



Agenda and General Information

IEEE 802.3

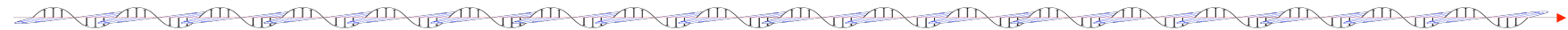
40 Gb/s and 100 Gb/s Fiber Optic

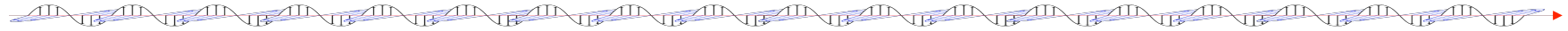
Task Force

Dan Dove

Applied Micro

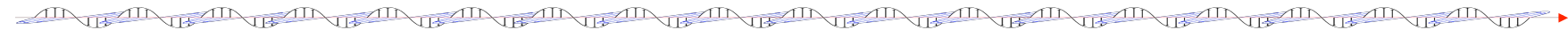
San Antonio, Texas USA – 12 -15 November 2012





Agenda

- Appointment of Recording Secretary
- Welcome and Introductions
- Approve Agenda
- Approve Minutes of September Interim Meeting
- Goals for this meeting
 - Big Ticket Items
- Reflector and Web
- Ground Rules
- IEEE
 - Structure, Bylaws and Rules
 - Call for Patents
 - IEEE Standards Process
- Liaisons and Communications
- Review of Action Items from September Meeting
- Presentations
- Motions, Discussions and Closing Business
- Future Meetings

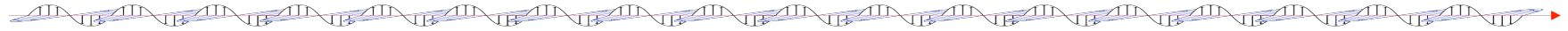




Task Force Decorum

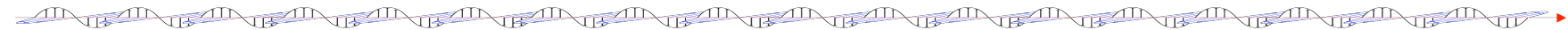


- Photography or recording by permission only (2010 SASB Op Manual 5.3.3.4)
- Cell phone ringers off
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (5.3.3.5)
- Wear your badges at all times in meeting areas
 - Help the hotel security staff improve the general 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



Goals for the meeting

- Review Task Force Operation & Schedule
- Review Ad hoc Activities & Reports
- Presentation of Material Relevant to Our Objectives
- Consider Motions & Discussions
 - Consider baseline proposals
 - Lay the ground work for the next meeting
- Wrap Up & Future Meeting Discussion





Reflector and Web

- To subscribe to the *Next Generation 40 Gb/s and 100 Gb/s Optical Ethernet* reflector, send an email to: ListServ@ieee.org

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

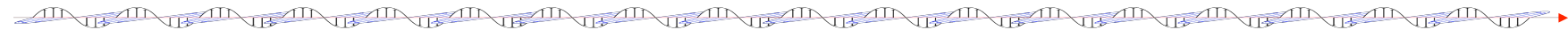
subscribe stds-802-3-100Goptx <yourfirstname> <yourlastname>
end

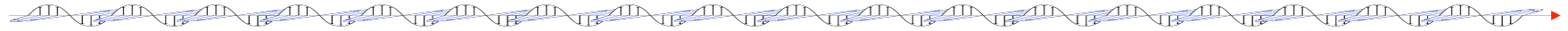
- Send *Next Generation 40 Gb/s and 100 Gb/s Optical Ethernet* reflector messages to:

STDS-802-3-100Goptx@LISTSERV.IEEE.ORG

- Task Force web page URL:

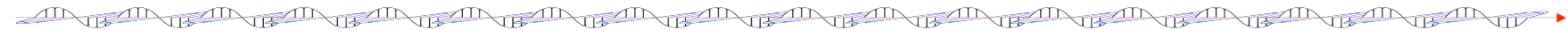
<http://www.ieee802.org/3/bm/index.html>





Task Force Private Area

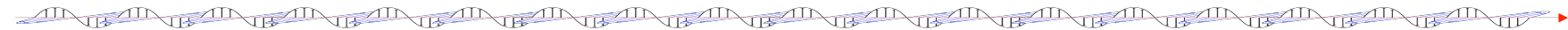
- URL: <http://www.ieee802.org/3/bm/private/index.html>
 - Username:
– Password: To be provided
- Write it down...
- Note - The draft, and any other content, is posted for your review only, and neither the content nor access information should be copied or redistributed to others in violation of document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





Ground Rules

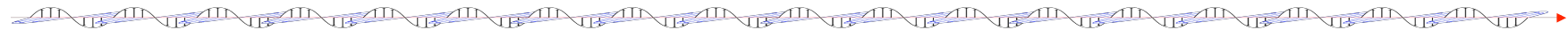
- Based upon IEEE 802.3 Rules
 - Foundation based upon Robert's Rules of Order
 - Anyone in the room may speak
 - Anyone in the room may vote
- **RESPECT**... give it, get it – Do unto others...
- NO product pitches (ex: “LightZippyDoo is the best!”)
- NO corporate pitches (ex: “We Illuminate Your Networks!”)
- NO prices!!!
 - This includes costs, ASPs, etc. no matter what the currency
- NO restrictive notices



