

# Agenda and General Information

IEEE 802.3

Next Generation

100Gb/s Optical Ethernet Study Group

Dan Dove

HP Networking

Chicago, Illinois – 9/14/2011

# Agenda

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- *Appointment of Recording Secretary*
- *Confirmation of Chair*
- 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
- Liaisons and Communications
- Presentations
- Motions and Closing Business
- Future Meetings

# Study Group Decorum



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

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- Establish high level goals/schedule for the group
- Solidify the “easy” objectives
- Define the areas where work is required
- Define a timeframe for closing on the tough objectives
- Lay the ground work for the next meeting

# Reflector and Web

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- To subscribe to the *Next Generation 100Gb/s Optical Ethernet* 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-802-3-100GNGOPTX <yourfirstname> <yourlastname>  
**end**

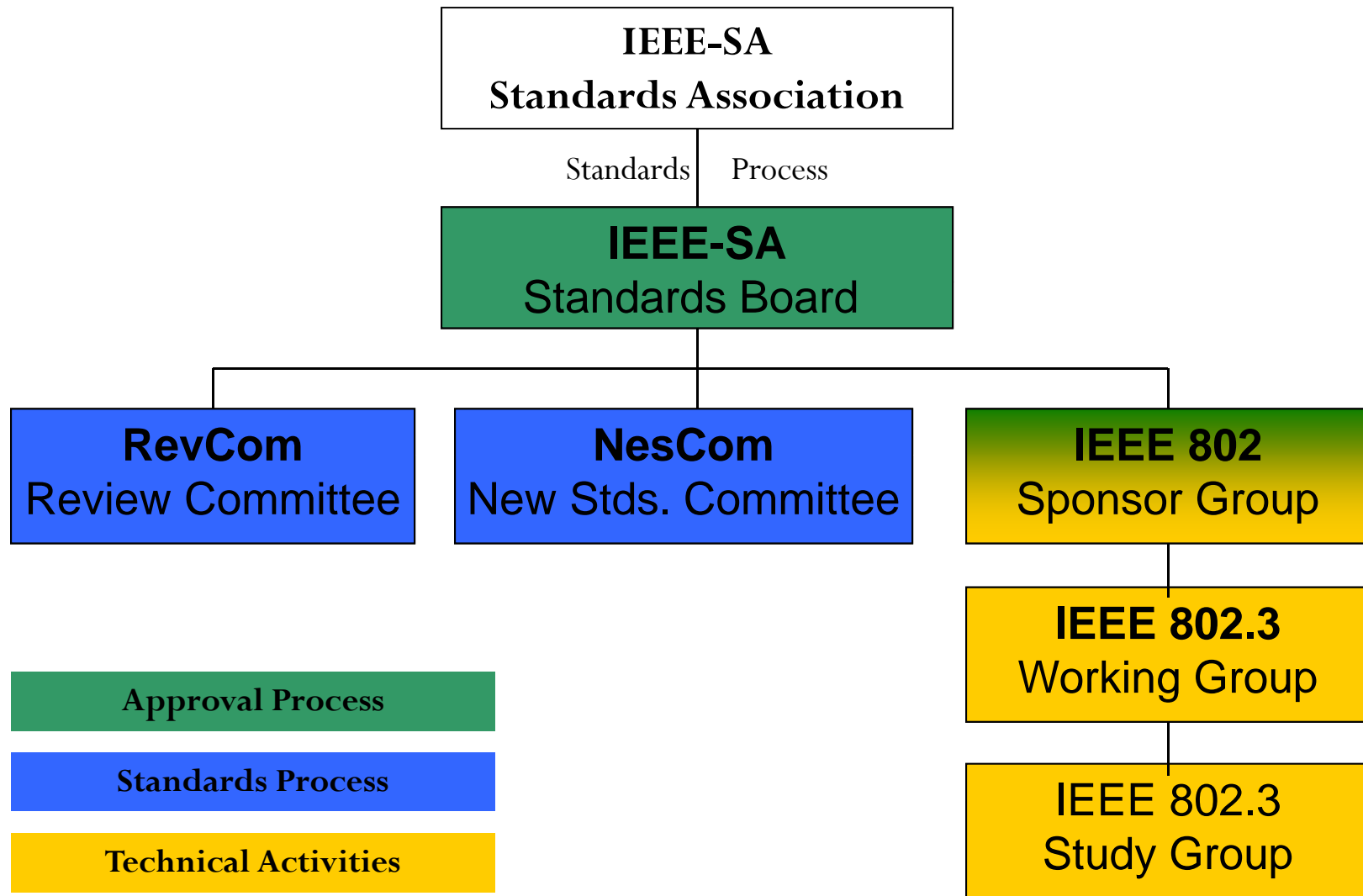
- Send *Next Generation 100Gb/s Optical Ethernet* reflector messages to:  
**STDS-802-3-100GNGOPTX@LISTSERV.IEEE.ORG**
- Study Group web page URL:  
**<http://www.ieee802.org/3/100GNGOPTX/index.html>**

