LTFS – VIDEO SURVEILLANCE

Video technology has always kept up with the trends in computer development. It keeps getting smaller, more robust, more efficient and cheaper. Originally, video technology mainly served the individual and the ñplayingò scene. Now, however, its main importance lies in evaluation possibilities. Besides use in companies, public places or institutions, this also includes satellite observation systems, medical video technology and image and pattern recognition in the field of biometry, which is used in law enforcement, for example.

Flood of pictures and archiving

Handling large volumes of data has always been a crucial issue surrounding the effective use of this technology in the area of video surveillance. In the past, video cassettes and film material on celluloid were the standard means of transfer. Since digital workflows have revolutionized the industry, all individual operations are digital. LTO tape storage is considered to be the universal means. Nevertheless: Files are becoming larger and larger due to the high-resolution and the increasingly complex formats of film and image materials (HD, 4K, 3D, etc.).

Coughlin Associates has always described digital archiving as the ñrat-tail of ROIò because digital contents often have to be stored for reuse for many years. The high data rates and storage capacities make LTFS particularly attractive and its use cost-effective. This is being watched, with interest, by the media industry due to the immense volumes of data involved.

Surveys have shown that 95% of all data is no longer used 6 months subsequent to recording. However, the records must be available longer for legal reasons. With the benefits provided by LTFS, costs for storage, electricity and operations can be reduced, as can support costs, which benefit from easier access.

Digital archiving

Since the beginning, the media industry has found LTO tape storage in combination with LTFS very interesting. Reasons include:

- surveillance videos/video surveillance
- video archives
- high-resolution images from the medical field

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- CAD/CAM files

Furthermore, LTFS technology provides an inexpensive method of long-term data storage for the conversion of older analogue material into digital formats. The demand is increasing!

Why LTFS/LTO is the current “state-of-the-art” solution?

A simple analogue security camera records an average of 6 frames per second. This corresponds to approximately 200 gigabytes of data per month (source: http://tandbergdata.com). Other providers, such as Tyco (http://www.americandynamics.net/) are working on solutions in which the camera only records images of change processes and, therefore, only transmits deltas that ensure high compressibility. A three-MP digital camera already reaches data levels of 1 terabyte per month at a constant picture rate. At least 25 images per second (the fourfold of the analogue surveillance camera) are needed for a smooth playback, which automatically generates terabytes of data that must be backed up and archived over a given period of time.

Over 60 hours of footage can be stored on an LTO-5 tape (with LTFS formatting). Analysts specify the costs per gigabyte for LTO-5 tapes to be much lower compared to alternative storage methods.

- 8 x lower than HDCRM SR tapes
- 37 x lower than XDCAM hard disks
- 350 x lower than P2 SSD memory cards

LTO-5 tapes are ideal for quick, worldwide transfer of large volumes of data. HP provides a comparison with a standard US postal package containing 28 LTO-5 tapes. This represents 42 terabytes or 1680 hours of material. The parcel will require three days, to reach the specified destination in the United States, at a cost of 15 dollars. This corresponds to a speed of 1.3GB per second or 1 gigabyte of dedicated access line, however, at significantly lower rates.

There is no need to worry about the security of data because data can be encrypted through hardware encryption of the LTO tape drives prior to storing on tape.

Previously, access to data stored in long-term archives caused considerable problems due to the system platforms, the software or the data storage method required. The tape content can be read, independent of the source system, the operating system or the operating system version when using LTFS technology. This also makes it possible to import LTFS formatted tapes to an LTFS-compatible archive without any problems. Only the tape index and the fileôs metadata must be added to the archive management catalogue. As soon as the LTO cartridges no longer have to be available ñon-lineò, they can be stored off-line. The shelf-life is up to 30 years in a secure environment.

These factors can lower running costs significantly and are therefore making tapes the currently preferred archiving method for long-term storage of infrequently used data.

Video surveillance providers know that an immense cost factor lies hidden in the long-term storage of video data. It was therefore all the more important to propose alternatives that minimized the costs of long-term storage whilst also taking the growing capacity requirements into account. This was made possible with LTFS technology, which, only two years after introduction, has already begun to prevail as the standard in this segment.