

60802 Time Sync – Issue Resolution Status & ToDo List

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Version 2

Main Topics

- Monte Carlo Simulation Results
 - Can we meet system level goals?
 - What are the matching device level requirements?
- Time Series Simulation Results
 - Do they match Monte Carlo results?
- Any new normative requirements?
- Informative Annex
- Coupling / Uncoupling Domains
- Revision of sections 6.2.5 to 6.2.13 to replace references to ClockSource / ClockTarget with Working Clock @ GM / @ End Station

Monte Carlo Simulation Results

- NRR & RR Drift Tracking and Compensation working well
 - Usually 98% or more effective
 - Sometimes drops to 80-90% range...very, very occasionally 50%
- Still haven't debugged some of the follow-on calculations (but almost there)...and the analysis spreadsheet needs updating too.

Time Series Simulation

- Waiting on Geoff's availability
- Should base comment resolution on Monte Carlo results in the meantime

Any New Normative Requirements?

- Minimum permissible time between Sync message TX
 - Specify as ignoring – for the purposes of calculating a new RR and RRdrift – an incoming Sync message that arrives too close (<1 ms) to a previous Sync message. Instead use the previously calculated RR and RRdrift for computing the outgoing Correction Field [at b] and RR [at c].
 - Part of informative annex description of algorithm
 - Monte Carlo simulations will add delay (i.e. not match intent) because it's hard to implement.
 - Add capability to identify how often it happens.
 - Time Series simulation implementation will match intent.
 - Also add capability to identify how often messages are ignored.
- **Should** use NRR tracking & compensation algorithm specified in informative annex. (Note cancellation effect.)

Informative Annex

- Based on presentations
- Principle of operation
- Example tracking & compensation algorithms
 - Be careful of different algorithms at successive nodes!
- Normative requirements & principles of testing

Coupling & Decoupling Domains

- Continuation of discussion based on Dragan's presentation
- Plan of action...
 - First: complete simulations to prove basic solution.
 - Write the basic requirement, e.g. " $\pm X$ ppm/s Working Clock @ GM" [Günter / Dragan]
 - See how large the $\pm X$ ppm/s Working Clock @ GM (or other requirement) can be, via additional simulations
 - For discussion via comment resolution: Delete text from 60802 describing the "external control", aligning/separating time domains (6.2.5)?

Revision of sections 6.2.5 to 6.2.13

- Replace references to ClockSource / ClockTarget with Working Clock @ GM / @ End Station
- David McCall to provide a contribution

Thank you!