EVB Revisions

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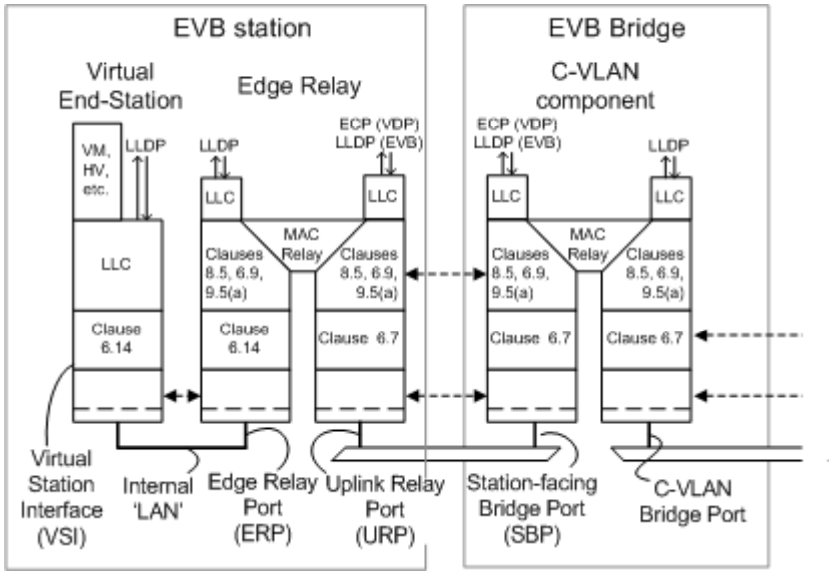
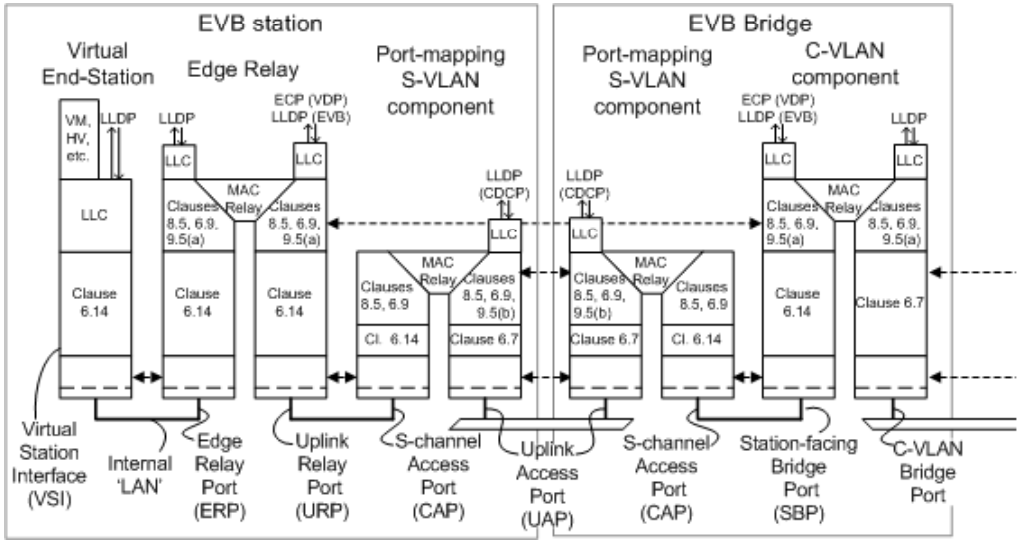
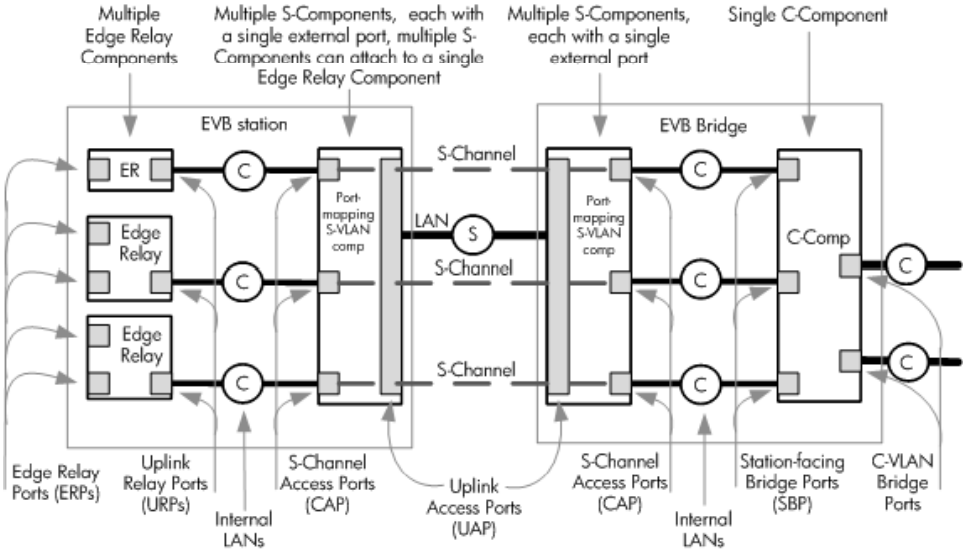
EVB configuration without S-channels



- An LLDP nearest non-TPMR database with the CDCP TLV may be built at the URP and(or) SBP. If the CDCP TLV is advertised it must have the parameter SComp set FALSE.
- If the nearest non-TPMR LLDP database and CDCP TLV are not exchanged it indicates no S-channel capability is present.

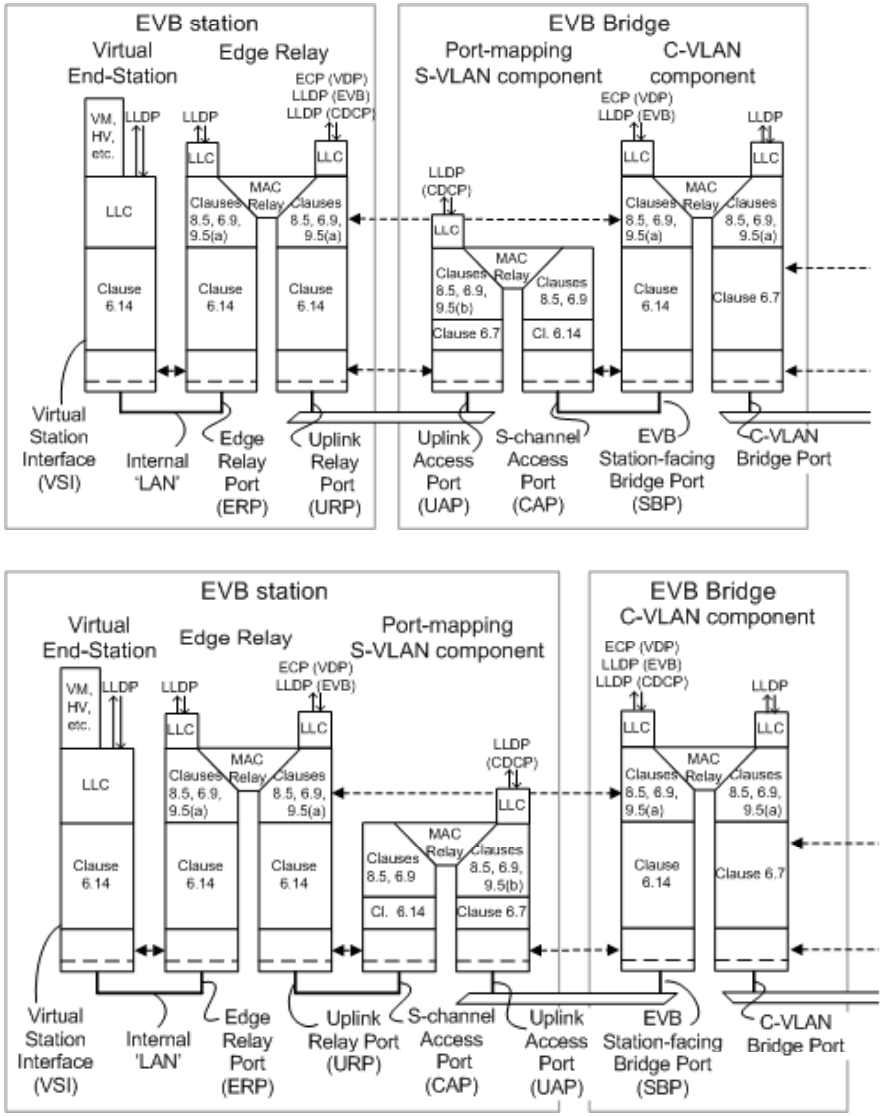
EVB configuration with S-channels





- An LLDP nearest non-TPMR database with the CDCP TLV is built at the UAPs. The CDCP TLV shall have the parameter SComp set TRUE.