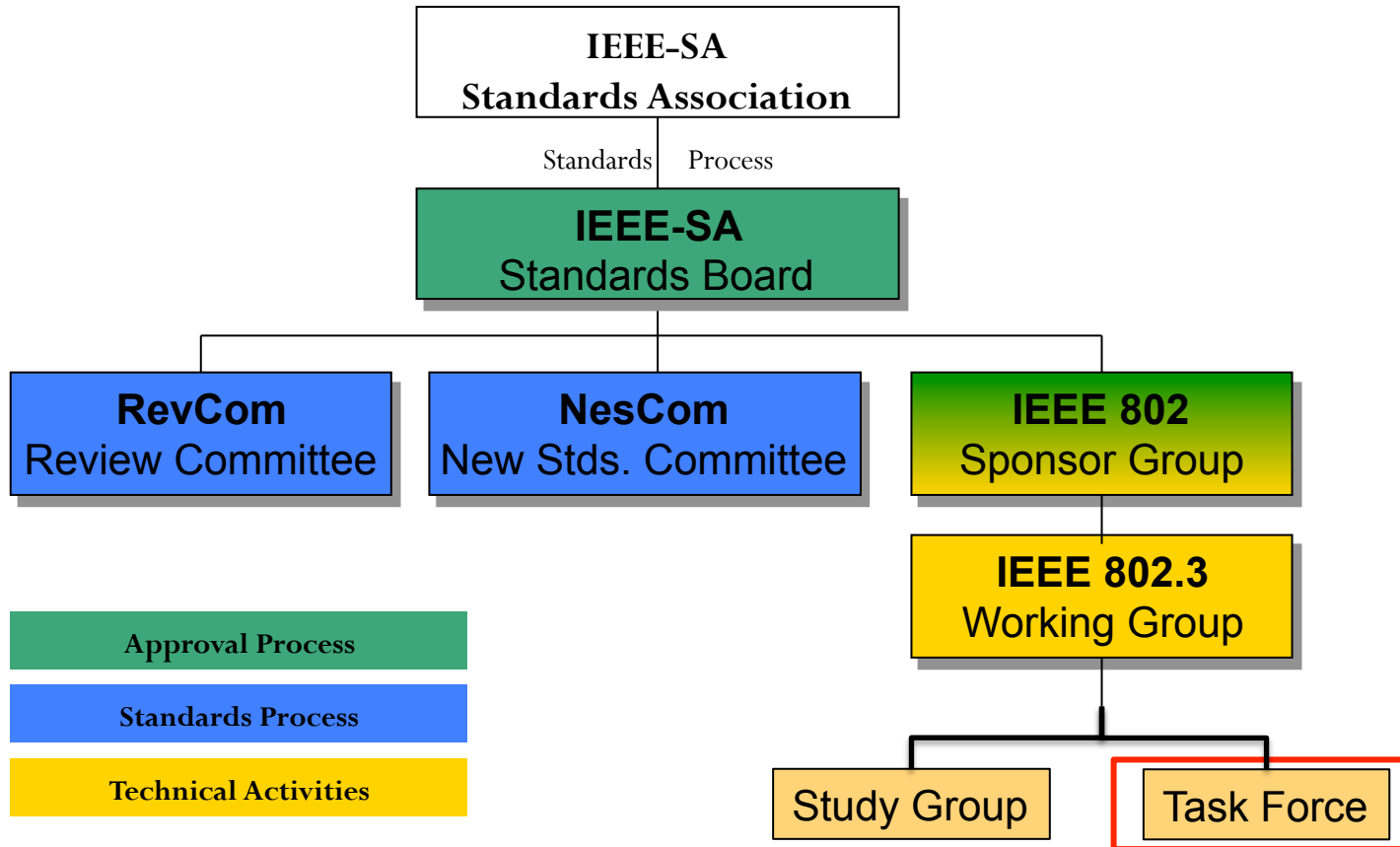


Attendance

- Tutorial Material on attendance tool
 - http://ieee802.org/3/minutes/mar11/0311_imat.pdf
- URL (Valid for this meeting only)
 - URL: <https://imat.ieee.org>



IEEE Structure





Important Bylaws and Rules

- **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
- **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
- **IEEE 802.3 Working Group Operating Rules**
http://ieee802.org/3/rules/P802_3_rules.pdf



Guidelines for IEEE-SA 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.**

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>

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.

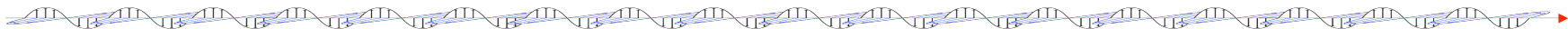
This slide set is available
at <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt>

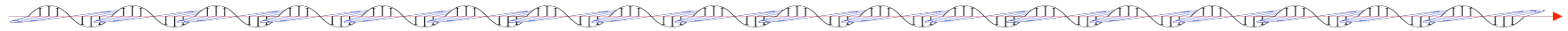


Participants, Patents, and Duty to Inform

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**
 - **“Personal awareness” means that the participant “is personally aware that the holder may have a potential Essential Patent Claim,” even if the participant is not personally aware of the specific patents or patent claims**
 - **“Should inform the IEEE (or cause the IEEE to be informed)” of the identity of “any other holders of such 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

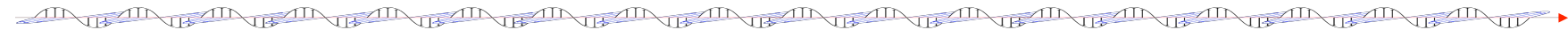
<http://standards.ieee.org/develop/policies/opman/sect6.html#6.3>

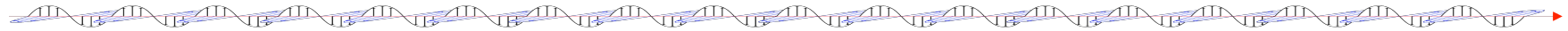
Material about the patent policy is available at

<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 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>

