

# Agenda and General Information

IEEE P802.3bs 400GbE Task Force

John D'Ambrosia, Dell  
Waikoloa, HI, USA

IEEE 802 July 2015 Plenary

# Agenda

---

- Welcome and Introductions
- Approve Agenda
- Approve May 2015 Interim Minutes
- Goals for this meeting
- Reflector and Web
- Patent Policy
- Ground Rules
- IEEE
  - Structure
  - Bylaws and Rules
  - Guidelines for IEEE-SA Meetings
  - IEEE Standards Process
- Ad Hoc Reports
- Project Documentation
- Liaisons & Communications
- Technical Presentations
- Chief Editor's Report
- Motions and Closing Business
- Future Meetings

# Task Force Decorum

---



- Photography or recording by permission only (2010 SASB Op Manual 5.3.3.4)
- Cell phone ringers off
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (5.3.3.5)
- Wear your badges at all times in meeting areas
  - Help the hotel security staff improve the general security of the meeting rooms
  - **PCs HAVE BEEN STOLEN** at previous meetings
  - **DO NOT** assume that meeting areas are secure
- Please observe proper decorum in meetings

# Attendance

---

- Tutorial Material on attendance tool
  - [http://www.ieee802.org/3/minutes/mar15/0315\\_imat.pdf](http://www.ieee802.org/3/minutes/mar15/0315_imat.pdf)
- Attendance books
  - Keeps track of attendance in room
  - Used to support requests to verify attendance by chair if IMAT not used.

# Goals for the meeting week

---

- Goals for the meeting
  - 20 Technical Presentations
    - SMF (500m / 2km) baselines
    - PCS (FEC) / PMA
    - CDAUI electricals / COM
  - Decisions needed to generate D1.0
    - PCS (FEC) / PMA Baseline
    - 4x100G PAM4 PSM4 Baseline
    - 2km SMF Baseline
    - Timeline to be revisited @ meeting after all baseline decisions made.
  - Liaisons & Communications
    - Respond to COBO communication
    - Status update to ITU-T and OIF

# Reflector and Web

---

- To subscribe to the 400G reflector, send an email to:

[ListServ@ieee.org](mailto:ListServ@ieee.org)

with the following in the body of the message (do not include “<>”):

*subscribe stds-802-3-400G <yourfirstname> <yourlastname>  
end*

- Send 400G reflector messages to:

[STDS-802-3-400G@listserv.ieee.org](mailto:STDS-802-3-400G@listserv.ieee.org)

- Task Force web page URL:

<http://www.ieee802.org/3/bs/index.html>

- Ad hoc area URL:

<http://www.ieee802.org/3/bs/public/adhoc/index.shtml>

# Private Area

---

- URL: <http://www.ieee802.org/3/bs/private/index.html>
  - Username: xxxxxx
  - Password: xxxxxx
- Write it down...
- Note - The draft, and any other content, is posted for your review only, and neither the content nor access information should be copied or redistributed to others in violation of document copyrights.

# Instructions for the WG Chair

The IEEE-SA strongly recommends that at each WG meeting the chair or a designee:

- **Show slides #1 through #4 of this presentation**
- **Advise the WG attendees that:**
  - The IEEE's patent policy is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
  - Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
  - There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
- **Instruct the WG Secretary to record in the minutes of the relevant WG meeting:**
  - That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
  - That the chair or designee provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard
  - Any responses that were given, specifically the patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.
- The WG Chair shall ensure that a request is made to any identified holders of potential essential patent claim(s) to complete and submit a Letter of Assurance.
- It is recommended that the WG chair review the guidance in *IEEE-SA Standards Board Operations Manual* 6.3.5 and in FAQs 14 and 15 on inclusion of potential Essential Patent Claims by incorporation or by reference.

Note: **WG** includes Working Groups, Task Groups, and other standards-developing committees with a PAR approved by the IEEE-SA Standards Board.





# 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

<http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6>

IEEE-SA Standards Board Operations Manual

<http://standards.ieee.org/develop/policies/opman/sect6.html#6.3>

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](mailto:patcom@ieee.org) or visit <http://standards.ieee.org/about/sasb/patcom/index.html>

This 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:
  - 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

