

Arecont Vision® Update

April 2016



Leading the Way in Megapixel Video

- Record March and 1Q Results—solid performance around the globe!
- New people on-board in sales, engineering and services
- ISC West was fantastic!
 - New products were a big hit!
 - Competitors trying to imitate but substantially behind!
 - Customers are delighted with ease of installation, quality, field and TAC support!
- Excellent Progress with VMS/NVR Partner integration, events, customer project training and execution
- Project Registration is providing substantial separation between standard and registered pricing.
- Quality and Service continue strong improvement and the results show it.
- Situational Awareness Plus will help drive improved understanding, better designs and terrific solutions.

ARECONT VISION MEGAVERTICAL PRESENTATIONS

(Check *arecontvision.com* for other MegaVertical Presentations)

Emergency Call Stations

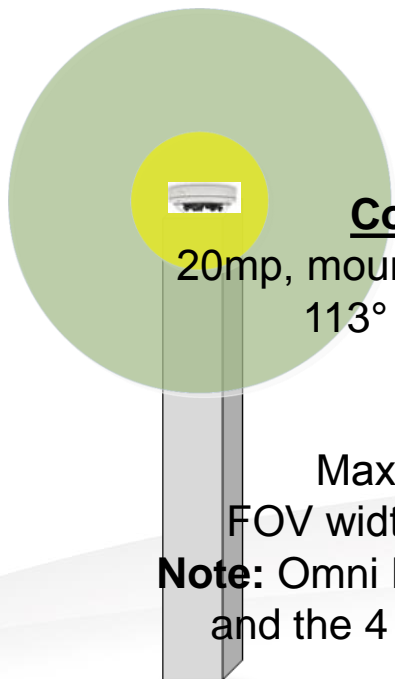


Far Left:
Ramtel® call box

Left:
Code Blue® call box

Below:
SurroundVideo Omni set
up in the center of a
traffic circle for a true 360
degree panoramic view





Coverage example:

20mp, mounted 10' high each lens with
113° FOV to cover < 360°

Yellow = 60ppf

Green = 30ppf

Max range shown @ 27'

FOV width at max = 54' over 360°

Note: Omni lens options can be changed
and the 4 sensors positioned in any
direction

Pro:

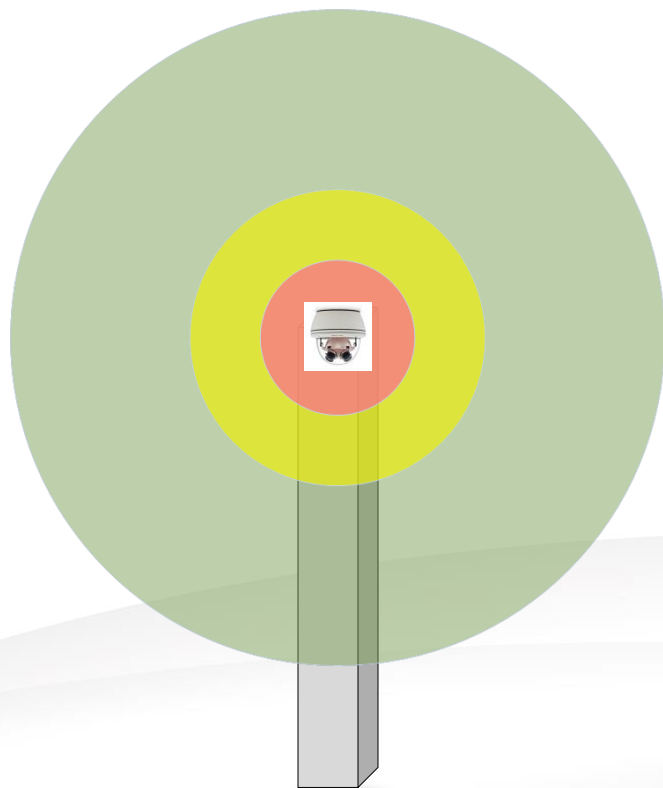
- Can cover 360° FOV all the time
- Many lens FOV options available
- Arrange 4 sensors in any direction required

