

The road to a completed standard

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including material from Howard Frazier and Marek Hajduczenia

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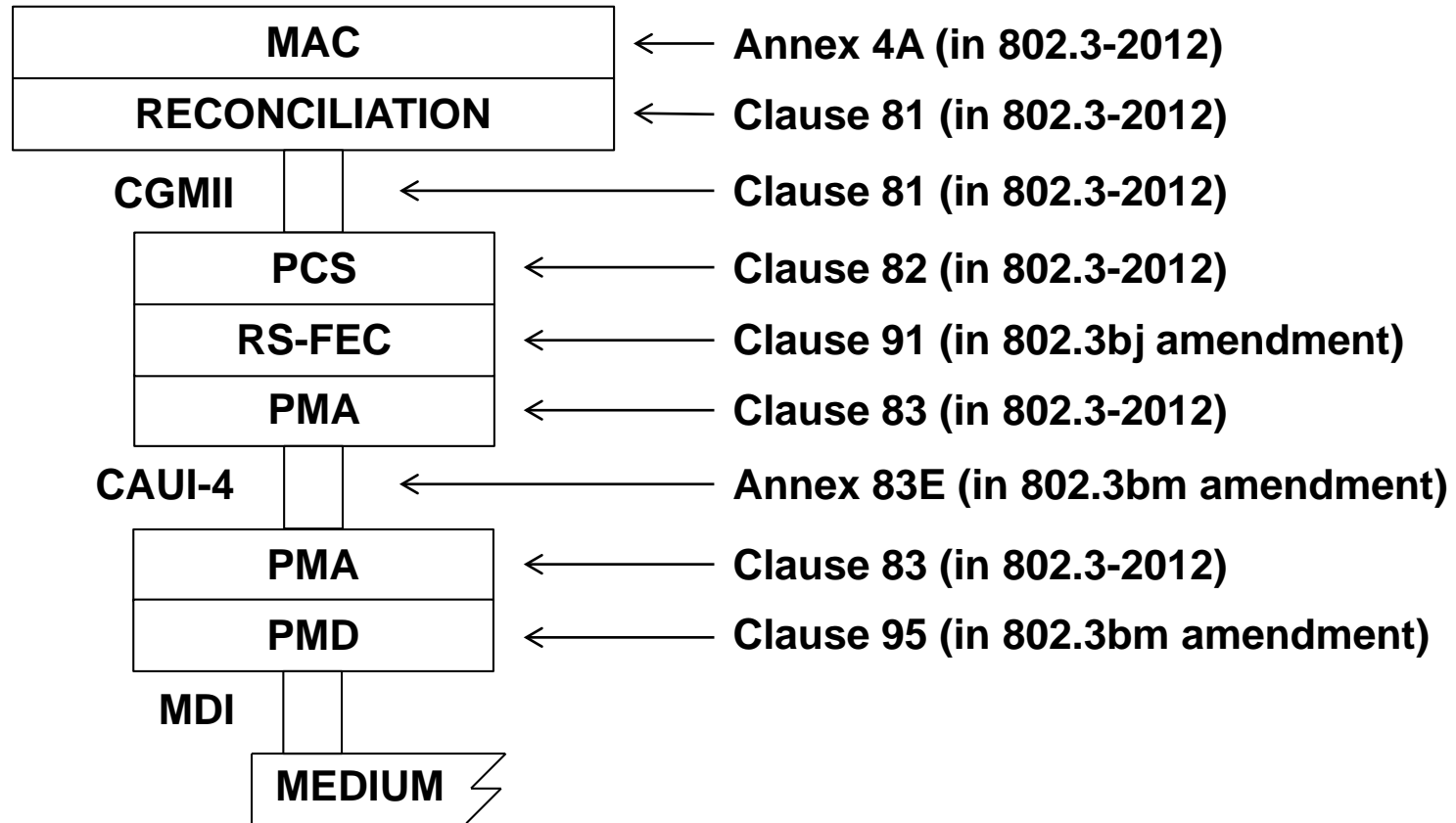
From here to a standard

- Now that the Task Force has **almost** been formed, the steps that have to be completed are:
 - Adopt baselines needed to fulfill the objectives
 - Create initial draft version (D1.0)
 - Task Force review (D1.x)
 - Working Group ballot (D2.x)
 - Sponsor ballot (D3.x)
 - Final approvals & publication

How the 802.3 standard is structured

- The 802.3 standard is structured as a set of **clauses** and **annexes** which provide all the information required to build fully-functional multi-vendor interoperable Ethernet links.
- Most projects within the 802.3 Working Group produce an **amendment** to the 802.3 standard that makes changes to existing clauses and annexes as well as adding a set of new clauses and annexes that define the new capabilities.
- Periodically, all of the approved amendments are combined with the base standard (as well as minor additional changes) in a **revision** project. The most recent one of these resulted in IEEE Std 802.3-2018.
- The next slide takes an example Ethernet PHY (100GBASE-SR4) and shows where the details of each sublayer or interface could be found when the P802.3bm project was completed.

