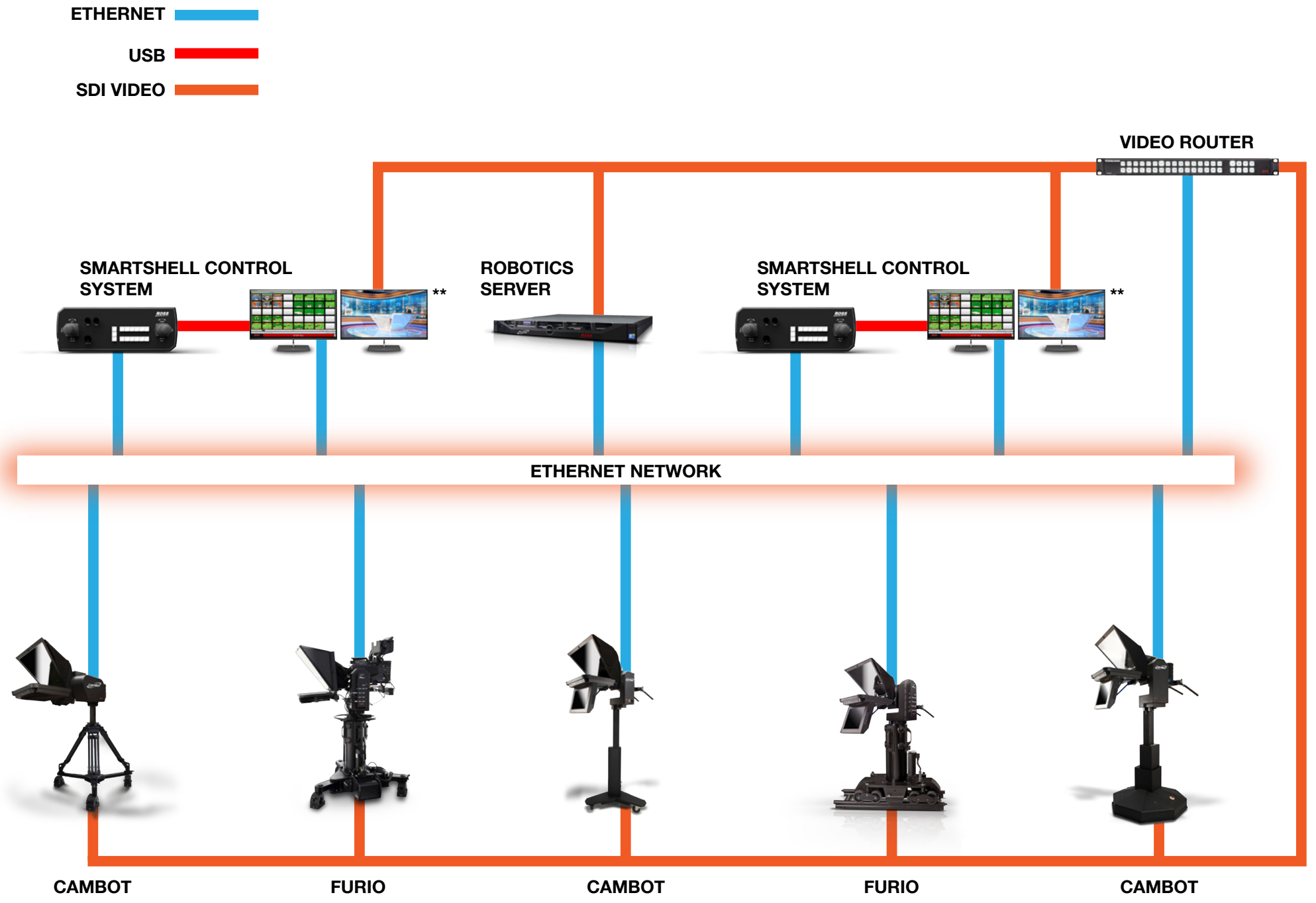
CENTRALIZED ETHERNET ARCHITECTURE

Each SmartShell control station communicates with the robots using native IP-based protocols over an Ethernet infrastructure. To minimize latency, the joystick panel communicates directly with each head, providing a responsive and natural feel.

