

PSCC Subcommittee WebEx Virtual Meeting Minutes - FINAL

Designation: PSCCC-F0	Name: IEEE Fiber Optics Subcommittee			
Meeting Location: WebEx	Meeting Time: 10 AM-1:00 PM-EDT	Meeting Date: 2021/06/23	Minutes Revised:	Minutes Approved: 2021/09/29

Presiding Officer: Chair: Delavar Khomarlou, Vice Chair: Corrine Dimnik, Secretary: John Jones	Recorded by: John Jones, D. Khomarlou, Corrine Dimnik
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Attendance: Total attendees = 21/27, 6 Guests (M: Member, CM: Corresponding Member, G: Guest, I: IEEE)

Name	Affiliation	Attending via Phone (P) / Web (W) or Local (L)/ Absent (A)	M/CM/ G/I
Austin Farmer	AFL	A	M
Jaclyn Whitehead	AFL	A	M
Mark Naylor	AFL	A	M
Robert (Bob) Kluge	ATC - Retired	P - W	M
Mike Warntjes	ATC	?	M
Corrine Dimnik	Kinectrics	W (V-C, host)	M
John Jones	PLP	W (secretary)	M
Josep Martin Regalado	Prysmian	W	M
Jim Ryan	Prysmian	W	M
Felix Chen	ZTT China	W	M
Jack Roughan	ZTT China	A	M
Linda Cai	ZTT China	W	M
Lemon Lu	ZTT China	W	M
Rabih Ghossein	HPS	?	M
Gabriel Okafor	HPS	W	M
Tewfik Schehade	Independent Consultant	W	M
Delavar Khomarlou	Hydro One Networks	W_(C)	M
Brett Boles	Southern Company	A	M
Greg Bennett	Southern Company	A	M
Christopher E. Royer	AEP	W	M
Jordan Ellis	AEP	A	M
Henson Toland	OFS Optics	W	M
Mike Riddle	Incab	W	M
Monty Tuominen	Bonneville Power - Retired	W	M
Mike Kipness/Erin Spiewak	IEEE (liaison)	A	I
Denise Frey	Fiber Planners	A	M
Chitrand Bhatnagar	DuPont	A	M
Guests (New and Old)			
Peyton Campbell	AFL	W	G
Marie Henshaw	AFL	W	G
Dan Baggett	AFL	W	G

Minutes of meeting (continued)

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Jacob Palmer	PLP	W	G
Peter Weiman	OFS	A	G?
Neal Murray	EPRI	W	G
Dimitry Gilbert	Incab	W	G

