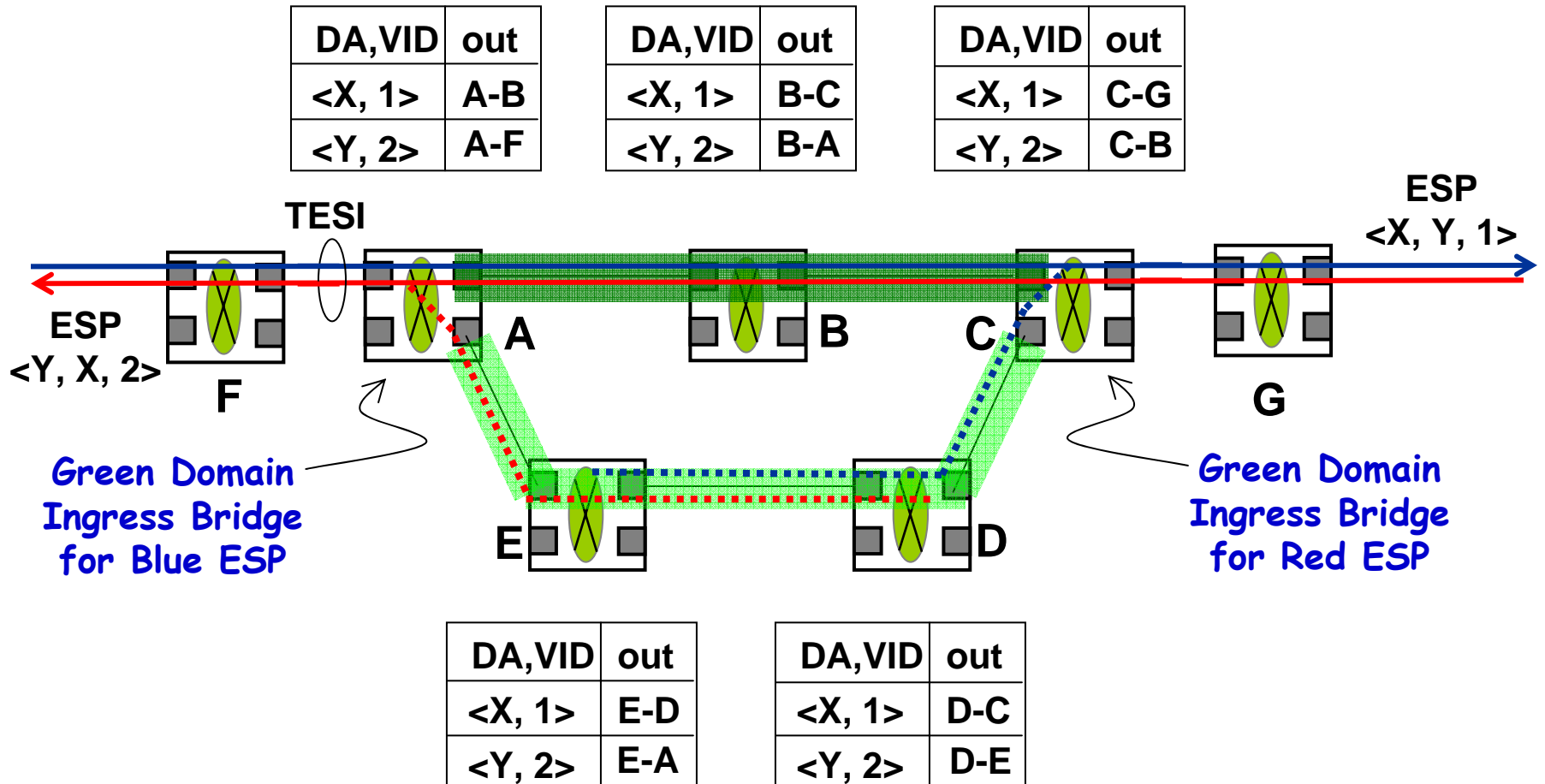


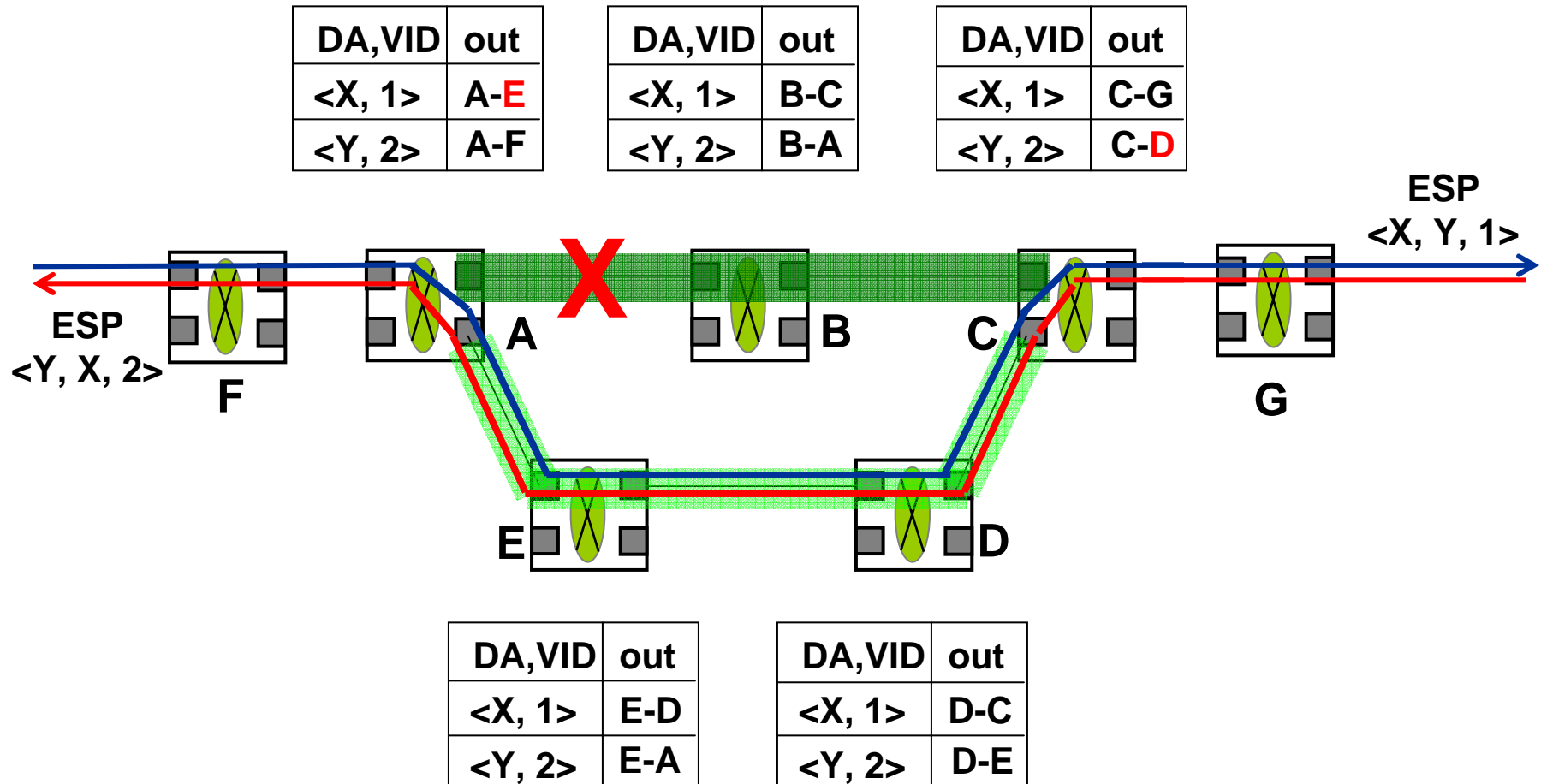
PBB-TE Segment Protection Technical Proposal

