

Agenda and General Information

IEEE 802.3

Distinguished Minimum Latency Traffic in
a Converged Traffic Environment
(DMLT) Study Group

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Phoenix, AZ,

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Agenda

- Appointment of Recording Secretary
- Confirmation of Chair
- Welcome and Introductions
- Approve Agenda
- 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
- Presentations of requirements
- PAR, 5C, and objectives preparation
- Motions and Closing Business
- Future Meetings

Study Group 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 of submitted presentations
- PAR, 5C, and objectives preparation
- Lay the ground work for the next meeting

Big ticket items

- Summarize presented requirements to be the basis for the PAR
- Summarize presented proposals to draft the scope and objectives to fit the requirements
- Organize PAR drafting process

- Lay the ground work for the next meeting

Reflector and Web

- To subscribe to the DMLT reflector, send an email to:

ListServ@ieee.org

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

subscribe stds-802-3-DMLT <yourfirstname> <yourlastname>

end

- Send <<*Study Group Name: IEEE 802.3 DMLT*>> reflector messages to:

[stds-802-3-DMLT @listserv.ieee.org](mailto:stds-802-3-DMLT@listserv.ieee.org)

- Study Group web page URL:

<http://www.ieee802.org/3/DMLT/>

Study Group Private Area

No private area established up to now

- URL: <<*Study Group Private Area URL*>>

- Username: <<XXXXXX>>
- Password: <<XXXXXXXX>>

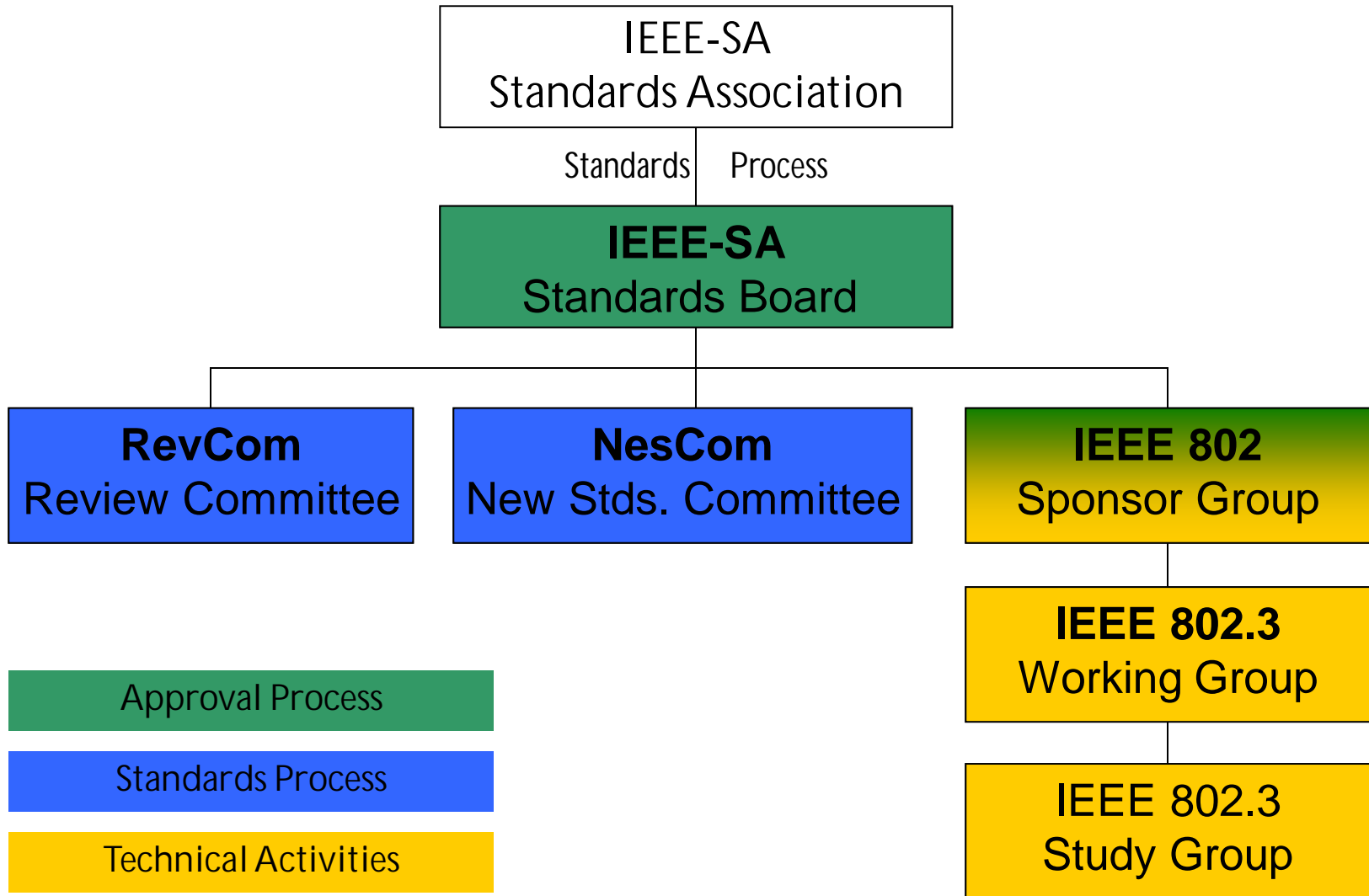
Note: The private area is used to store the draft, and on an exception basis, other copyrighted material shared through a liaison. Since a Study Group does not generate a draft, a private area should only be requested when required, and only at that point this slide will be filled.