Item no.	Notes	Action by
CALL TO ORDER	June 23, 2021 10:00 AM	D. Khomarlou
INTRODUCTIONS AND QUORUM	Quorum With XX members on WebEx, no IEEE representative in this meeting.	
CHAIR'S REMARKS	<p>WebEx Meeting Welcome, COVID-19 situation, the need to have virtual meetings in place of the face-to-face meeting given the situation. Possibility of having face-to-face meeting in September in Charlotte, depending on COVID-19. Will discuss in June conference call.</p> <p>IEEE SA Copyright policy for WG/subcommittee members was presented briefly. The Copyright presentation will be attached to these minutes for future reference. There was a question with regards to copyright of presentations made by members. UPDATE AND CLARIFICATION: The member holds the copyright, but grants IEEE automatic license to use the copyrighted material. Further clarification is sought through IEEE SA.</p> <p>Chair presentation has been placed in this document for your reference.</p> <p>123Signup process has been discontinued by IEEE, so no need to use it going forward.</p> <p>CLARIFICATION ON CORPORATE MEMBERSHIP: Question was raised in March 2021 meeting whether one person can attend a meeting from a company and then update colleagues and in the next meeting another person attends. Does this constitute attendance? The official policy does not allow representation of non-attendees from the same company. Discretion is up to the subcommittee chair or vice-chair.</p> <p>Need members to step up to help the subcommittee officers. Need one person to represent PSCCC-F0 in awards committee. Need one person to help Corrine, chair and secretary (John Jones) and use this experience to take one of the officers' positions in the near future.</p> <p>Corrine, John Jones and I will maintain mailing list for all members and can send documents/info. For privacy, group emails will be sent as Blind Carbon Copy (BCC).</p> <p>Bill Byrd awards will be presented in the first face-to-face meetings PSCCC/PSRC meeting which will be in 2022.</p>	D. Khomarlou
AGENDA APPROVAL	Agenda for the March 23-24, 2021 virtual meeting was sent to all members prior to the call. The agenda was approved by members on the call.	D. Khomarlou
APPROVAL OF PREVIOUS MINUTES	<p>Draft Minutes of the March 23, 2021 virtual meeting have been sent to all members. Draft minutes are posted on iMeetCentral. These were discussed in this meeting. With the exception made by Jim Ryan on Sheave size recommendation (J. Ryan – pointed out >20 deg should be corrected for ADSS). Once that is addressed by Denise Frey, minutes can be approved.</p> <p>These minutes will be posted in the IEEE PSCCC website for public access.</p>	D. Khomarlou
IEEE 1138 News	<p>The Ballot for IEEE 1138 closed on April 4, 2021 and passed.</p> <p>Two or three small editorial comments, to be corrected by Corrine. No need for additional voting before publication.</p> <p>IEEE 1138 should follow EIA and remove all references to dates of the standards, rather call for latest revision of the standard.</p> <p>Update (July 7): TIA-455-30 was superseded by TIA-455-204. There are references to this TIA in IEEE 1138 and IEEE 1594 which need to be updated.</p>	Corrine Dimnik/ IEEE 1138 WG
IEEE 1591.3 and 1594 Wrap Cable	<p>Not Discussed in this meeting.</p> <p>Retirement of TIA-455-30 and replacement with TIA-455-204 applies to these two standards as well.</p>	Mark Naylor

Item no.	Notes	Action by
IEEE 1595 Standard – 1595D4 OPPC	<p>IEEE 1595 D4 was voted out of the committee using Roll call in March 2021</p> <p>OPPC Standard: Standard is in Mandatory Editorial Review (MER) with the first pass completed and Jack (with help from Linda Cai and F0 officers) is addressing the editorial changes. UPDATE: MER process was completed.</p> <p>Ballot pool is already formed through IEEE SA MyProjects.</p> <p>IEEE 1595 should follow EIA lead and remove all references to dates of the standards, rather call for latest revision of the standard.</p> <p>Require standard to go to balloting before September meeting for a 60 day Ballot in order to meet the PAR deadline of Dec. 2021.</p>	Josep Martin Linda Cai/ Jack Roughan
OPPC Hardware 1591.4	<p>1591.4 OPPC Hardware draft was discussed briefly. Jack Roughan was travelling and not available to go through the standard. A draft version was sent out and attached to the Agenda.</p> <p>From March Meeting, we had:</p> <p>1591.4 – Jack Roughan Utilizing 1591.1 for guide Definitions – adjusted include OPPC specific items Clause 4.2 same Ground connections excluded. Omitting Cable trays. Helical repair rods – TBD Excluded Closures – consider separate standard 4.3 – material same 5. tests – some 1591.1 and 1591.2 clauses used. Review the number of fibers per buffer tube. Optional test – high temperature for OPPC. Replace hardware Added High Temperature test. Stress Strain – High temperature is possible. Corrine confirmed Draft is uploaded in iMeetCentral site. There is a reference to CORONA testing. 4.3.3 – follow up required. IEC 61284, Line hardware standard referenced. The Jumpers are deleted from hardware. To include Jumper connector – for good jumper connection.</p> <p>New Comments in June Meeting:</p> <p>Section 4.2.2.1 Deadends - Should specify that ground connections are not applicable (safety issue if they are installed), but jumpers (also called loops) are required.</p> <p>Section 4.2.2.2 Suspension Connections - Same as for deadends – no ground connections are applicable.</p> <p>Section 4.2.2.3 Dampers - Only Stockbridge dampers are specified. Different types of dampers should be identified if they are applicable (e.g space dampers, pendulum type, festoons,...)</p>	L. Cai/ J. Roughan/ Alex L.
IEEE 524 liaison	<p>No new Item</p> <p>Jack Roughan will continue to attend meetings representing PSCCC-F0 to IEEE 524. Jack and Bob Kluge will jointly work as liaison for our group.</p>	NA