Example: 3 of the sensors and lens shown here can be used to cover 339° field of view with 4th sensor pointed down using tighter FOV lens to cover under the camera or other area of interest

- Good situational awareness
- OK digital forensic zoom
- No moving parts

Con:

- About ¼ forensic zoom compared to 180°



Coverage example:

20mp, mounted 10' high with
360° FOV

Red = 90ppf

Yellow = 60ppf

Green = 30ppf

Max range shown @ 42'
FOV width at max = 84' over
360°

Pro:

- Can see 360° FOV all the time
- Good situational awareness
- OK digital forensic zoom
- No moving parts

Con:

- About ½ the forensic zoom compared to 180°
- Optics can only be tilt adjusted 10° up or down



Coverage example:
20mp, mounted 10' high with 180° FOV
Red = 90ppf
Yellow = 60ppf
Green = 30ppf
Max range shown @ 110'
FOV width at max = 220'

Pro:

- Can see 180° FOV all the time
- Good situational awareness
- Good digital forensic zoom
- No moving parts

Con:

- Only sees 180° fixed field of view

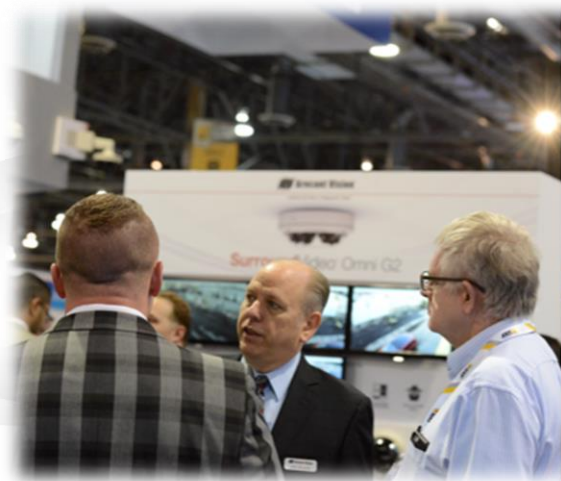
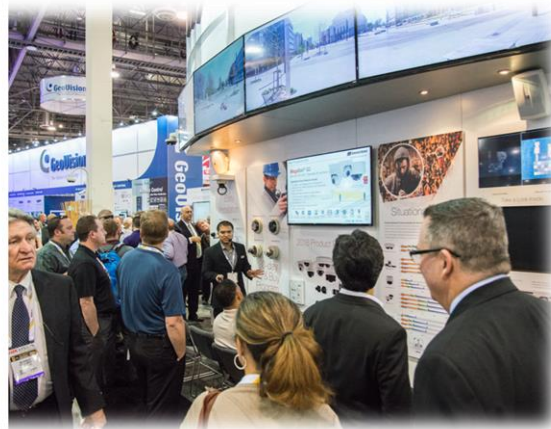
- Programs released.
 - Try&Buy Program
 - Special Pricing Program on GEN1 via Project Registrations
- New support programs in place to drive better service for our customers.
- SI/dealers should sign up for service parts/demo agreements. That way we can ship immediately and we will not require a credit card. It is fast and simple to do.
- Our new products are shipping now!