# Ground Rules

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- 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

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- **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)



# 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.**

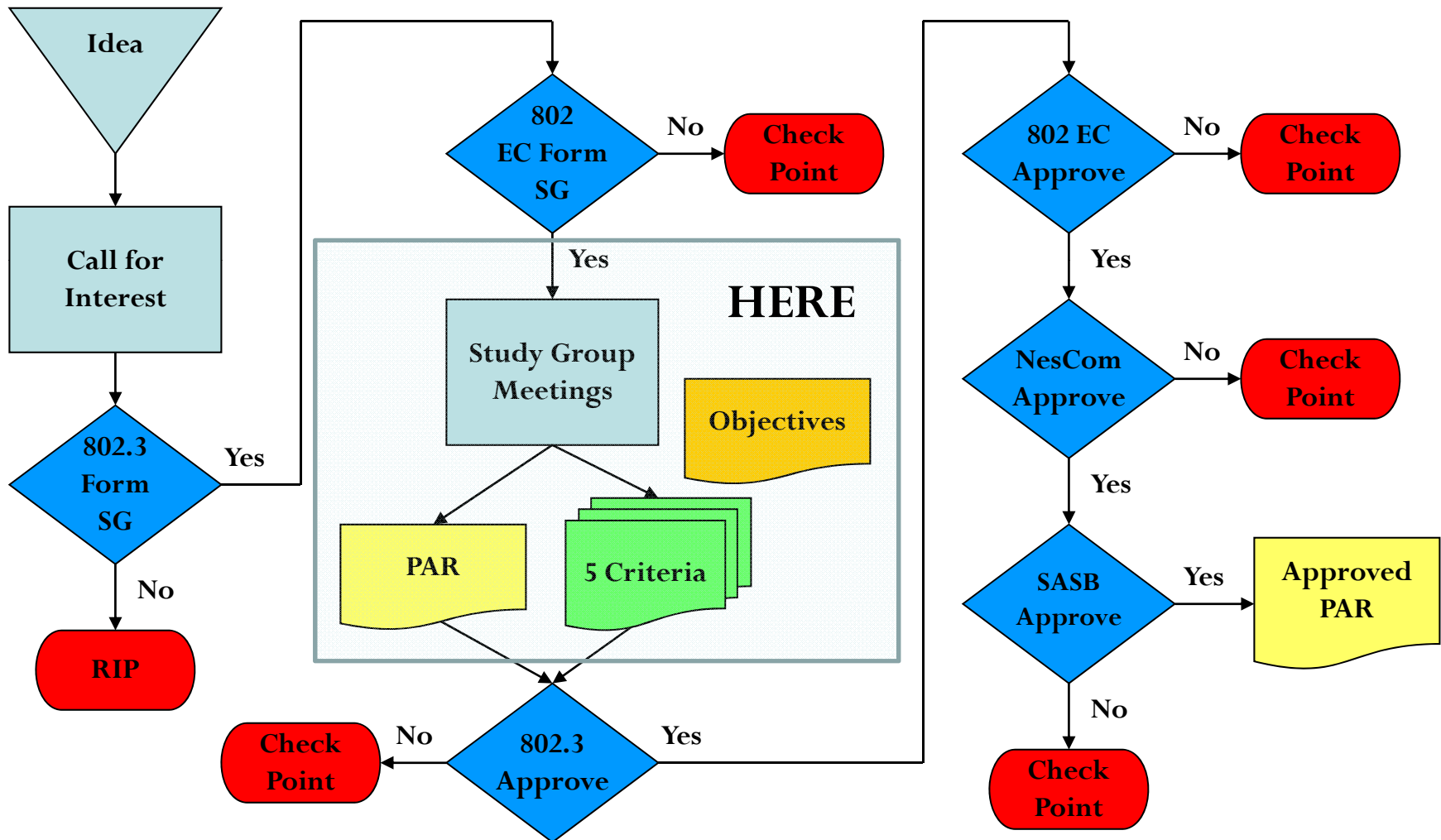
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If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at [patcom@ieee.org](mailto:patcom@ieee.org) or visit <http://standards.ieee.org/about/sasb/patcom/index.html>

