

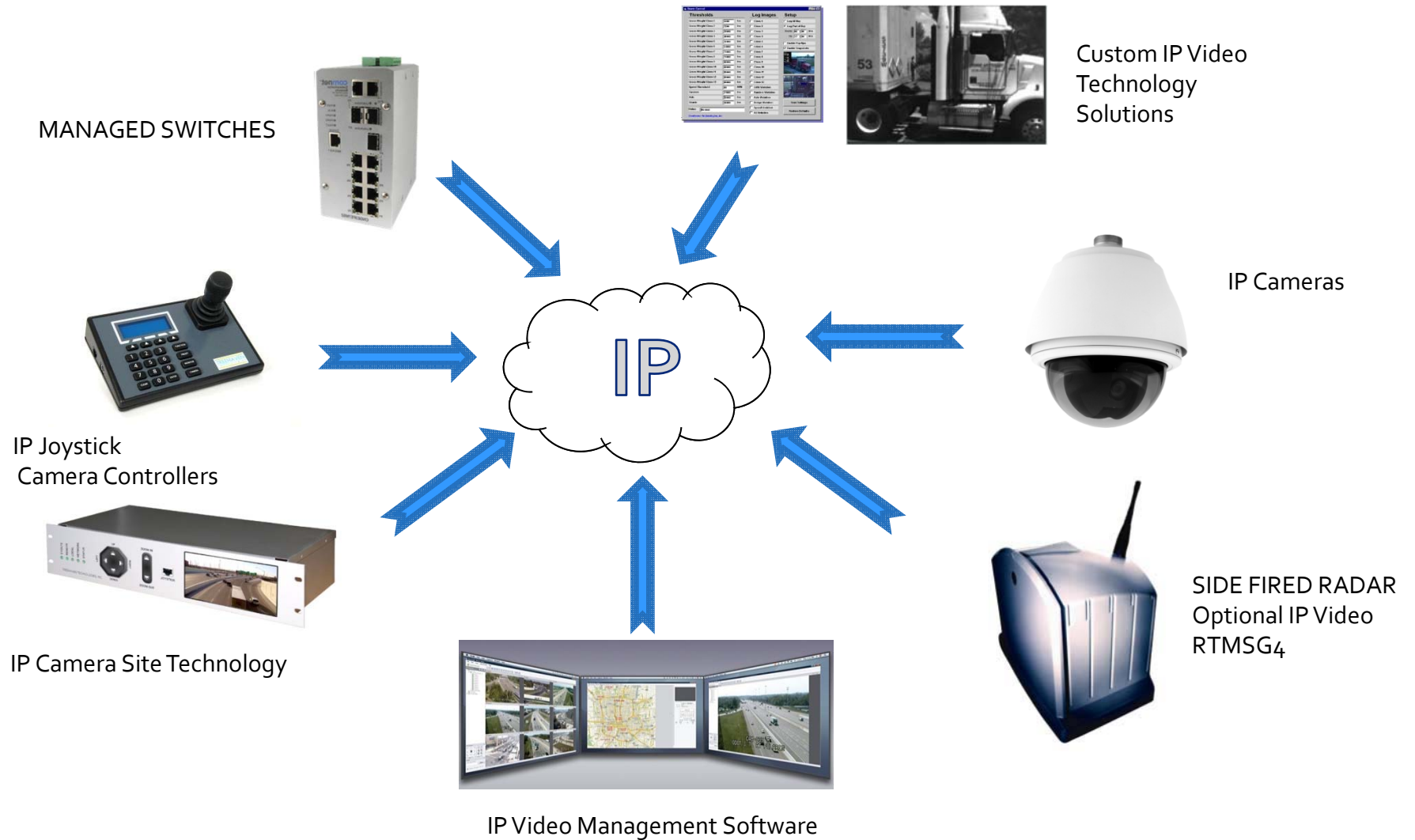
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ASSOCIATES INC.

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CONQUERING THE VIDEO IP REVOLUTION





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MG Squared Ethernet/IP Solutions

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Each Connector Factory Tested to meet
CAT5 100 base TX Ethernet Protocol







Raised awareness

The successful combination of an innovative camera lowering device with pure Ethernet/IP communications for freeway and arterial roadway ITS devices is likely to see a more widespread rollout across Idaho's freeways and beyond

by Jim Larsen, Ada County Highway District, USA

The Ada County Highway District (ACHD) in the USA's state of Idaho has been using camera lowering systems on the I-84 and I-184 freeway network in the Boise region for the past seven years. The ease of maintenance and resulting time and cost savings made shifting to the lowering system concept from a standard 50ft (15.24m) pole with homemade camera bracket an easy decision. In partnership with the Idaho Transportation Department (ITD), ACHD now has approximately 20 lowering systems in place on the local freeway network, with plans to expand the number as funding permits. In anticipation of more deployments statewide, ITD recently awarded a multi-year contract to [MG]², Inc, the system's supplier.