Bob Sultan, Ben Mack-Crane, Deng
Zhusheng: *Huawei Technologies*

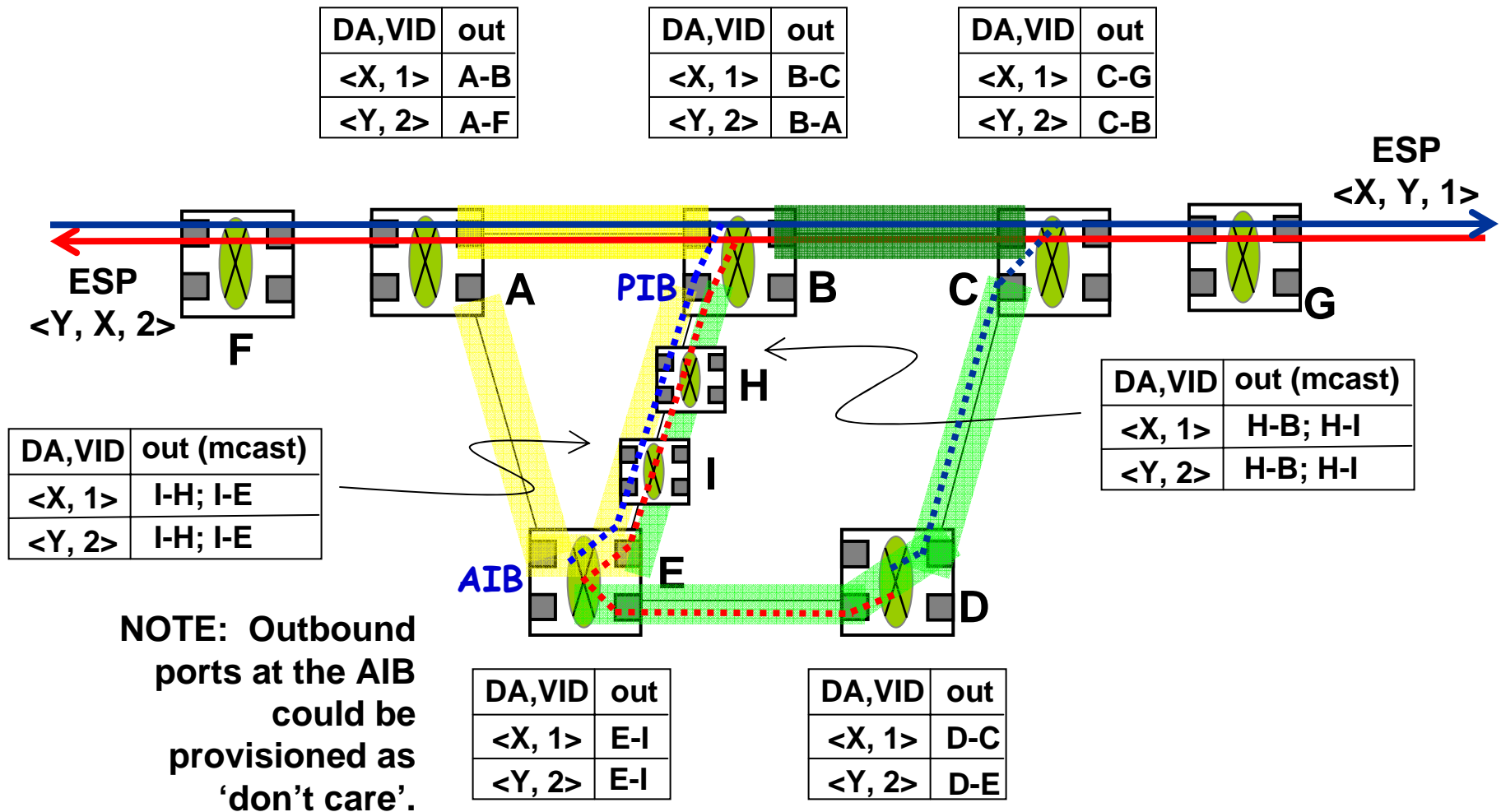
Provisioning of FDB outbound