The new SmartShell architecture includes a separate Robotics Server that provides centralized storage and management for thumbnails, communications with the robotic systems*, and router control. With the ability to simultaneously support every control station within your facility, this central server architecture consolidates your robotic control data*, simplifies control station redundancy, and easily pools and shares all your robot resources between control stations.

*CamBots only

** Video Monitor sold separately



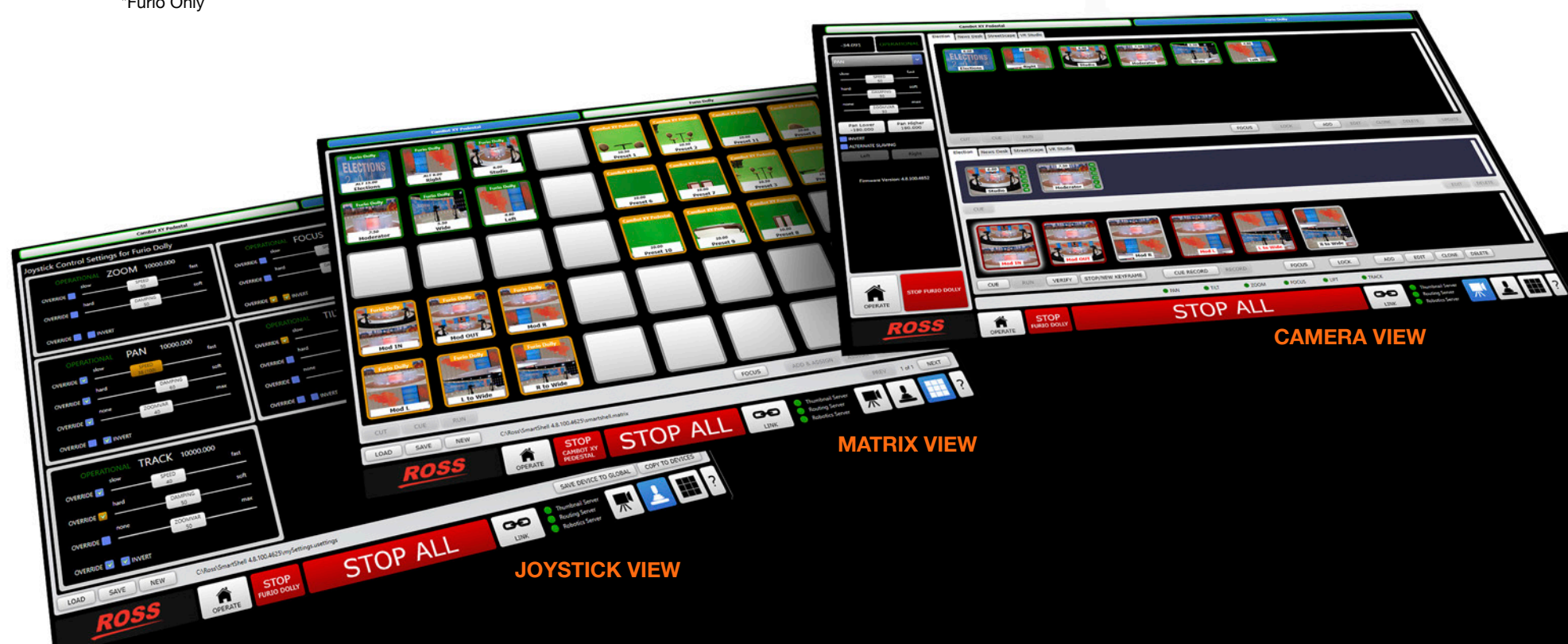
Smart Software

INTUITIVE GUI

The SmartShell 4 graphical user interface (GUI) provides a simple, easy-to-use interface for creating, managing and recalling shots on all your Ross Robotic cameras, helping you deliver consistent, high quality productions without sacrificing creativity.