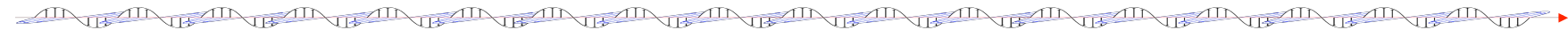




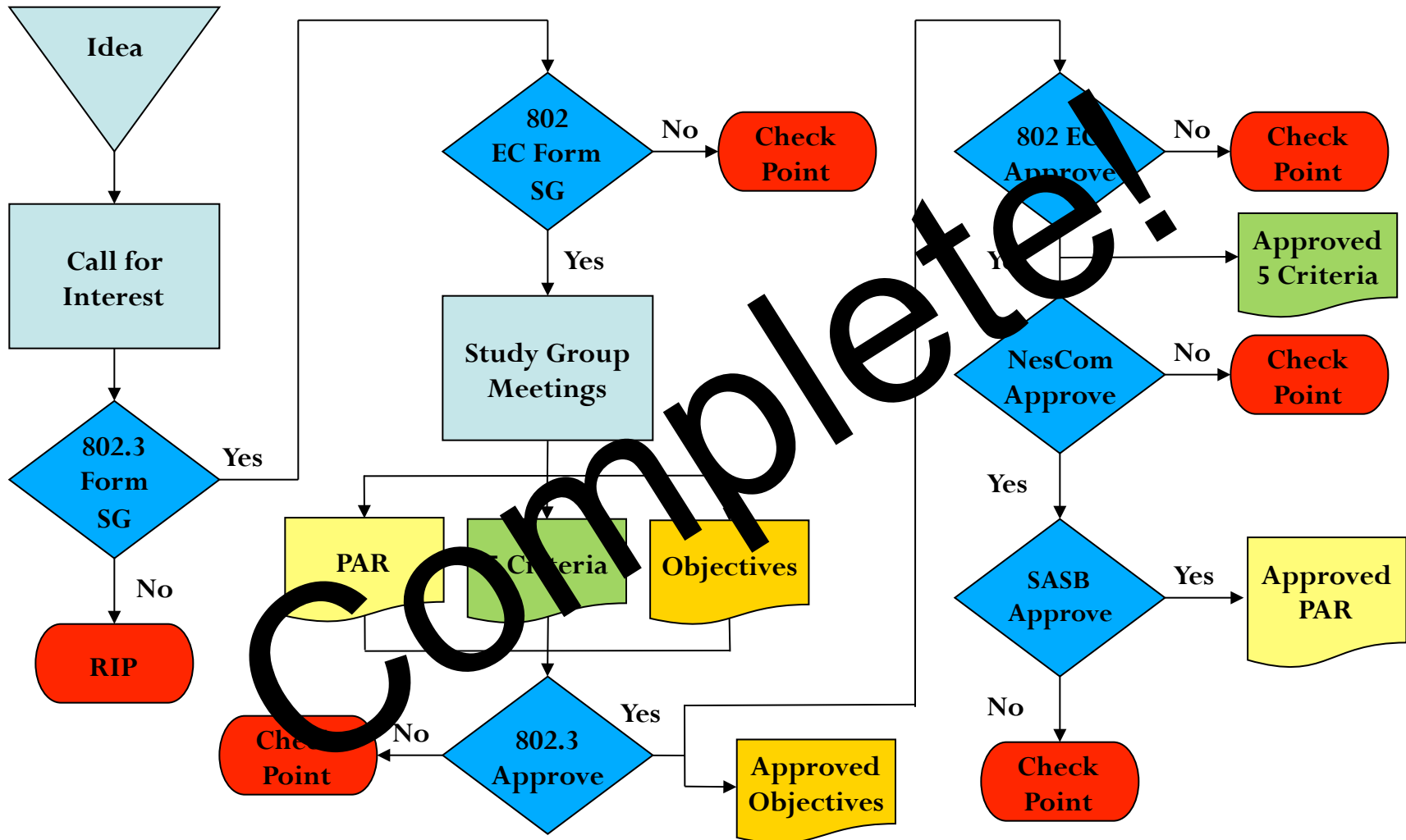
Call for Potentially Essential Patents

- 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

❖ **NOTE TO SECRETARY – Record this Call & Response to Call**

