ICOMERA
AN EQUANS COMPANY

Real-Time Digital Video Surveillance & Monitoring

Safety & Security

A Vital Concern for Transport Operators and Authorities

Maintaining the safe and efficient movement of people to and from their destinations is a priority for public transport operators and authorities, and an important consideration for any policy maker's agenda. There are several reasons why safety plays a key role in any successful public transport system:

Safe Passengers are Happy Passengers

Research has shown a tendency for the media to over-report terrorist incidents and violent crimes compared to road accidents[1]. Over half of US citizens are concerned about being a victim of terrorist attacks[2], and over a third of US citizens would stop doing certain activities due to their fear of becoming a victim of terrorism[3]. Additionally, a report published by independent UK public transport watchdog 'Transport in Focus' shows that overall passenger satisfaction increases as a direct result of security improvements made by operators. This report concludes that providing real-time security makes significant impacts on public opinion, while urging operators and policy makers to keep improving[4], demonstrating the importance of keeping up with the latest trends and innovations in safety & security, in order to maintain ridership numbers and passenger satisfaction.

Public Perception is Key

With the prevalence of instant social media communication in today's world, even minor incidents arising from lapses in safety can be rapidly shared among the population, driving up public consciousness of safety and security concerns, even if reasonable steps have been taken to prevent potential incidents. While public transport remains the safest way to travel, when incidents do occur, it has never been easier for the public and mass media to scrutinise the safeguards that were in place at the time.

Terrorism, Crime & Reputation

It is an unfortunate, yet unavoidable fact that perpetrators of criminal and terrorist activities seek to exploit security flaws in public transport systems and that when they do so, the cost and public exposure arising from such incidents could cause irreparable damage to the business and reputation of all parties involved.

Therefore, all decisions on tenders, awards, and investments ought to be made with passengers' safety and security front of mind.

Prevention is Better than Cure

While remaining the most efficient means of moving people across distances, the fact remains that public transport requires passengers to share confined spaces with total strangers, for predetermined lengths of time, with limited opportunities to remove themselves from uncomfortable situations.

Passengers may not perceive this loss of control when taking other modes of transport, such as when driving a car by themselves. It is therefore important for transport operators to ease potential anxiety by giving passengers the peace of mind that their persons and their property are fully secured as they travel.

Passengers in danger of personal harm or theft will find little comfort in knowing that video footage is recorded for use in court, if nobody can actively intervene to prevent the risk in the first place. This is one of many reasons for the industry's shift from forensic (retroactive evidence collection) to real-time digital video surveillance, as operators can stop unwanted behaviour before it can escalate.

In cases of terrorism or violent crime, remedial actions may be considered by the public to be 'too little, too late', whereas the presence of preventative measures, and systems which allow operators and their security personnel to better manage emergencies in real-time, decreases the danger perceived by the public, building confidence in the transport network in its ability to protect its passengers.

It should be noted that the collection of forensic evidence is still a vital component of any surveillance system; however, if the images retained do not meet the evidentiary standard required for prosecution, the solution is rendered ineffective. This is where high resolution digital footage makes all the difference, especially when combined with powerful compression technology and extensive storage capabilities.

Benefits of Real-time Digital Video Surveillance & Monitoring

As with many technologies, the public transport industry has undergone a paradigm shift from analogue to networked hardware platforms, with surveillance systems being no exception.

Transport operators looking to remain competitive within a highly dynamic industry have chosen to progress with the shift from forensic to real-time digital video surveillance, and are making the transition from analogue to Internet Protocol (IP) based video sensors, in order to benefit from:

Legal & Regulatory Compliance

As legislation continually evolves, it is no doubt beneficial for transport operators to invest in adaptive, future-proof technology which develops concurrently; delivering peace of mind that their transport systems will consistently remain compliant.

Reduced Expenditure & Insurance Premiums

When incidents do occur, the ability to access accurate, high-definition digital footage through reliable and easy-to-use video management systems allows operators to prevent and disprove fraudulent claims, avoid unnecessary claim payouts, and reduce their insurance premiums by having accurate and reliable evidence to hand when they need it most.

