

Extended EPON Study Group opening report

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Outline

- » Appointment of Recording Secretary
- » Welcome and introductions
- » Approve agenda
- » Goals for this meeting
- » Reflector and Web
- » Ground Rules
- » IEEE
 - > Structure
 - > Bylaws and Rules
 - > Call for Patents
 - > IEEE Standards Process
- » Presentations
- » Motions and Closing Business
- » Future Meetings

Attendance

- » Tutorial Material on attendance tool
 - > http://ieee802.org/3/minutes/nov11/1111_imat.pdf.

- » URL (Valid for this meeting only)
 - > URL: <https://murphy.events.ieee.org/imat/index>
 - > No meeting attendance code this meeting
 - > Server is locally hosted – disable all VPN software !!!

- » The attendance in any Study Group at the meeting counts towards the meeting credit. Please make sure you are signed in for the day.

Study Group Decorum



- » Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (2008 SASB Op Manual 5.3.3.5)
- » Photography or recording by permission only (5.3.3.4)
- » Cell phone ringers off
- » 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 this meeting

- » Examine the incoming LL from CCSA
- » Examine and produce responses to any comments on PAR, 5 Criteria and Objectives we receive by 5PM Tuesday. Responses must be submitted by 5PM Wednesday.
- » Hear and discuss any presentations associated with [approved project objectives](#), in preparation for the technical work under Task Force
- » No technically binding decisions can be made at this time. We can discuss technical merits of proposed solutions, compare them and prepare materials for the Task Force.
- » Baseline proposals, motions to select specific technical solution etc. are to be delayed until the Task Force meetings start

Email reflector and web

- » Currently 96 subscribers on Extended EPON SG reflector
- » To subscribe to Extended EPON SG reflector, send email to: listserv@ieee.org and include this line in the body of the message:
subscribe stds-802-3-EXTND-EPON firstname lastname
- » Detailed information is available at:
[http://www.ieee802.org/3/EXTND EPON/reflector.html](http://www.ieee802.org/3/EXTND_EPON/reflector.html)
- » Study Group web page URL:
[http://www.ieee802.org/3/EXTND EPON/index.html](http://www.ieee802.org/3/EXTND_EPON/index.html)

Introductions

- » Please, state
 - > Your name
 - > Your affiliation

IEEE SA Standards Board Operations manual

5.3.3.1 Disclosure of affiliation

Each participant's affiliation shall be disclosed at any working group or project meeting. The chair or the chair's delegate shall inform the meeting of the requirement for disclosure of affiliation (see 5.2.1.5 of the IEEE-SA Standards Board Bylaws). This shall be via a sign-in (e.g., sign-in sheet, electronic sign-in, verbal disclosure, or electronic communication) that provides for disclosure of employer and any other affiliation, a reminder of the definition of affiliation, and possible penalties for non-compliance.

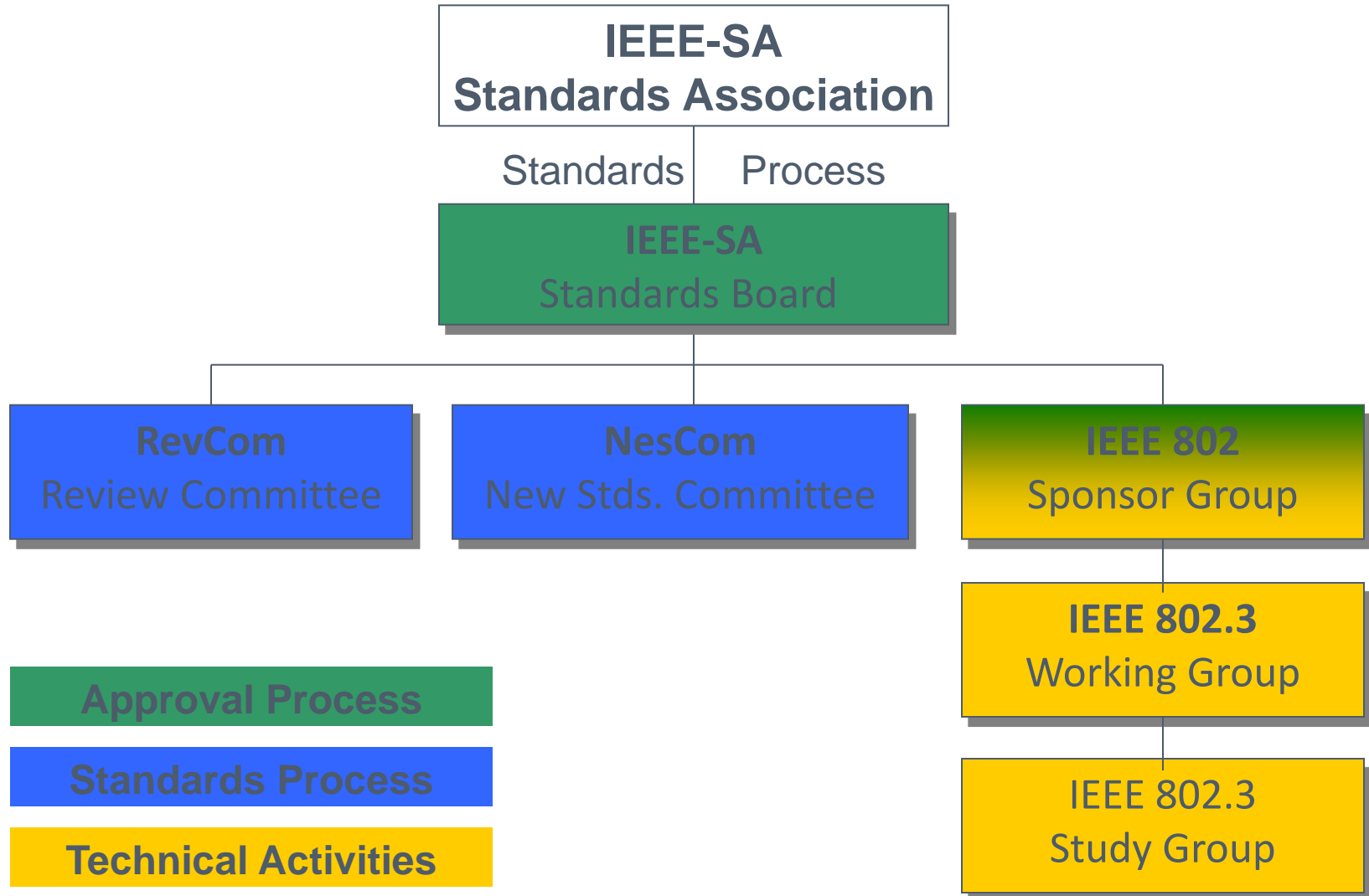
...