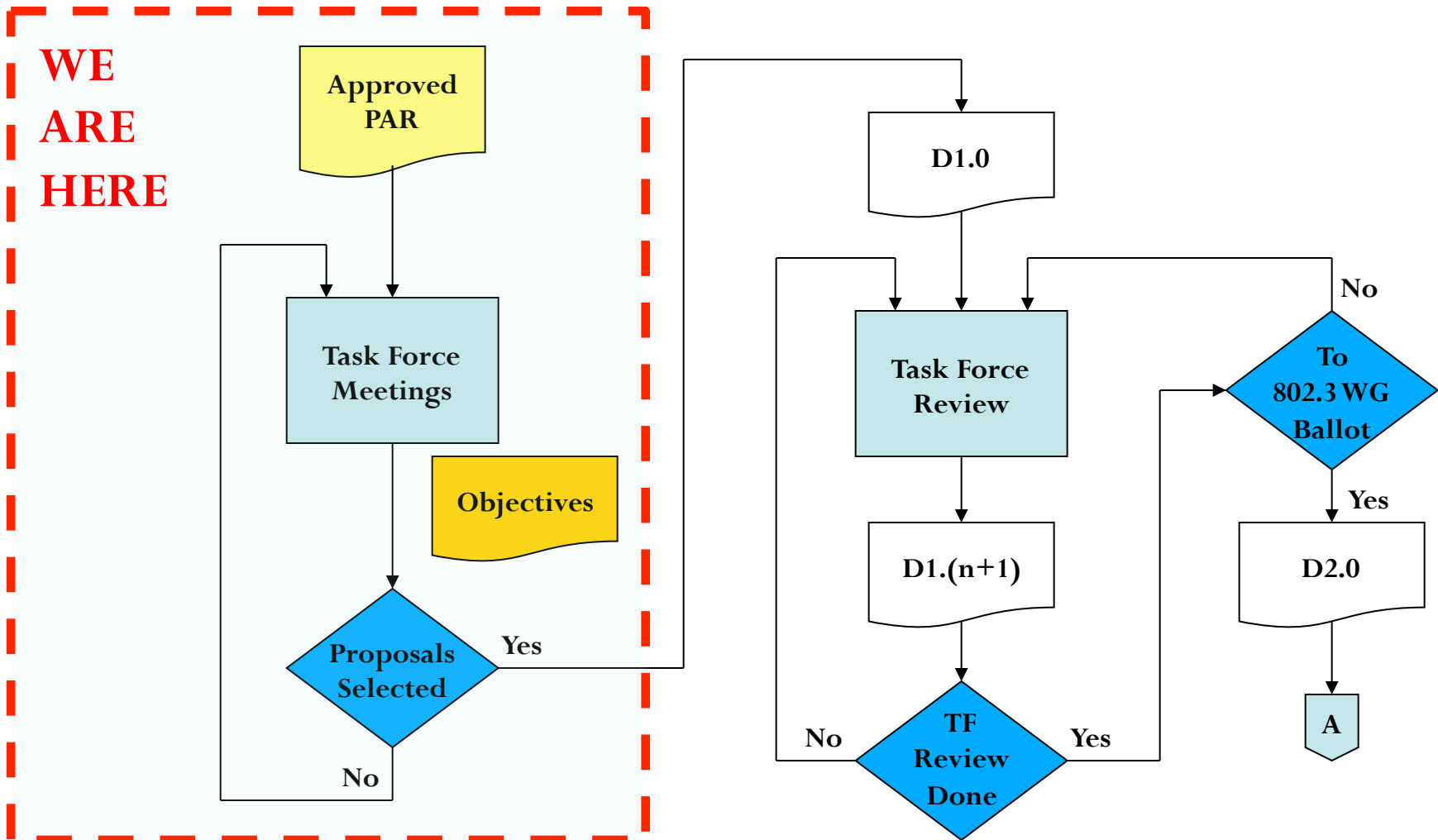


Overview of IEEE 802.3 Standards Process (1/5)- Study Group Phase

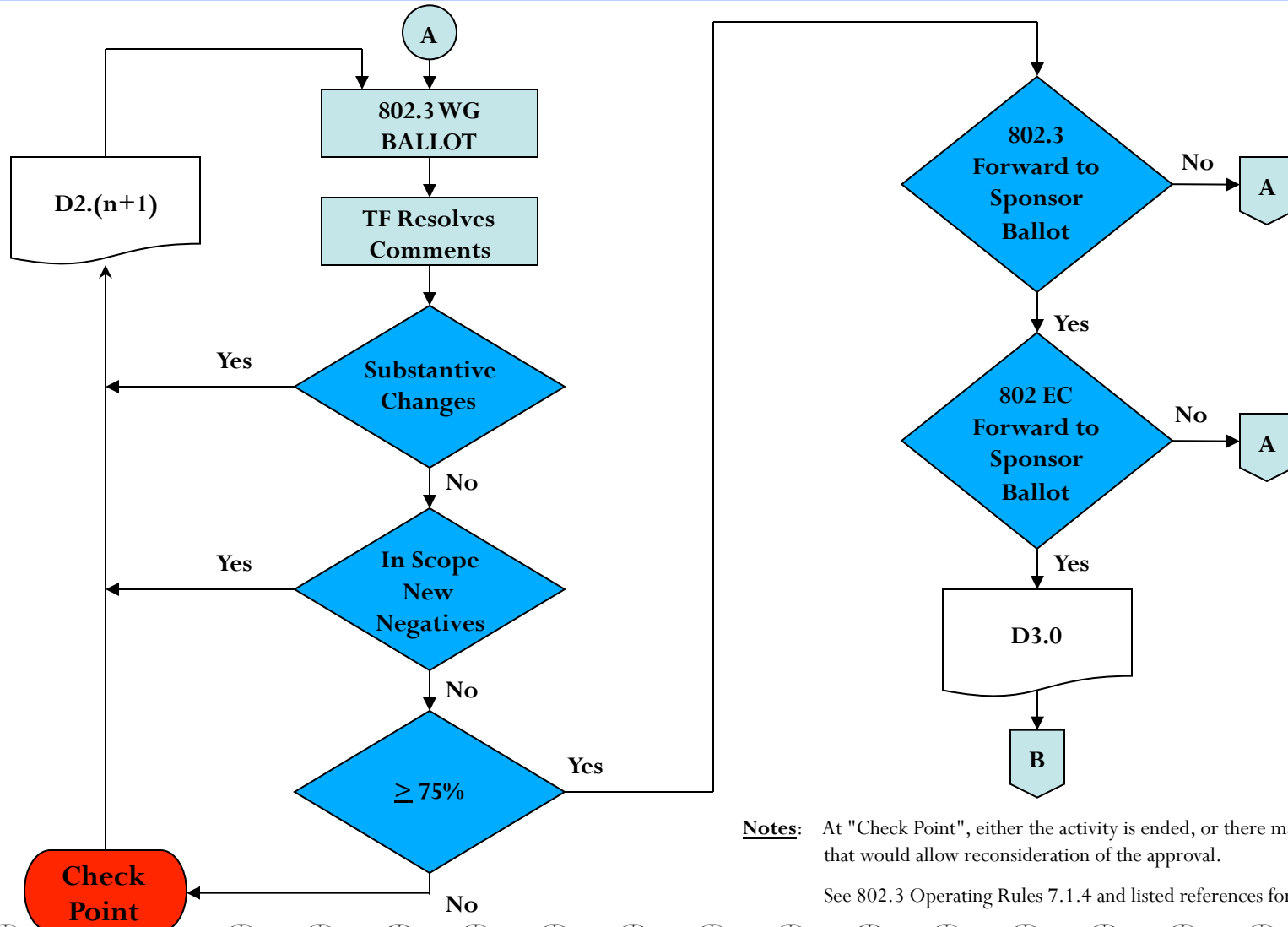


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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