PREPARED FOR ETHERNET/IP

In 2009 ACHD took the decision to start shifting its ITS communications network to an all-Ethernet/IP-based system. Many systems today utilize Ethernet by way of encoders and decoders located in a pole- or ground-mounted traffic cabinet. What's meant by an 'all-Ethernet-based system' – and what is specifically different with such a system – is the insertion of an IP-based CCTV camera. Running the Ethernet straight out of the camera eliminates the need for costly encoder/decoders. Most of the CCTV providers now have an IP dome-type camera. After a great deal of review and field testing, ACHD selected the Bosch



Cameras can be installed at any height to provide a greater field of view as height is not limited to the reach of large bucket trucks

Series 500 IP camera to be installed on all new ITS projects.

In anticipation of the eventual (albeit likely to be slow) move toward a pure Ethernet deployment – where IP is run straight from the CCTV – the Alabama-based [MG]² had already begun development of a complementary lowering device, and in particular a contact connector, designed

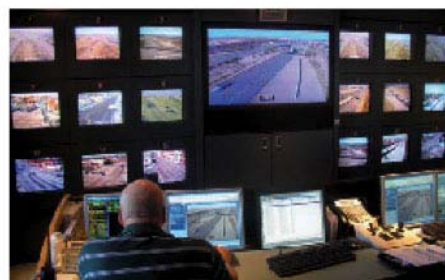
The camera and its housing can be detached from its position atop a pole and lowered on a stainless steel wire aircraft cable



specifically for interfacing with the new Ethernet/IP CCTV cameras. The timing was perfect for ACHD to utilize this new Ethernet connector. The systems came prewired for IP/Ethernet connections using CAT 6 100 Base TX wire. Each connector included eight gold-plated contacts for the CAT 6 Cable, four additional gold-plated contacts that may be used for power or alarms, and a gold-plated ground contact.

The new IP connectors were made out of a molded synthetic rubber to ensure the greatest durability in extreme cold or extreme heat environments. Once again, the lowering device enabled quick and easy access to the CCTV cameras. Meanwhile, the MPEG-4 video from the camera is crystal clear on the TMC's videowall and the agency is not experiencing any latency in the pan-tilt-zoom (PTZ) control. ACHD is very pleased with both of these innovative technologies and certainly foresees them becoming standard – and not just in Idaho, but in other states and even other countries too. Overall, the shift to an all Ethernet/IP network has been a success in the Boise region, so much so that the Idaho Transportation Department has selected the Bosch Ethernet/IP cameras and [MG]² lowering systems to be used statewide on various freeway projects. ■

For more information on [MG]² products, please call +1 205 823 6688, email information@mg2squared.com or alternatively log on to www.mg2squared.com



The IP-based video cameras deliver crystal clear MPEG-4 video of conditions out on the Idaho highways

