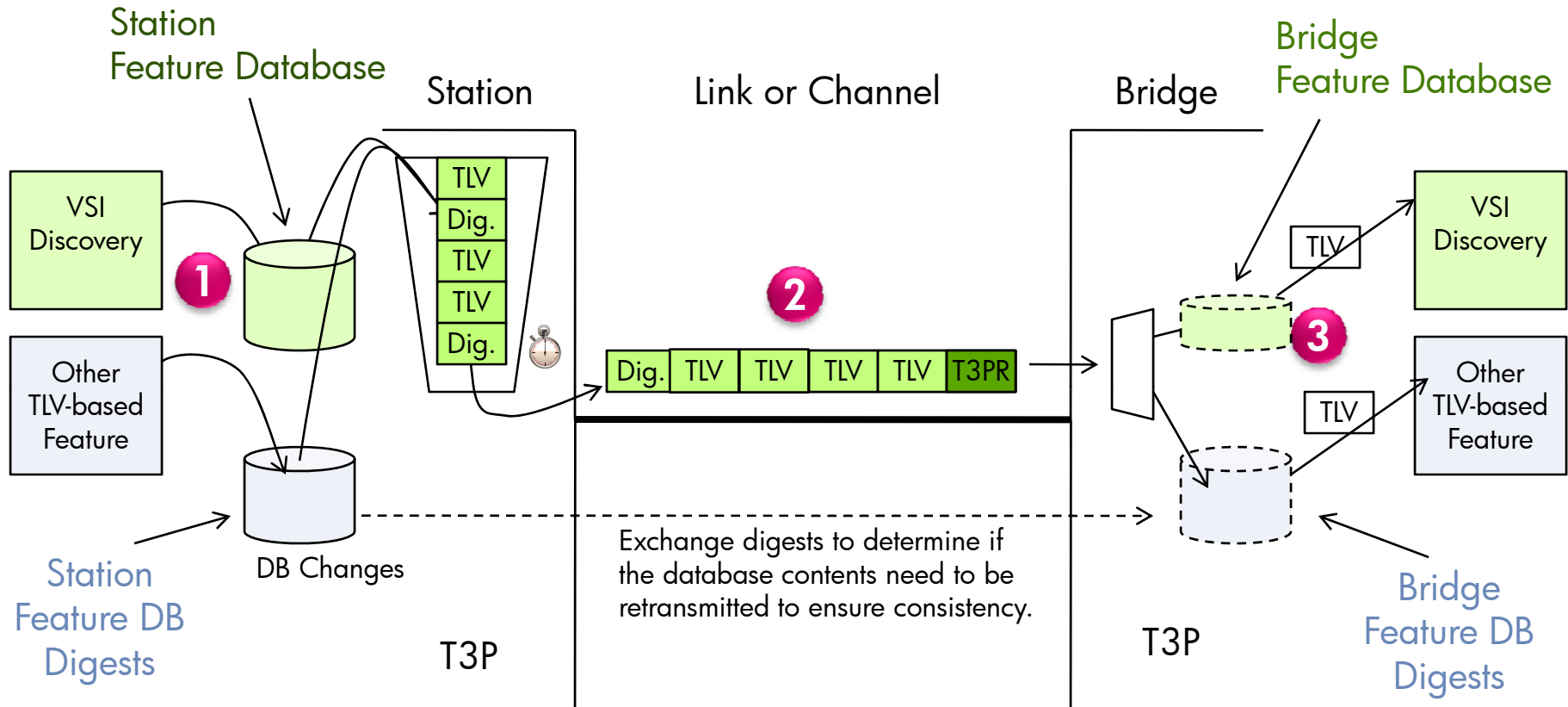


EVB Basic Architecture

v5

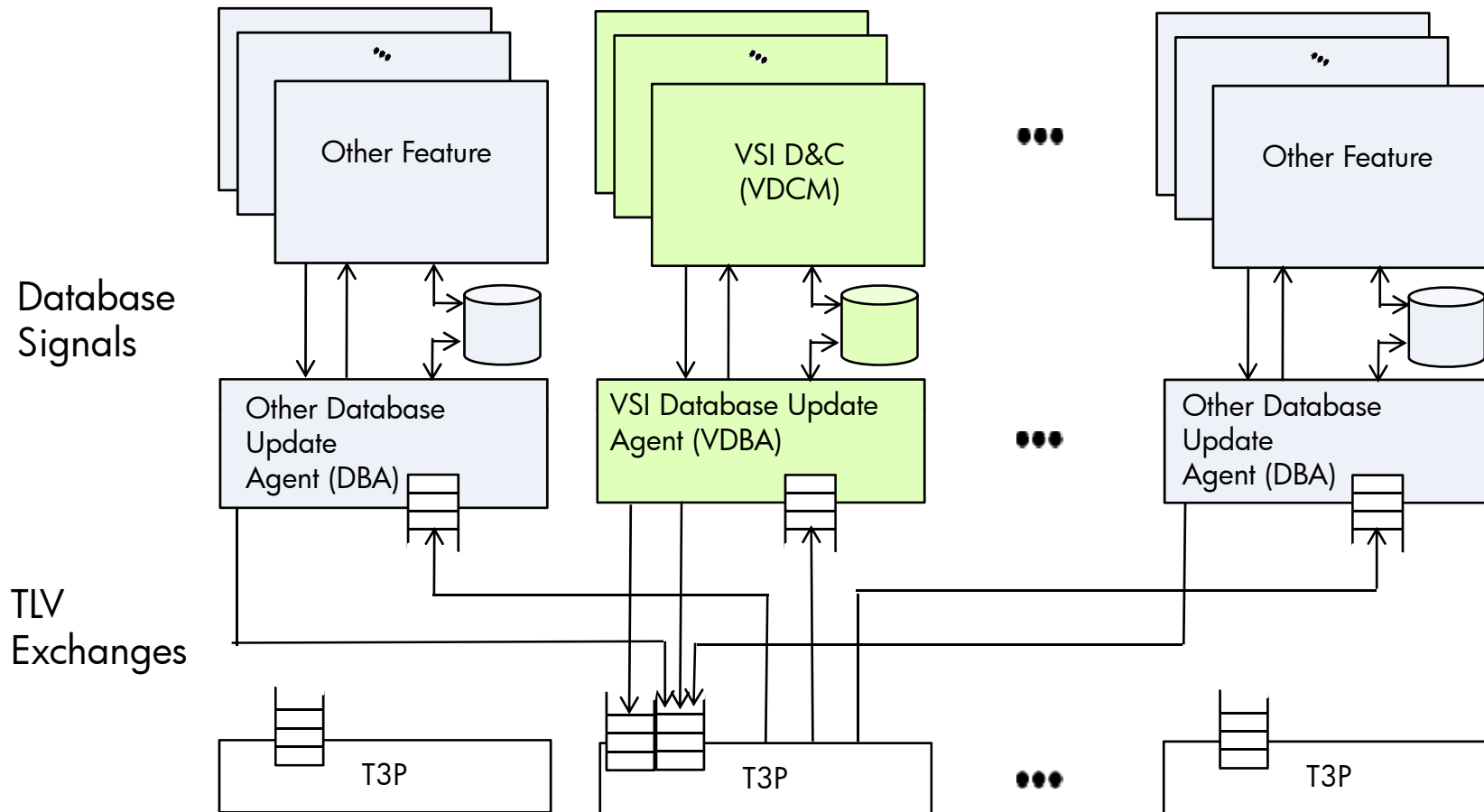
February 18, 2010

EVB VSI Co-ordination Overview



- Virtual Service Instance Discovery and Configuration Protocol (VDCP) co-ordinates network resources for Virtual Machines (VMs)
- Feature Databases (FD) stores and updates active VSI (up to 1000s)
- Database Synchronization Protocol (digest, DSP) provides guaranteed database synchronization between the station and bridge
- Trivial TLV Transport Protocol (T3P) provides reliable delivery of TLVs between the station and bridge