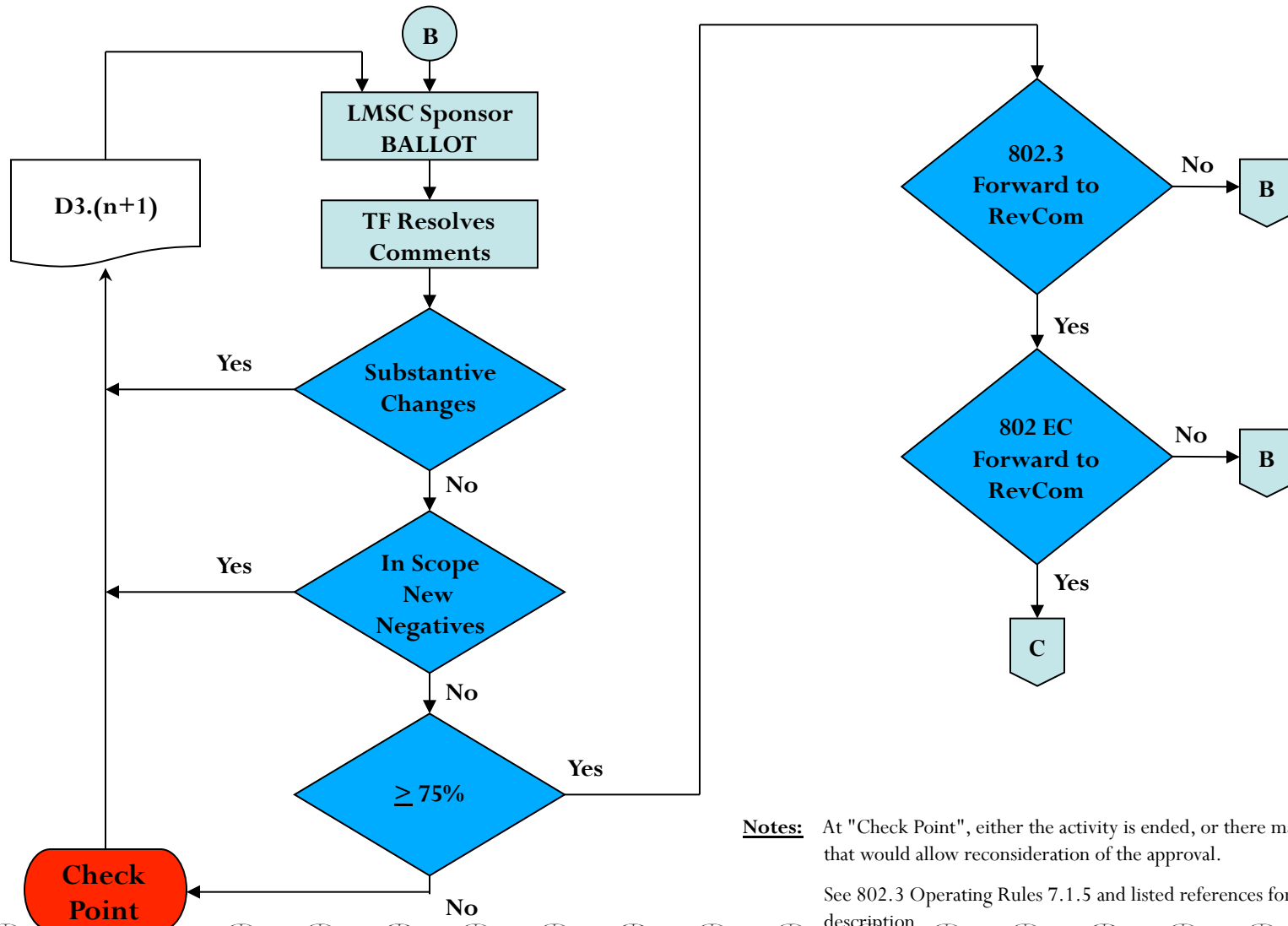
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

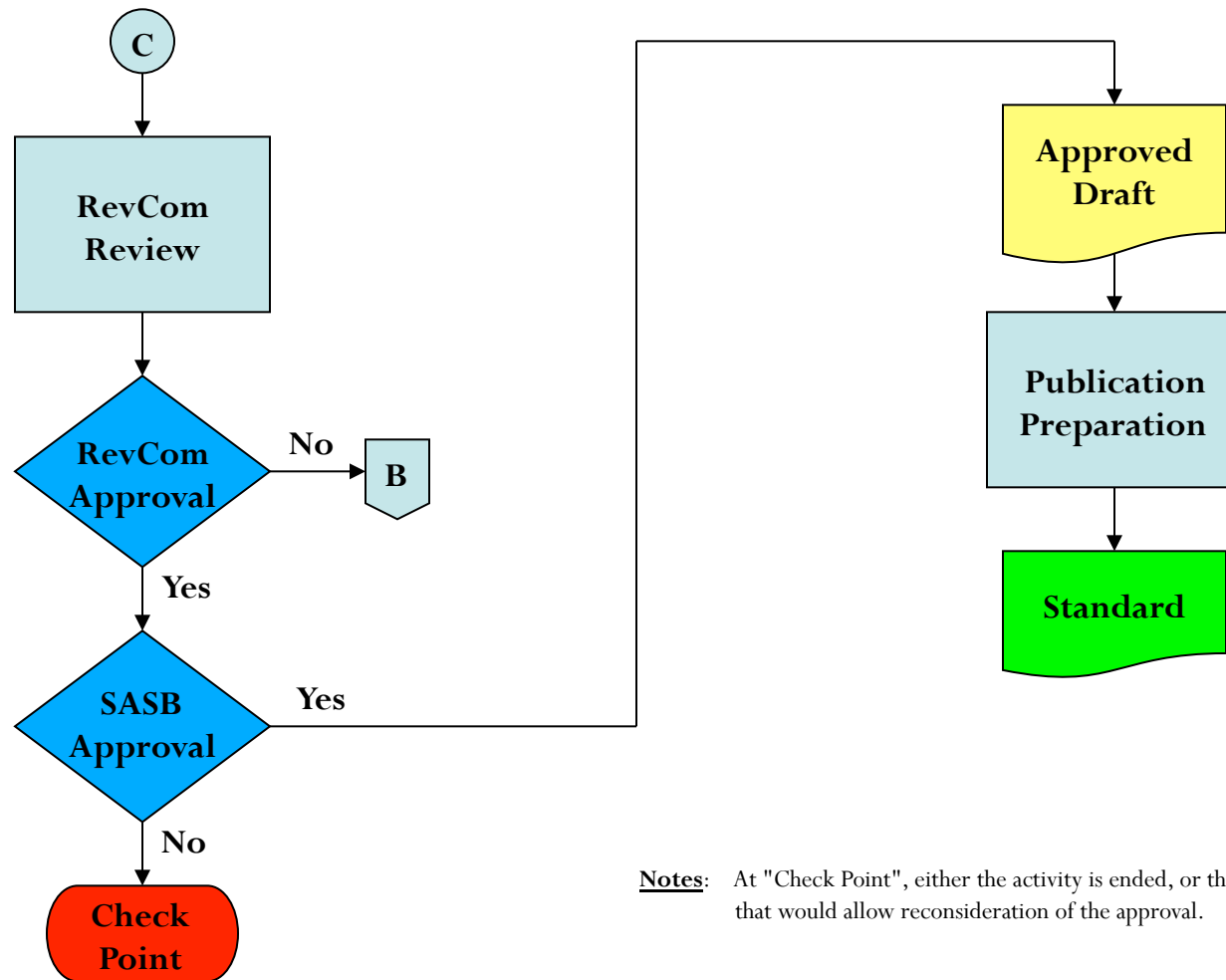
Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



