REALITY LIVE

Ncam Reality real-time camera tracking enables live virtual broadcast graphics in studio or outside broadcast, including installation on a handheld, Steadicam, Jib and cable-based systems.

The Ncam Reality camera tracking system features a multi-sensor camera bar that is easily mounted on the camera and provides real-time data to the Ncam tracking server.

Ncam Reality provides full position, orientation information, plus focal length and focus, via industry-standard protocols compatible with any VR/AR graphics system. It is suitable for a wide range of applications both indoors and outdoors, across all camera rigs and even handheld or Steadicam or others.

Instant real-time tracking

No need for time-consuming system calibration, surveys, training and learning of environment.

Multi-sensor hybrid technology

For a robust solution in mission-critical situations, Ncam combines patented multi-sensor Technology. Ncam does not rely on simple optical-only solutions.

Live Markerless Tracking

No need for adding markers on the floor, ceiling or studio/pitch. Ncam's unique tracking technology identifies for patterns and areas of contrast generating 3D tracking points and historical point clouds - all in real-time.

Rapid setup and workflow

Ncam Reality's user-friendly interface enables the fast configuration of an automated origin, axis alignment. Operators can also use the intuitive image-based modelling module for manual placement.Ncam supports all production-proven and industry-standard broadcast graphics engines, either via the Free-D protocol or Ncam's SDK.

Integrated lens profiling

High accuracy lens profiling that produces proprietary lens distortion models for all lens types via in-built lens profiling module. Ncam Reality can import pre-existing Open CV lens profiles and export to your preferred graphics engine.

Lens encoding

Focal length and focus values are combined within the camera bar by using external encoders or direct data from Canon/Fujinon digital virtual ports via smart encoder cable.

Advanced SDK for custom integration

The revolutionary and advanced SDK enables a rich real-time tracking data stream including timecode, optical parameters, distortion maps (distorted/undistorted) and active camera telemetry and lens profile/models (optical parameters).

Copper or fiber connectivity

Ncam's camera bar data is sent down a single Cat-6 Gigabit Ethernet cable or converted using an Ethernet to Fiber Converter or Extender.

ncam®

SPECIFICATON

Main camera information

Supported cameras	Digital broadcast cameras with HD SDI monitoring. Film cameras with HD video tap plus timecode.
Supported lenses	ENG Lenses. Broadcast Zoom.
Lens metadata	From LDS lens via SDI stream. Canon/Fujinon lens data via Ncam smart cable. Direct encoding via ethernet.
Lens profiling	Precision lens profiling & measurement of lens distortion & optical parameters. Stored and selectable from database and exported to graphics engine.
Camera configurations	Handheld, Steadicam, tripod, dolly, crane, Jib, pedestal.
Camera monitor feed equipment	HD 1920x1080 3G SDI with timecode. 23.98, 24, 25, 29.97, 30 fps frame rate. Progressive or PsF or Interlaced.
Composited image preview to camera	HD 1920/1080 3G SDI (wired/wireless) Frame rate (based on camera monitor output). Progressive or PsF (monitor output). To electronic viewfinder or field monitor.

Ncam camera bar

Configuration	Multi-sensor tracking technology; 1 bar per broadcast camera.
Mounting	Position – underslung from front rods. Rod types: 19mm; 15mm Studio; 15mm LWS (user selectable).
Power	Powered from camera – 900mA @ 12V DC. Direct encoding via ethernet.
Operation	Tether cable to Ncam Server workstation: copper (Ethernet) – up to 100m or fibre – 2km+.
Weight	2.65lbs or 1.2kgs.

Package Features	LIVE PACKAGES		
	PTZ Entry Level Pan, tilt & zoom setups	**STUDIO** Mid Tier Studios, broadcast & business	**EVENT** Upper Tier Outside broadcast & tradeshows
Lens Profiling	Yes	Yes	Yes
Pan, Tilt & XYZ Rotation (3 DoF)	Yes	Yes	Yes
Dolly, Truck & Pedestal (6 DoF)	No	Yes	Yes
Studio (Indoor Tracking)	Yes	Yes	Yes
OB (Outdoor Tracking)	Yes	No	Yes
Extreme Tracking (Variable Lighting conditions)	Option	Option	Option
Unreal Engine Plugin	Option	Option	Option
Reality SDK	Yes	Yes	Yes

Live - Lens Profiling	Pre-2019 Release	2019 release
Lens type	Number of Lens	Days to profile	Days to profile
Canon/Fujinon Zoom- Lenses	5	3	1

Ncam Server

Configuration	One Server per broadcast camera.
Device	Silent-running bespoke workstation.
Server interface	Monitor, keyboard, mouse.
Operating system	Ncam OS based on Ubuntu 18.04.
Application software	Ncam Reality.
Location	Studio – rack-mounted – controlled over KVM Mobile – OB Truck.
Power	4A @ 220V (8A @ 110V) AC. AC mains 50/60Hz – Heat output: 1kW (max).
Heat output	1kW (max).

Outputs

- Ncam server real-time user display
- HD SDI output
- Real-time composited image of monitor video with tracked and keyed CGI
- Routed to camera EVF or field monitor
- Routed to video village and director/producer monitors
- Automatic take system records a labelled .fbx file
- Camera position, rotation, focus, iris and zoom
- Timecode plus captured point cloud for each take
- Lens profile data for post-production

Ncam Tracking Latency

2.5 video frames (Interlaced/PsF mode).
5 video frames (Progressive mode).

Integrations

All Render Engines   One system per Ncam Server

Render engine	Free D			Model Export	Reality SDK	
	Serial	**UDP** unicast	**UDP** broadcast		**TCP**	**UDP**
Viz Engine	Yes	Yes	Yes	Yes		
Brainstorm	Yes	Yes	Yes	Yes	Yes*	
Zero Density					Yes*	
Pixotope (Future Group)					Yes	Yes
Ventuz					Yes	
RT Graphics					Yes	
Wasp3D		Yes	Yes			
Ross Xpression					Yes**	
ORAD/Avid	Yes	Yes	Yes	Yes		

Yes* - Cinelens Degree 2 (ZD experimental)   Yes** - Distortion maps are not supported

Locations

Interior	In studio /on-set
Exterior	Back-lot /on location

N.B. not weather/water/blast-proof (camera bar and lenses require shielding / server requires Easy-Up or similar)

Rigging

- Ncam is mounted on 15mm or 19mm rods. This should be considered when mounting system with Box Cameras, follow focuses etc.
- Weight of the Ncam camera bar is 2.65 lbs or 1.2kgs but may vary in total weight based on which encoders are used.

Operation

- One Ncam technician.
- One Graphics operator to manage and create on-air graphics output.