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>

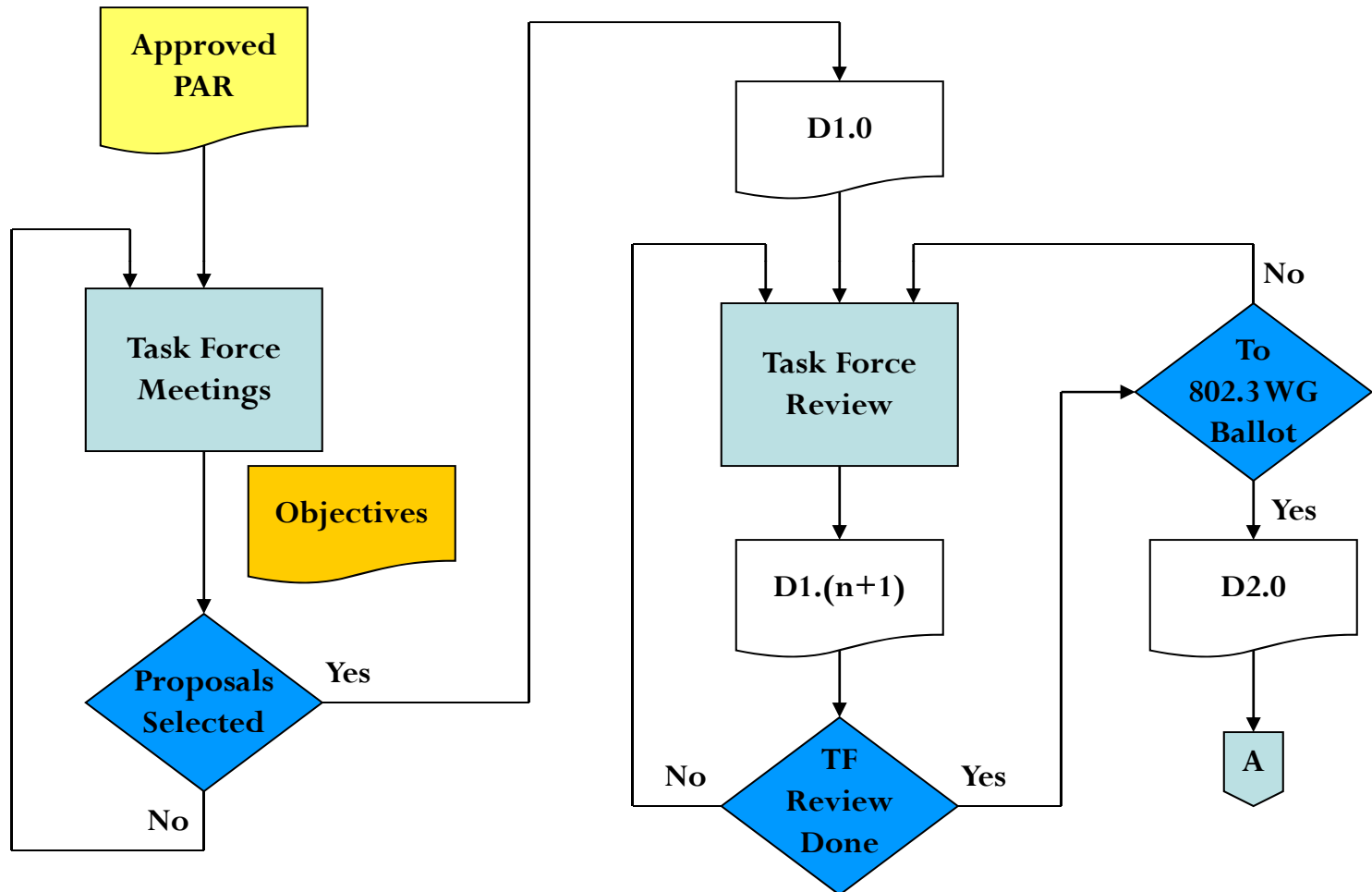


# Overview of IEEE 802.3 Standards