# Other Guidelines for IEEE WG Meetings

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

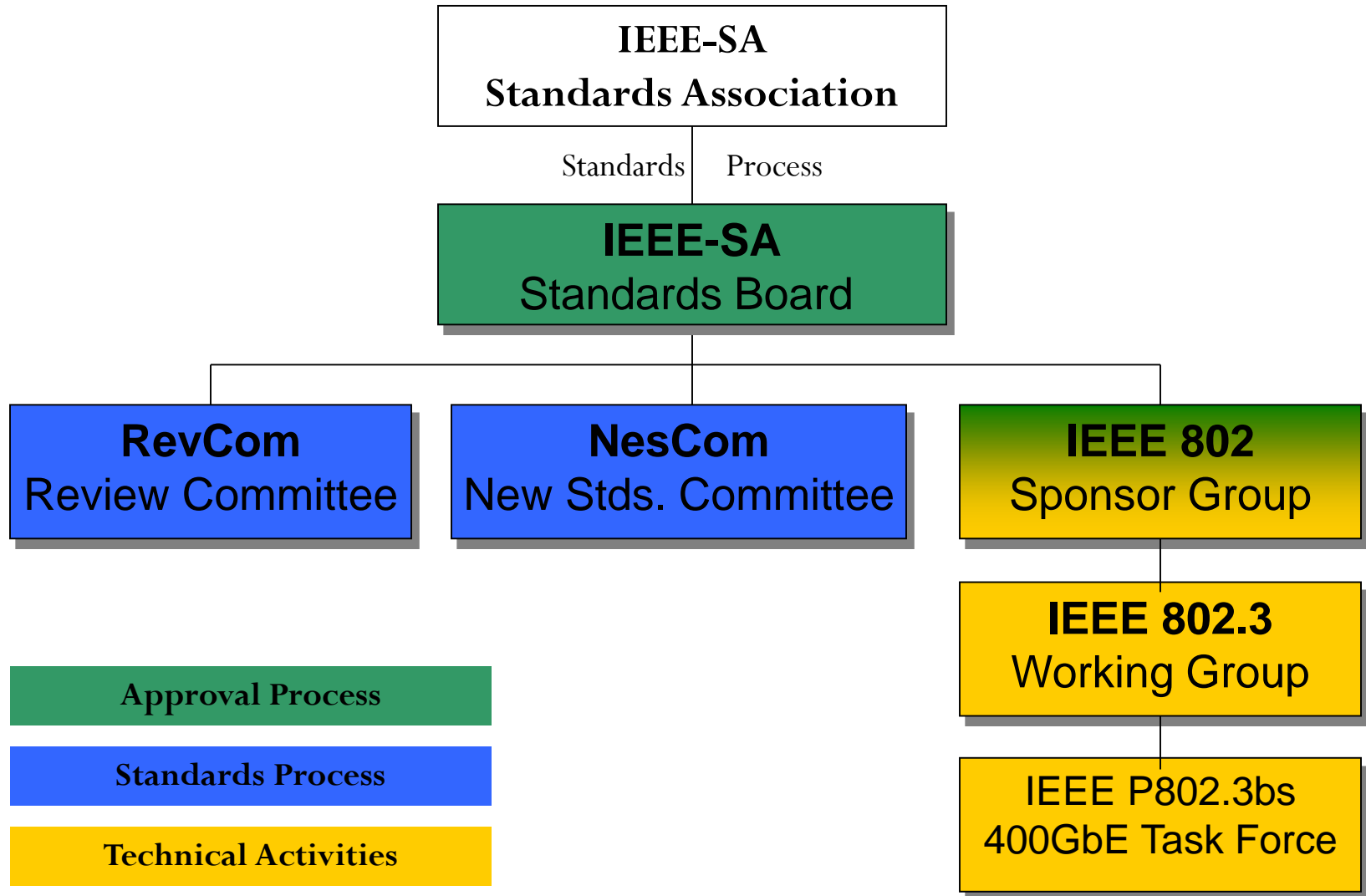
-----  
See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and “Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association’s Antitrust and Competition Policy” for more details.

# Ground Rules

---

- Based upon IEEE 802.3 Rules
  - Foundation based upon Robert's Rules of Order
  - Anyone in the room may speak
  - Anyone in the room may vote
- **RESPECT**... give it, get it
- NO product pitches
- NO corporate pitches
- NO prices!!!
  - This includes costs, ASPs, etc. no matter what the currency
- NO restrictive notices

