Pruning the decision trees

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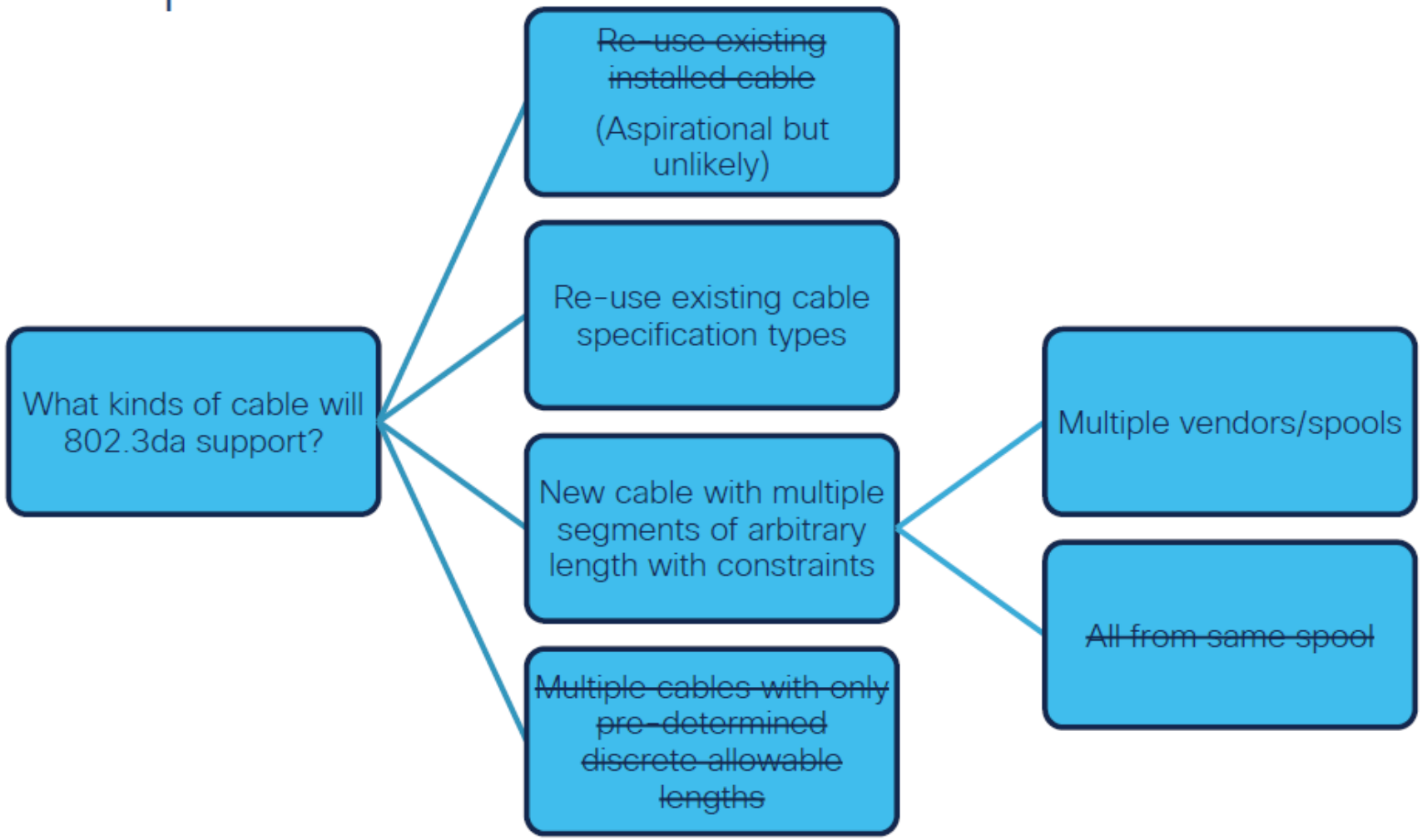
Paths to closure – Process

- 3 areas: Cable / Mixing segment, Data Solution, Power Solution
  - Only power solution is pruned down to a single solution type
    - Power has many questions
  - Others have multiple paths that need to be pruned to improve focus
- Suggested process:
  - Identify the next step and what is needed to take it
  - Unless someone signs up for the next step, BEFORE November, and presents in November, we prune off paths by motion in November
    - At the November Plenary, either:
      - Hear contributions and consider whether sufficient forward progress is being made, OR
      - Prune off a path of consideration

Source: https://www.ieee802.org/3/da/public/0722/SPMD_Potterf_Open_Issues_2022-07-11_PostDiscussion.pdf