ISC West Report

Extremely Busy Booth All 3 Days of ISC West



Leading the Way in Megapixel Video™



- Constant walk-on traffic
- Fully booked meeting rooms for end user, systems integrator, and partner scheduled sessions
- Well attended hourly presentations by Ernie Velayo, Team Leader, Inside Sales
- Updated back wall with new panoramic video displays
 - *Easy installation*
 - *Try-&-Buy promotion*
 - *SituationalPlus™ campaign*
 - *STELLAR™ demo*

- **New products on display**

- **SurroundVideo®** Omni G2'
- **SurroundVideo®** G5 Mini (Coming soon)
- **MegaVideo®** Flex (Coming soon)
- **SurroundVideo** Omni Mini (Coming soon)
- **MegaDome®** 4K (Coming Soon)



- **New or Updated Displays**

- **MegaVideo®** Flex wall
- **SurroundVideo®** Omni G2 wall (updated)
- **SurroundVideo** Omni G2 on Emergency Call box
- **STELLAR™** Technology demo (moved to rear wall)
- **MegaDome®** 4K



Multiple Partners Displaying Arecont Vision



Leading the Way in Megapixel Video™



3 New Industry Awards

- **Security Products GovSec Govies**

- *Platinum Govie* – **SurroundVideo®** Omni G2
- *Gold Govie* – **MegaVideo®** Flex

- **Security Sales & Integration MVP**

- **SurroundVideo®** Omni G2



- Video walk through the booth
- Booth images

→ <https://www.facebook.com/arecontvision/>



Learn More:
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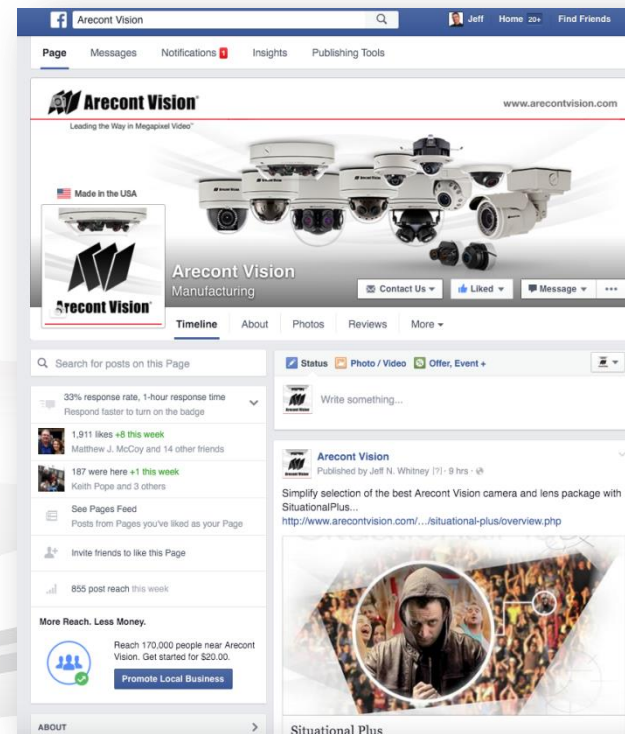
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Arecont Vision Corporate Blog
<http://blog.arecontvision.com>



The screenshot shows the Facebook profile of Arecont Vision. The header includes the company name, a search bar, and navigation links like 'Page', 'Messages', and 'Notifications'. The cover photo features a collage of various security cameras with the tagline 'Leading the Way in Megapixel Video™'. The profile picture is the Arecont Vision logo. Below the cover photo, there are tabs for 'Timeline', 'About', 'Photos', 'Reviews', and 'More'. The timeline shows several posts, including one about a '33% response rate, 1-hour response time' and another about a 'Situational Plus' camera package. The right sidebar contains a 'Status' section with a text input field and a 'Photo / Video' upload button. Below that, there's a post from 'Arecont Vision' published by Jeff N. Whitney, mentioning a 'Situational Plus' camera package. At the bottom, there's an 'About' section with a 'More Reach. Less Money.' ad.