# IEEE Structure

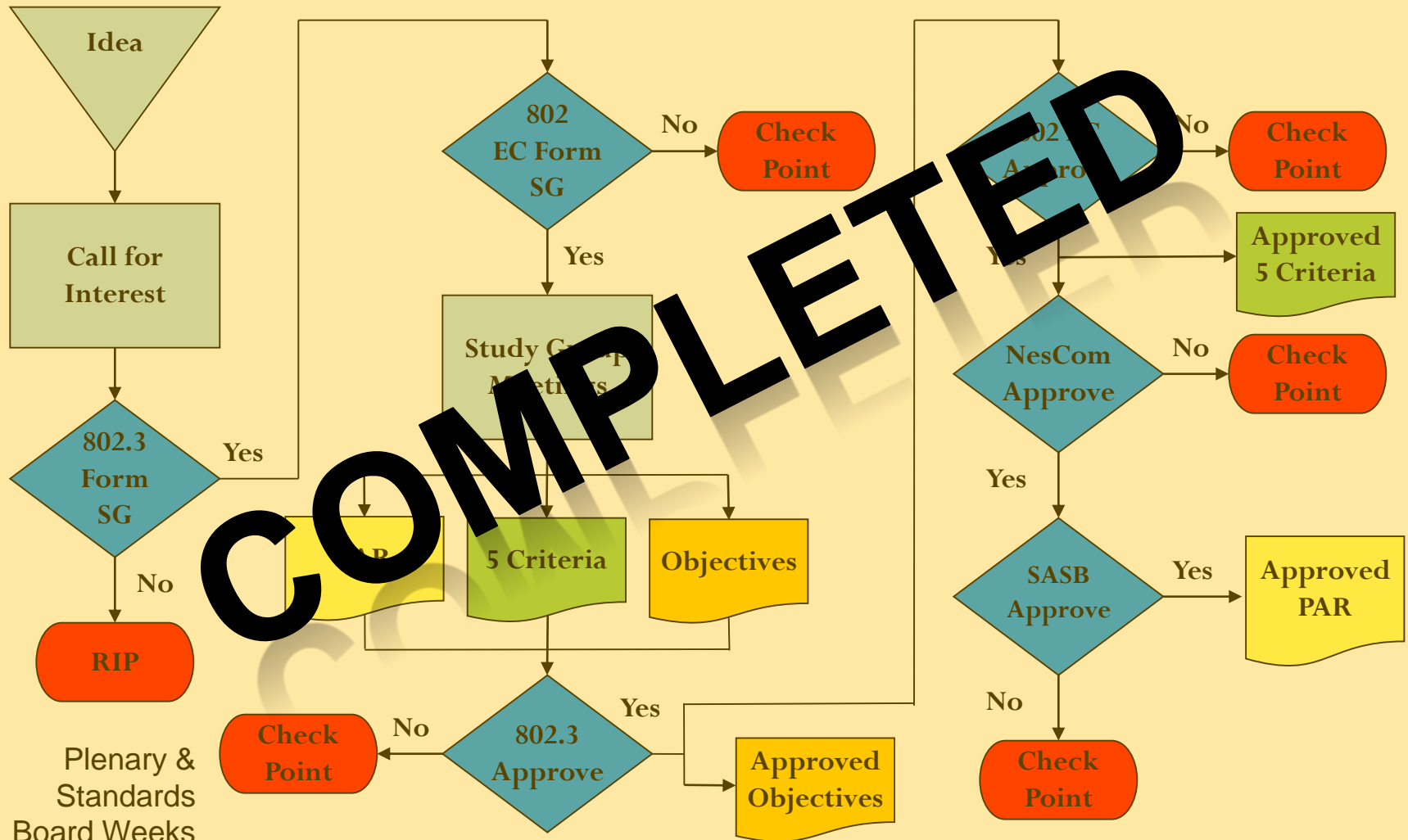


# Important Bylaws, Rules, & References

---

- **IEEE-SA Operations Manual**  
<http://standards.ieee.org/sa/sa-om.pdf>
- **IEEE-SA Standards Board Bylaws**  
<http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf>
- **IEEE-SA Standards Board Operations Manual**  
<http://standards.ieee.org/guides/opman/sb-om.pdf>
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Policies and Procedures**  
<http://standards.ieee.org/about/sasb/audcom/pnp/LMSC.pdf>
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Operations Manual**  
[http://www.ieee802.org/PNP/2010-07/IEEE\\_802\\_LMSC\\_OM\\_approved\\_100716.pdf](http://www.ieee802.org/PNP/2010-07/IEEE_802_LMSC_OM_approved_100716.pdf)
- **IEEE 802 LAN/MAN Standards Committee (LMSC) Working Group (WG) Policies and Procedures**  
[http://www.ieee802.org/PNP/2010-07/IEEE\\_802\\_LMSC\\_WG\\_PandP\\_approved\\_100716.pdf](http://www.ieee802.org/PNP/2010-07/IEEE_802_LMSC_WG_PandP_approved_100716.pdf)
- **IEEE 802.3 Working Group Operating Rules**  
[http://ieee802.org/3/rules/P802\\_3\\_rules.pdf](http://ieee802.org/3/rules/P802_3_rules.pdf)
- **“Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy”**  
<http://standards.ieee.org/develop/policies/antitrust.pdf>