Example Ethernet stack for 100GBASE-SR4



Baselines

- For a project defining a new Ethernet rate a new set of clauses and associated annexes will need to be generated for almost all of the sublayers on the previous slide. The style and some of the content for these new clauses and annexes will, however, likely be derived from existing 802.3 clauses and annexes.
- The major technical details for each of these clauses and annexes is defined via a set of **baseline** documents which the proponents put together and try to gain consensus for.
- Baselines can contain some “TBD” elements, but these should be kept to a minimum.
- Each of the baseline documents is then adopted by a motion of the Task Force (requiring $\geq 75\%$ approval as they are technical).
- The baselines are the basis for the draft specification so they need to include enough information for the editors to be able to create a draft.

Example baseline documents from P802.3ba

- RS and XLGMII/CGMII in Clause 81
 - http://www.ieee802.org/3/ba/public/may08/gustlin_02_0508.pdf
- PCS in Clause 82
 - http://www.ieee802.org/3/ba/public/may08/gustlin_01_0508.pdf
- PMA in Clause 83
 - http://www.ieee802.org/3/ba/public/jul08/trowbridge_01_0708.pdf
- 40GBASE-KR4 in Clause 84
 - http://www.ieee802.org/3/ba/public/may08/mellitz_01_0508.pdf
- 40GBASE-SR4 and 100GBASE-SR10 in Clause 86
 - http://www.ieee802.org/3/ba/public/may08/pepeljugoski_01_0508.pdf
- 100GBASE-LR4 in Clause 88 (slides 9 to 11)
 - http://www.ieee802.org/3/ba/public/jul08/anslow_01_0708.pdf
- 100GBASE-ER4 in Clause 88
 - http://www.ieee802.org/3/ba/public/jul08/cole_02_0708.pdf

More on baselines

- A baseline proposal must contain sufficient detail so that an editor can draft text without having to infer any significant technical material
 - Baseline proposals must be complete and definitive
- A baseline proposal should have a limited scope
 - They typically address one objective or one sublayer
 - A consistent set of baselines may be adopted in the same meeting
- A baseline proposal must meet all of the Criteria for Standards Development ([CSD](#))
- It is ok for competing proposals for the same item to be developed in parallel
 - The best proposals will gain the most support with time

P802.3cn baselines

In addition to the usual baselines, a significant amount of the work in the P802.3cn project will be to define for the coherent PMDs:

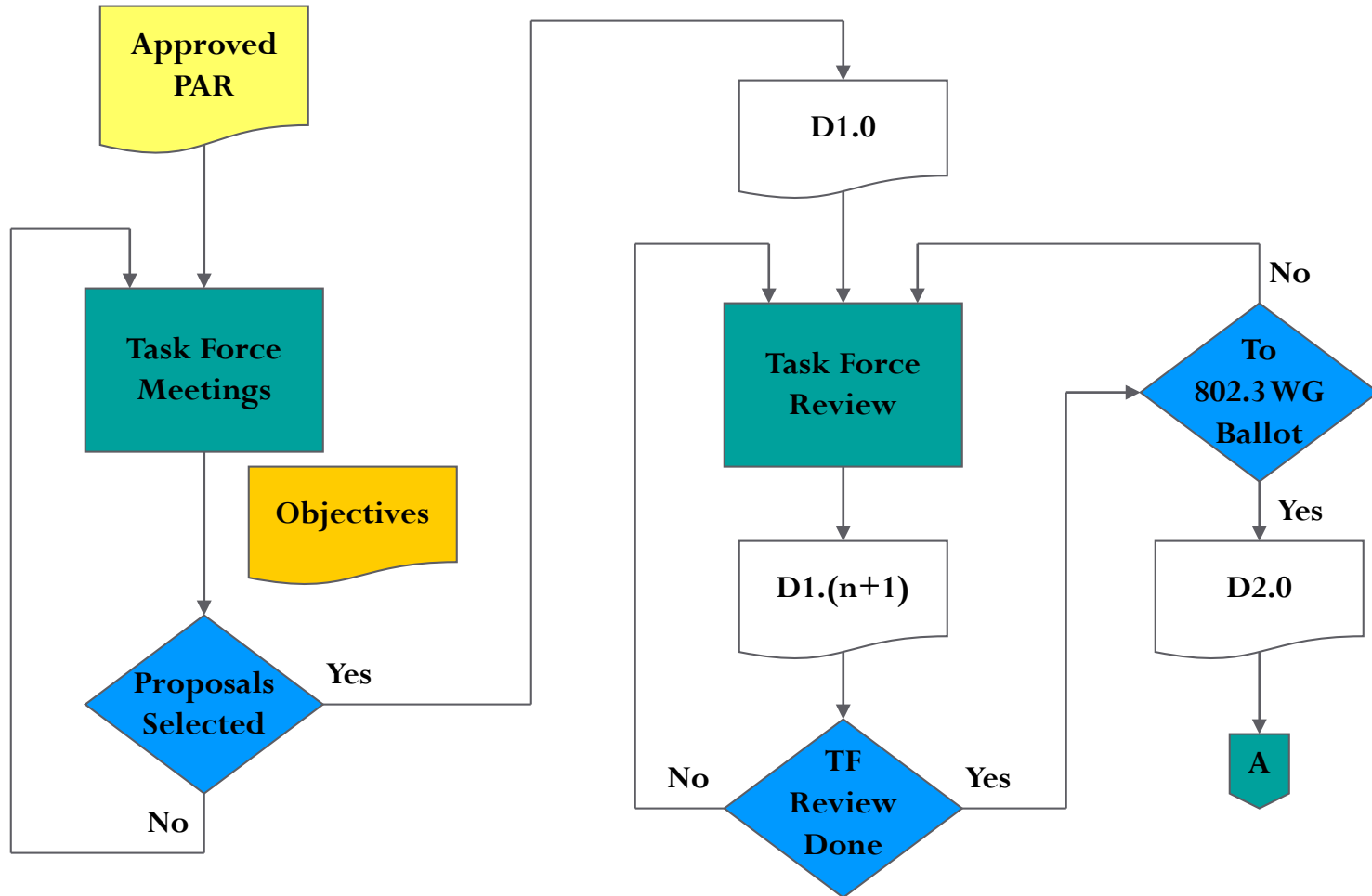
- A metric to define the quality of a worst case transmitter
- A metric to define the worst case optical filter function for the path between the two MDIs

Because of the critical nature of these two metrics for a multi-vendor interoperable specification (and the lack of applicable metrics in most other standards bodies) it is probably worth generating baselines for these aspects also in order to avoid having to do the heavy lifting via the comment process.

Creation of a draft

- Once a consistent set of baselines has been adopted by the Task Force, the editors work towards the creation of a draft amendment to 802.3.
- This is done using Adobe® FrameMaker® software to be consistent with the base 802.3 standard and to make integration of the amendment in to the next revision easier.
- The editors are likely to generate a draft version 0.9 for preview by the Task Force to ensure that the baselines have been correctly incorporated.
- D0.9 and all of the successive draft versions are placed in the password protected private area.
- The Task Force then adopts draft D1.0 ready to begin Task Force review.