Tech Tips & Tricks:

Correlation between our Electronic Exposure Control & Frame Rate

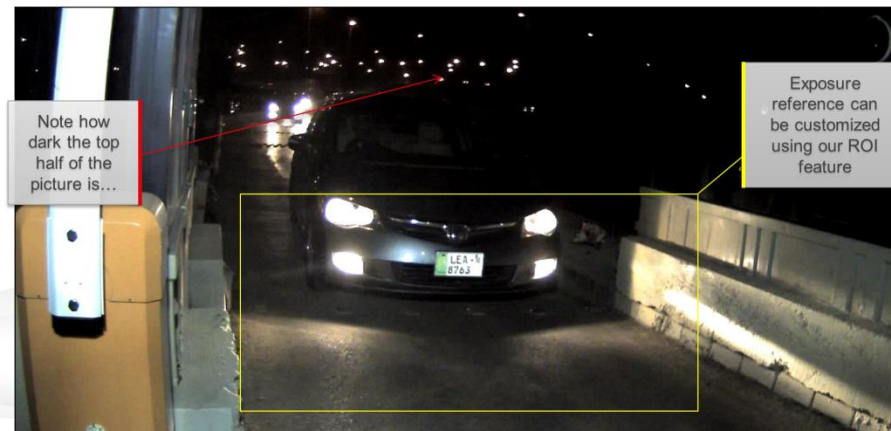
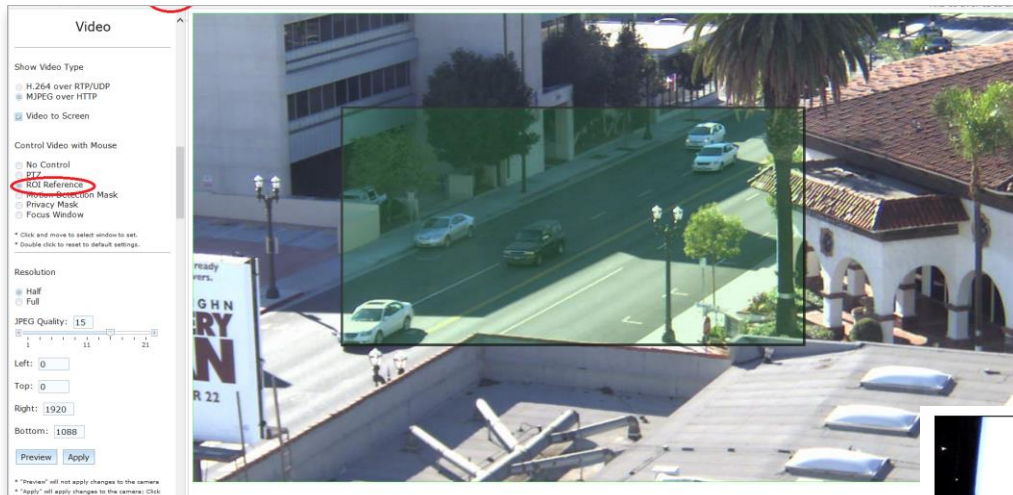
- *We can see fantastic pictures when noting is moving but as soon as something moves through the scene, we get motion blur. What to do ?*
- *Image from Camera seems to be too dark even when there is enough light in the installation location and on target object. Why ?*
- *During night time, there is lot of noise in the image. Is camera faulty ?*
- *Image from camera is too bright during day time and we can not see the target in the scene due to this.*
- *During day, the image is really great but in night, we get less fps from the camera.*



- Understanding Electronic Exposure Control and shutter control operations
- Region of Interest as exposure reference
- Shutter Speed and fps relation
- Arecont Vision's Electronic Exposure Control Modes
- Tips & Tricks to get best image quality out of cameras

- Arecont Vision Cameras uses CMOS sensor and our own Automatic Exposure Control, electronically within the Chip, to achieve the best quality Image.
- How does this work ?
 - In bright light, the electronic shutter speeds up to limit the light intake
 - In low light, the electronic shutter slows down to increase the amount of light intake and it automatically increases the gain to brighten the image.
- Electronic shutters are measured in (and typically ranges in our cameras) from $1/1000^{\text{th}}$ of a second ($=1\text{ms}$) to $1/2^{\text{nd}}$ of a second ($=500\text{ms}$). So, $1/30^{\text{th}}$ of a second means 33ms exposure time.
- Exposure Control continuously measures the actual brightness of the **ROI** and it automatically adjust the exposure time (shutter speed) and/or the gain to arrive at the target brightness.
- Hence, based on light conditions, Camera's exposure control will arrive at the target brightness with trade-offs between motion blur (slow shutter speed produces motion blur) and the noise level in the image (gain amplifies the video signal and noise, both).

