

Synchronization fault detection in IEC/IEEE 60802

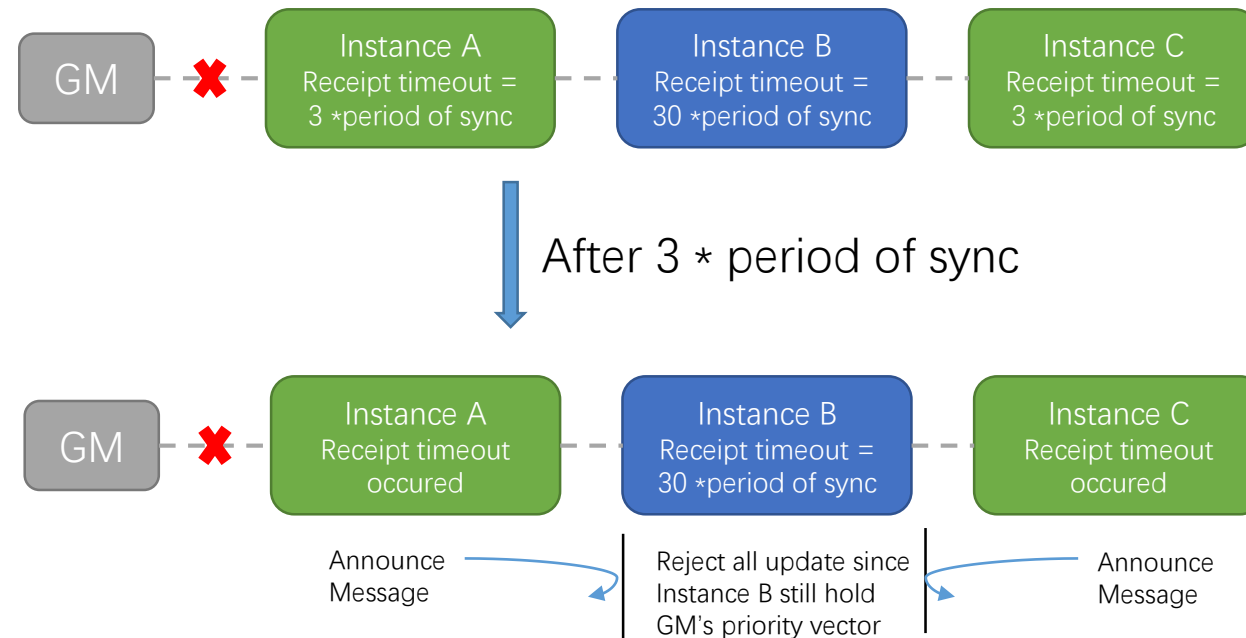
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Problem Statement

- Link Fault and GM stop working can cause the synchronization spanning tree changed and therefore bringing in time jitter. The first step to solve these problems is to detect them in time.
- There is no entry about synchronization fault detection in general gPTP requirements. However, for variable industrial devices in one gPTP domain, it's very common to have a wide range of configurations on fault detection.

Why unified detection

- For BMCA algorithm, After GM disabled, the correction component might be put off since Announcement Message can not be propagated unless each instance has noticed the GM problem.



Why unified detection

- For hot standby model, the secondary GM should not be the last one to detect synchronization fault.

proposal

- The IEC/IEEE 60802 (clause 5.6.3.1 gPTP common options) should specify that the detection(Receipt timeout) ought to be about 3 periods of Sync or Announce Message.

Reference

- IEEE Std 802.1AS-2020

THANK YOU!