port entries (single domain)



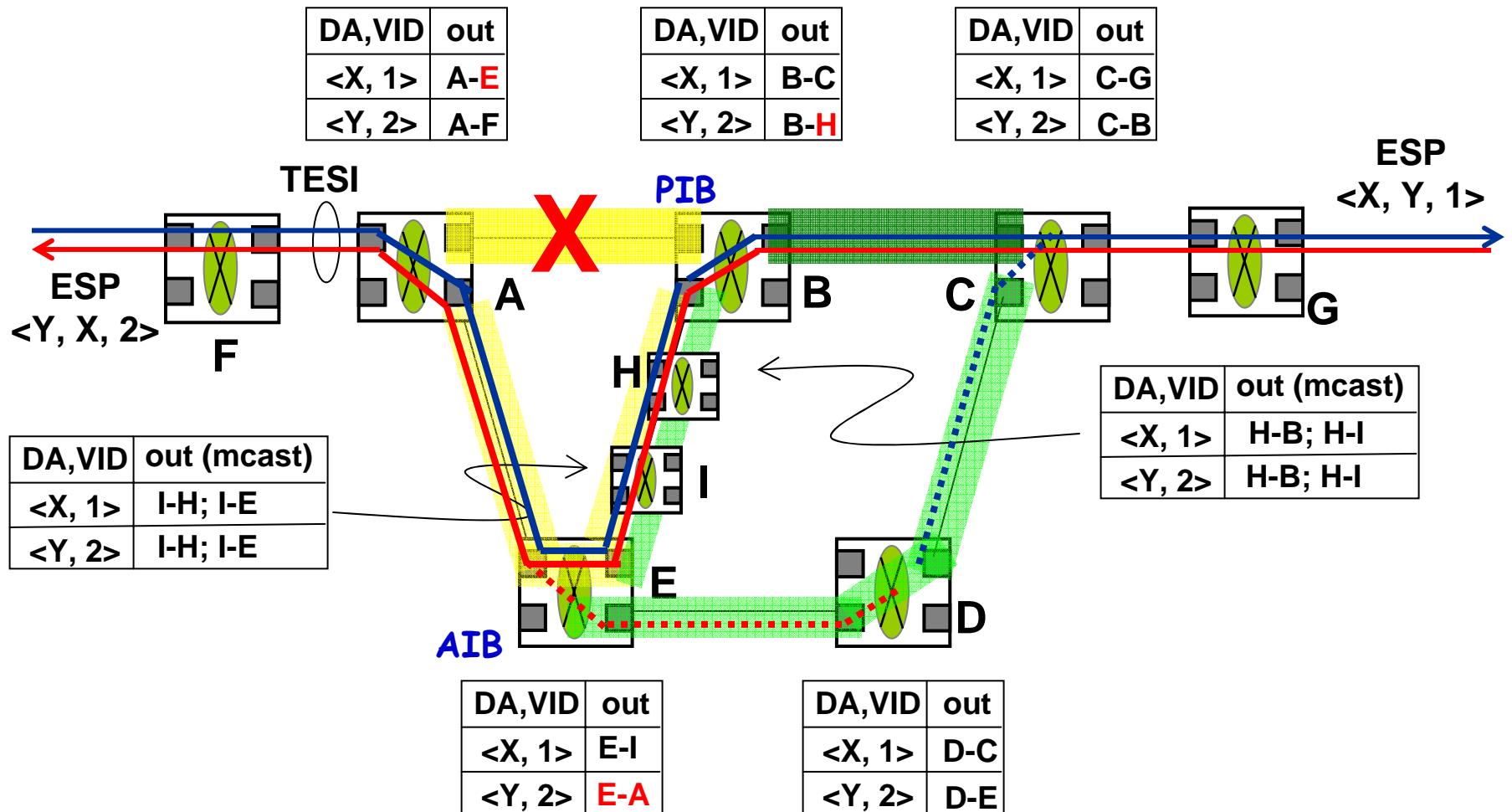
FDB outbound port update on failure (isolated domain)



