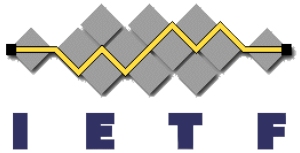
Trustworthy Location

draft-ietf-ecrit-trustworthy-location-02

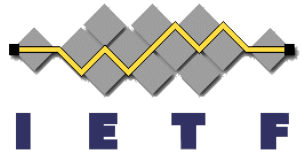
ECRIT WG

IETF 81

July 25, 2011

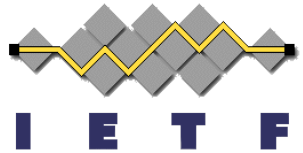


Issues Fixed and Outstanding



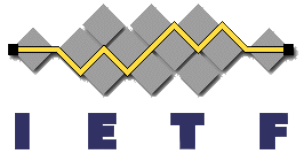
- Issues fixed in -02:
  - Issue #3: Out of date references
- Issues still outstanding:
  - Issue #4: Untrusted location and provider intent

Issue #4: Untrusted Location and Provider Intent



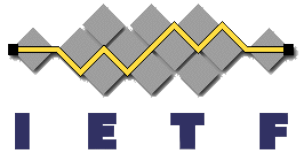
- Not every LCP is intended for use in emergencies. For example, "location based services" can have terms of service that disclaim fitness for use in an emergency.
  - Not just a legal/liability issue -- the services may not provide a level of reliability and accuracy expected of an emergency services-quality location service.

Issue #4: Potential Resolutions



- Brian Rosen:
  - "send it, but let us know what you know about it". No entity should withhold location information unless it is certain that the information it is withholding is fraudulent. While the PSAP doesn't like having to decide what to do, it's better that it has the information and knows that some of it MAY be suspect…. We want whatever location to be accurately labeled (source, method, uncertainty).

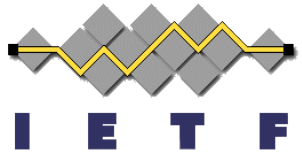
“What We Know About It”



- Where the presentity can be reached
  - ‘contact’ element
  - Potentially useful in preventing ‘cut and paste’ attacks
- The time at which the PIDF was created
  - ’timestamp’ element
  - Potentially useful in preventing time-shifting attacks
- The location (geospatial or civic)
  - ‘location-info’ element
- How the location was derived or discovered
  - RFC 4119, Section 2.2.3: ‘method’ element
  - http://www.iana.org/assignments/method-tokens/method-tokens.xml
- The organization that supplied this location information (beyond what can be provided in a certificate)
  - RFC 4119, Section 2.2.4: ‘provided-by’ element

Example: W3C Location API

http://dev.w3.org/geo/api/spec-source.html




```
interface Position {
        readonly attribute Coordinates coords;
        readonly attribute DOMTimeStamp timestamp;
 };
interface Coordinates {
        readonly attribute double latitude;
        readonly attribute double longitude;
        readonly attribute double? altitude;
        readonly attribute double accuracy;
        readonly attribute double? altitudeAccuracy;
        readonly attribute double? heading;
        readonly attribute double? speed;
};
interface PositionOptions {
        attribute boolean enableHighAccuracy;
        Attribute long timeout;
        Attribute long maximumAge;
        };
```

6.2 Requirements

6.2.1 The Geolocation API must provide location data in terms of a pair of latitude and longitude coordinates.

6.2.2 The Geolocation API must provide information about the accuracy of the retrieved location data.

6.2.3 The Geolocation API must support "one-shot" position updates.

6.2.4 The Geolocation API must allow an application to register to receive updates when the position of the hosting device changes.

6.2.5 The Geolocation API must allow an application to request a cached position whose age is no greater than a specified value.

6.2.6 The Geolocation API must provide a way for the application to receive updates about errors that may have occurred while obtaining a location fix.

6.2.7 The Geolocation API must allow an application to specify a desired accuracy level of the location information.

6.2.8 The Geolocation API must be agnostic to the underlying sources of location information.

How Are We Doing?

- Where the presentity can be reached
  - ‘contact’ element
- The time at which the PIDF was created
  - ’timestamp’ element
  - Potentially useful in preventing time-shifting attacks
- The location (geospatial or civic)
  - ‘location-info’ element
  - How does ‘accuracy’ map to uncertainty and associated shape?
- How the location was derived or discovered
  - RFC 4119, Section 2.2.3: ‘method’ element
  - How do we determine the ‘method’? Do we guess based on the browser and version??
- The organization that supplied this location information (beyond what can be provided in a certificate)
  - RFC 4119, Section 2.2.4: ‘provided-by’ element
  - Same issue as above.

Proposed Resolution

- Provide advice on ‘cut and paste’ and ‘time shifting’ attacks
  - contact & timestamp elements
- Advise implementations to “send what we know”
  - location-info element
- Question: what (if anything) can we infer?
  - Can we infer uncertainty from ‘accuracy’?
  - Can we infer the ‘method’ from ‘accuracy’?
  - Can we infer the ‘provided-by’ element?
    - LBS provider may be ‘hard-wired’

Feedback?