AXIS P3905-R Mk III Dome Camera

2 MP indoor onboard surveillance

This compact and discreet 2 MP onboard camera complies with rolling stock standards such as EN50155 and EN45545. It can withstand vibrations and a wide range of temperatures. Additionally, with AXIS TP3826-E housing this dome camera can be mounted on the outside of a vehicle. Thanks to Lightfinder and Forensic WDR, it provides details even in challenging light conditions. And with traffic light mode it can distinguish the color of traffic lights in dark scenes. Optional M12 lenses are available to adjust field of view for customized monitoring purposes.

- > Compact, rugged design
- > Complies with EN50155
- > Lightfinder and Forensic WDR
- > Zipstream
- > Traffic Light mode

AXIS P3905-R Mk III Dome Camera

Variants
AXIS P3905-R Mk III RJ45 3.6 mm
AXIS P3905-R Mk III M12 3.6 mm
AXIS P3905-R Mk III M12 2.8 mm

Camera

Image sensor
1/2.9" Progressive scan RGB CMOS
Pixel size 2.8 µm

Lens
3.6 mm, F2.0 :
Horizontal field of view: 88°
Vertical field of view: 47°
Minimum focus distance: 0.3 m (1 ft)
M12 mount, fixed iris
2.8 mm, F1.2 :
Horizontal field of view: 107°
Vertical field of view: 56°
Minimum focus distance: 0.3 m (1 ft)
M12 mount, fixed iris
See **Optional accessories** for exchangeable lenses

Minimum illumination
3.6 mm, F2.0 :
Color: 0.04 lux at 30 IRE F2.0
Color: 0.13 lux at 50 IRE F2.0
2.8 mm, F1.2 :
Color: 0.02 lux at 30 IRE F1.2
Color: 0.07 lux at 50 IRE F1.2

Shutter speed
With WDR: 1/19000 s to 1/5 s
No WDR: 1/17000 s to 1/5 s

Camera adjustment
Pan: ±30°
Tilt: 15-90°
Rotation: ±175°

System on chip (SoC)

Model
S6LM55

Memory
1024 MB RAM, 512 MB Flash

Video

Video compression
H.264 (MPEG-4 Part 10/AVC) Main and High Profiles
H.265 (MPEG-H Part 2/HEVC) Main Profile
Motion JPEG

Resolution
16:9: 1920x1080 to 640X360
16:10: 1280x800 to 640x400
4:3: 1280x960 to 320x240

Frame rate
H.264 and H.265: 25/30 fps (50/60 Hz) in all resolutions
Motion JPEG: 15 fps (50/60 Hz) in all resolutions

Video streaming
Up to 4 unique and configurable video streams[1]
Multiple, individually configurable streams in H.264, H.265 and Motion JPEG
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264 and H.265
Video streaming indicator

WDR
Forensic WDR: Up to 120 dB depending on scene

Noise reduction
Spatial filter (2D noise reduction)
Temporal filter (3D noise reduction)

Image settings
Compression, brightness, sharpness, contrast, white balance, Forensic WDR, exposure control, exposure zones, fine tuning of behavior at low light, rotation: 0°, 90°, 180°, 270° including Corridor Format, dynamic overlay, 32 individual polygonal privacy mask, mirroring of images
Scene profiles: forensic, vivid, traffic overview

Image processing
Axis Zipstream, Forensic WDR, Lightfinder

Pan/Tilt/Zoom
Digital PTZ, preset positions, guard tour, control queue

1. *We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.*

Network

Network protocols
IPv4, IPv6 USGv6, HTTP, HTTPS[2], HTTP/2, TLS[2], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, RTSP, RTP, SRTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SOCKS, SSH, LLDP, CDP, MQTT v3.1.1, Syslog, Link-Local address (ZeroConf)

System integration

Application Programming Interface
Open API for software integration, including VAPIX® and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*.
One-click cloud connection
ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S and ONVIF® Profile T, specification at *onvif.org*

Video management systems
Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' partners available at *axis.com/vms*.