Minimising Service Disruption & Maintenance Downtime

Through real-time monitoring, the prevention of vandalism, theft, violence, and the ability to react quickly in medical emergencies will save money and reduce service disruptions. Additionally, operators will also lower the amount of downtime sustained as a result of manually monitoring asset health and delayed repairs to units which have stopped working.

Icomera presents a modern, powerful and scalable Real-Time Digital Video Surveillance & Monitoring solution, which offers numerous benefits to transport operators:

- Act Quickly & Appropriately in Emergency Situations
- Reduce Insurance Premiums & Accident Claim Costs
- Obtain High Quality Video Evidence for Use in Court
- Connect Systems to Obtain a "Single Source of Truth"
- Ensure Legal & Regulatory Compliance
- Automated Monitoring of Asset Health
- Record, Stream and Rewind Simultaneously, in Real Time
- Provide a Safe Workplace & Reduce Staff Turnover
- Scalable Video Management Software (VMS)
- Reduce Operating Costs of Manual Evidence Retrieval
- Promote Safety & Security to Attract More Passengers
- Less Cabling to Install & Maintain

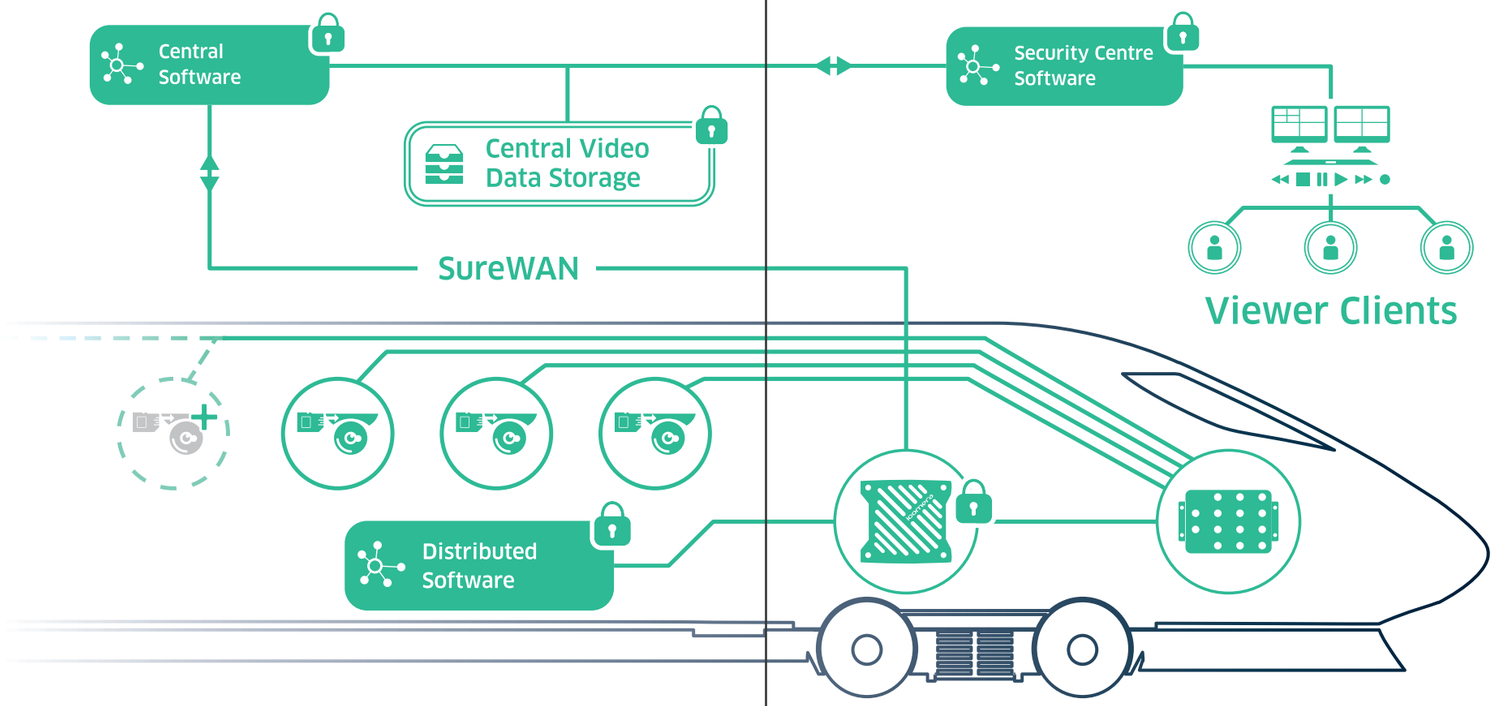
Digital Video Surveillance for Rail Vehicles

