



PSCCC Subcommittee S0 Meeting Minutes

Designation: S0	Name: PSCCC Cybersecurity Subcommittee Meeting
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Meeting Location: Virtual	Meeting Time: 10:20 AM CDT	Meeting Date: 2021/05/06	Minutes Revised: [YYYY/MM/DD]	Minutes Approved: 2021/09/24
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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
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Presiding Officer: Scott Mix - Chair	Recorded by: Scott Mix	Draft Number: 0.0
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Attendance:			
		Attending via Phone (P) / Web (W) or Local (L)	M/CM/G
Name	Affiliation		

Scott Mix	PNNL	W	M
Theo Laughner	Lifescale Analytics	W	M
Jay Anderson	ComEd - Exelon Corp	W	M
James Bougie	GPT	W	M
Eugenio Carvalheira	Omicron Energy	W	M
TW Cease	Independent	W	M
Ed Cenzon	Schweitzer Engineering Labs	W	M
Mike Dood	Schweitzer Engineering Labs	W	M
Herb Falk	OTB Consulting		M
James Formea	Eaton	W	M
Didier Giarratano	Schnieder Electric	W	M
Shane Haveron	AMETEK Power Instruments	W	M
Dennis Holstein	Opus Consulting Group	W	M
Chris Huntley	Schweitzer Engineering Labs	W	M
Anthony Johnson	SCE	W	M
R. Benjamin Kazimier			M
Steve Kunsman	Hitachi ABB Power Grids	W	M
Marc Lacroix	Consultant	W	M
Deepak Maragal	NYPA		M
Steve Mark	Schweitzer Engineering Labs		M
Ryan Newell	TRC	W	M
Dean Ouellette	RTDS		M
Jeff Pack	POWER Engineers, Inc	W	M
Craig Preuss	Black & Veatch	W	M
Shashi Sastry	Hitachi ABB Power Grids		M
Brian Smith	SCE		M
Eric Thibodeau	Hydro Quebec	W	M
Nathan Wallace	Cybirical	W	M
Alex Apostolov	OMICRON Energy	W	G
Marc Benou	Iniven LLC	W	G

Minutes of meeting (continued)

Jeff Dagle	PNNL	W	G
Samir Darbali	US Nuclear Regulatory Commission	W	G
Lingling Fan	University of South Florida	W	G
Faris Elhaj	OMICRON Energy	W	G
Ron Farquharson	DNP Users Group and Mount Victoria Consulting	W	G
Jean-Sebastien Gagnon - Vizimax	Vizimax	W	G
Colin Gordon	Schweitzer Engineering Labs	W	G
Luke Hebert		W	G
Tom Hofstetter	NERC	W	G
Mario Jardim	Schneider Electric	W	G
Karen Leggett Wyszczelski	Schweitzer Engineering Labs	W	G
Jason Lombardo	S&C Electric Company	W	G
Yuchen Lu	EPRI	W	G
Steel McCreery	OMICRON Energy	W	G
Jim Michaelis	Commonwealth Associates, Inc.	W	G
Hugo Monterrubio	Beckwith	W	G
Erin Morales	IEEE	W	G
Priyanka Nadkar	Schweitzer Engineering Labs	W	G
Bharat Nalla	Schweitzer Engineering Labs	W	G
Gayle Nelms	Schweitzer Engineering Labs	W	G
Juan Placid	JJ Power and Energy Inc.	W	G
Jose Ruiz	Doble	W	G
Mickey Schultz	Black & Veatch	W	G
Arun Shrestha		W	G
Jesse Silva	SCE	W	G
Wayne Stec	Distregen, LLC	W	G
Marcos Velazquez	Doble	W	G
Deryk Yuill	iS5 Communciations	W	G

M: Member
 CM: Corresponding Member
 G: Guest

Item no.	Notes	Action by
CALL TO ORDER	Called to order at 10:20 AM CST.	Chair
INTRODUCTIONS AND QUORUM	Attendance with first and last names was noted on the WebEx Participants list. Attendance was 51 – with 21 members and 30 guests. Quorum Achieved: Yes! (21 of 28 members)	Chair
CALL FOR PATENTS	N/A Not a standards meeting	Chair
CHAIR'S REMARKS	Chair Mix welcomed the participants to SC meeting.	Chair