Onscreen controls
Video streaming indicator
Wide dynamic range
Privacy masks

Event conditions
Device status: above operating temperature, above or below operating temperature, below operating temperature, IP address removed, network lost, new IP address, storage failure, system ready, within operating temperature
Edge storage: recording ongoing, storage disruption
I/O: manual trigger, virtual input
MQTT subscribe
Scheduled and recurring: scheduled event
Video: average bitrate degradation, live stream open, tampering

Event actions
Guard tours
Upload images or video clips: FTP, HTTP, HTTPS, SFTP, email and network share
Notification: HTTP, HTTPS, TCP and email
Overlay text
Preset positions
Record video: SD card and network share
SNMP trap messages
WDR mode
MQTT publish

Built-in installation aids
Pixel counter

Analytics

Applications
Included
AXIS Video Motion Detection, active tampering alarm[3]
Supported
AXIS Fence Guard, AXIS Loitering Guard, AXIS Motion Guard
Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Approvals

Product markings
CE, ECE, KC, RCM, UL/cUL, UKCA, VCCI, WEEE

Supply chain
TAA compliant
NDAA compliant

EMC
EN 55032 Class A, EN 55035, EN 61000-6-1, EN 61000-6-2, ECE R10 rev.06 (E approval), EN 50498,
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES-3(A)/NMB-3(A)
Japan: VCCI Class A,
Korea: KS C 9835, KS C 9832 Class A,
USA: FCC Part 15 Subpart B Class A
Rolling stock: EN 50121-3-2, EN 50121-4, IEC 62236-4

Safety
IEC/EN/UL 62368-1, CAN/CSA C22.2 No. 62368-1, UN ECE R118
EN 45545-2, NFPA 130[4]

2. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
3. *For detection of tampering attempts in static and non-crowded scenes.*
4. *ASTM E162 and the non-flaming parts of ASTM E662*

Environment
IEC/EN 60529 IP66, IEC/EN 60529 IP67,
IEC/EN 62262 IK10,
IEC 60721-3-5 Class 5M3 (vibration and shock),
IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-27,
IEC 60068-2-64, IEC 60068-2-78, IEC 60068–2–14
IEC/EN 61373 Category 1 Class B, EN 50155:2021 OT1/ST2

Network
NIST SP500-267

Cybersecurity
ETSI EN 303 645

Cybersecurity

Edge security
Software: Signed OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 Client Credential Flow/OpenID Authorization Code Flow for centralized ADFS account management, password protection, AES-XTS-Plain64 256bit SD card encryption
Hardware: Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), system-on-chip security (TEE), Axis device ID, secure keystore, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

Network security
IEEE 802.1x (EAP-TLS, PEAP-MSCHAPv2)[5],
IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR,
HTTPS/HSTS[5], TLS v1.2/v1.3[5], Network Time Security (NTS), X.509 Certificate PKI, host-based firewall

Documentation
AXIS Hardening Guide
AXIS Vulnerability Management Policy
AXIS Security Development Model
AXIS OS Software Bill of Material (SBOM)
To download documents, go to *axis.com/support/cybersecurity/resources*
To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing
IP66/67- and IK10-rated aluminum and polycarbonate casing

Mounting
Inside vehicles and rolling stock

Power
Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 1
Typical 2.2 W, max 3.8 W

Connectors
RJ45: male, 10BASE-T/100BASE-TX
M12: female, rugged, D-coded with rotatable coupling nut
All connectors support PoE

Storage
Support for microSD/microSDHC/microSDXC card with UHS Speed Class U1
Support for recording to network-attached storage (NAS)
For SD card and NAS recommendations see *axis.com*

Operating conditions
-30 °C to 55 °C (-22 °F to 131 °F)
Maximum (intermittent): 70 °C (158 °F)
Humidity: 10-100% RH (condensing)

Storage conditions
-40 °C to 65 °C (-40 °F to 149 °F)

Dimensions
Height: 50 mm (1.97 in), ø 110 mm (4.33 in)

Weight
241 g (0.53 lb)

Box content
Camera, Installation guide, Windows® decoder 1-user license, lens tool