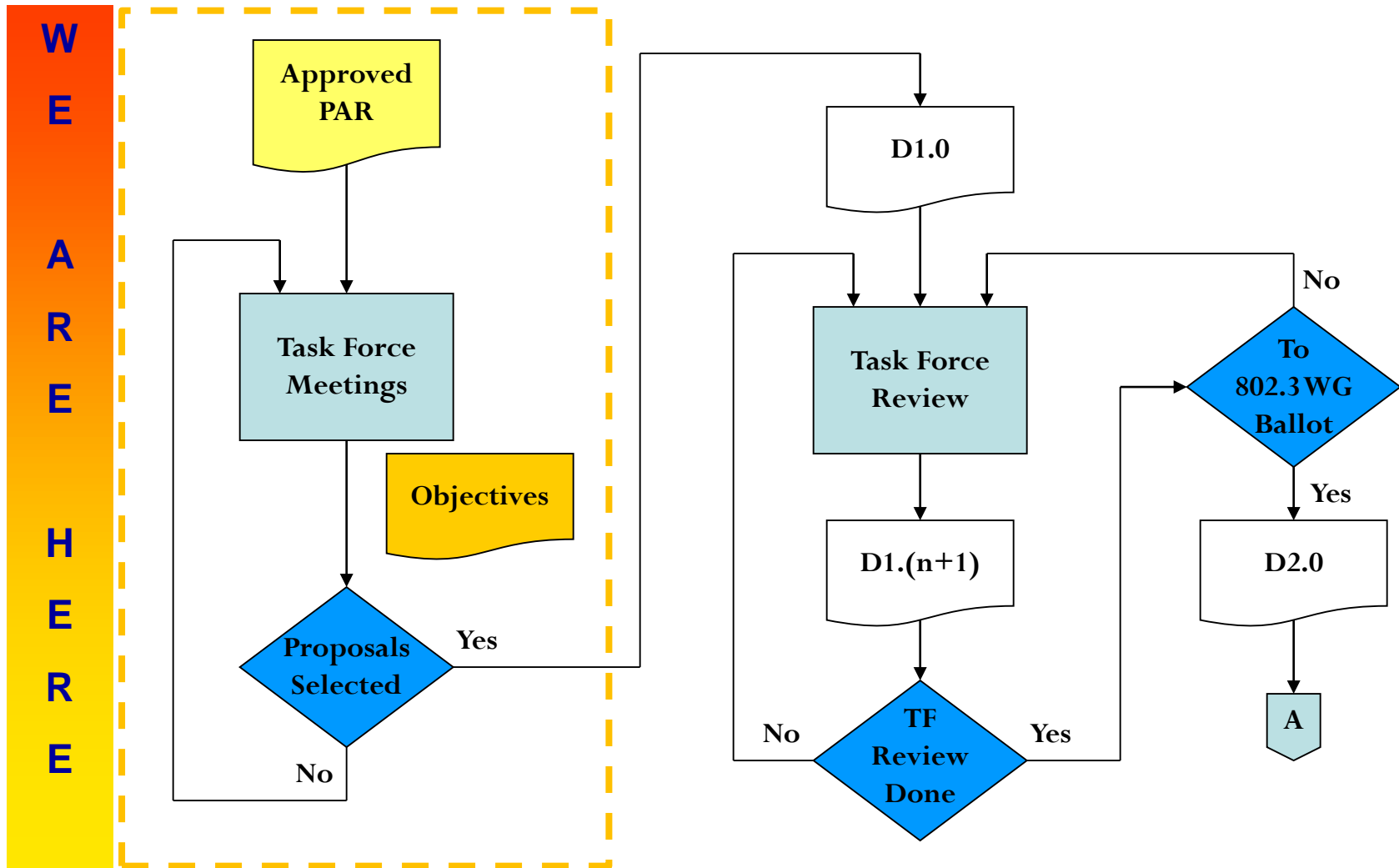
# Overview of IEEE 802.3 Standards Process (1/5)- Study Group Phase



