Agenda and General Information

IEEE P802.3ch Multi-Gigabit Automotive Ethernet PHY Task Force

Steve Carlson, Chair
High Speed Design, Inc., Robert Bosch
Orlando, FL, USA, November 8 - 9, 2017

Agenda

- Jon Lewis, Dell EMC – Recording Secretary
- Welcome and Introductions
- Approve Agenda
- Approve September 2017 Task Force Minutes
- 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 May Meeting
- Presentations
- Motions and Closing Business
- Future Meetings

Task Force Decorum

- Photography or recording by permission only (December 2016 IEEE-SA Standards Board Ops Manual 5.3.3.2)
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (December 2016 IEEE-SA Standards Board Ops Manual 5.3.3.3)
- 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 the meeting

- Review Task Force Operation
- Hear presentations on objectives (media and use)
- Begin the link segment selection process
  - We're still not making good progress here
- Lay the ground work for the next meeting

Big ticket items

- **Link segment selection begins**
  - We need contributions!
  - What can we do to move forwards?
- OEM and Tier 1 reports on media types pro/con
- Lay the ground work for the next meeting
- Remember---we are a contribution driven organization!

Reflector and Web

- To subscribe to the Multi-Gigabit Automotive Ethernet PHY reflector, send an email to: *ListServ@ieee.org*

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

  > *subscribe* **STDS-802-3-NGAUTO** *<yourfirstname> <yourlastname>*
  >
  > *end*

- Send Multi-Gigabit Automotive Ethernet PHY reflector messages to:
  STDS-802-3-NGAUTO *@listserv.ieee.org*

- Task Force web page URL:
  http://www.ieee802.org/3/ch/index.html

Task Force Private Area

URL: **http://www.ieee802.org/3/ch/private/index.html**

- Username: 802.3ch
- Password: ********

- 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
- NO product pitches
- NO corporate pitches
- NO prices!!!
  - This includes costs, ASPs, etc. no matter what the currency
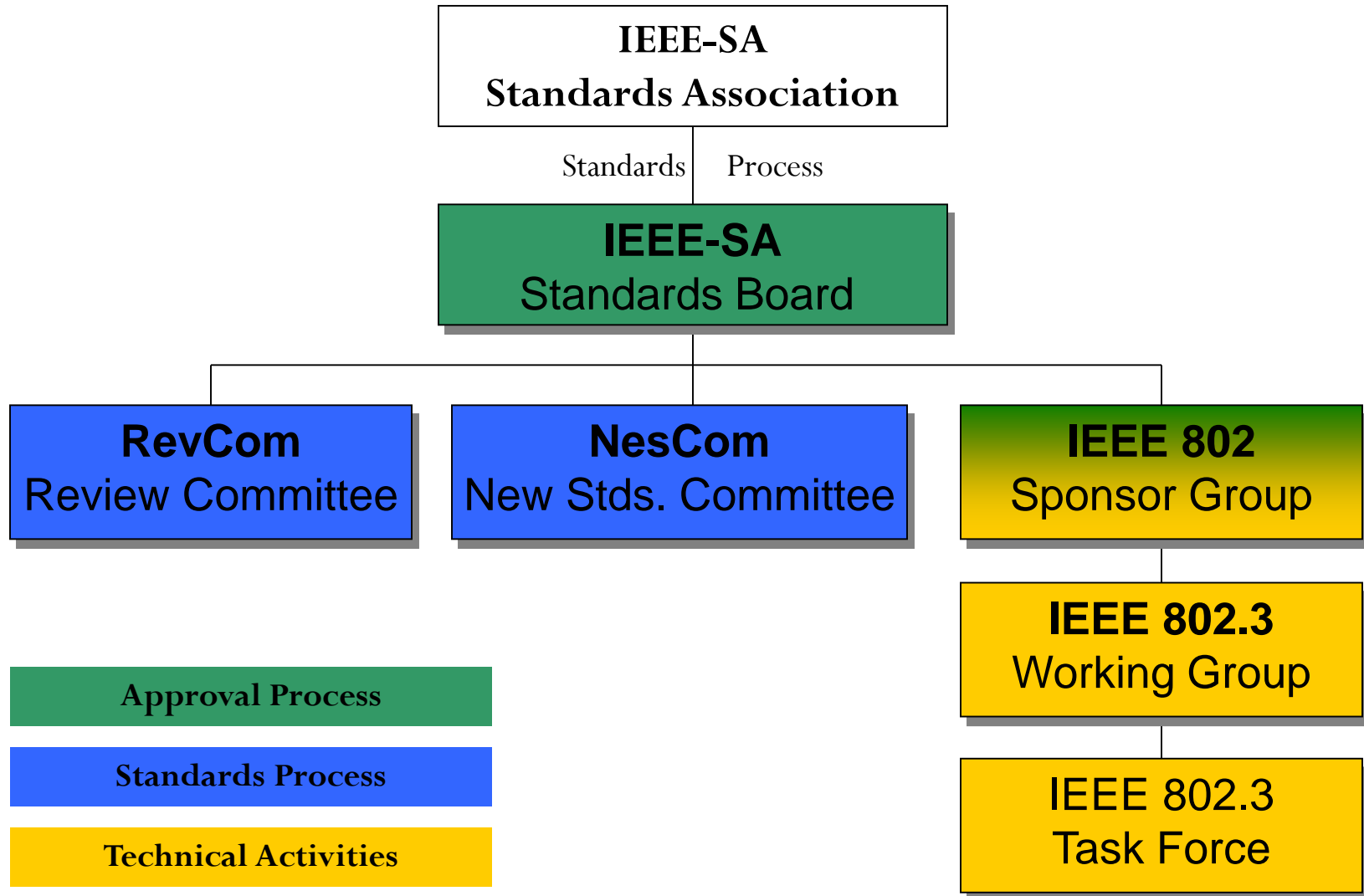- NO restrictive notices