Cable Expectations



Contribution to IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force

Paths to select from – Cable Expectations

(choose one, or consolidate into one)

- Reuse existing cable –
  - Next step – installation survey measurements
- Re-use existing cable spec types –
  - Next step – propose specifications to be reused.
  - Secondary – evaluate topologies using spec limits
- New cable with multiple segments of arbitrary length with constraints
  - Next step – propose variation for key parameters to evaluate topologies with

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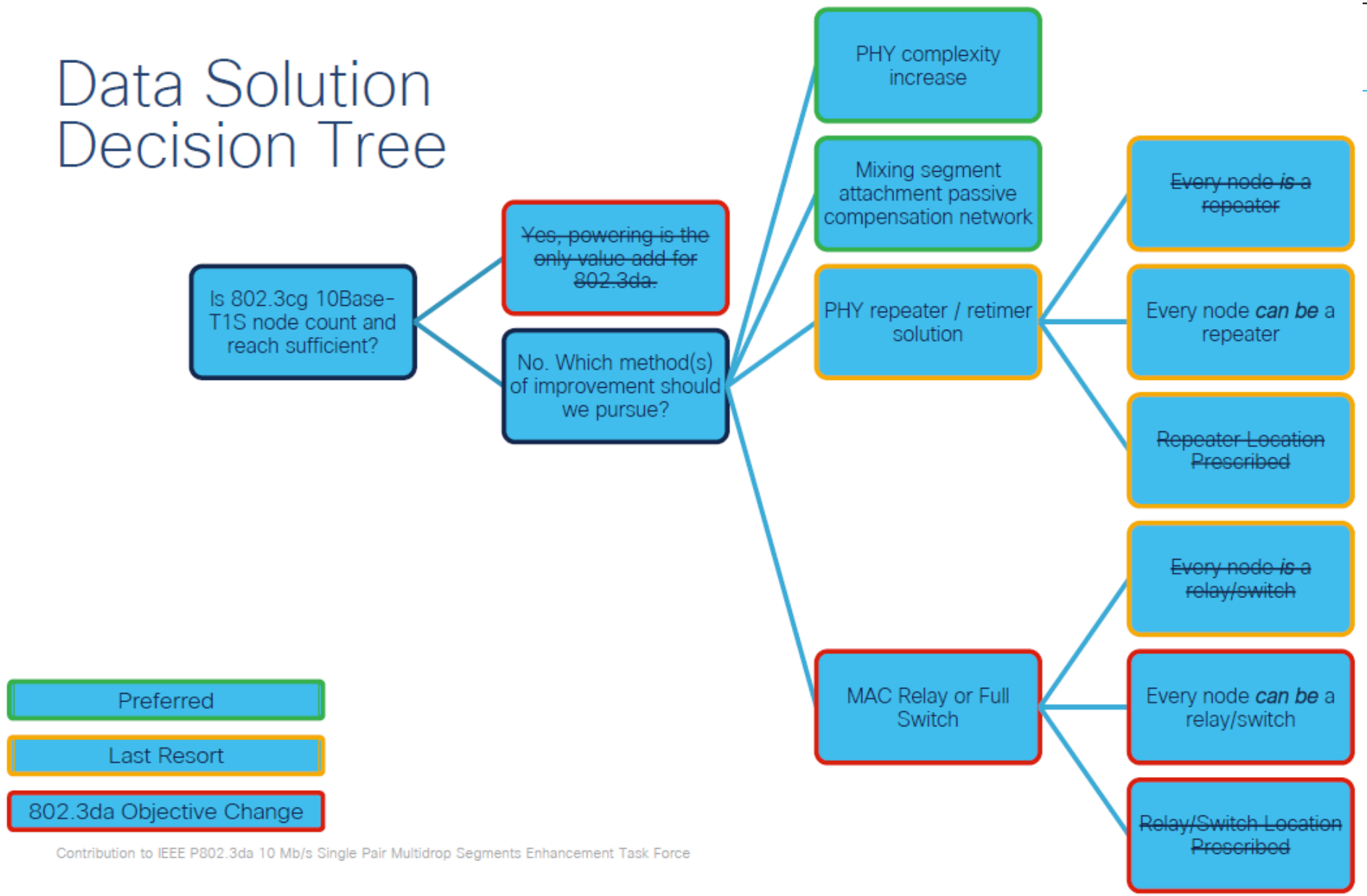
Data Solution Decision Tree