- Write it down...
- Note - The 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
- 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

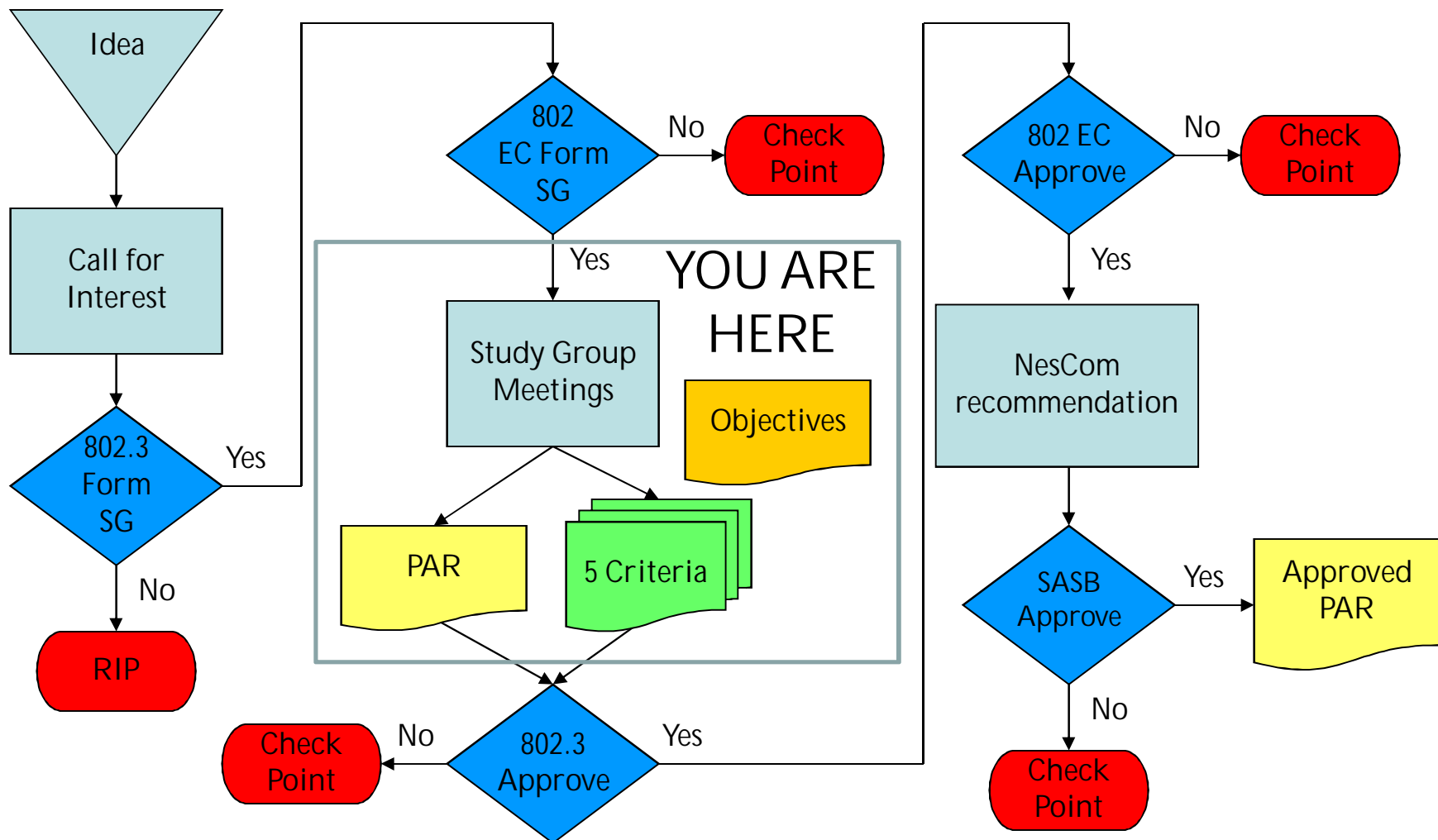
- | **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
- | **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
- | **Don't discuss specific license rates, terms, or conditions.**
 - | 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.