Attendance

- Tutorial Material on attendance tool
  - http://ieee802.org/3/minutes/attendance_procedures.pdf

- Access details
  - URL: http://imat.ieee.org/ Please sign the paper attendance sheet

IEEE Structure

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                    ┌──────────────────────────┐
                    │        IEEE-SA           │
                    │  Standards Association   │
                    └──────────────────────────┘
                          Standards │ Process
                    ┌──────────────────────────┐
                    │        IEEE-SA           │
                    │    Standards Board       │
                    └──────────────────────────┘
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RevCom Review Committee	**NesCom** New Stds. Committee	**IEEE 802** Sponsor Group

IEEE 802.3 Working Group

IEEE 802.3 Task Force

Approval Process

Standards Process

Technical Activities

Important Bylaws and Rules

- **IEEE-SA Operations Manual**
  http://standards.ieee.org/develop/policies/sa_opman/

- **IEEE-SA Standards Board Bylaws**
  http://standards.ieee.org/develop/policies/bylaws/

- **IEEE-SA Standards Board Operations Manual**
  http://standards.ieee.org/develop/policies/opman/

- **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/devdocs.shtml

- **IEEE 802 LAN/MAN Standards Committee (LMSC) Working Group (WG) Policies and Procedures**
  http://www.ieee802.org/devdocs.shtml

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

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.

15 March 2015

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(Optional to be shown)

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**

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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

15 March 2015

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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