Item no.	Notes	Action by
AGENDA APPROVAL	<p>Agenda:</p> <ol style="list-style-type: none"> 1. Introduction 2. Roll Call/Quorum 3. Approval of Agenda 4. Members 5. Approval of Previous Minutes 6. S0 Group Minutes and Roster Reminder 7. S0 SC Working Group/Study Group/Task Force Summary & Status 8. Old Business 9. New Business 10. Announcements 11. Adjournment <p>Kunsmann moved to approve the agenda as prepared; Anderson seconded. The agenda was approved with no dissent.</p>	Chair
Members	<p>Chair Mix recalled the memory of Ralph Mackewicz, who passed last month, and announced the following new members of the S0 Subcommittee:</p> <p>Based on increased participation in working group leadership,</p> <ol style="list-style-type: none"> a. Brian Smith - Vice-Chair of S9 b. Steve Mark - Vice-Chair of S10 c. R. Benjamin Kazimier, Bender Inc - Vice-Chair of S13 d. Shashi Sastry, Hitachi ABB Power Grids – (Vice) Chair of S14 e. Jay Anderson, ComEd - Exelon Corp – Chair of S15 f. Dean Ouellette, RTDS – Secretary of S15 g. Eugenio Carvalheira, Omicron – Chair of S16 <p>And, based on historical participation in S0 meetings and activities:</p> <ol style="list-style-type: none"> a. Dennis Holstein, Opus Consulting Group 	Chair
APPROVAL OF PREVIOUS MINUTES	<p>January 2021 meeting minutes were briefly reviewed. Johnson moved to approve the minutes as prepared; Dood seconded. The minutes were approved with no dissent.</p>	Chair
S0 Group Minutes and Roster Reminder	<ol style="list-style-type: none"> a) Summary minutes to be provided to SC officers immediately after this meeting. b) Detailed minutes to be provided to SC officers within 2 weeks after your group meeting. c) Meeting notice and WG/TF/SG agenda to be sent to S0 Chair 2 weeks prior. 	Chair
S0 SC Working Group/Study Group/Task Force Summary & Status	<p>Note: room sizes and conflicts were not captured. Conflicts will be collected in December when the January JTCM schedule is being developed.</p>	Chair

Item no.	Notes	Action by
<p>WG S1</p>	<p>Revision of IEEE 1686 IED Cyber Security Capabilities</p> <p>Chair: Marc Lacroix Vice-chair: Éric Thibodeau Secretary:</p> <p>Scope: The standard defines the functions and features to be provided in intelligent electronic devices (IEDs) to accommodate cybersecurity programs. The standard addresses security regarding the access, operation, configuration, firmware revision and data retrieval from an IED. Confidentiality, integrity and availability of external interfaces of the IED is also addressed.</p> <p>Status: The draft standard as revised by IEEE MEC was reviewed. During the meeting, the working group finalized the draft based on the proposed changes. The working group approved the draft for balloting and requested S0 to approve creating the ballot pool and move to Sponsor Ballot (See New Business).</p>	<p>Sub-group Chair</p>
<p>WG S2</p>	<p>P1711.1 Serial SCADA Protection Protocol (SSPP)</p> <p>Chair: Ed Cenzone Vice-chair: Secretary:</p> <p>Scope: This standard defines the Substation Serial Protection Protocol (SSPP), a cryptographic protocol to provide integrity, and optional confidentiality, for cyber security of substation serial links. It does not address specific applications or hardware implementations and is independent of the underlying communications protocol.</p> <p>Status: No quorum was present. Chair apologized for lack of progress on 1711.1 or 1711 since the last meeting. PAR for 1711.1 is expiring this year. Chair will update the documents within the next few days and upload to Imeet Central with help from IEEE. WG meeting will be scheduled in approximately 2 weeks to discuss the standards and ask for comments with the goal to go to ballot as soon as possible.</p>	<p>Sub-group Chair</p>
<p>WG S5</p>	<p>Revision of IEEE C37.240 Cybersecurity Requirements for Power System Automation, Protection and Control Systems</p> <p>Chair: Steve Kunsman Vice-chair: TW Cease Secretary:</p> <p>Scope: Revision of IEEE C37.240 to included new technical requirements for power system cyber security. Based on sound engineering practices, requirements can be applied to achieve high levels of cyber security of automation, protection and control systems independent of voltage level or criticality of cyber assets.</p> <p>Status: IEEE SA approved the PAR extension to December 31, 2023 allowing the development work to continue.</p> <p>The WG re-discussed the document structure presented by Craig Preuss in the January meeting following the NIST Cyber Security Framework (CSF) with the emphasis on: Identify, Protect, Detect, Respond, Recover requirements, specifically the alignment with the structure of IEEE 1547-3 was discussed to gain synergies. After review of their document, the decision was to leverage some of the 1547.3 work but stay with the C37.240 present structure.</p> <p>The WG then reviewed document section needing owners and authors and solicited volunteers.</p> <p>Next meeting will be May 18 or 19th with the authors to review in details the section structure and discuss section content development.</p>	<p>Sub-group Chair</p>