Process (1/5)- Study Group Phase

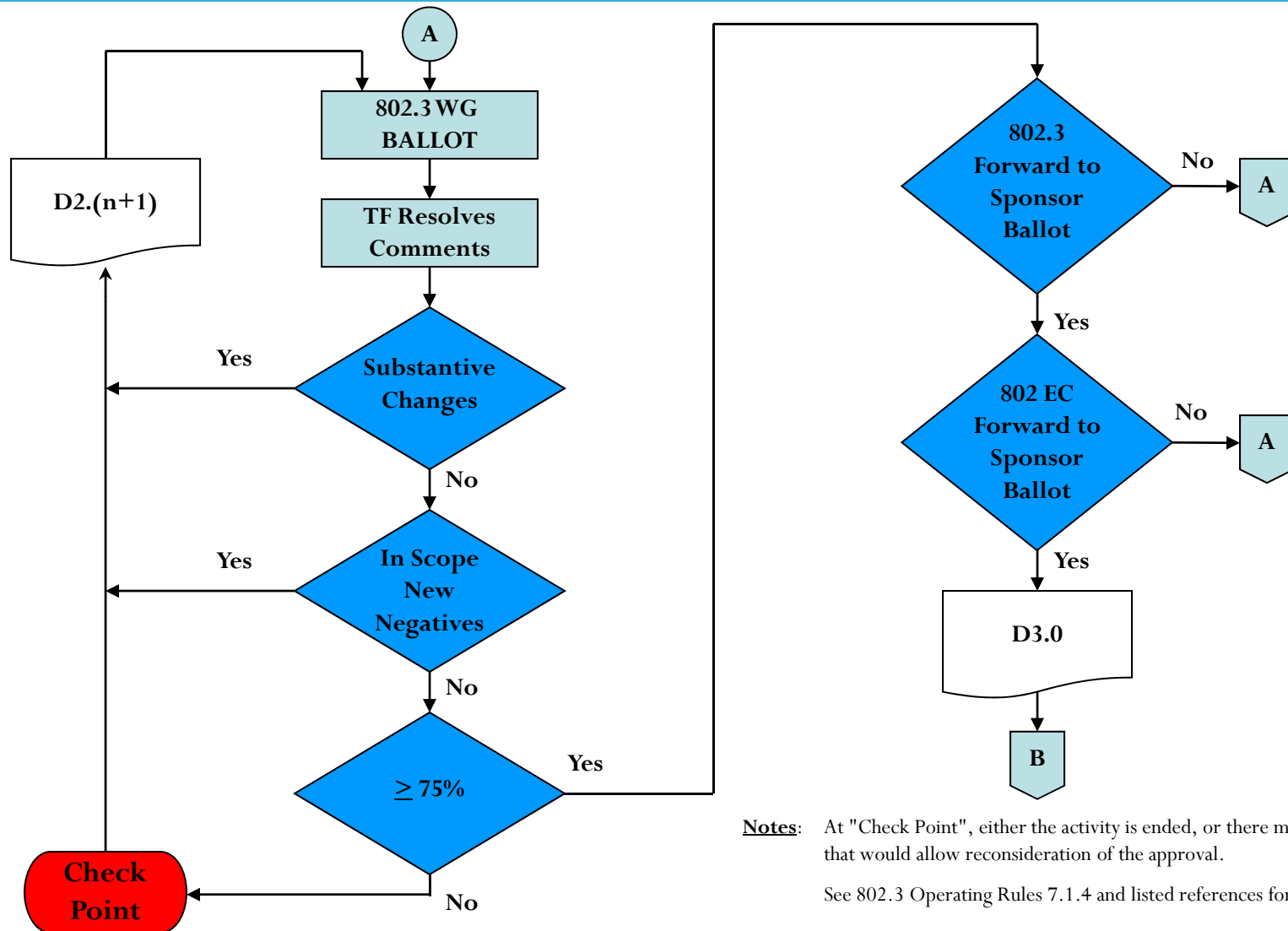


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