IEEE

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.
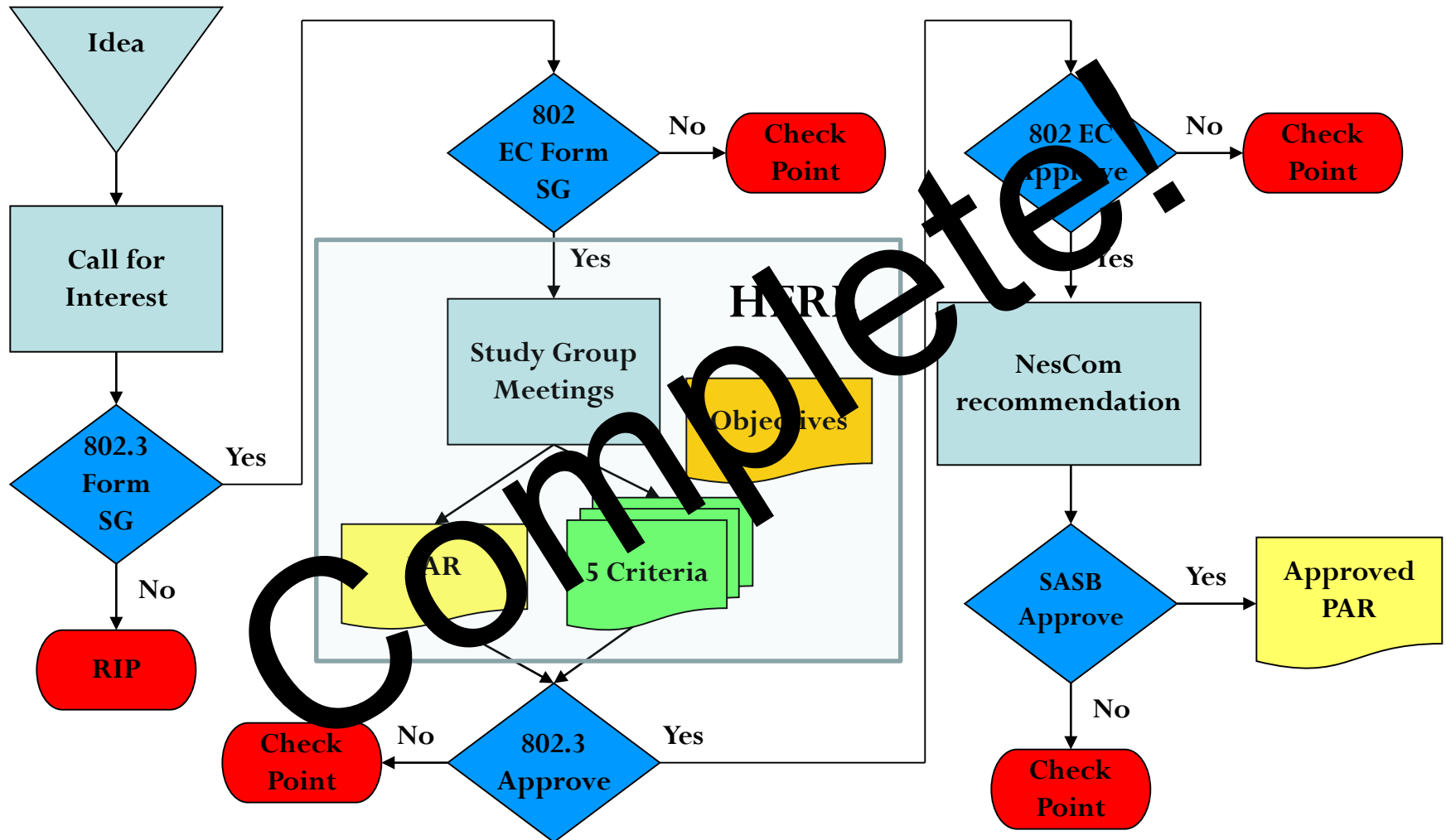
IEEE

Participation in IEEE 802 Meetings

Participation in any IEEE 802 meeting (Sponsor, Sponsor subgroup, Working Group, Working Group subgroup, etc.) is on an individual basis

- **Participants in the IEEE standards development individual process shall act based on their qualifications and experience. (https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1)**

- **IEEE 802 Working Group membership is by individual; "Working Group members shall participate in the consensus process in a manner consistent with their professional expert opinion as individuals, and not as organizational representatives". (subclause 4.2.1 "Establishment", of the IEEE 802 LMSC Working Group Policies and Procedures)**

- **Participants have an obligation to act and vote as an individual and not under the direction of any other individual or group. A Participant's obligation to act and vote as an individual applies in all cases, regardless of any external commitments, agreements, contracts, or orders.**

- **Participants shall not direct the actions or votes of any other member of an IEEE 802 Working Group or retaliate against any other member for their actions or votes within IEEE 802 Working Group meetings, see https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1.3 and the IEEE 802 LMSC Working Group Policies and Procedures, subclause 3.4.1 "Chair", list item x.**

By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.

(Latest revision of IEEE 802 LMSC Working Group Policies and Procedures: http://www.ieee802.org/devdocs.shtml)

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

Idea

Call for Interest

802.3 Form SG

Yes

No

RIP

802 EC Form SG

No → Check Point

Yes

Study Group Meetings

HERE

PAR

Objectives

5 Criteria

Check Point ← No — 802.3 Approve — Yes

802 EC Approve

No → Check Point

Yes

NesCom recommendation

SASB Approve — Yes → Approved PAR

No

Check Point

Complete!

