Drift Measurement TLV

Consequences for the use of Announce in static configuration networks

2023-01-20

ETHERNOVIA

VIRTUALIZING VEHICLE COMMUNICATION

Drift Measurement TLV

Process

- Added to ASdm

- PAR and CSD modification discussion this afternoon

- Comment on next draft of ASdm
  - Including detailed contribution?

- Current intent is that TLV includes...
  - Sync message TX timestamp (similar to pDelayResp)
  - stepsRemoved (same as Announce)
  - Grand Master Identity (same as Announce)

https://www.ieee802.org/1/files/public/docs2023/60802-McCall-Time-Sync-Update-16-Jan-0123-v01.pdf

ETHERNOVIA

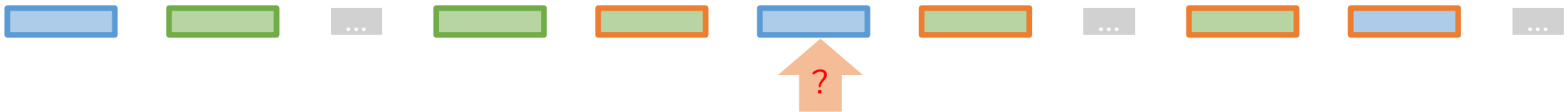VIRTUALIZING VEHICLE COMMUNICATION

Assumptions and prerequisites

- This argument assumes a fully static network configuration and therefore a pre-determined sync-tree for all (error) cases and domains – i.e. full external port configuration!

- Changes to the GM identity or the number of hops (steps removed) is only relevant in a specific AS-Domain!

- The AS domainNumber is the only element linking Announce and Sync/FollowUp messages.

- Sync/FollowUp (w/ Drift Measurement TLV) and Announce are sent at significantly different intervals, with the Announce interval assumed to be longer.

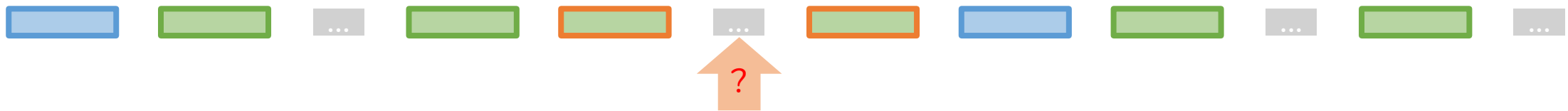- Sync/FollowUp (w/ Drift Measurement TLV) and Announce are tiggered by independent state machines.

ETHERNOVIA

VIRTUALIZING VEHICLE COMMUNICATION

Two difficult examples

Nomenclature:

Announce w/ OLD GM info	Announce w/ NEW GM info	Sync/FollowUp w/ OLD GM info	Sync/FollowUp w/ NEW GM info

Case 1:

Case 2:

time

ETHERNOVIA

VIRTUALIZING VEHICLE COMMUNICATION

Conclusion and suggestion

- The combination of using Sync/FollowUp with Drift Measurement TLV AND Announce likely raises more handling questions than it helps an implementation.

- Use either Announce OR Sync/FollowUp with Drift Measurement TLV.

- **Add this as an informative statement in ASdm.**

- Do not(!) try to resolve the handling questions from using both in ASdm.

ETHERNOVIA

VIRTUALIZING VEHICLE COMMUNICATION

Max Turner
Utrechtseweg 75
NL-3702AA Zeist
The Netherlands
+49 177 863 7804
max.turner@ethernovia.com

ETHERNOVIA

VIRTUALIZING VEHICLE COMMUNICATION

THANK YOU

ETHERNOVIA

VIRTUALIZING VEHICLE COMMUNICATION