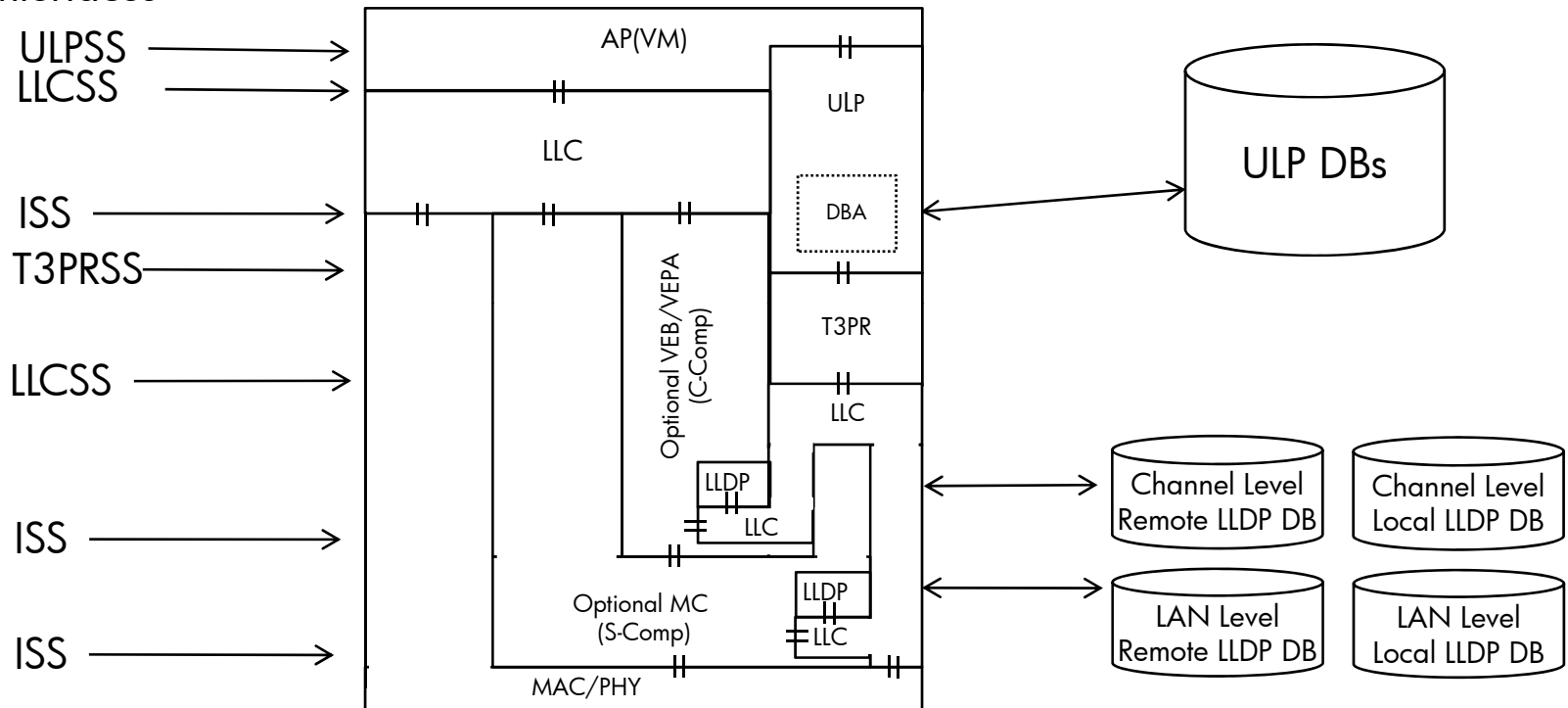
VSI Implementation



- There is one state machine per VSI. The VSI D&C handles all VSI state transitions. It sends and exchanges signals with the DBA.
- There is one VDBA per database. The VDBA handles all TLV updates, keeps running digest totals, filters duplicate TLVs, removes void TLVs, and maintains synchronization between the local and remote DBs. The DBA exchanges TLVs over T3P and exchanges signals or TLVs with the VDCM.
- There is one T3P per channel. It provides reliable TLV delivery for TLVs which are placed in its reserved transmit and receive queues by the DBAs operating over the network. It also delivers TLVs to the appropriate DBA.