Optional accessories
Lenses
Lens M12 2.1 mm, F2.2: horizontal field of view 145°
Lens M12 2.8 mm, F1.2: horizontal field of view 107°
Lens M12 3.6 mm, F2.0 : horizontal field of view 88°
Lens M12 6 mm, F1.6: horizontal field of view 51°
Lens M12 8 mm, F1.6: horizontal field of view 39°
Other
AXIS T94D01S Mount Bracket,
AXIS T94D02S Curved Mount Bracket,
Network coupler IP66, Network cable coupler indoor,
TM3101 Pendant Wall Mount, AXIS TP3826-E housing,
TP3827 Clear Dome Cover, TP3830 Top Black Cover
For more accessories, see *axis.com/products/axis-p3905-r-mk-iii#accessories*

5. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

System tools
AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator
Available at *axis.com*

Languages
English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

Warranty
5-year warranty, see *axis.com/warranty*

Part numbers
Available at *axis.com/products/axis-p3905-r-mk-iii#part-numbers*

Sustainability

Substance control
PVC free, BFR/CFR free
RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018
REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *axis.com/partner.*

Materials
Recycled aluminum: 95%
Screened for conflict minerals in accordance with OECD guidelines
To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*

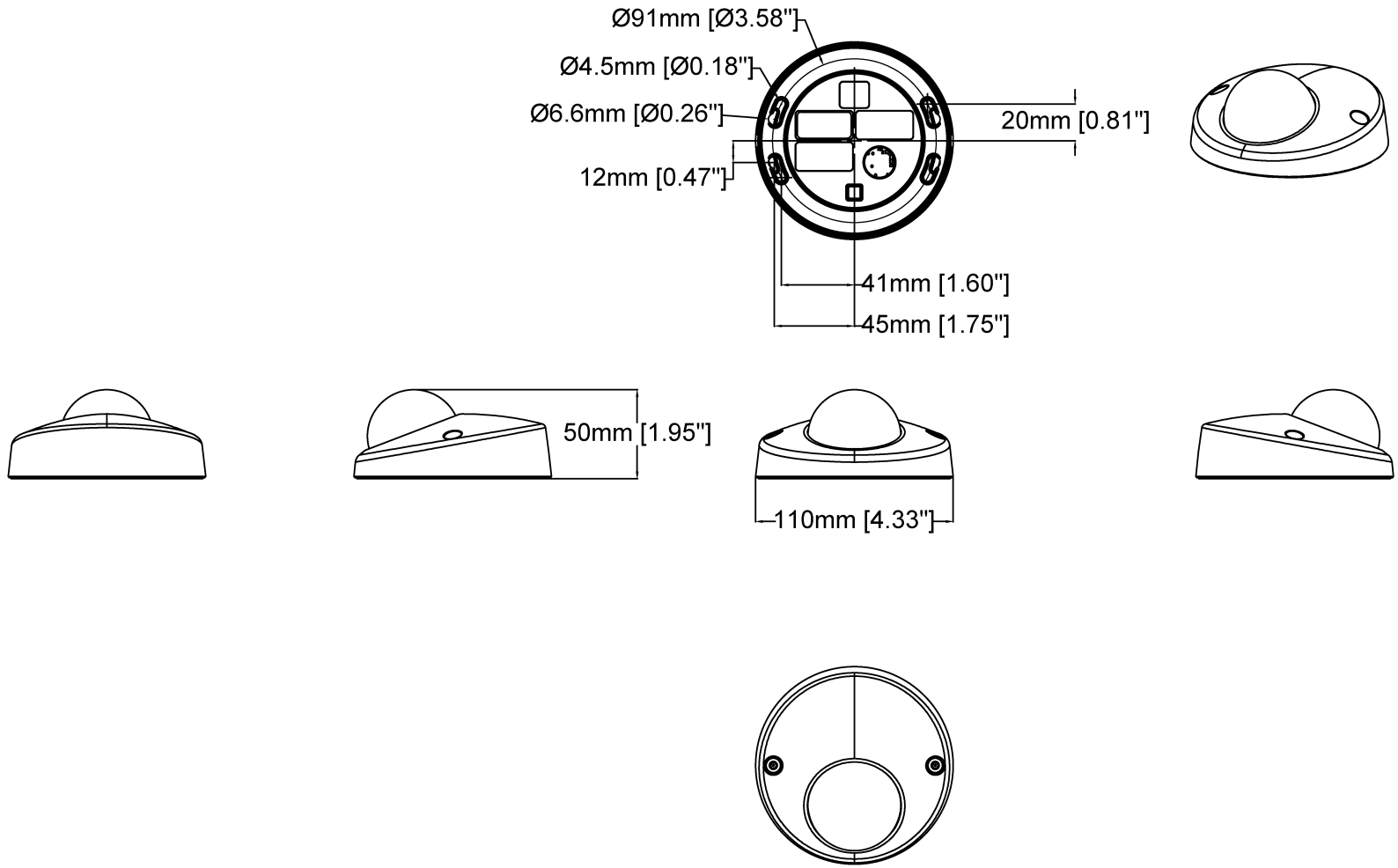
Environmental responsibility
axis.com/environmental-responsibility
Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

