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I'm sure if you asked anybody about to step on the new Gautrain what their biggest consideration in terms of commuting was – safety and security would feature high up on the list. It's the same reason that more and more surveillance cameras are being installed in our rail, bus and rail car systems around the world, writes Roy Alves, country manager: SA of Axis Communications.

Traditional transport security is all about analogue CCTV cameras however, it has two major drawbacks - high installation costs and limited image quality. Until a few years ago there really was no alternative.

Thankfully today, the market is rapidly moving to digital network video solutions, and what the flexibility and openness of an IP-based solution guarantees you and me, is better safety and security as we travel. What this means for the transport authorities is a guarantee of continuous operation. Here are some of the real benefits to digital video for safer transport:

\* Better image quality facilitates identification - One of the main reasons for installing onboard cameras is to detect and prevent crime, so it's important that the surveillance system can provide images that make identifying suspects straightforward. All too often there are criminal acts caught on camera that cannot be solved due to the low image quality of the recorded video. Network cameras and network video recorders (NVRs) give high image quality in both live and recorded video, and the images can be easily shared and accessed numerous times without losing any quality. All recorded video has a resolution of at least 800x600 pixels, which is more than the 2CIF typically offered by analogue systems. Network cameras with HDTV and megapixel resolution offer even more detail and information, providing video quality similar to what we see on our HD television sets at home.

\* Flexible and cost-efficient installation - Network video cameras use a standard Ethernet network, making it easy for installers to add new cameras if needed. The recorded video and events are stored locally, and can be transferred wirelessly to a centralised storage bank. Thanks to Power over Ethernet, network cameras can be installed with a single cable to each camera communicating video, as well as providing power, saving both cable and installation costs. Many modern trains have a pre-installed Ethernet network, which can exchange information between the cars, display

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passenger information and provide Internet services. In such trains, the same network can be used for a network-based video surveillance system, making the installation even more cost-efficient.

\* Dedicated to onboard installations - There are various network cameras available that are especially designed to withstand the tough environment on board public transport. The cameras and recorders are protected from dust and water, withstanding shock, vibrations and temperature fluctuations, and are quick and reliable to install. Features can include: mounting options for curved and flat surfaces; battery back-up to handle short periods of power drops and integrated protection against voltage spikes.

\* Built-in tampering alarm detects camera manipulation - Network cameras provide the benefit of built-in intelligence, and in the transportation sector the active tampering alarm is a popular intelligent feature. If someone tries to tamper with the camera, for instance by spray-painting or covering the lens, the camera immediately sends an alert through the network to the user. Actions can then be taken to put the camera back into operation. The active tampering alarm helps to ensure that all cameras are fully operational, which is key to providing a safe transit system.

There are several other examples of camera intelligence for the transport industry. One of them is motion detection, where the camera either sends an alert or initiates recording when an object moves in a selected part of the image. Subway and rail stations often use motion detection to produce an alarm when a trespasser is on the tracks.

All trends point to more intelligent features, where the camera actively decides what to record and report. We have only seen the beginning of what's possible.

Axis' network video products have been installed in many demanding environments including busses in Stockholm, trains in Zurich and subways in Moscow. Imagine what they could do for our bus, train and other transport systems. Isn't it time to get on the bus?

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