Asymmetric EVB configurations, no S-channels



- In both asymmetric cases the LLDP nearest non-TPMR local database with the CDCP TLV is always built at the UAP including a CDCP TLV with the parameter SComp set TRUE.
- In the first case, the URP sees the remote nearest non-TPMR database with the CDCP TLV and the SComp set TRUE and may advertise a CDCP TLV. If the URP chooses to advertise a CDCP TLV they must set SComp to FALSE.
- In the second case, the SBP sees the remote nearest non-TPMR database with the CDCP TLV and the SComp set TRUE and may advertise a CDCP TLV. If the SBP chooses to advertise a CDCP TLV they must set SComp to FALSE.

Conformance framework

- EVB station has two types of externally accessible port:
  - URP
  - UAP
- EVB Bridge has three types of externally accessible ports:
  - C-VLAN Bridge Ports
  - SBP
  - UAP
- S-channel requirements
  - Only for systems with UAPs
  - Extend the base requirements for EVB station and Bridge
- Edge Relays:
  - Common edge relay requirements
    - Are C-VLAN components
    - Have a single URP
  - Separate VEPA and VEB requirements

VEPA requirements

- Written as extensions to 8.6.1 and 8.6.3
- Reflective relay configuration support through extended 6.6.5 description

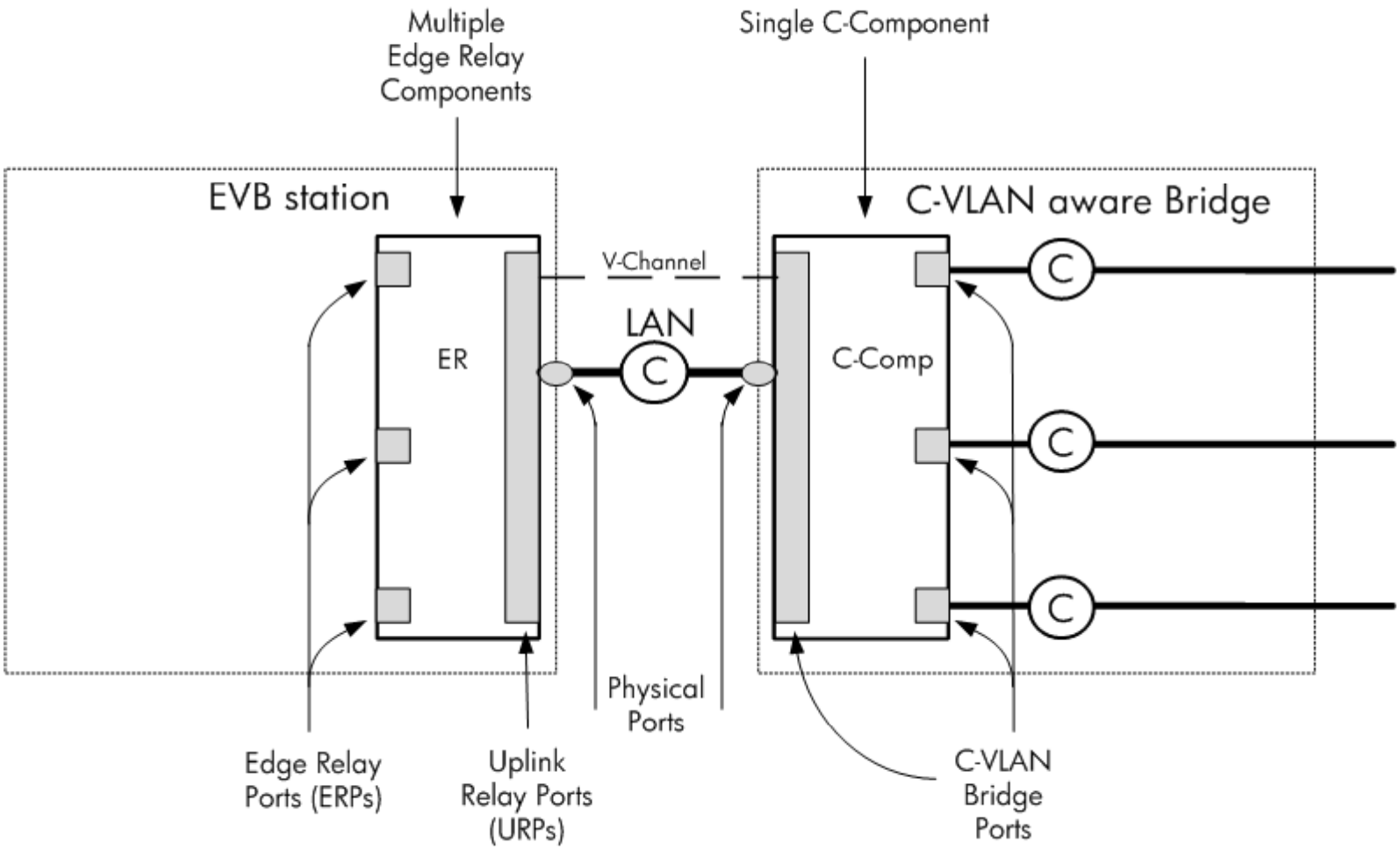
Management framework

- Separate the ECP and VDP parameters into separate objects
- Separate SBP and URP objects from S-channel interface object
  - Keying under <componentID, portNumber>
  - Map to external portNumbers,
    - needed since an EVB station may have multiple ERs each with redundant portNumbers
  - EVB TLV enables, controls and configuration
  - ECP object references
  - VDP object references
  - Reflective relay control (6.6.5)
- UAP and S-channel interface objects optional
  - S-channel interface object no longer carrier SBP/URP configuration information
  - CDCP configuration still tied to UAP