EVB Stack Architecture

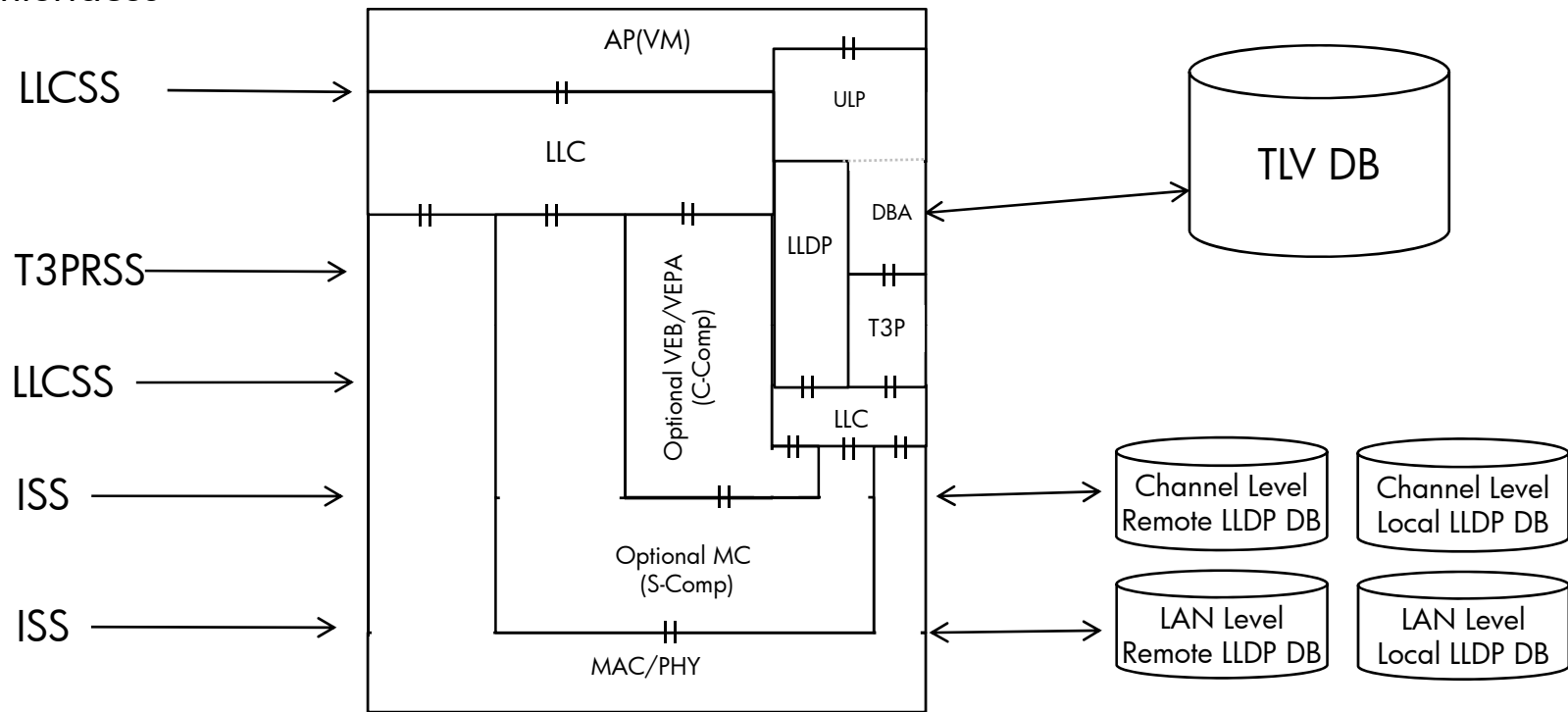
Sublayer Service Interfaces



- T3P may be connected direct a LAN through a MAC, to a Channel, or to a VEB/VEPA internal bridge port
- If MC is present then two levels of LLDP databases exist, one at the LAN and one at the Channel
- All TLVs pass from T3P to DBA which control all updates to the TLV DB

