SIP for Emergency Services

Henning Schulzrinne
Dept. of Computer Science
Columbia University
New York, New York
schulzrinne@cs.columbia.edu

48th IETF (Pittsburgh)
Issues

Need emergency access for all-IP environments – tel:911 is not a solution (and may have unintended side effects...)

- emergency address (network, application)
- find PSAP
- obtain caller civil/geo address

Will focus on SIP layer issues
Emergency Address

- similar to postmaster, webmaster, etc.
- can have several, e.g., 911, 110 (Europe), help, ...
Find PSAP

- outbound proxy
  - works iff outbound proxy is geographically bounded
  - hard-configured
  - use DNS, e.g., pittsburgh.pa.911.arpa
- SLP - but scope not likely to coincide with ESR
- central server (250,000/day)
Obtain Caller Identity and Location

- minimize prank calls
- GPS is not sufficient (doesn’t work in buildings, altitude)
- solutions classes:
  - caller provides in request
    
    GPos: 42 21 54 N 71 06 18 W -24m 30m  
    GL: S3.US.45420.1910 "1425 Arbor Avenue, Dayton OH"
  
  - PSAP queries caller (see ’spatial’ BOF)
  
  - PSAP queries third party based on caller identity
A GPS location announcement for each wire is sent to a first-hop switch. This switch consults a user database (location, room number, ...) and then an RADIUS or private protocol database to find the corresponding customer database (names, addresses). The customer database is then used to invoke an INVITE sip:911 using the GPS coordinates or GL location: S3.US.45420.1910. The geo <-> civil translation database is also consulted for the location announcement for each wire.