The minutes of each working group or project meeting shall record a list of attendees and the disclosed affiliation of each attendee.

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 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

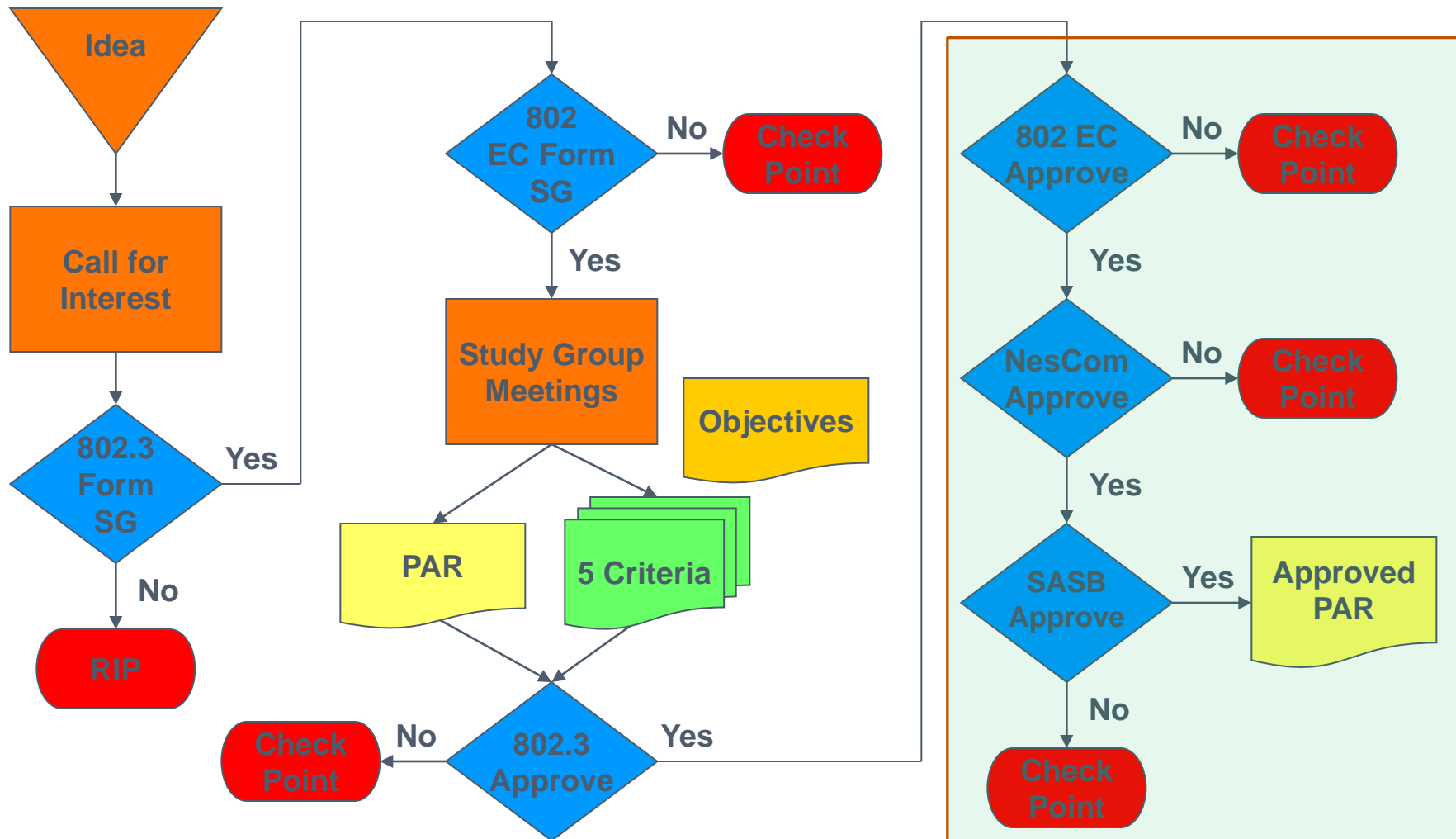
Guidelines for IEEE-SA Meetings

- » 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>

Overview of IEEE 802.3 Standards Process (1/5)