- Create memorable moving shots by building complex sequences of keyframes using Furio Moves*, which can then be perfectly recalled and reproduced over and over again.
- Presets and Moves can be organized in tabs allowing you to group shots by show, scene, operator or anything else you desire, making it easy to manage hundreds or even thousands of shots from across your productions. Individual Presets or Moves can be locked to prevent deleting or editing by users without the right permissions.
- The Matrix View provides direct access to a consolidated matrix of presets and Moves from any or all of your connected cameras. Cells can be dragged and dropped into any arrangement, optimized for a particular show or production. Matrices can be saved, shared and recalled so that a different matrix can be created for each show or segment as desired.
- The Joystick view provides a complete view of all joystick axes at once, allowing the user to customize settings for each robot independently. Settings can then be saved to a file, so that each operator can have their own personal configuration, without having to worry about what the previous user may have changed.

*Furio Only



Furio SE Live. Now You're Flying

For live events or unscripted studio productions, the Furio SE Live offers unparalleled flexibility and responsiveness. Sharing essentially the same dolly and lift design with the Furio SE Studio, the Furio SE Live comes with one of two control systems, each of which allows a dedicated camera operator complete control over every aspect of the camera's movement.

For more details on the Furio SE Live, visit the Ross Video website to download a copy of the [Furio SE Live brochure](#).

FOOT PEDALS

Controls track (dolly) and telescopic lift while it offers system, including hands-free for pan, tilt, zoom, and focus controls*.



PANBAR CONTROLS

The most intuitive camera control system available today, the remote PanBar controls are instantly familiar to any camera operator. Based on an actual fluid head with adjustable drag, it offers a number of flexible features only possible in a remote PanBar system, including the ability to dial up or down the sensitivity, such that the same gentle swing of the arms can produce a slow pan, or a rapid sweep.



JOYSTICK CONTROL

The Joystick Control system provides a flexible and responsive user interface for harnessing the power of the Furio SE Live. Featuring a compact modular design that makes it easy to adapt to personal preferences, the joystick controls are perfect for today's robotics operators.



JOYSTICK MODULE

3-axis high precision joystick for accurate control of pan and tilt.



FZ MODULE

Ergonomic and responsive controls provide accurate command of zoom and focus.

TOUCH SCREEN CONSOLE

Combines on-screen menus with tactile knobs for quick configuration of system settings.



