

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: 2021/11/01	Minutes Revised:	Minutes Approved: 2021/11/15
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
Andre Melo		Schneider Electric		W	M
Jean Raymond		Hydro Québec		W	M
Veselin Skendzic		SEL		W	M
Gayle Nelms		SEL		W	M
Adam Caballero		Eaton		W	M
Anthony Sivesind		SRP		W	M
Prasad Shrawane		Greater Sudbury Hydro Inc.		W	M
Mike Dood		SEL		W	M
Ibrahim Abdulhadi		University of Strathclyde, Glasgow		W	M
Shane Haveron		AMETEK		W	M
Noor Mohd Fadzli B Hj. Othman		PETROLIAM NASIONAL BERHAD (PETRONAS)		W	M
Austin Wade		SEL		W	M
Scott Mix		PNNL		W	M
Priyanka Nadkar		SEL		W	M
Greg Zweigle		SEL		W	M
Ted (Charles) Witham		Eaton		W	M
Cole Weber		Advantech		W	M
Farzad Khalilpour		SCE		W	M
Paul Myrda		EPRI		W	M
Sai Chandra Reddy Thota		Megger Ltd			M
Thomas Rudolph		Schneider Electric GmbH			M
James Formea		Eaton			M
Madhab Paudel		Eaton			M
Jay Anderson		ComEd			M
Dean Samara-Rubio		Intel			M
Eugenio Carvalheira		OMICRON			M
Miguel Rios		Southern Company			M
Hao CHEN (来宾)		State Grid Corporation of China			M
Chris Heron		Integrated Power Services			M

Prithpal Khajuria	Intel		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
Fred Agyekum	SEL		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
Jose Ruiz	Doble		M
Joshua Hughes	Patterson Power Engineers		M
Juan Placid	J J Power & Energy Inc.		M
Laurel Brandt	TVA		M
Luke Hebert	Cybirical		M
Michael Thompson	SEL		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, Shane Haveron second. No objections or abstentions.	
APPROVAL OF PREVIOUS MINUTES	Oct 18 – Mike Dood motion to approve, Farzad Khalilpour second. No objections or abstentions.	
Regular Web Meetings	EPRI (X) SCE (X) SRP (X) Intel (X) Advantech (X) LF Energy SEAPATH project and CIGRE B5.60 (X) PSRC H45 PC37.300 (X) TTEch Industrial North America (Nov 15) VMWare (Nov 15) PSCCC S1 P1686??? PSRC H46 PC37.1.3??? PSRC H27 COMSET PC37.251??? PSCCC S7 ISO TS 23167, general cloud that is applicable Big Data and Analytics Subcommittee of the AMPS Committee, Cloud Computing for Power Grid Task Force Others???	
New Business	<p>Work continued on the definition of substation virtualization</p> <p>The decoupling of substation protection, automation, monitoring (e.g., metering, condition-based monitoring, closed-loop control), or control software from its associated hardware. Digital twins</p> <p>The decoupling of software from its dedicated hardware that supports multiple real-time or near real-time applications such as protection, automation, monitoring (e.g., metering, condition-based monitoring, closed-loop control), or control on a more compact hardware platform.</p> <p>Microsoft Azure definition: Virtualization creates a simulated, or virtual, computing environment as opposed to a physical environment. Virtualization often includes computer-generated versions of hardware, operating systems, storage devices, and more.</p> <p>Existing decoupling technology today is based upon hypervisors, containers, and virtual machines. Hypervisors also virtualize the hardware.</p>	

Item no.	Notes	Action by
Next Steps	What does P21 want to recommend to P0 subcommittee 1. PAR related work, working group 2. Report related work, task force 3. Request extension to continue work (B5.60 work published end of 2021) 4. No future work is needed	
Action Items	Still no update from Erin about setting up an iMeet site for P21 Chair requested P21 participants to provide feedback on definition of substation virtualization that was worked on during the meeting. Contact P0 for extension request that is needed for P21 work Follow up with chair of PSCCC P11, Cloud Computing, uses and Requirements of Electric Power Utilities, Task Force Chair	Chair will contact Erin. P21 members Chair Chair will contact TW Cease.
ITEMS REPORTED OUT OF EXECUTIVE SESSION	There was no executive session.	
TIME OF FINAL ADJOURNMENT	The meeting was adjourned at approximately 11:30 AM Eastern.	
NEXT FACE TO FACE MEETINGS	Meeting bi-weekly on Nov 29, Dec 13.	
FUTURE MEETING ROOM REQUIREMENTS	N/A for room size, projector, conflicts.	