

# The Goal

- Create a unifying DHCP Option (format) to deliver geodetic location (a point, circle or polygon, etc.) to a client

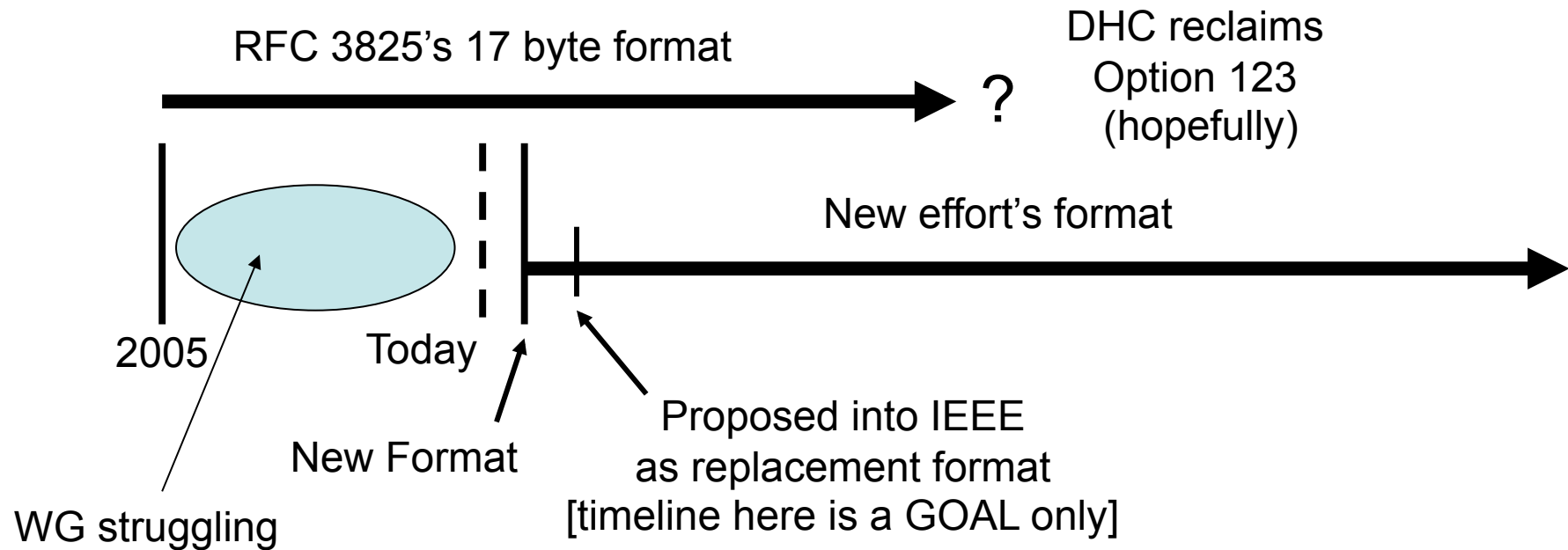
# How'd we get to this?

- Effort started out with
  - Desire for Polygon Option
  - Desire to update/refresh/clarify 3825
- Noticed this would be the 4<sup>th</sup> different format for geo-coordinates
  - RFC 3825
  - rfc3825bis ID
  - Hannes's circle ID
  - Any new Option for polygon
- How do we fix this inconsistency, especially when IEEE is using RFC 3825's format

# Approach

- Bring all the geodetic shapes into a single doc / option
  - Which makes things easier for implementers and WG members to understand
  - Hopefully will focus WG energy

# Relationship to RFC 3825



- Will need to have overlapping formats until RFC 3825 is no longer used
- Sometime in the future, goal has DHC reclaiming Option 123
  - When no one is using format any longer
  - Can't make RFC 3825 Historical because it is not a Full Standard (FS)
    - But there is talk about being able to do this for PSs

draft-polk-geopriv-dhc-geoelement-shape-option-00

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# What's in the Shapes Option

- Adapted new Option format to that accepted in RFC 4776
  - i.e., “Type / Length / Value” (TLV)
  - Allows for
    - #1 commonality between DHCP Options for Location
    - #2 additional location shapes to be defined
    - #3 easy extensibility
- includes both v4 and v6 Option formats