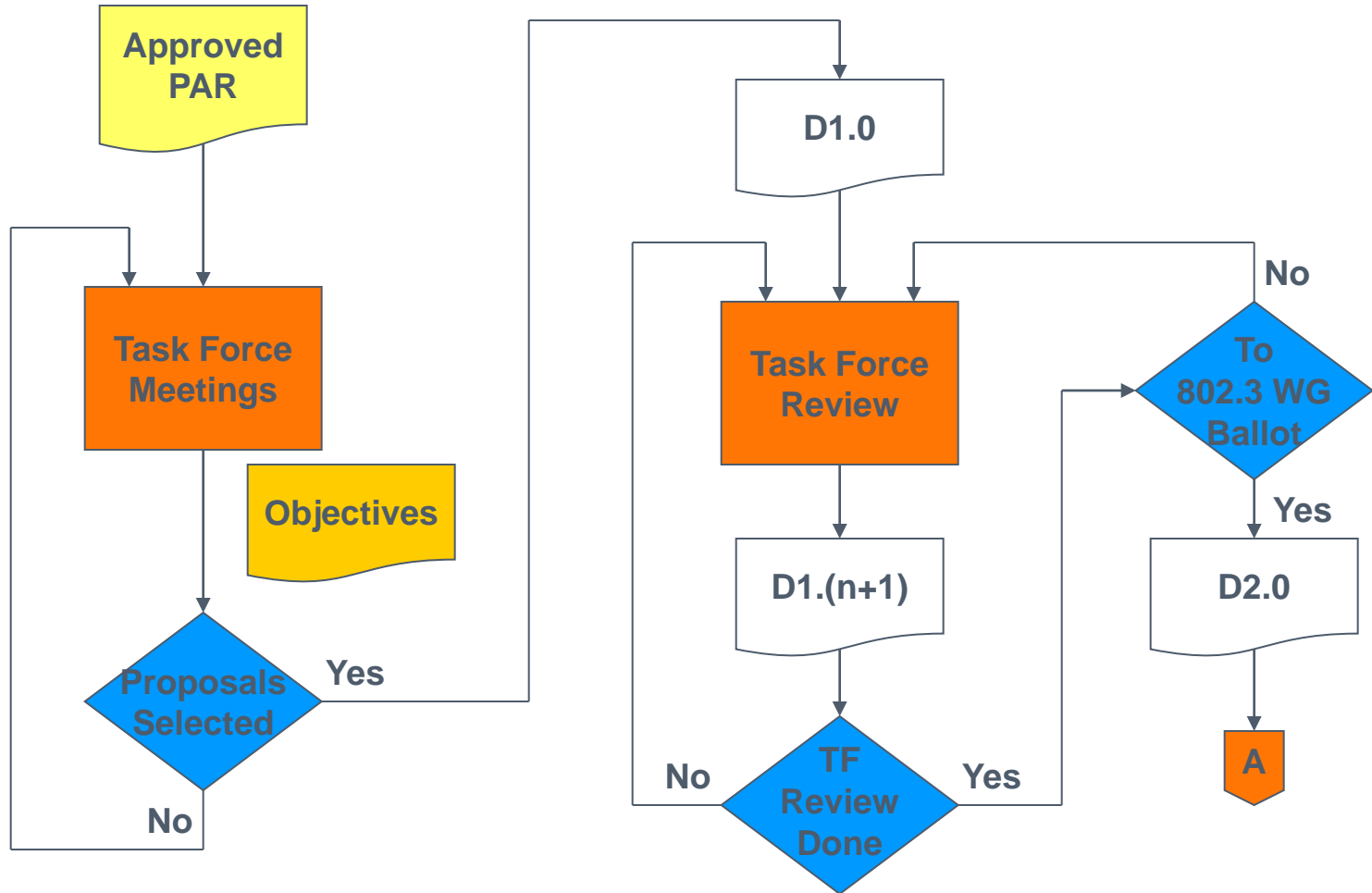
Study Group Phase



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

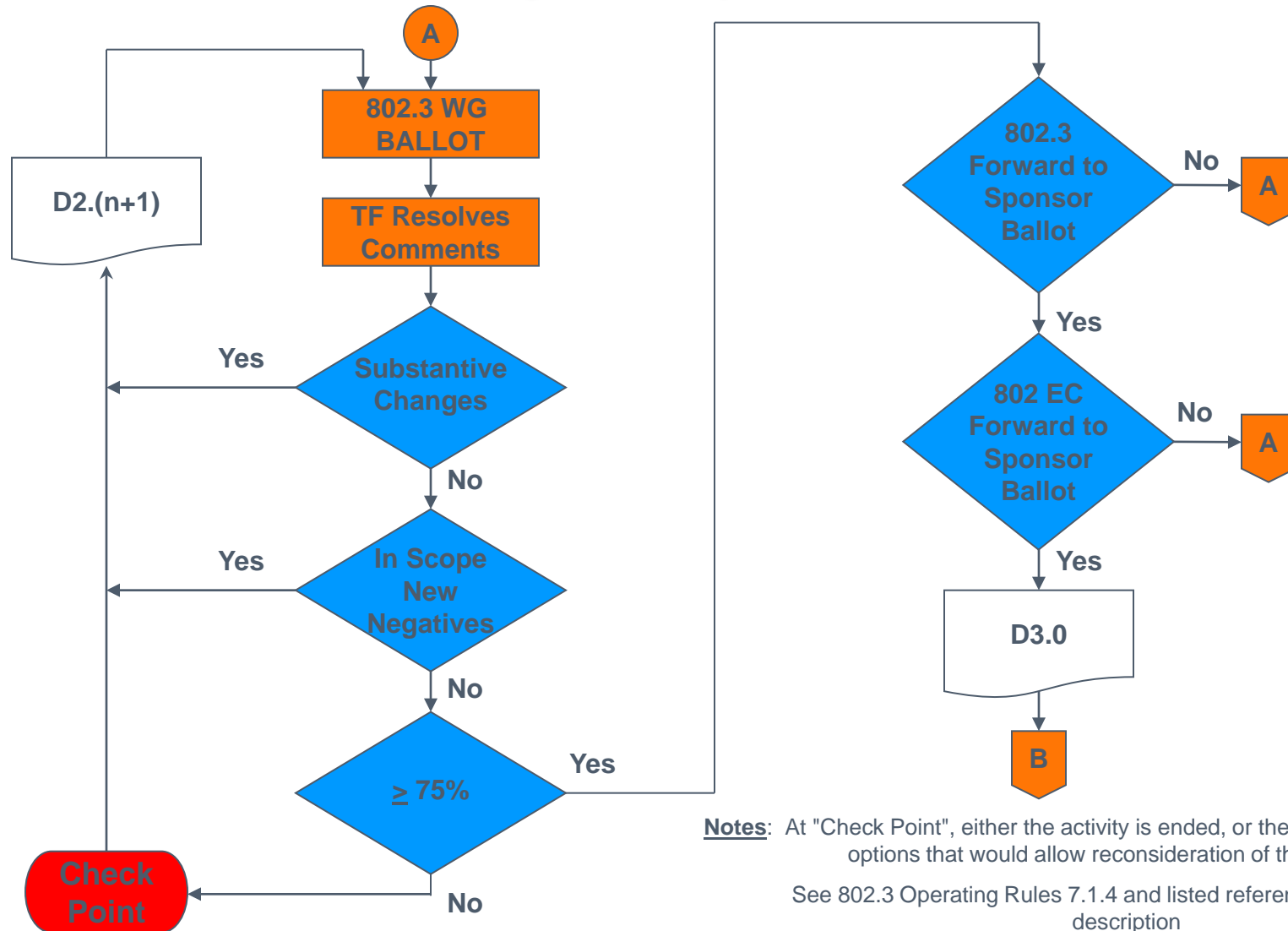
Overview of IEEE 802.3 Standards Process (2/5)

Task Force Comment Phase



Overview of IEEE 802.3 Standards Process (3/5)

