

IEEE Std 802.1Q™-2014
Bridge Configuration Data and Status/State
UML Models

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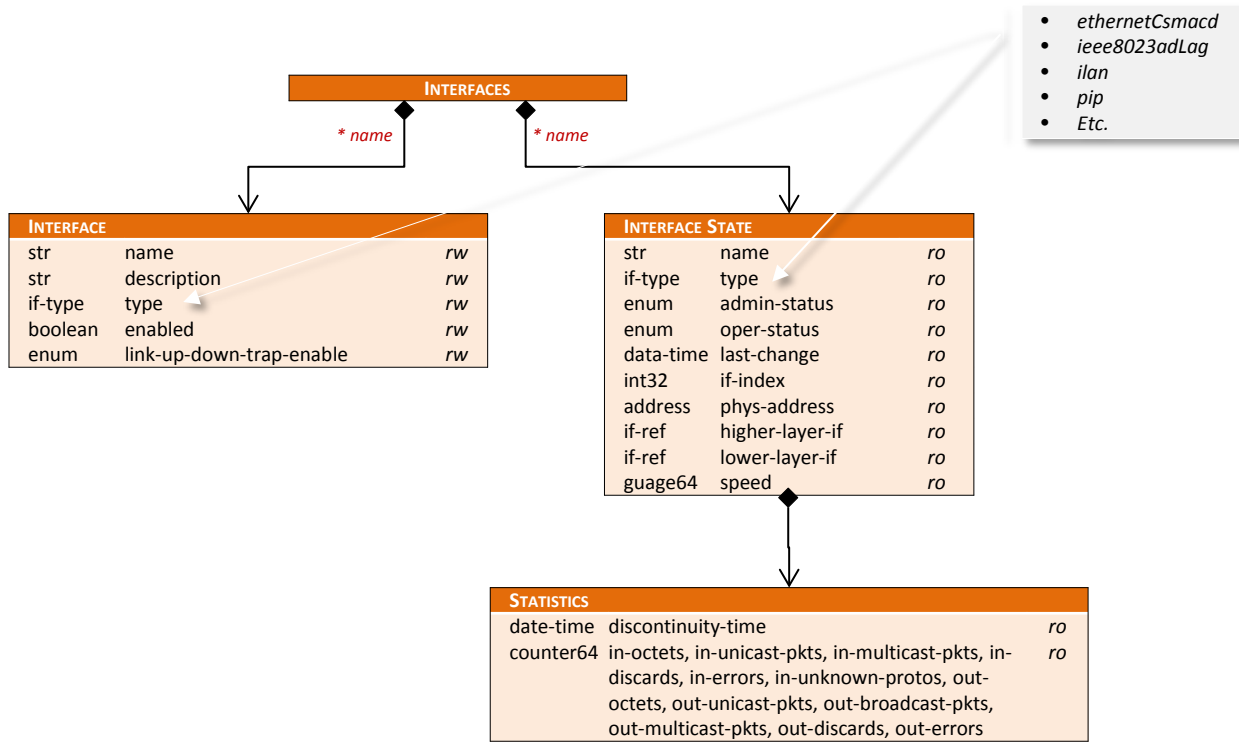
Introduction

- Introduce UML configuration data and state/status modeling of IEEE Std 802.1Q™-2014 Bridges
- IEEE 802.1Q bridging modelled includes:
 - TPMR (Two Port MAC Relay) Bridges
 - Customer VLAN Bridges
 - Provider Bridges
 - Provider Backbone Bridges
- IEEE 802.1Q features not (currently) being modelled includes:
 - Bridge protocol entities (e.g., MST, etc.)
 - MRP and MMRP entities
 - CFM and DDCFM entities
 - PBB-TE entities
 - Shortest Path Bridging entities
 - Forwarding and queuing for time-sensitive stream entities
 - Congestion Notification entities
 - Stream Reservation Protocol (SRP) entities
 - Edge Virtual Bridge (EVB) entities
 - Edge Control Protocol (ECP) entities

Outstanding Model Areas

- Confirmation/validation that proposed model (structure) can gracefully accommodate
 - Link Aggregation (802.1AX)
 - CFM
 - 802.1X

IETF INTERFACES Model (RFC7223)