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

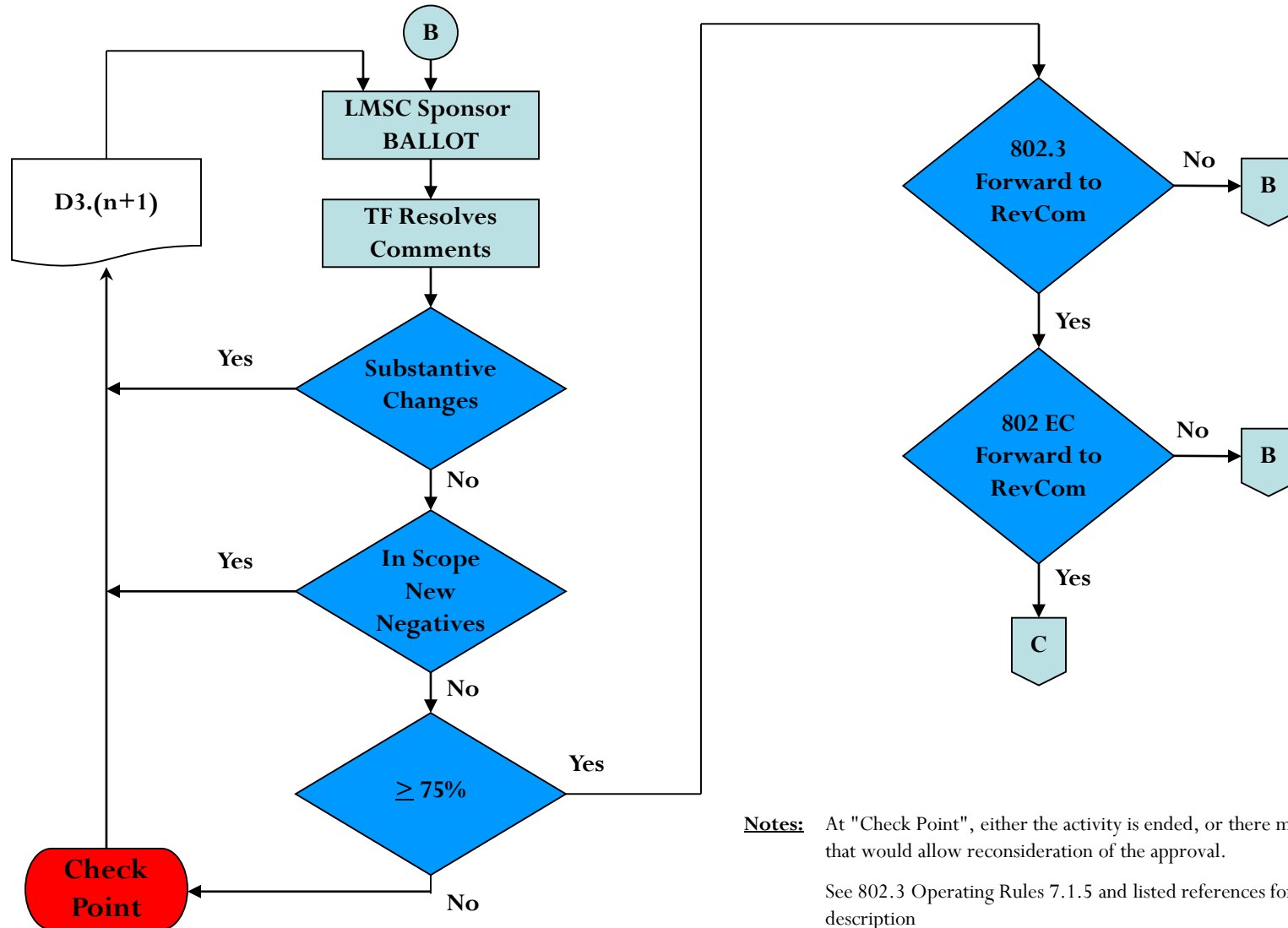# Overview of IEEE 802.3 Standards Process (2/5) – Task Force Comment Phase