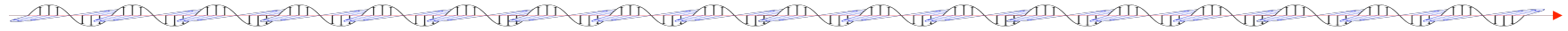
Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

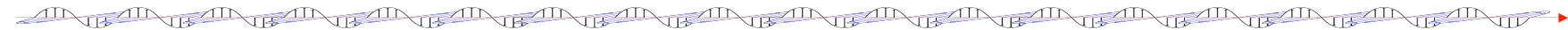


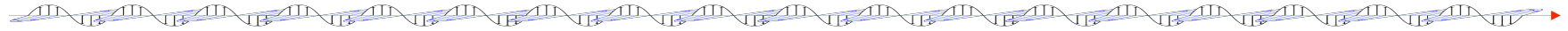
Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.



Liaisons and Communications

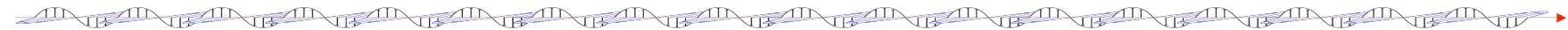
- **P802.3bj/P802.3bm Joint Session**
 - None at this meeting.
- **OIF**
 - Ongoing communications between OIF and IEEE 802.3 initiated by IEEE P802.3ba project
 - In regards to OIF CEI-25G-LR, CEI-28G-SR, CEI-28G-VSR
 - Currently being operated through 802.3 Working Group
 - **OIF Liaison letter received October 24th including OIF-28G-VSR**
- **ITU-T**
 - Proposed liaison activity to ensure alignment.
 - Joint Workshop just held in Geneva, Switzerland in September

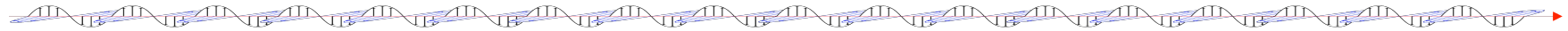




Pending Action Items

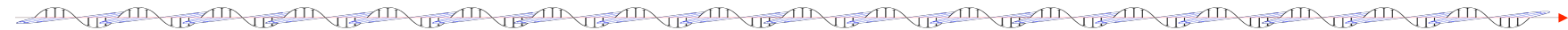
- Draft liaison response to OIF





IEEE P802.3bm Next Generation 40 Gb/s and 100 Gb/s Optical Ethernet Approved Project Documents

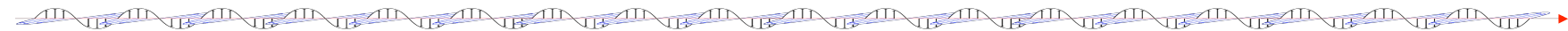
- PAR
 - <http://www.ieee802.org/3/bm/P802.3bm.pdf>
- 5 Criteria
 - <http://www.ieee802.org/3/bm/5Criteria.pdf>
- Objectives
 - <http://www.ieee802.org/3/bm/Objectives.pdf>
- Timeline
 - http://www.ieee802.org/3/bm/timeline_0912.pdf





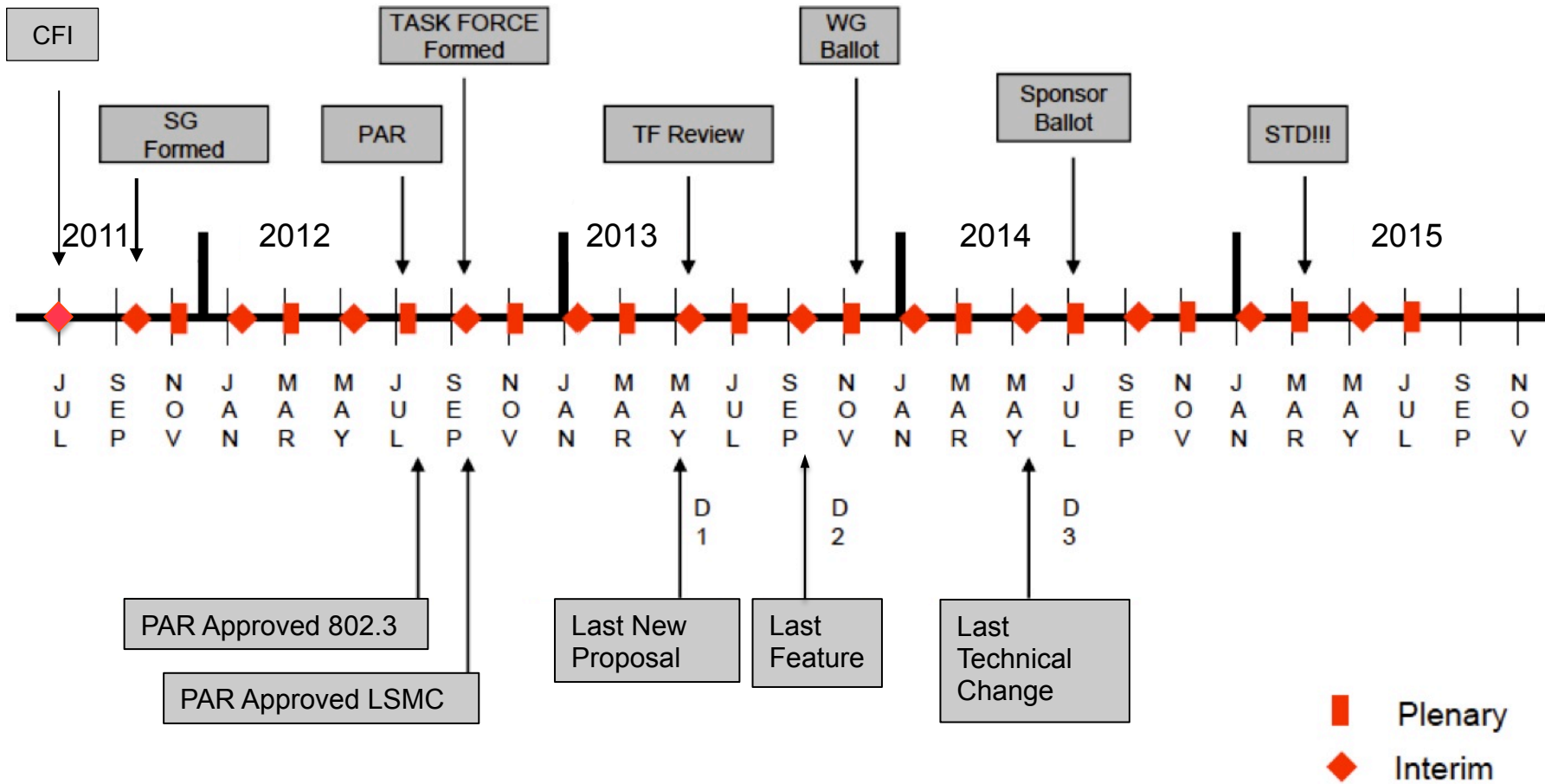
IEEE P802.3bm Next Generation 40 Gb/s and 100 Gb/s Optical Ethernet Objectives

