

# 802.1Qbg VSI Discovery and Configuration State Machine

Paul Bottorff

Paul Congdon

V1

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# Local Change Events

- Current VDP state machines uses the shorthand term “localChange-” to indicate a local event from the Hypervisor or the Bridge control plane.
- Other 802.1 state machines which use variable tests to identify events.
- Definitions to identify events at Station:
  - HyperCmd = request TLV from the Station’s Hypervisor
  - rxResp = most recent Bridge response TLV received at the Station
  - A new command event is indicated by HyperCmd != NULL
  - A new response event is indicated by rxResp != NULL
- Definitions to identify events at Bridge:
  - rxCmd = most recent Station command TLV received at the Bridge
  - bridgeExit = a boolean which is set TRUE whenever the Bridge wants to exit
  - A new command event is indicated by rxCmd != NULL
  - An exit event is indicated when bridgeExit = TRUE

# Command-Response TLV Fields

- All TLVs have the same format as in draft 1.0
- Mode1 is 1 octet encoding the command or response
  - PREASSOC: 1
  - ASSOC: 2
  - DEASSOC: 3
  - Note1: PREASSOC without resource reservation removed
  - Note2: Response does not always reflect command (DEASSOC case)
- Mode2 is 1 octet encoding the completion code
  - SUCCESS: 0
  - Fail Codes: 1-255
- State machine may references TLV fields as follows:
  - Cmd TLV: Cmd.Mode1 and Cmd.Mode2
  - rxCmd TLV: rxCmd.Mode1 and rxCmd.Mode2
  - Resp TLV: Resp.Mode1 and Resp.Mode2
  - rxResp TLV: rxResp.Mode1 and rxResp.Mode2
  - Note: TLV.Mode1 and TLV.Mode2 = NULL when TLV = NULL
  - Note: Current state machine uses shorthand for the content of the TLV mode field, ASSOC\_ACK\_rx, ASSOC\_NACK\_rx, PREASSOC\_ACK\_rx, PREASSOC\_NAK\_rx, DEASSOC\_ACK\_rx

# Timer Events Using Local Variables

- Current Station state machine uses two timers for an response timeout and for a keep alive.
- Current Bridge state machine uses one timer for a keep alive time out.
- Change Station to count down timers
  - StartRespTimer() to WaitRespWhile = respWaitDelay
  - ACTIVITY\_TIMER\_EVENT to KeepAliveWhile = reinitKeepAlive
  - Response timeout when waitRespWhile == 0
  - Keep alive event cycle when KeepAliveWhile == 0
- Change Bridge to count down timers
  - INACTIVE to KeepAliveWhile = toutKeepAlive
  - Keep alive timeout when KeepAliveWhile == 0

# Keep Alives During PreAssociate

- Draft 1.0 VDP machine may hang because there are no keep alives during preassociate
- It is a simple change to allow keep alives during both associate and preassociate

# Bridge Resourcing States

- The bridge state machine must hand the command to another machine which may query to network management system before sending a response.
- The Bridge state machine needs to break the command request into two states to allow the command hand-off
  - Need a timeout for the resource request from the Bridge
  - Need to build the response for the station from the resource request response