Item no.	Notes	Action by
IEEE 1591.x Task Force Group	<p>Jack Roughan will lead the group. The purpose of the group is to try to harmonize all 1591.x hardware standards for different types of cables. Group is still open to accepting new members – a number of people in the meeting expressed interest.</p> <p>No new Information</p>	
IEEE 525 and PSCCC E0 Liaison	<p>Chair (Liaison) met with the newly restructured IEEE 525 group and went through our comments (our 2018 comments) to the standard.</p> <p>Update (July 9, 2021): Chair attended IEEE 525 June meeting. A revised version of the Comment form will be circulated within F0 for additional comments.</p> <p>On Page 211 of IEEE 525, the values for fiber types in Table Q.1 to be reviewed and revised by our group. Chair assigned this to a fiber manufacturer representative unless volunteers are found. UPDATE Sep 2021: Work was completed by Henson Toland and team at OFS., Thank you.</p>	NA
IEC Liaison ITU Liaison	<p>Not covered in this meeting.</p> <p>Note from IEC: They are removing all references to revisions of the standards and calling for latest revisions.</p>	NA
IEEE 1222	<p>Publication through IEEE. Standard has been nominated for an IEEE PSCCC award.</p> <p>No New item for IEEE 1222.</p>	J. Ryan
1591.1 OPGW hardware	<p>There are a number of comments that were addressed and a couple of others that require more work by John Jones. The follow up will be adding the Repair Device.</p> <p>This standard will be discussed in the newly formed 1591.x meetings.</p> <p>John Jones went through the document and the changes he had made. There was discussion on some of the items and comments from members.</p> <p>Change the Repair Device from Fault Current to DC Resistance. Shift to Hardware characteristics section.</p> <p>Action: John to make changes and we will have a copy uploaded to iMeetCentral and we will send before September meeting in order to be ready to finalize in September meeting.</p> <p>PAR is valid until Dec. 2022.</p>	J. Jones/ B. Kluge

Item no.	Notes	Action by
<p>Sheave Size Recommendation/ IEEE 524</p>	<p>Denise Frey was not available for the meeting.</p> <p>There was good discussion on the current table (placed in this document for convenient reference).</p> <p>We will need one more row for OPGW to cover > 20 degree Span and < 300 feet. We will need two more rows for ADSS to cover conditions >20 degree for <300 ft, >20 degree for <600 ft for ADSS</p> <p>ADSS > 20 degrees should be Sheave must be > OD x 40 (suggested rather than OD x 42) Large cable must be >40 times the cable diameter – per J. Ryan Does span length need to be in this table?</p> <p>The ADSS cable size (OD) is < 1.2” (most often it is < 1.0” OD).</p> <p>It would be good if we stay consistent throughout with Metric units (Imperial units) everywhere in the table.</p> <p>Denise will work with manufacturers to refine the recommendation and present the final document in September meeting.</p> <p>Once approved by PSCCC-F0, it will be sent out to IEEE 524 for inclusion in their standard.</p>	
<p>New /Other Business</p>	<p>Will have presentations from members on areas that are interesting and educational. Need to clarify from IEEE SA on copyright issues.</p> <p>New Business: Splice box, Sensing. Open for suggestions.</p>	
<p>ITEMS REPORTED OUT OF EXECUTIVE SESSION</p>	<p>NA</p>	
<p>CLOSING</p>	<p>iMeetCentral PSCCC-F0 site has been restructured to reflect our sub groups and standards that we work in. Members are encouraged to look at the site and add/verify files/standards in each area.</p>	
<p>TIME OF FINAL ADJOURNMENT</p>	<p>June 23, 2021: 12:30 EDT</p>	
<p>NEXT MEETINGS</p>	<p>Next Meeting will be a virtual:</p> <p>WebEx: Wednesday September 29 and Thursday September 30, 2021. 10AM to 1PM EDT (3 hours with a break) each day.</p> <p>Mike Riddle to have presentation</p>	
<p>MATERIAL TO BE PLACED IN iMeetCentral And Attached</p>	<ol style="list-style-type: none"> 1. IEEE Copyright statement (included in this document) 2. IEEE Patent and duty to inform clause (included in this document) 3. Sheave size for ADSS/OPGW/OPPC proposed recommendation–(included in this document) 4. IEEE 1591.1 OPGW hardware Latest draft 5. IEEE 1591.4 OPPC hardware latest draft 6. IEEE 1595 OPPC Post MER Draft – Will be placed in iMeetCentral (for Balloting) 	