# What the Shapes Option defines

- Which Geotypes [TLVs] are required for
  - Point
  - Circle
  - Polygon
  - (others can be added – there are 16 shape values)
- Identifies which Geotypes [TLVs] aren't applicable for each shape
- Includes optional TLVs for
  - datum, valid-for, centerpoint
  - Open to adding Confidence and Uncertainty
- Includes section on converting each Option field into a PIDF-LO
- IANA registers a lot of values
- Proposal to drop all remaining RFC 3825 related efforts

# The Shapes Option Format in v4

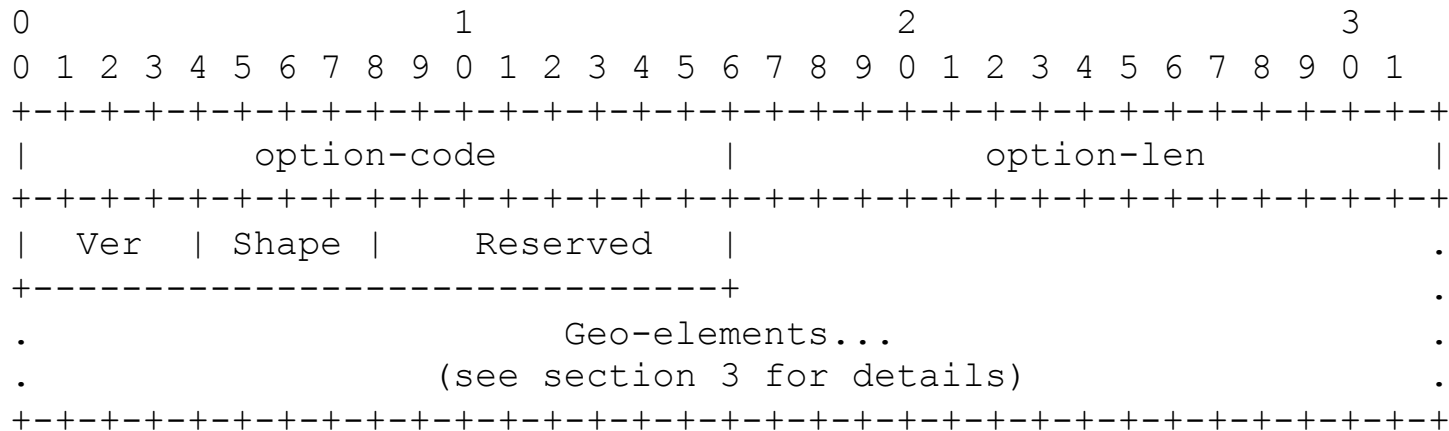
- Changed the already simple DHCP LbyR Option from this:

```
0                      1                      2                      3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  Code XXX      | Length=XX   | Ver  | Shape |   Reserved   |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
.
.                Geoelements...
.                (see section 3 for details) ...
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
```



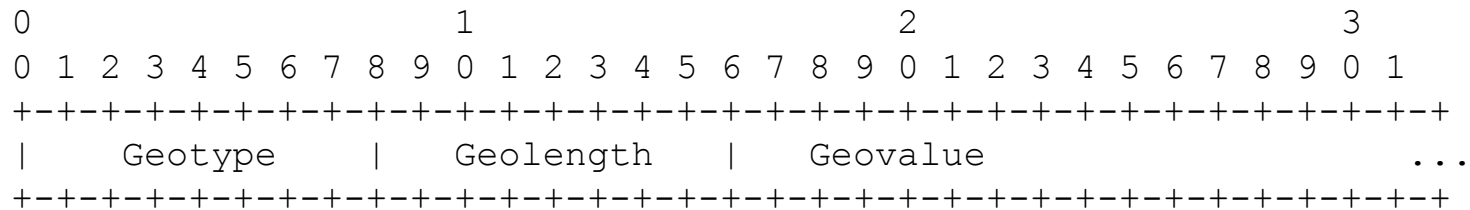
# The Option Format Change

- and this for IPv6:



# The Option Format Change

- Adapted “LbyrElements” format from RFC 4776:



Geotype: A one-byte identifier of the data location value.

Geolength: The length, in bytes, of the Geovalue, not including the Geolength field itself, up to a maximum of 255 bytes.

Geovalue: The location shape value, as described in detail below. The Geovalue is always in UTP-8.

# Open Issues

- We hope this is viewed as a consolidated geo-coordinate effort to focus WG along an common format already chosen by RFC4476
- If Geopriv or DHC do not like sub-options (i.e., same Option # for different shapes), we are open to creating new Option #s per shape within this doc
  - one per each shape
- Open to removing version and reserved fields
- Others?