ROI – Region of Interest for Exposure Control



- Electronic Shutter operation and frames per second (fps) from camera:
 - Basic rule of thumb (based on mechanical shutter): The fps required in the stream should be $\frac{1}{2}$ of the denominator of shutter speed.
 - E.g., 25fps stream – Camera should at least have shutter speed of $\frac{1}{50}$ th of a second = 20ms
 - E.g., 10fps stream – Camera should at least have shutter speed of $\frac{1}{20}$ th of a second = 50ms
 - So, automatically higher fps is possible at faster shutter speed (low exposure time – bright light conditions)
 - And automatically lower fps is possible at slower shutter speed (high exposure time – low light conditions)



Short shutter interval



Long shutter interval

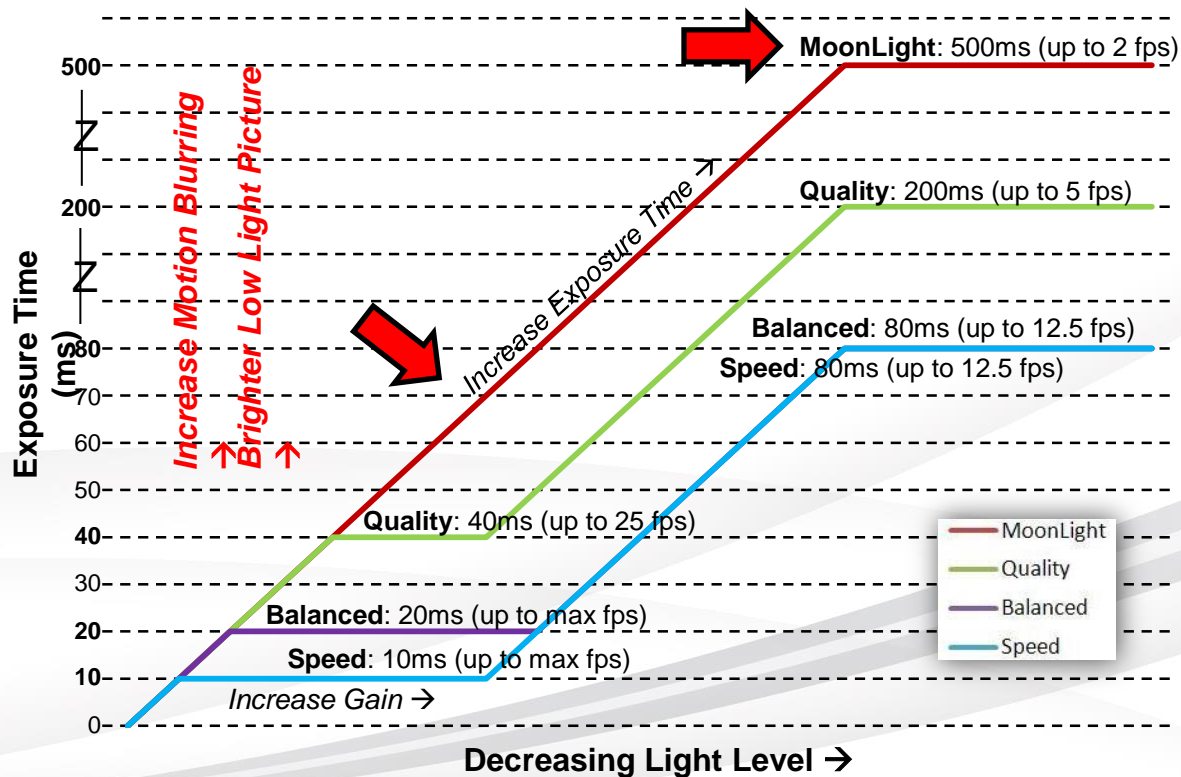
What does this mean?

