OSPF Geo Location

draft-acee-ospf-geo-location-02
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Geo Location in Routing

- P2P, P2MP, and Hybrid automatic link cost
- Find-My-Router Apps
- Proximity services in content sharing and SFC
- Network topology maps
- Dynamic DNS loadsharing
- Traffic matrix of location pairs
- Same ‘subnet’ over WAN and ECMP
- Future routing/service/mgmt apps
- Static provisioning, utilize additional information or GPS capable device
Geo Location TLV

<table>
<thead>
<tr>
<th>0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1</th>
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<tbody>
<tr>
<td>W</td>
</tr>
<tr>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Latitude Degr.</td>
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<tr>
<td>--------------------------------------------</td>
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<tr>
<td>Longitude Degr.</td>
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| Altitude
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<td>.. Optional Sub-TLVs</td>
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- Flag: W, U, N, E, A, M
- Location Uncertainty in centimeter
- Latitude and Longitude in milliseconds
- Altitude is a signed integer, in centimeter or meter
In OSPF LLS

- Notify the neighbor of our location
- Can be used to calculate P2P, P2MP, and hybrid (RFC 6845) cost.
- Implementation and operation specific
- Can be optionally suppressed after the adjacency is established, re-advertise in LLS or withdraw by setting the ‘W’ bit in the Geo Coordinate flag
In OSPF RI

• Optionally in OSPF RI LSAs for router location
• Withdrawal is done by simply re-flooding RI LSA without Geo Location.
• Packet flooding scope can vary
Security

- Increase of attack vector
- Geo location information can be sensitive, proprietary or physical security/safety related
- Implementation MUST make advertisement optional
- Protocol level or link level encryption may be needed