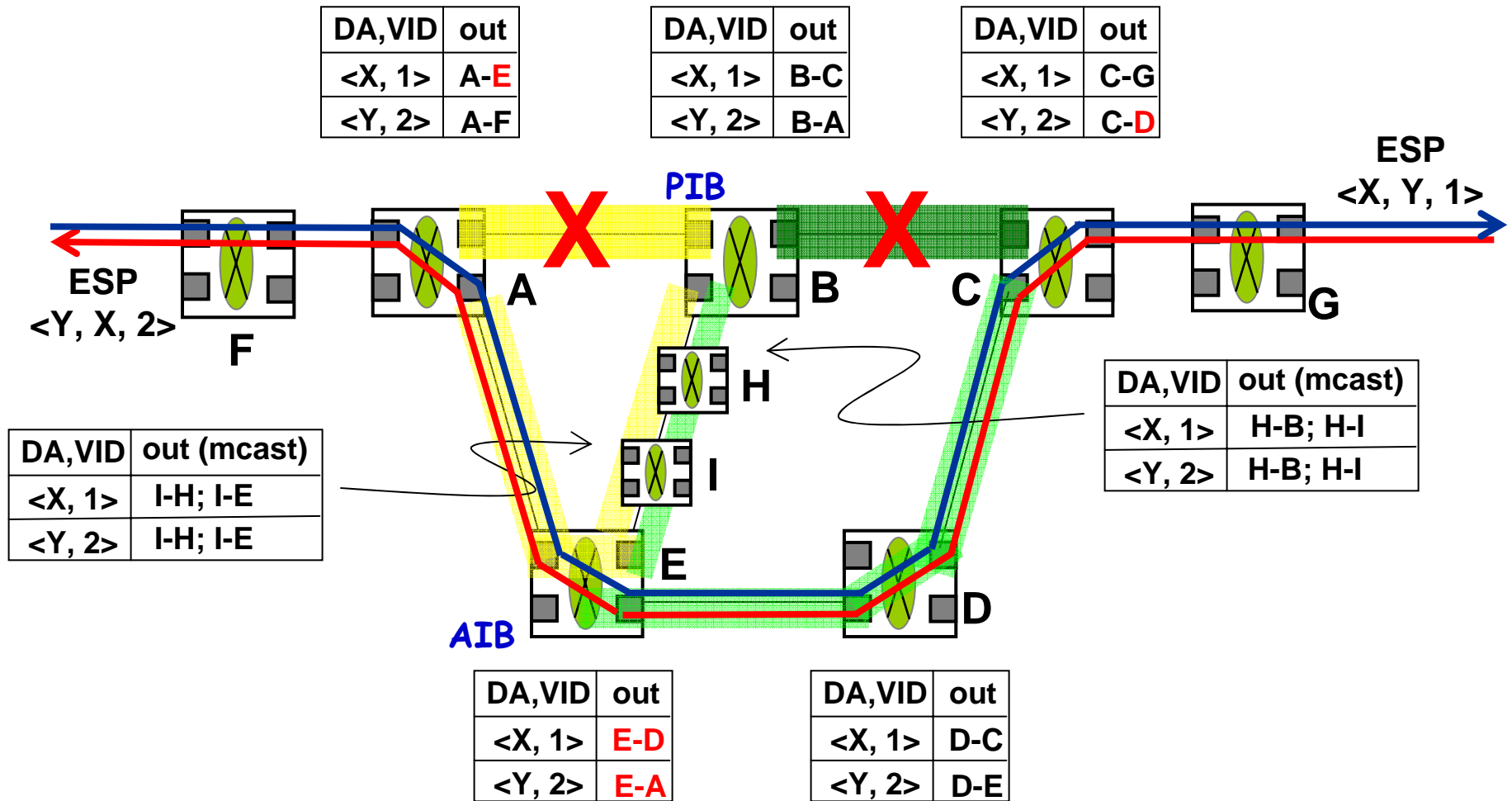
Provisioning of FDB outbound port entries (shared segment)