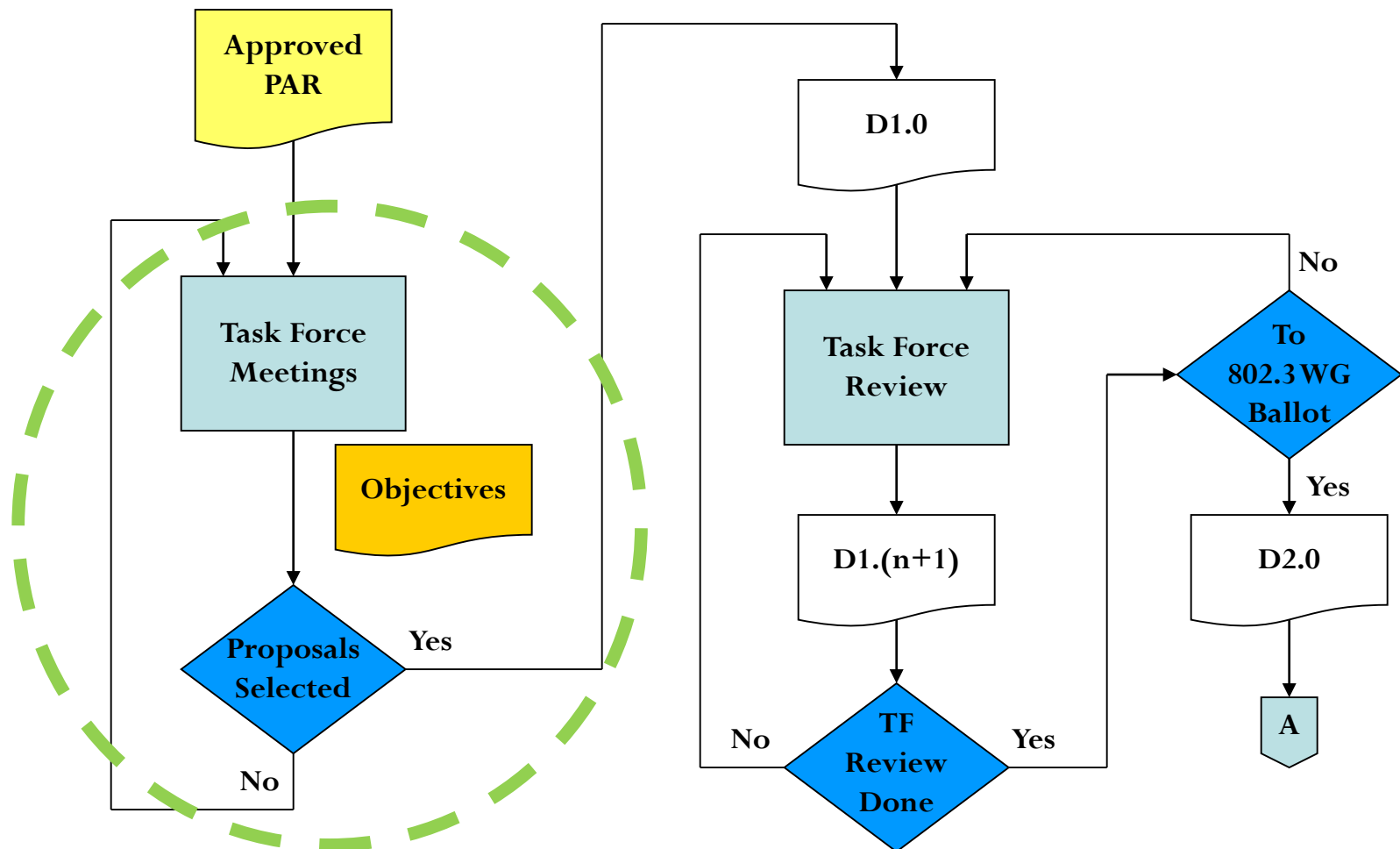
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase
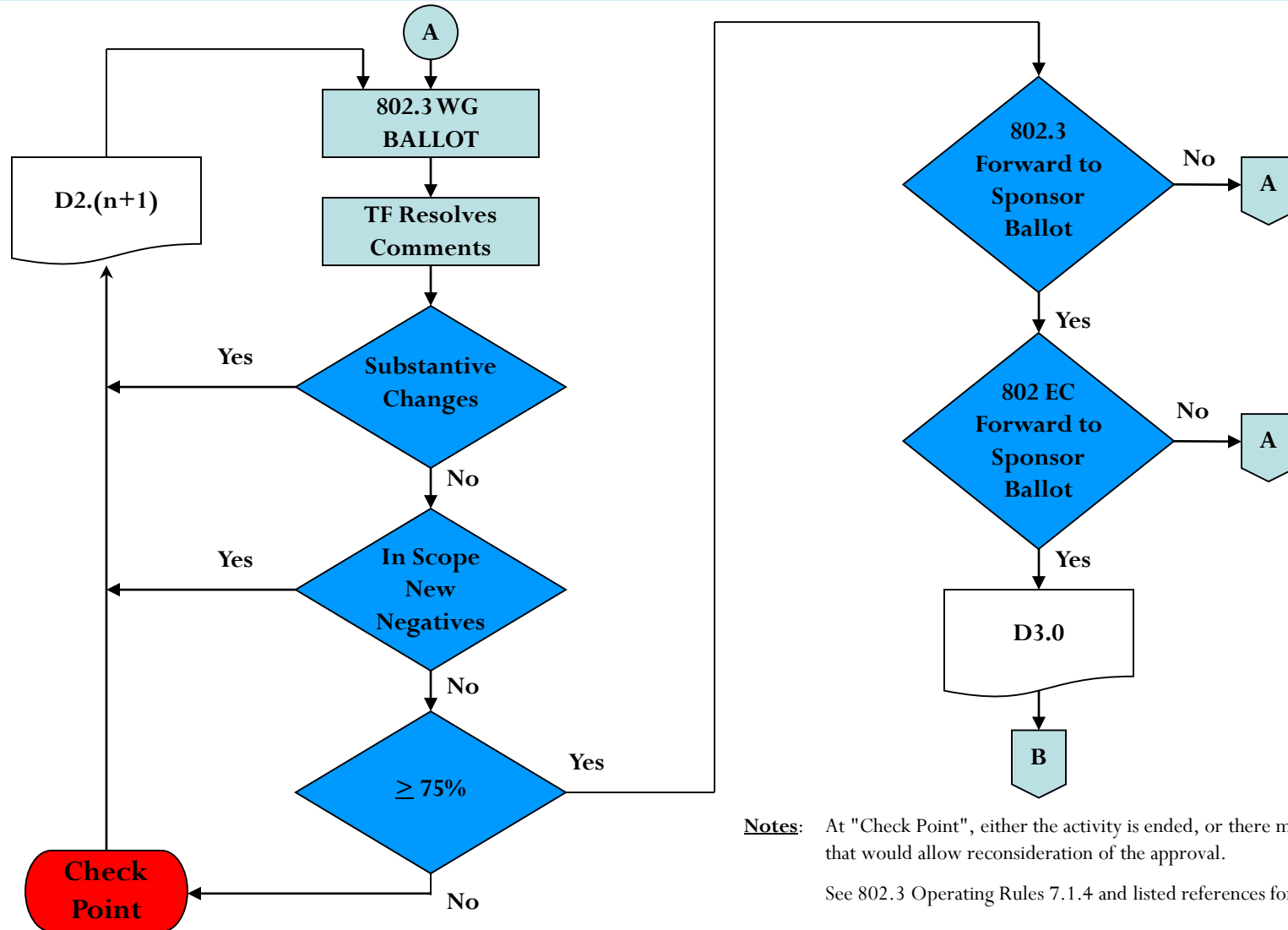
Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