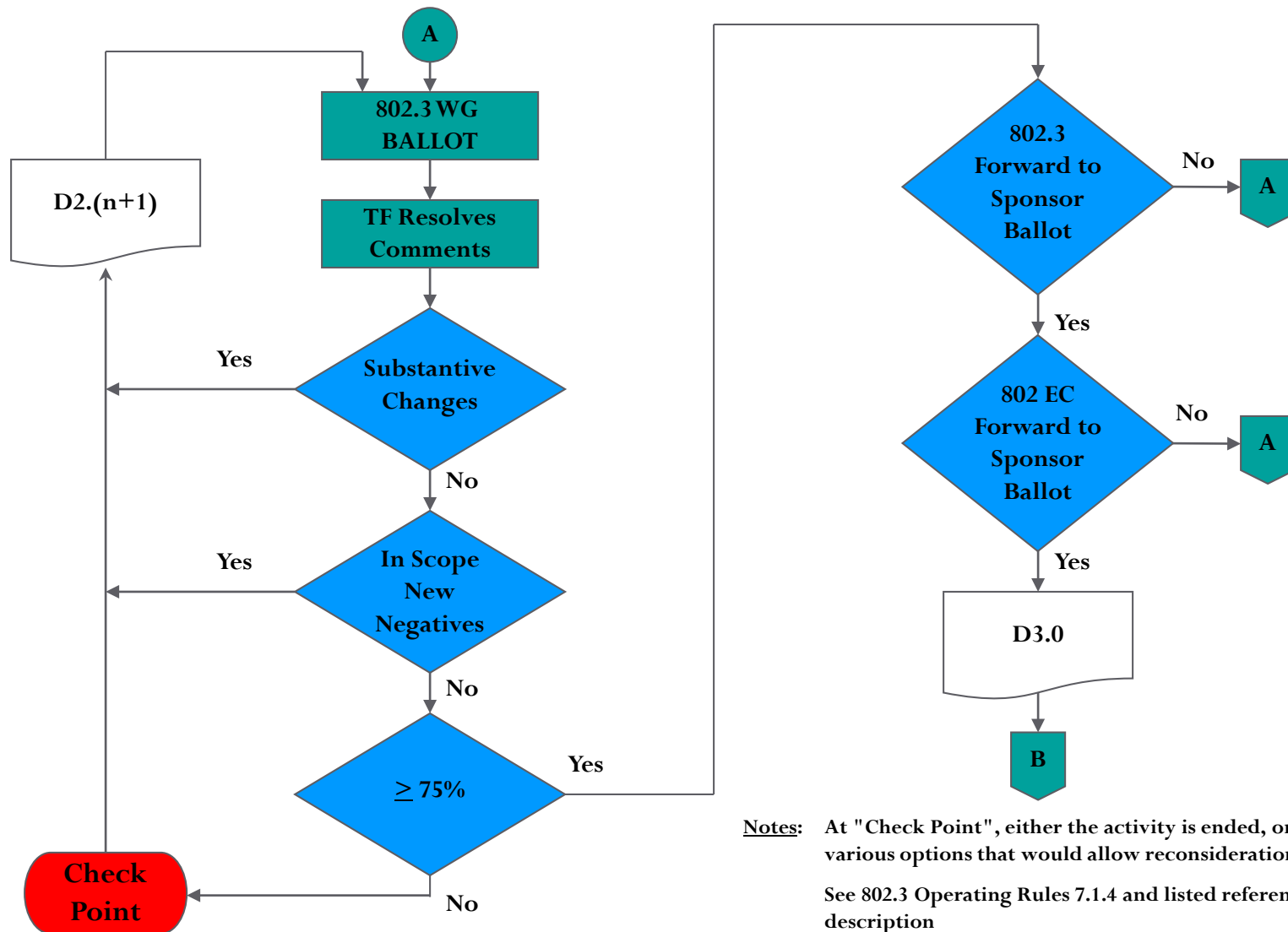
Task Force review phase



Task force review

- The first draft adopted by the TF ready for “TF review” is usually designated Draft D1.0. This may be still technically incomplete, contain some TBDs, editorial notes on missing text, etc., but these will be resolved through the comment process before moving to Working Group ballot.
- During the TF review process, comments and proposals from the TF (and anyone else who wants to comment) are submitted against draft D1.x using a comment tool. All received comments are considered at the next TF meeting and resolved.
- The editors then apply the approved comment resolutions to Draft D1.x in order to create Draft D1.(x+1) which is then opened to another round of Task Force review.
- When the draft is technically complete (has no TBDs) is editorially satisfactory and is reasonably stable the TF can request that the draft proceeds to Working Group ballot.