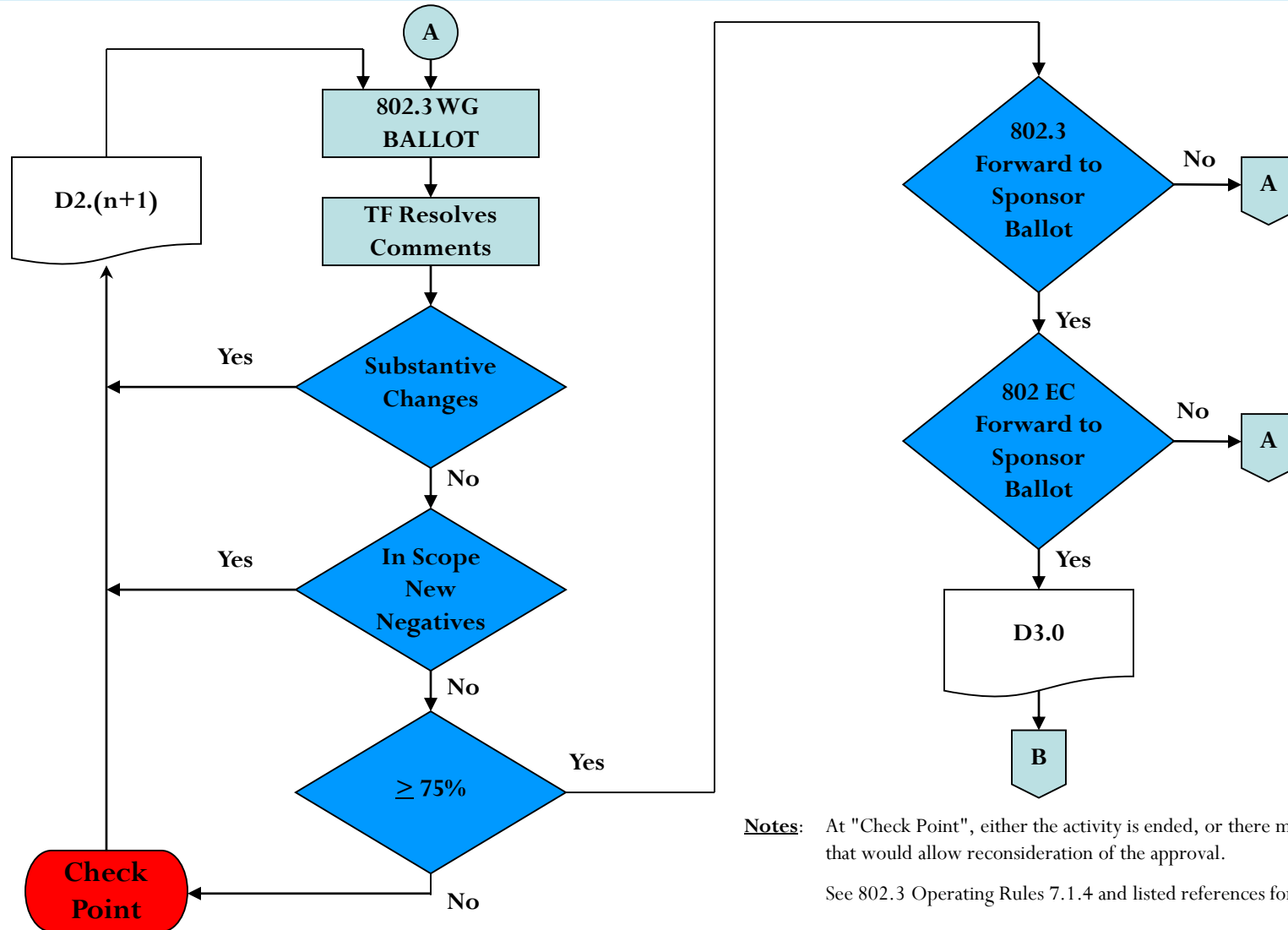
Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.