BACKUP SLIDES

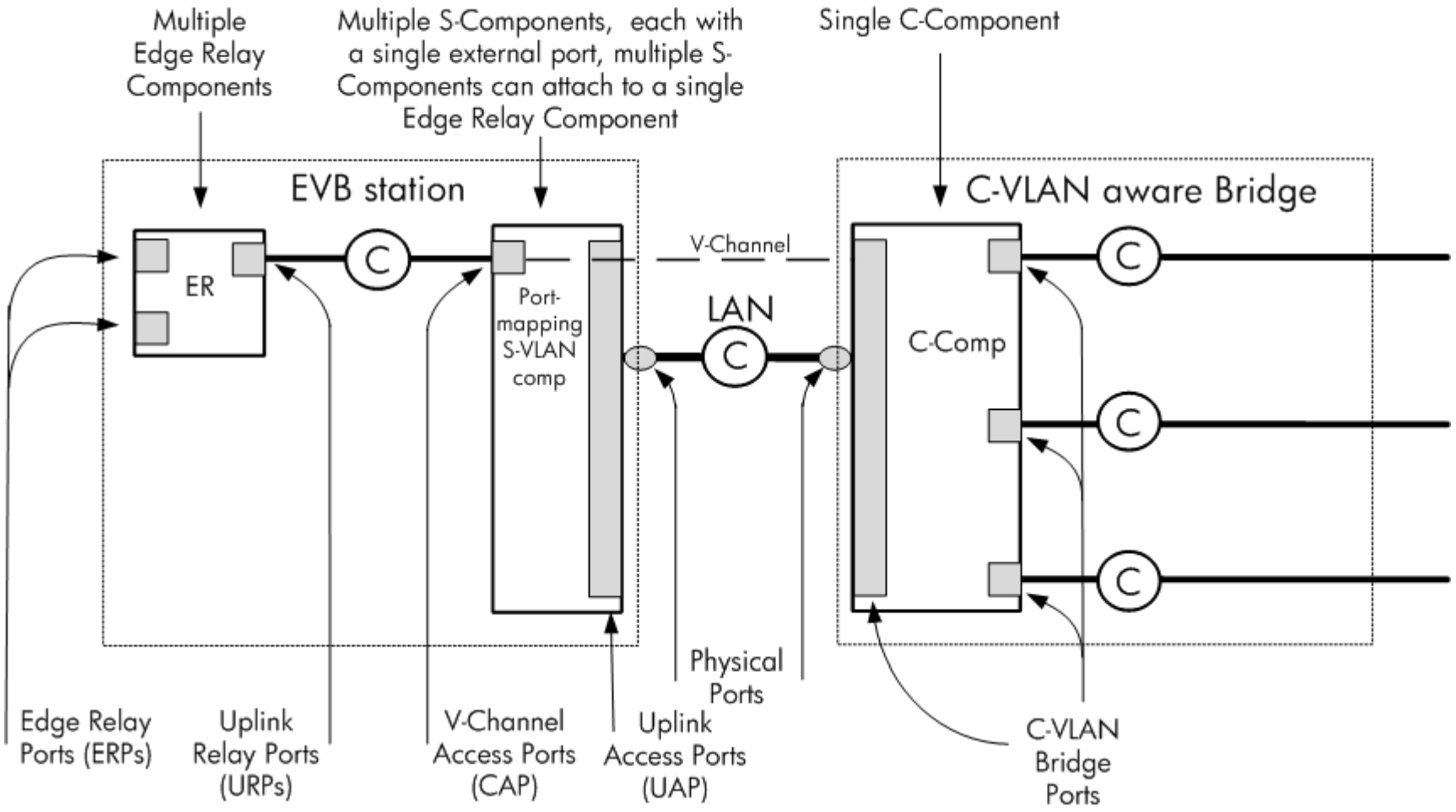
A FEW USELESS EVB PORT CONFIGURATIONS

C-VLAN Bridge Port to URP



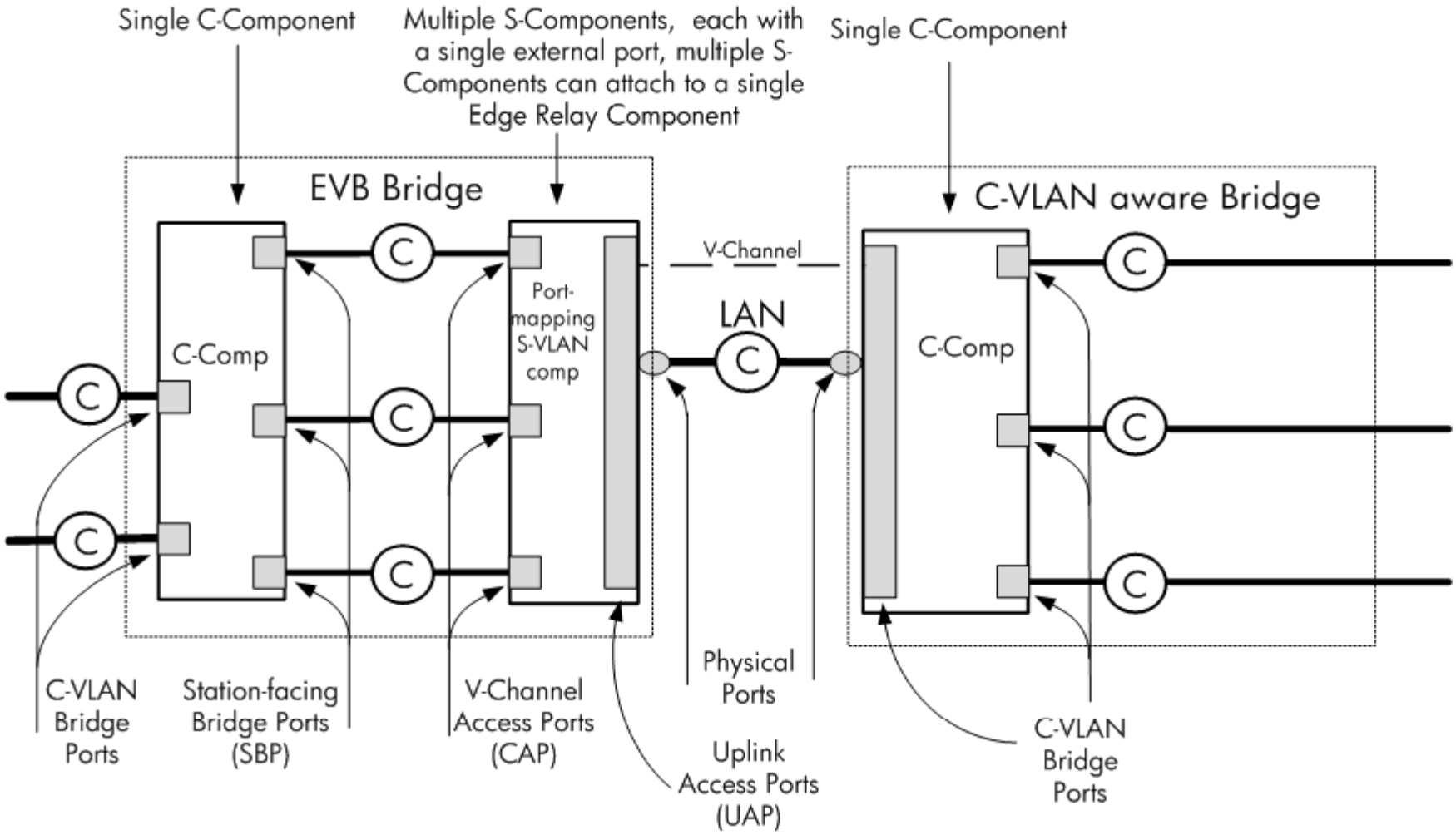
- Un-modified C-VLAN Bridge connected to EVB station

C-VLAN Bridge Port to UAP (station)



- Un-modified C-VLAN Bridge connected to EVB station with Port-mapping S-VLAN component

C-VLAN Bridge Port to UAP (Bridge)



- Un-modified C-VLAN Bridge connected to EVB Bridge UAP (SBP is same effect)