comnet

Communication Networks

**Communication
Networks Booth 811
See David Sinise**

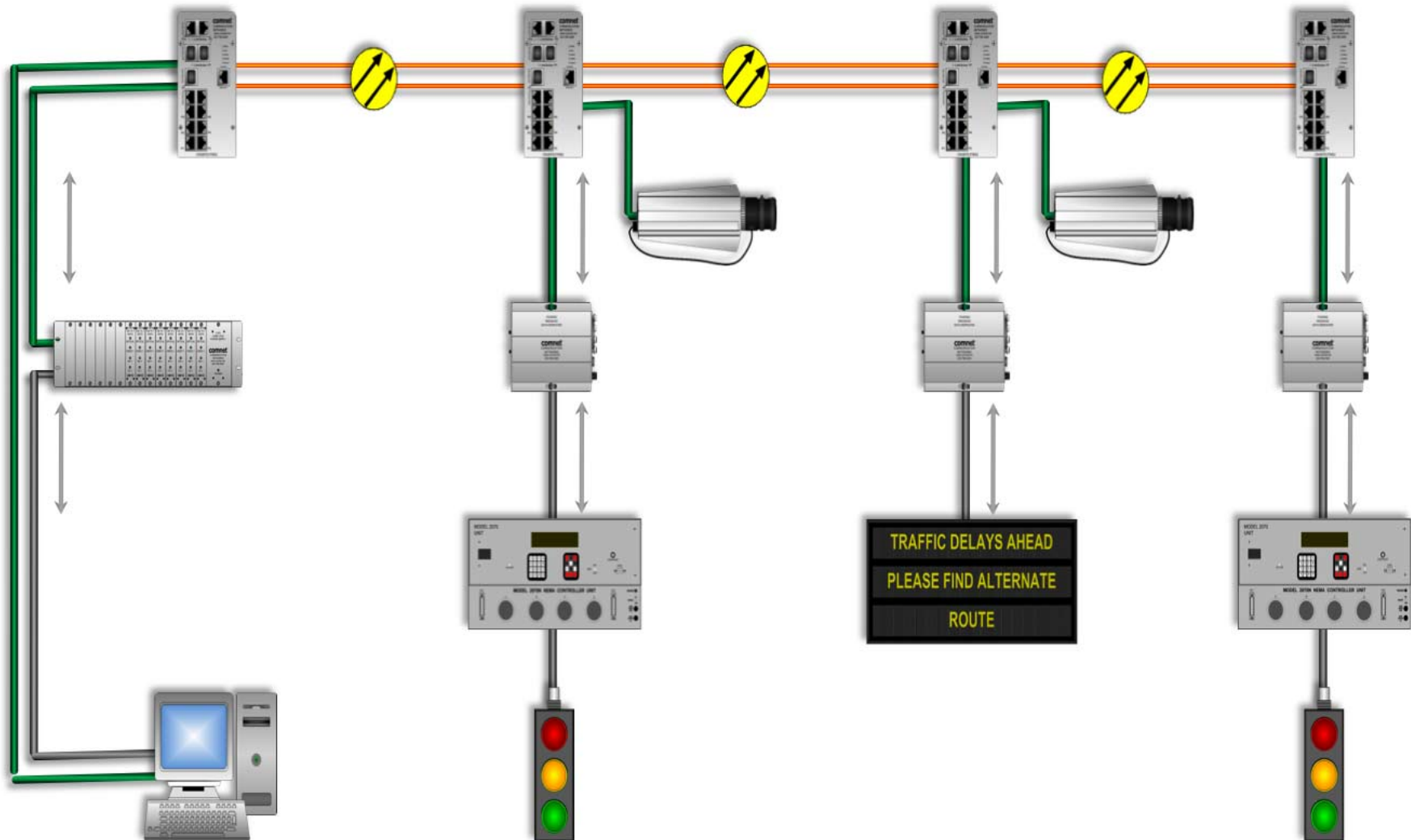
- A complete line of Hardened Ethernet products for the ITS Industry
- Ethernet over fiber and copper products
- Managed switches
- Un-Managed switches
- Media Converters
- Serial Data to Ethernet
- Coax and Twisted pair copper to Ethernet
- We are the "Backbone of your ITS system"



- All Products Are **Industrially Hardened**
- Support Temperatures of **-40°C to +75°C**
- **Meets NEMA TS2**
- **Free Power Supply** With Every Unit
- Industry Leading **Lifetime Warranty**
- **Free technical support**
- **Free System Builder**



Ethernet Based System with Legacy Equipment Copper and Fiber Network (serial to Ethernet)