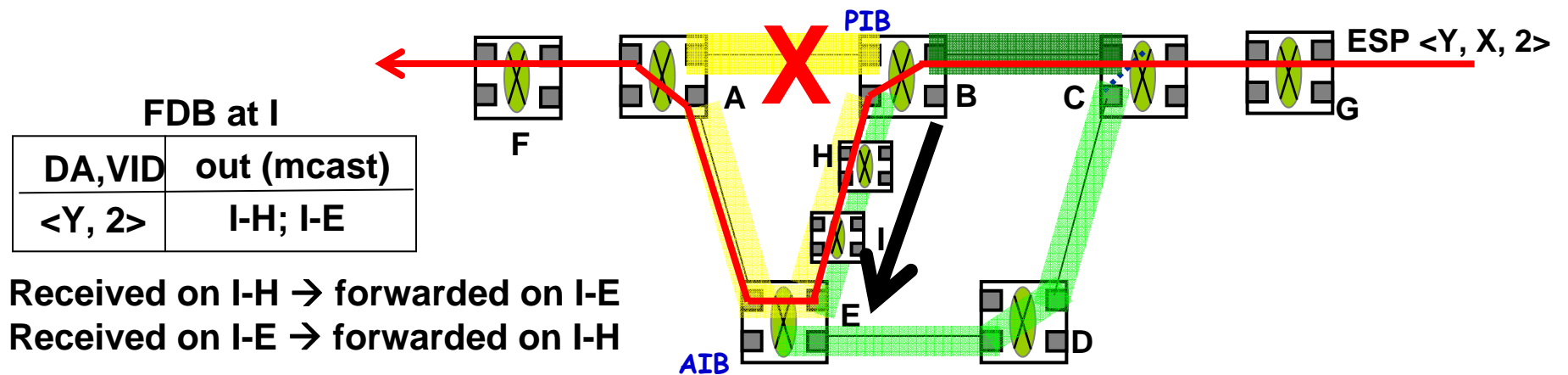
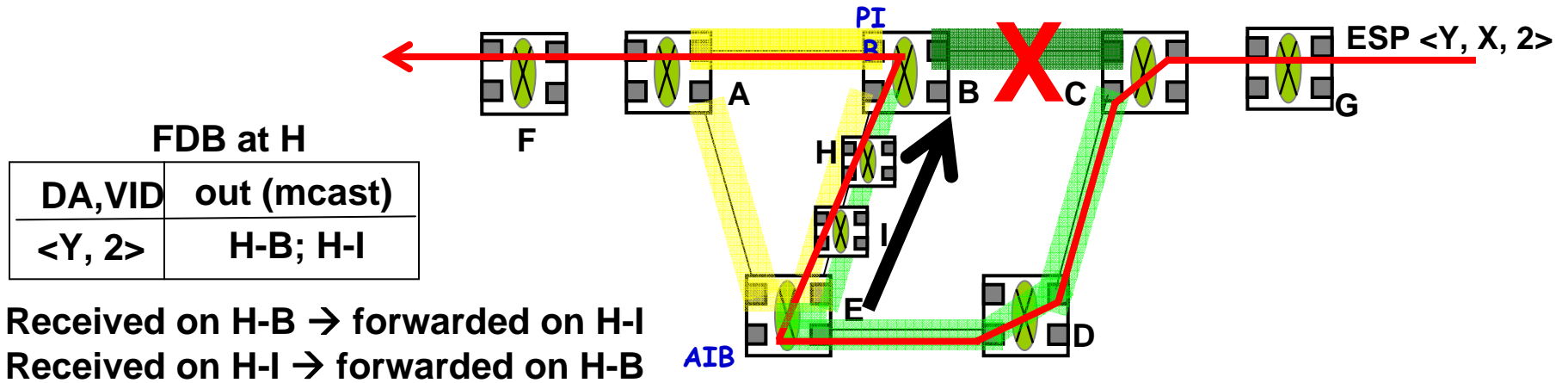
FDB entry outbound port update (failure of yellow domain primary segment)



