

VSAF: Video Surveillance Application Format

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OVERVIEW LTD



The Problem

- Current video surveillance systems have **limited inter-operability**
- **Quality assurance** is increasingly important
- Precise **timing information** is important in many applications
- **New functionality** is difficult to integrate with existing systems
- Very little cross-industry standardization of **surveillance meta-data**
- Format has **legal** implications

The Solution

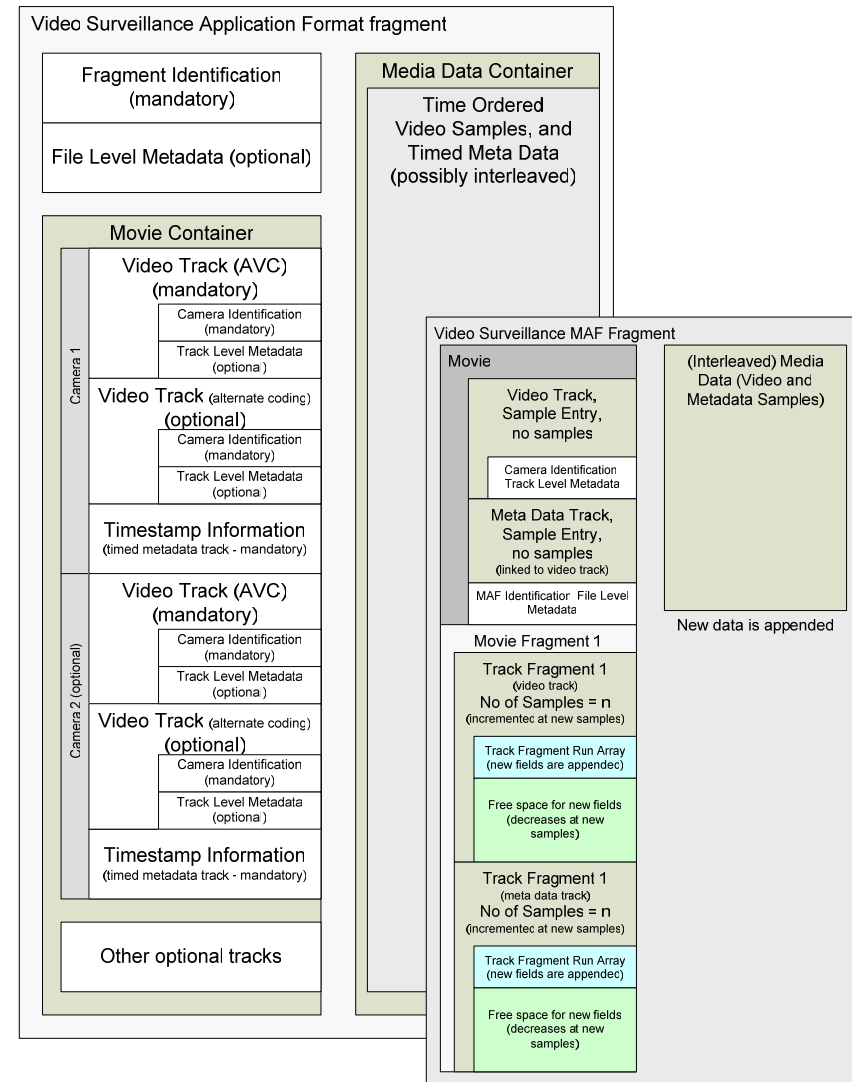
- Use AVC (H.264) video coding (base-line profile)
- Extend AVC file-format to include additional meta-data
- Support legacy media types externally (allow references to them)
- Require that each frame is indexed with a millisecond-accurate time-stamp
- Support collections of file fragments to easily allow ring buffer architectures
- Allow a single file to contains multiple tracks
- Use MPEG-7 meta-data Description Schemes (see next slide)

Video Surveillance Meta-data

- Two domains of meta-data:
 - Technical: describes the surveillance **equipment**, camera locations, IDs, timing
 - Observation: human and automatic **annotations** to describe what has been observed (events, tracks etc)
- Meta-data stored at two levels:
 - For the whole collection (description, location, taxonomy, references)
 - For a single tracks (description, location, annotations, segmentation, colour, references)
- *Classification Schemes* allow one or more **user-defined taxonomies** to be adhered to

File Format

- ISO Base Media File Format extended to create a structure of 'boxes' to hold the relevant video data and meta-data.
- Designed to support ring buffers of 'fragments' to allow continuous recording and access.
- Support for audio data / meta-data and data-protection, data-integrity, authentication and audit trails to be considered in subsequent releases.



International standardization

- The Video Surveillance Application Format (VSAF) is standardised as MPEG-A: Part 10
- Currently at FCD status (Jan 08)
(Final Committee Draft)
- Schedule: Draft International Standard ~ Oct 08
- Lead partner: Siemens Plc
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 - Kingston University responsible for MPEG-7 meta-data elements and reference software