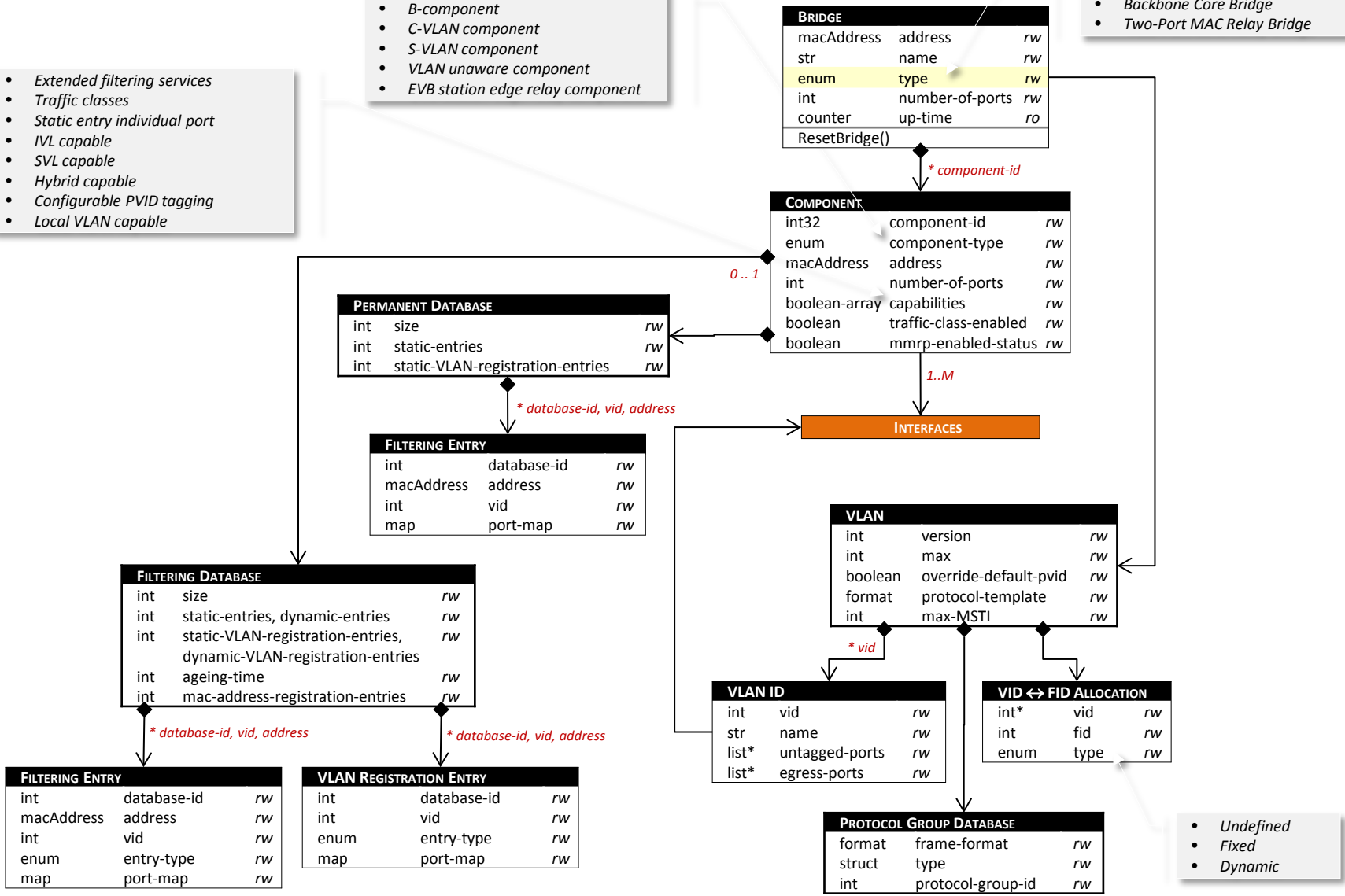


IEEE 802.1Q-2014 BRIDGE Model

- Extended filtering services
- Traffic classes
- Static entry individual port
- IVL capable
- SVL capable
- Hybrid capable
- Configurable PVID tagging
- Local VLAN capable

- I-component
- B-component
- C-VLAN component
- S-VLAN component
- VLAN unaware component
- EVB station edge relay component

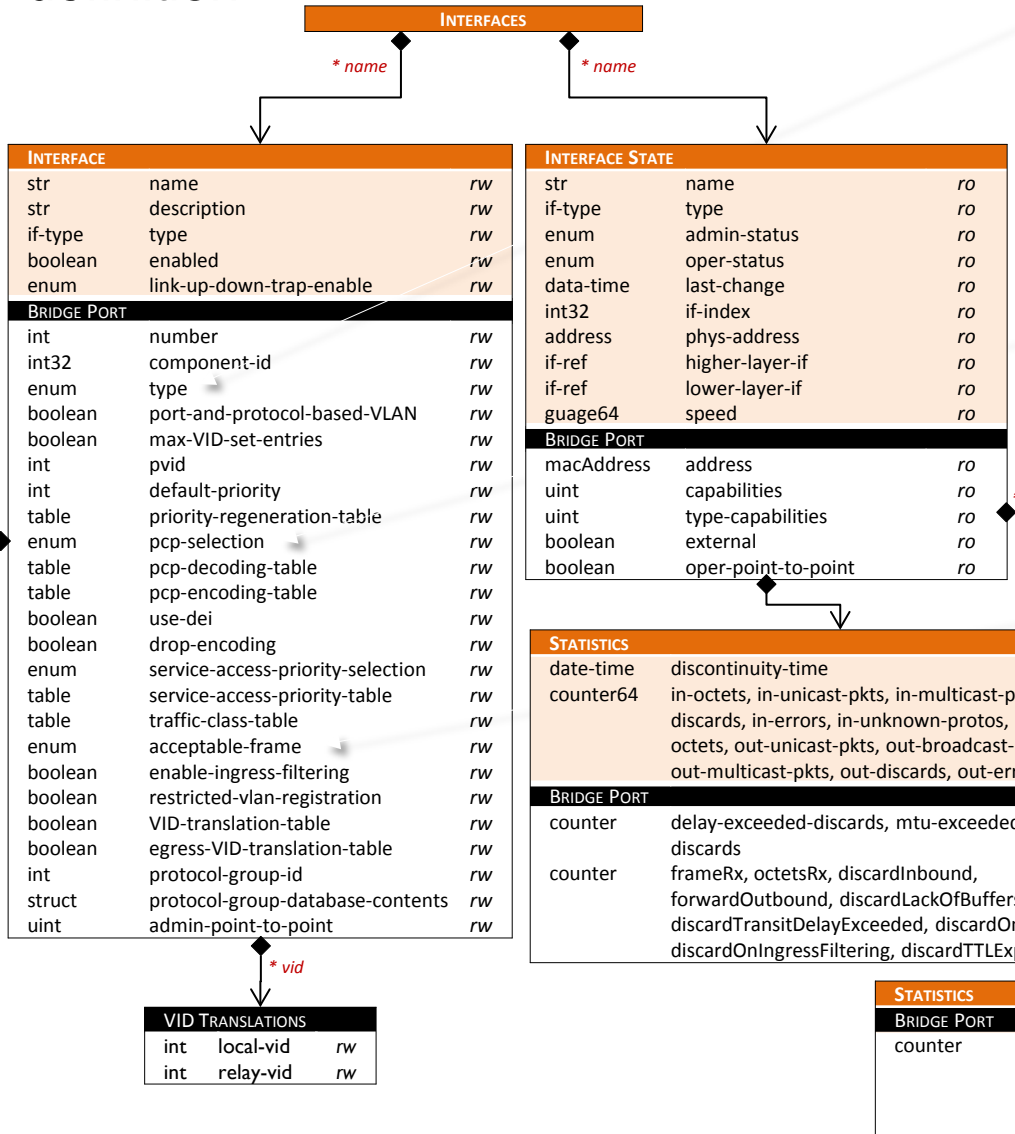
- Customer VLAN Bridge
- Provider Bridge
- Provider Edge Bridge
- Backbone Edge Bridge
- Backbone Core Bridge
- Two-Port MAC Relay Bridge



