

Trustworthy Location Information

draft-tschofenig-ecrit-trustworthy-
location

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Why?

“... but a user could report a false location.
How can we prevent this?”

- Popular discussion topic in the emergency services community

Threat Models

- **External adversary model:**
 - End host & PSAP honest
 - Malicious middle (end host – LIS, end host – PSAP)
- **Malicious infrastructure adversary model:**
 - Malicious call routing elements (LIS, LoST, call routing)
- **Malicious end host adversary model:**
 - End host malicious
 - Owner may not be aware (bot)

Location Spoofing

- **Place shifting:** Trudy, the adversary, pretends to be at an arbitrary location.
 - place shifting can be limited in range, e.g., to the coverage area of a particular cell tower.
- **Time shifting:** Trudy pretends to be at a location she was a while ago.
- **Location theft:** Trudy observes Alice's location and replays it as her own.
- **Location swapping:** Trudy and Malory, located in different locations, can collude and swap location information and pretend to be in each other's location.

Call Identity Spoofing

- Document argues that the caller's identity is an important piece in the entire deployment story to catch adversaries and hoax callers.
- Providing strong identity is not easy, as it might require changes to the existing practice of (some) VoIP providers
 - primarily those with “free” accounts
- Subject therefore relates to the unauthenticated emergency calls.

Nothing is perfect

- Realistic goal is that “almost all” good calls are verifiable
 - rest is treated as suspicious when call taker resources are available
 - and will be lower priority during overload (“ranking”)
- Don’t need perfection in any single technique
 - combination of techniques likely works better
 - choose easiest-to-deploy
 - every call should have one at least one “is good” indicator

Solution Highlights

- Document discusses the properties of
 - Location signing
 - Location by reference
 - Proxy adding location
- May include techniques that reduce scope for lying

What's Next?

- Submitted to ECRIT
- Got the advice to talk to GEOPRIV
- Description dates back to IETF#68, see <http://www.ietf.org/proceedings/07mar/slides/geopriv-4/sld1.htm>
 - Scope got reduced over time.
- Is the document useful?