The Synchronization Experts.

PTP Redundancy in the Broadcast and Professional Media Industries

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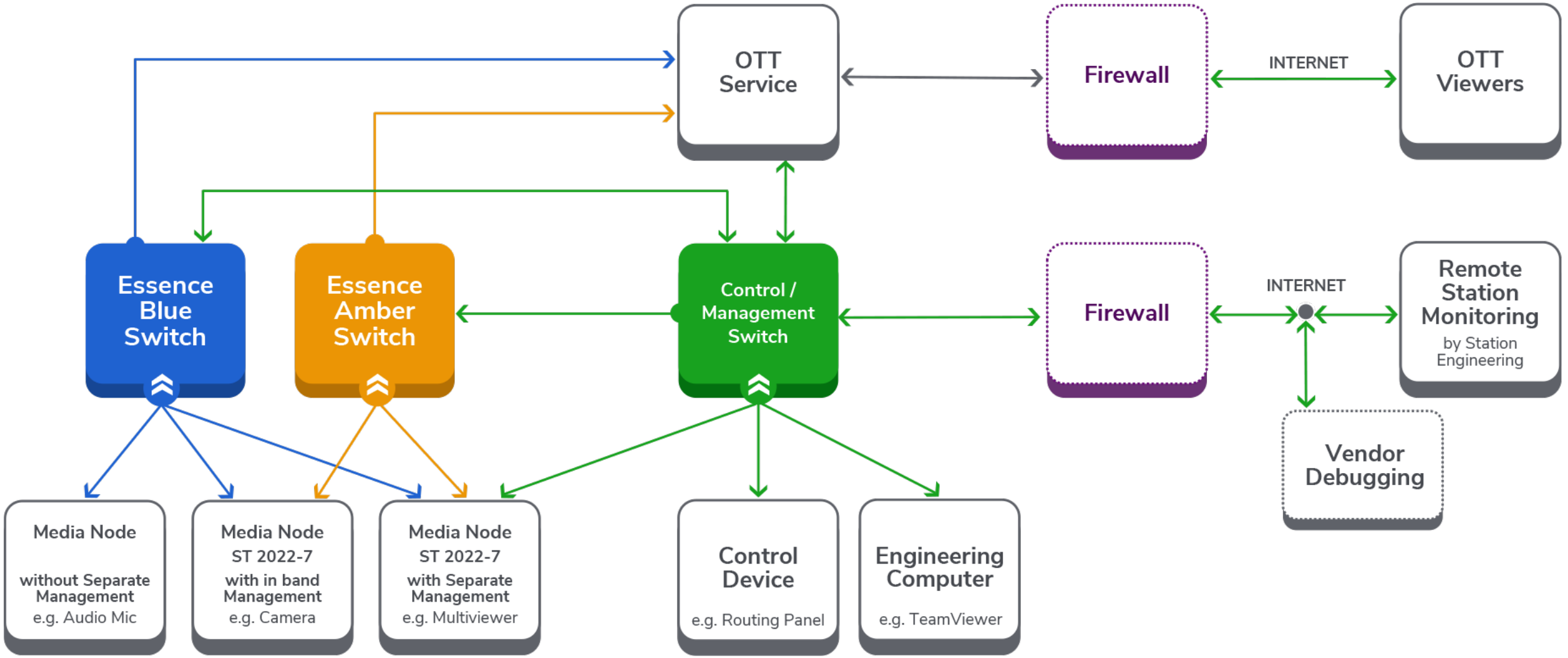
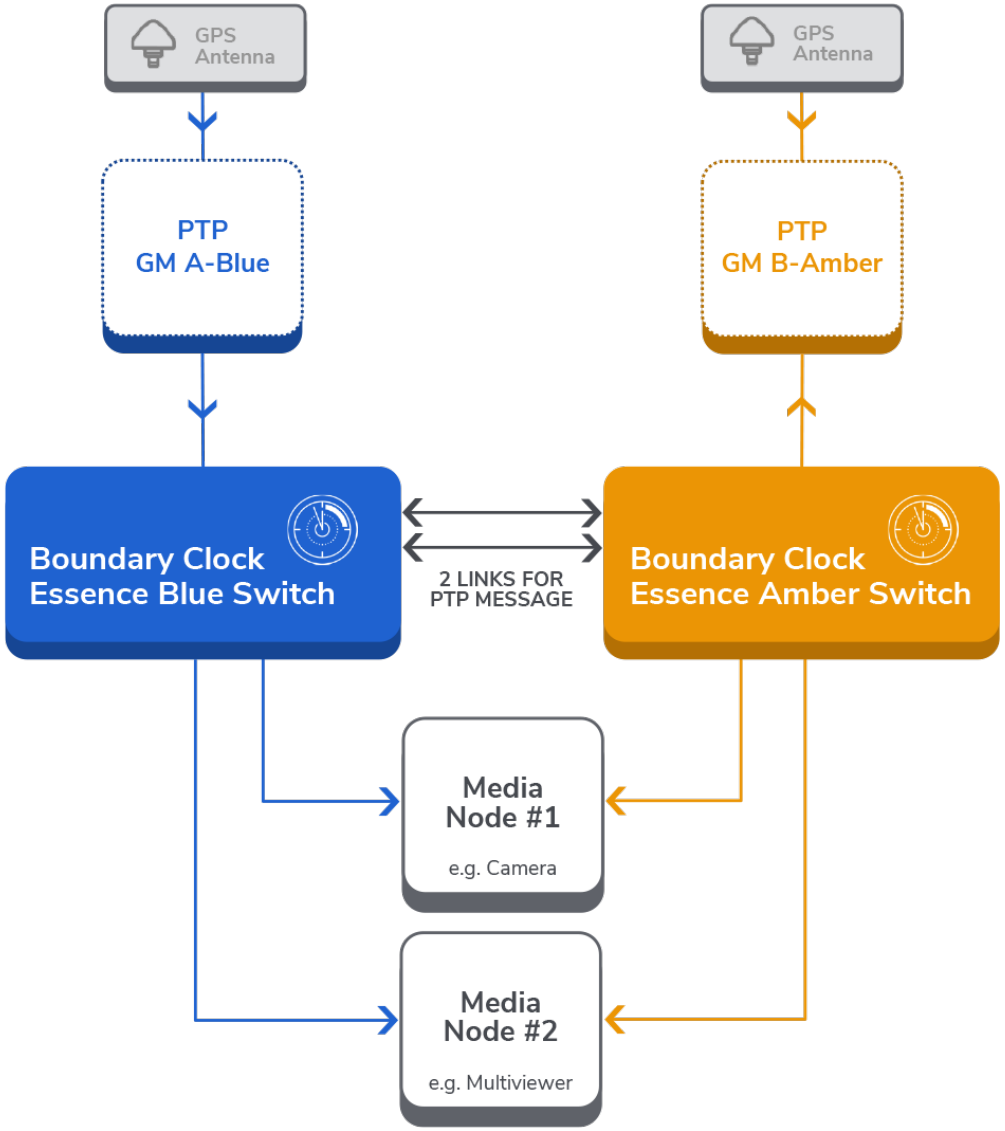
PUBLIC