Applications

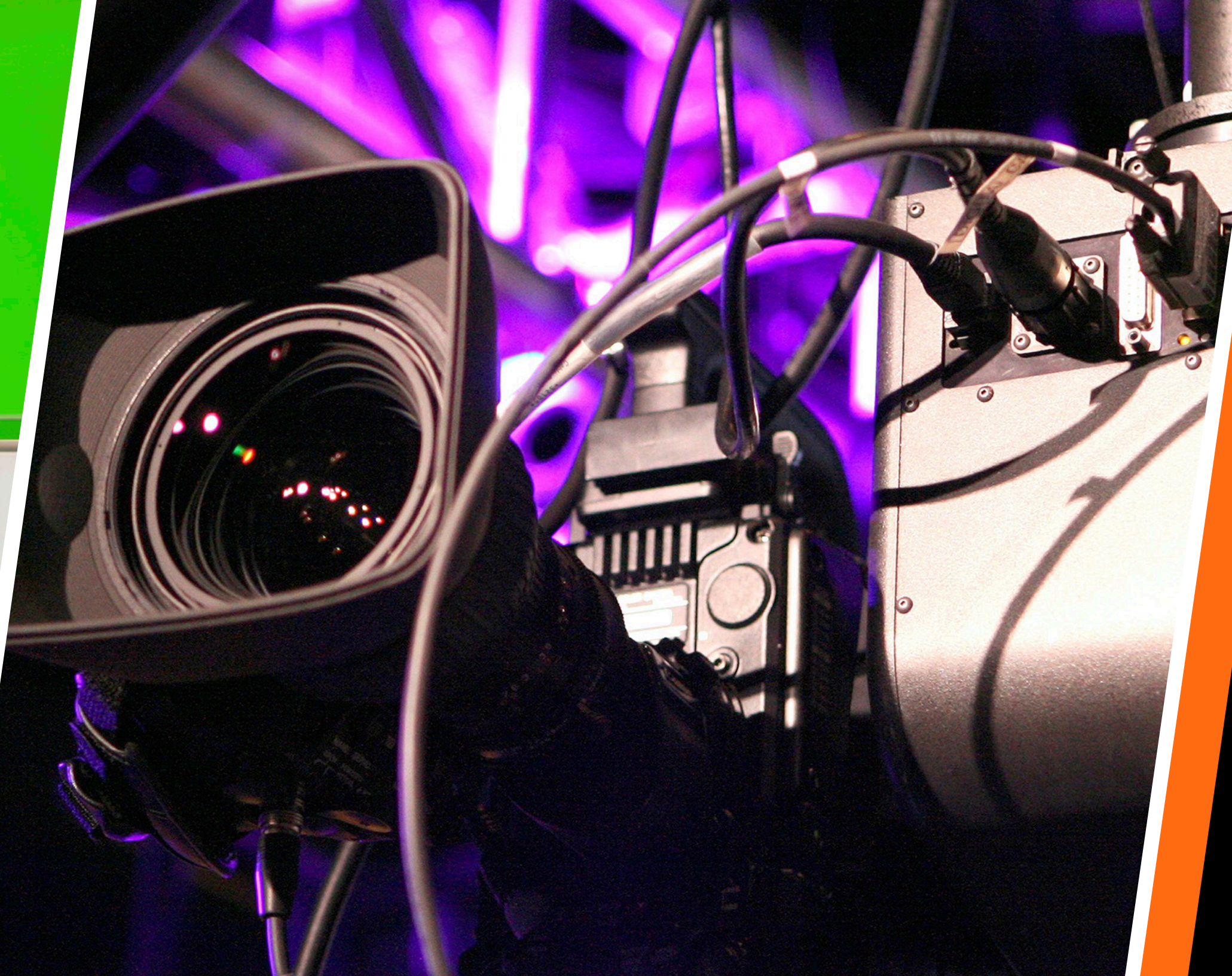
ROBOTICS FOR VIRTUAL SETS AND AUGMENTED REALITY

With a full line-up of tracking-enabled robotic systems, including pedestals, dollies, and heads, Ross Robotics can assemble complete robotic solutions that are ideally suited for almost any virtual set or augmented reality design. Producing visually stunning and realistic Virtual or Augmented Reality is critically dependent on the accuracy and repeatability of the robots themselves, which is one of the areas where Ross Robotics excels. Whether it is the absolute encoders on the Furio SE Studio system, or the differential drive on the CamBot XY series, you can be certain to see precise registration between real and virtual elements. And nothing reveals the depth and realism of a virtual set more than the long, sweeping dolly shots that the Furio system delivers with ease.

LARGE STUDIO PRODUCTIONS AND NEWS

The Furio SE Studio and CamBot XY series are perfect for any Sports, Weather, or News production. From a common Graphical User Interface and Joystick Control System, the operator can enjoy the best of both worlds in any demanding environment. The CamBot Free-Roaming XY Pedestal provides the flexibility to remotely position the camera for any number of shots from different locations around the studio, while also supporting virtually any payload configuration. Meanwhile the Furio SE Studio adds the ability to produce complex moving shots that would be virtually impossible with conventional manned cameras. Together, they create powerful, complementary solutions for top end news and entertainment productions. Both systems integrate seamlessly with automated production systems like Ross OverDrive and others, bringing a new level of production value while dramatically improving efficiency.





Applications

SMALL STUDIO OR CHROMA KEY POSITIONS

Where floor movement is not required, all Ross robotic pan/tilt heads are available stand-alone for post or tripod mounting. The larger 600 and 700 series heads have the capacity to easily support today's typical studio configurations with teleprompters and preview monitors. Adding an elevation column provides extremely smooth on-air quality vertical moves at an economical price point. As an option, local control units are available for any of the CamBot models, permitting operators to locally control elevation (if applicable), pan, and tilt using panbars and a joystick.

