

IEC 61850 User Feedback Task Force - Bug #6596

Simulation Mode with Centralized Protection

11/12/2023 04:40 AM - Dustin Tessier

Status: Resolved	Start date: 11/12/2023
Priority: Normal	Due date:
Assignee:	% Done: 0%
Category:	Estimated time: 0.00 hour
Target version:	
ID:	To discuss in WG10: No
Source:	Short Proposal:
TF Unique ID:	Standard(s):
WG10 Proposal:	Needs More Information: No
Estimated Completion:	Assigned TF: AHTF Virtualization
Discuss in Upcoming Meeting: No	

Description

During a recent vPAC Alliance meeting the topic of LPHD.Sim was discussed and how it would not support a centralized protection scheme, which forces the entire physical device (centralized computing platform) to be placed into simulation mode. Ideally the simulation modes could be applied to LDs (similar to test mode via LLN0), however this would create backwards compatibility issues. The other option is to not use simulation mode, and use the LN's InRef's tstEna/setTstRef data objects to dynamically subscribe to the test set.

Proposal descriptions

Note: Issue should be addressed in AdHoc TF Virtualization. TF Leader shall be informed. Possible, there is a need for editorial changes in 7-1 and other parts as well.

History

#1 - 11/14/2023 07:35 AM - Herbert Falk

It is true that LPHD is for the "physical" device. However, the subtlety is that it is really for the IEC 61850 server's perspective of physical. In a virtual environment, there can be multiple "guest OS" which represent their own "physical" device and would have at least one IEC 61850 server. So there is no issue in this particular use case since virtualization is all about isolation. Even without virtualization, it has always been possible to have multiple IEC 61850 servers within a single platform. Each of these would have their own LPHD.Sim.

There is no issue, but maybe from an editorial perspective, the scope of LPHD.Sim should be clarified to be for the IEC 61850 server in which it is located.

#2 - 11/14/2023 08:34 AM - Dustin Tessier

Herbert Falk wrote in [#note-1](#):

It is true that LPHD is for the "physical" device. However, the subtlety is that it is really for the IEC 61850 server's perspective of physical. In a virtual environment, there can be multiple "guest OS" which represent their own "physical" device and would have at least one IEC 61850 server. So there is no issue in this particular use case since virtualization is all about isolation. Even without virtualization, it has always been possible to have multiple IEC 61850 servers within a single platform. Each of these would have their own LPHD.Sim.

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D.Tessier Response:

7-1 states "The logical node physical device (LPHD) represents common data of the physical device hosting the logical device .", which is contrary to your statement that it models the "IEC 61850 server". Therefore it is associated to the physical device that's hosting the logical device, and not the entire server. As for your comment that each instance of LPHD would have its own LPHD.Sim is incorrect. I agree you may have multiple instances of LPHD.Sim in one physical device, however only a single instance shall have its LPHD.Sim data object that is controllable.

#3 - 11/17/2023 01:25 AM - Thierry Dufaure

Further discussion will occur in the TF virtualization. 7-1 will surely need to be adapted to address hosting machine with multiple virtual IEDs - each of

them having their own simulation capability.

Typically, the Bay represents an entity that needs to be isolated, maintained and tested, and therefore requires a bay specific simulation functionality. Multiple servers in an IED, or multiple virtual IEDs USE CASES needs to be investigated within the scope of the task force.

The statement "There is no issue, but maybe from an editorial perspective, the scope of LPHD.Sim should be clarified to be for the IEC 61850 server in which it is located." is very true.

#4 - 11/21/2023 12:43 AM - Vladan Cvejic

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

#5 - 11/21/2023 08:31 AM - Vladan Cvejic

- *Status changed from New to Resolved*

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

- *Proposal descriptions updated*

- *Assigned TF AHTF Virtualization added*

- *Assigned TF deleted (None)*

#6 - 11/21/2023 08:32 AM - Vladan Cvejic

- *Proposal descriptions updated*