- Low light condition (needs proper set up):
 - Slow shutter (& *lesser fps*)= Motion Blur
 - Extra Gain = Noise
 - Good light conditions = Great Image quality (easy set up)
-
- Objective to capture fast moving object = Higher shutter speed (need light)
 - Objective to have more bright image of target = Lower shutter speed (longer exposure time but less fps)



- A number of settings like exposure, gain, BLC etc. have been grouped into selectable preset modes.
- These functions automatically adjust their levels at rates determined by the mode selected.
- Five modes available in our Cameras are:
 - Moonlight
 - Quality
 - Balanced (Default mode)
 - Speed
 - High Speed

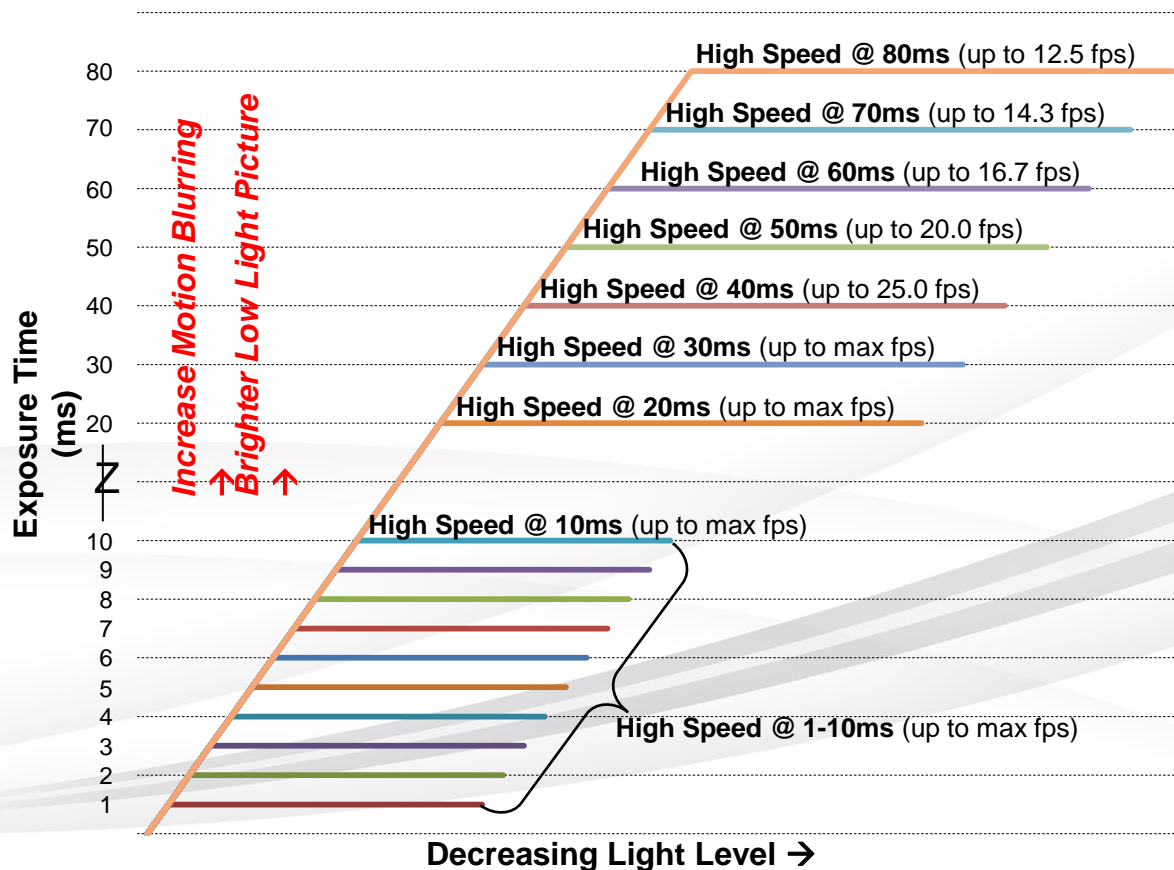
- **MoonLight:** Produce best image quality under very low light with least noise but high motion blur. (40ms – 500 ms)
- **Quality:** This is similar to MoonLight mode except for shorter exposure time (40ms – 200ms). This mode is a good trade off between less noise and motion blur but in more motion blur under very low light conditions.
- **Balanced:** Similar to the Quality setting but the knee point is at 20ms and 80 ms. This is the default mode and will provide the best exposure settings for typical installations assuming good lighting conditions.
- **Speed:** Similar to the Balanced mode at 80ms. But it has lower starting exposure time of 10ms to ensure minimal motion blur and faster fps at good illumination.