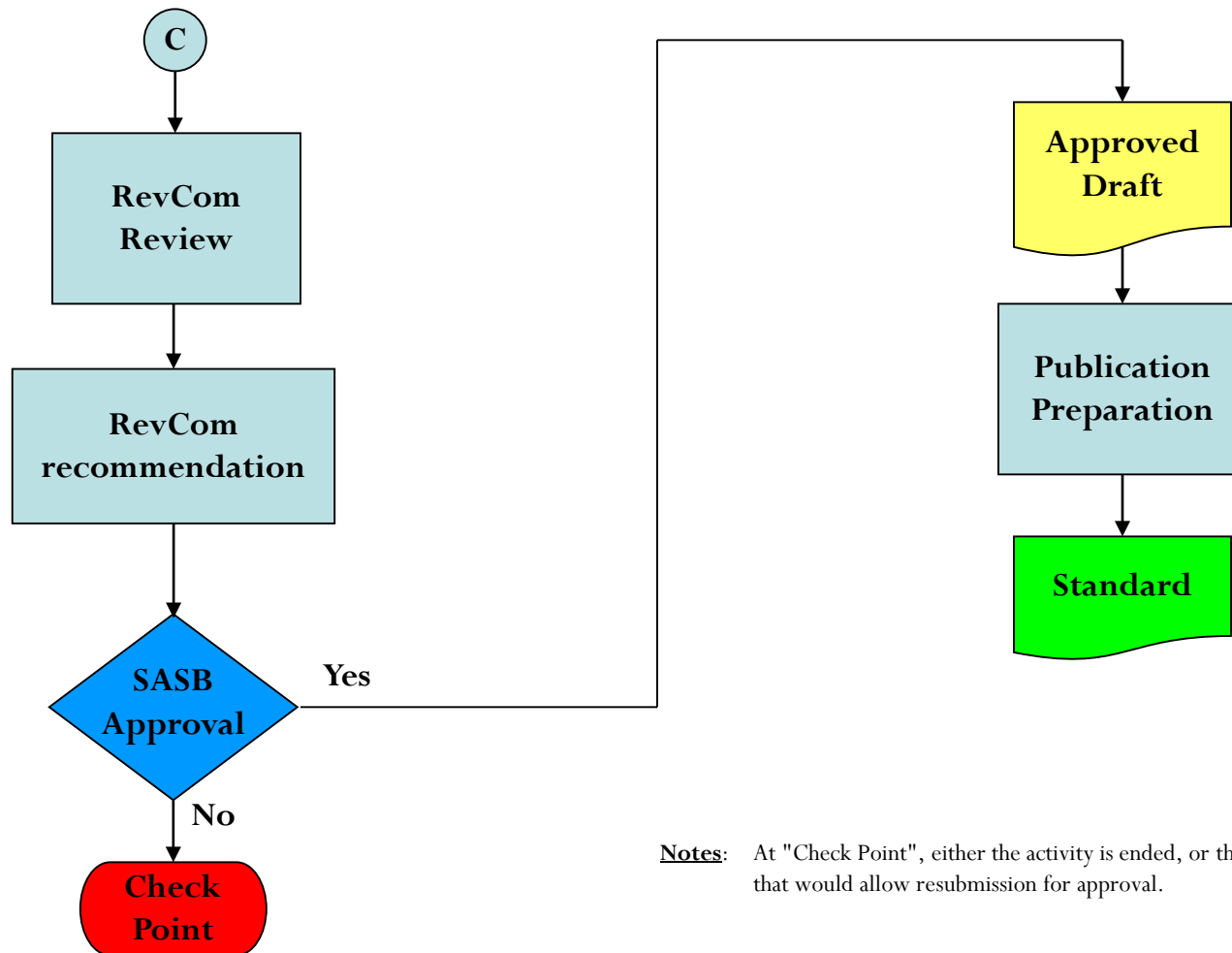See 802.3 Operating Rules 7.1.4 and listed references for complete description