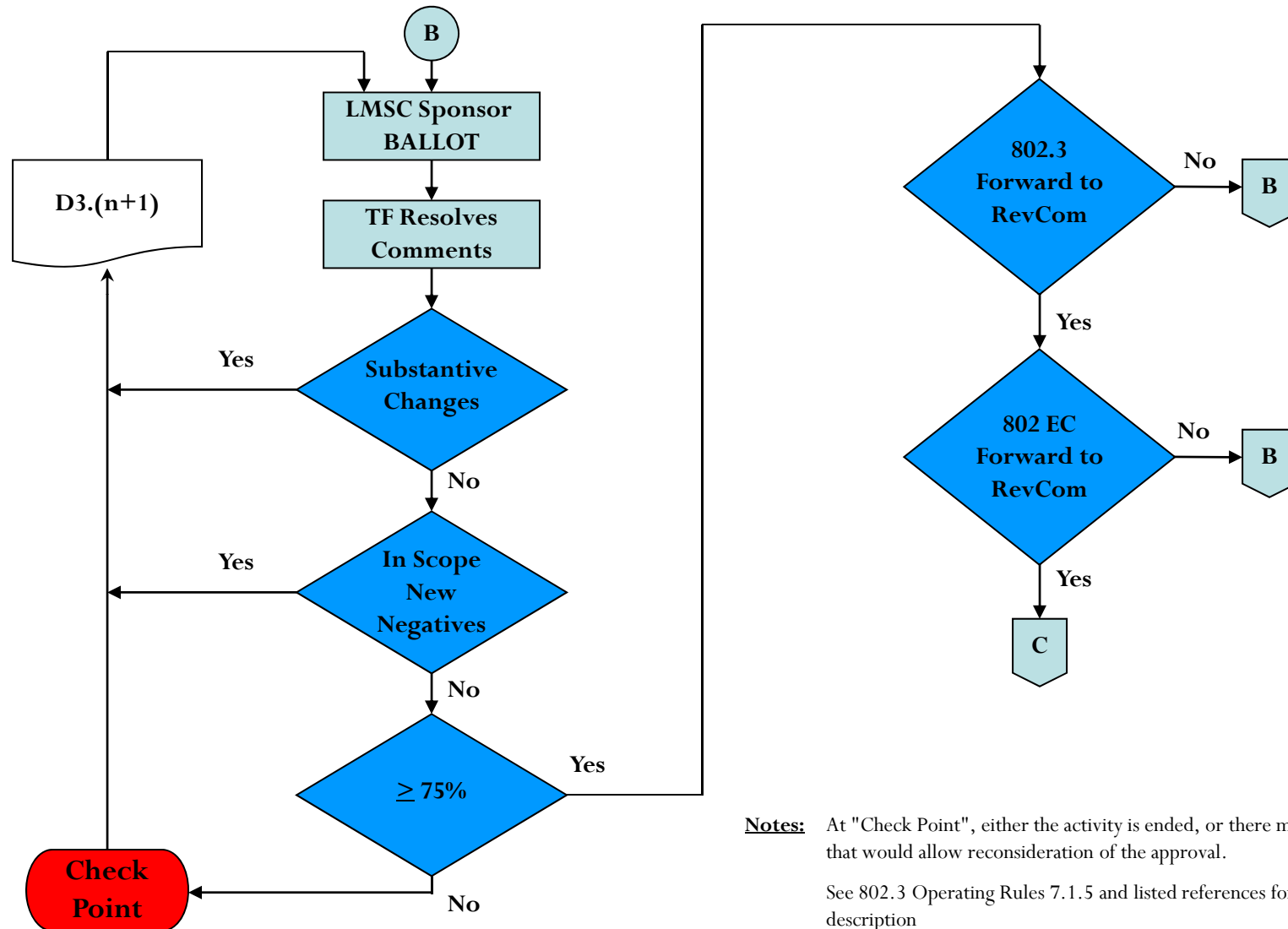


# Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



**