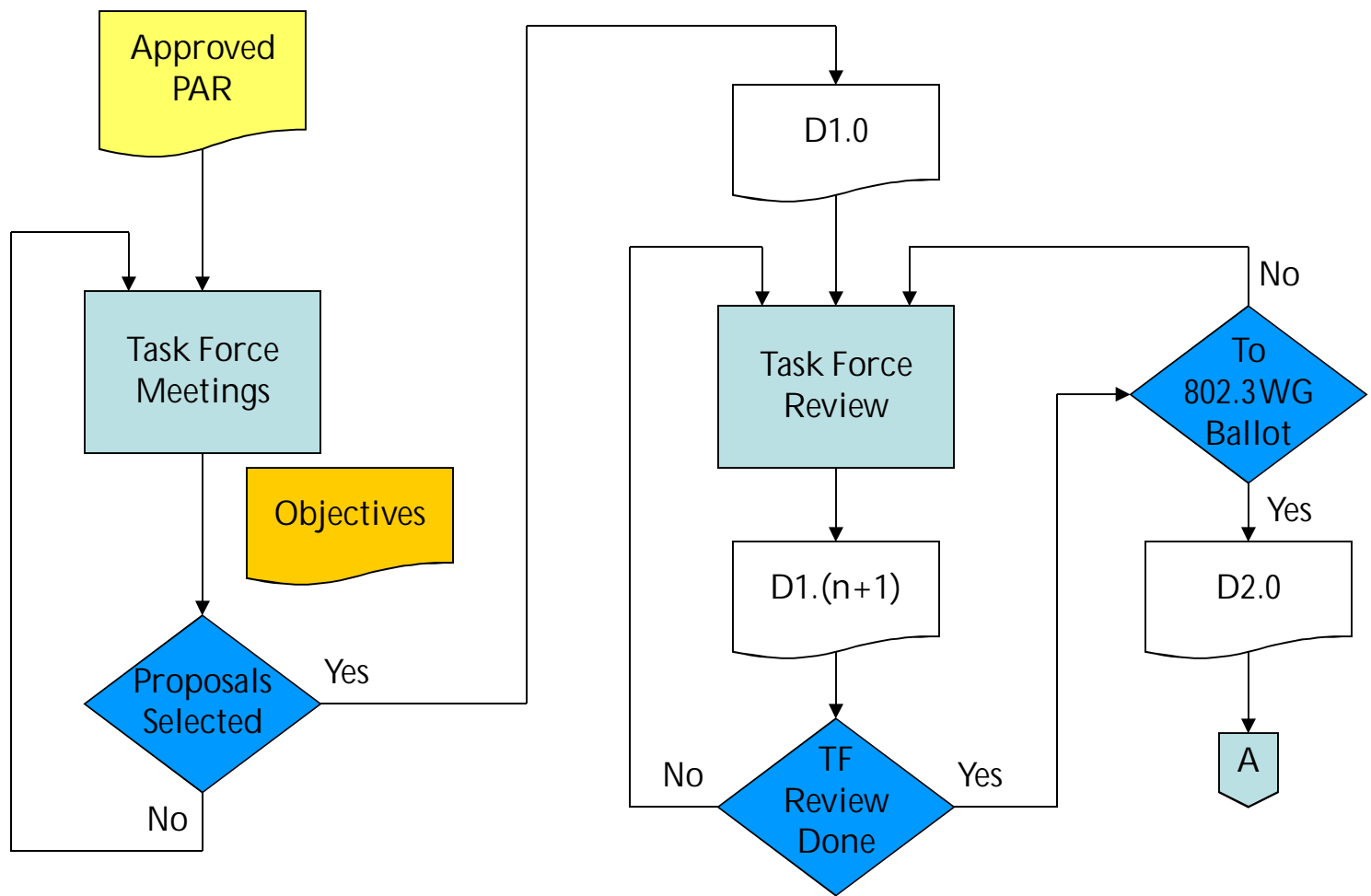
This slide set is available
at <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt>

