Metadata saves on resources required to store large amounts of data

Yu Kitamura, Product Manager, Network Video Monitoring, Sony Europe explains the facts about metadata, and their benefits.

All organisations have to face the costly challenge of the storage and management of their valuable data. In the sphere of security, where visual data is indispensable, any avenues that make the capture, storage and retrieval of that information more efficient will command budget attention.

One of the inevitable costs of a comprehensive security operation is the money and resources required to store weeks of largely irrelevant security film, and also to identify and retrieve the relevant material from the archives when needed. What can make metadata - or data about data - economically attractive is being able to save on those resources.

Key facts about metadata
Metadata may sound like yet another stream to manage but, on the contrary, it is actually the key to automating management, and allowing technology to make some decisions by itself. With current network video monitoring solutions

On a more strategic level, the use of metadata also has an important role to play in keeping traffic off the network, as well as the data that a security camera usually captures, the additional metadata enables the surveillance system itself to do much of the detection work that normally falls on the security operative. It can, for instance, pinpoint with coloured boxes areas of the screen that contain threats, making the job of the observer easier, and the ultimate response quicker and more effective.

On a more strategic level, the use of metadata also has an important role to play in keeping traffic off the network - an advantage that not only comes with substantial operational benefits, but also one that has significant cost implications.

New security cameras which make use of metadata can independently recognise visual security breaches, such as abandoned packages or suspicious movement, and are sophisticated enough to know the difference between moving people and safe background conditions, such as blowing trees or splashing fountains. Such a capability means that those areas need no longer form a security blind spot as they do with current analogue CCTV.

As a consequence, there is no more need to 'mask' problem areas within the field of view. These cameras' capabilities also enable many of the common time-consuming false alarm scenarios to be eradicated. Once again, this is a function of the metadata, which feeds back information on the risks associated with what the cameras are seeing.

The benefits of metadata technology
The metadata technology of these security cameras comes with technical benefits too. Bandwidth requirements are minimised.

Metadata technology provides fast and accurate results when searching through historical data because only legitimate threat images and data are sent and stored. In a security environment where monitoring may be happening 24/7, the screening out of irrelevant data is a big step forward. It makes a significant difference to the cost and management of the captured material, and it also makes for fast and accurate results when searching through historical data.

**Application of intelligence in video surveillance and proactive detection**

Surveillance software currently available in the market analyses, assesses and responds to the images transmitted by intelligent security cameras. The surveillance software packages also gain additional information about the images from the cameras' metadata. By then employing features that alert and direct operatives to the visible threats within a frame of video, this type of software provides more than just a safety net - it delivers proactive detection.

This type of security software is designed with the practicalities of security work in mind. An unmistakable on-screen highlight box locates a threat, captures the observer’s attention and leaves no room for error. It enhances the security decision-making process and provides
accurate back-up data in time-critical situations, delivering essential decision support when it is most needed.

**Metadata...it is actually the key to automating management, and allowing technology to make some decisions by itself**

What allows this type of system to run so efficiently, with the metadata running alongside the video and audio data is its development of Distributed Enhanced Processing Architecture (DEPA). Having intelligent cameras on the same network as the servers that are running the security software opens up enormous possibilities and potential, and now means that a multi-camera security set-up doesn't have to be complex and difficult to monitor; personnel can be guided by the software to the hot-spots and the right screens to watch. They can be shown the detail of the threat before it becomes an incident, and may even as a result prevent it from turning into an incident at all.

A new era in security network video monitoring is underway. The return on investment from bringing monitoring cameras on to the network and away from the world of analogue CCTV, are clear. It is no longer necessary to run, manage and upgrade two separate systems. The same investment that allows a company to save money on voice over-IP can now benefit the security function as well. Use of the network also allows the possibility of additional hardware devices to function alongside the network video monitoring, allowing features such as triggered lighting or door locking.
Yu Kitamura,
Product Manager
Network Video Monitoring
Sony