The C-VLAN Bridge Port to EVB port connections useless

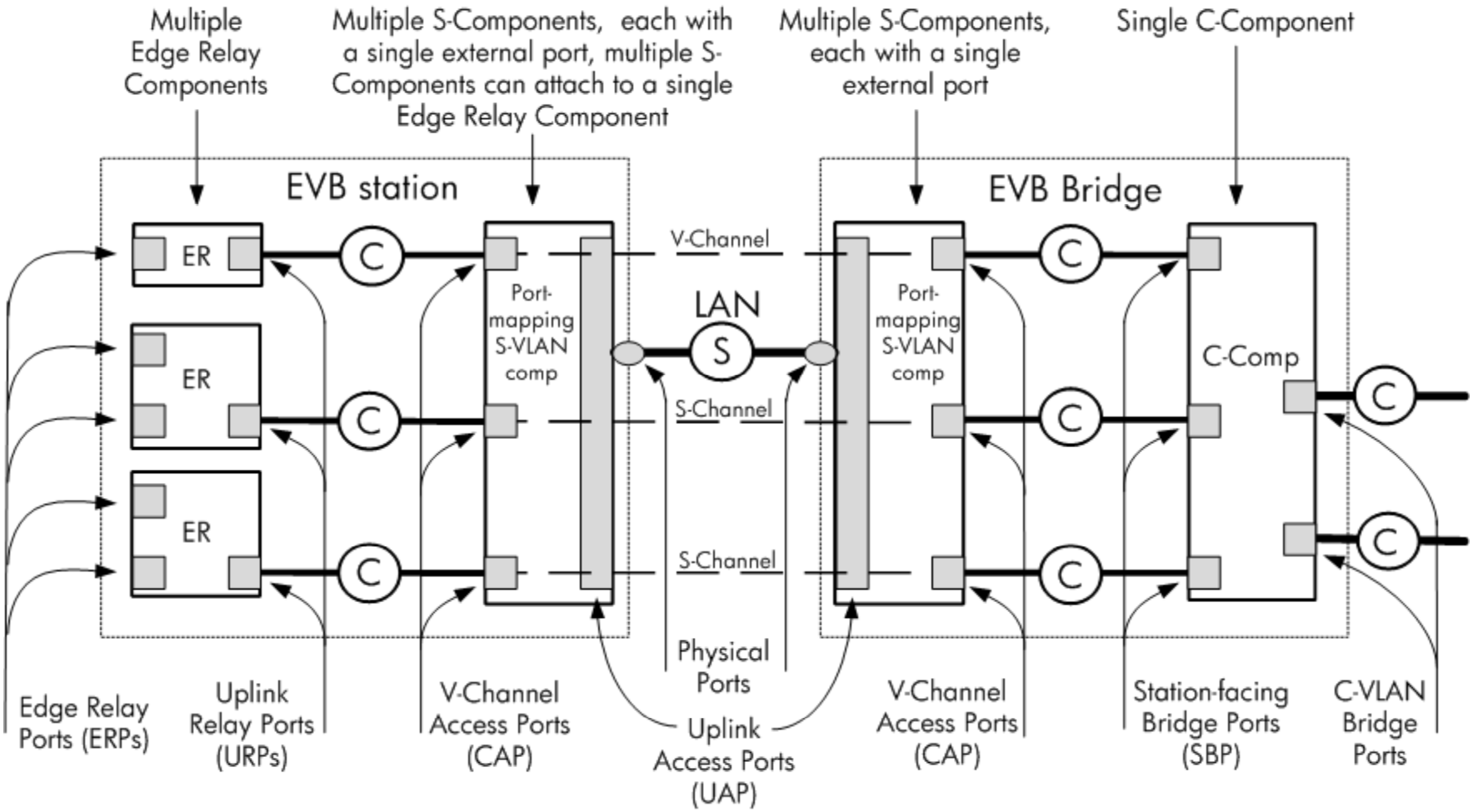
- An EVB station executes VDP. Since a C-VLAN Bridge Port does not execute VDP, all attempts to Associate will fail. We will never establish a VSI and so never transfer any data.
- Since an EVB Bridge and EVB station are under different administrators we should not allow the presence of an EVB station to determine the EVB Bridge port type.
  - Instead, we treat the boundary between the EVB station and EVB Bridge as a demarcation between autonomous systems.
  - For the EVB station to have network access through VDP the network administrator must enable the EVB protocols by setting the Port Type.
  - Alternatively, the EVB Bridge may have pre-designated ports for EVB station attachment or network attachment.
  - This is also why in normal situations the EVB station should not send STP frames or MRP frames. Both of these may affect the topology of the DCN which is under a different administration.
  - The EVB Bridge should be able to protect itself from the EVB station

Agreements and recommendations

- EVB call attendees agreed that we did not need to describe the invalid C-VLAN Bridge Port to EVB port attachments in the 802.1Qbg standard.
- EVB call attendees agreed to place an editor's note in the text to inform the readers that the external port types are hard set by either system configuration or by management to allow the enforcement of different administrations between the EVB stations and EVB Bridges.

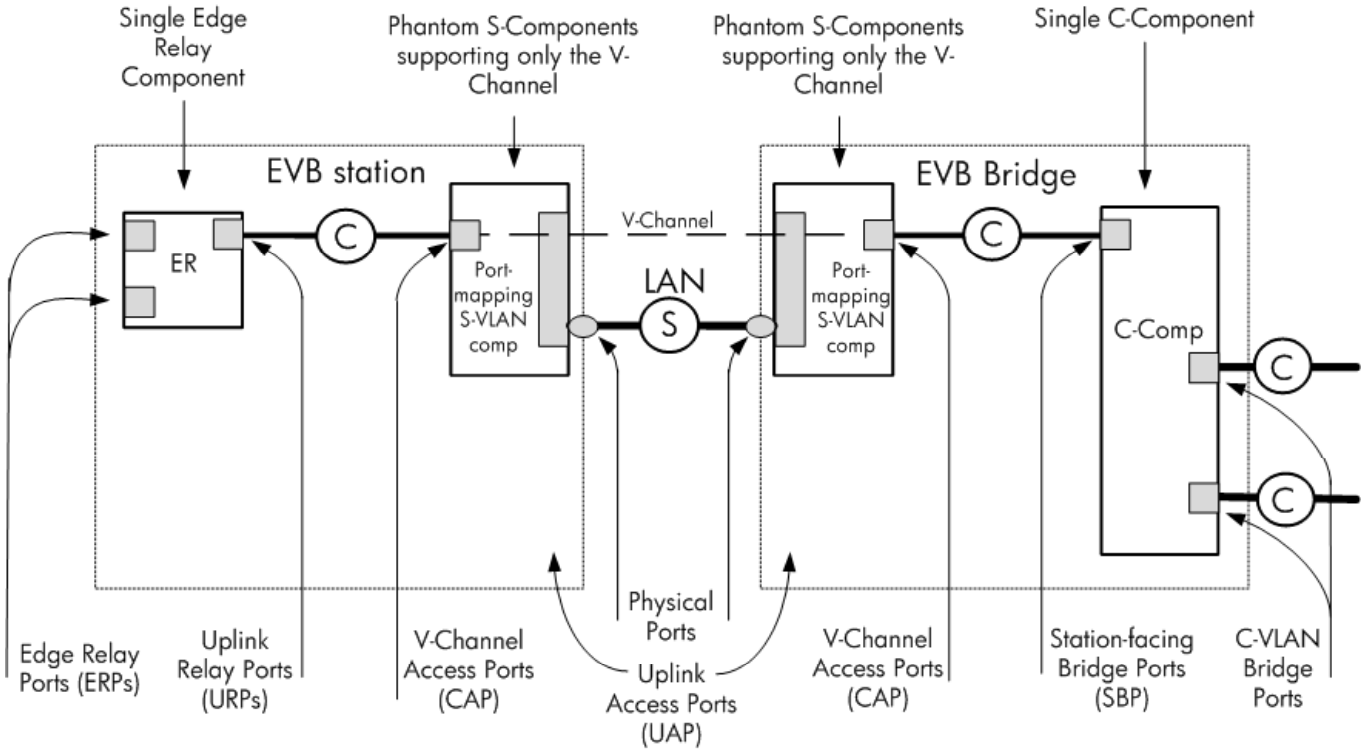
DRAFT 1.3:
THE UNIFIED MODEL

UAP to UAP (draft 1.3 model)



- Both EVB station and Bridge are S-Channel capable and advertise a CDCP TLV and one EVB TLV on the V-Channel.
- When a new S-Channel is requested by the EVB station and enabled by the EVB Bridge (by CDCP exchange) a new EVB TLV will be started per S-Channel.
- Four relay combinations could be considered: Both EVB station and Bridge have real Port-mapping S-VLAN components, either the EVB station or Bridge has a "phantom Port-mapping S-VLAN component, or both EVB station and Bridge have "phantom Port-mapping S-VLAN components".