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

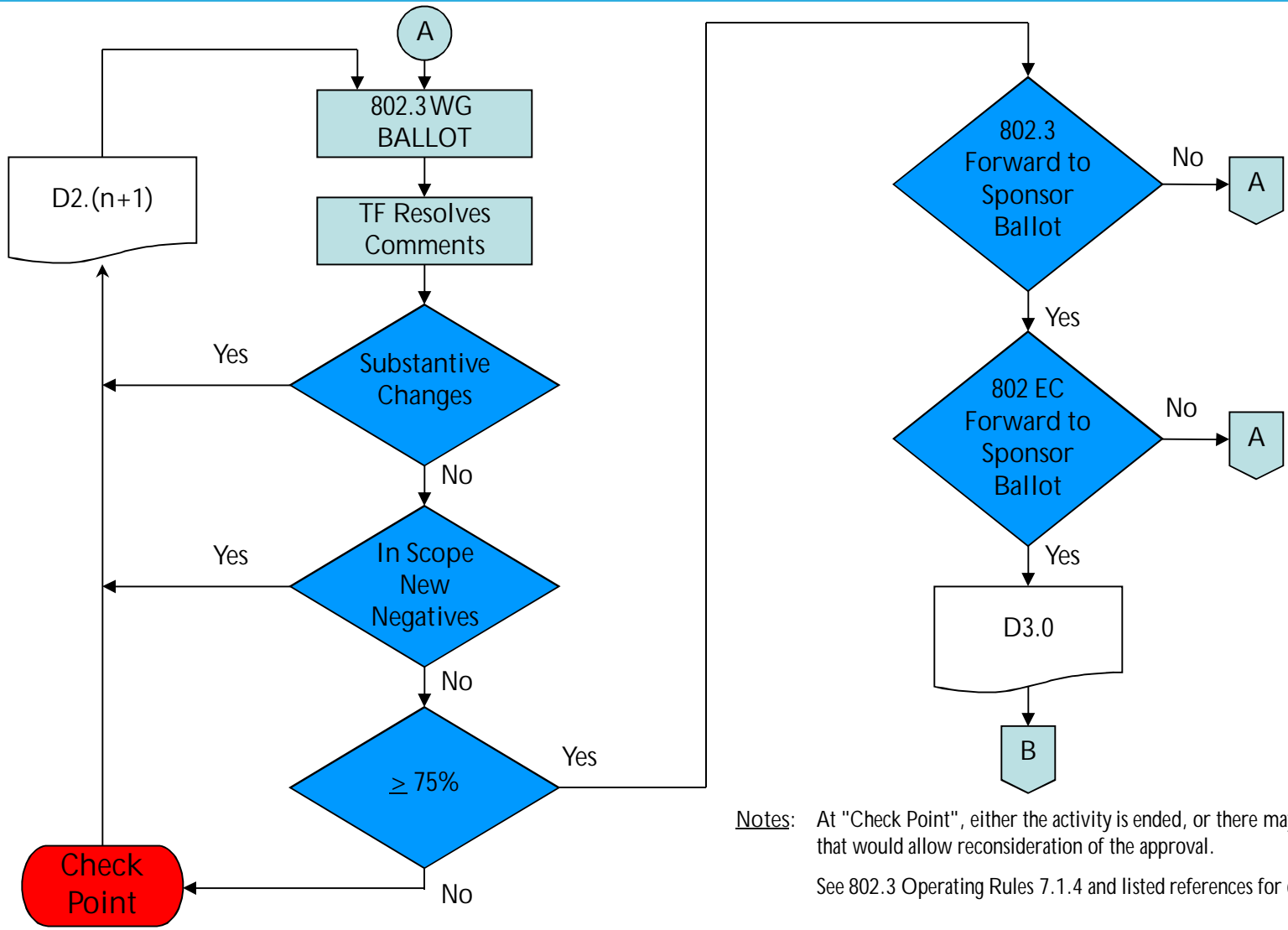


Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

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

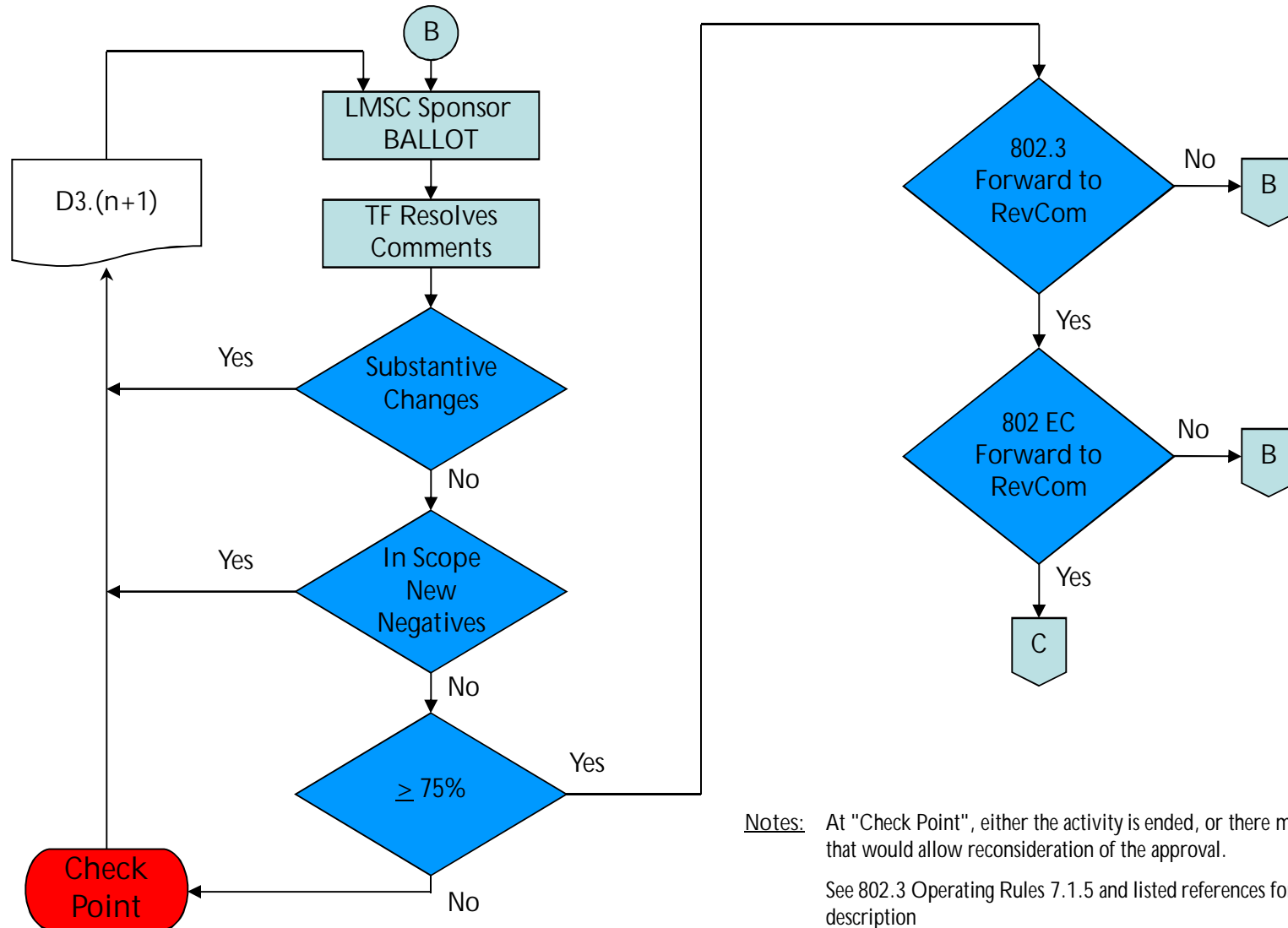


Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase



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

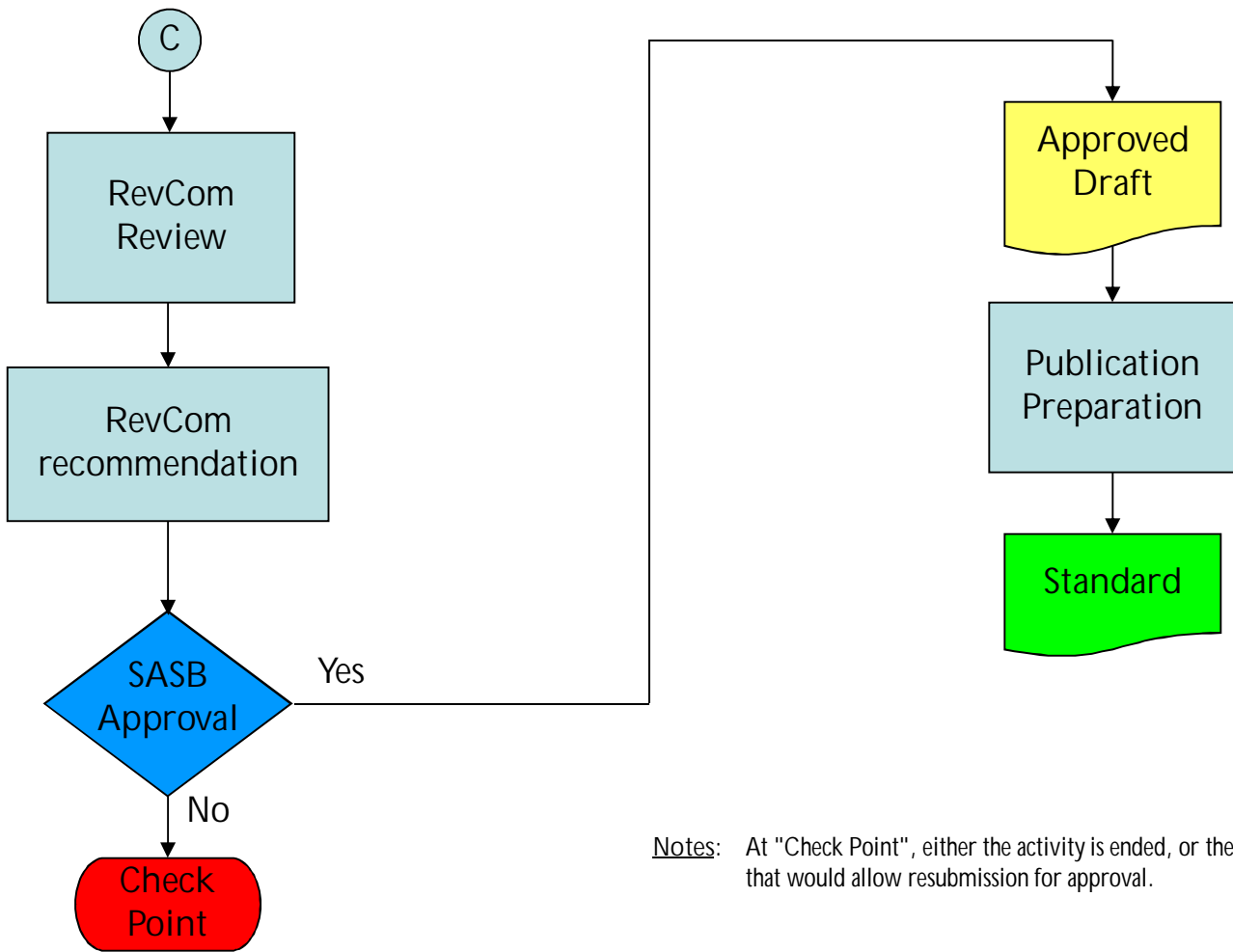
Overview of IEEE 802.3 Standards Process (4/5)- Sponsor Ballot Phase