WALL AND CEILING MOUNTING

The 520PT can be coupled with optional ceiling or wall mounts, representing the perfect pan-tilt head for smaller studios and a wide variety of applications such as Legislatures, Stadiums, Houses of Worship, Auditoriums, and Music Venues. Its robust offset-axis design greatly reduces the footprint of the head while still supporting an impressive 32 kgs (70 lbs) payload, easily accommodating a teleprompter and ENG camera. The 520PT provides smoothness, speed, precise control, and on-air quality moves.

System Specifications

PAN/TILT HEAD SPECIFICATIONS

	VR100	520PT	600PT / VR600	700PT
Max. NET Payload	20 kgs (44 lbs)	32 kgs (70 lbs)	57 kgs (125 lbs)	90 kgs (200 lbs)
Max. Prompter Size	15"	17"	21"	Unlimited
Min. – Max. Pan/Tilt Speed	0.001 – 60 deg/sec	0.001 - 90 deg/sec	0.001 – 90 deg/sec	0.001 – 90 deg/sec
Pan/Tilt Repeatability	< 0.02deg	<0.02deg	< 0.02deg	< 0.02deg
Weight Pan/Tilt Head	15 kgs (35 lbs)	10 kgs (22 lbs)	25 kgs (55 lbs)	33 kgs (72 lbs)
Power Requirement	24V DC Brick or Rack 100-240V AC	48V DC Brick or Rack 100-240V AC	48V DC Brick or Rack 100-240V AC	48V DC Brick or Rack 100-240V AC
Tracking for VS/AR	•		• (VR600)	

CONTROL SYSTEM SPECIFICATIONS

SmartShell v4	
Control System to Head Communications	IP over Ethernet
Ethernet Connection	10/100 Mb/s over Cat5e or equivalent
Joystick Control	Track/XY/Lift + Pan/Tilt/Zoom
Rotary Controls	Focus, Iris and Time
Camera Selection Buttons	11
Action Buttons	Cut, Cue and Run
Tally Inputs	IP
Video Router Control	IP or RS232
Comm. Joystick - Workstation	USB
Joystick to Head communication	UDP over Ethernet
Control Stations with Shared Server	
Control PC	All-in-One PC with Multi-Touch 1920 x 1080
Control PC Operating System	Windows 10
Robotics Server	1 RU Rack mount server
Robotic Server Operating System	Windows Server 2012 Foundation
Control Station with Integrated Server	
Control PC	Compact desktop PC with multi-touch 1920 x 1080 Display
Control PC Operating System	Windows 10
Robotics Server	All Robotics Server software hosted on Control PC
Robotic Server Operating System	Windows 10

ELEVATION SYSTEM SPECIFICATIONS

	CamBot 600PTZ	Furio SE VR100 BlackBird	Furio SE VR600 BlackBird
Max. NET Payload	57 kgs (125 lbs)	20 kgs (44 lbs)	57 kgs (125 lbs)
Max. Prompter Size	21"	15"	21"
Min.-Max. Pan/Tilt Speed	0.001 – 90 deg/sec	0.001 – 60 deg/sec	0.001 – 90 deg/sec
Pan/Tilt Repeatability	< 0.02deg	< 0.02deg	< 0.02deg
Lift Max. Height Optical Center	174.5 cm (68.7")	222.3 cm (87.5")	224.3 cm (88.3")
Lift Total Range Min / Max	50.8 cm (20")	87.1 cm (34.3")	87.1 cm (34.3")
Lift Payload	N/A	123 kgs (270 lbs)	123 kgs (270 lbs)
Max. Lift Speed	12.7 cm/sec (5"/sec)	15 cm/sec (6"/sec)	15 cm/sec (6"/sec)
Base Width	93cm (36.5") Diameter	81cm (32")	81cm (32")
Total System Weight	79 kgs (175 lbs)	101 kgs (223 lbs)	111 kgs (245 lbs)
Power Requirement	110V or 220V AC	100-240V AC (autoselect)	100-240V AC (autoselect)
Tracking for VS/AR		Pan, Tilt, Elevation, Zoom and Focus	Pan, Tilt, Elevation, Zoom and Focus