Working Group Ballot Phase

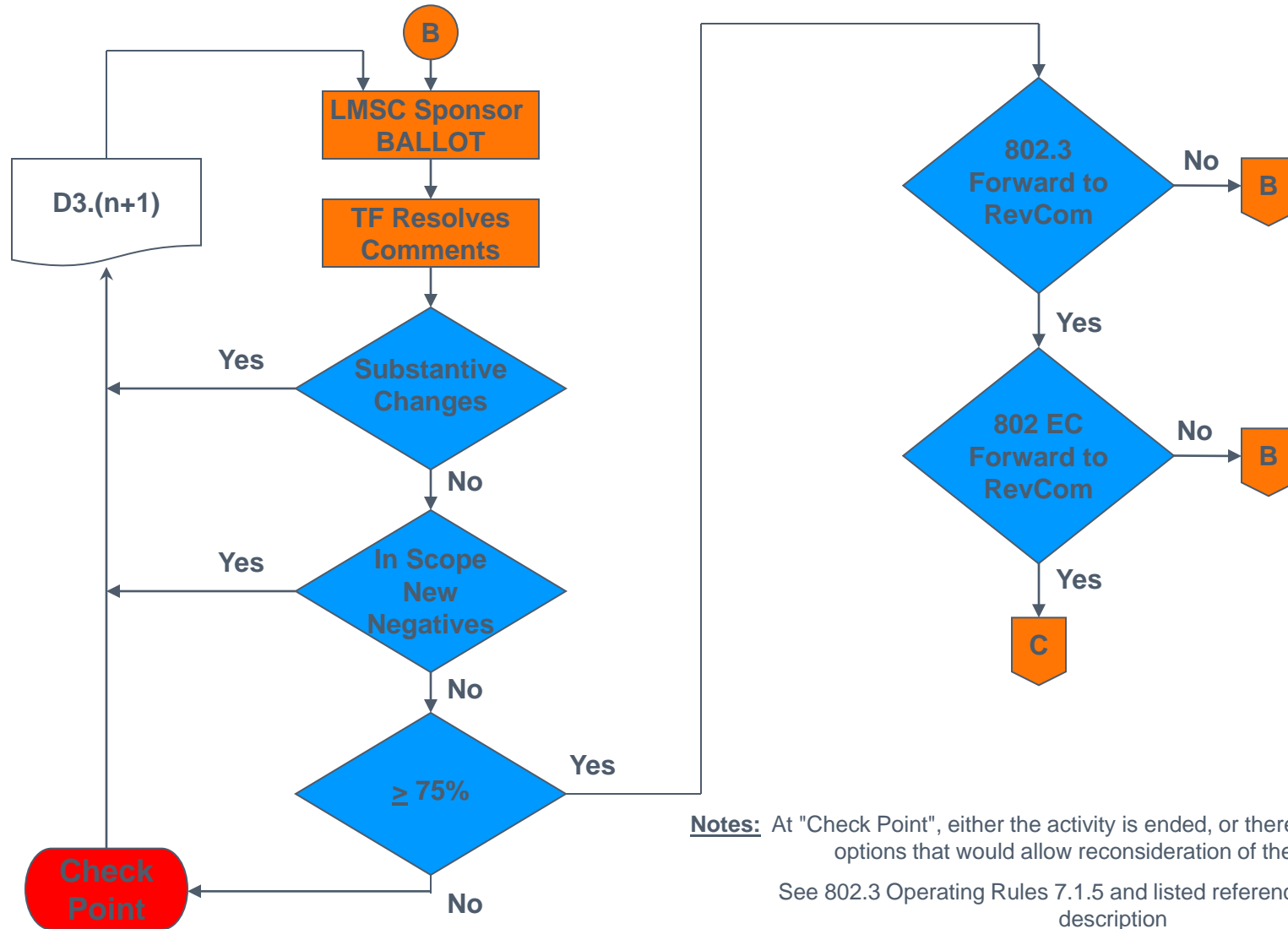


Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

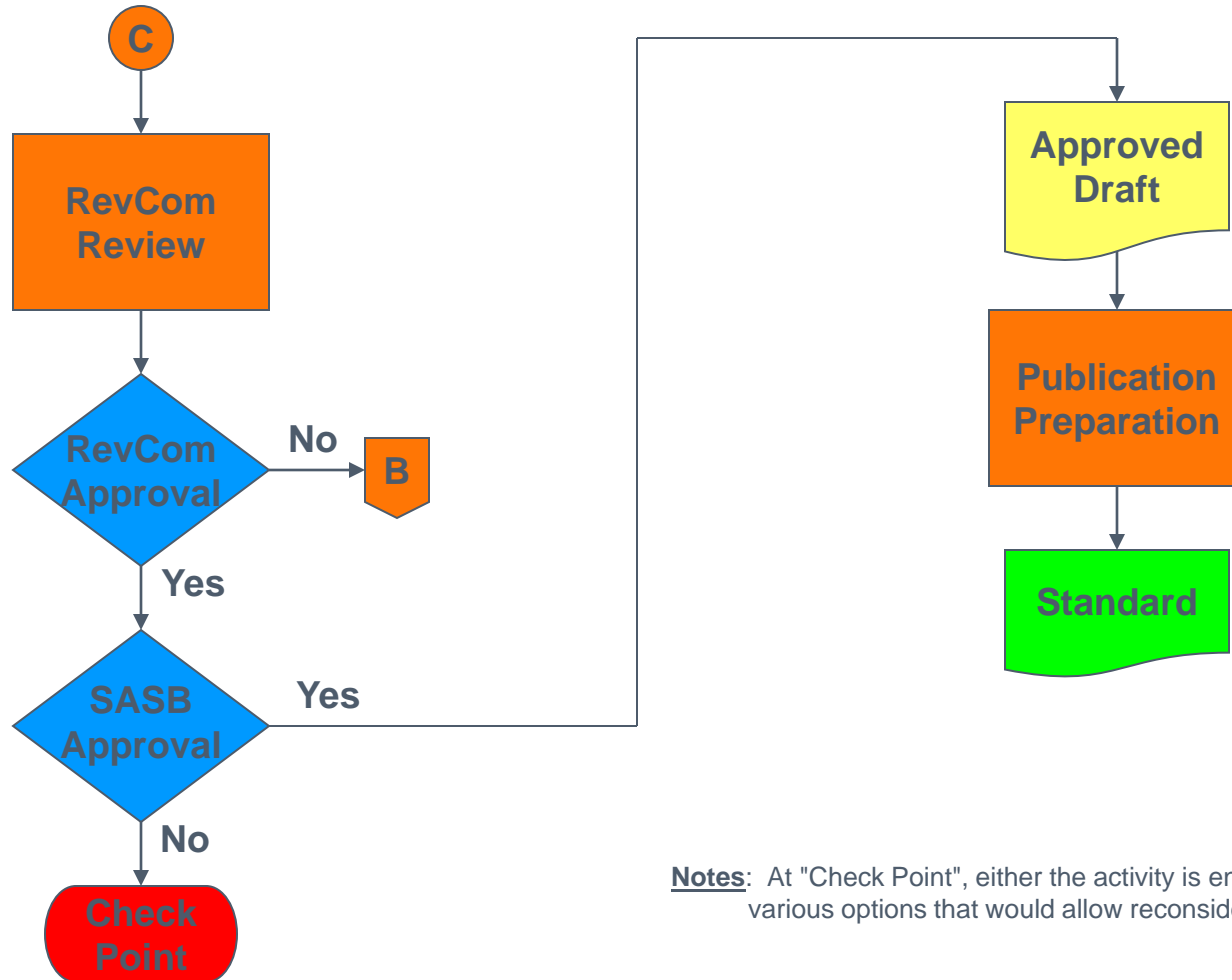


Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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.

The Study Group

- » Normal function is to draft a complete PAR and Five Criteria
- » Provide a plenary week tutorial to the LMSC.
- » Gain approval at the WG 802.3, 802 SEC, IEEE NesCom and IEEE-SA Standards Board.

- » SG only exists for 6 months
 - > Extensions can be requested
 - > Voted on by 802.3
 - > Ratified by SEC
- » Development of Objectives helps set the goals for the Task Force
- » Consensus (>75%) required to move forward

- » Not a goal – choosing a solution.

Request for Formation of Study Group (as per #19 Plenary Motion)

» Motion #19 from July 2011 plenary

MOTION #19

Move the IEEE 802.3 Working Group authorizes the formation of a Study Group for “Extended EPON”.

M: M. Hajduczenia

S: D. Remein

> 50%

Y: 41, N: 0, A: 16

Passed 21-July-2011 6:14 pm

http://www.ieee802.org/3/minutes/jul11/minutes_0711.pdf

Project documents

- » Project Authorization Request (PAR)

[ExEPON PAR approved.pdf](#)

- » Project Objectives

[ExEPON Objectives approved.pdf](#)

- » 5 Criteria

[ExEPON 5Criteria approved.pdf](#)

- » Public website

[http://www.ieee802.org/3/EXTND_EPON/index.html](#)

Minutes from 2012 January meeting

- » Minutes (unapproved) from January 2012 meeting have been posted on website for almost 2 months:
http://www.ieee802.org/3/EXTND_EPON/public/1201/ExEPON_1201_minutes_unapproved.pdf
- » No requests for corrections have been received so far
- » Special thanks to Duane for taking the minutes

Motion #1

Approval of Last Meeting's Minutes

- » Approve minutes of January 2012 meeting as recorded in ExEPON_1201_minutes_unapproved.pdf and post them online as ExEPON_1201_minutes_approved.pdf
- » Moved by: Duane Remein
- » Seconded by: Phillip Chang

(Procedural motion, > 50%)

Motion passed by voice vote without opposition

Agenda

- » **Tuesday: 9:00 – 17:00 (with lunch/coffee breaks)**
 - > Meeting opening
 - > Technical contributions in the following order
 - + [ExEPON 1203_xu_1.pdf](#)