# Overview of IEEE 802.3 Standards Process (2/5) – Task Force Comment Phase



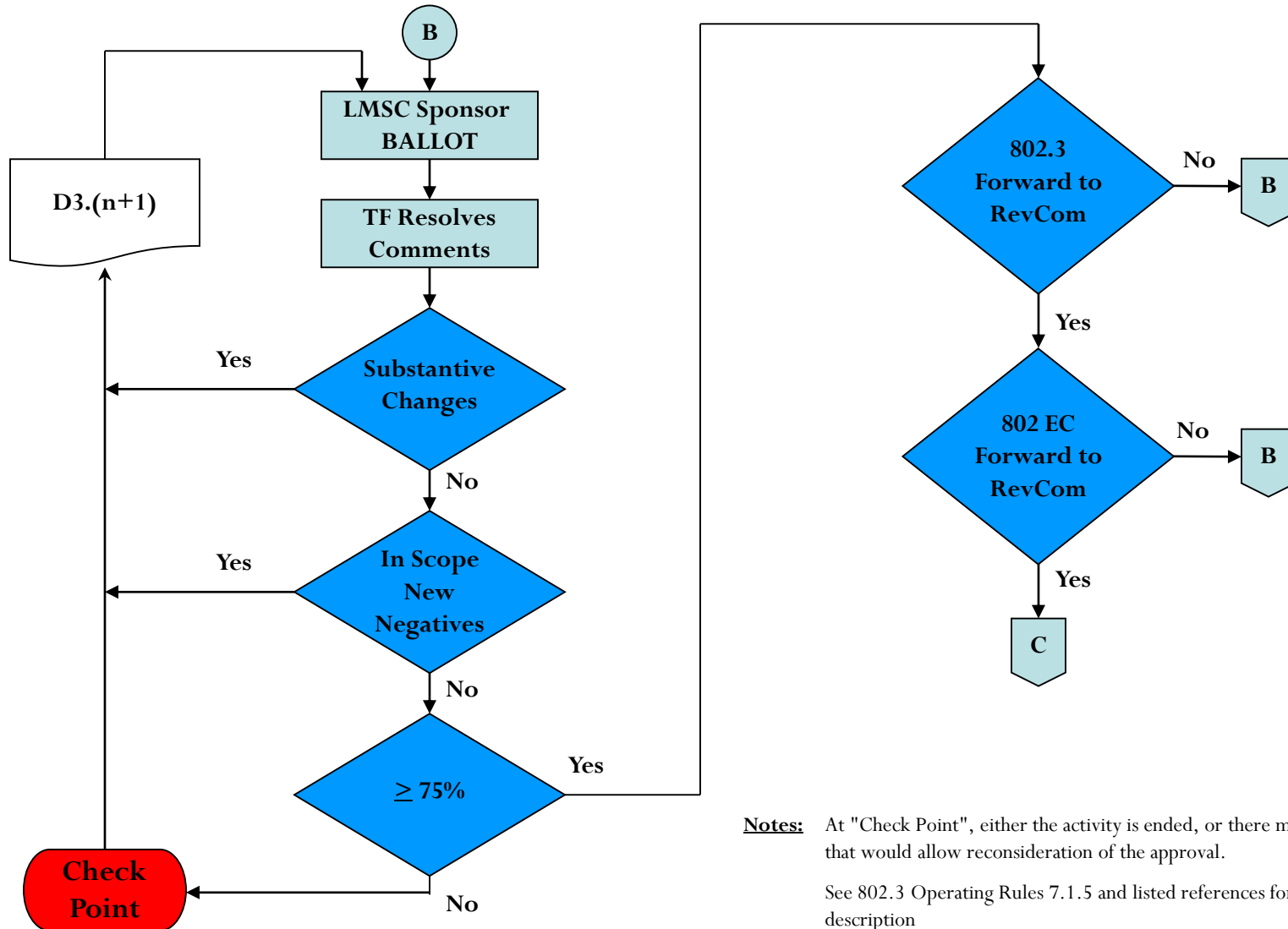
# Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operating Rules 7.1.4 and listed references for complete description

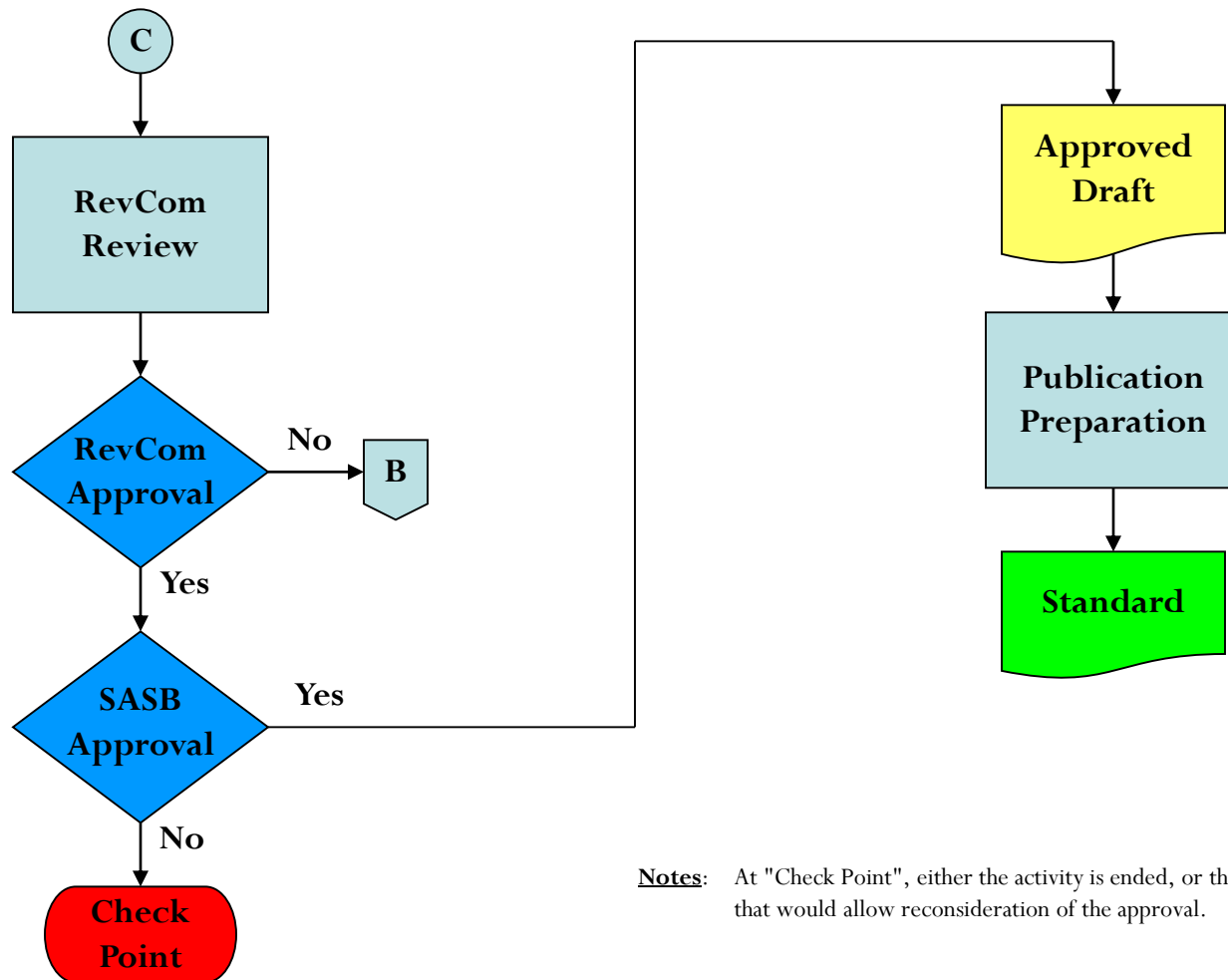
# Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operating Rules 7.1.5 and listed references for complete description

