802.1ASdm
Hot Standby Split function
Comment #34 against D0.5

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IEEE 802.1 TSN

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Comment #34

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Comment Type **TR** *Comment Status* **A**

Don't we need to also take into consideration the transfer of time sync from the secondary to the primary?
The reason for the Editor to not consider this case was described in NOTE 2 in the next page.
The commenter thinks that it is important to consider this case, and if there is interest from the group, then the commenter can bring a contribution to further develop the technical details on this.

SuggestedRemedy

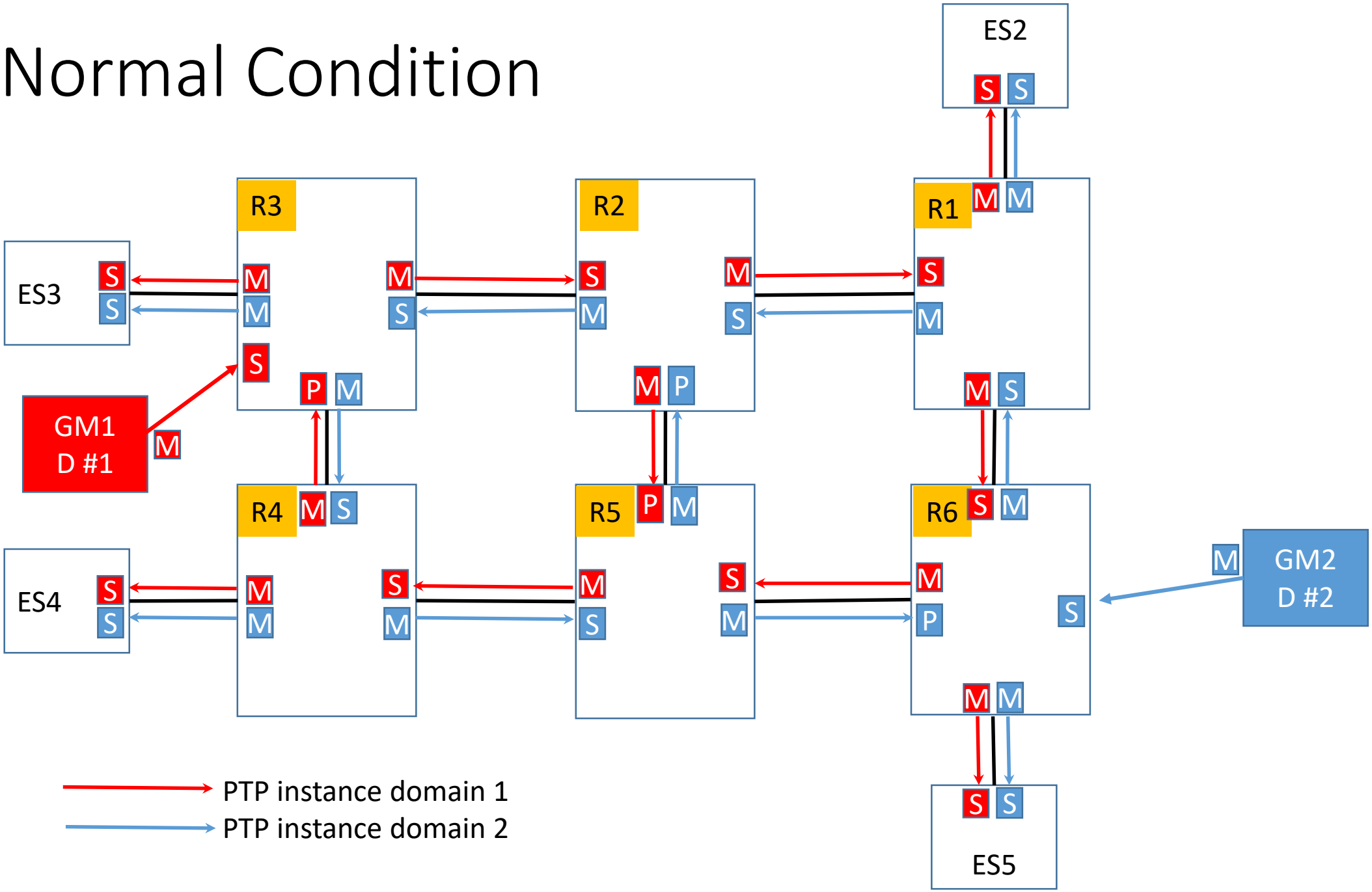
If the group agrees the commenter will bring a contribution to address this case.