The Challenge

Background
Essence Redundancy in the Broadcast and Professional Media Industries



Background
PTP Redundancy in the Broadcast and Professional Media Industries

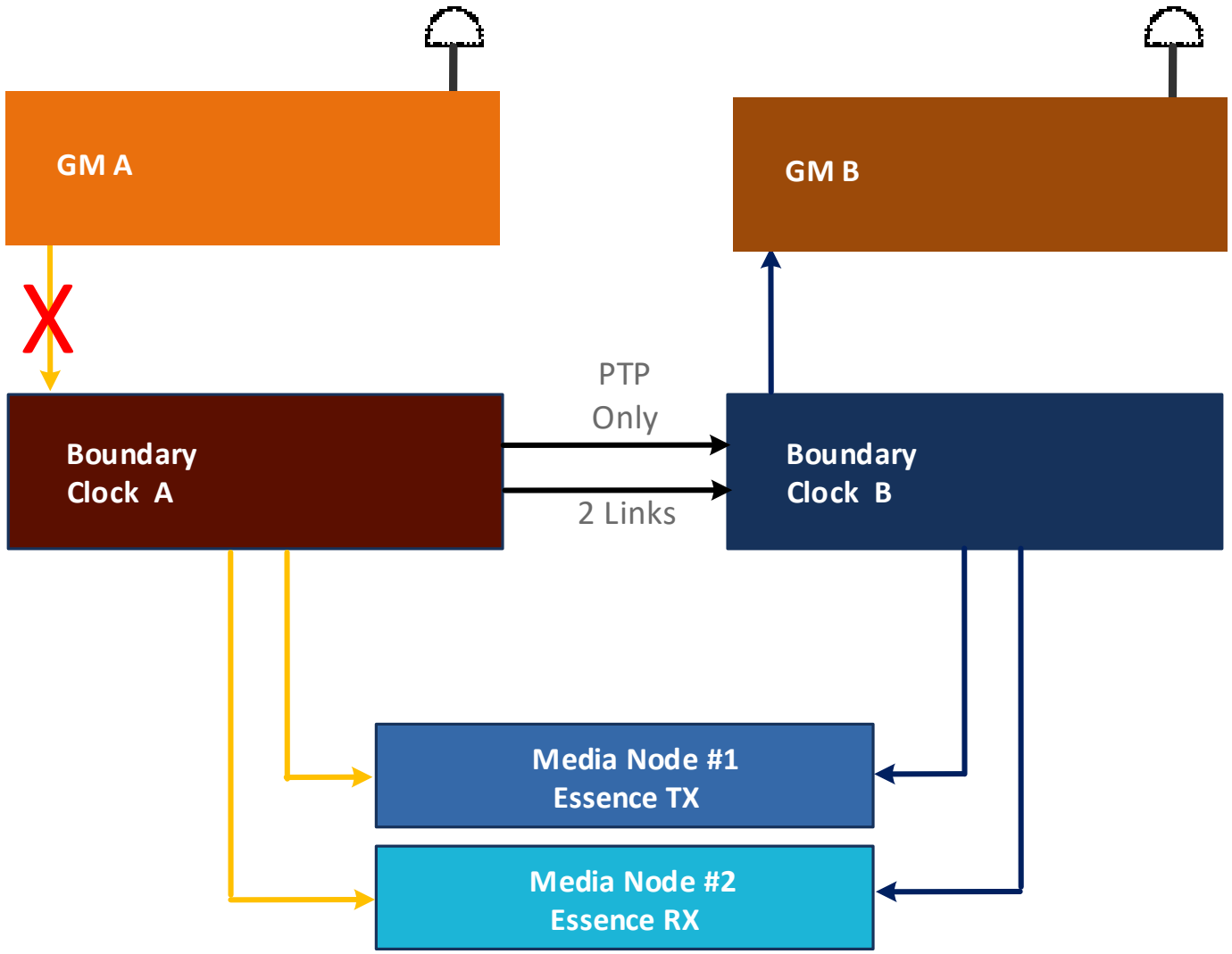


Problem Statement

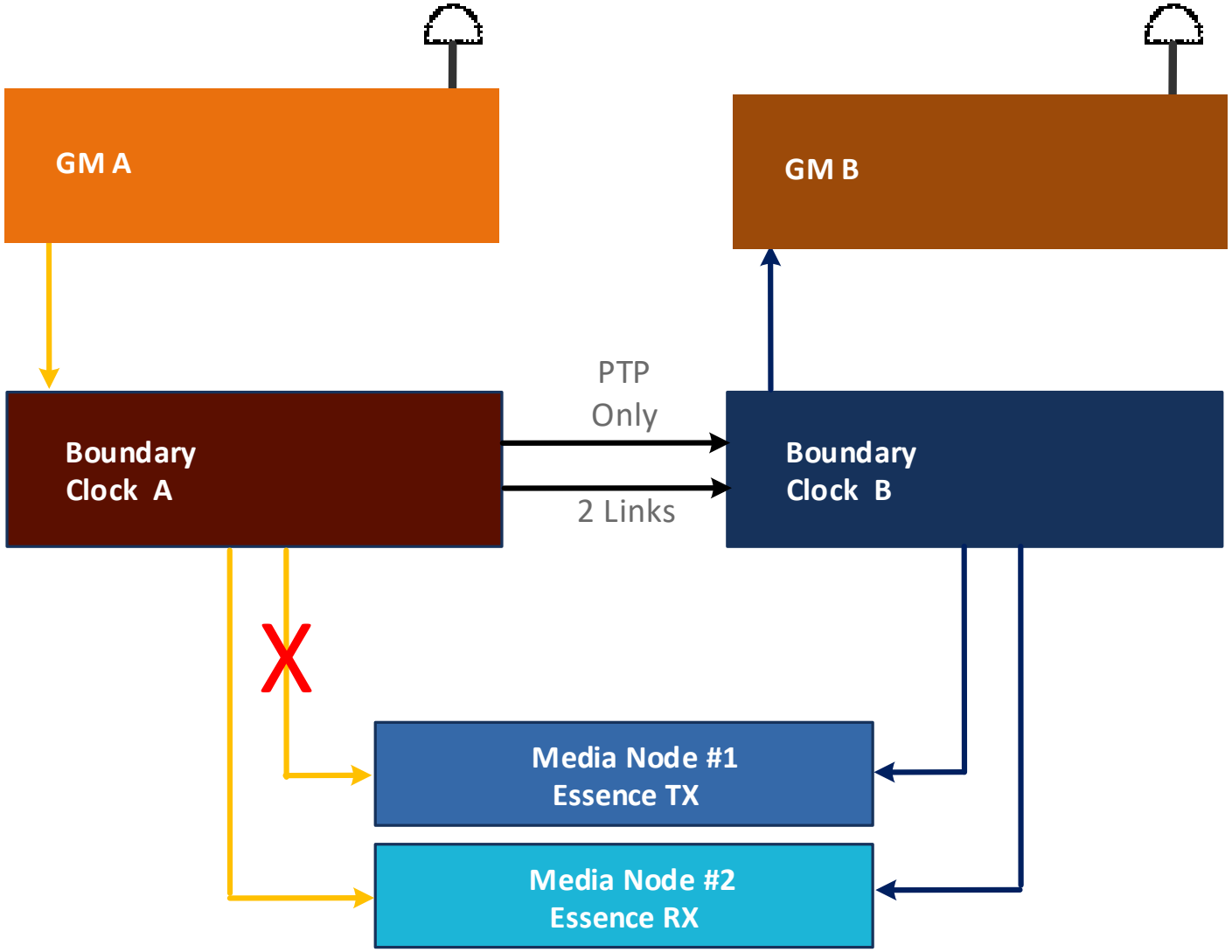
- “With any 1 failure (E.g. Link, interface, or switch), all Media Nodes will converge to th same GM”
  - This is so the essence RTP timestamps will be correct

- The “obvious” solution is not obvious to all implementors
  - In other words, some implementations are bad