# Overview of IEEE 802.3 Standards Process (5/5) – Final Approvals / Standard Release



**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

# Project Documentation

---

- **PAR -**

[http://www.ieee802.org/3/bs/PAR\\_P802.3bs\\_14\\_0612.pdf](http://www.ieee802.org/3/bs/PAR_P802.3bs_14_0612.pdf)

- **CSD -**

[http://www.ieee802.org/3/bs/CSD\\_400\\_14\\_0121.pdf](http://www.ieee802.org/3/bs/CSD_400_14_0121.pdf)

- **Objectives -**

[http://www.ieee802.org/3/bs/Objectives\\_14\\_0320.pdf](http://www.ieee802.org/3/bs/Objectives_14_0320.pdf)

- **Timeline (update needed) -**

[http://www.ieee802.org/3/bs/timeline\\_3bs\\_0514.pdf](http://www.ieee802.org/3/bs/timeline_3bs_0514.pdf)

# Project Objectives

- Support a MAC data rate of 400 Gb/s
- Support a BER of better than or equal to  $10^{-13}$  at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current Ethernet standard
- Provide appropriate support for OTN
- Specify optional Energy Efficient Ethernet (EEE) capability for 400 Gb/s PHYs
- Support optional 400 Gb/s Attachment Unit Interfaces for chip-to-chip and chip-to-module applications
- Provide physical layer specifications which support link distances of:
  - At least 100 m over MMF
  - At least 500 m over SMF
  - At least 2 km over SMF
  - At least 10 km over SMF

# Ad Hoc

---

- Webpage: Ad Hoc
  - <http://www.ieee802.org/3/bs/public/adhoc/index.shtml>
- Ad Hoc
  - Logic, Chair – Mark Gustlin
  - SMF, Chair – Pete Anslow
  - MMF, Chair – Jonathan King
- July Ad Hoc Reports
  - Logic - [http://www.ieee802.org/3/bs/public/15\\_07/gustlin\\_3bs\\_01\\_0715.pdf](http://www.ieee802.org/3/bs/public/15_07/gustlin_3bs_01_0715.pdf)
  - SMF - [http://www.ieee802.org/3/bs/public/15\\_07/anslow\\_3bs\\_02\\_0715.pdf](http://www.ieee802.org/3/bs/public/15_07/anslow_3bs_02_0715.pdf)

# Liaisons and Communications

---

- COBO Communication
- Status Update
  - ITU-T
  - OIF



# Tuesday

All times and order listed are subject to change.