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

C

RevCom Review

RevCom recommendation

SASB Approval

Yes

No

Check Point

Approved Draft

Publication Preparation

Standard

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

Liaisons and Communications

- None at this time

IEEE P802.3ch NGAUTO Ethernet PHY Task Force

Approved Project Documents

- PAR
  - http://ieee802.org/3/ch/P802.3ch_PAR.pdf
- 5 Criteria
  - https://mentor.ieee.org/802-ec/dcn/17/ec-17-0069-00-ACSD-802-3ch.pdf
- Objectives
  - http://ieee802.org/3/ch/0317_approved_objectives_3NGAUTO.pdf

IEEE P802.3 P802.3ch NGAUTO Ethernet PHY Task Force Objectives

1. Preserve the IEEE 802.3/Ethernet frame format at the MAC client service interface

2. Preserve minimum and maximum frame size of the current IEEE 802.3 standard

3. Support full duplex operation only

4. Define optional startup procedure which enables the time from power_on=FALSE to a state capable of transmitting and receiving valid data to be less than 100ms

5. Support data rates of 2.5 Gb/s, 5 Gb/s and 10 Gb/s at the MAC/PLS service interface.

6. Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)

7. Support optional Auto-Negotiation

8. Support optional Energy Efficient Ethernet

9. Support operation in automotive environments (e.g., EMC, temperature)

10. Do not preclude meeting FCC and CISPR EMC requirements.

IEEE P802.3ch NGAUTO Ethernet PHY Task Force Objectives

11. Define the performance characteristics of an automotive link segment and an **electrical** PHY to support 2.5 Gb/s point-to-point operation over this link segment supporting up to four inline connectors for at least 15m on at least one type of automotive cabling (e.g., UTP, STQ, STP, SPP, Coax, or Twinax).

