

PSCC Subcommittee Study Group Meeting Minutes

Designation: P21		Name: System Architectures Supporting the Virtualization of Substation Protection and Control Applications			
Meeting Location: Teleconference		Meeting Time: 10:00 AM	Meeting Date: 2021/11/29	Minutes Revised:	Minutes Approved: 2021/12/13
PAR Output: N/A	PAR Output: N/A	PAR Approval Date: N/A	PAR Expiration Date: N/A	Target Sponsor Ballot Date: N/A	Target Completion Date: N/A
Presiding Officer: Craig Preuss, Chair			Recorded by: Craig Preuss		Draft Number: N/A
Attendance:					
Name		Affiliation		Attending via Phone (P) / Web (W) or Local (L) M/CM/G	
Craig Preuss		Black & Veatch		W	M
Jose Ruiz		Doble		W	M
Mike Dood		SEL		W	M
Anthony Sivesind		SRP		W	M
Priyanka Nadkar		SEL		W	M
Scott Mix		PNNL		W	M
Andre Melo		Schneider Electric		W	M
Greg Zweigle		SEL		W	M
Gayle Nelms		SEL		W	M
Jean Raymond		Hydro Québec		W	M
Prasad Shrawane		Greater Sudbury Hydro Inc.		W	M
Jay Anderson		ComEd		W	M
Cole Weber		Advantech		W	M
Farzad Khalilpour		SCE		W	M
Thomas Rudolph		Schneider Electric GmbH		W	M
Miguel Rios		Southern Company		W	M
Prithpal Khajuria		Intel		W	M
Austin Wade		SEL			M
Adam Caballero		Eaton			M
Michael Thompson		SEL			M
Ibrahim Abdulhadi		University of Strathclyde, Glasgow			M
Madhab Paudel		Eaton			M
Dean Samara-Rubio		Intel			M
Fred Agyekum		SEL			M
Paul Myrda		EPRI			M
Song Zhang		ISO New England			M
Sai Chandra Reddy Thota		Megger Ltd			M
Veselin Skendzic		SEL			M
Shane Haveron		AMETEK			M
Noor Mohd Fadzli B Hj. Othman		PETROLIAM NASIONAL BERHAD (PETRONAS)			M
Ted (Charles) Witham		Eaton			M

James Formea	Eaton		M
Eugenio Carvalheira	OMICRON		M
Hao CHEN (来宾)	State Grid Corporation of China		M
Chris Heron	Integrated Power Services		M
Joseph Yang	Advantech		M
Jeff Brown	Advantech		M
Alex Apostolov	OMICRON		M
Anthony Johnson	SCE		M
Antonello Monti	RWTH Aachen University		M
Arun Shrestha	IEEE		M
Benton Vandiver	Hitachi Powergrids		M
Byungtae Jang, KR			M
Chand Tailor	Eaton		M
Charles Adewole	ERL Phase Technologies		M
Chris Huntley	SEL		M
Daniel Ridenour	Dominion Energy		M
Daqing Hou	SEL		M
David Dolezilek	SEL		M
Deepak Maragal	NYPA		M
Dennis Holstein	OPUS Consulting Group		M
Deryk Yuill	is5		M
Eric Thibodeau	Hydro Québec		M
Florian Ainhirn	Versuchsanstalt für Hochspannungstechnik Graz GmbH High Voltage Test Laboratory Graz Ltd.		M
Gurudatha (Guru) Pai	GE Digital		M
James Bougie	GPT		M
Jay Herman	EPRI		M
Jeff Pack	POWER Engineers		M
Jeremy Slimmer	Cybirical		M
Jesse Silva	SCE		M
Jim Michaelis	Commonwealth Associates. Inc.		M
Joshua Hughes	Patterson Power Engineers		M
Juan Placid	J J Power & Energy Inc.		M
Laurel Brandt	TVA		M
Luke Hebert	Cybirical		M
Mickey Schultz	Black & Veatch		M
Mital Kanabar	GE Renewable Energy		M
Murty Yalla	Hubbell		M
Nathan Wallace	Cybirical		M
Nirmal Nair	University of Auckland, New Zealand		M
Ramakrishna Gokaraju	University of Saskatchewan		M
Richard Kephart	Emerson		M
Steve Klecker	MidAmerican		M
Steven Blair	Synaptec		M
Thai Li	Hubbell		M
Wayne Stec	Distregen		M
Xavier Manel-la	Siemens		M
Zeus Xioco	SCE		M