Phantom Port-mapping S-VLAN comps



- Supports only the V-Channel which is un-S-tagged
- Priority tag generation can be disallowed by setting Service Access Priority Selection == Disable on all UAPs
- UAPs don't generate S-Tagged frames since the default S-VID=1 is a member of the UAP Un-tagged set and since only a single CAP (and therefore single S-VID=1) exists in each "Phantom port-mapping S-VLAN component".
- Real S-Comps supporting only a V-Channel can reject any S-Tagged frames at the UAPs by setting "Admit only Untagged or Priority Tagged frames". This will prevent processing a frame containing an S-TAG with the default VLAN.
- This leaves the case where a mis-configuration has resulted in priority tagged frame generation. In this case a real Port-mapping S-VLAN comp will strip the priority tag while a "phantom" will pass it. If the ER and SBP are set to "Admit only C-tagged frames" the priority tag will be discarded at the ER or C-Comp, otherwise the priority tag will be treated as un-C-tagged. Of course this is a mis-configuration anyway.

CDCP and phantom S-comps

- Four configurations are reduced to one:
  - Real Port-mapping S-VLAN components
  - EVB station or Bridge with Phantom and mate with Real
  - Both EVB station and Bridge Phantom
- In all four cases the CDCP TLV is advertised (unless management is in manual mode) and build the nearest Non-TPMR LLDP database

  CDCP TLV allows us to indicate the capabilities of the Port-mapping S-VLAN components on each side. If the variable AdminChnCap = 1 then we are only capable of the V-Channel. If either side advertises ChnCap = 1, then the other side operates only with ChnCap = 1.
  - If we need to know the difference between a Phantom S-Comp and a Real S-Comp with ChnCap = 1, then we could add a bit to the TLV indicating this, however it is not clear the added information is needed.

Reserved Addresses and phantom S-comps

- Phantoms don't filter S-VLAN reserved addresses, therefore
- With phantoms S-Comp reserved addresses will deliver to ER or C-Comp
  - ER or C-Comp will always filter C-Comp reserved addresses
  - No hello packets or MRVP packets from Port-mapping S-Comps so these are unimportant
  - LLDP database levels will all be under the same IF Index, however will still be distinct based on address. Since we are not changing the physical configuration to move to S-Channels we will either have all LLDP databases under the ER/C-Comp IF Index or under the Port-mapping S-VLAN index, but will not change.

Two Real S-Comps

- Here the V-Channel can only use the default priority at the S-Comp since we have not included a mechanism to signal S-Comp priority on the V-Channel.
- The V-Channel has control of the ER or C-Comp priority though C-tags.
- If we need to add S-Comp priority signaling then we can:
  - Solution 1: recognize this as a restriction of the V-Channel and if the default S-Comp priority is not sufficient build a new (S-tagged) S-Channel to carry the data
  - Solution 2: allow the S-Comps to move to S-tags on the V-Channel when both sides indicate ChnCap > 1 or the existence of a real S-comp. They also must back down to no S-TAGs as soon as either side advertises ChnCap = 1.
  - Solution 3: support subclause 6.20 on C-tags at the UAP

Management Model

- The ComponentID was removed from the EVB structures so the Port-mapping S-VLAN components are not required in the Bridge Base Tables.
- For Phantom S-Comps we do need to build all the EVB objects, including the UAP and S-Channel interface objects.
- We therefore always have enough management structure to support CDCP and the V-Channel

One way to resolve the "phantom" component comments

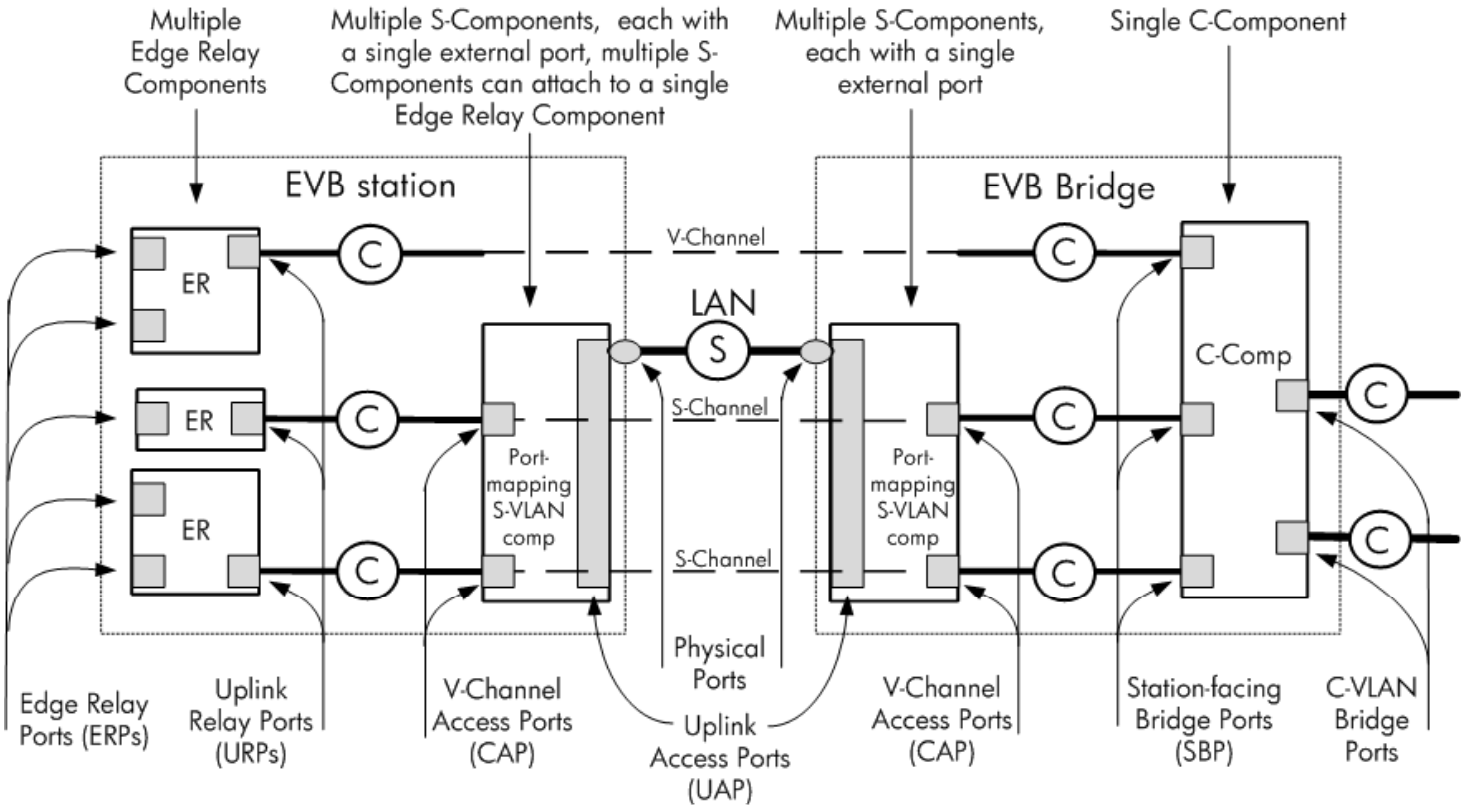
- Simply remove the Port-mapping S-VLAN component from the conformance definitions in 5.19 and 5.20 while keeping the V-Channel requirement.
- Continue with the current draft description