Detect, Observe, Recognize, Identify (DORI)

3.6 mm lens	DORI definition	Distance
Detect	25 px/m (8 px/ft)	50.6 m (166.0 ft)
Observe	63 px/m (19 px/ft)	20.1 m (65.9 ft)
Recognize	125 px/m (38 px/ft)	10.1 m (33.1 ft)
Identify	250 px/m (76 px/ft)	5.1 m (16.7 ft)

2.8 mm lens	DORI definition	Distance
Detect	25 px/m (8 px/ft)	21.1 m (69.2 ft)
Observe	63 px/m (19 px/ft)	7.4 m (24.3 ft)
Recognize	125 px/m (38 px/ft)	4.2 m (13.8 ft)
Identify	250 px/m (76 px/ft)	2.1 m (6.9 ft)

Axis calculates the DORI values using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such as object motion, video compression, lighting conditions, and camera focus. Use margins when planning. The pixel density varies across the image, and the calculated values can differ from the distances in the real world.



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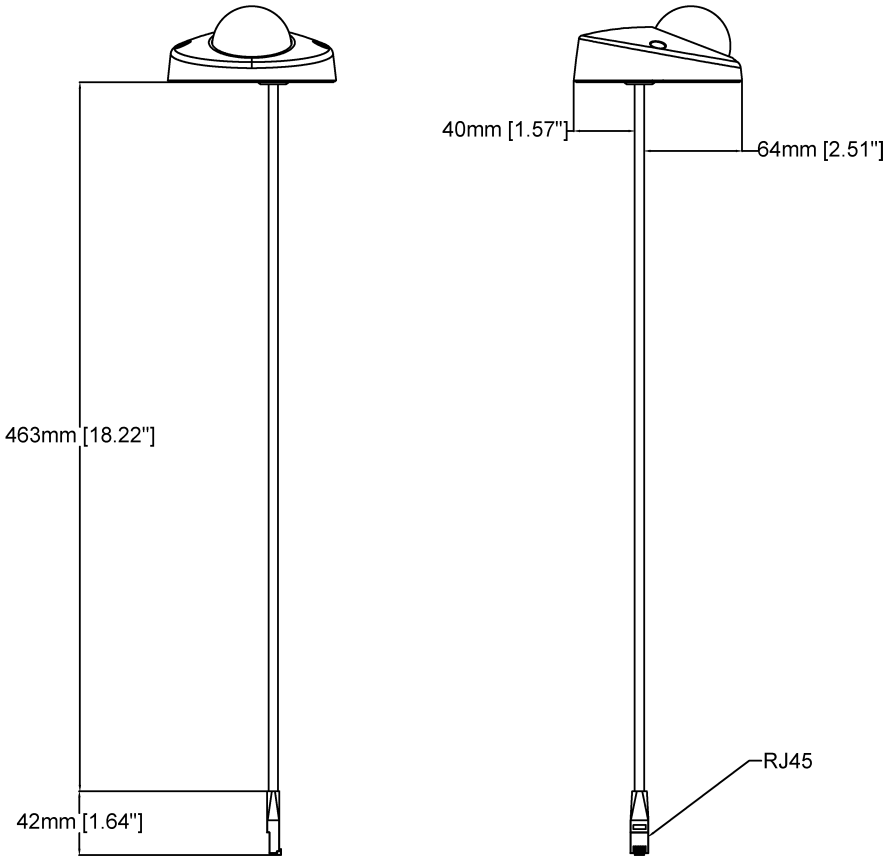
Revision	v.01	Revision date	2022-12-14
Paper size	A4	Release date	2022-12-14
Created by	MS	Scale	1:3