User Controllable Exposure Control Preset Mode

High Speed: The exposure time increases consistently until it reaches the selected maximum exposure time where it begins to add gain.

- This mode has selectable exposure times from 1-80 ms in increments of 1ms via camera webpage – user controllable.
- Shorter exposures reduce motion blur for applications such as monitoring fast moving objects and reading license plates
- The trade-off is an increased level of noise



- Target should be suitably set as ROI for exposure reference.
- To maintain higher fps (25/30fps), the exposure must be set near to 33ms or lower.
- So, based on the results expected from the installed camera, installer should select suitable exposure mode by considering the following:
 - If better low light performance is required – Select Moonlight/Quality/Balanced mode
 - If better fast moving object capture (or higher fps) is required – Select Balanced/Speed/High Speed and set the exposure time
 - If intelligent tradeoff across all and varying lighting condition is required then select the default Balanced mode.
 - If manually, installer wish to control the exposure time and results, then select High Speed mode and enter exposure time manually. To reduce the noise, overall brightness of camera image can also be reduced.

Product Update

SurroundVideo® Omni G2

4 Motorized User-Configurable Sensors in
an Omni-Directional All-in-One Solution

Highlighted Features Include:

- 12 or 20 Megapixel (MP) H.264 All-in-One Remote Focus Omni-Directional User-Configurable Multi-Sensor True Day/Night Indoor/Outdoor Dome IP Cameras
- Multiple Lens Options in a Single Camera Housing from 2.1mm to 16mm
- Up to 4 Individual Camera Gimbals can be Independently Placed in Any Orientation Around a 360° Track Including Looking Straight Down
- True Wide Dynamic Range up to 100dB at Full Resolution
- Increased Frame Rates



Multi-Sensor Omni

MegaVideo® Flex

Ultra Low Profile Design Solution

Highlighted New Features Include:

- 1.2MP, 1080p, 3MP, and 5MP H.264 Remote Focus True Day/Night Indoor/Outdoor Tethered IP Cameras
- Camera Sensor and Main Unit can be Connected via a USB Cable up to 40ft in Length
- Optional IR LEDs



*Sold Separately

MegaDome® 4K

8.3 Megapixels at 30fps!

Highlighted New Features Include:

- 4K Ultra High Resolution Image Quality
- 8.3MP H.264 True Day/Night Indoor/Outdoor Dome IP Cameras
- 30 Frames per Second
- New Easy-to-Install Housing Design



SurroundVideo® G5 Mini

Smaller Housing Models Now Up to 20 Megapixels

Highlighted New Features Include:

- 12MP and 20MP H.264 All-in-One 180° or 360° Panoramic True Day/Night Indoor/Outdoor Dome IP Cameras
- True Wide Dynamic Range up to 100dB at Full Resolution
- Increased Frame Rates