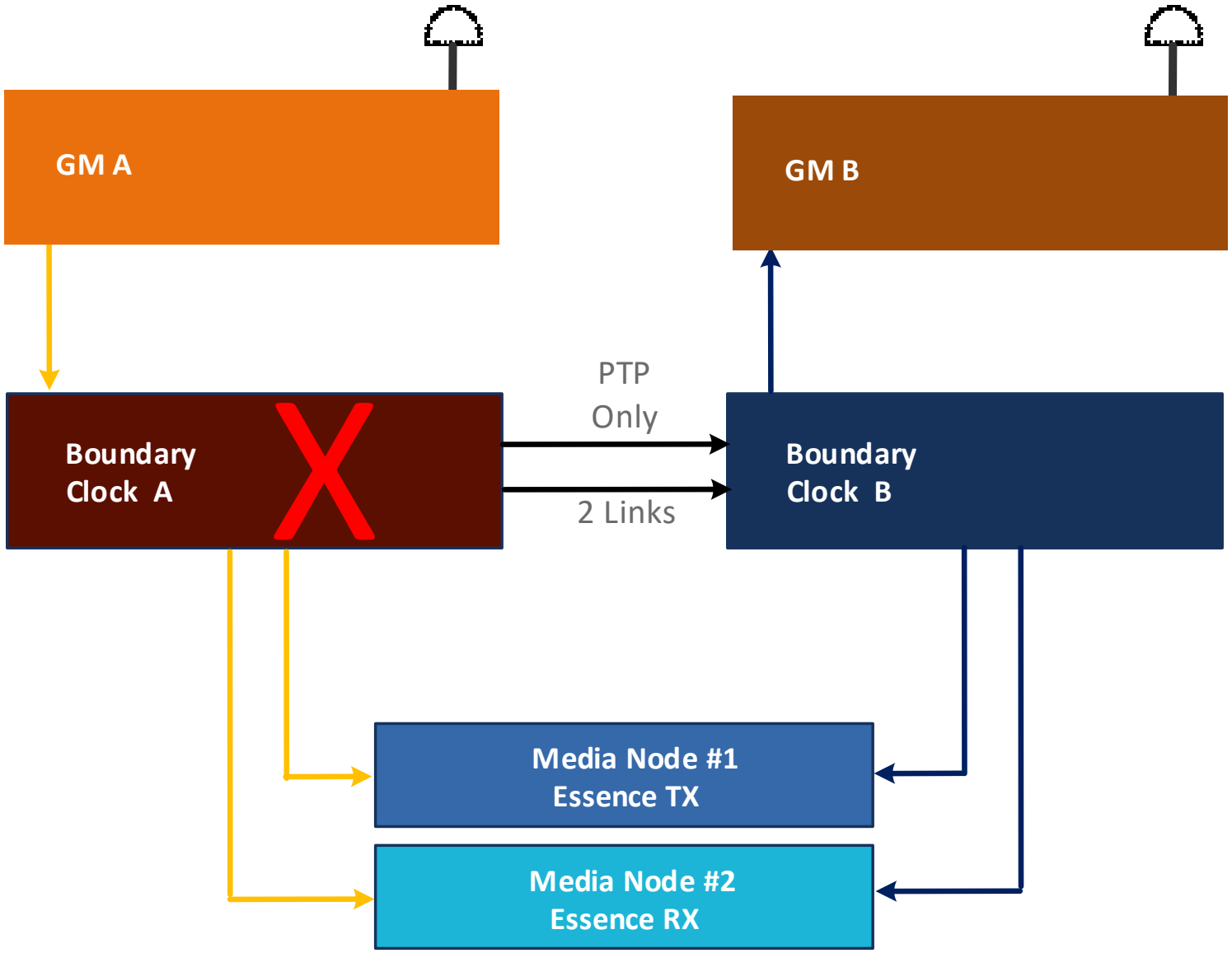
Failure Use Cases - #1 – GM link/GM/GM Interface