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

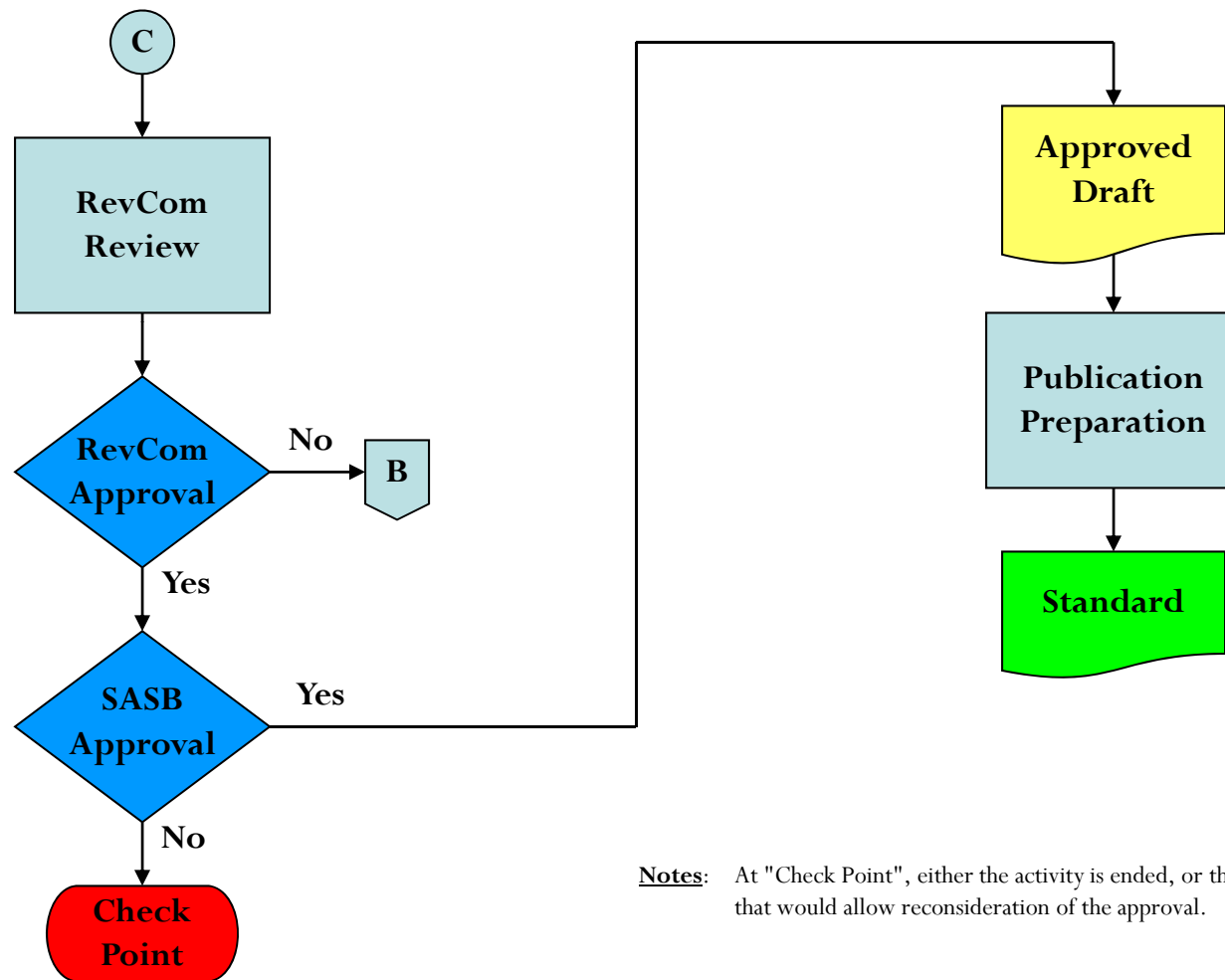
# Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