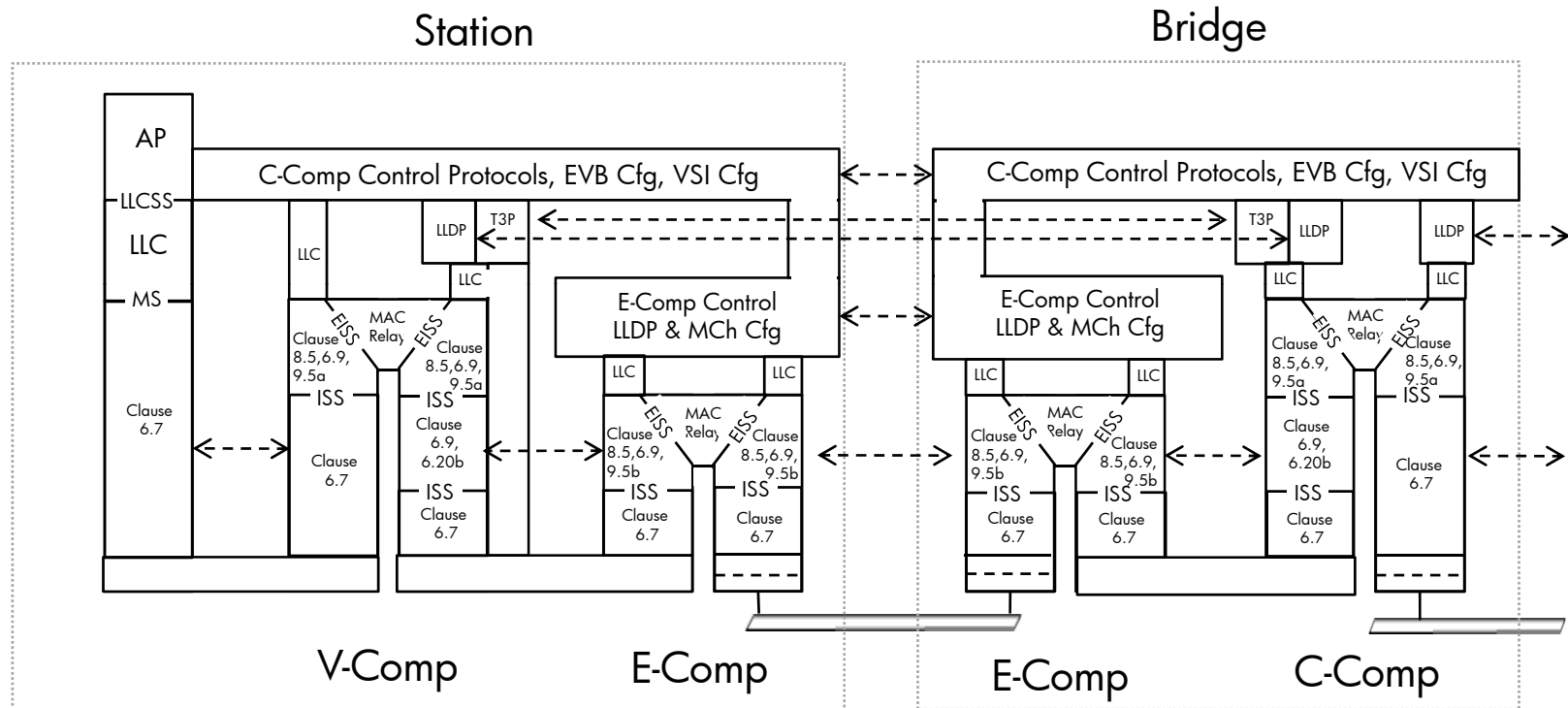
EVB Stack Architecture

Sublayer Service Interfaces



- MAC: Media Access Control 802.2001 subclause 6.2.3 and 802.1Q Rev 2010 subclause 6.1
- ISS: Internal Sublayer Service 802.1Q Rev 2010 subclause 6.6
- LLC: Link Layer Control Protocol see 802.2001 subclause 6.2.2 and 802.2 (note: see 802.1AB 2009 subclause 6.7)
- LLCSS: Link Layer Control Protocol Sublayer Service 802.1AB-Rev 2009 subclause 6.7
- T3PR: Trivial TLV Transport Protocol new link layer protocol
- T3PRSS: Trivial TLV Transport Protocol Sublayer Service new service interface for T3PR to ULP
- S-Comp: S-VLAN Component 802.1Q Rev 2010 subclause 5.6
- C-Comp: C-VLAN Component 802.1Q Rev 2010 subclause 5.5