 - > LL from CCSA
 - > “ODN ad-hoc” status update
 - > Comments on PAR, 5 Critters and Objectives
 - > Follow-up discussions
- » **Wednesday: 8:30 – 9:00**
 - > Resolve any new comments (to be announced on the reflector)
 - > Adjourn
- » **Wednesday: 9:00 – 10:30**
 - > IEEE 802.3/802.1 joint meeting

Motion #2

Approval of meeting's agenda

- » Approve agenda for 2012 March meeting of ExEPON SG, as shown in ExEPON_1203_opening.pdf, slide 22
- » Moved by: Wen Li
- » Seconded by: Duane Remein

(Procedural motion, > 50%)

Motion passed by voice vote without opposition

LL from CCSA

- » Response from CCSA was received prior to the meeting
- » LL together with the attachment were placed in public directory at:
http://www.ieee802.org/3/EXTND_EPON/public/1203/index.html
- » Tasks for the meeting:
 - > Examine the letter, discuss content and decide whether response needs to be written
 - > Generate draft if SG decides that response is in order, approve and deliver as informal communication

LL from CCSA (Appendix D)

- » The CCSA TC6 YD/T 1688.4-2011 contains 10G-EPON specifications, including definition of PR(X)40 and PR(X)50 power budget classes in Appendix D
- » Translation of Appendix D was prepared and submitted for this meeting and will be published online as ExEPON_1203_LL_CCSA_AppD_EN.pdf

Appendix D
(reference appendix)
10G EPON optical module and extended power budget characteristics

D.1 10G EPON optical module and extended power budget
D.1.1. extended power budget
Extended power budget are shown in table D.1

Table D.1 Extended power budget

Name	Extended Power Budget 1		Extended Power Budget 2		Unit
	PR(X)40	PR40	PR(X)50	PR50	
Fiber Number	1				
Downstream Data rate	10.3125				Gbit/s
Upstream Data rate	1.25	10.3125	1.25	10.3125	Gbit/s
Down stream wavelength (center)	1577				nm
Down stream wavelength (range)	±3				nm
Upstream wavelength (center)	1310	1270	1310	1270	nm
Upstream wavelength (range)	±50	±10	±50	±10	nm
Maximum reach*	≥20		≥20		km
Maximum channel insertion loss	33		37		dB
Minimum channel insertion loss	15		15		dB

* A compliant system may exceed the maximum reach designed for given power budget as long as optical power budget and other mandatory optical layer specification are met.