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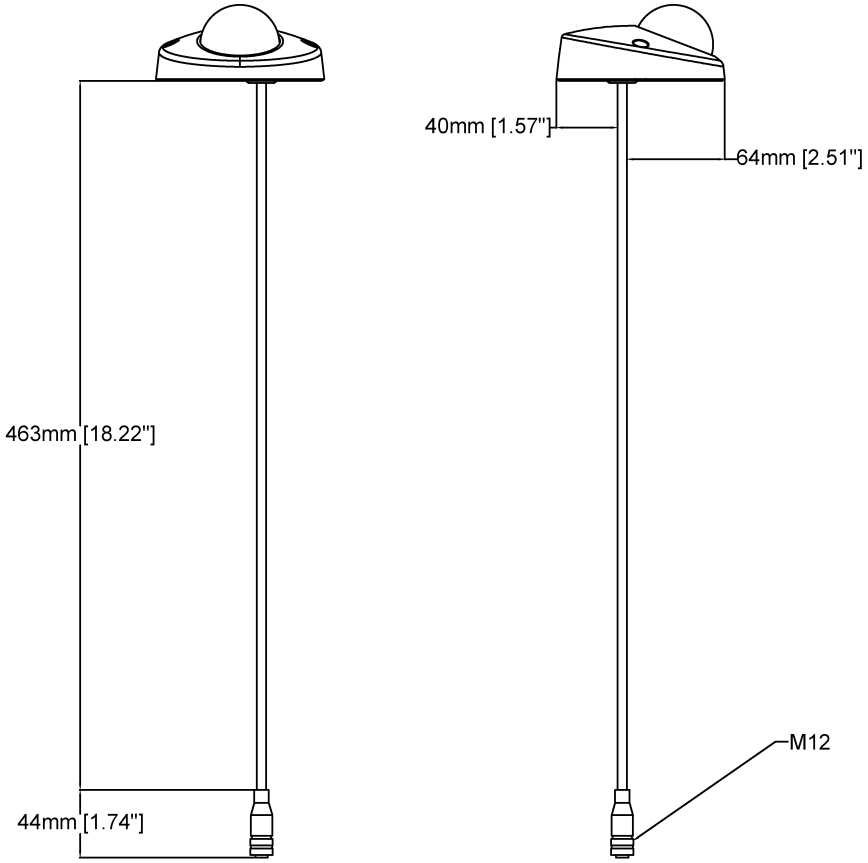

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Highlighted capabilities

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc.) against malicious extraction in the event of a security breach. The secure keystore and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

Furthermore, signed video ensures that video evidence can be verified as untampered. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream allowing video to be traced back to the Axis camera from where it originated.

To read more about Axis Edge Vault, go to *axis. com/ solutions/edge-vault*.

Zipstream

The Axis Zipstream technology preserves all the important forensic in the video stream while lowering bandwidth and storage requirements by an average of 50%. Zipstream also includes three intelligent algorithms, which ensure that relevant forensic information is identified, recorded, and sent in full resolution and frame rate.

Forensic WDR

Axis cameras with wide dynamic range (WDR) technology make the difference between seeing important forensic details clearly and seeing nothing but a blur in challenging light conditions. The difference between the darkest and the brightest spots can spell trouble for image usability and clarity. Forensic WDR effectively reduces visible noise and artifacts to deliver video tuned for maximal forensic usability.

Lightfinder

The Axis Lightfinder technology delivers high-resolution, full-color video with a minimum of motion blur even in near darkness. Because it strips away noise, Lightfinder makes dark areas in a scene visible and captures details in very low light. Cameras with Lightfinder discern color in low light better than the human eye. In surveillance, color may be the critical factor to identify a person, an object, or a vehicle.

For more information, see *axis.com/glossary*