Working Group ballot phase

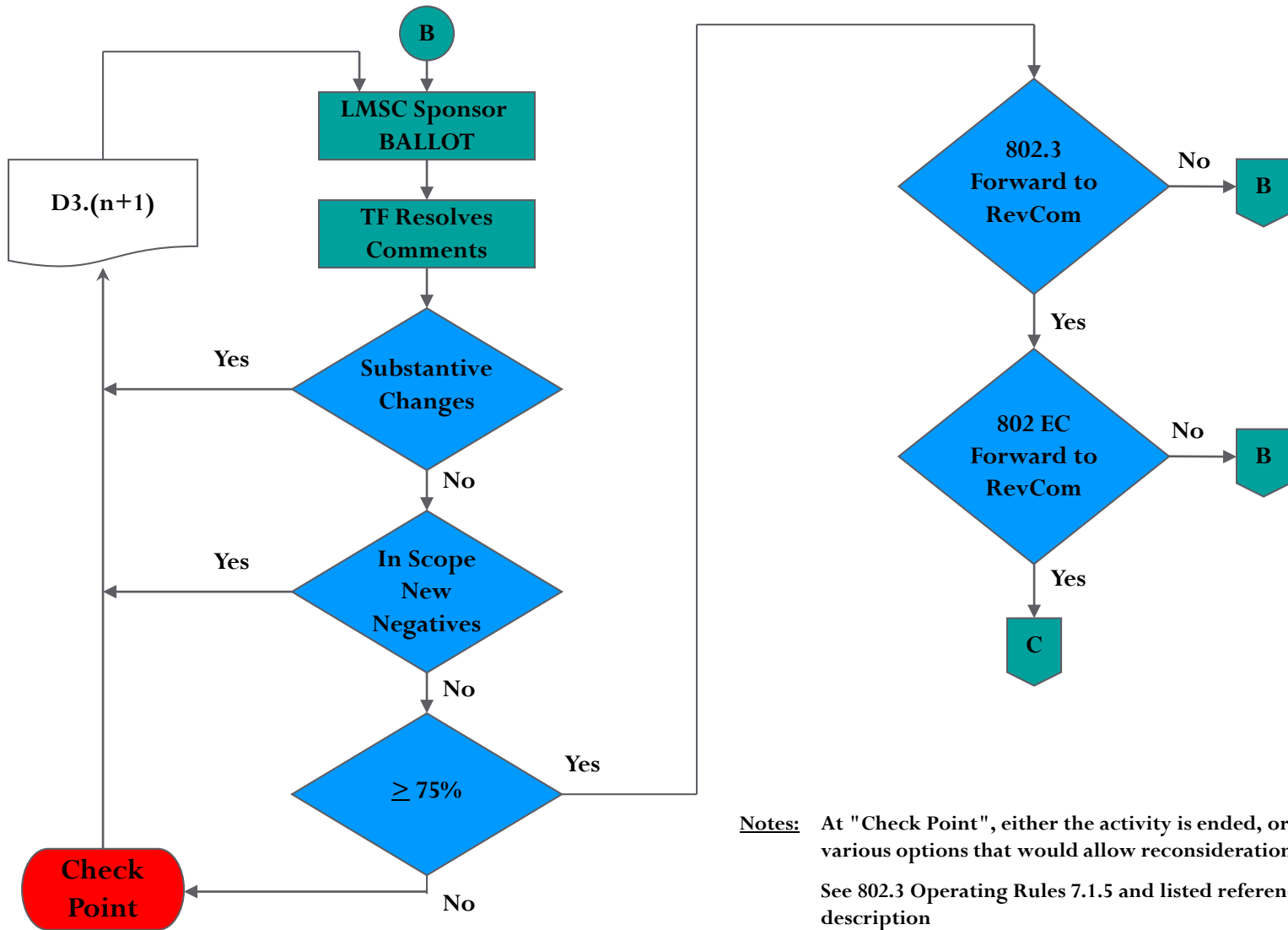


Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval. See 802.3 Operating Rules 7.1.4 and listed references for complete description

Working Group ballot

- This is similar to Task Force review except that the group asked to comment is the WG voting membership on the day that the initial ballot package is created and that each commenter votes “approve” or “disapprove”. Anyone else may comment but these are non-binding.
- WG ballot continues until the following conditions are met:
 - No substantive (technical) changes in the last recirculation
 - No new in-scope 'required' comments (TR/ER) associated with a Disapprove ballot in the last recirculation
 - $\geq 75\%$ approval ratio
 - $> 50\%$ response ratio
 - $< 30\%$ abstention ratio
- When the above conditions are met the TF can request that the draft proceeds to Sponsor ballot.