Bridge “Baggy Pants” Model



- Station uses a dual relay. The outside relay is an S-VLAN aware Component called an E-Comp. The inside relay is a C-VLAN Component with options for VEB or VEPA
- Multichannel is implemented using the peered E-Comps. An LLDP database exists on each exterior facing leg of the E-Comp
- The VEB or VEPA has an LLDP database on it's exterior facing legs

Service interfaces for T3PSS

- Parameters:
 - List of TLVs (7 bit ULP type, 9 bit length, tlv-list)
 - TLV list contains TLVs from a single ULP
 - Signals: None
- Primitives:
 - T3P_UNITDATA.request (ulptype, ulptlv-list)
 - T3P_UNITDATA.indicate (ulptype, ulptlv-list)
- Probably use same service interface for both T3PR and DBA since both could be TLV interfaces.

Multi-Channel Stack Architecture

Sublayer Service Interfaces

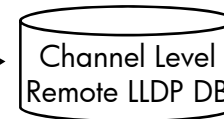
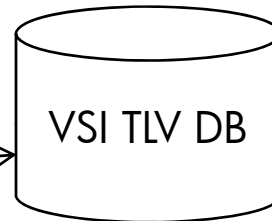
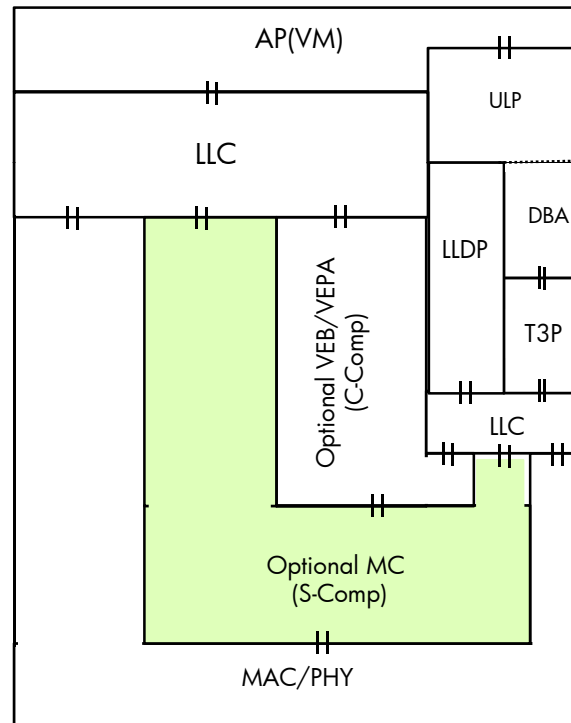
VDCSS
LLCSS