Response *Response Status* **C**

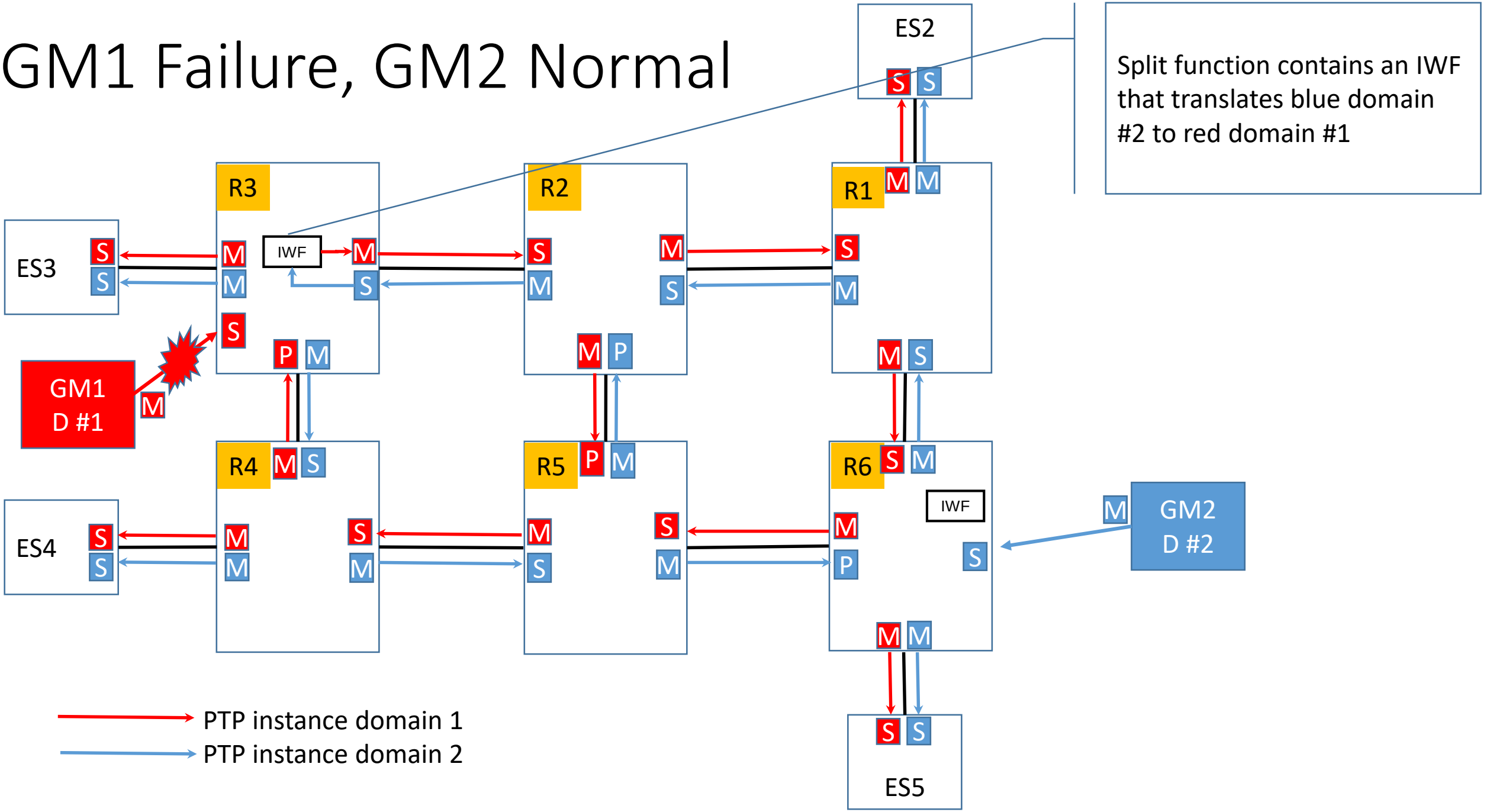
ACCEPT IN PRINCIPLE. Add an editor's note requesting contributions on this topic.
Incorporate the results of the discussion of submitted contribution(s).