- Support full-duplex operation only
- Preserve the IEEE 802.3 / Ethernet frame format utilizing the IEEE 802.3 MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface
- Provide appropriate support for OTN
- Define re-timed 4-lane 100G PMA to PMA electrical interfaces for chip to chip and chip to module applications
- Define a 40 Gb/s PHY for operation over at least 40 km of SMF
- Define a 100 Gb/s PHY for operation up to at least 500 m of SMF
- Define a 100 Gb/s PHY for operation up to at least 100 m of MMF
- Define a 100 Gb/s PHY for operation up to at least 20 m of MMF





IEEE P802.3bm Next Generation 40 Gb/s and 100 Gb/s Optical Ethernet Timeline (Adopted 28th, September 2012)



Tuesday Presentations

Tuesday 13-November-2012

Note –Times listed are subject to change.

Tuesday		Start Time	8:00	Discussion Time	15
Presentation Time	Duration	Presenter	Affiliation	Title	Filename
9:00	30	Dan Dove	Applied Micro	Introductions, Review Task Force Operation	dove_01b_1112_optx.pdf
9:30	10	Pete Anslow	Ciena	SMF Ad hoc report	anslow_01_1112_optx.pdf
9:40	15	Pete Anslow	Ciena	Editor's Report	anslow_02_1112_optx.pdf
9:55	5	Jonathan King	Finisar	MMF Ad hoc report	king_01a_1112_optx.pdf
10:00	5	Ryan Latchman	MindSpeed	CAUI-4 Ad hoc Report	latchman_01_1112_optx.pdf
10:05	20	Mark Gustlin, Dave Ofelt, Jeff Maki, Chris Cole, Gary Nicholl, Pete Anslow	Xilinx, Juniper, Juniper, Finisar, Cisco, Cisco, Ciena	100GbE evolution	gustlin_01a_1112_optx.pdf
10:25	25	Piers Dawe	IPTronics	Low Power 100G MMF PHY and Electrical Specs	dawe_01a_1112_optx.pdf
11:05	15	BREAK			
11:20	15	Ali Ghiasi, Fred Tang	Broadcom, Broadcom	Feasibility of Unretimed 100GBASE-SR4	ghiasi_02_1112_optx.pdf
11:50	20	Scott Kipp	Brocade	Link Distance and Server Connectivity	kipp_01_1112_optx.pdf
12:25	20	Petar Pepeljuginoski	IBM	Analysis of Various Options for Multimode Fiber Links	pepeljuginoski_01_1112_optx.pdf
13:00	60	LUNCH			
14:00	20	John Petrilla	Avago Technologies	100G SR4 100m & 20m Support	petrilla_02_1112_optx.pdf
14:35	15	Rick Pimpinella, Jose Castro	Panduit, Panduit	Measurement and Estimation of the Mode Partition Coefficient k	pimpinella_01_1112_optx.pdf
15:05	15	Andre Szczepanek	Inphi	FEC Latency Considerations	szczepanek_01_1112_optx.pdf
15:35	15	BREAK			
15:50	10	Chris Cole	Finisar	100Gb/s SMF PMD Observations	cole_01_1112_optx.pdf
16:15	15	Chris Bergey, Sudeep Bhoja, Chris Cole, Ali Ghiasi, Jonathan King, Ilya Lyubomirsky, Hari Shankar, Brian Welch	Luxtera Inphi Finisar Broadcom Finisar Finisar Inphi Luxtera	100 Gb/s SMF PMD Alternatives Analysis	lyubomirsky_01a_1112_optx.pdf
16:45	20	Sudeep Bhoja, Gary Nicholl, Vipul Bhatt, Arash Farhood	Inphi, Cisco, Cisco, Cortina	PAM8 & FEC Options	bhoja_01a_1112_optx.pdf
17:20	20	Arash Farhood, Vipul Bhatt, Ben Smith, Sean Anderson	Cortina Systems, Cisco, Cortina Systems, Cisco	Improved MPI Upper Bound Analysis	farhood_01_1112_optx.pdf
17:55	15	Ali Ghiasi, Zhongfeng Wang, Vivek Telang, Brian Welch	Broadcom, Broadcom Broadcom, Luxtera	Investigation of PAM-4/6/8 Signaling and FEC for 100 Gb/s Serial Transmission	ghiasi_01a_1112_optx.pdf
18:25	15	Arlon Martin, Mehdi Asghari, Samir Desai,	Kotura, Kotura, Kotura	WDM C-Band Channel Plan	martin_01_1112_optx.pdf
18:55	5	Discussion		Motions, Straw Polls, Discussion	
19:00	0	RECESS TILL 9:00am			

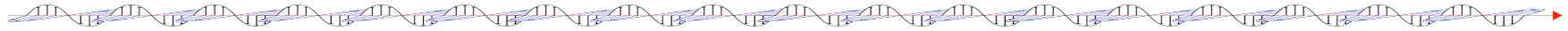


Wednesday Presentations

Wednesday 14-November-2012

Note –Times listed are subject to change.