**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

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- Normal function is to draft a complete PAR and Five Criteria
- Provide a plenary week tutorial to the LMSC <if appropriate>.
- 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 July 2011 Plenary Motion)

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Move the IEEE 802.3 Working Group  
authorizes the formation of a study group  
for “***Next Generation 100 Gigabit Optical  
Ethernet***”



# Development of Objectives

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## Example # 1 – IEEE P802.3ba Objectives

- Support full-duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum FrameSize of current 802.3 standard
- Support a BER better than or equal to  $10^{-12}$  at the MAC/PLS service interface
- Provide appropriate support for OTN
- Support a MAC data rate of 40 Gb/s
- Provide Physical Layer specifications which support 40 Gb/s operation over:
  - at least 10km on SMF
  - at least 100m on OM3 MMF
  - at least 7m over a copper cable assembly
  - at least 1m over a backplane
- Support a MAC data rate of 100 Gb/s
- Provide Physical Layer specifications which support 100 Gb/s operation over:
  - at least 40km on SMF
  - at least 10km on SMF
  - at least 100m on OM3 MMF
  - at least 7m over a copper cable assembly

# Development of Objectives

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## Example # 2 – IEEE P802.3bg Objectives

- 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
- Support a MAC data rate of 40 Gb/s
- Use the 40GBASE-R PCS and PMA
- Use only existing electrical and logical interfaces from IEEE Std 802.3 as modified by IEEE P802.3ba
- Provide Physical Layer specification which support 40 Gb/s operation over at least 2 km on SMF.
- Provide optical compatibility with existing carrier 40Gb/s client interfaces (OTU3/STM-256/OC-768/40G POS).

# Development of Objectives

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## Example # 3 – IEEE P802.3bj Objectives

- Support full-duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum FrameSize of current 802.3 standard
- Support a BER of better than or equal to  $10^{-12}$  at the MAC/PLS service interface
- Define a 4-lane 100 Gb/s backplane PHY for operation over links consistent with copper traces on “improved FR-4” (as defined by IEEE P802.3ap or better materials to be defined by the Task Force) with lengths up to at least 1m.
- Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper twin-axial cables with lengths up to at least 5m.

# Project Documentation

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- PAR
  - Title – What are we calling this project?
  - Scope – What is the focus of the project?
  - Purpose – Why do we want to do this?
- 5 Criteria
  - Broad Market Potential
  - Compatibility with IEEE Std. 802.3
  - Distinct Identity
  - Technical Feasibility
  - Economic Feasibility

# Liaisons and Communications

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- **Joint P802.3bj/100G Optical SG Joint Session**
  - 5:00 - 6:30 pm on Wednesday (14 Sept)
  - An opportunity to work together and ensure alignment between the two projects.
  - Room location ( Wolf Point )
- **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
- **ITU-T**
  - Proposed liaison activity to ensure alignment.

# Attendance

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- Tutorial Material on attendance tool
  - [http://ieee802.org/3/minutes/jul11/0711\\_imat.pdf](http://ieee802.org/3/minutes/jul11/0711_imat.pdf)
- URL (Valid for this meeting only)
  - URL: <<<http://seabass.ieee.org/imat>>>
  - suntimes

# Wednesday Presentations

Wednesday 14-Sept-11

Note –Times listed are subject to change.