Digital Trains of the future use numerous hardware devices and software applications interlinked across a single onboard Internet connectivity backbone, lowering the total cost of ownership, reducing onboard cabling, and providing a means for operators to scale up as their business grows.

Icomera's X-Series mobile Internet connectivity & applications platform is at the heart of the Digital Train's onboard network, providing the storage space and processing power required to support as many Digital Video Surveillance cameras as are needed to keep the entire train, its passengers, and environment safe & secure.

AXIS P-39 Series Network Camera

- High-definition video
- Fully compliant with transport industry regulations
- Electronic image stabilization
- Compact, rugged, and designed specifically for public transport
- WDR & Lightfinder



Additional P-39 Series Cameras

- Additional P-39 series cameras can be purchased as needed, for maximum flexibility.
- P-39 series cameras support microSD/microSDHC/ microSDXC storage and Zipstream compression technology, reducing storage size for high quality video footage.

High-Performance Digital Video Management System (VMS)

- Multi-View HD Playback
- Multi-Platform Support
- High Quality & Low Latency
- MPEG4, H.263/4, MJPEG Compression
- Modular System Architecture
- Intuitive Status Display
- Live Streaming & Playback
- Cost-Effective & Easy to Integrate with Existing Systems
- 24/7 Expert Support
- Fully Scalable Licensing
- "Over-the-Air" Config & Updates
- Redundant Configuration for High Availability

Icomera X-Series Multi-Radio Router

- High-performance LTE-A connectivity
- Optimised for video streaming
- Intel® Xeon-family Pentium® processor
- Up to 2TB (2 x 1TB) SSD
- Industry-grade IP65 aluminium chassis

Managed PoE Network Switch

- High-bandwidth data transfer
- Specifically designed for public transport
- Easy to configure and manage

Digital Video Surveillance for Road Vehicles

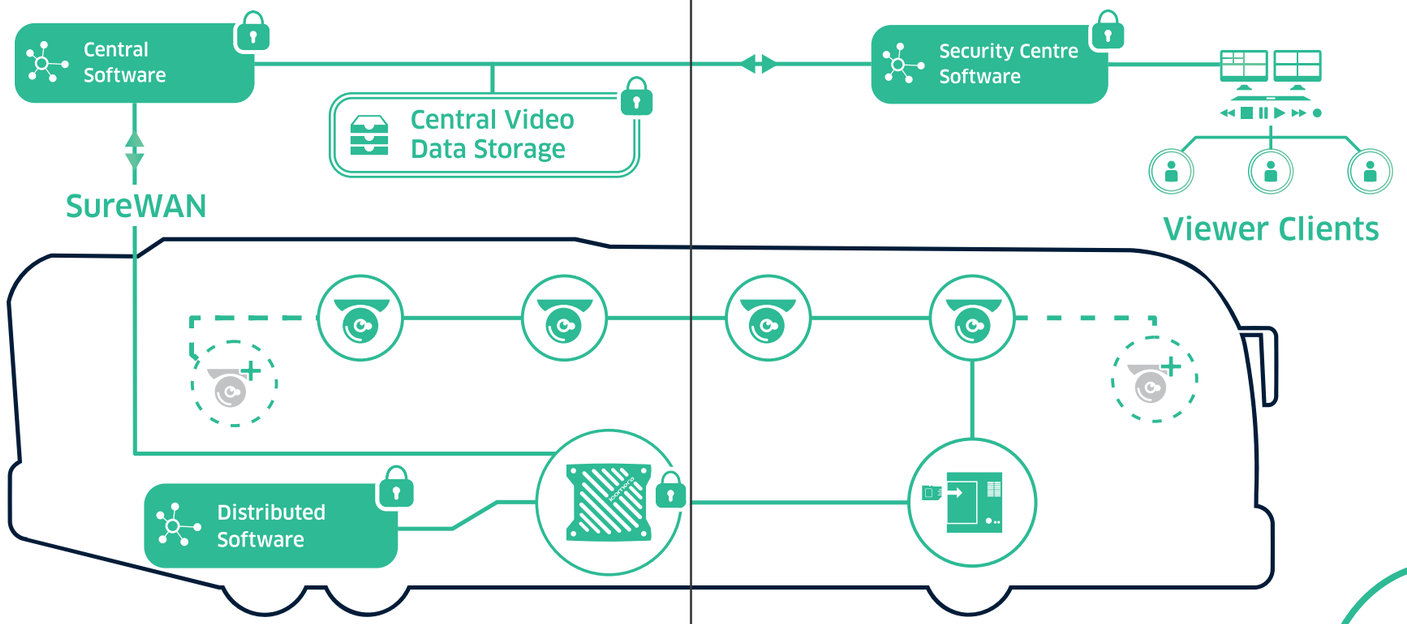
Connectivity-enabled applications for road transport, such as Passenger Infotainment and Telematics, allow transport operators to provide passengers with a significantly improved journey experience, while keeping data costs low by running multiple resource-intensive applications on a single optimised hardware platform.