Wednesday		Start Time	9:00	Discussion Time	15
Presentation Time	Duration	Presenter	Affiliation	Title	Filename
9:00	15	Dan Dove	Applied Micro	Introductions, Review Task Force Operation	
9:15	20	Brian Welch, Ali Ghiasi, Chris Bergey, Zhongfeng Wang, Vivek Telang	Luxtera, Broadcom, Luxtera Broadcom, Broadcom	100 Gb/s Duplex Interconnects using Moderate PAM-N signaling	welch_01_1112_optx.pdf
9:50	15	Yurii Vlasov Douglas Gil	IBM IBM	Proposal for 4-channel WDM (WDM4) for intermediate reach 100GbE SMF PMD	vlasov_01_1112_optx.pdf
10:20	15	Douglas Gill Yurii Vlasov	IBM IBM	Implementation tradeoffs for WDM4 PMD in relation to cost	gill_01a_1112_optx.pdf
10:50	15	BREAK			
11:05	15	Toshiki Tanaka, Tomoo Takahara, Jens C. Rasmussen	Fujitsu Laboratories Ltd.	Basic Study about Bandwidth Requirement for Discrete Multi-tone Modulation	tanaka_01a_1112_optx.pdf
11:35	15	Tom Palkert	Luxtera	Network architecture growth path using PSM4	palkert_01_1112_optx.pdf
12:05	60	LUNCH			
13:05	20	John Petrilla	Avago Technologies	100G PSM4 Link Model and Results	petrilla_01_1112_optx.pdf
13:40	20	Jon Anderson, John Petrilla, Tom Palkert	Oclaro, Avago Technologies, Xilinx	100GBASE-PSM4 Optical Budget Baseline Specification Proposal	anderson_01a_1112_optx.pdf
14:15	15	Ali Ghiasi, Fred Tang	Broadcom, Broadcom	CAUI-4 Chip to Chip and Chip to Module Applications	ghiasi_03_1112_optx.pdf
14:45	15	BREAK			
15:00	20	Ryan Latchman	MindSpeed	CAUI-4 Chip-Module Draft Baseline	latchman_02_1112_optx.pdf
15:35	15	Ryan Latchman	MindSpeed	Review application targets for CAUI-4 Chip-Chip and potential economies relative to 100GBASE-KR4	latchman_03_1112_optx.pdf
16:05	15	Tom Palkert	Xilinx	CAUI4 chip to chip applications	palkert_02_1112_optx.pdf
16:35	15	Tom Palkert, Brian Misk, Mike Dudek	Xilinx, Avago Technologies, Qlogic	CAUI4 jitter test proposal	palkert_03_1112_optx.pdf
17:05	55	Discussion		Motions, Straw Polls, Discussion	
18:00	0	RECESS Till 8:00am			



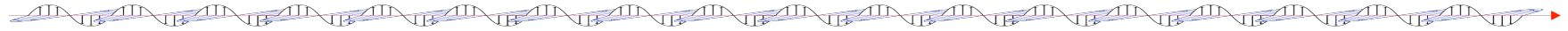
Thursday Presentations

Thursday 15-November-2012

Note –Times listed are subject to change.

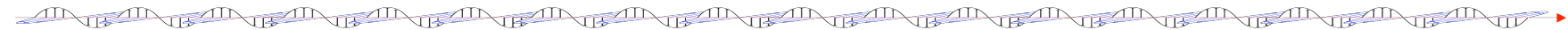
Thursday		Start Time	8:00		Discussion Time	15
Presentation Time	Duration	Presenter	Affiliation	Title	Filename	
8:00	15	Dan Dove	Applied Micro	Introductions, Review Task Force Operation		
8:15	15	Mike Dudek, Barrett Bartell	Qlogic, Qlogic	VSR Compliance Board Specification Range	dudek_3bi_02_1112.pdf	
8:45	15	Gary Nicholl	Cisco	Energy Efficient Ethernet (EEE) for 40 Gb/s and 100 Gb/s optical interfaces	nicholl_01_1112_optx.pdf	
9:15	15	Steve Trowbridge	Alcatel Lucent	EEE modifications	trowbridge_01_1112_optx.pdf	
9:45	15	Piers Dawe	IPTronics	Layer Diagrams with FEC and CAUI-4 (1)	dawe_02_1112_optx.pdf	
10:15	15	BREAK				
10:30	5	Brad Booth	Dell	Short Reach 100G Optics for Data Center Racks (2)	booth_01_1112_optx.pdf	
10:50	5	Petar Pepeljuginoski	IBM	Observations on SMF Reflection Impacts (2)	pepeljugoski_02_1112_optx.pdf	
11:10	50	Discussion		Motions, Straw Polls, Discussion		
12:00	0	Adjourn				





Future Meetings

- See: <http://www.ieee802.org/3/interims/index.html>
- **Week of January 21st, 2013**
 - IEEE 802.3 Interim
 - Hyatt Regency
 - Phoenix, AZ
 - USA
- **Monday, March 18th through Thursday, March 21st, 2012**
 - IEEE 802 plenary
 - Caribe Royale Hotel
 - Orlando, FLA
 - USA
- **Week of May 13, 2013**
 - The Fairmont Empress
 - Victoria, BC, Canada
- Anyone interested in hosting a meeting contact Steve Carlson.





Thank You!