# Reverting to Last Successful Associate

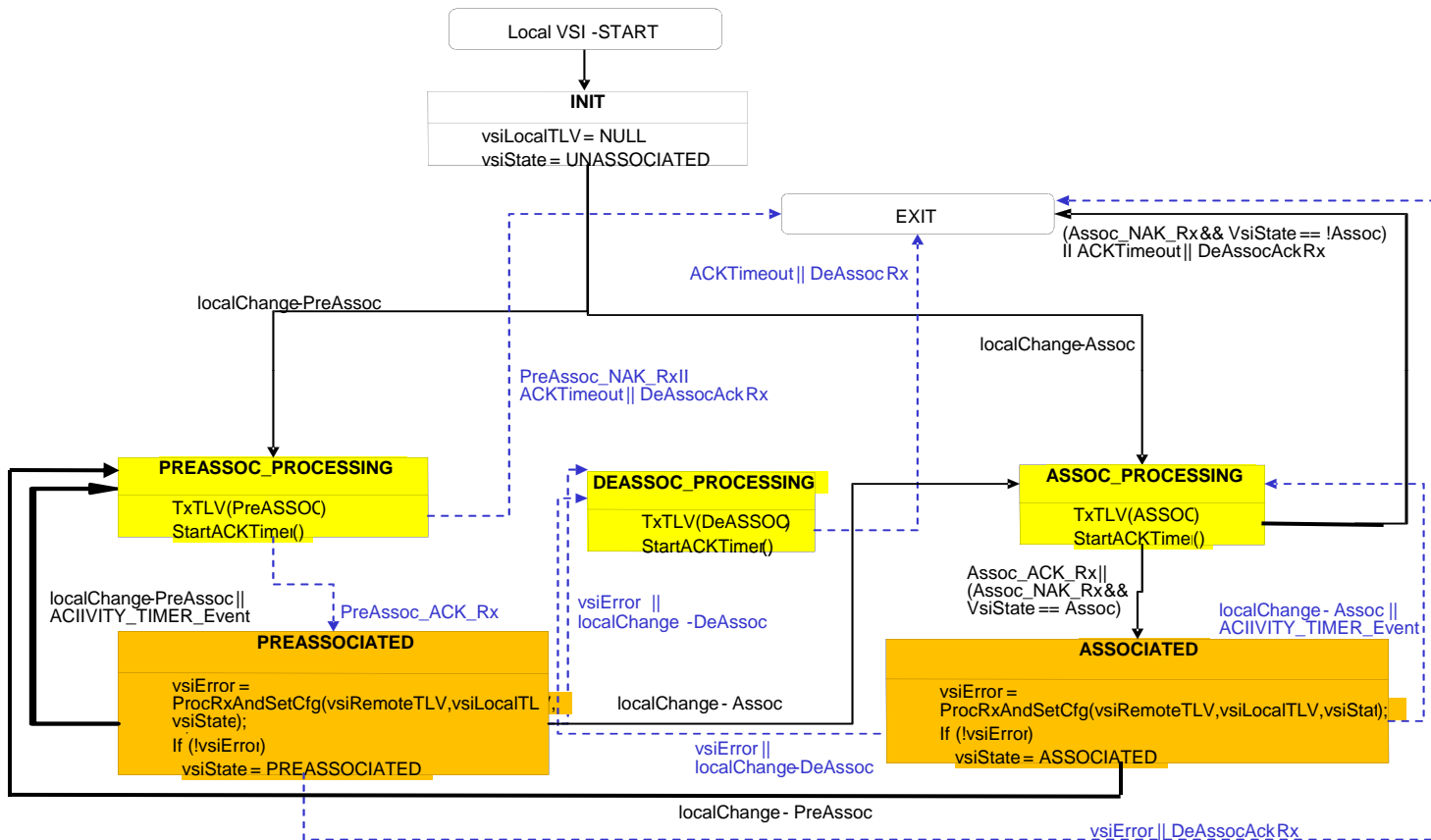
- The current VDP machines provide state transitions to revert to the previous successful associate in the event of an associate failure.
- Even though the machine includes the transition they are not very specific about retaining the existing state.

# Error Processing

- Current VDP machine illustrates error checks on procedure calls, however these are not conventionally illustrated in our machines unless we specify the specific errors possible and who they affect the machine outcomes.
- We suggest removing these from the illustration unless we fully specify the operation of the procedures.