Icomera's Real-Time Digital Video Surveillance solution leverages our superior X-Series mobile Internet connectivity & applications platform to provide real-time video offload, extensive historic data storage, and powerful monitoring tools, all managed as part of a single digital ecosystem - All with much lower data costs.

4 x AXIS Dome Sensor F4005-E*

- Easy to install
- Vandal-resistant, rugged recessed dome sensor for in-vehicle use
- Fixed lens with 1080p resolution
- Wide 110° horizontal FOV
- IP66 and IK09 rated

*Additional dome sensors can be purchased as necessary



(Optional) AXIS Concealed Sensor F1005-E

- Ideal for discreet in-vehicle surveillance
- -Easy to install in tight spaces
- Fixed lens with 1080p resolution
- Wide 113° horizontal FOV
- IP66 and IK09 rated

High-Performance Digital Video Management System (VMS)

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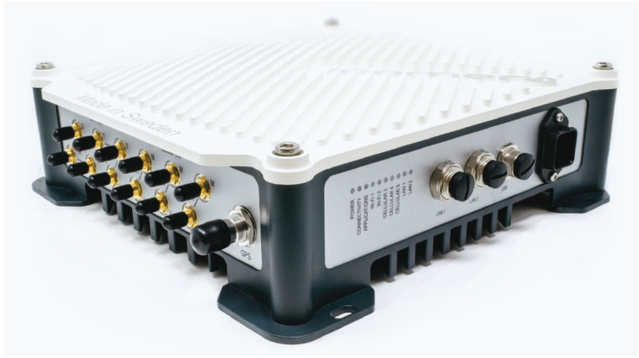
1 x AXIS Main Unit F44*
&
2 x AXIS Surveillance Card 64/128/256 GB

- Supports 1080p/HDTV 720p video from four sensor units simultaneously
- -Wide Dynamic Range - Forensic Capture
- -Advanced Zipstream compression technology
- -Rugged, easy to install
- -I/O ports, 2 x SD card slots
- *Additional Main Units can be purchased as necessary, for full flexibility.