NOTE 2—The split functionality is used only to transfer time synchronization information from the primary PTP Instance to the secondary PTP Instance when the secondary PTP Instance is in the NOT_SYNCED state. It is not used to transfer time synchronization information from the secondary PTP Instance to the primary PTP Instance when the primary PTP Instance is in the NOT_SYNCED state. The reason for this is that, if time synchronization could be transferred from the primary PTP Instance to the secondary PTP Instance at one time-aware system, and from the secondary PTP Instance to the primary PTP Instance at another time-aware system, the possibility of creating a timing loop would exist.

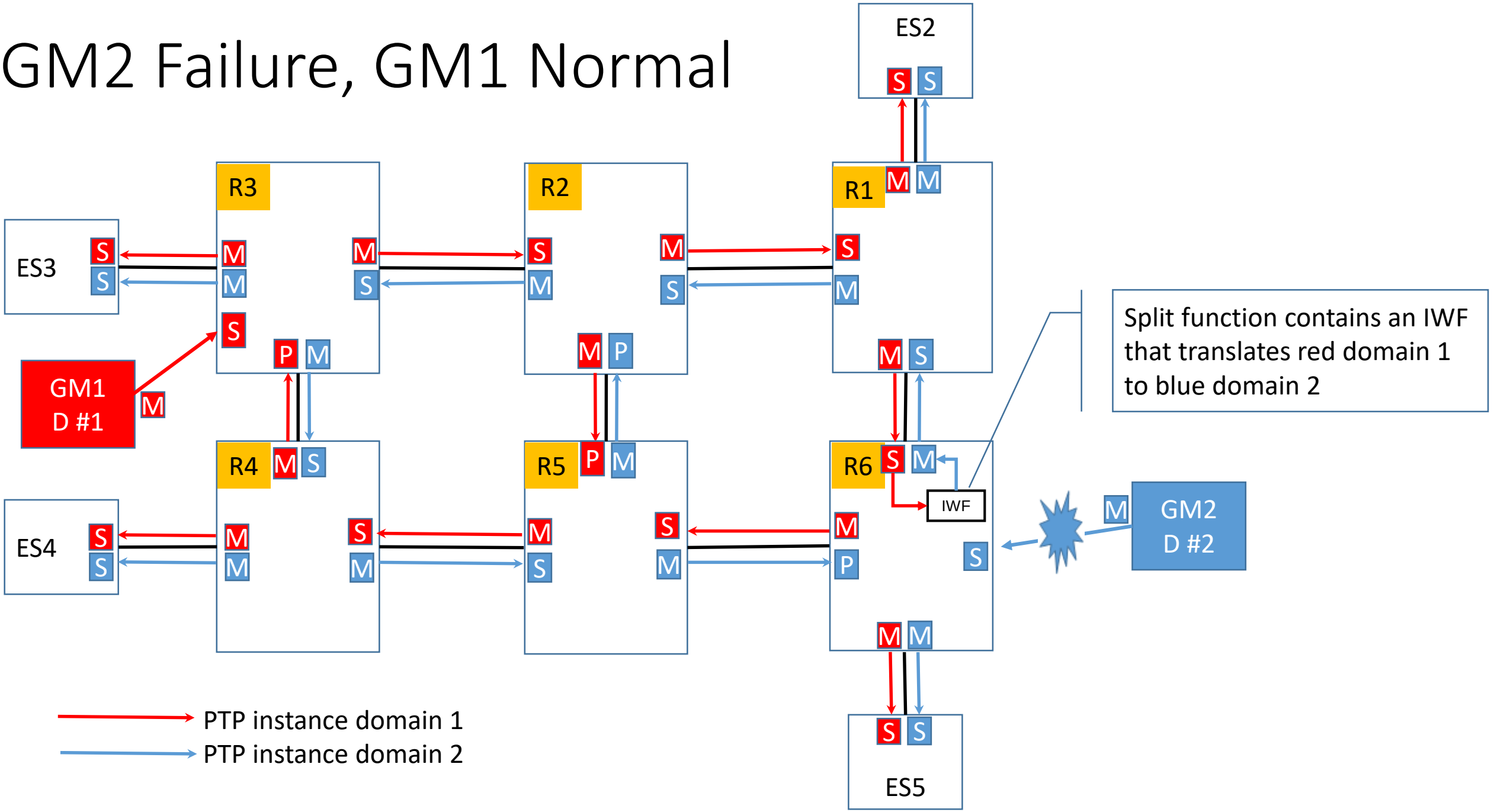
Normal Condition