RTMS G4

**RTMS G4 - Remote Traffic
Microwave Sensor
Booth 817
See Mike Ouellette**



RTMS Based Traffic Solutions

RTMS G₄ - Remote Traffic Microwave Sensor



Fourth Generation

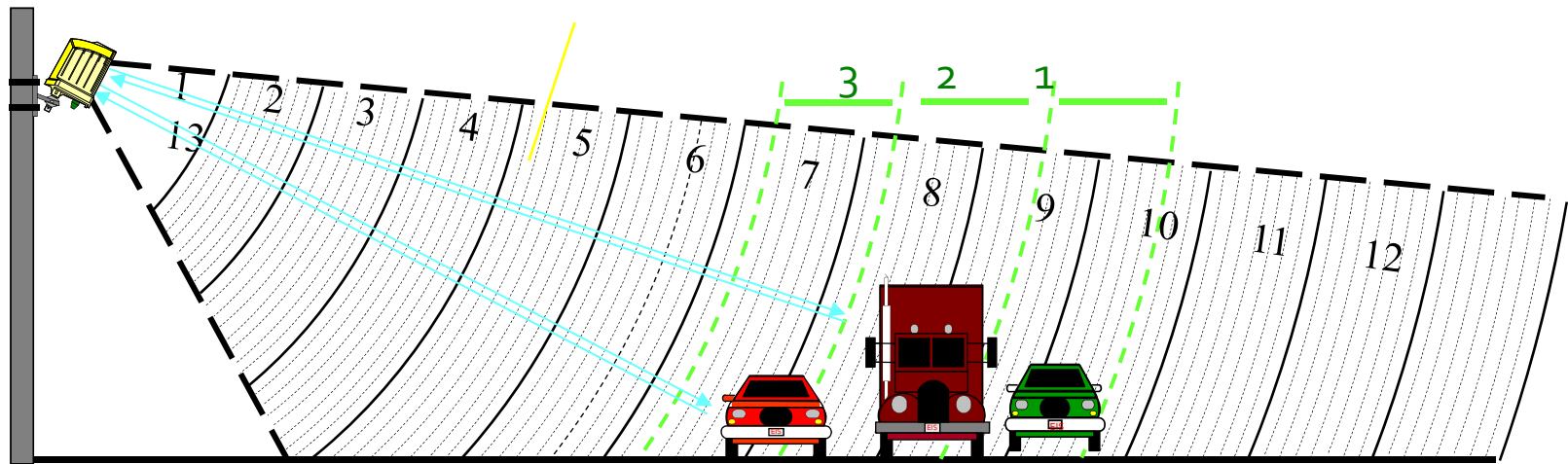
- 12 lanes of coverage
- High Resolution
- Zero Setback
- Bluetooth
- 3 (yes 3) Watts
- Six Classification Bins
- Communication Options
 - Serial, TCP/IP, RF, Cellular, Internal Bluetooth
- Integrated Solutions
 - Counting, Safety, UTC, Incident Detection, Data Collection
- IP Camera Option

High Resolution

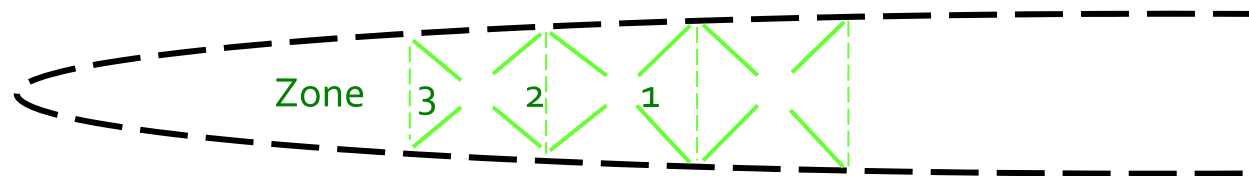
Micro-slices approx 1.3 ft wide

Micro Slice Technology

Zones based on traffic location



Reflection is from the near side of vehicle like a mirror reflecting back a light ray



Footprint - as projected on road



Booth 817

See Ron Rogers

Video over IP

- **C Series**
 - Compression: H.264, MPEG-4, MPEG-2, M-JPEG
 - Includes 1 channel, 3 channel, and 4 channel versions
 - 1:1 BNC to DSP Ratio
 - Integrated Switch/Codec Product (CS-20)
 - Temp. Hardened from -40°C to +74°C
- **S Series**
 - Compression: H.264, MPEG-4 and M-JPEG
 - Includes 1 channel and 4 channel Versions
 - 1:1 BNC to DSP Ratio
 - Local prerecording
 - Integrated video motion detection
 - Dual core encoding for 2 streaming formats
 - Operating Temp. $\geq -10^{\circ}\text{C}$ to $+60^{\circ}\text{C}$
- **V Series**
 - Compression: MPEG-4 and M-JPEG
 - Integrated video motion detection
 - Operating Temp. $\geq 0^{\circ}\text{C}$ to $+50^{\circ}\text{C}$

c-Series



s-Series



s-Series



Cameras

More than 20 different camera types:

- for each location (wall, ceiling, pole)
- for each infrastructure (coax, network)
- for harsh environments (weatherproof, vandal resistant)
- for difficult light circumstances (back light compensation, wide dynamic range, day/night)
- for high quality pictures (Megapixel)
- HD 1080 720
- **NTCIP** Compliant

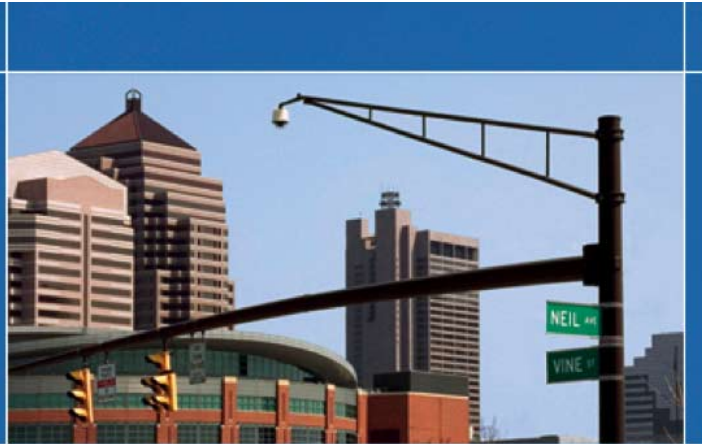


New Encoders

- S-64 E – 4 channel H.264 encoder
 - 2 H.264 encoders per input
 - 1 MJPEG encoder per input
 - 44 channels in 3 RU
 - \$1475 MSRP

