Video911

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Scenario 1

• You’re walking down 4th street

• You notice a menacing figure following you

• She demands your wallet
• You give it to her

• End of story
Scenario 2

• You’re walking down 4th street

• You notice a menacing figure following you

• You open your mobile phone and activate Video911
• He tries to steal your software
• You inform him he is live on camera being transmitted to the police
• He’s already in trouble with the Justice Department so he leaves you alone
Motivation

• Four things proliferating:

1. Guns
2. Surveillance cameras
3. Fast wireless
4. Camera-endowed mobile phones
Now

- Guns increase likelihood of violence
- Ubiquitous surveillance erodes civil liberties (and doesn’t work so well)
- Then what?
With Video911

- Strictly defensive

- More “Little Brother” than Big Brother
Overview

- User streams scene to secure location
- Operators there monitor the situation
- If the user is harmed, the operator is alerted and the device continues to transmit
Prototype

- JMF applications
- RMI messaging
- H.263 codec (RFC2190, RFC2429)
- RTP transmission (RFC1889, RFC2198)

- Let’s see it
Evaluation

• Simple idea

• Open protocols

• Bandwidth (PCS Vision: 70, 3G: 384)

• Infrastructure
Future

- SOAP RPC
- Audio channel
- Switchboard interface and scalability
- GPS positioning
- PKS secure channel (auth + crypt, CA)
- Server-side face matching
- Client-side face optimization, Infrared
- Privacy issues (eg. scrambling, expiring)