D.1.2. budget application mark
Budget mark in table D.2

Table: D2 Budget application mark

Type	Budget mark	Power budget	Transmission direction	Data rate (Gbit/s)	Working method	Physical layer Characteristic
1	10/1GBASE-PR(X)-D4	Extended power 1	Downstream	10.3125	Continuous	D3 and D4
	10/1GBASE-PR(X)-U4	Extended power 1	Upstream	1.25	Burst	D5 and D6
2	10/1GBASE-PR(X)-D5	Extended Power 2	Downstream	10.3125	Continuous	D3 and D4
	10/1GBASE-PR(X)-U5	Extended Power 2	Upstream	1.25	Burst	D5 and D6
3	10GBASE-PR-U4	Extended Power 1	Upstream	10.3125	Continuous	D3 and D4
	10GBASE-PR-U4	Power 1	Upstream	10.3125	Burst	D5 and D6
4	10GBASE-PR-D5	Extended Power 2	Downstream	10.3125	Continuous	D3 and D4
	10GBASE-PR-U5	Power 2	Upstream	10.3125	burst	D5 and D6

D.1.3. Link match

Link match in table D.3

Table: D.3 PMD – power budget mapping for asymmetric-rate PR(X)-type and PR-type power budgets

LL from CCSA (Response)

- » At this time, SG cannot take technical decisions based on received LL from CCSA. But a response to CCSA would be welcome, to thank them for their LL and indicate when more detailed analysis and technical response will be generated.
- » Draft response is offered for discussion, editing and approval

IEEE 802.3 Extended EPON Study Group
Informal Communication

Source: IEEE 802.3 Extended EPON Study Group¹
To: Liu Qian, RITT, CATR (liuqian@mail.ritt.com.cn)
CC: Paul Nikolich, Chair IEEE 802 LMSC (p.nikolich@ieee.org)
David Law, Chair IEEE 802.3 Ethernet Working Group (dllaw@hp.com)
Wael Diab, Vice-Chair IEEE 802.3 Ethernet Working Group (wadiab@broadcom.com)
Adam Healey, Secretary IEEE 802.3 Ethernet Working Group (adam.healey@lsi.com)
Liu Duo, Deputy Secretary-general of CCSA
Mao Qian, Chair of Transport & Access network Technical Committee (TC6), CCSA
Ao Li, Vice-chair of Transport & Access network Technical Committee (TC6), CCSA
Zhao Shizhuo, Project Manager of International Standardization Department, CCSA
Subject: Informal communication to CCSA on cooperation in developing specifications for extended EPON optics
From: Marek Hajduczenia, Chair IEEE 802.3 Extended EPON Study Group (marek.hajduczenia@zte.pt)
Approval: Agreed to at IEEE 802.3 Extended EPON Study Group meeting, March 13, 2012

Dear Ms. Liu Qian,

Thank you very much for your kind liaison letter dated March 1, 2012, and the attached copy of the YD/T 1688.4-2011 specification, developed by the CCSA Transport & Access network Technical Committee (TC6), including PMD parameters for extended 10G-EPON optics.

As indicated in our last informal communication to you, dated January 26, 2012, the Extended EPON Study Group is currently pending approval of the project by the IEEE-SA Standards Board. If approved, we are currently anticipating the first meeting of the IEEE P802.3bk Task Force during the week of May 14 through Friday, May 18, 2012, in Minneapolis, MN, USA. More detailed information can be found at <http://www.ieee802.org/3/interims/index.html>.

We anticipate to examine the CCSA TC6 specification for extended EPON optics, with the special focus on content included in Annex D, during the May meeting of the IEEE P802.3bk Task Force. At that time the Task Force will start technical discussions and selection of baseline proposals towards development of the first version of our draft.

We would be very happy to welcome active participation of your membership in our proceedings, to make sure that any extended EPON specifications developed are best suited for the EPON industry.

We will keep you informed of any new and relevant developments as our work progresses, and we look forward to our next communication.

Sincerely,

Marek Hajduczenia,
Chair, IEEE 802.3 Extended EPON Study Group
marek.hajduczenia@zte.pt

¹ This document solely represents the views of the IEEE 802.3 Extended EPON Study Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, IEEE 802®, or IEEE 802.3.