- Undefined
- Fixed
- Dynamic

BRIDGE PORT Model

- BRIDGE PORT (representation) is an *extension* of the IETF INTERFACE definition



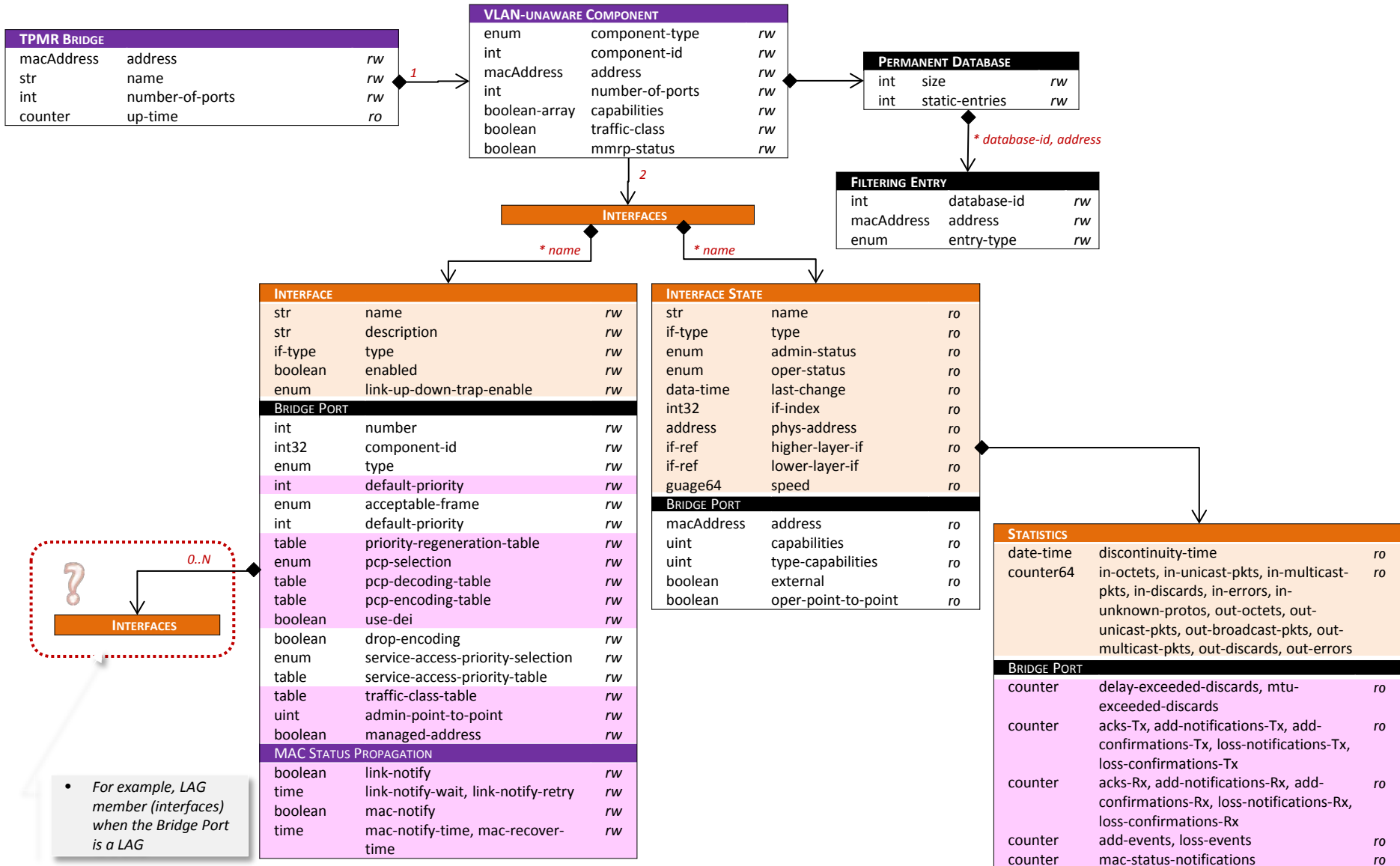
- C-VLAN Bridge port
- Provider Network Port (PNP)
- Customer Network Port (CNP)
- Customer Edge port (CEP)
- Customer Backbone Port (CBP)
- Virtual Instance Port (VIP)
- Provider Instance Port (PIP)
- D-Bridge Port
- Remote Customer Access Port (RCAP)
- Station-facing Bridge Port (SBP)
- Uplink Access Port (UAP)
- Uplink Relay Port (URP)

