Transit Q&A

Q: Is it difficult to search the footage?

A: In the early days of on-board video surveillance searching through hours and hours of video footage was very cumbersome because 'tape based' systems did not provide many options beyond 'fast forward' search of video tape to find incidents. Today's advanced digital mobile video systems provide many search utilities that aid investigators with increase search functionality. The viewing software has many capabilities including digital 'fast forward' which is considerably faster than tape systems. Digital timelines allow you to 'mouse click' directly to timeframe in question. Attachment of other data (metadata) gives managers the ability to find incidents quickly based on data or inputs from GPS (Global Positioning Satellite) data, vehicle stops, door openings, crash sensors, explosive agent detectors, or communication systems. The ability of systems to 'bookmark' or 'tag' the video also makes for easier location of events. Newer viewing software applications provide investigators the ability to view all cameras, hear the audio and view the data in one desktop view. Getting all of this information at once helps find what you need fast.

Q: Are bus operators going to accept on-board video surveillance?

A: Of course many operators think the idea of on-board video cameras is to keep an eye on them. However, the majority of installations rarely have a view of the operator. In fact, most systems monitor passenger seating areas, vehicle stairwells, and externally forward and rear of the vehicle. Experience has shown that most operators don't like the idea of cameras. However, once they are installed there is overwhelming support for them. This is because many recorded situations have come up either operationally or with passengers that show drivers react professionally and to established procedures.

Q: Are digital video systems reliable?

A: Many of the tape based video systems had many mechanical parts that didn't do well with the vibration and shock in the mobile environment. Capstans, tape ejection, and other moving parts would rattle and come loose creating problems. Newer digital system have less moving parts and feature more solid state circuitry making systems more reliable and durable.

Q: How clear is the image quality?

A: Image quality has vastly improved in the last five years with the advent of better quality camera heads and image sensing technology. These cameras provide excellent images in varying light conditions reducing 'blooming' from headlights and sunlight situations. This is called backlight compensation. Camera sensitivity also provides better images in low light conditions. In fact, mobile cameras are available in 'day/night' configurations that use infra-red illumination that the camera can see but the human eye cannot. Additionally, digitally recorded images can be recorded at higher frame rates (up to 30 FPS per camera) and with advanced compression technology that strikes the best balance of image quality to storage. New high definition IP cameras provide increased image resolution and wider field of views for varying mobile applications including forward views.

Q: Are on-board video systems easily damaged?

A: Much of the equipment that is being produced for the mobile market is designed to meet stringent environmental standards encountered in trains, buses and public safety vehicles. Manufacturers design for excessive vibration and shock, electrical surges, and mechanical durability. Depending upon application requirements additionally systems can be hardened to deal with extreme environments.

Q: How simple is it to offload information from the on-board system?

A: Operators now have more choices to download video from systems than before. With the proliferation of computers, laptops and network connectivity there are many methods to easily access digital video. These include removable hard drives that can be swapped with spare hard drives and keep vehicles in service. With advanced wireless networking video can also be downloaded to the investigators computer workstation. Newer digital video system can also be configured to only transfer video incidents only without making the operator look at all the recorded images.

Q: Is it difficult to integrate GPS?

A: First generation digital video systems had proprietary GPS antennas that would only work with their systems. Today's advanced systems can work with many standard GPS antennas. In fact, many systems will also share GPS data with other on-board systems to reduce the number of antennas installed on each vehicle.