Policy-based video dissemination in V2V

Chenyang Qu, Denis Ulybyshev, Rohit Ranchal, Prof. Bharat Bhargava

qu10@purdue.edu, dulybysh@purdue.edu, rranchal@purdue.edu, bbshail@purdue.edu

“Policy-based secure distributed dissemination of video data in vehicle-to-vehicle systems”
Sensitive data is set of pictures, representing the video.

Metadata contains policies: if picture has human's face – it is accessible only by law enforcement.

Virtual Machine is a policy engine which provides policy enforcement.

**Active Bundle (AB)**
- Sensitive data is set of pictures, representing the video.
- Metadata contains policies: if picture has human's face – it is accessible only by law enforcement.
- Virtual Machine is a policy engine which provides policy enforcement.

1. **Video from Car's camera**
   - Stream
   - Video as set of images

2. **Creating an Active Bundle**
   - Sensitive Data
   - Metadata
   - Virtual Machine

3. **Active Bundle**
   - Pictures without human's face
   - E(pictures with face)

4. **Traffic Monitoring**
   - Video recompiled from pictures w/o faces
   - Traffic Monitoring

5. **Law Enforcement**
   - Video recompiled from all pictures
   - Law Enforcement

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**Active Bundle**
- Pictures without human's face
- E(pictures with face)

**Active Bundle**
- Pictures without human's face
- Pictures with human's face
Main Features

• Car is equipped with video camera, capturing the live video at rate 24 fps (frames per second)
• Video is decomposed into images
• Active Bundle containing images is created
  ➢ Sensitive data is a set of pictures, representing video
  ➢ Metadata contains policies: if picture has human's face then it is accessible only by law enforcement
  ➢ Virtual machine is a policy engine which provides policy evaluation and enforcement
Main Features

• Separate thread runs the face recognition algorithm
  ➢ 4 algorithms are available
  ➢ most accurate face recognition algorithm imposes the largest performance overhead (processing 1 image takes up to 2.6 sec depending on the resolution)

• Services receiving AB can recompile video from the set of pictures using ffmpeg