Indoor Signal Position Conveyance

draft-jones-geopriv-sigpos-survey

IETF 85 Atlanta, GA

November 7, 2012

geopriv WG

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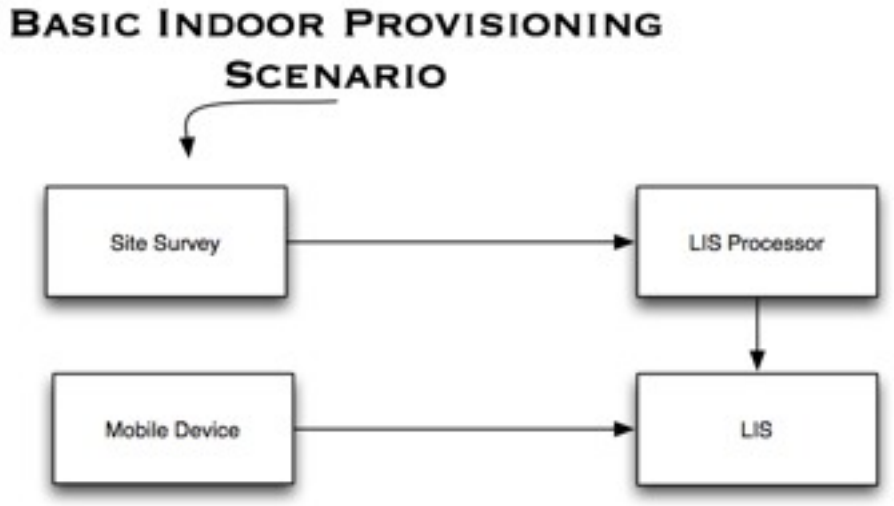
Outline

- Quick Review
- Issues addressed with draft 01
- Known issues
- New issues raised

Review

- Provide a means to capture and convey signal survey information from a survey device to a LIS processor.
- Provide data rights facility for declaring data usage
- Provide flexible structure to support multiple models of location services, e.g. rss-based and fingerprint-based location services
- Provide ability to capture information from heterogeneous signal sources, e.g. Wi-Fi, Bluetooth Low Energy beacons
- Provide common specification for interoperability
- Provide mechanism to link signal survey data with map survey data

Problem Domain



Need a common way to convey information about the location of signals and their respective beacons for use in indoor location provisioning.

Today's methods use proprietary systems that lack interoperability, consistency, and data protection mechanisms.

This does NOT address how the signal information is captured (e.g. survey equipment) nor how the data is used to operate a LIS.

Similar to HELD Measurements, but intended to identify the location of the beacons and their signals rather than the device that is observing the signals.

Problem Domain - Signal capture

- **Indoor site survey, e.g.**
- **Where are the beacons and what is the signal map?**
  - Need baseline understanding of signals and beacons
  - Many different signal sources
  - Many different data requirements
  - Need knowledge of survey device capabilities
  - Need knowledge of survey device's location and orientation
  - Provide common conveyance for signal survey data

sigpos draft - outline

- Session
  - Venue
    - Venue name/address
    - Venue owner
    - Data Rights
    - Map metadata
  - Survey Device
  - Survey
    - Ground Truth
    - Beacons
    - Signals

Problem Domain - Data rights

- **Why data rights?**
  - Provide a mechanism that can specify usage, retention, and derivative rights to the data
  - Encourages participation by venue owners
  - Provides ability to offer differentiated services
  - Promotes interoperability and transportability of the data
- **Current proposed data licenses**
  - Unrestricted
  - One of pre-defined Creative Commons license
  - Private
  - Expiration
  - No enforcement mechanism
- **What are derivative rights?**
  - Using data to derive location of other beacons
  - Ability to bootstrap and replace data

sigpos draft - data licenses

- Unrestricted License - allows unrestricted use and derivative rights to the data.
- Creative Commons License
  - Leverages existing work, templates, and definitions
  - Not all CC licenses are valid for this specification
- Private License
  - Allow externally defined license types

```
<license>
  <licenseType>private</licenseType>
  <licenseURI>http://www.example.com/mylicense.html</licenseURI>
  <licenseExpiry>2008-04-29T14:33:58</licenseExpiry>
</license>
```

Changes with Draft 01

- clarification of licensor and licenses
- exclusion of crowdsourcing
- specification of HTTPS for transport
- inclusion of response object for handling success/errors to client
- initial XML schema (beacon location profile)
- more IANA specifications

Known Issues

- Device configuration method
- Licensing options,two orthogonal issues + data expiration
  - derivative use of the data
    - ensure that the data provided is not used by a location provider (e.g. LIS) to derive additional beacon information in such a way as to obviate the need for the original survey data. This is the 'no derivative' clause.
  - access to location results
    - provide access control to the location derived from the survey data. In other words, a provider of survey data (licensor) may want to restrict the location derived from the signal/beacon location data to only a particular set of users or applications.

		LIS Usage	
		Unrestricted	**No-derivative**
Location Access	**Public**	Allow any to access, use data to extend positioning system	Allow any to access, do not use data to extend positioning system
	Controlled	Controlled access, use data to extend positioning system	Controlled access, do not use data to extend positioning system

Additional Issues

- From Brian Hart
  - Magnetic anomaly data
    - How to encode? Is there a data standard we can incorporate?
  - The license describes usage conditions for the LIS, but sometimes this is not enough ... assuming LIS->device->app... see previous slide.
  - The LIS could be an end device or even an app
    - need more scenarios
  - "_nomap" for AP privacy, but IEEE 802.11 is being asked to look at a more standardized version of that. There could be some overlap between the two efforts, which could be worthy of further study.
    - relevant, but where does it belong?
  - binary version of this schema
    - is this common? how have other IETF documents addressed this?

Next Steps

- Incorporate feedback from geopriv WG
- Create full XSD
- Update licensing section
- WG accepts ID as official WG doc
- Entice more industry involvement
- Work document through to adoption

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