Motion #3

Motion #3

- » Approve the text of the informal communication with CCSA as posted at [ExEPON_1203_informal_communication_to_CCSA.pdf](#). SG Chair to deliver the approved document to recipients as necessary.
- » Moved by: Phillip Chang
- » Seconded by: Jordan Xu

(Procedural motion, > 50%)

Motion passed by voice vote without opposition

ODN ad-hoc

- » Purpose: study the ODN elements (connectors, splices, fibre, splitters/couplers) and develop loss budget and power budget models for the use of Study Group / Task Force (once approved at TF level) to facilitate validation of the power budget proposals from the membership.
The tools developed will be published in the tools directory of the SG / TF.
- » Duration: until the end of the SG charter; may be extended by TF if needed
- » Appointed ad-hoc chair:
Ed Mallette, Bright House Networks
- » Status update
 - > Ed has work conflicts and had to step down
 - > Volunteer(s) needed

Technical presentations

- 1) [ExEPON 1201 xu 1.pdf](#)

Comments from 802

Comments from Paul Nikolich

- » The scope and purpose (specifically when referring to "loss budgets") could use clarification for NesCom members that are not familiar with optics
- » I suggest the following changes (marked in red)
 - > 5.2 Scope: The scope of this project is to amend IEEE Std 802.3 to add at least one physical layer specification, possibly **optical** power budget extenders, and management parameters necessary for EPON to support **optical** loss budgets in excess of those specified in IEEE Std 802.3-2008 and IEEE Std 802.3av-2009.
 - > 5.4 Purpose: The purpose of this project is to extend the **optical** loss budgets supported by Ethernet Passive Optical Networks to support higher density and longer reach applications, while optimizing costs of ownership.
- » I think it would also be wise to add the objective of "1:64 split at 20 km" in the PAR, most likely in the Purpose statement.

Response to comments (I)

» Comment:

- > The scope and purpose (specifically when referring to "loss budgets") could use clarification for NesCom members that are not familiar with optics
- > I suggest the following changes (marked in red)
 - + 5.2 Scope: The scope of this project is to amend IEEE Std 802.3 to add at least one physical layer specification, possibly **optical** power budget extenders, and management parameters necessary for EPON to support **optical** loss budgets in excess of those specified in IEEE Std 802.3-2008 and IEEE Std 802.3av-2009.
 - + 5.4 Purpose: The purpose of this project is to extend the **optical** loss budgets supported by Ethernet Passive Optical Networks to support higher density and longer reach applications, while optimizing costs of ownership.

» Response from SG:

- > Approve
- > SG Chair to update PAR accordingly.

Response to comments (II)

» Comment:

- > I think it would also be wise to add the objective of “1:64 split at 20 km” in the PAR, most likely in the Purpose statement.

» Response from SG:

- > Reject
- > No other projects within 802.3 has ever included any of the objectives in their PAR statement or purpose. The SG believes it is inappropriate to include objectives in the PAR.

Motion #4

- » Approve responses to comments on project documents (PAR, 5 Criteria and Objectives) as recorded in ExEPON_1203_opening_SG.pdf, slides 31 – 32.
- » SG Chair to update the project documents offline and seek their re-approval at the 802.3 WG Closing Plenary meeting.
- » Grant the SG Chair editorial license to make changes to text of PAR, 5 Criteria and Objectives, as approved by the SG.

- » Moved by: Duane Remein
- » Seconded by: Phillip Chang

(Technical motion, $\geq 75\%$)

Yes: 7

No: 0

Abstain: 0

Motion passed

Motion #5

- » SG authorizes the SG Chair to request the extension of the ExEPON Study Group from 802.3 WG for an additional 6 months.
- » Moved by: Duane Remein
- » Seconded by: Wen Li

(Procedural motion, > 50%)

Motion passed by voice vote without opposition

Motion #6

- » SG approves the revised PAR, as shown in ExEPON_1203_PAR_updated.pdf, with changes from November 2011 PAR shown in red.
Grant SG Chair editorial license to make changes as needed.
- » Moved by: Duane Remein
- » Seconded by: Wen Li

Y: 6, N:0, A: 0

(Technical motion, $\geq 75\%$)

Motion passed

Future Meetings

- » See: <http://www.ieee802.org/3/interims/index.html>

- » 2012.05 802.3 Interim Meeting
 - > Hilton Minneapolis, Minneapolis, MN, USA
 - > Monday, May 14th through Friday, May 18th, 2012

- » 2012.07 802 Plenary Meeting
 - > Grand Hyatt Manchester, San Diego, CA, USA
 - > Monday, July 16th through Thursday, July 19th, 2012

- » 2012.09 802 Interim Meeting
 - > ITU-T facilities, Geneva, CH
 - > Monday September 24th through Friday, September 28th, 2012

- » Anyone interested in hosting a meeting contact me for more information.

Straw Poll #1

- » I will attend the IEEE 802.3 interim meeting in Hilton Minneapolis, Minneapolis, MN, USA, Monday, May 14th through Friday, May 18th, 2012
 - > Yes: 3
 - > Maybe Yes: 2
 - > Maybe No: 0
 - > No: 0

- » I will attend the meeting of the Extended EPON Study Group, taking place during the IEEE 802 interim meeting during the week of May 14th:
 - > Yes: 4
 - > Maybe Yes: 2
 - > Maybe No: 0
 - > No: 0

Thank You!