

802.1AS Hot Standby Amendment: 4 Domains

Rodney Cummings
National Instruments

Introduction

- This presentation is a response to [this proposal](#), which shows 4 domains for 802.1AS hot standby
- This presentation assumes January PAR scope
 - No BMCA, 2 domains

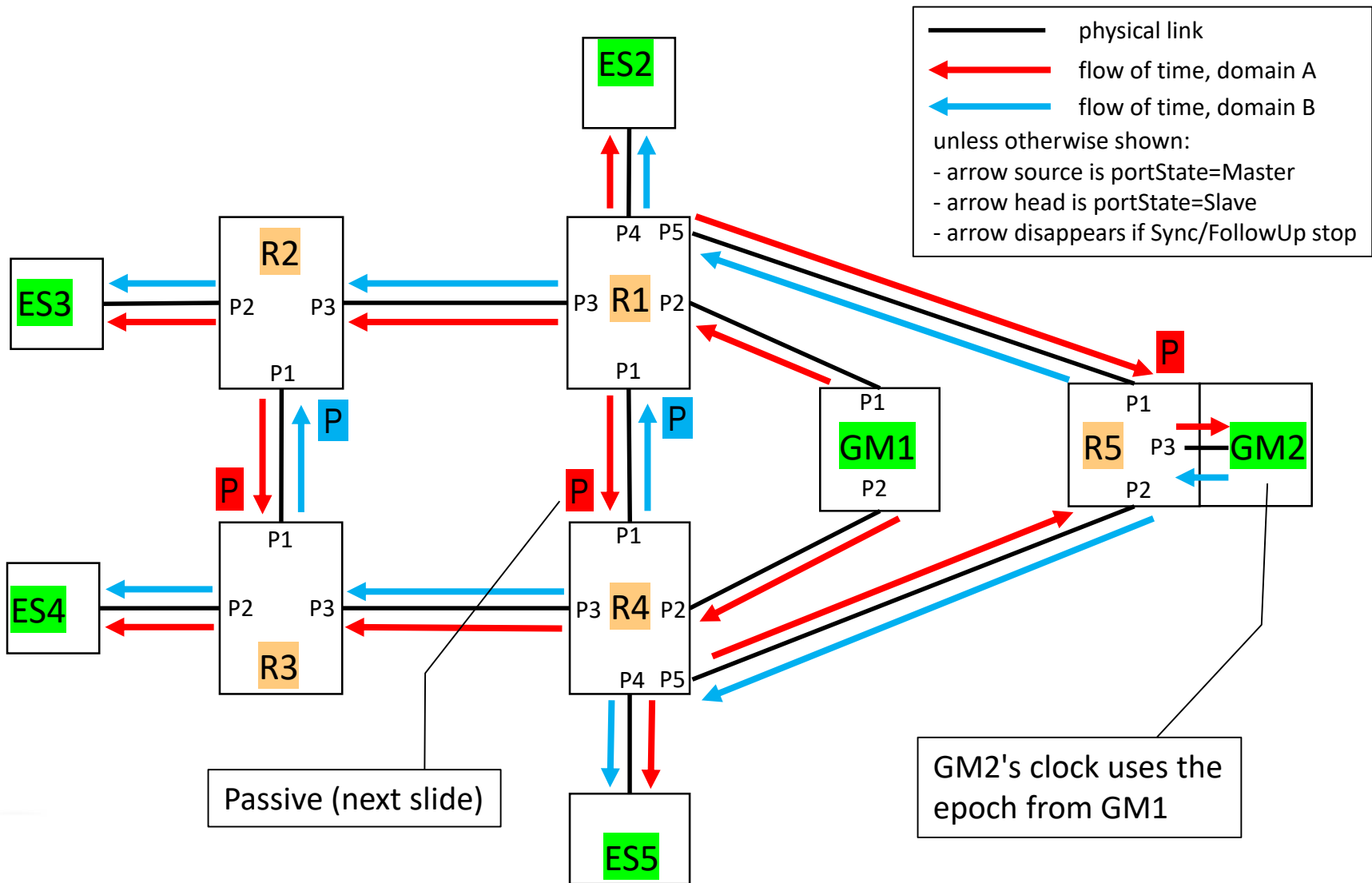
Assumptions

- Time sync performance requirement is network-wide
 - Conformance/certification is per system (hardware product)
 - For example, see P60802 drafts
- Goal for hot-standby: maintain network performance
 - Unlike BMCA, goal is not to find best-performing path
 - All paths meet network requirement
- Use as many paths as possible for availability

What is a Domain?