12. Define the performance characteristics of an automotive link segment and an electrical PHY to support 5 Gb/s point-to-point operation over this link segment supporting up to four inline connectors for at least 15m on at least one type of automotive cabling.

IEEE P802.3 P802.3ch NGAUTO Ethernet PHY Task Force Objectives

13. Define the performance characteristics of an automotive link segment and an electrical PHY to support 10 Gb/s point-to-point operation over this link segment supporting up to four inline connectors for at least 15m on at least one type of automotive cabling.

14. Support optional Clause 104 power over data lines on appropriate media.

Presentations

Title	Presenters(s)	Affiliation(s)
Ad hoc report	George Zimmerman, Ad Hoc Chair	CME Consulting/CommScope, LTC, Aquantia
Editor's Report - 802.3 Primer for Baselines	Natalie Wienckowski, Chief Editor	GM
Copper Link Segment		
STP cable in automotive environment	Taketo Kumada	YAZAKI
SDP Screening & Coupling Attenuation for 802.3ch	Bert Bergner, Eric DiBiaso	TE Connectivity
Channel Requirements for Optimum/Robust PHY Design Beyond 1000BASE-T1	Ramin Farjadrad	Aquantia
RF Ingress Measurements for STP Cables from Automotive ALSE Test	Ramin Shirani, Larry Cohen	Aquantia
Copper PHY		
A First Look at Multi-Gig PHY TX-PSD Mask	Sujan Pandey	NXP

Note –Times listed are subject to change.

Motions and Straw Polls

Action Items

Future Meetings

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

- November 2017 802 Plenary
  - Orlando, FL (Caribe Royale)
  - November 6-9, 2017
- January 2018 802.3/802.1 joint interim
  - ITU, Geneva, CH
  - January 22 – 26
  - Joint workshop January 27
- March 2018 802 Plenary
  - Hyatt Regency O'Hare
  - March 5 – 8
  - Rosemont, IL

- Anyone interested in hosting a interim meeting contact the IEEE 802.3 Executive Secretary Steve Carlson.
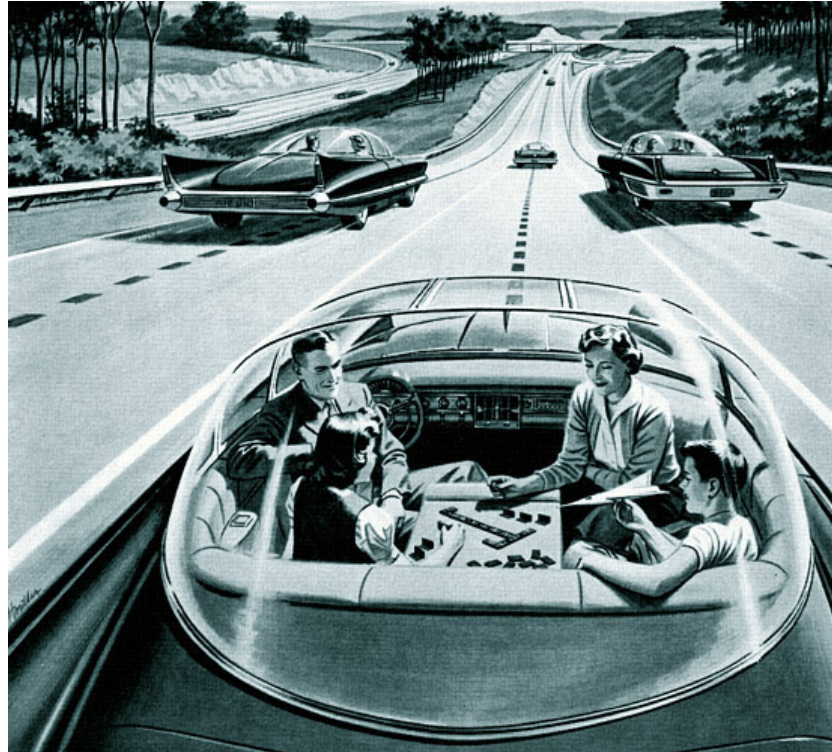
Straw Poll on Attendance

- Attend January 2018 interim, ITU, Geneva, CH:
  - Y: N: M:

- Attend March 2018 802 Rosemont, IL plenary:
  - Y: N: M:

Questions?

Thank you!