Time	Presenter	Affiliation	Title	File Name
1:00 PM	John D'Ambrosia	Dell	Agenda and General Information	agenda_3bs_01_0715.pdf
1:30 PM	Brad Booth	Microsoft	COBO Liaison	
1:40 PM	Mark Gustlin	Xilinx	400GbE PCS and PMA Baseline Proposal	gustlin_3bs_02_0715.pdf
2:00 PM	Mark Gustlin	Xilinx	1x400G vs 4x100G FEC Implications	wilkie_3bs_01_0715.pdf
2:20 PM	Xinyuan Wang	Huawei	Further clarification of FEC performance in PAM4 link with bit-multiplexing	wang_x_3bs_01_0715.pdf
2:50 PM	Break			
3:10 PM	Tongtong Wang	Huawei	Summary of 400GbE FEC Architecture	wang_t_3bs_01_0715.pdf
3:40 PM	Pete Anslow	Ciena	FEC performance with PAM4 precoding	anslow_3bs_04_0715.pdf
4:10 PM	Pete Anslow	Ciena	1 x 400G vs. 4 x 100G FEC performance	anslow_3bs_05_0715.pdf
4:40 PM	Pete Anslow	Ciena	1 x 400G vs. 4 x 100G FEC performance further analysis	anslow_3bs_06_0715.pdf
5:30 PM	Break			

# Wednesday

All times and order listed are subject to change.

Time	Presenter	Affiliation	Title	File Name
8:30 AM	John D'Ambrosia	Dell	Day's Opening Comments	
8:40 AM	Zhongfeng Wang	Broadcom	Reduced-Complexity Data Alignment Scheme for 400GE	wang_z_3bs_01_0715.pdf
9:00 AM	Martin Langhammer	Altera	1x400G FEC Implementations	langhammer_3bs_01_0715.pdf
9:25 AM	Martin Langhammer	Altera	400GE FEC Breakout Architecture Analysis	langhammer_3bs_02_0715.pdf
9:50 AM	Break			
10:10 AM	Phil Sun	Marvell	FEC Architecture and Breakout	sun_3bs_01_0715.pdf
10:40 AM	David Ofelt	Juniper	Views on the FEC Architecture Decision	ofelt_3bs_01_0715.pdf
11:05 AM	Discussion & Strawpolls: Architecture / FEC			
12:00 PM	Lunch			
1:00 PM	Brian Welch	Luxtera	400G-PSM4: A Proposal for the 500m Objective using 100 Gb/s per Lane Signaling	welch_3bs_01_0715.pdf
1:25 PM	Gary Nicholl	Cisco	400Gb/s 2km SMF PMD Considerations	nicholl_3bs_01_0715.pdf
1:55 PM	Chris Cole	Finisar	400Gb/s 8x50G PAM-4 WDM 2km SMF PMD Baseline Specifications	cole_3bs_01_0715.pdf
2:25 PM	Ali Ghiasi	Ghiasi Quantum LLC	Consideration for the CRU BW and Jitter Tolerance	ghiasi_3bs_01_0715.pdf
2:55 PM	Break			
3:15 PM	Ali Ghiasi	Ghiasi Quantum LLC	Optical transmitters and receivers compliance test methodology	ghiasi_3bs_02_0715.pdf
3:45 PM	Rich Mellitz	Intel	COM parameters for CDAUI chip to chip 8x25Gbs PAM4	mellitz_3bs_01_0715.pdf
4:10 PM	Raj Hegde	Broadcom	Channel Operating Margin (COM) Proposal for CDAUI-8	hegde_3bs_01_0715.pdf
4:35 PM	Mike Li	Altera	Effects of Additional FIR Taps to the CDAUI-8 Chip-to-Chip Link Performance	li_3bs_01_0715.pdf
5:00 PM	Chris DiMinico	MC Communications	Considerations for 802.3bs Test Fixtures	diminico_3bs_01_0715.pdf
5:25 PM	Discussion & Strawpolls			
6:00 PM	Break for day			

# Thursday

All times and order listed are subject to change.

Time	Presenter	Affiliation	Title	File Name
8:30 AM	John D'Ambrosia	Dell	Opening Comments	
8:40 AM	Pete Anslow	Ciena	PMD Naming	anslow_3bs_03_0715.pdf
9:00 AM	Pete Ansow	Ciena	Chief Editor's Report	anslow_3bs_01_0715.pdf
9:20 AM	Discussion, Strawpolls, Motions			
10:00 AM	Break			
10:20 AM	Discussion, Strawpolls, Motions			
11:40 AM	Closing Business			
12:00 PM	Adjourn			

# Future Meetings

---

- See: <http://www.ieee802.org/3/interims/index.html>
- Sept 2015 Interim
  - Week of Sept 14
  - Hyatt Regency Coconut Point, Bonita Springs, FL, USA
  - Hosted by NEC
- Nov 2015 Plenary
  - Week of Nov 8
  - Hyatt Regency Dallas, Dallas, TX, USA
- Jan 2016 Interim
  - Week of Jan 18
  - Atlanta, GA, USA
- Mar 2016 Interim
  - Week of Mar 18
  - Macau China
- Anyone interested in hosting a meeting or webex contact me.

---

# Thank You!