

Don't hesitate. Share your thoughts and experiences.

I looked into the Summer 2009 edition of PAC World (according to my opinion an excellent journal), the cover story, where it is written under "IEC 61850 substation architecture" as follows:

Quote: The next possible step when using station and process bus is the optimization of the switchgear. In order for the protection, control and monitoring functions in a substation to operate correctly, several instrument transformers are placed throughout the high voltage installation. However with the capability to send voltage and current measurements as sampled values over a local area network it is possible to eliminate some of these instrument transformers. One example is the voltage measurements needed by distance protections. Traditionally voltage transformers are installed in each outgoing feeder. However if voltage transformers are installed on the busbar, the voltage measurements can be transmitted over the local area network to each function requiring these measurements.

Unquote: My opinion is that here is nothing new and this can not be treated as an advantage given by process bus. Such station configurations, using for distance protection at one bus system the busbar installed VTs have been in practical use in many countries for a number of years. Many

utilities are using such solutions as their standard station configuration. There is of course a commercial benefit at substation construction, but there are of course some negative impacts on operation of distance protection, which may result even in their wrong operation (for example unnecessary trip when the protected feeder is transferred from one to another bus). Also some voltage dependent functionality while connected to autoreclosing activity can not be performed completely in a correct way. One must consider all of this when deciding whether to use for distance protection line or busbar installed voltage instrument transformers. I think that it is a bit exaggerating to claim that now we can eliminate a number of instrument transformers just thanks to process bus implementation.

*Janez Zakonjsek,
Slovenia*

PAC World: Dear Mr.Zakonjsek, thank you very much for your comment. We hope that your analysis of the impact of IEC 61850 on the design of IEC 61850 based substations and more specifically on the reduction in the number of instrument transformers will lead to some of our readers responding by writing articles and comments on the subject. We are looking at a future issue of the magazine dedi-

cated to the "Impact of IEC 61850 on PAC systems".

The Final Thoughts column in the Summer 2009 issue of the magazine states that "In countries in different corners of the world it is becoming the standard communications protocol in substations."

It is NOT a protocol! It is a definition of objects and commands that communicate using TCP/IP protocol! ... This is why nearly everyone in the US doesn't think there is any benefit of changing from DNP3 – they think IEC 61850 is just another SCADA protocol.

*Rod Hughes,
Australia*

PAC World: Dear Mr. Hughes, thank you very much for your comment. You are raising a very important issue related to the need for good understanding of what IEC 61850 is, how it compares with the communication protocols that have been used for many years in the protection, automation and control industry and what are the benefits of using it. We hope that your comment, as well as the IEC 61850 column and the Last Word column in this issue will trigger some further discussions on the subject of your comment and will help the readers expand their knowledge and understanding of IEC 61850.

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