

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 AM	Meeting Date: 2022/01/31	Minutes Revised:	Minutes Approved: 2022-02-28
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
Adam Caballero		Eaton		W	M
Andre Melo		Schneider Electric		W	M
Ted (Charles) Witham		Eaton		W	M
Cole Weber		Advantech		W	M
Darrin Kite		SEL		W	M
Dean Samara-Rubio		Intel		W	M
Farzad Khalilpour		SCE		W	M
Gayle Nelms		SEL		W	M
Greg Zweigle		SEL		W	M
Herb Falk		OTB Consulting		W	M
Jay Anderson		Retired		W	M
Joemoan Xavier		ABB		W	M
Jose Ruiz		Doble		W	M
Kannan Devarajan		TTTech		W	M
Madhab Paudel		Eaton		W	M
Michelle Afenya		S&C Electric		W	M
Mike Dood		SEL		W	M
Nathan Wallace		Cybirical		W	M
Nirmal Nair		University of Auckland, New Zealand		W	M
Prasad Shrawane		Greater Sudbury Hydro Inc.		W	M
Priyanka Nadkar		SEL		W	M
Scott Mix		PNNL		W	M
Shane Haveron		AMETEK		W	M
Jeff Pack		POWER Engineers			M
James Bougie		GPT			M
Alex Apostolov		OMICRON			M
Anthony Johnson		SCE			M
Austin Wade		SEL			M
Benton Vandiver		Hitachi Powergrids			M
Byungtae Jang, KR					M
Chris Huntley		SEL			M

Dean Ouellette	RTDS Industries		M
Dennis Holstein	OPUS Consulting Group		M
Dustin Tessier	Tesco Automation		M
Jay Herman	EPRI		M
Jim Michaelis	Commonwealth Associates. Inc.		M
Steve Klecker	MidAmerican		M
Jun Verzosa	Doble		M
James Formea	Eaton		M
Ibrahim Abdulhadi	University of Strathclyde, Glasgow		M
Jean Raymond	Hydro Québec		M
Song Zhang	ISO New England		M
Thomas Rudolph	Schneider Electric GmbH		M
Veselin Skendzic	SEL		M
Prithpal Khajuria	Intel		M
Anthony Sivesind	SRP		M
Miguel Rios	Southern Company		M
Michael Thompson	SEL		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
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
Antonello Monti	RWTH Aachen University		M
Arun Shrestha	IEEE		M
Chand Tailor	Eaton		M
Charles Adewole	ERL Phase Technologies		M
Daniel Ridenour	Dominion Energy		M
Daqing Hou	SEL		M
David Dolezilek	SEL		M
Deepak Maragal	NYPA		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
Jeremy Slimmer	Cybirical		M
Jesse Silva	SCE		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
Ramakrishna Gokaraju	University of Saskatchewan		M

Richard Kephart	Emerson		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 10:00 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	Shane Haveron motion to approve agenda, Scott Mix second. No objections or abstentions.	
APPROVAL OF PREVIOUS MINUTES	Jan 10 – Scott Mix motion to approve, Jay Anderson second. No objections or abstentions.	
Presentation	Presentation by Darren Kite from SEL on a container-based platform. Refer to file embedded at the end of the minutes.	
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) – not meeting at JTCM • Copy of CIGRE B5.60 report for P21 will likely be unavailable, but CIGRE and IEEE just signed new MOU • Prithpal to coordinate utility presentations (Entergy, National Grid, AEP) • Chair to schedule next set of bi-weekly meetings after Dec 13 meeting, first one is Jan 31 (will be sent out after any new attendees from this meeting) • IEEE-SA presentation on trial-use standards – in progress • CIGRE D2.42 report on time synchronization and distribution, that is a challenge for virtualization. Dennis Holstein will investigate whether that work is addressing virtualization or not, it may have been a survey. 	
New Business	Definition of substation virtualization: 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).	
New Business	Upcoming presentations <ul style="list-style-type: none"> • February 14 <ul style="list-style-type: none"> ○ TTTech Industrial North America ○ ABB • February 28 <ul style="list-style-type: none"> ○ Hydro-Quebec ○ CIGRE D2.43 	

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Regular Web Meetings	How much background / reference / presentation is needed 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/tccl/ Others???	Prithpal still working on coordinating presentations from other utilities.
Next Steps	What does P21 want to recommend to P0 subcommittee <ol style="list-style-type: none"> 1. PAR related work, working group (could address trial use) 2. Report related work, task force 3. No future work is needed 	
ITEMS REPORTED OUT OF EXECUTIVE SESSION	There was no executive session.	
TIME OF FINAL ADJOURNMENT	The meeting was adjourned at approximately 11:31 AM Eastern.	
NEXT FACE TO FACE MEETINGS	Bi-weekly meetings continue. Final face-to-face meeting will be held May 9-12, 2022, presently scheduled for Reno, NV.	
FUTURE MEETING ROOM REQUIREMENTS	N/A for room size, projector, conflicts.	

