

Server - Issues #5347

How should time correlated GOOSE change status in GOOSE Performance test

04/25/2022 06:58 AM - Hua Qin

Status: In Progress	Due date: 10/04/2022
Priority: Normal	
Assignee: Richard Schimmel	
Category:	
Target version:	
Discuss in Upcoming Meeting: No	Updated Test Document:
Clause Reference:	Test Case ID:
61850 Standard:	Closed Reason: Test Procedure Update
Triggering Tissue:	Triggering Tissue 2:
Final Decision:	Triggering Tissue 3:
Initial Test Document:	

Description

Please clarify how should the time correlated GOOSE change status in GOOSE performance test.

From what I read below and understand, there are 5 GOOSE which has the following scheme 1:

- 4ms: GPFsubscribed1 only change status of 5th data
- 2ms: GPFsubscribed2 only change status of 5th data
- 0ms: GPFsubscribed3 change status of 5th data, GPFPPing change the status
- 2ms: GPFsubscribed4 only change status of 5th data
- 4ms: GPFsubscribed5 only change status of 5th data

But there is another understanding - scheme 2:

- 4ms: GPFsubscribed1/2/3/4/5 all change status of 5th data
- 2ms: GPFsubscribed1/2/3/4/5 all change status of 5th data
- 0ms: GPFsubscribed1/2/3/4/5 all change status of 5th data, GPFPPing change the status
- 2ms: GPFsubscribed1/2/3/4/5 all change status of 5th data
- 4ms: GPFsubscribed1/2/3/4/5 all change status of 5th data

In device with contact inputs rather than GOOSE, there is a general setting like debounce time to filter the situation in scheme 2 and thus will not have 5 changes within 8ms.

History

#1 - 04/25/2022 09:56 AM - Bruce Muschlitz

It is "obvious" (to me) that because clause 4.1.3 of UCATestProceduresGoosePerformanceEd2_Rev2p5.pdf says for the time correlated subscribed GOOSE:

Retransmission at 4, 32 and 256 ms (or more) that it is means that GPFsubscribed1 has an incremented state number ONLY at time= -4 ms; and not at -4 and -2 and 0 and 2 and 4 ms.

Similarly GPFsubscribed2 does not have incremented state numbers at -4 or 0 or +2 or +4.

This results in exactly 6 time-correlated subscribed GOOSE messages centered upon relative time 0 ms (both GPFPPingNormal and GPFsubscribed3 are sent at 0 ms).

To produce the most accurate measurements, it is assumed that GPFPPingNormal is sent slightly before GPFsubscribed3 to avoid queuing issue on the Ethernet media. In other words, the specification implies "these are simultaneous" but sending first the GPFsubscribed3 GOOSE would add a delay to the PING-PONG GOOSE name GPFPPingNormal.

For the above, please substitute GPFPPingLarge for tests Gpf4 and Gpf8.

#2 - 04/26/2022 03:32 AM - Hua Qin

Thank you Bruce.

I propose to change the "5 subscribed GOOSE each having one used for ping-pong" to the following words:

5 subscribed GOOSE each having one state change of the 5th data value element approximately as following before and after the subscribed

GOOSE state change used for ping-pong:

At -4ms: subscribed GPFsubscribed1 GOOSE change status of 5th data

At -2ms: subscribed GPFsubscribed2 GOOSE change status of 5th data

At 0ms: subscribed GPFPPing GOOSE change the status and followed by subscribed GPFsubscribed3 GOOSE change status of 5th data

At 2ms: subscribed GPFsubscribed4 GOOSE change status of 5th data

At 4ms: subscribed GPFsubscribed5 GOOSE change status of 5th data

#3 - 06/14/2022 01:23 PM - Bruce Muschlitz

- *Discuss in Upcoming Meeting changed from No to Yes*

#4 - 07/26/2022 08:55 AM - Joel Greene

- *Status changed from New to In Progress*

- *Assignee set to Richard Schimmel*

- *Discuss in Upcoming Meeting changed from Yes to No*

Richard to clarify test case.

#5 - 08/09/2022 08:41 AM - IEC 61850 TPWG

- *Due date set to 10/04/2022*