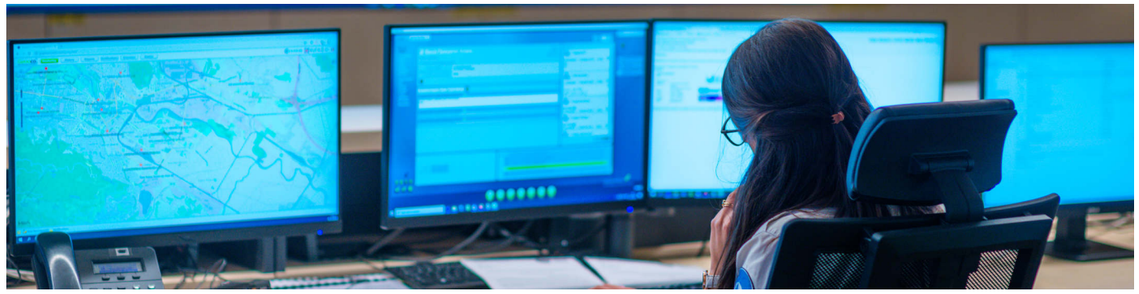
A Powerful Platform For Innovation



With the industry's shift from analogue to IP-based video solutions, there also comes a demand for increased bandwidth, processing power, and storage. Icomera's mobile Internet connectivity platform is designed to meet transport operators' growing data requirements by bringing LTE-A connectivity and Mobile Edge technology to public transportation.

Operators are now able to leverage the vehicle's onboard Internet connectivity as a backbone for high-resolution digital video surveillance systems and video management software, providing a powerful and fully realised bespoke real-time security solution, which serves as a proactive deterrent, a means of enacting faster, more appropriate situational responses, and an effective post-hoc investigative tool, leading to a safer, more secure journey for passengers.

Operators can opt for Icomera's high-performance X-Series routers for their Real-Time Digital Video Surveillance and Monitoring solution, which simultaneously supports additional resource-intensive applications such as Passenger Wi-Fi and Infotainment packages, with back-office connectivity to the surveillance components, local recording, and storage capacity as part of a single solution which can be scaled up or down as necessary to fit the operator's exacting requirements.



The Icomera Advantage

A Single Point of Contact

From hardware to help-desk, Icomera's experts fully manage your onboard network for you

Lower Cost of Ownership

Reliable and highly performant solutions enable you to minimise operating costs over their service life

Future-Proof Connectivity

The same connectivity that powers your Passenger Wi-Fi can be used to support numerous other applications

Secure Solutions as Standard

Our solutions are designed and delivered with cybersecurity in mind, ensuring that passenger and operational data is safe

Advanced Technology

Icomera's fully robust, high-performance technology platform delivers consistently reliable onboard connectivity

Fully Scalable Solutions

Our offering is tailored to fit your business and budget, giving you access to efficient and fully-realised solutions as you grow

About Icomera

Icomera, a subsidiary of ENGIE Solutions, is the world's leading provider of wireless Internet connectivity for public transport and is committed to promoting green mobility. Our award-winning technology serves millions of users across the globe daily.

We work with other industry leaders to innovate and meet the growing data demands presented by the advent of 5G and IoT technology. Our advanced solutions make public transport a better, safer, more attractive option for passengers, supporting our mission to help contribute to a reduction in carbon emissions of 3.5 million metric tons by 2022.

About Axis

Axis enables a smarter and safer world by creating network solutions that provide insights for improving security and new ways of doing business. As the industry leader in network video, Axis offers products and services for video surveillance and analytics, access control, and audio systems.

Axis has more than 3,000 dedicated employees in over 50 countries and collaborates with partners worldwide to deliver customer solutions. Axis was founded in 1984 and has its headquarters in Lund, Sweden.

For more information about Axis, visit www.axis.com.