MULTI-CONFIGURATION MODEL

Multi-configuration model

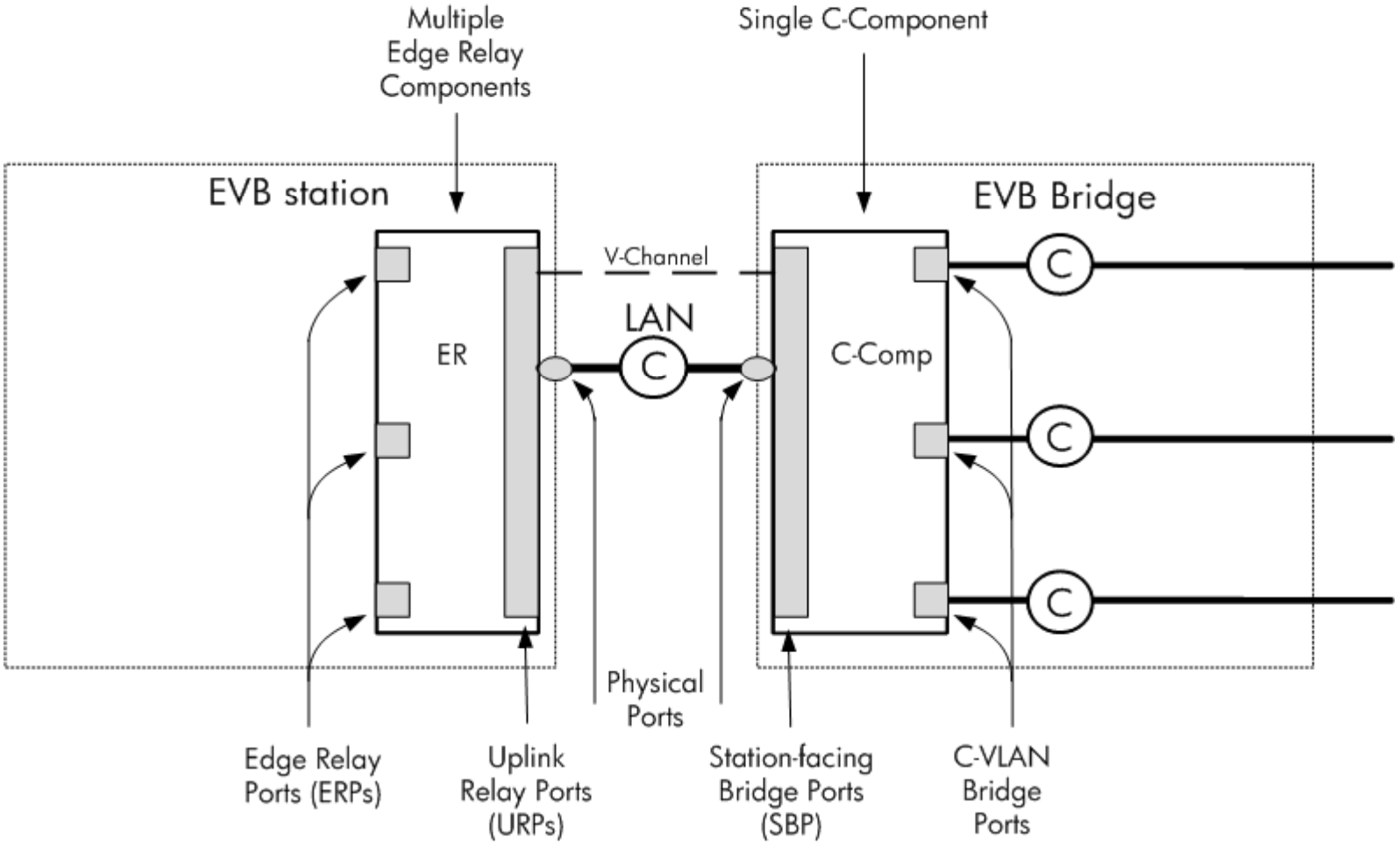
- Here we could look at models with and without S-Comps
- Valid external port types on the EVB Bridge
  - UAP
  - SBP
  - C-VLAN Bridge Port
- Valid external port types on the EVB station
  - UAP
  - URP
- If we support auto-config:
  - all combinations will exist, though some may only exist during transitions from one configuration to another

This model is NOT VALID



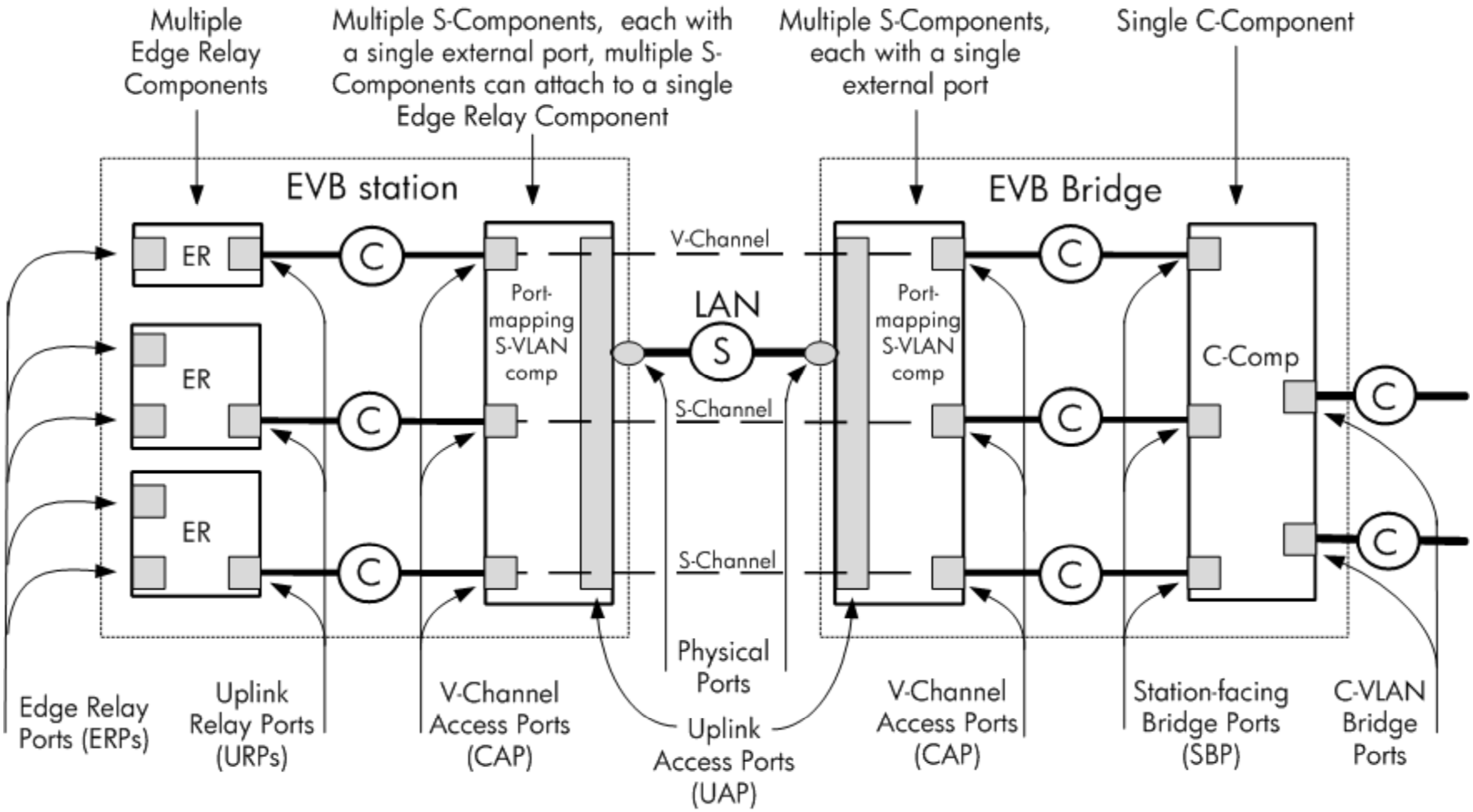
- It is not possible to have this configuration since the V-Channel must share the LAN, but has no multiplexing component
- Implies if we start without S-Comps then we must tear down all communication channels when we move to S-Channels

URP to SBP (no S-Channel support)



- Neither EVB station or Bridge are S-Channel capable so neither advertises a CDCP TLV and both advertise one EVB TLV on each V-Channel.
- This case was eliminated in the current draft by describing a UAP with a "default Channel".