Chair Comments

Chair attends weekly meetings with Parent Sub Committee

10:17 AM Covered Copyright policy

IEEE FIBER OPTIC SUBCOMMITTEE
(PSCCC-Fo)

Chair Updates

June 2021

Delavar Khomarlou, Hydro One Inc., Chair
Corrine Dimnik, Kinectrics Inc., Vice-Chair
John Jones, PLP Inc., Secretary

The 123 Signup is discontinued

123Signup Update

123 Signup is not going to be used going forward. Members don't need to worry about logging in or annoying messages from 123Signup.

Apparently the whole company behind 123Signup dissolved.

It is not a big issue for us, but causing problems for other IEEE PES sub committees since they relied on 123Signup for meetings/conferences.

PSCCC-Fo Membership Guidelines

1. Subcommittee (SC) members must be IEEE members.
2. Need to attend meetings in order to maintain subcommittee membership. If you have a reason to miss a meeting please let one of the officers know.
3. I checked and corporate membership (i.e. having one person from a corporation attend and update others within the roster from that company) is not supported, but there is flexibility to allow to some extent. It is allowed at the discretion of the Subcommittee officers.
4. Members who are not attending meetings (without legitimate reason) or have lost interest or moved on to other positions could ask / have their membership changed to corresponding members or become "Past-Member". If SC officers initiate the

PSCCC-Fo
Report From Parent Subcommittee (Ao)

Awards Committee - Need representative. Bill Byrd Achievement award granted, not received yet. Will be awarded at a face-to-face meeting.

P&P manual: It is being revised and updated by Ao officers.

PSCCC Website - Updated to have PSCCC-Fo and Minutes. Still work in progress.

iMeetCentral - Changed the areas to match our structure. Please populate.

IEEE National Standard Adoption - discussions ongoing in Ao.

China Satellite committees - Being discussed at Ao, but details haven't been worked out.

IEEE standards integration effort taken up by Ao - Started as an effort to identify all the standards that have points of overlap with PSCCC-Fo work. Mostly in IEEE PES ICC subcommittee D. Also PSCCC-Fo will be working closely with IEEE D2 S25.

IEEE SA Copyright Policy
(Mandatory for each meeting)

- * IEEE-SA's copyright policy is described in Clause 7 of the IEEE-SA Standards Board Bylaws and Clause 6.1 of the IEEE-SA Standards Board Operations Manual;
- * Any material submitted during standards development, whether verbal, recorded, or in written form, is a Contribution and shall comply with the IEEE-SA Copyright Policy;
- * By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE-SA Copyright Policy.
- * Previously Published material (copyright assertion indicated) shall not be presented/ submitted to the Working Group nor incorporated into a Working Group draft unless permission is granted.
- * Prior to presentation or submission, you shall notify the Working Group Chair of previously Published material and should assist the Chair in obtaining copyright permission acceptable to IEEE-SA.
- * For material that is not previously Published, IEEE is automatically granted a license to use any material that is presented or submitted.

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IEEE Travel Policy

I did not receive a great deal of information from our parent committee.

Below excerpt was in one of Ao presentations.

"All IEEE Volunteer travel and associated meetings must adhere to all appropriate guidance from cognizant local public health authorities. 2. Given continuing global pandemic risk, only mission critical travel should be conducted at this time."

I would like to propose one more virtual meeting for September 2021 and then face-to-face meeting in March 2022.

Check this out from IEEE !
All requests for reimbursable mission critical IEEE volunteer travel must be pre-approved at the IEEE Volunteer OU President/Vice-President level (TAB Vice President, MGA Vice President, PSPB Vice President, EAB Vice President, Awards Board Chair, Standards Board President and the IEEE-USA President). OU Presidents/Vice-Presidents may delegate this authority to another volunteer, but should ensure that travel is reviewed to ensure that it is critical, necessary, effective and that other alternatives have been considered.

