

## 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: 2021/11/15	Minutes Revised:	Minutes Approved: 2021/11/29
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
Anthony Sivesind		SRP		W	M
Austin Wade		SEL		W	M
Scott Mix		PNNL		W	M
Jay Anderson		ComEd		W	M
Adam Caballero		Eaton		W	M
Thomas Rudolph		Schneider Electric GmbH		W	M
Michael Thompson		SEL		W	M
Ibrahim Abdulhadi		University of Strathclyde, Glasgow		W	M
Jose Ruiz		Doble		W	M
Gayle Nelms		SEL		W	M
Andre Melo		Schneider Electric		W	M
Priyanka Nadkar		SEL		W	M
Jean Raymond		Hydro Québec		W	M
Madhab Paudel		Eaton		W	M
Dean Samara-Rubio		Intel		W	M
Prasad Shrawane		Greater Sudbury Hydro Inc.		W	M
Fred Agyekum		SEL		W	M
Greg Zweigle		SEL		W	M
Farzad Khalilpour		SCE		W	M
Paul Myrda		EPRI		W	M
Song Zhang		ISO New England		W	M
Miguel Rios		Southern Company		W	M
Sai Chandra Reddy Thota		Megger Ltd		W	M
Prithpal Khajuria		Intel		W	M
Veselin Skendzic		SEL			M
Mike Dood		SEL			M
Shane Haveron		AMETEK			M
Noor Mohd Fadzli B Hj. Othman		PETROLIAM NASIONAL BERHAD (PETRONAS)			M
Ted (Charles) Witham		Eaton			M
Cole Weber		Advantech			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
<b>CALL TO ORDER</b>	Meeting was called to order by the chair at approximately 10:04 AM Eastern	
<b>INTRODUCTIONS AND QUORUM</b>	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.	
<b>CALL FOR PATENTS</b>	Pre-PAR patent slides were shown.	
<b>IEEE-SA COPYRIGHT</b>	IEEE-SA copyright slides shown.	
<b>CHAIR'S REMARKS</b>	General welcome given.	
<b>AGENDA APPROVAL</b>	Jose Ruiz motion to approve agenda, Scott Mix second. No objections or abstentions.	
<b>APPROVAL OF PREVIOUS MINUTES</b>	Nov 1 – Farzad Khalilpour motion to approve, Scott Mix second. No objections or abstentions.	
<b>Regular Web Meetings</b>	<p>How much background / reference / presentation is needed</p> <ul style="list-style-type: none"> <li>EPRI (X)</li> <li>SCE (X)</li> <li>SRP (X)</li> <li>Intel (X)</li> <li>Advantech (X)</li> <li>LF Energy SEAPATH project and CIGRE B5.60 (X)</li> <li>PSRC H45 PC37.300 (X)</li> <li>TTTech Industrial North America (Nov 29)</li> <li>VMWare (Nov 29)</li> <li>ABB (TBD)</li> <li>SEL (TBD)</li> <li>PSCCC S1 P1686???</li> <li>PSRC H46 PC37.1.3???</li> <li>PSRC H27 COMSET PC37.251???</li> <li>PSCCC S7 WG, IEEE Std 2808 Standard for Function Designations used in Electrical Power Systems for Cyber Services and Cybersecurity</li> <li>PSCCC P11 TF, Cloud Computing, uses and Requirements of Electric Power Utilities</li> <li>ISO TS 23167, general cloud that is applicable</li> <li>Analytic Methods for Power Systems (AMPS) Technical Committee, Big Data &amp; Analytics (BDA) Subcommittee, Cloud for Power Grid</li> <li>IEEE Computer Society Technical Committee on Cloud Computing</li> <li><a href="https://tc.computer.org/tcclld/">https://tc.computer.org/tcclld/</a></li> <li>Others???</li> </ul>	<p>Greg Zweigle indicated SEL could provide a presentation. Chair to follow up.</p>
<b>New Business</b>	<p>Work continued on the definition of substation virtualization</p> <p>A consistent and secure 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, supporting closed-loop control), metering, control, or simulation (e.g., digital twin).</p>	<p>Members to provide comments for 11/29 meeting</p>

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<b>New Business</b>	iMeet Workspace name  PSCCC P21 System Architectures Supporting the Virtualization of Substation Protection and Control Applications  Invitations sent out to all rostered members Materials posted Will be the method of providing meeting materials (e.g., minutes, presentations) and S21 report Link provided in Teams interface	
<b>New Business</b>	P0 chair approved extension request for P21 to complete our work no later than the May 2022 PSRCC/PSCCC meeting	
<b>New Business</b>	No formal comments will be collected by P21 regarding PC37.300 draft provided. If there is interest in providing feedback, contact the H45 Chair, Ratan Das, to get involved in that work.	
<b>Action Items</b>	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
<b>Action Items</b>	CIGRE B5.60 report copies could be provided to P21.	Thomas Rudolph to confirm
<b>Action Items</b>	Presentation by ABB	Prithpal to coordinate
<b>Next Steps</b>	What does P21 want to recommend to P0 subcommittee 1. PAR related work, working group 2. Report related work, task force 3. No future work is needed	
<b>ITEMS REPORTED OUT OF EXECUTIVE SESSION</b>	There was no executive session.	
<b>TIME OF FINAL ADJOURNMENT</b>	The meeting was adjourned at approximately 11:29 AM Eastern.	
<b>NEXT FACE TO FACE MEETINGS</b>	Next bi-weekly meetings: Nov 29, Dec 13	
<b>FUTURE MEETING ROOM REQUIREMENTS</b>	N/A for room size, projector, conflicts.	