- 8P0D
- 7P1D
- 6P2D
- 5P3D

- Admit only VLAN-tagged frames
- Admit only Untagged and Priority Tagged frames
- Admit All frames

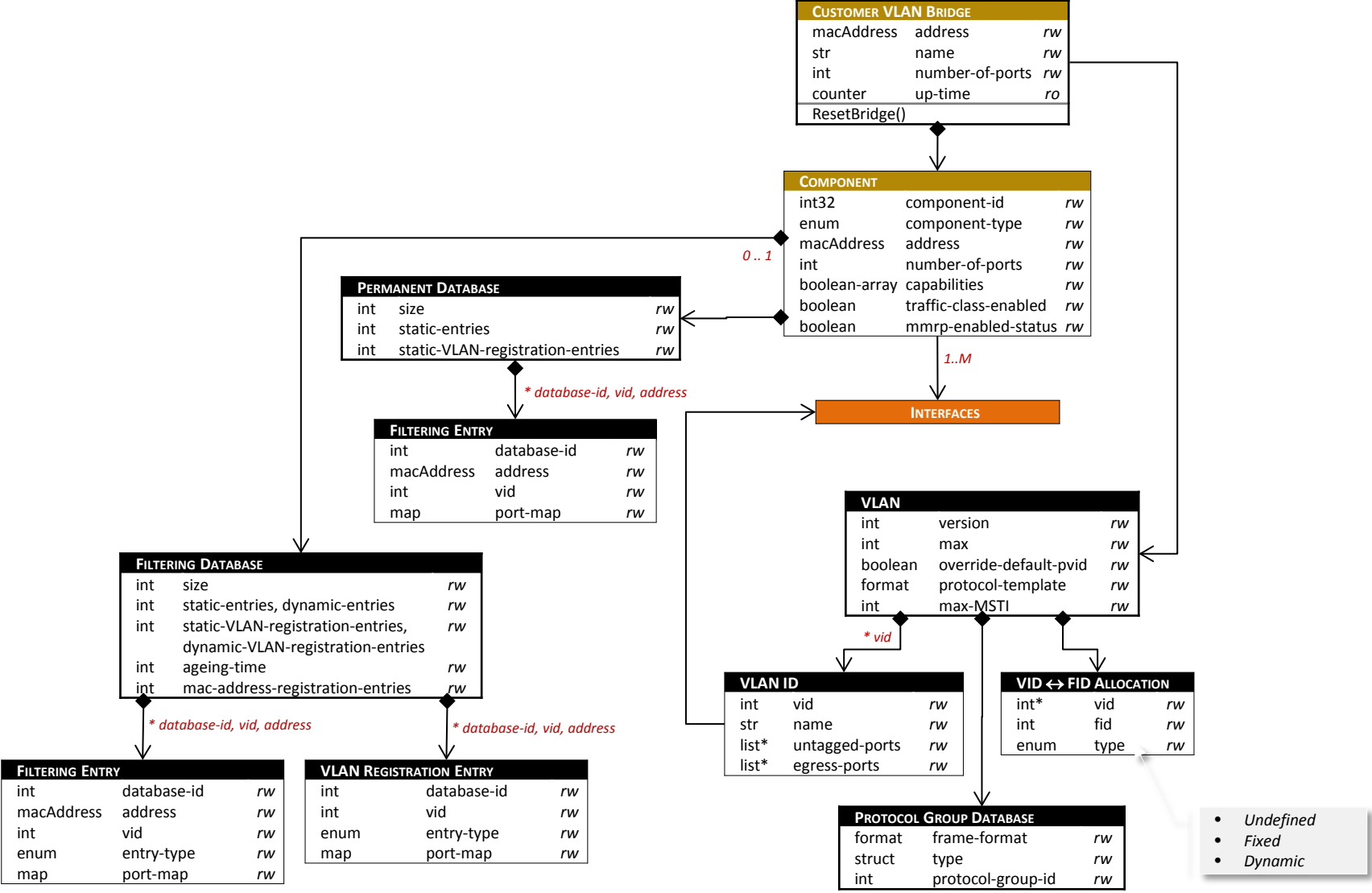
For example, LAG members (interfaces) when the Bridge Port is a LAG