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Need awards committee rep
Vice Chair and Chairman volunteers
needed

The official policy does not allow
representation of non-attendees from
the same company. Discretion may be
up to the committee chairman.

PSCCC-Fo 2021 Goals

Completion of the standard: IEEE 1595 OPPC standard for publication in 2021. OPPC attachment hardware standard: 1591.4 PAR is valid until 2023.

Harmonization of all 1591.x standards.

IEEE 1591.1 OPGW hardware PAR expires in Dec 2022, so we need to move on it.

Agree upon new business/standards to tackle.

Provide a recommendation to T&D IEEE 524 group on sheave and bull wheel sizes for installation of aerial fiber optic cables (OPGW, ADSS, helically Wrapped and OPPC). The recommendation must be acceptable to manufacturers as well as end users and installation service providers. **Denise has completed the recommendation to discuss.**

Liaison with IEEE 524 on their cable installation practices for overhead fiber cables.

Find new business/standards and have regular presentations to educate ourselves.

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EIA REFERENCE STANDARDS:

2021	I-3	Alessi, Julie	N/a	Editorial	Normative references must be cited within normative text. The following normative references do not have text citations: TIA/EIA 455-3 TIA/EIA 455-78 TIA/EIA 455-81-B TIA/EIA 455-82-B Normative references and their text citations must match.	Yes	Please add citations within normative text or move the references to the bibliography.
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SHEAVE SIZE RECOMMENDATIONS

Disclaimer for ADSS & OPGW

"For ADSS and OPGW, the Bottom of the Groove diameter (BOG), otherwise also known as the Root Diameter, of a sheave should be 40 times the cable diameter or larger. Smaller sheaves may be permitted with written notification from the cable manufacturer. Considerations of cable design, cable diameter, and installation tension, number of angles in a segment and size of angles determine if permission is granted by the manufacturer."

PROPOSED IEEE SHEAVE RECOMMENDATIONS

$\leq 20^\circ$ angles, ≤ 300 ft spans, ≤ 0.85 dia ADSS,
 ≤ 600 lb max sagging tension = 14" sheave

$\leq 20^\circ$ angles, ≤ 300 ft spans, ≤ 0.85 dia ADSS,
 $\leq 1,500$ lb max sagging tension = 22" sheave

$>20^\circ$ angles, any span length, ≤ 0.85 " dia ADSS,
 $\leq 1,500$ lb max sagging tension = 42" sheave

IEEE can discuss:
 short span being 300' to 600'
 Max sagging tension being 1,500 lbs to 1,000 lbs.
 Max ADSS cable dia being 0.85" to 1.2"

Sheave dia is larger than bottom of groove. Ex: 14" is 12" bottom of groove diameter

Follow table requires update to show correct BOG

ADSS – there was no objection to <20 degree, the 300' limit for span length

OPGW – Accepted Max Diameter $y = 1''$.

OPPC –

Stringing block – Lining’s neoprene yellow, urethane black. No lining is preferred as long as it is clean.

ADSS/OPGW/OPPC Sheave Size Recommendation Table

Cable	Angle	Span Length	Recommendation
ADSS	≤ 20° angles	≤ 300 ft spans and ADSS cable diameter ≤ 0.85 inches, installed with less than 600 lbs sagging tension	Sheave must be 14 inch Bottom of Groove (BOG) diameter or greater.
	≤ 20° angles	≤ 600 ft spans and ADSS cable diameter ≤ 1.2 inches, installed with less than 1,500 lbs sagging tension	Sheave must be 22 inch Bottom of Groove (BOG) diameter or greater.
	> 20° angles	On any span length and ADSS cable diameter ≤ 1.2 inches, installed with any sagging tension	Sheave must be 42 inch BOG diameter or greater.
OPGW & OPPC	≤ 20° angles	≤ 300 ft spans	Sheave must be 22 inch Bottom of Groove (BOG) diameter or greater.
	> 20° angles	For any span	Sheave BOG must be the cable Outer Diameter (OD) x 40 or greater.