Item no.	Notes	Action by
<p>WG S7</p>	<p><u>WG S7: P2808 Function Designations used in Electrical Power Systems for Cyber Services and Cybersecurity</u></p> <p><u>Chair:</u> Nathan Wallace <u>Vice-chair:</u> Mike Dood <u>Secretary:</u> Deepak Maragal</p> <p><u>Scope:</u> Draft is underway with multiple contributions from members. Working Group decided Standard will define (a) a Designation Block and its properties, (b) a list of Designation Acronyms, and (c) possibly a list of Drawing types these Designations may be used for. A SysML model will be created but will be provided in an Annex.</p> <p>Biweekly meetings over the summer have been set with defined meeting topics.</p>	<p>Sub-group Chair</p>
<p>WG S8</p>	<p><u>WG S8: P2658 Guide for Cybersecurity Testing in Electric Power Systems</u></p> <p><u>Chair:</u> Nathan Wallace <u>Vice-chair:</u> Deepak Maragal <u>Secretary:</u></p> <p><u>Scope:</u> Draft is underway with multiple contributions from members. The document outline and the Types of Testing (categories) has been finalized. A framework for applying the tests is also underway that includes a matrix for considering the environment in which one is carrying out the tests. Next steps for the working group is to create a common structure to use in the document for each test, create language for the matrix, continue with content creation and review. Also, a SysML model will be created to help facilitate the conversation for the Working Group and possibly be used in the main body of the Guide.</p> <p>Biweekly meetings over the summer have been set with defined meeting topics.</p>	<p>Sub-group Chair</p>
<p>TF S9</p>	<p><u>TF S9: Task Force on Utility IT-OT Cybersecurity challenges in roles and terminology</u></p> <p><u>Chair:</u> Theo Laughner <u>Vice-chair:</u> Brian Smith <u>Secretary:</u></p> <p><u>Scope:</u> Assess the IT-OT challenge in Utility Cybersecurity roles. Determine if a Task Force is required to create a report to assist in building organizational understanding and collaboration</p> <p><u>Status:</u> Monthly meetings were held following the January meeting to add content to chapter sections. Dennis Holstein added content for all sections. A review of the document was planned for this meeting.</p> <p>The chair requested future review by each chapter section chair for the report sections. Review of the Chapter and/or section leads are as follows:</p> <ul style="list-style-type: none"> • Executive Summary – Theo Laughner • Introduction / Background – Theo Laughner • Governance / Organizational Responsibility – Dennis Holstein • Identify – Jeff Pack • Protect – Harvey Z. • Detect – TBD • Respond – Juan V. • Recover – Juan V. • Maturity Assessment – Scott Mix, Dennis • Conclusion – Theo Laughner. 	<p>Sub-group Chair</p>