TPMR BRIDGE Model

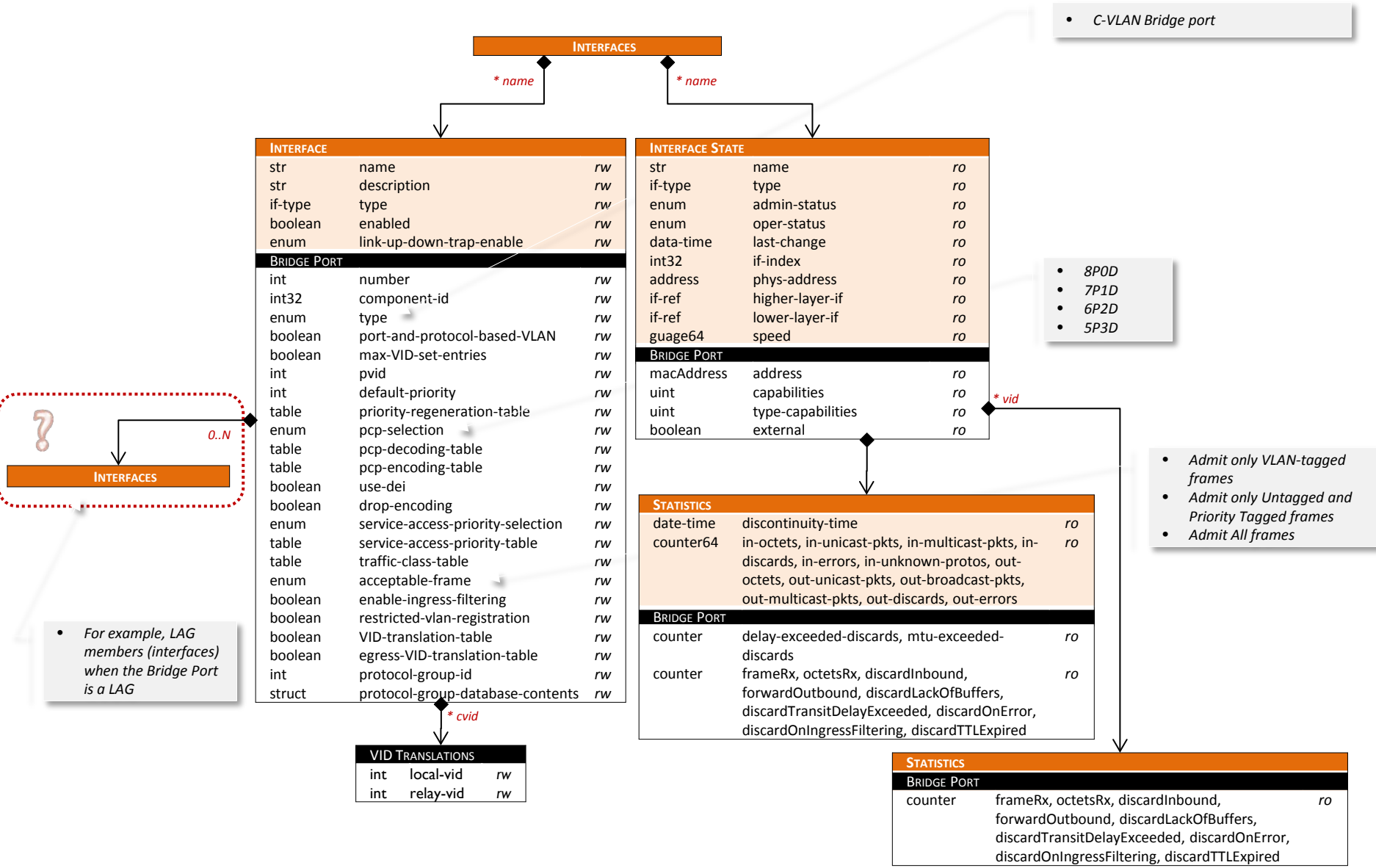


• For example, LAG member (interfaces) when the Bridge Port is a LAG