FDB entry outbound port update (failure of both primary segments)

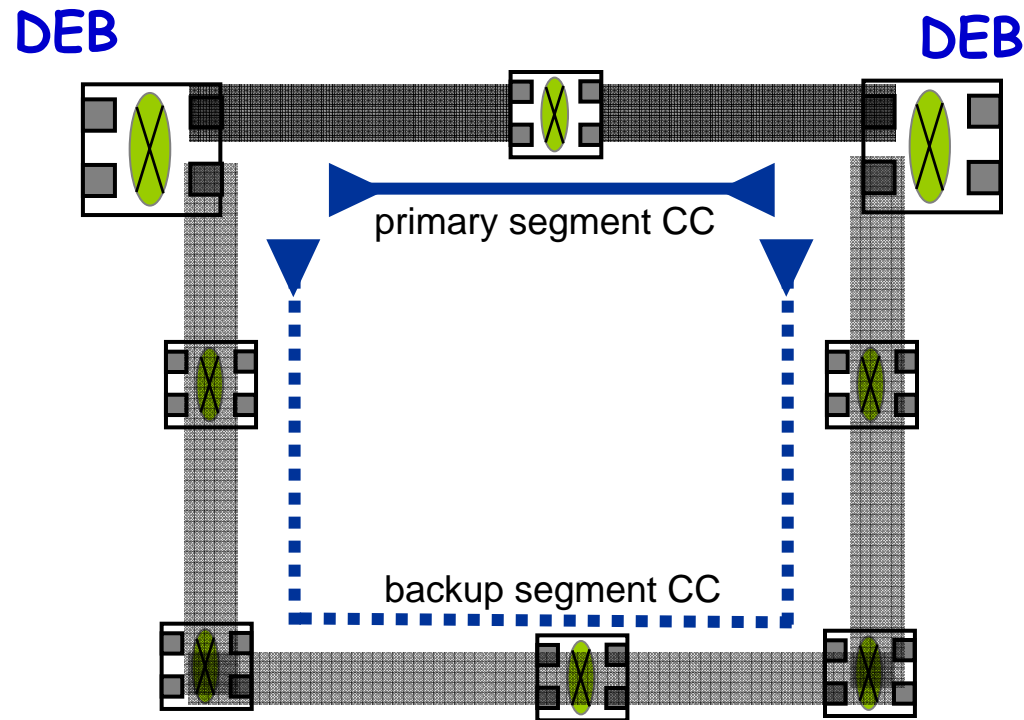


Forwarding on a Shared Segment



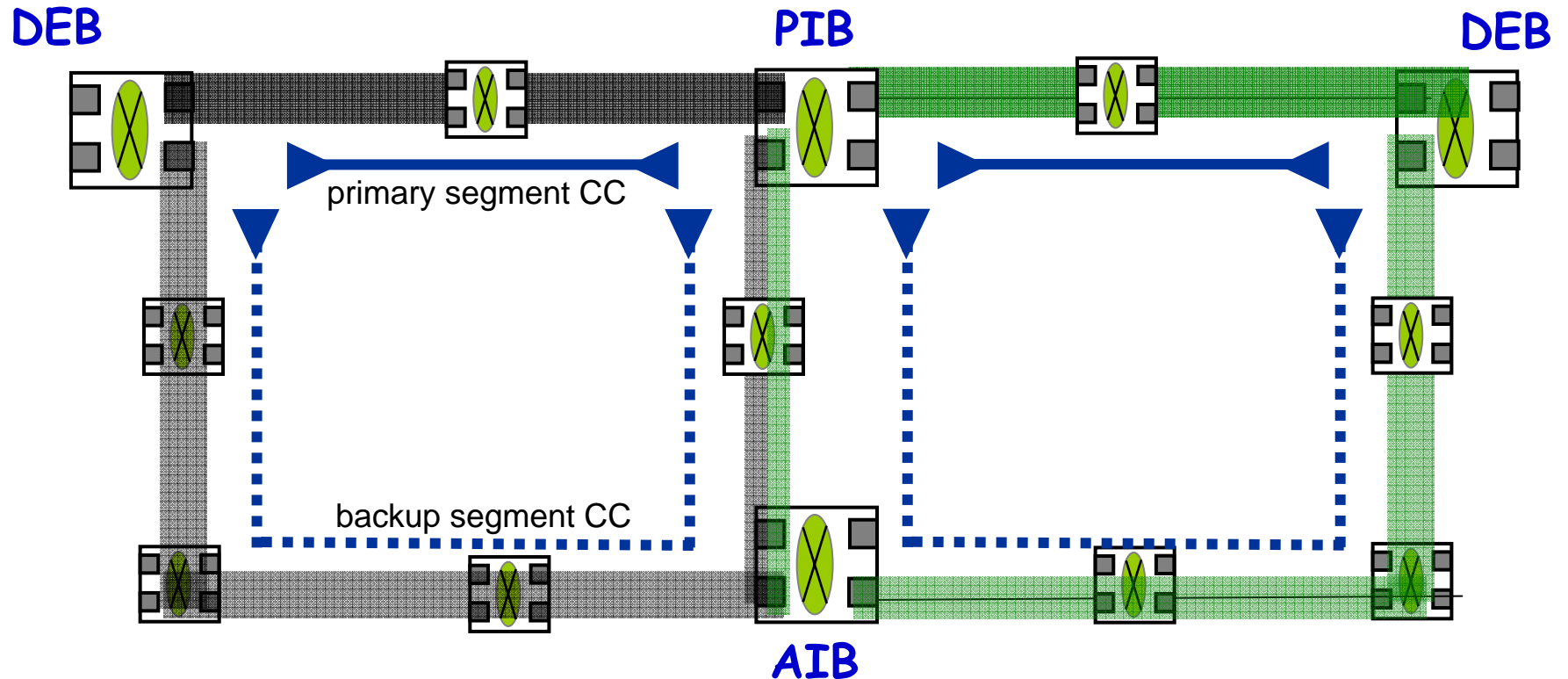
Bridges on shared segment use multicast entries to forward data *in either direction* on shared segment.