Item no.	Notes	Action by
<p>TF S10</p>	<p><u>TF S10: Utility & Municipality Challenges on Analyzing and Implementing Cybersecurity Standards and Best Practices</u></p> <p><u>Chair:</u> Jeff Pack <u>Vice-chair:</u> Steve Mark <u>Secretary:</u></p> <p><u>Scope:</u> Assess the challenge in utilities & municipalities with limited resources on the applicability and relevance of the cybersecurity standards and create a report to assist summarizing the relevant cybersecurity standards.</p> <p><u>Status:</u> The task force held its fourth meeting with Jeff Pack as chair. Steve Mark was unavailable to attend.</p> <p>The meeting focused on a short review of the progress, reviewing the outline of the report and completing writing assignments. We also discussed the need to provide examples of risk decisions for the organization when faced with differing guidance from the baseline standards. We will continue to strive to make the focus more international rather than U.S. as well as best practices rather than only compliance.</p>	<p>Sub-group Chair</p>
<p>WG S13</p>	<p><u>Review 1547.3 Guide for Cybersecurity of DERs Interface with Electric Power Systems</u></p> <p><u>Chair:</u> Tony Johnson <u>Vice-chair:</u> R. Benjamin Kazimier <u>Secretary:</u></p> <p><u>Scope:</u> To jointly develop 1547.3 with SCC21.</p> <p><u>Status:</u> The working group Reviewed basis and history of the 1547.3 document. There is possibility that once complete, 1547.3 can be adopted into the 1547 base standard future revision. Subgroups 1 and 2 of SCC21 are where most of the effort is being concentrated currently. Protocol subgroup needed, 1547.3 is looking for expertise in 2030.5, IEEE 1815, Sunspec Modbus, and IEC 61850.</p> <p>Upcoming meetings:</p> <ul style="list-style-type: none"> • Web meeting in June details TBD • Biweekly subgroup meetings alternating weeks • Sept 2021 PSCC meeting <p>Question about rule21 versus 1547.3 was raised. Chair Johnson indicated that Rule21 is being revised now and will give more guidance on the communication aspect. There is an effort to prevent conflicts between the two works and harmonize as much as possible.</p>	<p>Sub-group Chair</p>

Item no.	Notes	Action by
<p>SG S14</p>	<p>Study Group on HTTPS and TLS Exploration</p> <p>Chair: Steve Kunsman Vice-chair: Shashi Sastry Secretary:</p> <p>Scope: Develop a report on the implementation of TLS for usage in legacy (e.g. SCADA) and emerging (e.g. DER) power system applications</p> <p>Status: The January meeting discussions were reviewed. The SG discussed whether to move into a WG with the intent to fast track a guide or recommend practice vs. TF to produce a report, concluding that a TF is more appropriate. The TF report will allow NERC and IEC to progress on their standards effort related to encryption and end-to-end authentication.</p> <p>The SG then developed the TF assignment:</p> <p style="padding-left: 40px;">Develop a report on the implementation of TLS for usage in legacy (e.g. SCADA) and emerging (e.g. DER) power system applications</p> <p>SG approved the motion to request S0 SC approval to move S14 into a Task Force (See New Business).</p>	<p>Sub-group Chair</p>
<p>WG S15</p>	<p>IEEE Guide for Securing Generic Object Oriented System Events (GOOSE) and Sampled Values (SV) Protocols of IEC 61850 using IEC 62351-6 and IEC 62351-9</p> <p>Chair: Jay Anderson Vice-chair: Shane Haveron Secretary: Dean Ouellette</p> <p>Scope: This guide provides information for suppliers and implementors on applying security from the most recently published versions of IEC 62351-6 and IEC 62351-9 to GOOSE (IEC 61850-8-1), R-GOOSE (IEC 61850-8-1), SV (IEC 61869-9), or R-SV (IEC 61850-9-2) protocols.</p> <p>Status: Discussion on the use of macro-enabled documents that are prevented by either corporate policy, or technology (e.g., Macintosh) resulted in the suggestion that contributions be made in separate documents which are merged into the macro-enabled versions by an editor.</p> <p>Herb Falk provided a document containing a discussion threat vectors to GOOSE and SV, and how IEC 62351 can mitigate them.</p> <p>A section on how IEC 62351-9 can enable testing was added. Discussion around resiliency designs can be used to secure the network, although physical security is not part of 562351-9. Security of IEEE 1588 (PTP) was noted as important but out of scope.</p> <p>A section on functional security will be developed</p>	<p>Sub-group Chair</p>
<p>SG S16</p>	<p>SG S16: Study Group on Application of IDS and IPS to Electric Power Systems</p> <p>Chair: Eugenio Carvalheira Vice-chair: Eric Thibodeau Secretary:</p> <p>Scope: <i>tbd</i></p> <p>Status: The study group met for the first time to determine the need for a report, a guide, a recommended practice or a standard. We had a consensus to go towards a Task Force to produce a report, which should be more like a tutorial type of report and academic survey of what exists. We started discussions about target audience, title and scope of the effort. The group agreed to have a web call meeting around June and aim to finalize the SG work in the September meeting.</p>	<p>Sub-group Chair</p>