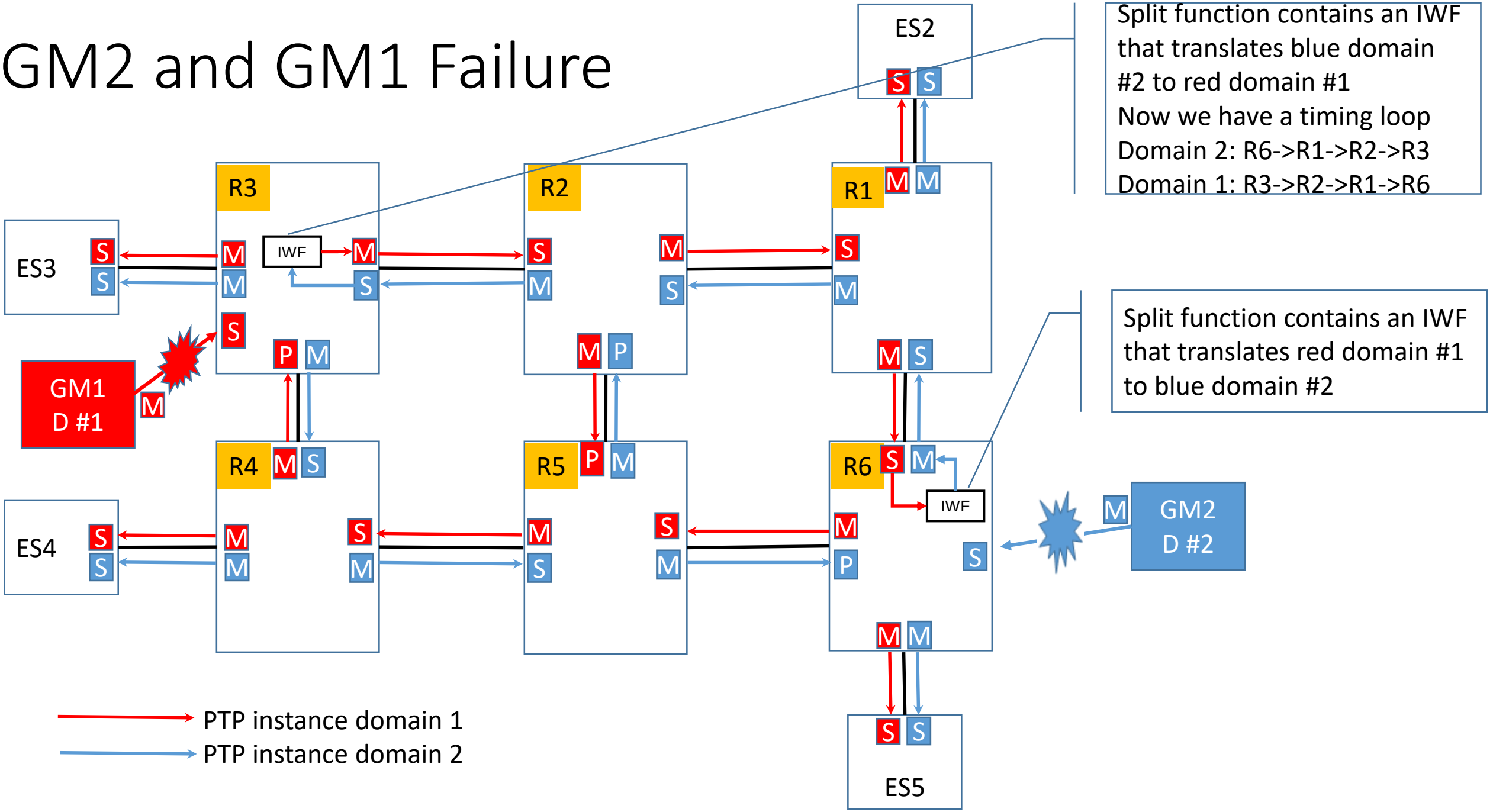
GM1 Failure, GM2 Normal



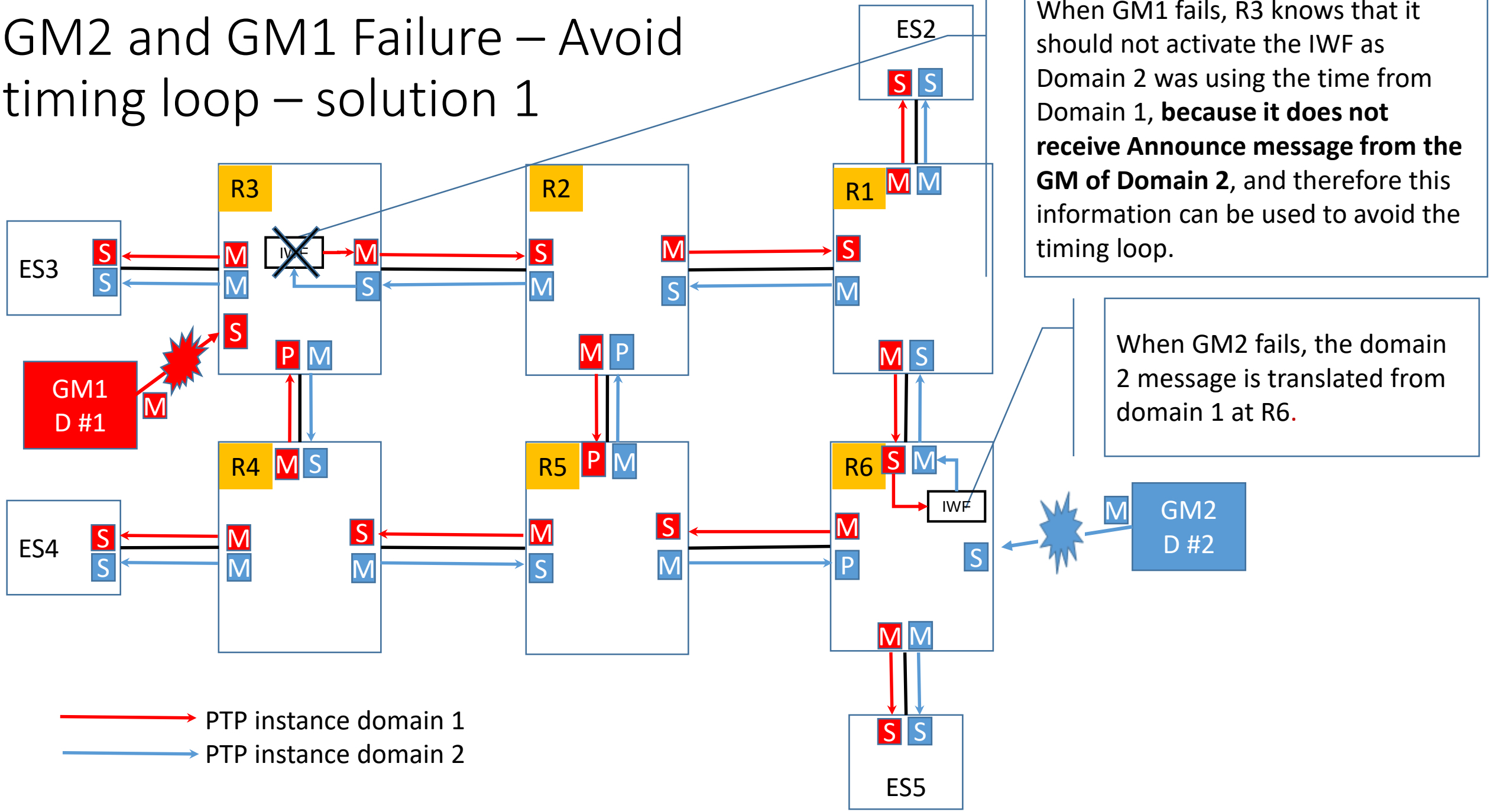
GM2 Failure, GM1 Normal



GM2 and GM1 Failure



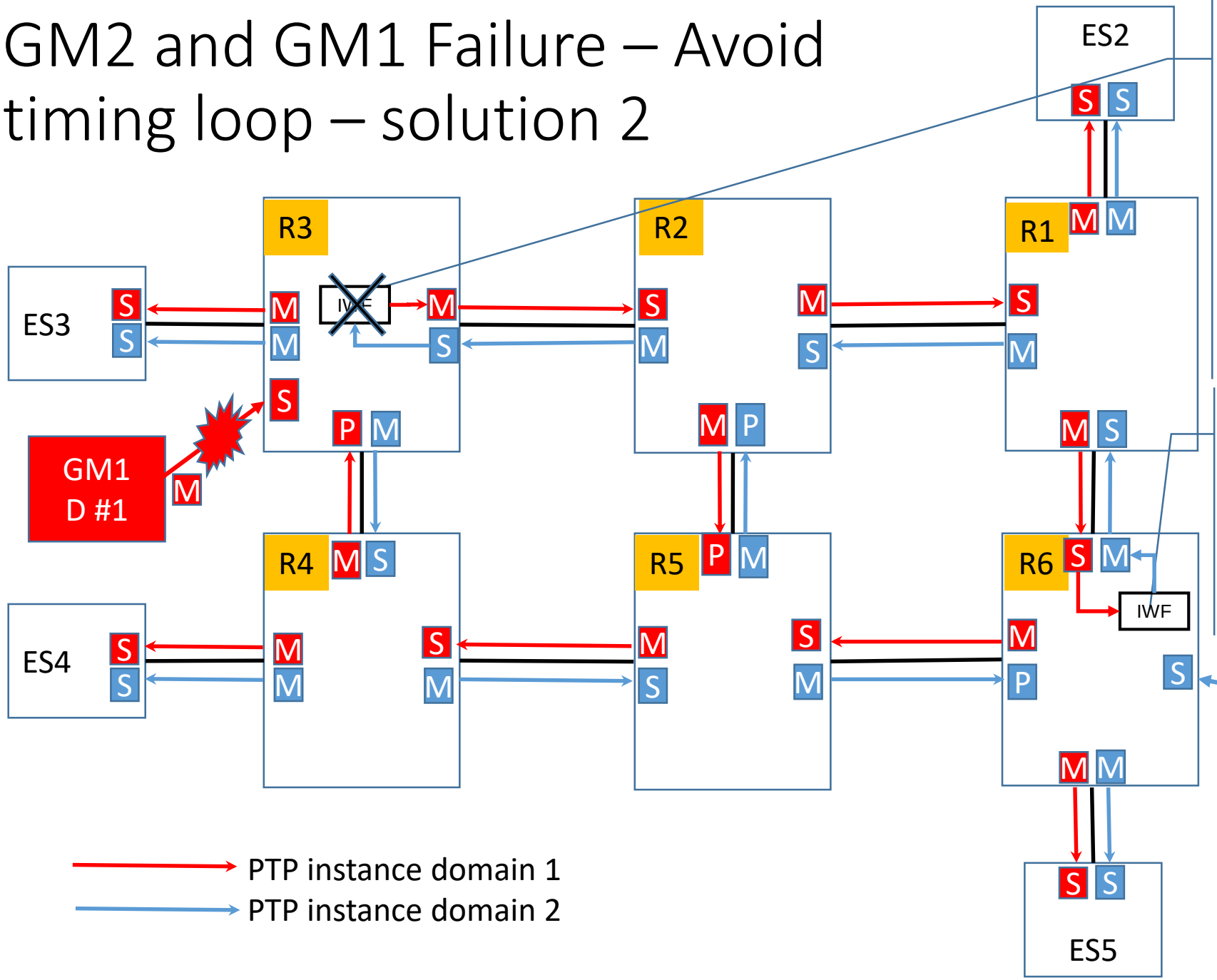
GM2 and GM1 Failure – Avoid timing loop – solution 1