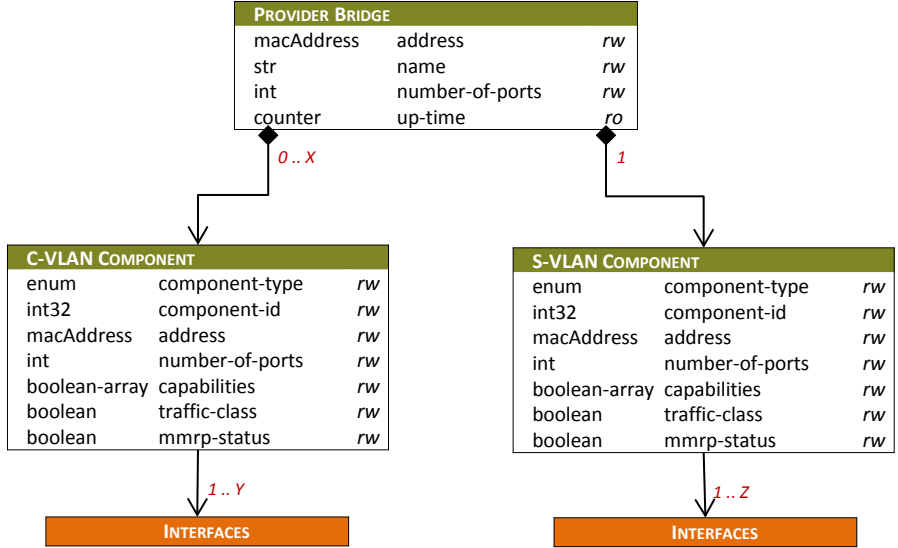
CUSTOMER VLAN BRIDGE Model



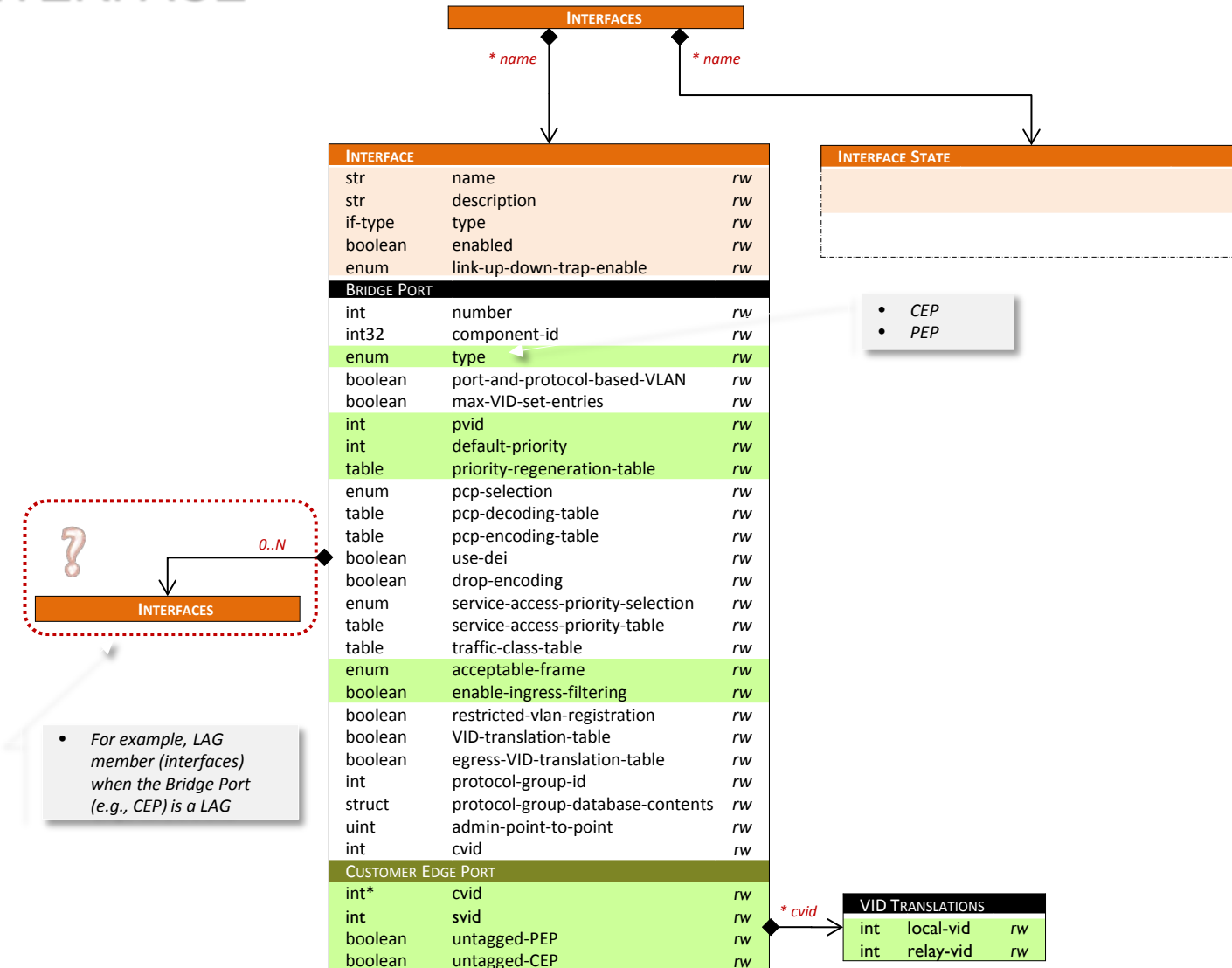
CUSTOMER VLAN BRIDGE COMPONENT INTERFACE Model



