Carrying location objects with uncertainty in RADIUS

https://datatracker.ietf.org/doc/html/draft-grayson-5580uncertainty-00

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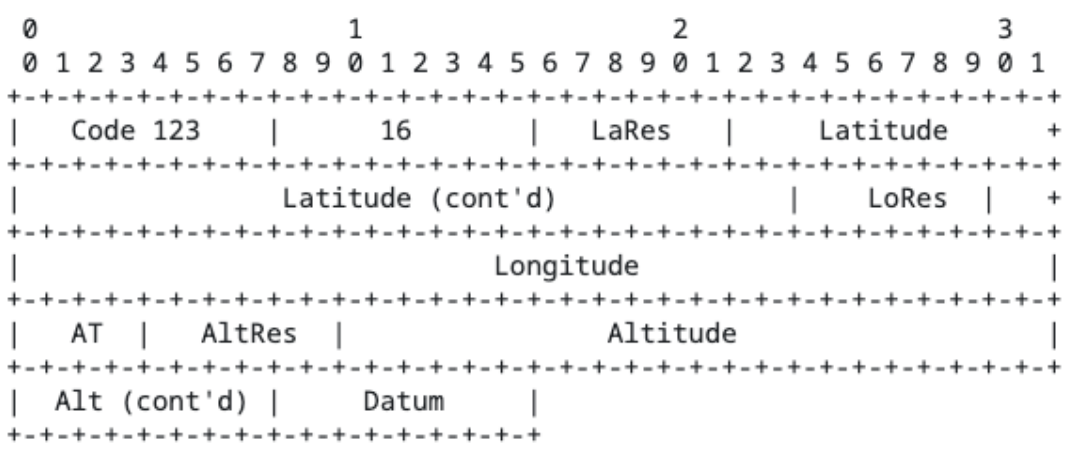
Background

- >15 years after publication, RFC 5580 is increasingly being adopted across Wi-Fi ecosystem
- A 2023 WBA liaison LINK introduced their white paper Signaling Location Information in RADIUS
- Since publication of RFC 5580, use of referenced RFC 3825 definition of geospatial object has been obsoleted by RFC 6225
- RFC 6225 enhanced the original RFC 3825 capabilities (Option#123) to enable location uncertainty to be signalled (Option#144)
- Regulators are defining requirements for signalling location together with uncertainty for certain use-cases, e.g., related to emergency calling
  - E.g., European Emergency Number Association recommends that to help location consumers understand how to interpret any given position estimate, it should be delivered with an uncertainty factor and a confidence factor.

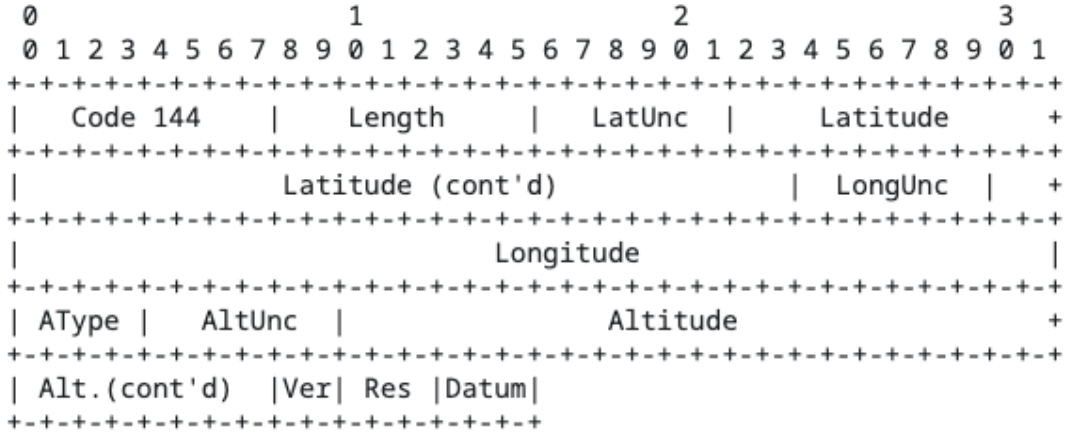
3825 vs 6225 and 7549

RFC3825 DHC Location Configuration

(also referred to as GeoConf Option in RFC 6225)



RFC6225 DHCPv4 GeoLoc Option

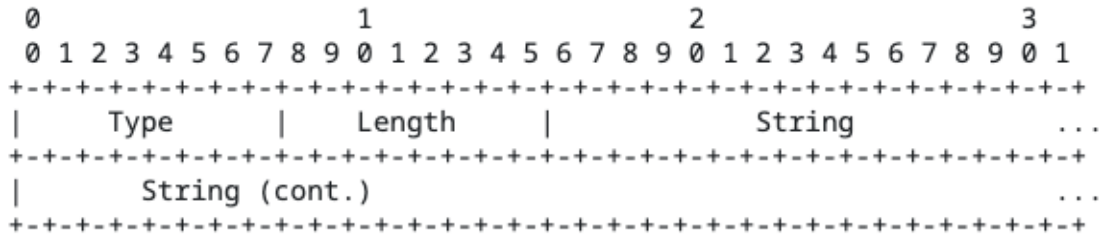


RFC7549

> [RFC6225] defines a means for representing uncertainty, but a value for confidence is not specified. A default value of 95% confidence should be assumed for the combination of the uncertainty on each axis. This is consistent with the transformation of those forms into the uncertainty representations from [RFC5491]. That is, the confidence of the resultant rectangular Polygon or Prism is assumed to be 95%.

Proposed New Location Profile Type

- Location Data Attribute
- 5580



  - Type 0 – Civic Location Profile with encoding based on RFC 4776
  - Type 1 – Geospatial Location Profile with encoding based on (obsoleted) RFC 3825
- draft-grayson-5580uncertainty
  - Type TBC (2) - Geospatial Location Profile with encoding based on RFC 6225
  - Contents based on GeoLoc Option
  - At 95% confidence – following RFC 7549

Ask to RadExt

- Appreciating feedbacks on the draft, including thoughts on RadExt charter and WG adoption