Monitoring performed by DEB



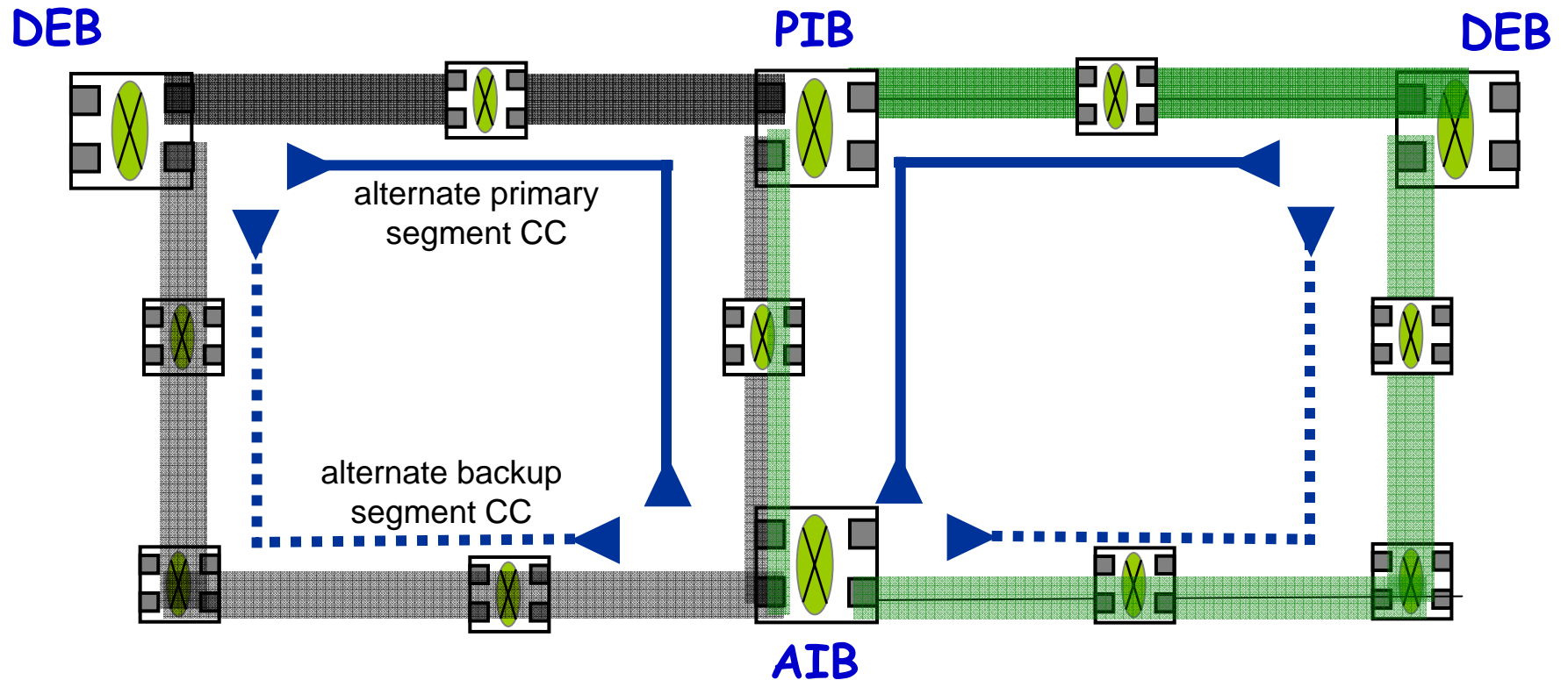
CC performed across primary segment and backup segment (*not* on a TESI carrying data traffic)

Monitoring in domains sharing a segment



**DEB monitors pri and bkup segments in its domain.
PIB monitors pri and bkup segments in both domains.**

Monitoring in domains sharing a segment



AIB monitors *alternate* primary and *alternate* backup segments in both domains.