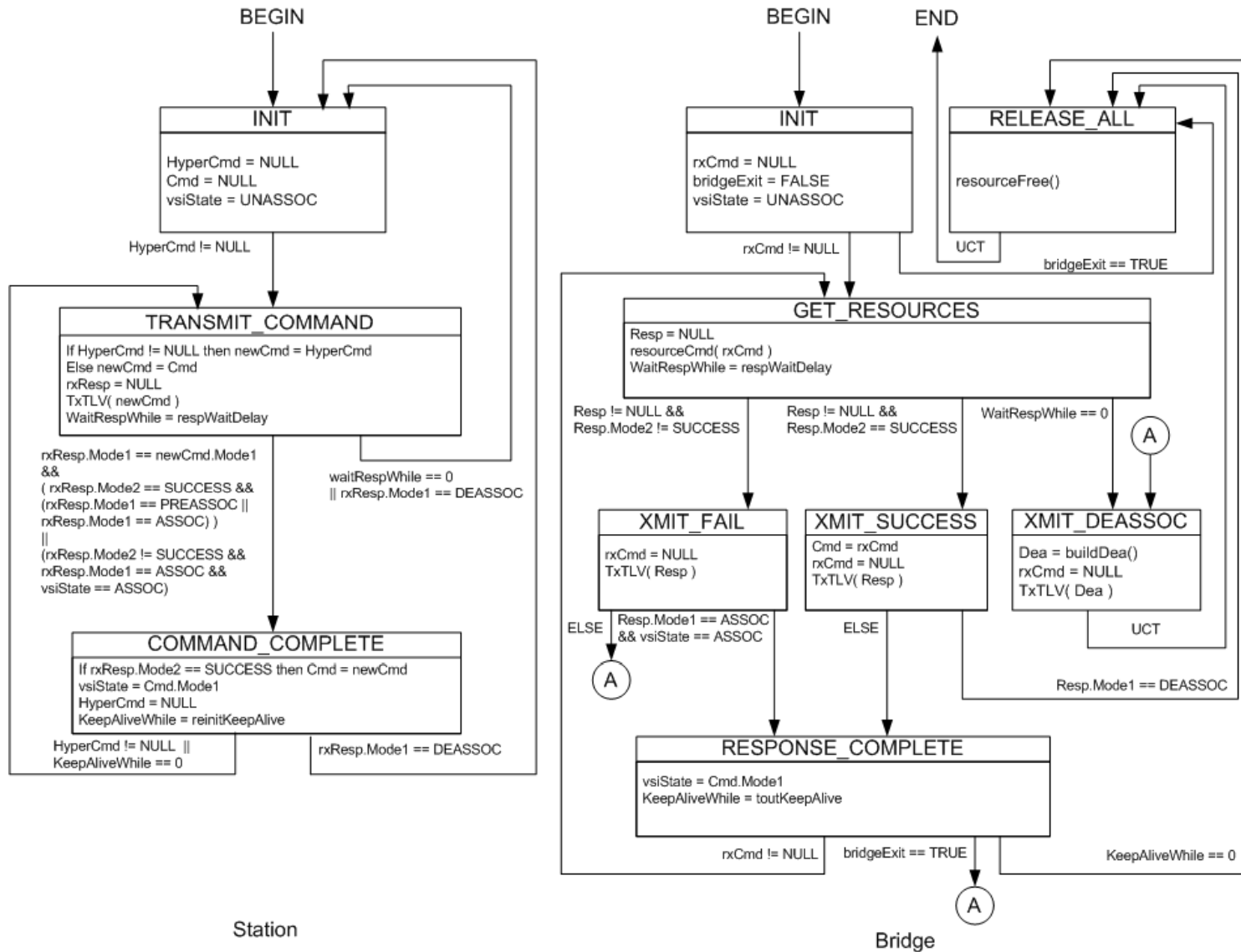


# VDP Draft 1.0: State consolidation



- Yellow states may be consolidated
- Orange states may be consolidated

# Proposed VDP State Machines



# Procedures in Proposed VDP Machine

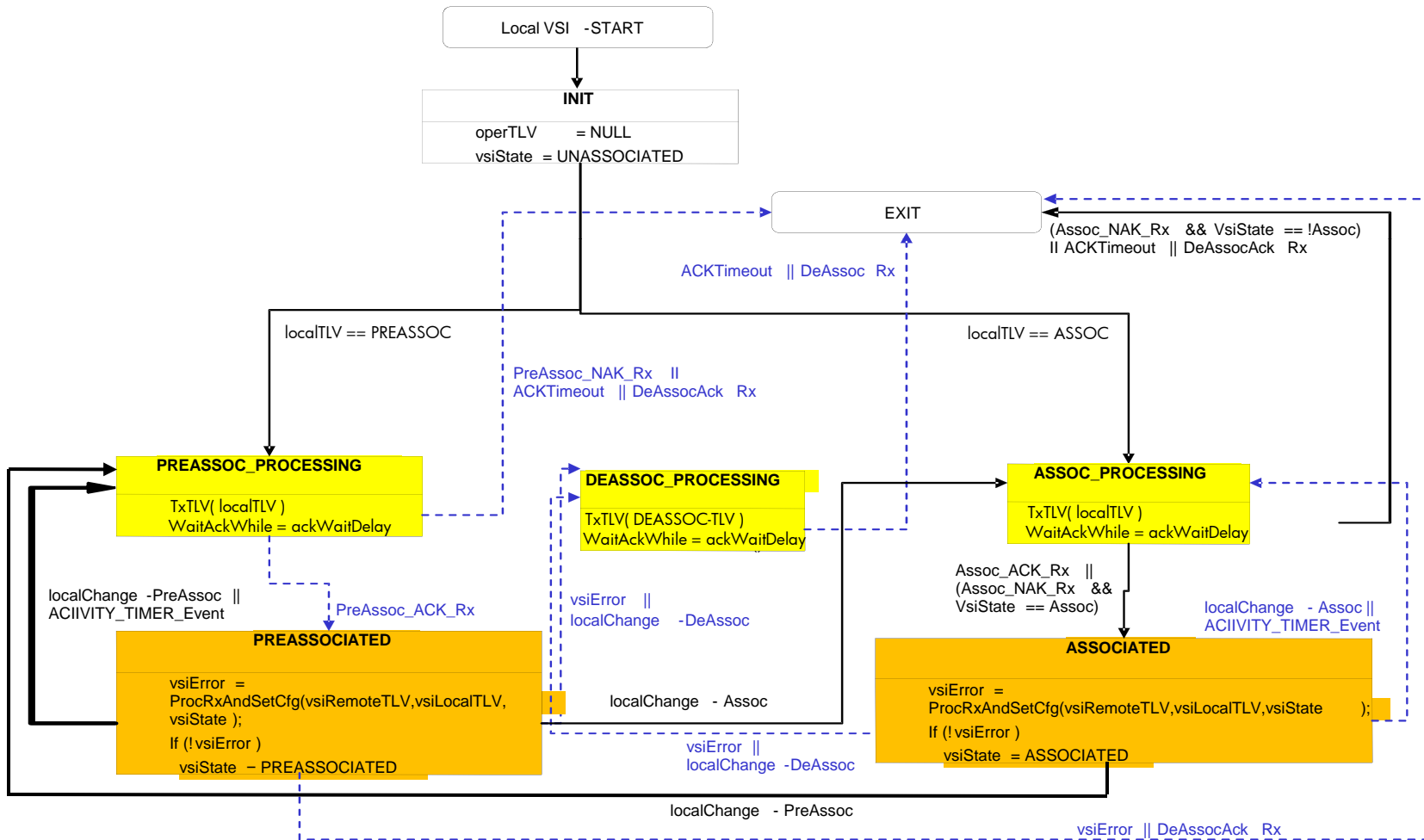
- TxTLV( TLV ) sends a TLV to the VDP listener for packing into a ECP frame.
- Bridge Procedures:
  - resourceCmd( rxCmd) makes a resource request from the Bridge and builds a response TLV from the current received command. The response may be PREASSOC, ASSOC or DEASSOC with success or fail. The response is returned in the variable Resp.
  - resourceFree() frees all the resources associated with this state machine instance
  - Dea = buildDea() builds a DEASSOCIATE TLV for the current state machine and returns it in the return parameter.

# Possible Issues

- Both D1.0 and proposed VDP machine handle duplicates by cycling through CmdComplete (no duplicate filtering).
- Both D1.0 and proposed VDP machines must compare entire TLV to determine if a new command or response has been received (no transaction IDs).
- Both D1.0 and proposed VDP machines use the 16 octet instance ID to identify the VSI state machine instance (no handle exchanges).

# **BACKUP SLIDES**

# Station VDP State Machine: operTLV



# Bridge VDP State Machine: Draft 1.0