Presentation Time	Presenter	Affiliation	Title	Filename
9:00 - 9:45	Dan Dove	Hewlett Packard	Agenda & Objectives of Meeting	dove_01_0911_NG100GOPTX.pdf
9:45 - 10:30	Pete Anslow	Ciena	Objectives for Next Generation 100GbE Optical Interfaces	anslow_01_0911_NG100GOPTX.pdf
10:30 - 11:00	Ali Ghiasi	Broadcom	100G-Optics Next Gen Possible PMD Set	ghiasi_01_0911_NG100GOPTX.pdf
11:00 - 11:15			<b>BREAK</b>	
11:15 - 12:00	Chris Cole	Finisar	Investigation Topics	cole_01_0911_NG100GOPTX.pdf
12:00 - 13:00			<b>LUNCH</b>	
13:00 – 13:45	Mark Nowell	Cisco	Next-Gen 100G PMDs: Considerations when defining objectives	nowell_01_0911_NG100GOPTX.pdf
13:45 - 14:20	Ryan Latchman	Mindspeed	Considerations for Electrical Objectives	latchman_01_0911_NG100GOPTX.pdf
14:20 - 15:00	Ali Ghiasi	Broadcom	Application Space of CAUI-4/OIF-VSR and cPPI-4	ghiasi_02_0911_NG100GOPTX.pdf
15:00 - 15:30			<b>BREAK</b>	
15:30 - 16:00	Ali Ghiasi	Broadcom	Feasibility of Un-retimed 4x25G Host to Module “cPPI-4	ghiasi_03_0911_NG100GOPTX.pdf
16:00 - 17:00	Dan Dove	Hewlett Packard	Open Discussion and Motions	
17:15 - 18:30	John D'Ambrosia	Dell	Areas Of Common Interest (p802.3bj & Next Generation 100G Optics SG)	dambrosia_01_0911_NG100GOPTX.pdf
18:30	Dan Dove	Hewlett Packard	RECESS till 9am Thursday 15-Sept-2011	

# Thursday Presentations

Thursday 15-Sept-11

Note –Times listed are subject to change.

Presentation Time	Presenter	Affiliation	Title	Filename
9:00 - 9:15	Dan Dove	Hewlett Packard	RESUME	
9:15 - 10:00	Piers Dawe	IPtronics	Portfolio of short-reach link types, retimed and unretimed electrical interfaces	dawe_01_0911_NG100GOPTX.pdf
10:15 - 10:45	John Petrilla	Avago Technologies	100G Next Gen Multi-mode Optics	petrilla_01_0911_NG100GOPTX.pdf
10:45 - 11:00			<b>BREAK</b>	
11:00 - 11:30	Alan Flatman	LAN Technologies	Data Centre Link Lengths & Deployment of Optical Fibre	flatman_01_0911_NG100GOPTX.pdf
11:30 - 13:00			<b>LUNCH</b>	
13:00 - 13:45	Paul Kolesar	Commscope	Fiber Cabling Trends in Data Centers	kolesar_01_0911_NG100GOPTX.pdf
13:45 - 14:20	Paul Kolesar	Commscope	100G-SR4 link modeling	kolesar_02_0911_NG100GOPTX.pdf
14:20 - 15:00	Wenbin Jiang	Cosemi Technologies	Extend 100GBASE-SR4 Wavelength to 980 nm	jiang_01_0911_NG100GOPTX.pdf
15:00 - 15:30			<b>BREAK</b>	
15:30 – 15:45	Chris Cole	Finisar	Investigation Topics <b>(Revised)</b>	cole_02_0911_NG100GOPTX.pdf
15:45 – 17:00	Dan Dove	Hewlett Packard	Wrap-up & Future Meeting Plans	dove_02_0911_NG100GOPTX.pdf
	Dan Dove	Hewlett Packard	Adjourn	



# Meeting Map

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- Image to be added prior to meeting

# Future Meetings

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- See: <http://www.ieee802.org/3/interims/index.html>
- **Monday, November 7th through Thursday, November 10th, 2011**
  - Hyatt Regency Atlanta
  - Atlanta, USA
- **Week of January 23, 2012**
  - IEEE P802.3 interim session  
All IEEE 802.3 Task Force and Study Groups will meet
  - Hosted by Ethernet Alliance
  - Venue and meeting days TBD
- **Monday, March 12th through Thursday, March 15th, 2012**
  - Hilton Waikoloa Village
  - Big Island, Hawaii
  - USA
  
- Anyone interested in hosting a meeting contact me.



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# Thank You!