Rules for setting FDB Entries

At DEB and PIB (per-domain):

Primary segment FAIL → forward on backup;

Forced switch request → forward on backup;

Manual switch to primary → forward on primary if OK

Manual switch to backup → forward on backup if OK

Primary segment OK → forward on primary; except:

- **Forced switch**
- **Manual switch to backup and backup OK**

At AIB (per-domain):

Identical except substitute 'alternate primary' and 'alternate backup' for 'primary' and 'backup'

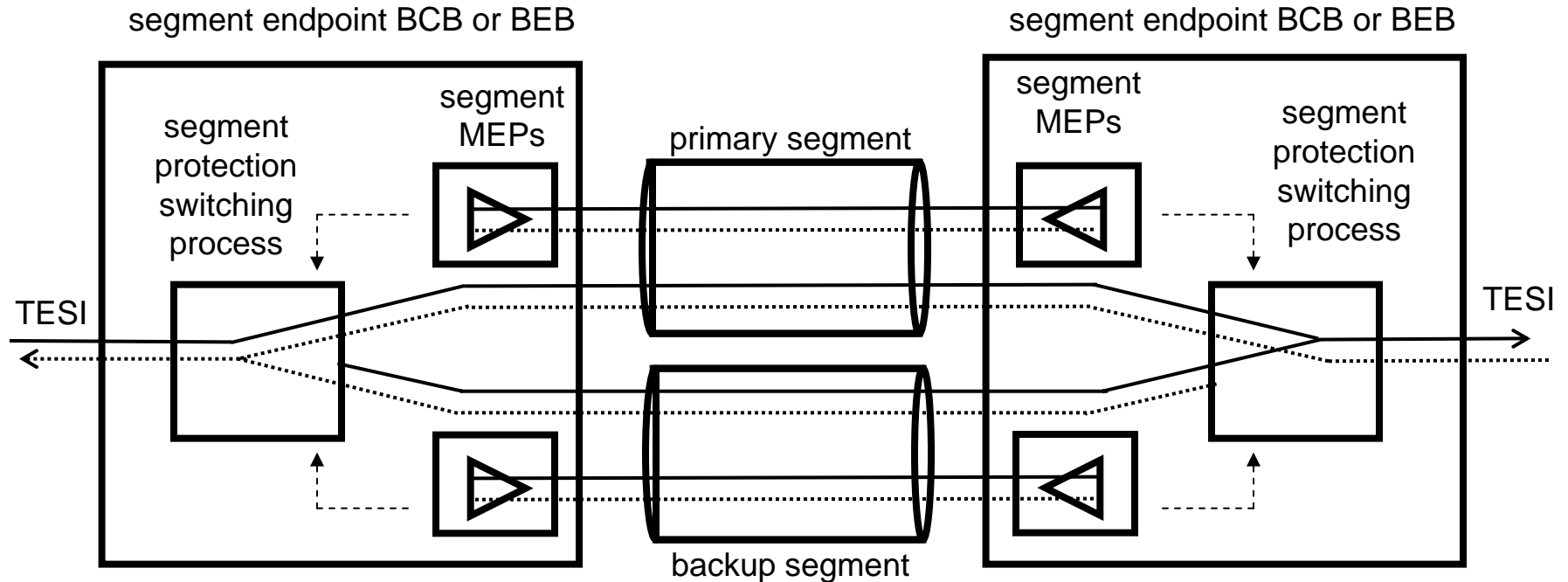
Segment Protection State Machine (SPSM)

- Present in each DEB, PIB (per-domain) and AIB (per-domain).
- AIB state machine substitutes 'alternate primary' for 'primary' and 'alternate backup' for backup.
- Operation similar to 26.10.3 Protection Switching State Machine (with appropriate modifications)

Segment Protection Requests Hierarchy is similar to 802.1Qay Table 26-8— Protection Requests Hierarchy

Priority	Request
highest	LoP
	FS
	p-SF bkup.CCFail
	w-SF pri.CCFail
	MSto Protection Backup MSto Working Primary
	WTR
lowest	NoRequest

Segment protection switching architecture



- **Analog of 802.1Qay figure 26.9**
- **FDB outbound port modified on segment protection switch (instead of BSI – BVID table entry in case of TESI protection)**
- **Key difference is that segment MEPs do not send CCM via end-to-end TESIs**