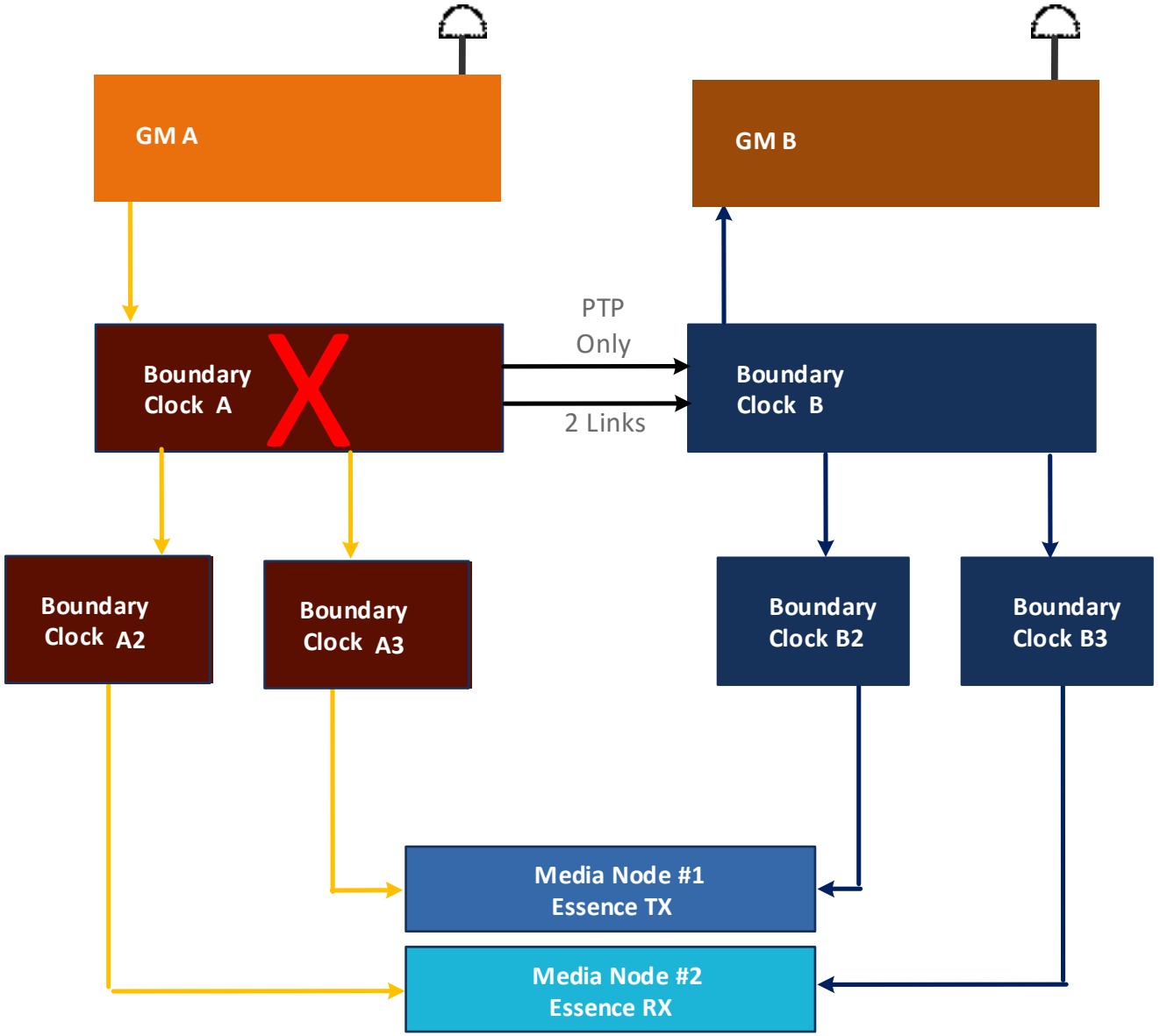
Failure Use Cases - #2 – Media Mode link/Interface



Failure Use Cases - #3 – Media Mode switch



Failure Use Cases - #4 – Spine Switch



Additional Problem Statement

- defaultDS.slaveOnly = True and the Media Node “wins” the BMCA so no “master”

Possible Solutions

Not reinvent the wheel

- Power Industry has a similar challenge and SMPTE needs to examine their solution

Solution

BMCA Decision rules

1. Priority 1 (P1) – User set
2. Clock quality
   - (E.g. class and accuracy - GPS lock, freerun)
3. Priority 2 (P2) – User set
4. Other random stuff

Solution

- Need to find the best GM over all the Media Nodes interfaces
  - E.g. BMCA over all the interfaces

Summary

Summary

- Media essence and the timing have different redundancy models
- “With any 1 failure (E.g. Link, interface, or switch), all Media Nodes will converge to th same GM”
- Only a limited number of use cases and implementations are impacted
- Need to examine the power industry to not reinvent the wheel
- Solution needs to find the best GM between both the Media Nodes interfaces
- Probable solution is based on BMCA between both the Media Nodes interfaces
- Looking for volunteers to help with the SMPTE standard

Thank You

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