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 resubmission for 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 IEEE 802.3 WG, IEEE 802 EC, IEEE-SA NesCom and IEEE-SA Standards Board.
- SG only exists for 6 months
 - Extensions can be requested
 - Voted on by IEEE 802.3
 - Ratified by IEEE 802 EC
- Development of Objectives helps set the goals for the Task Force
- Consensus required to move forward
- Not a goal – choosing a solution.

Request for Formation of Study Group (as per San Antonio 2012 Plenary Motion)

Title: IEEE 802.3 Distinguished Minimum Latency Traffic in a Converged Traffic Environment Study Group

Chair: Ludwig Winkel
Acknowledgement of acting chair was done by IEEE 802.3 chair at the beginning of the session.

Liaisons and Communications

None

Action Items

None

Attendance

- Tutorial Material on attendance tool
 - http://ieee802.org/3/minutes/mar11/0311_imat.pdf
- URL (Valid for this meeting only)
 - URL: imat.ieee.org
 - Password will be provided verbally

Meeting hours

- Meeting starts at 9:00am per day
- Morning break at 10:30am
- Lunch 12:00 – 13:30
- Afternoon break at 3pm

Presentations

Albert Tretter	Industrial Requirements for a converged network with Distinguished Minimum Latency (40 min)
Anatoly Moldovansky	Industrial Requirements for a converged network (30 min)
Oliver Kleineberg	Requirements from the perspective of mission-critical automation (30 min)
Christian Boiger	Improving Current QoS Mechanisms (40 min)
Pat Thaler	MAC Merge Sublayer to Support Minimum Latency Scheduled Traffic (30 min)
Geoff Thompson	Re-Viewing Preemption
Karl Weber	General considerations and Test methods
Yong Kim	Straw man PAR and 5C, objectives

Note –Times listed are subject to change.