When GM1 fails, R3 knows that it should not activate the IWF as Domain 2 was using the time from Domain 1, **because it does not receive Announce message from the GM of Domain 2**, and therefore this information can be used to avoid the timing loop.

When GM2 fails, the domain 2 message is translated from domain 1 at R6.

GM2 and GM1 Failure – Avoid timing loop – solution 2



When GM1 fails, R3 knows that it should not activate the IWF as Domain 2 was using time from Domain 1, **send some** information downstream that can be used to avoid the timing loop (e.g. PTP profileSpecific 1" flag can be defined to inform PTP instances that the split function was used upstream.

When GM2 fails, the domain 2 message is translated from domain 1 at R6.
Send information downstream to indicate the use of IWF (e.g. use "PTP profileSpecific 1" flag

Suggested changes to the text

17.6.3.3.2.2 Split Functionality

The HotStandbySystem shall provide an interworking function (IWF) that transfers time synchronization information from the primary PTP Instance to the secondary PTP Instance when the secondary PTP Instance is in the NOT_SYNCED state, or from the secondary PTP Instance to the primary PTP Instance when the primary PTP Instance is in the NOT_SYNCED state. The IWF provides the most recently received PortSyncSync structure of the primary/secondary PTP Instance SiteSync entity to the secondary/primary PTP Instance SiteSync entity, as follows:

a) The domainNumber is changed from the primary/secondary PTP Instance domainNumber to the secondary/primary

PTP Instance domainNumber;

b) localPortNumber is changed to the portNumber of the secondary/primary PTP Instance slave port; and

c) All other members of the primary/secondary PTP Instance PortSyncSync structure are provided to the

Secondary/primary PTP Instance SiteSync entity unchanged.

NOTE 1—With the above, the secondary/primary PTP Instance state machines operate as though the time synchronization information had been received from the secondary/primary PTP Instance slave port. The SiteSync entity of the secondary/primary PTPInstance transfers the timing information to the PortSync entity of each master port of the secondary/primary PTP Instance. Each PortSyncSync state machine computes rateRatio, which now is relative to the primary/secondary PTP Instance GM. Each MDSncSend state machine computes the fields of transmitted Sync and, in the two-step case, Follow_Up messages. The copied syncReceiptTimeout time is less than currentTime because sync receipt timeout has not occurred at the primary/secondary PTP Instance.

Replace NOTE 2 with the following

NOTE 2—The split functionality is used to transfer time synchronization information from the PTP Instance that is in the SYNCED state to the PTP Instance that is in the NOT_SYNCED state, it is not meant to cover the case where primary and secondary PTP Instances are in the NOT_SyncED. However if both the primary and the secondary PTP Instances are in the NOT_SyncED state, then there could be the possibility of creating a timing loop, as time synchronization could be transferred from the primary PTP Instance to the secondary PTP Instance at one time-aware system, and from the secondary PTP Instance to the primary PTP Instance at another time-aware system.

Thank you!