PROVIDER BRIDGE Model

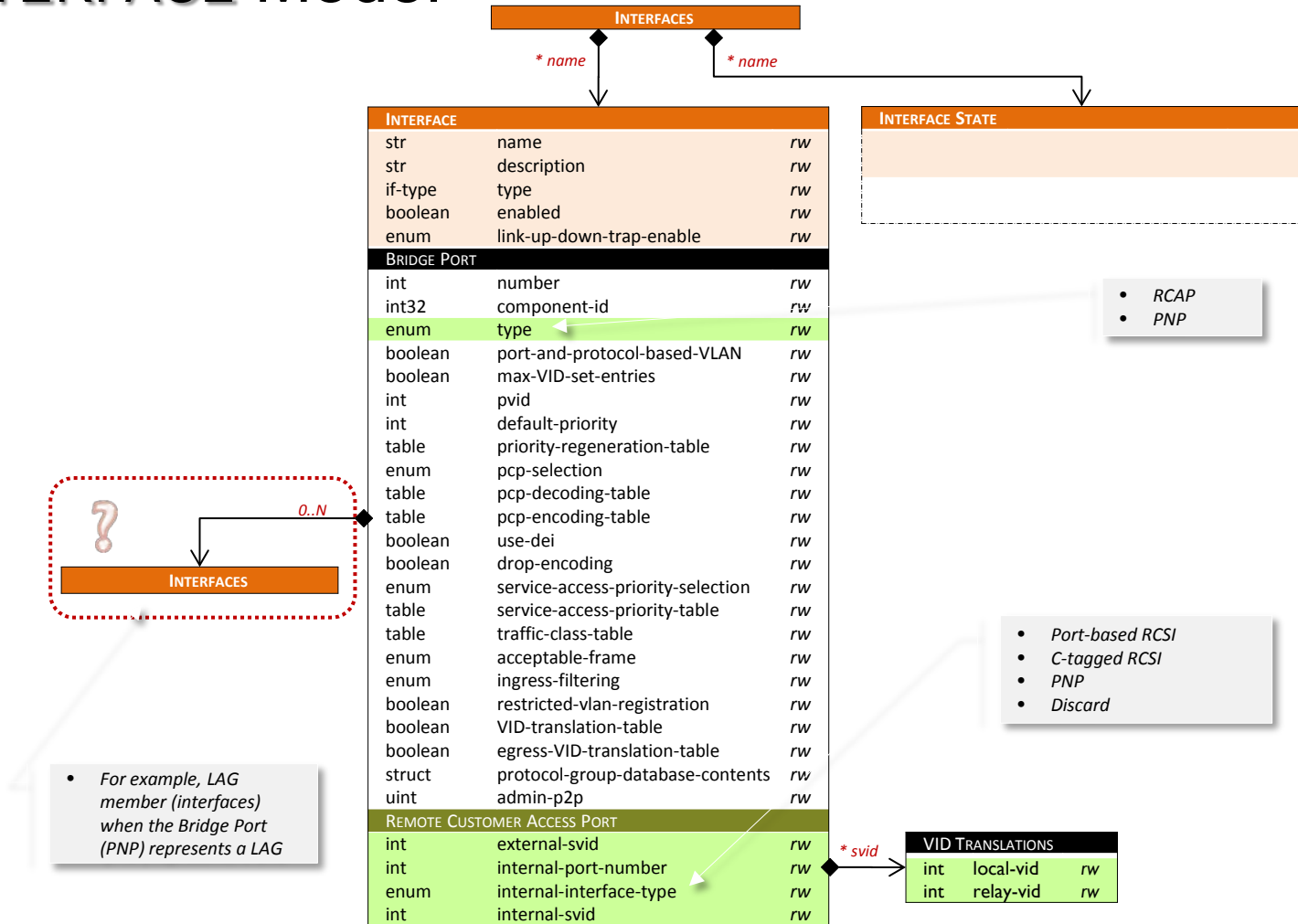


PROVIDER EDGE BRIDGE C-VLAN COMPONENT INTERFACE Model

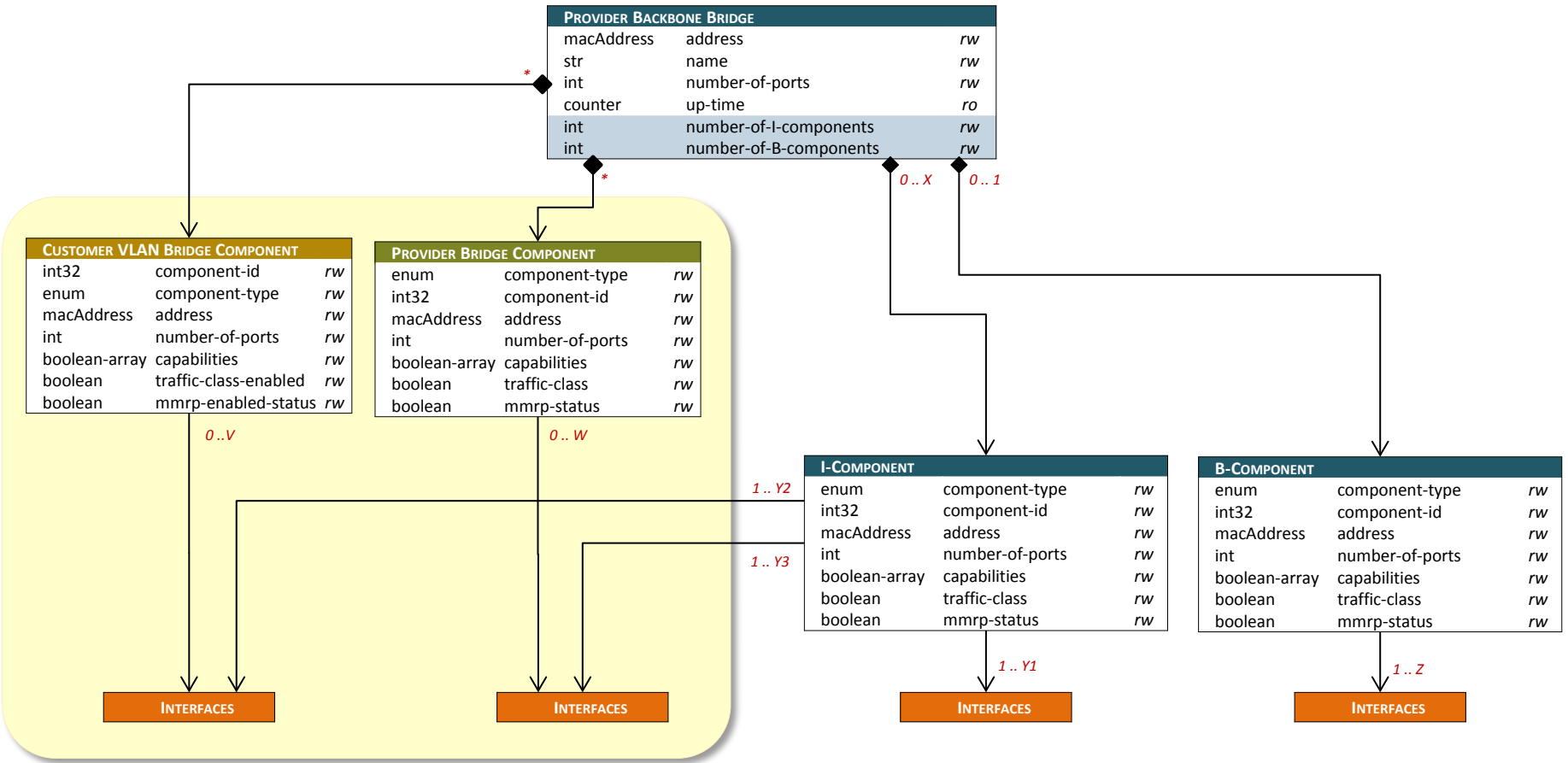


PROVIDER BRIDGE S-VLAN COMPONENT