180° Panoramic

360° Panoramic

SurroundVideo® G5

Now with Remote Focus and STELLAR™

Highlighted New Features Include:

- 5MP, 12MP, and 20MP H.264 All-in-One 180° Panoramic True Day/Night Indoor/Outdoor Dome IP Camera
- Motorized P-Iris Lenses with Remote Focus
- **STELLAR™** (Spatio Temporal Low Light Architecture) on 5MP Models
- True Wide Dynamic Range up to 100dB at Full Resolution
- Increased Frame Rates



180° Panoramic

MicroDome® G2

Now with Remote Focus and 3-Axis Gimbal

Highlighted New Features Include:

- 1.2MP, 1080p, 3MP, and 5MP H.264 All-in-One True Day/Night Indoor/Outdoor Dome IP Cameras
- Motorized Lens with Remote Focus
- True Wide Dynamic Range up to 100dB at Full Resolution
- 3-Axis Gimbal



MegaBall® G2

Now with STELLAR™, Adjustable IR, and More!

Highlighted New Features Include:

- 1.2, 1080p, 3, and 5 Megapixel (MP) H.264 All-in-One Motorized P-Iris or Manual Panomorph Lens True Day/Night Indoor IP Cameras
- **STELLAR™** (Spatio Temporal Low Light Architecture)
- True Wide Dynamic Range up to 100dB at Full Resolution
- New Adjustable IR LEDs
- Flush or Surface Mount Domes and New Bell Mount Housing Options



Technology Partner Program Expansion Infrastructure Partners

Technology Partner Program: Infrastructure Partners

- The **Arecont Vision® Technology Partner Program** and the Arecont Vision **MegaLab™** provide product integration testing and validation with program members from a wide range of security and IT vendors for complete solutions
 - **Video Partners:** Open VMS, Analytics Software, and NVR Platforms
 - **Infrastructure Partners:** Servers, Storage, Wireless, Networking, Structured Cabling, Optics, Enclosures, Networking, Cybersecurity, Illumination, Utilities, and Accessories

Arecont Vision MegaLab™ Services

- *Integration validation testing beyond our commitment to ONVIF and PSIA standards compliance*
- *Validate new features, versions, and products for enhanced integration*
- *Test performance and configuration changes*
- *Simulate real-world conditions using extensive onsite equipment resources*
- *Troubleshoot issues and behavior*

Learn about the Technology Partner Program at: <http://www.arecontvision.com/partners/technology-partner-program>

Learn about the MegaLab at: <http://www.arecontvision.com/supports/megalab>

Or read this MegaLab news article by *Security Today Magazine* at: <https://goo.gl/ePZJFI>

Or read this MegaLab press release: <http://goo.gl/QI7LEu>

Video Partners



Note: Listings are examples only and are not inclusive.

- Coming Soon:
 - Announcements for new Infrastructure Partners
 - New landing page coming soon!
- To participate as an Infrastructure Partner:
 - Track record of successful joint installations
 - Commitment to continuing sales, development, and support collaboration
 - Provide product for MegaLab™
- Participation is open to manufacturers of products that include:

• Servers	Storage
• Network infrastructure	Wireless
• Cybersecurity	PSIM
• Structured cabling	Illumination
• Optics	Enclosures
• Utility software	Accessories

Arecont Vision® Announces Expansion of the Technology Partner Program to Include Infrastructure Partners



Los Angeles, CA (March 23, 2016) – [Arecont Vision®](#), the industry leader in [IP-based megapixel camera technology](#), has expanded the popular Technology Partner Program to pre-test integration with complementary security and IT industry products under the new Infrastructure Partner category.

Arecont Vision Infrastructure Partner Registration

To be considered to be part of the Arecont Vision Infrastructure Partner Program, please complete this form and submit the requested files at the bottom.

Company Name *

Company Website *

Partner Program Contact Name & Title *

Partner Program Contact Direct Phone Number *

Partner Program Contact Email *



Learn More:

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