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: 2021/12/13	Minutes Revised:	Minutes Approved: 2022/1/10	
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
Farzad Khalilpour	SCE	W	M
Jay Anderson	ComEd	W	M
Andre Melo	Schneider Electric	W	M
Austin Wade	SEL	W	M
Gayle Nelms	SEL	W	M
Greg Zweigle	SEL	W	M
Ibrahim Abdulhadi	University of Strathclyde, Glasgow	W	M
Mike Dood	SEL	W	M
Scott Mix	PNNL	W	M
Prasad Shrawane	Greater Sudbury Hydro Inc.	W	M
Priyanka Nadkar	SEL	W	M
Jean Raymond	Hydro Québec	W	M
Dean Samara-Rubio	Intel	W	M
Shane Haveron	AMETEK	W	M
Song Zhang	ISO New England	W	M
Thomas Rudolph	Schneider Electric GmbH	W	M
Veselin Skendzic	SEL	W	M
Prithpal Khajuria	Intel	W	M
Cole Weber	Advantech	W	M
Jose Ruiz	Doble		M
Anthony Sivesind	SRP		M
Miguel Rios	Southern Company		M
Adam Caballero	Eaton		M
Michael Thompson	SEL		M
Madhab Paudel	Eaton		M
Fred Agyekum	SEL		M
Paul Myrda	EPRI		M
Sai Chandra Reddy Thota	Megger Ltd		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	Scott Mix motion to approve agenda, Thomas Rudolph second. No objections or abstentions.	
APPROVAL OF PREVIOUS MINUTES	Nov 29 – Scott Mix motion to approve, Mike Dood second. No objections or abstentions.	
Action Items	- Follow up with chair of PSCCC P11 TF Cloud Computing, uses and Requirements of Electric Power Utilities (TW Cease) – work still ongoing - Thomas Rudolph to check on obtaining copies of CIGRE B5.60 report for P21 - Prithpal to coordinate utility presentations (Entergy, National Grid, AEP) – no update, but Hydro-Quebec – Jean Raymond has presentation made that already includes substation virtualization as topic. 90 minutes needed, scheduled for Feb 28. - Chair to schedule next set of bi-weekly meetings after Dec 13 meeting, first one is Jan 29 - IEEE-SA presentation on trial-use standards – in progress	Jean Raymond to provide copy of presentation to chair for review.
New Business	Definition of substation virtualization, there was discussion about whether or not should be constrained to substation or not. Left as future extension to include control center or other locations; but need to be careful with P11 and its work: difference between cloud and virtualization? Difference could be that cloud is considered off premises and virtualization is on premises. Current definition of substation virtualization is: 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).	

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Regular Web Meetings	How much background / reference / presentation is needed EPRI (X) SCE (X) SRP (X) Intel (X) Advantech (X) LF Energy SEAPATH project and CIGRE B5.60 (X) PSRC H45 PC37.300 (X) VMWare (Jan 31) SEL (Jan 31) TTTech Industrial North America (Feb ??) ABB (Feb ???) PSCCC S1 P1686??? PSRC H46 PC37.1.3??? PSRC H27 COMSET PC37.251??? 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/tccld/ Others???	Prithpal still working on coordinating presentations from other utilities.
Action Items	Need to delete slide from agenda on previous work on substation virtualization.	Chair to delete slide from agenda.
Action Items	Investigate whether there is another way to get copy of CIGRE B5.60 report for P21.	Chair to contact PES
Action Items	Prithpal is involved in organizing a panel dinner at DistribuTech, looking for panelists. There was discussion about the chair providing a short presentation on P11, P21 and H45 work.	Prithpal to provide information to chair.
Next Steps	What does P21 want to recommend to P0 subcommittee 1. PAR related work, working group (could address trial use) 2. Report related work, task force 3. 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 11:07 AM Eastern.	

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NEXT FACE TO FACE MEETINGS	Next bi-weekly meetings: Jan 31 JTCM, January 10-13, 2022; 5 pm Tuesday slot Garden Grove, CA In person and hybrid To attend any meeting scheduled during the JTCM, you must register whether in-person or remote Registration for virtual attendees will support web conference facilities being provided at the hotel and all the work to make hybrid meeting possible https://pestechnical.org/	Chair to work on re-scheduling JTCM P21 meeting time.
FUTURE MEETING ROOM REQUIREMENTS	N/A for room size, projector, conflicts.	