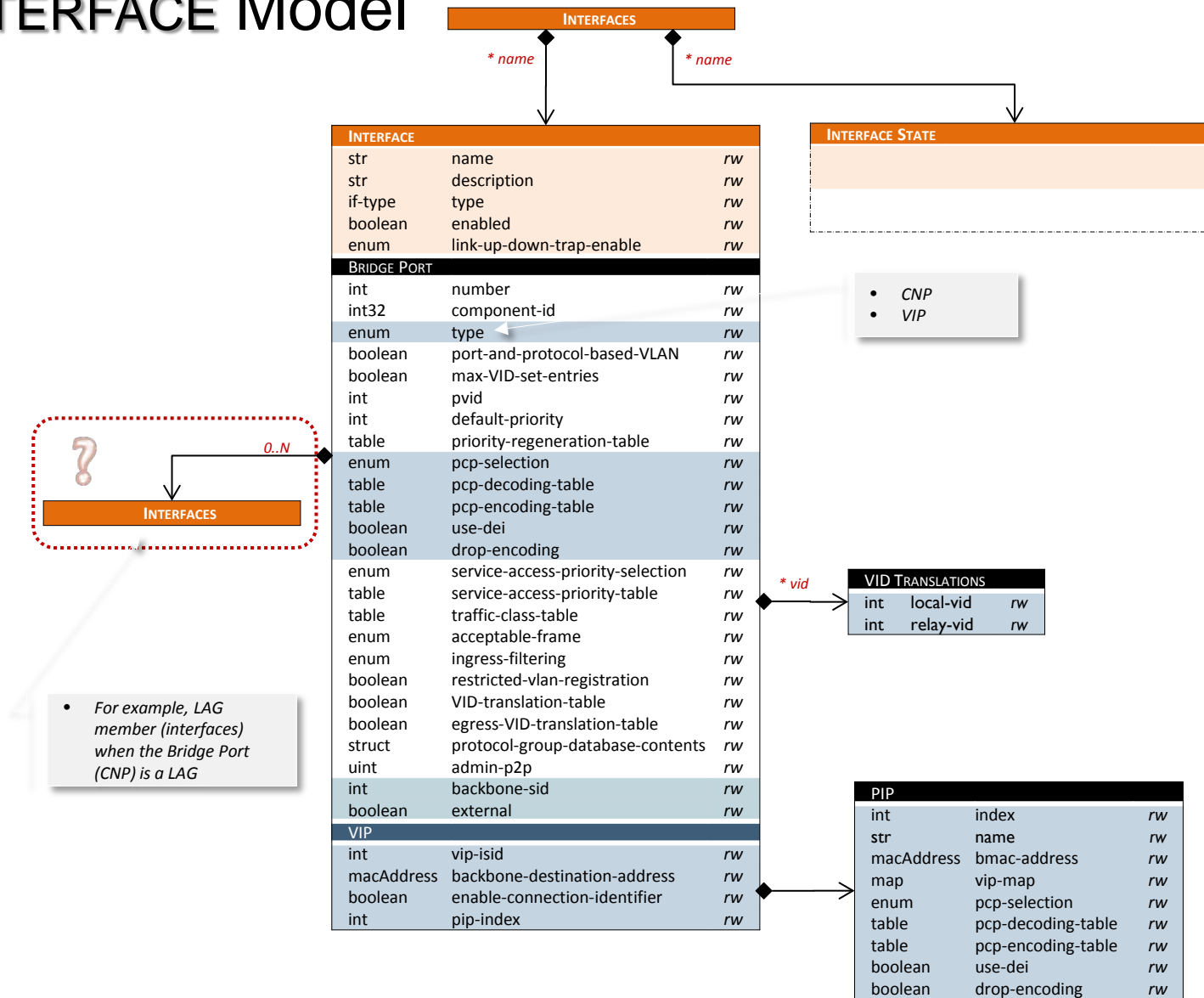
INTERFACE Model



PROVIDER BACKBONE BRIDGE Model



BACKBONE EDGE BRIDGE I-COMPONENT INTERFACE Model



BACKBONE BRIDGE B-COMPONENT INTERFACE Model