M: Member

CM: Corresponding Member

G: Guest

Item no.	Notes	Action by
CALL TO ORDER	Meeting was called to order by the chair at approximately 10:04 AM Eastern	
INTRODUCTIONS AND QUORUM	Introductions were not undertaken, the participants list was used. Quorum does not apply to study group per IEEE-SA rules all attendees are considered voting members.	
CALL FOR PATENTS	Pre-PAR patent slides were shown.	
IEEE-SA COPYRIGHT	IEEE-SA copyright slides shown.	
CHAIR'S REMARKS	General welcome given.	
AGENDA APPROVAL	Mike Dood motion to approve agenda, Scott Mix second. No objections or abstentions.	
APPROVAL OF PREVIOUS MINUTES	Nov 15 – Scott Mix motion to approve, Farzad Khalilpour second. No objections or abstentions.	
Action Items	<ul style="list-style-type: none"> • Follow up with chair of PSCCC P11 TF Cloud Computing, uses and Requirements of Electric Power Utilities (TW Cease) – in progress • Thomas Rudolph to check on obtaining copies of CIGRE B5.60 report for P21 • Prithpal to coordinate ABB presentation – in progress 	
Regular Web Meetings	<p>How much background / reference / presentation is needed</p> <p>EPRI (X) SCE (X) SRP (X) Intel (X) Advantech (X) LF Energy SEAPATH project and CIGRE B5.60 (X) PSRC H45 PC37.300 (X) TTTech Industrial North America (Dec 13) ABB (Dec 13) VMWare (???) SEL PSCCC S1 P1686??? PSRC H46 PC37.1.3??? PSRC H27 COMSET PC37.251???</p> <p>PSCCC S7 WG, IEEE Std 2808 Standard for Function Designations used in Electrical Power Systems for Cyber Services and Cybersecurity PSCCC P11 TF, Cloud Computing, uses and Requirements of Electric Power Utilities ISO TS 23167, general cloud that is applicable Analytic Methods for Power Systems (AMPS) Technical Committee, Big Data & Analytics (BDA) Subcommittee, Cloud for Power Grid IEEE Computer Society Technical Committee on Cloud Computing https://tc.computer.org/tcclld/ Others???</p>	<p>Entergy, National Grid, AEP are other utilities who many be interested in providing a presentation on their perspective. Prithpal to coordinate.</p> <p>SEL confirms date for presentation. Refer to email to chair.</p>
	ComEd is probably a long way from virtualization as evolution is still in a hardwired environment and just starting to use IEC 61850. Utilities can be slow to adopt new technologies.	

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New Business	<p>Work continued on the definition of substation virtualization</p> <p>A consistent, secure, and managed approach to the decoupling of software from its dedicated hardware using a variety of hardware architectures to support multiple real-time or near real-time substation applications such as protection, automation, monitoring (e.g., condition-based monitoring, validation, transformation), metering, control (closed- or open-loop), or simulation (e.g., digital twin).</p> <p>Support services for virtualized environment include time synchronization (architecture issue).</p> <p>Management includes file management, network management, virtual machine management, security management, etc. (future work to refine “managed approach”)</p>	Members to provide comments for 12/13 meeting
Action Items	Need to schedule more meetings for the January – May period, start with the last Monday of January	Chair to schedule after conclusion of meetings in December
Action Items	CIGRE B5.60 report copies could be provided to P21.	Thomas Rudolph to confirm
Next Steps	<p>What does P21 want to recommend to P0 subcommittee</p> <ol style="list-style-type: none"> 1. PAR related work, working group 2. PAR related work as trial-use standard document, working group 3. Report related work, task force 4. No future work is needed 	Chair to follow up with IEEE-SA to give presentation on how trial-use standards
ITEMS REPORTED OUT OF EXECUTIVE SESSION	There was no executive session.	
TIME OF FINAL ADJOURNMENT	The meeting was adjourned at approximately 11:27 AM Eastern.	
NEXT FACE TO FACE MEETINGS	<p>Next bi-weekly meetings: Dec 13</p> <p>JTCM, January 10-13, 2022</p> <p>Garden Grove, CA</p> <p>In person and hybrid</p> <p>To attend any meeting scheduled during the JTCM, you must register whether in-person or remote</p> <p>Registration for virtual attendees will support web conference facilities being provided at the hotel and all the work to make hybrid meeting possible</p> <p>https://pesttechnical.org/</p>	
FUTURE MEETING ROOM REQUIREMENTS	N/A for room size, projector, conflicts.	