TRACK AND FREE-ROAMING XY PEDESTAL SYSTEM SPECIFICATIONS

	Furio SE VR100 Full Dolly	Furio SE VR600 Full Dolly	CamBot 600XY-S2	CamBot 600XY-S3	CamBot 700XY
Max. NET Payload	20 kgs (44 lbs)	30 kgs (66 lbs)	57 kgs (125 lbs)	57 kgs (125 lbs)	90 kgs (200 lbs)
Max. Prompter Size	Max. 15"	Max. 19"	Max. 21"	Max. 21"	unlimited
Min. – Max. Pan/Tilt Speed	0.001 – 60 deg/sec	0.001 – 90 deg/sec	0.001 – 90 deg/sec	0.001 – 90 deg/sec	0.001 – 90 deg/sec
Pan/Tilt Repeatability	<0.02 deg	<0.02 deg	<0.02 deg	<0.02 deg	<0.02 deg
Max. Track/Floor Speed	1 - 2.5 m/s on straight track 0.5 - 1 m/s on curved track (depends on payload and track length)	1 - 2.5 m/s on straight track 0.5 - 1 m/s on curved track (depends on payload and track length)	30 cm/sec (12"/sec)	30 cm/sec (12"/sec)	30 cm/sec (12"/sec)
Max. Track Length	30m (98 ft)	30m (98 ft)			
Min. & Max. radius Curved Track	min. 3m (10ft.) / unlimited max.	min. 3m (10ft.) / unlimited max.			
Track or Floor Repeatability	< 1 cm (absolute positioning)	< 1 cm (absolute positioning)	±0.1%	±0.1%	±0.1%
Lift Max. Height Optical Center	220.8 cm (86.9")	222.8 cm (87.7")	163 cm (64.3") *	176 cm (69.1")	179 cm (70.6")
Lift Total Range Min / Max	87.1 cm (34.3")	87.1 cm (34.3")	50.8 cm (20")	76.2 cm (30")	76.2 cm (30")
Max. Lift Speed	15 cm/sec (6"/sec)	15 cm/sec (6"/sec)	12 cm/sec (5"/sec)	15 cm/sec (6"/sec)	15 cm/sec (6"/sec)
Dolly Track Width	36 cm / 14.17"	36 cm / 14.17"			
Dolly / Base Length x Width x Height	89cm x 46cm x 23cm (34.9" x 18.0" x 9")	89cm x 46cm x 23cm (34.9" x 18.0" x 9")	Max 128 cm (50.5")	Max 128 cm (50.5")	Max 128cm (50.5")
Total System Weight	104 kgs (229 lbs)	114 kgs (251 lbs)	155 kgs (341 lbs)	162 kgs (357 lbs)	170kgs (375 lbs)
Power Requirement	100-240V AC (autoselect)	100-240V AC (autoselect)	100-240V AC (autoselect)	100-240V AC (autoselect)	100-240V AC (autoselect)
Tracking for VS/AR	all 7 axes	all 7 axes	all 7 axes	all 7 axes	all 7 axes

* Riser available

ROSS VIDEO Production Technology Experts

MOTION GRAPHICS

XPRESSION | Studio, BlueBox, Prime, Go!, Designer, Developer, Quad
XPRESSION CLIPS
XPRESSION TESSERA
XPRESSION MAPS
XPRESSION TELESTRATE
XPRESSION TOUCH FACTORY
XPRESSION BRAND IT
XPRESSION TICK IT