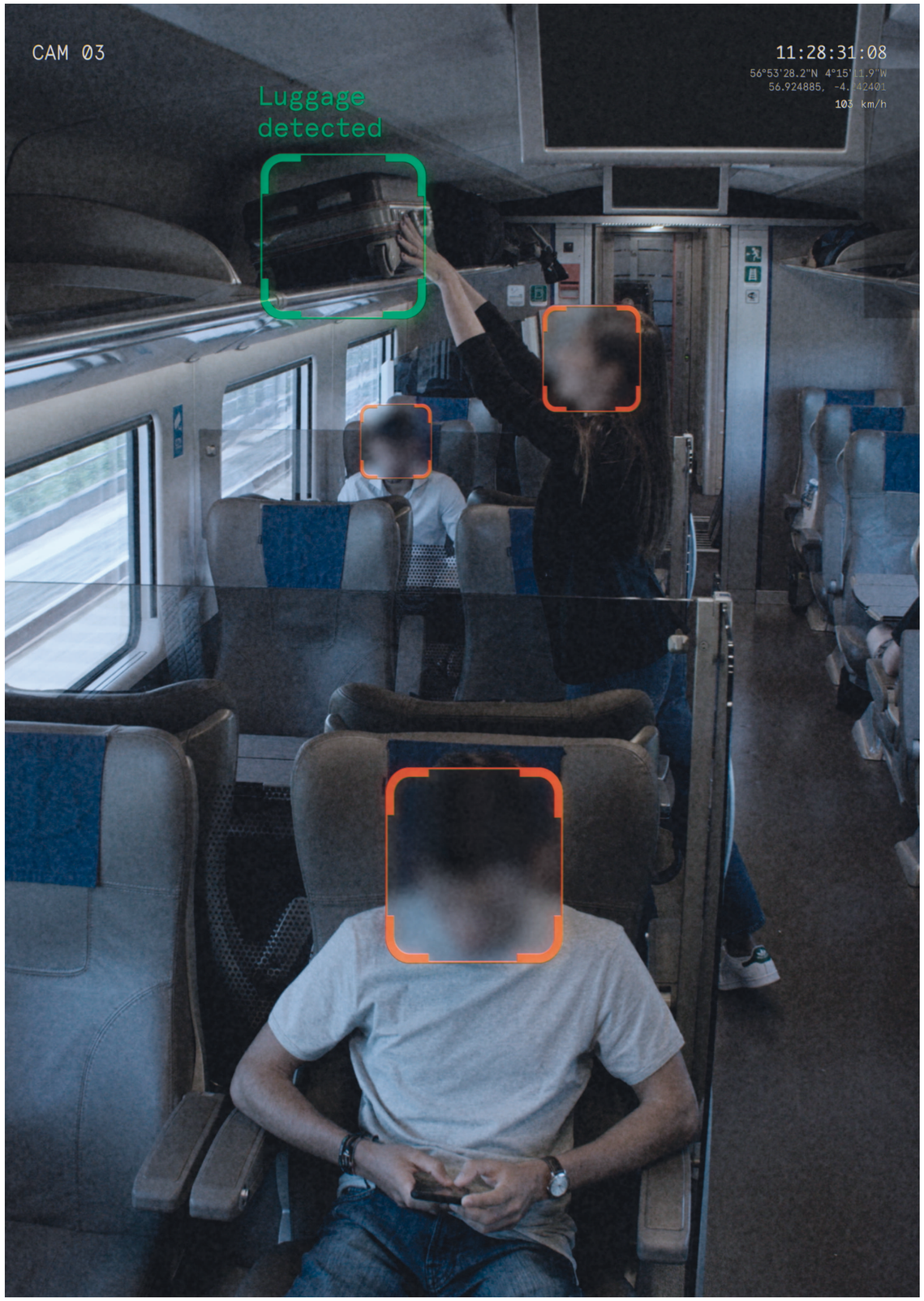
Synergistic Safety Solutions as a Service

In creating the Passenger Wi-Fi segment in 2001 and deploying the world's first mobile Internet connectivity solution for public transport in 2003, Icomera has blazed a trail in delivering the benefits of a Connected Journey to transport operators and their passengers alike.

It is therefore fitting that Icomera's chosen hardware partner, Axis, developed the first-ever IP-enabled cameras in 1996, opening the door to an entirely new means of providing safety and security through high-quality video evidence and effective real-time monitoring.

Icomera's powerful, high-performance connectivity and applications hosting platform transforms Axis' robust network cameras into intelligent devices that help transport operators actively manage incidents as they happen, while providing valuable context for fleet management and telematics at the same time.

Icomera's Real-Time Digital Video Surveillance & Monitoring Solution provides a single point of contact for all installation, maintenance and support requirements, tailored to the transport operators' needs in a modular, "Pay as You Grow" approach.



Get in Touch Today...

At Icomera, we work in partnership with clients to build long-term relationships. We listen to your needs and advise you on the solutions that fit your requirements, with room to grow in the future. We are with you through the installation process and over the entirety of a solution's service life. We can point to our proven track record of successful projects, providing relevant case studies on request.

To find out more about how we can help you, contact sales@icomera.com today

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