MAINTENANCE SCHEDULE FOR STANDARDS UNDER PSCCC-F0

PRIORITY	DUE DATE	STANDARD NUMBER	STANDARD TITLE	LAST PUBLISHED DATE	ACTION (DEV / REVISION / COMMENTS ONLY)	COMMENTS
1	New PAR submitted June 2024	IEEE-1138-2009	IEEE Standard for Testing and Performance for Optical Ground Wire (OPGW) for Use on Electric Utility Power Lines	2009	Voted out in September 23-24, 2020 meeting	PAR had expired in December 2019. New PAR with publication date in 2024 is approved Vote out of September 2020 Meeting
	Active PAR	IEEE 1222-2011	IEEE Standard for Testing and Performance for All-Dielectric Self-Supporting (ADSS) Fiber Optic Cable for Use on Electric Utility Power Lines	2011 New Version 2020	Published 2020	Published 2020
	Active PAR Exp. Dec 2021	IEEE 1594-2008	IEEE Standard for Helically Applied Fiber Optic Cable Systems (Wrap Cable) for Use on Overhead Utility Lines	2008		April 2020: Voted out of committee and to IEEE editors
	Active PAR Exp. Dec. 2021	IEEE 1595-DRAFT	Draft Standard for Testing and Performance for Optical Phase Conductor (OPPC) for Use on Electrical Utility Power Lines			Standard is voted out of the committee, next step is Mandatory Editorial Review (MER) and then ballot group formation.
	Active PAR Exp. Dec. 2022	IEEE 1591.1-2012	IEEE Standard for Testing and Performance of Hardware for Optical Ground Wire (OPGW)	2012		
	Active PAR Exp. Dec. 2021	IEEE 1591.3-2011	IEEE Standard for Qualifying Hardware for Helically-Applied Fiber Optic Cable Systems (WRAP Cable)	2011		April 2020: Voted out of committee and to IEEE editors
	PAR Approval May 2019 Exp. Dec. 2023	IEEE 1591.4-DRAFT	Standard for Testing and Performance of Hardware for Optical Fiber Composite Overhead Phase Conductor (OPPC)			Standard under development. Target end of 2021.
		IEEE 1591.2-2017	IEEE Standard for Testing and Performance of Hardware for All-Dielectric Self-Supporting (ADSS) Fiber Optic Cable			
	Nor ours Published Date: Apr.	IEEE 524-2016	IEEE Guide for the Installation of Overhead Transmission Line Conductors		For comment only	Liaison Report

PRIORITY	DUE DATE	STANDARD NUMBER	STANDARD TITLE	LAST PUBLISHED DATE	ACTION (DEV / REVISION / COMMENTS ONLY)	COMMENTS
	2017					
		IEEE 525-2016	IEEE Guide for the Design and Installation of Cable Systems in Substations		For comment only	Liaison Report

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Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.

- Participants [**Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2**]:
 - “Shall inform the IEEE (or cause the IEEE to be informed)” of the identity of each “holder of any potential Essential Patent Claims of which they are personally aware” if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
 - “Should inform the IEEE (or cause the IEEE to be informed)” of the identity of “any other holders of potential Essential Patent Claims” (that is, third parties that are not affiliated with the participant, with the participant’s employer, or with anyone else that the participant is from or otherwise represents)
- The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group
- Early identification of holders of potential Essential Patent Claims is strongly encouraged
- No duty to perform a patent search

Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development. Patent Policy is stated in these sources:

- IEEE-SA Standards Boards Bylaws (Clause 6) <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html>
- IEEE-SA Standards Board Operations Manual (Clause 6.3) <http://standards.ieee.org/develop/policies/opman/sect6.html>
- Material about the patent policy is available at <http://standards.ieee.org/about/sasb/patcom/materials.html>

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit" <http://standards.ieee.org/about/sasb/patcom/index.html>

This patent information (slide set) is available at: <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt>

Call for Potentially Essential Patents

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance (LOA): • Either speak up now, or

Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible, or Cause an LOA to be submitted

Don't discuss the interpretation, validity, or essentiality of patents/patent claims.

Don't discuss specific license rates, terms, or conditions. • Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings. • Technical considerations remain primary focus

Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.

Don't discuss the status or substance of ongoing or threatened litigation.

Don't be silent if inappropriate topics are discussed ... do formally object.

Other Guidelines for IEEE Meetings

All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.