Contribution to IEEE P802.3da 10 Mb/s Single Pair Multidrop Segments Enhancement Task Force

Paths to Prune - Data Solution
(more than one allowed)

- PHY-level improvement: (not exclusive)
  - PHY complexity increase – baseline phy model
    - Propose baseline & alternative (Schmidt trigger/eye vs. Optimum linear vs. nonlinear (DFE/Multicarrier) vs. sequence-oriented (Viterbi))
  - Mixing segment passive compensation network
    - Propose limits on specification
  - PHY repeater/retimer
    - Need detailed proposal to determine, including how does it work with PLCA
- Network-level improvement: (e.g., two-port MAC relays or switches)
  - Applies whether PHY is improved or not
  - New specifications at the MAC or above are out of scope for a PHY project, but considerations for use of a PHY might benefit from documentation in an informative annex or clause
  - May consider an annex on how that fits in with a modern multidrop architecture to extend networks
    - This is simple if we do not define repeaters
    - If 10BASE-T1M repeaters are defined, it might need to include system configuration information similar to, e.g., IEEE Std 802.3-2022 Clauses 13 & 29

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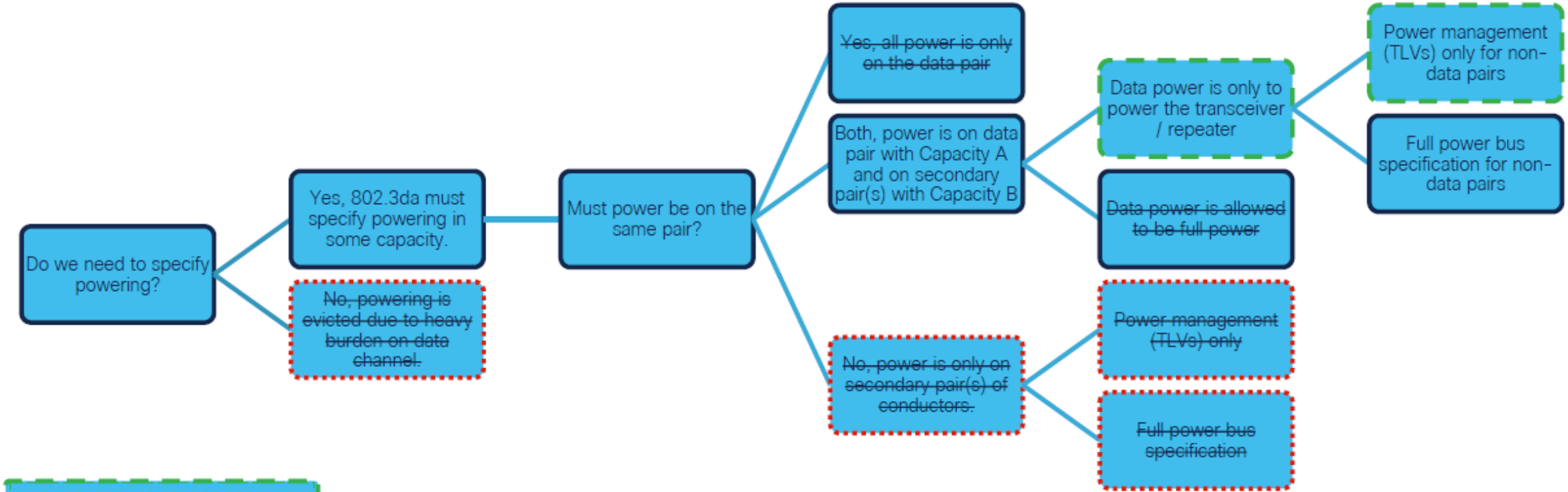
Power Solution Decision Tree



Power Solution - (Already down to one branch, details needed)

- Minimal Data-Pair Power + Non-Data-Pair Power
  - Next step – need presentations on detail
  - How much power on data pair – need proposals
    - Feasibility (Economic & Technical) - Analysis on circuits, e.g., inductor sizing
    - How much power per node (data and non-data)… need proposal and how to specify
    - Architecture (and how it impacts power delivery)
      - What might be on the wiring side of the isolation barrier
      - How does a node connect into the mixing segment (tapped, in-and-out, ?)
      - Is non-data-pair power pt-to-pt or multidrop? Does that impact control
- Power control & management
  - Needs proposal on power management TLVs/hooks
    - Minimal control vs. envisioning many possibilities
- Process may benefit from having strawman ‘defaults’ on some of these which are more easily achieved… (for discussion)

DISCUSSION & STRAW POLLS