- S-68 E – 8 channel H.264 encoder
 - 1 H.264 encoder per input
 - 1 MJPEG encoder per input
 - 88 channels in 3 RU
 - \$2295 MSRP



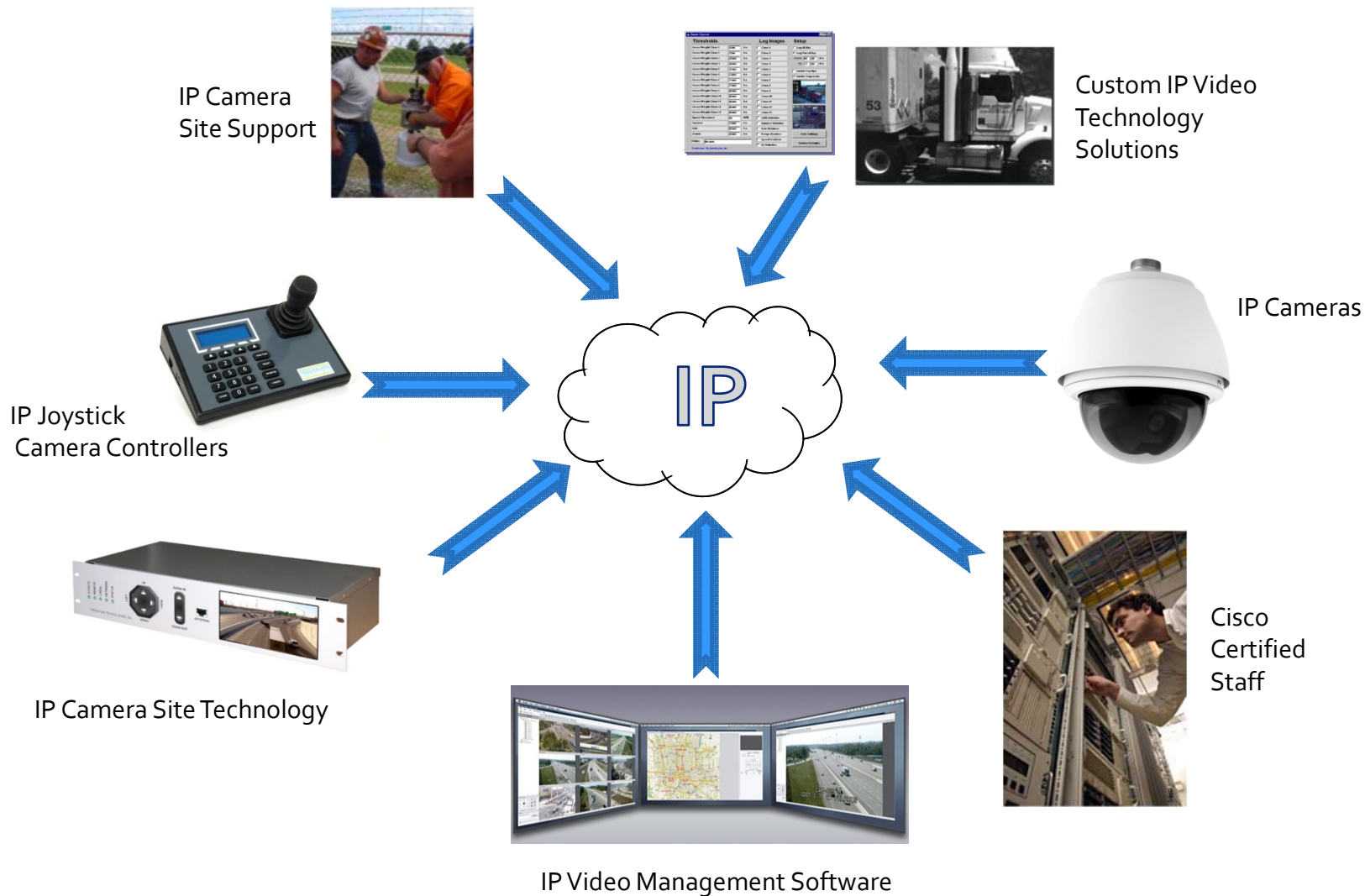


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