UAP to UAP (S-Channel Support)



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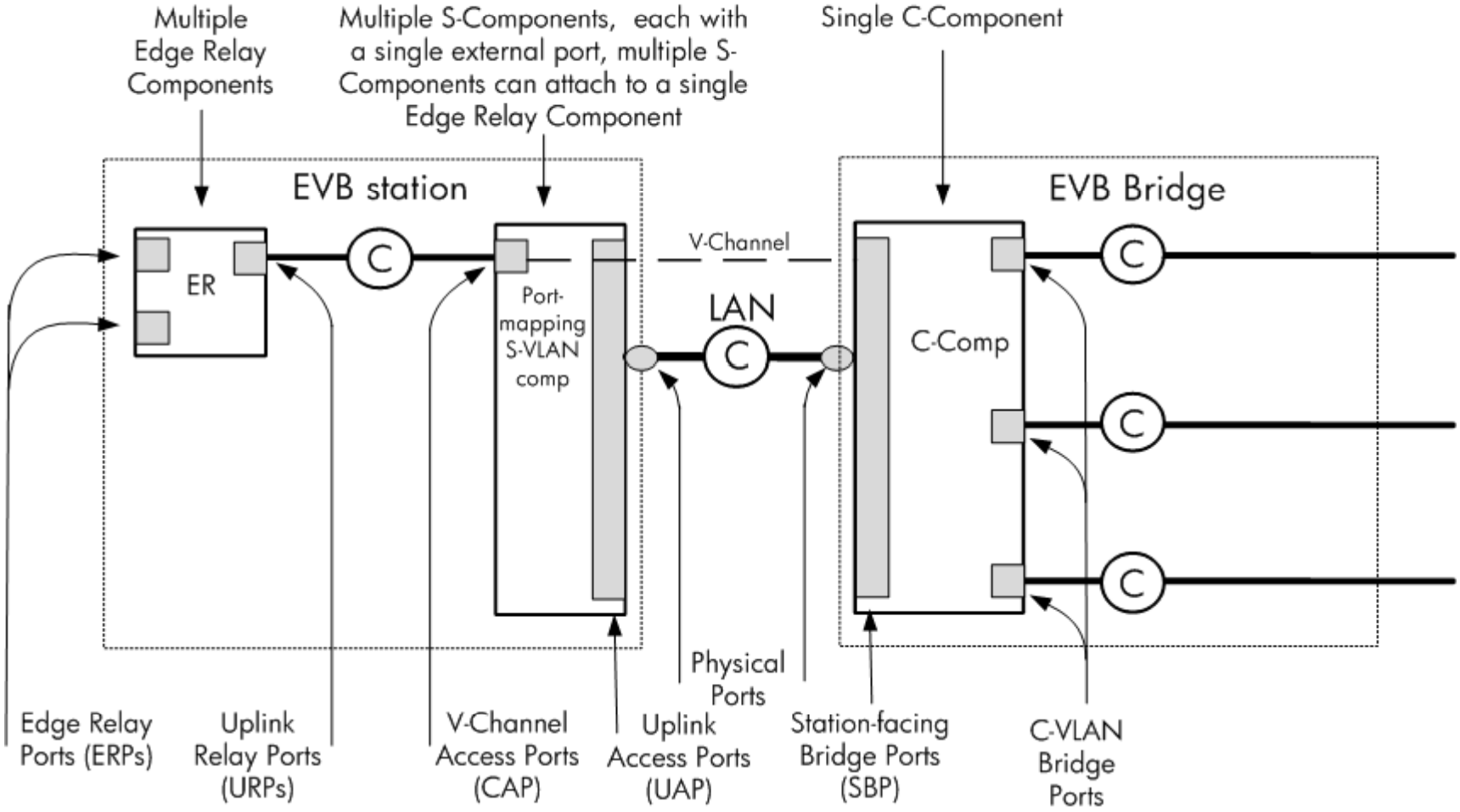
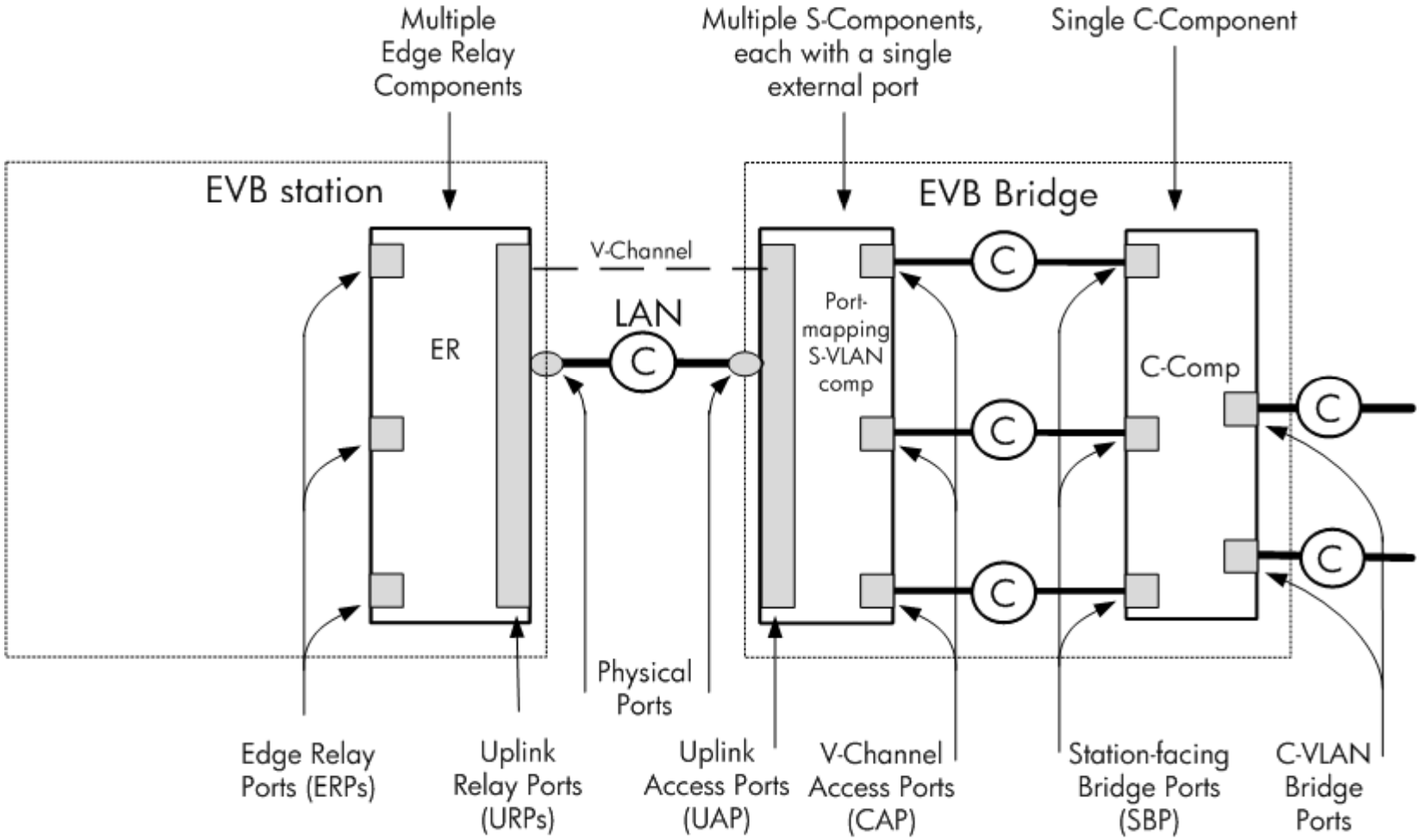
UAP to SBP (no S-Channel support)