CREATIVE SERVICES

ROCKET SURGERY | Graphics Creation



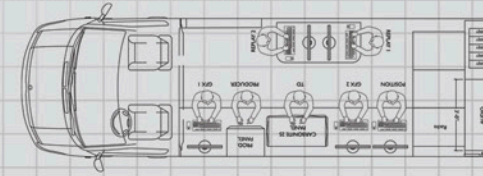
STUDIO IN A BOX

GRAPHITE | All-in-One Live Production Vehicle



OPENTRUCK

OPENTRUCK | Flight Case through 40-foot Truck Designs



PRODUCTION SERVICES

ROSS MOBILE PRODUCTIONS



ASSET MANAGEMENT



CAMERAS

ACID CAMERA | H200-UCHR, Z50-UCHR
PIVOTCAM | PIVOTCam-20



CHROMA KEYING

ULTRACHROME HR



* Carbonite Black Chassis with UltraChroma HR Software

NEWS & SOCIAL MEDIA

INCEPTION NEWS | Academic, Express, Standard, Enterprise
INCEPTION LIVE
INCEPTION SOCIAL
INCEPTION.CLOUD
HORIZON



CONTROL SYSTEMS

OVERDRIVE | Express, Prime, Premium
DASHBOARD
LIGHTNING CONTROL SYSTEM



PRODUCTION SWITCHERS



ACUITY | Panel: A1s, A2m, A2x, A3m, A3, A4 Frame: 4RU, 8RU
CARBONITE BLACK | Panel: C1, C1s, C2, C2s, C3s, C3x Frame: 2RU
CARBONITE BLACK PLUS
CARBONITE BLACK PLUS 12G
CARBONITE BLACK SOLO

INFRASTRUCTURE

ULTRIX ROUTER | 16x16-72x72
NK ROUTER | 16x4 -144x144
OPENGEAR | Modular Signal Processing
MASTER CONTROL | MC1 openGear Card, MC1 Panel
NIELSEN | Watermarks Encoder

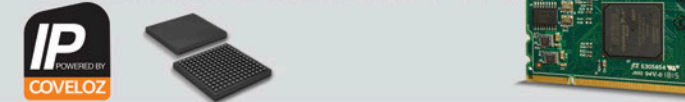


STUDIO VIDEO-OVER-IP | AIMS-compliant Gateways & Control
GEARLITE | Point of Use Signal Processing
AUDIO MONITORING | MB 651, MB-652
MASTER SYNC & REFERENCE | SRG-2200, SRG-4400, ACO-4400



IP TECHNOLOGY

OEM PRODUCTS | Market Ready Modules & System-on-Chip



VIDEO SERVERS, REPLAY & DELAY

ABEKAS MIRA | Replay Systems
ABEKAS TRIA | Production Servers
ABEKAS AIRCLEANER | Live Events Delay



ROBOTICS

FURIO SE LIVE | Live Head, SE Dolly and SE Lift; PanBar and Joystick Controls
FURIO SE STUDIO | VR100, VR600 Heads; SE Lift and SE Dolly; SE BlackBird
CAMBOT | 520PT, 600PT, 700PT Heads; 600 PTZ; 600XY & 700XY Free-Roaming Peds
SMARTSHELL | Robotic Camera Control System



VIRTUAL & AUGMENTED REALITY

TRACKLESS VIRTUAL UX VIRTUAL TRACKING SYSTEM FRONTIER



ROSS Robotics

Ross Video has a complete range of technical services available to ensure that your Robotics 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 Robotics 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.

Robotics 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.**

Contact Us

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www.rossvideo.com

ROSS VIDEO

PRODUCTION TECHNOLOGY EXPERTS

SOLUTIONS

- Broadcast & Production
- Augmented Reality & Virtual Sets
- Sport & Live Events
- Legislative
- Mobile Production
- House of Worship
- Education
- Corporate

PRODUCTS

- Production Switchers
- Motion Graphics & Clip Servers
- Replay & Production Servers
- Robotic & Camera Systems
- Control Systems
- Routing Infrastructure
- Signal Processing Infrastructure
- News, Live & Social Production Management
- Media Asset Management

SERVICES

- Creative Services
- Mobile Production

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Production Technology Experts