Sponsor ballot phase

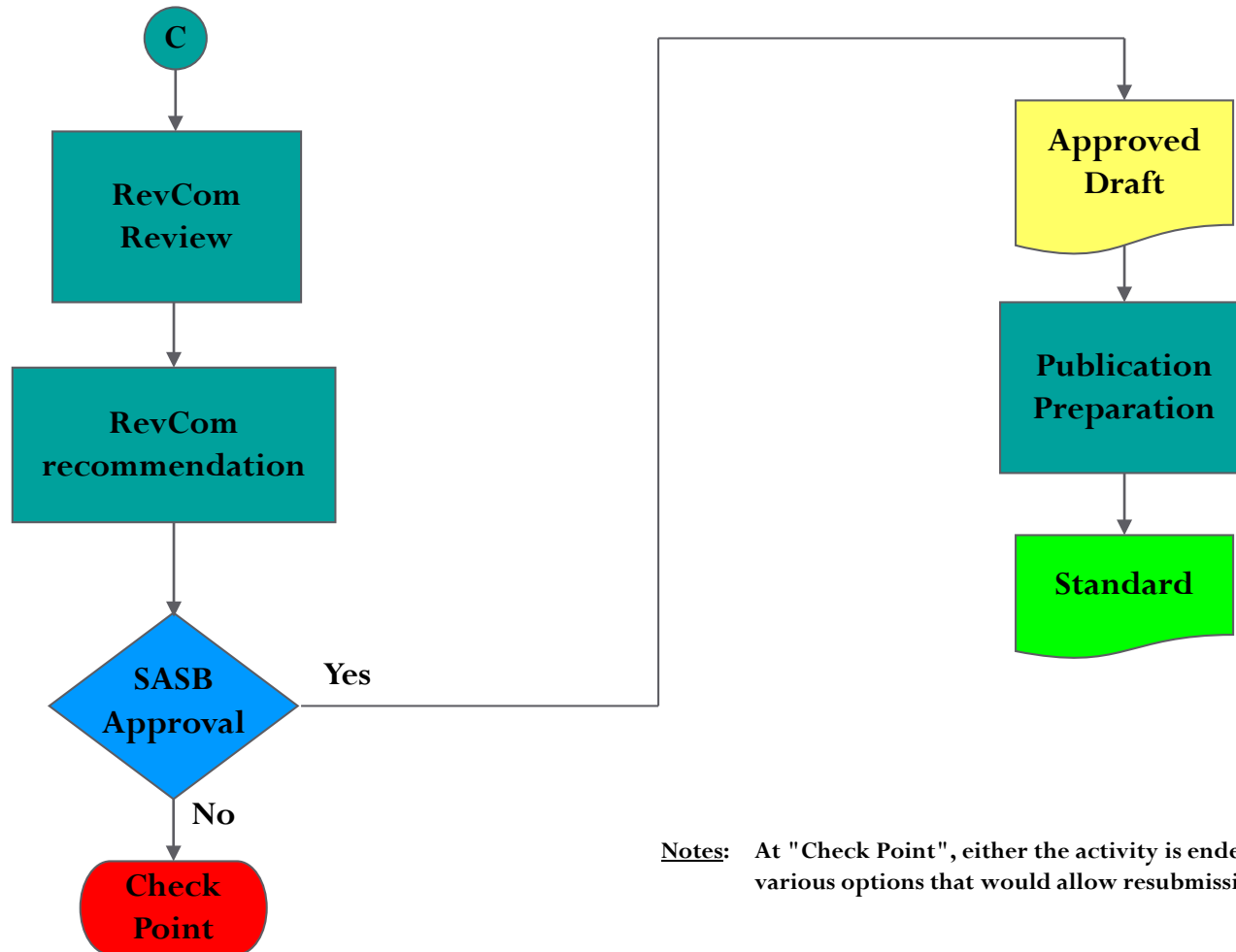


Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval. See 802.3 Operating Rules 7.1.5 and listed references for complete description

Sponsor ballot

- This is similar to WG ballot except that the group of participants (the Sponsor ballot pool) is different again.
 - The Sponsor ballot pool is open to anybody with IEEE-SA membership or willing to pay per-ballot fee. Anybody in the world with interest in the given draft can join and cast ballot on the draft.
 - The comments continue to be resolved in meetings of the Task Force
- Sponsor ballot continues until the following conditions are met:
 - No substantive (technical) changes in the last recirculation
 - No new in-scope 'required' comments (TR/GR/ER) associated with a Disapprove ballot in the last recirculation
 - $\geq 75\%$ approval ratio
 - $\geq 75\%$ response ratio
 - $< 30\%$ abstention ratio
- When the above conditions are met the TF can request that the draft is submitted to RevCom and the SASB for final approval.

Final approvals & publication



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

And then ... ?

- Once the Sponsor Ballot is complete and the final version of the draft has been submitted to RevCom and the SASB for approval the Task Force is disbanded.
- Once approved by the SASB, the standard is published
- Any further changes use the maintenance process or take place in a revision project.

- Time to do another CFI to start the whole process over again!

Thanks!