Item no.	Notes	Action by
Old Business	<p>It was announced that 123Signup has been rolled out, and all S groups will be required to manage group rosters and meeting attendance via this tool. Training was provided yesterday. Training materials will be made available to all sub group officers.</p>	Chair
New Business	<p>Several sub-groups have completed their assignments and are being moved to inactive status:</p> <ol style="list-style-type: none"> 1. Move status of S3 to inactive and disband current WG. Motion by Johnson, Seconded by Thibodeau. Motion passed without objection. 2. Move status of S6 to inactive and disband current TF. Motion by Thibodeau, seconded by Johnson. Motion passed without objection. 3. Move status of S11 to inactive and disband current TF. Motion by Laughner, seconded by Kunsman. Motion passed without objection, 4. Move S1 approval to go to sponsor ballot: Motion to authorize working group S1 to start the balloting process with the draft revised by IEEE MEC and approved by the working group Motion by Johnson, Seconded by Kunsman. Motion passed by roll-call vote. 5. Move S14 transition from SG to TF: Supporting the IEEE PSCCC S0 Roadmap output, the need to investigate HTTPS and TLS for usage in Power System applications was a high priority. Chair – Shashi Sastry Vicechair – Colin Gordon Proposed Task Force Assignment: <ul style="list-style-type: none"> • Develop a report on the implementation of TLS for usage in legacy (e.g. SCADA) and emerging (e.g. DER) power system applications <ul style="list-style-type: none"> ○ Document the existing use cases including HTTPS, legacy end points, long standing point-to-point connections, short term point-to-point connections ○ Identify the barriers to successful implementation ○ Identify inappropriate uses and why is very relevant ○ Identify the various configuration options (e.g. TLS v1.2 vs v1.3, PKI and certificate management) ○ Document the existing cypher suites and the impact of interoperability issues leveraging the IEC 62351 development <p>Note: deferring the inclusion of quantum resistant cypher suites from this report.</p> <p>Motion by Kunsman, Seconded by Thibodeau. Motion passed without objection.</p> 	Chair
General Discussion	<p>A question on roster clean-up was raised. Discussion resulted with the recommendation that any clean-up must be performed prior to the scheduled start of a meeting and notice to anyone deleted must be given. Additional guidance on this may be needed.</p>	Chair

Item no.	Notes	Action by
Announcements:	<ul style="list-style-type: none"> • Chairs must provide full meeting minutes within 2 weeks (by 5/20/2021) • Chairs (or other officers) are to update 123Signup rosters and meeting attendance information • Meeting Minutes (draft and approved) are to be uploaded to the PSCC Committee iMeet site (training on Friday) • All groups are expected to have Vice Chairs 	Chair
ITEMS REPORTED OUT OF EXECUTIVE SESSION	N/A	
TIME OF FINAL ADJOURNMENT	Thibodeau moved to adjourn; seconded by Johnson, Motion passed without objection. Meeting adjourned at 11:20 PM CST.	Chair
NEXT FACE TO FACE MEETINGS	September 2021. In-person or virtual to be determine later with input from a PSRCC survey.	Chair
FUTURE MEETING ROOM REQUIREMENTS	[Room Size=40] [Projector=YES] [Conflicts=H SC, P SC]	