Meeting Map

Tu AM1:	General	Ludwig
Tu AM 2	Presentations	See list
Tu PM1	Presentations	See list
Tu PM2	Presentations	See list
We AM1	Summarize presented requirements to be the basis for the PAR Summarize presented proposals to draft the scope and objectives to fit the requirements	
We AM2	Organize PAR drafting process	
We PM1	Proposals for PAR and Objectives	
We PM2	Next meetings	

Summary of the Presentations

Albert:

Convergence is the demand from end users. That means to efficiently converge all network services – scheduled, reserved and best-effort traffic – onto the same media. But for this to occur, particularly in certain market segments such as industrial automation and automotive, lower end-to-end latency and real-time control are required in support of scheduled traffic in time-sensitive LANs.

Looking at additional opportunities to expand the overall Ethernet market and their associated technology requirements.

The laws of physics are not negotiable! The requirement is that the scheduled traffic is budgeted within the scheduled resources and those resources are respected by best effort traffic. In Industrial Automation Applications different media types and speed are used and required. These are already provided by IEEE 802.3.

Anatoly:

Eliminating the need of parallel networks is the demand from end users. It is an attractive way forward. The problems were shown at an example of a paper machine with a lot of axles synchronized via a cyber axles instead of mechanical axles.

Summary of the Presentations

Oliver:

Mission critical automation examples includes offshore wind parks, energy distribution (substations), oil-productions, etc.. These are additions to the traditional industrial automation applications. These require determinism in time and application specific protocols (e.g. PROFINET, ETHERNET/IP, Internet protocol).

The anticipated IEEE 802.1/3 solution will enable the migration or enhancement of many of different existing solutions. Even if several of these solutions are successful on the market, the market leader are working together to produce a common IEEE 802 based solution.

Speed ,media, cable types needs to be flexible. Robustness, resilience (mostly ring topology), etc. is required. The DMLT solution needs to be available for all physical wired media. Mechanisms to facilitate device setup need to be included in the project.

Christian:

Interoperability at the higher layer is crucial.

Reducing the interference of traffic classes is important for the intended IEEE 802.3 std.

QoS mechanisms: Strict priority, reserved traffic (i.e. credit based shaper), scheduled traffic (i.e. time aware shaper; needs engineered traffic).

Scheduled traffic, new QoS Mechanisms are the recommended improvements in the ranking of Christian. Next is Reserved traffic and not really recommended strict Priority.

Set of 802.1/802.3 mechanisms is necessary to provide a whole solution rather than single mechanism.

Summary of the Presentations

Pat:

Shows architectures for preemption in PHY, MAC or a new sublayer. MAC merge sublayer connects two MACs to a common PHY. Recommends making no change to MAC and using MAC Merge sublayer.

Geoff:

Proposal of an approach similar to Pat's presentation showing a PHY implementation with a PHY MUX similar to IEEE 802.9a.

Karl:

Key factor is improved performance for scheduled traffic with minimum impact on best effort traffic. Best effort traffic allows no traffic restrictions.

Several evaluations strategies discussed:

- Building real components
- Simulation of the components
- Virtualization concept

Providing the results of some use case evaluations.

Future Meetings

- See: <http://www.ieee802.org/3/interims/index.html>
- March 2013, Plenary
 - Orlando, FL, USA
 - 2013-03-18 ... 2013-03-21
- Mai 2013, Interim
 - Victoria, BC, Canada
 - 2013-05-13 ... 2013-05-16
- July 2013, Plenary
 - Geneva, Switzerland
 - 2013-07-15 ... 2013-07-18
- Anyone interested in hosting a interim meeting contact me or the IEEE 802.3 Executive Secretary [Steve Carlson](#).

Thank You!