

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: 2022/02/28	Minutes Revised:	Minutes Approved: 2022/03/14
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		
Herb Falk	OTB Consulting	W	M		
Steve Klecker	MidAmerican	W	M		
Shane Haveron	AMETEK	W	M		
Veselin Skendzic	SEL	W	M		
Adam Caballero	Eaton	W	M		
Anthony Sivesind	SRP	W	M		
Scott Mix	PNNL	W	M		
Prasad Shrawane	Greater Sudbury Hydro Inc.	W	M		
Jose Ruiz	Doble	W	M		
Ted (Charles) Witham	Eaton	W	M		
Thomas Rudolph	Schneider Electric GmbH	W	M		
Madhab Paudel	Eaton	W	M		
Jay Anderson	Retired	W	M		
Greg Zweigle	SEL	W	M		
Cole Weber	Advantech	W	M		
Farzad Khalilpour	SCE	W	M		
Joemoan Xavier	ABB	W	M		
Dean Samara-Rubio	Intel	W	M		
Paul Myrda	EPRI	W	M		
Alan Renouf	VMware	W	M		
Nathan Wallace	Cybirical	W	M		
Nirmal Nair	University of Auckland, New Zealand	W	M		
Jani Valtari	ABB		M		
Gayle Nelms	SEL		M		
Laurel Brandt	TVA		M		
Ibrahim Abdulhadi	University of Strathclyde, Glasgow		M		
Austin Wade	SEL		M		
Jean Raymond	Hydro Québec		M		
Mike Dood	SEL		M		
Michelle Afenya	S&C Electric		M		
Mickey Schultz	Black & Veatch		M		

Andre Melo	Schneider Electric		M
Darrin Kite	SEL		M
Kannan Devarajan	TTTech		M
Priyanka Nadkar	SEL		M
Jeff Pack	POWER Engineers		M
James Bougie	GPT		M
Alex Apostolov	OMICRON		M
Anthony Johnson	SCE		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
Jun Verzosa	Doble		M
James Formea	Eaton		M
Song Zhang	ISO New England		M
Prithpal Khajuria	Intel		M
Miguel Rios	Southern Company		M
Michael Thompson	SEL		M
Fred Agyekum	SEL		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
Luke Hebert	Cybirical		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	Scott Mix motion to approve agenda, Jay Anderson second. No objections or abstentions.	
APPROVAL OF PREVIOUS MINUTES	Scott Mix motion to approve Jan 31, 2022 meeting minutes, Farzad Khalilpour second. No objections or abstentions.	
APPROVAL OF PREVIOUS MINUTES	Steve Klecker motion to approve Feb 14, 2022 meeting minutes, Scott Mix second. No objections or abstentions.	
Presentation	Presentation by Herb Falk from OTB. Refer to embedded file below.	
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 be provided soon • Prithpal to coordinate utility presentations (Entergy, National Grid, AEP) • IEEE-SA presentation on trial-use standards – scheduled • 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).	

Item no.	Notes	Action by
New Business	Upcoming presentations <ul style="list-style-type: none"> • March 14 <ul style="list-style-type: none"> ○ VMWare ○ IEEE-SA ○ CIGRE D2.43 (?) • March 28 <ul style="list-style-type: none"> ○ Hydro-Quebec ○ CIGRE D2.43 (?) ○ TTTech (?) 	
Future Presentation Ideas	Bringing presentations to an end so we can focus in April on next steps	
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 	
Next Steps	Should we move to weekly meetings in April at same time? No opposition.	Chair to send out meeting invitations.
What Others are Creating	DMTF creates standards specific to cloud and virtualization management <ul style="list-style-type: none"> • ISO/IEC 19099 Virtual Management (VMAN) • ISO/IEC 17203 Open Virtualization Format (OVF) Specification • ISO/IEC 17963 Web Services for Management (WS-MAN) Specification ITU-T Y.3510 Cloud computing infrastructure requirements (online at https://www.itu.int/rec/T-REC-Y.3510-201602-1/en) ISO/IEC 21878 Information technology — Security techniques — Security guidelines for design and implementation of virtualized servers	
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	Bi-weekly meetings continue, with weekly meetings in April. 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.	