T3PSS

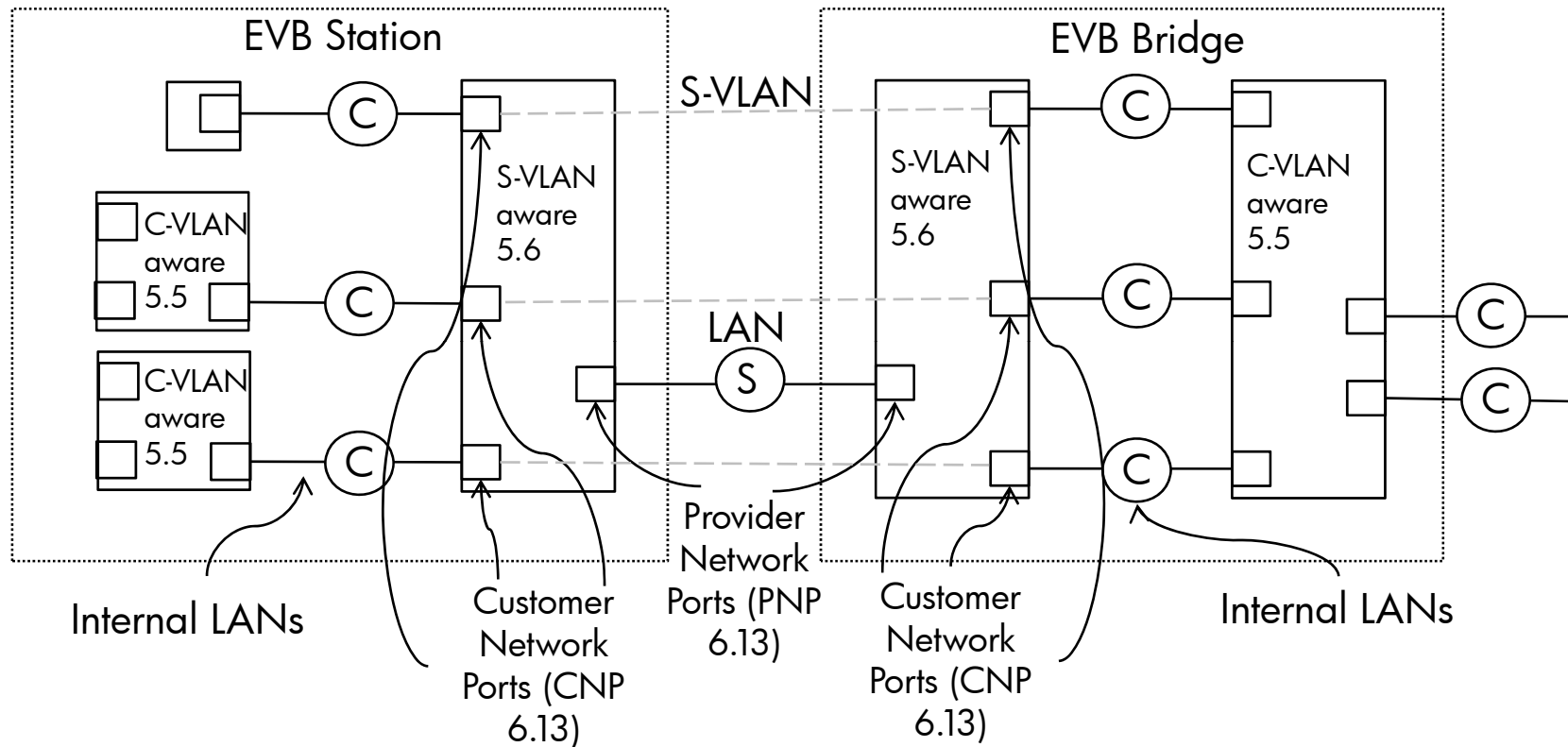
LLCSS

ISS

ISS



Multi-Channel Components

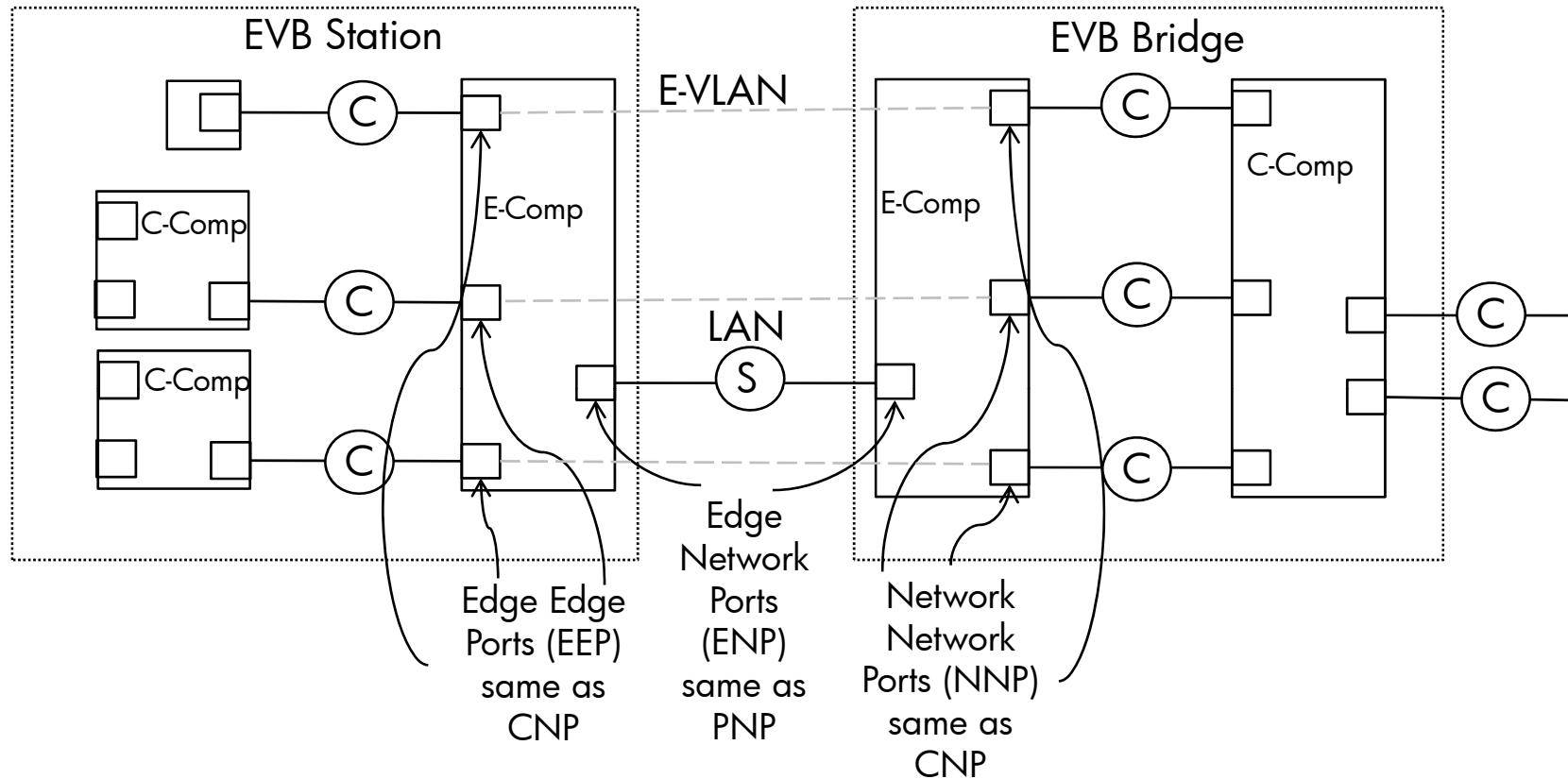


- S-VLAN aware component used to implement MultiChannel
- Disable spanning tree and MAC learning
- Relationship between CNP and C-Comp Bridge Ports is 1-1

Thoughts on Naming?

- LAN – the interface between station and bridge
- S-TAG – the tag used to implement multichannel
- E-Comp – a S-VLAN aware bridge component used to implement multichannel
- E-VLAN – a channel, implemented as an S-VLAN
- Edge Network Port (ENP) – a PNP used between a station and bridge to implement E-VLANs
- Edge Edge Port (EEP) – a CNP used to terminate an E-VLAN in a station
- Network Network Port (NNP) – a CNP used to terminate an E-VLAN in a bridge

Multi-Channel E-Bridge Components



- EEP, ENP and NNP are same definitions as CNP and PNP
- S-TAG remains unchanged and with same name
- E-VLAN is an S-VLAN used as a channel
- E-Comp is a new S-VLAN aware component profile (new 5.x clause)

Summary

- EVB Layer Model
 - S-Comp profile for Multichannel
 - VEB/VEPA bridges
 - T3P client of LLC (like LLDP)
 - TLV service interface between T3P, DBA, ULPs
- Multichannel implementation
 - Each channel is a VLAN
 - A channel terminates at a CNP
 - The interface between Station and Bridge is a PNP

BACKUP SLIDES