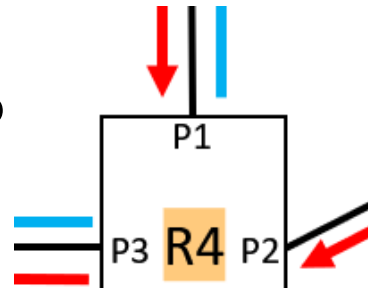
- Message headers have distinct domainNumber value
 - Not relevant by itself... it's just a number
- Each domain carries a distinct time
 - Do two GMs carry different time? Yes
 - Yes; each GM has its own clock
 - "Clock" per 1588 definition: "A device that can provide a measurement of the passage of time since a defined epoch."
 - Do two paths carry different time?
 - Technically Yes, but under the previous assumptions... No
 - All paths meet network performance, so effectively the same
- Are there limitations on the path a domain can use?
 - Yes, but there are simple ways to work around limitations

Two Domains

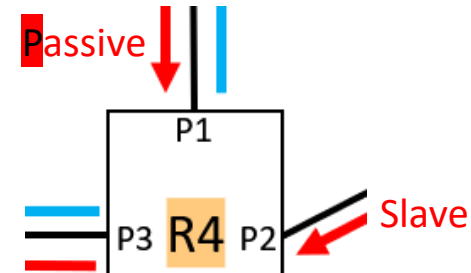


Multiple Flows Into Relay

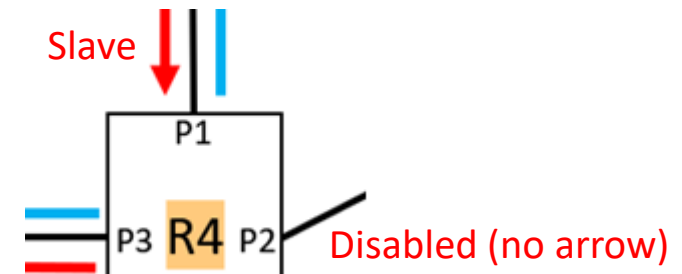
How do we support this?



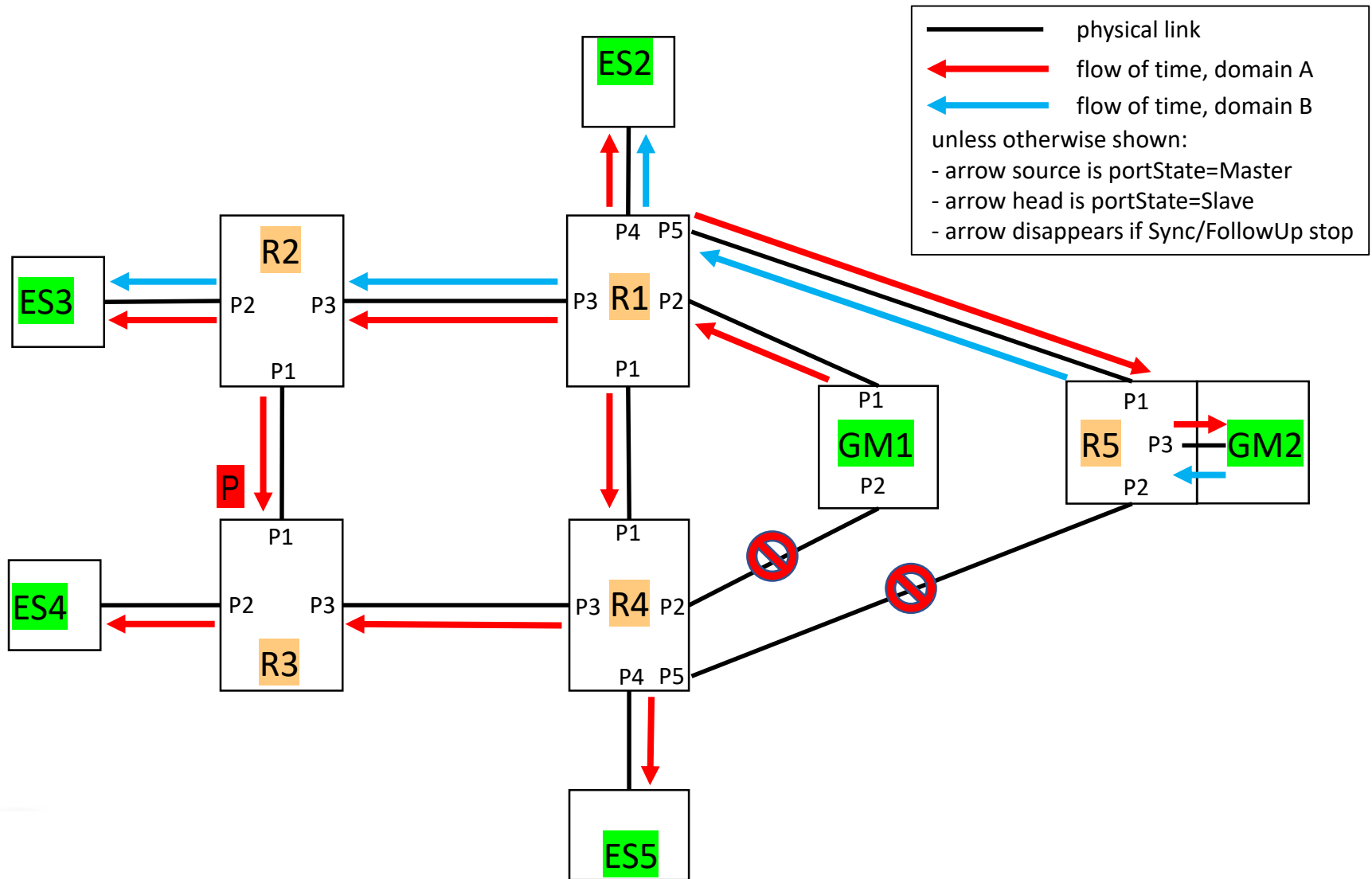
- Assume we have boolean `isSynced` per port
- Initial portState configuration:



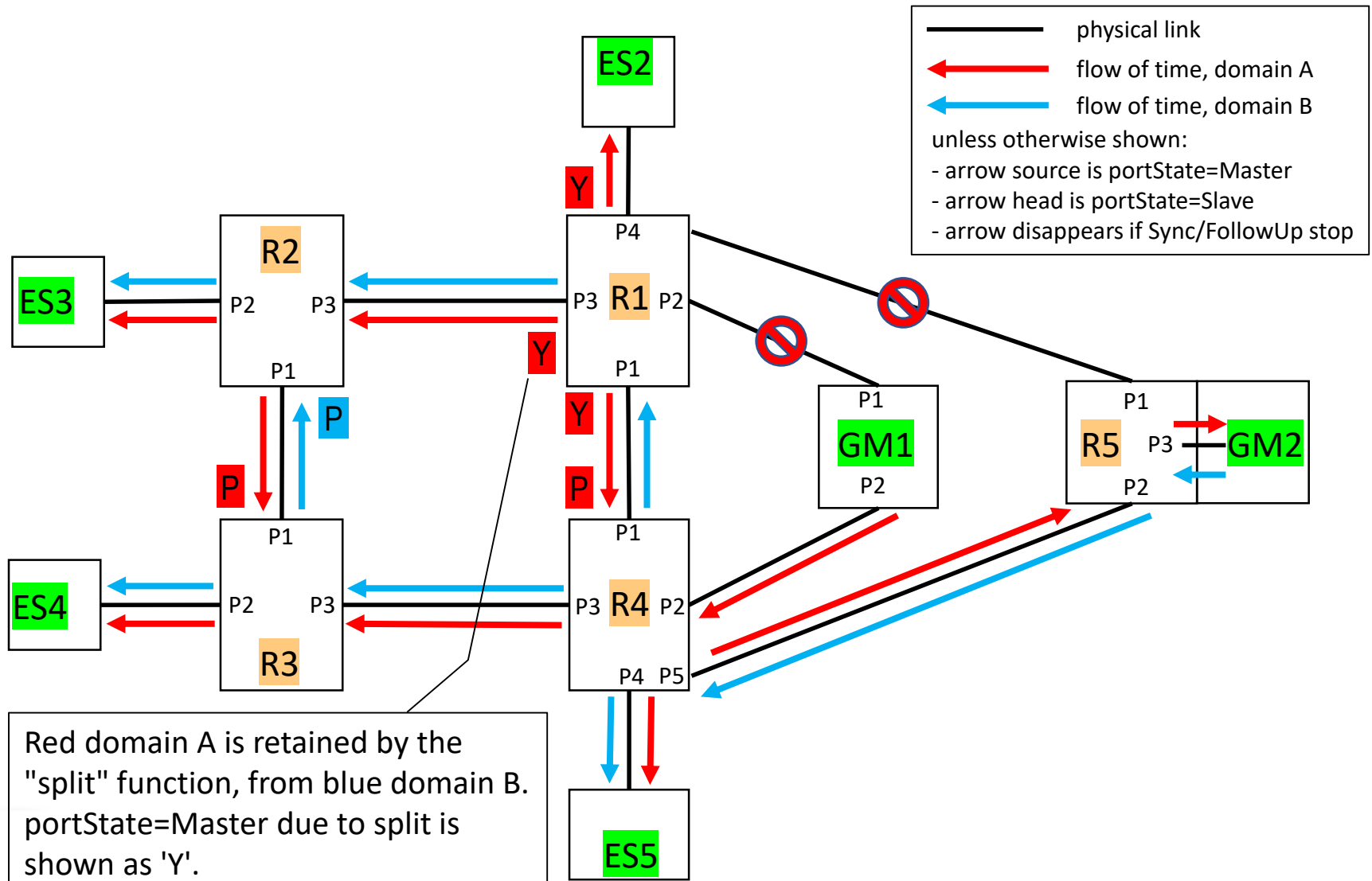
- If `isSynced` for P2 becomes false, local hot-standby state machine changes configuration to:



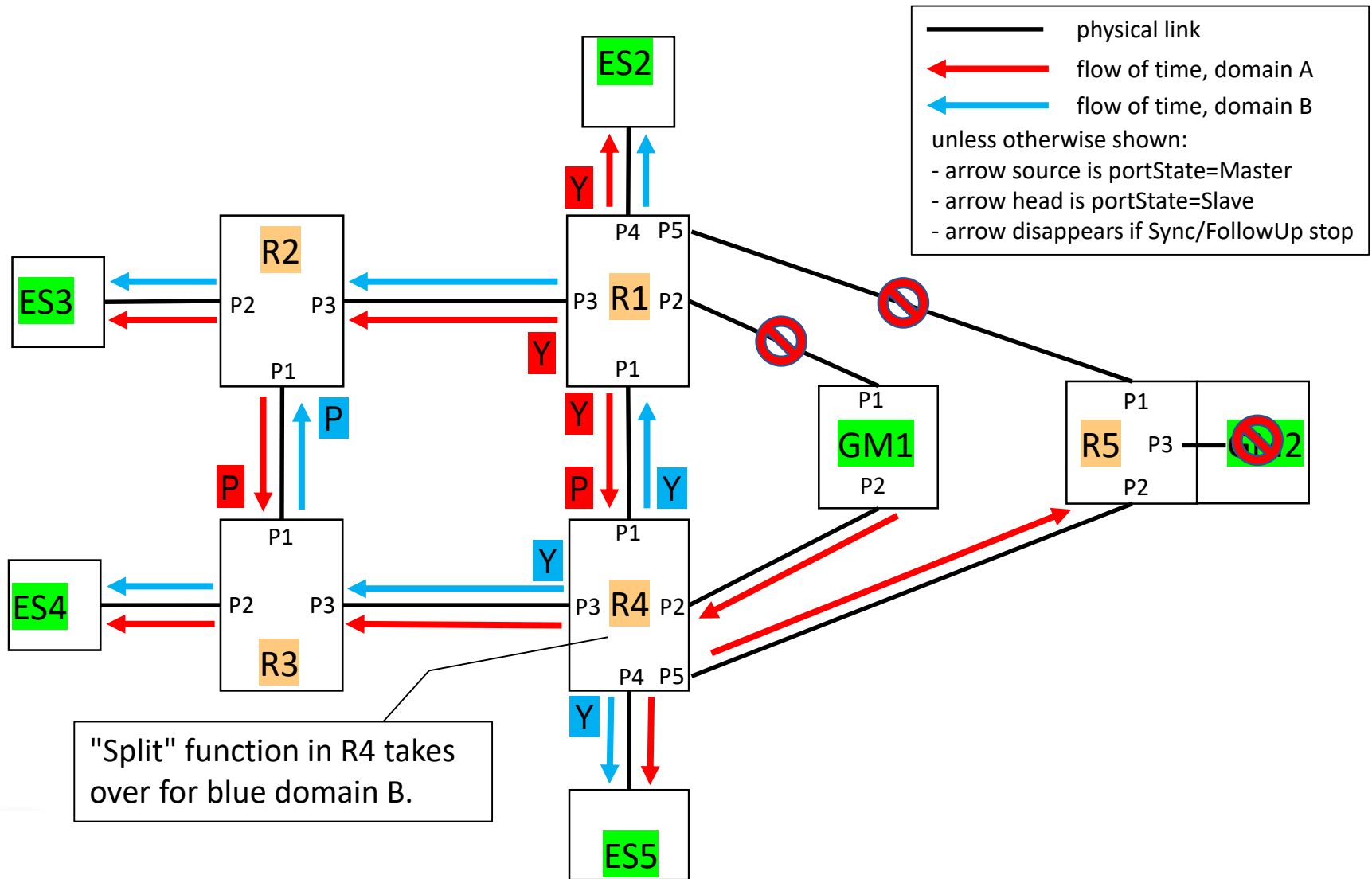
Two Links Fail: Mitigated



Other Two Links Fail: Mitigated



Two Links & One GM Fail: Mitigated



Thank You