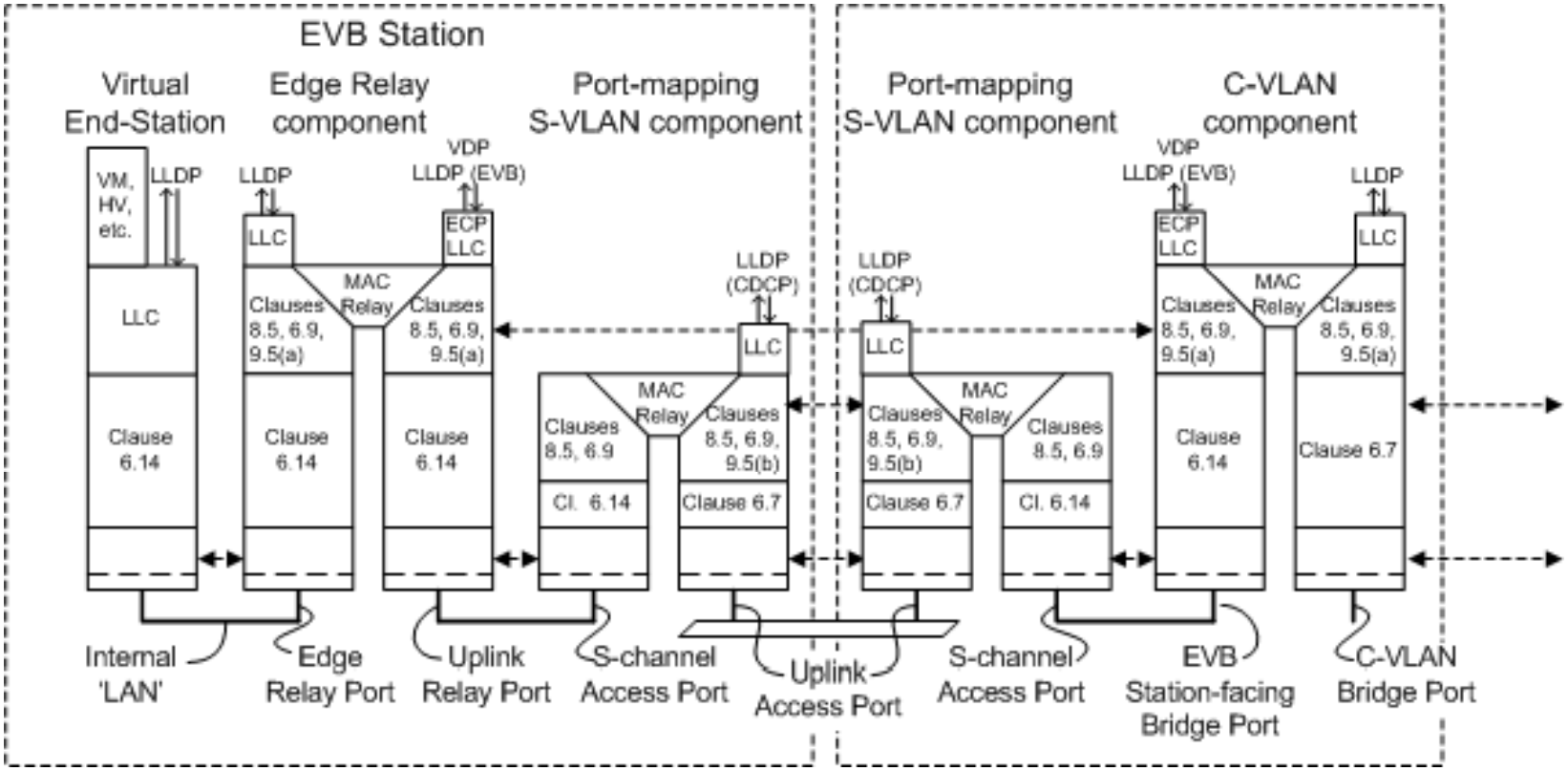
- EVB station is S-Channel capable so it advertises one CDCP TLV (per LAG) and one EVB TLV (per V-Channel). The Bridge is not S-Channel capable and does not advertise CDCP however it advertises an EVB TLV on each SBP.
- This case was eliminated in the current draft by describing a UAP with a "default Channel".

URP to UAP (no S-Channel support)



- EVB Bridge is S-Channel capable and advertises CDCP TLV and one EVB TLV on V-Channel, however the EVB station is not S-Channel capable so only advertises one EVB TLV (per ER per LAG group)
- This case was eliminated in the current draft by describing a UAP with a "default Channel".

Baggy Pants Diagram



- LLDP at 4 internal places with different databases

Baggy Pants Diagram

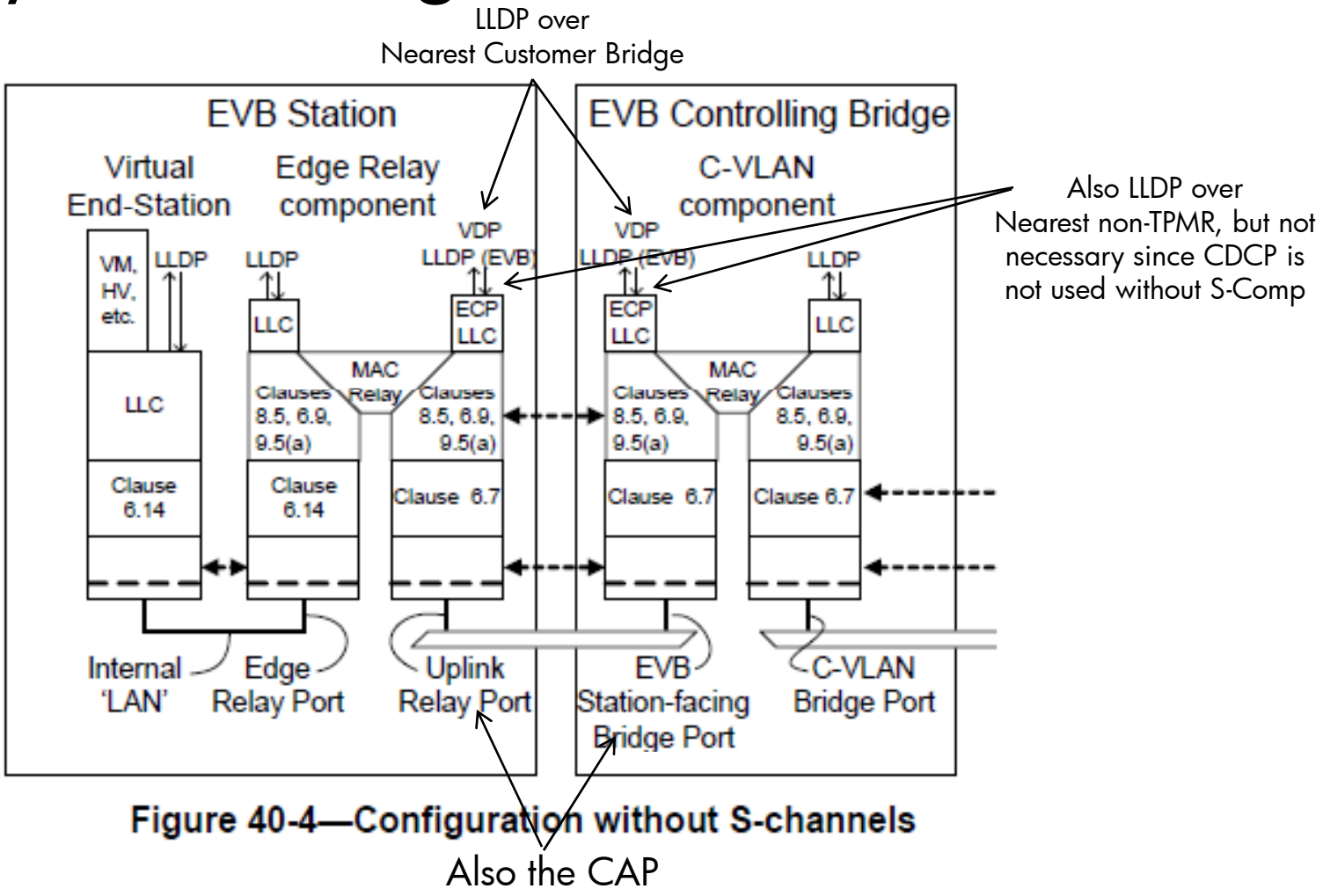


Figure 40-4—Configuration without S-channels

- Without S-Components and thus without S-Channels