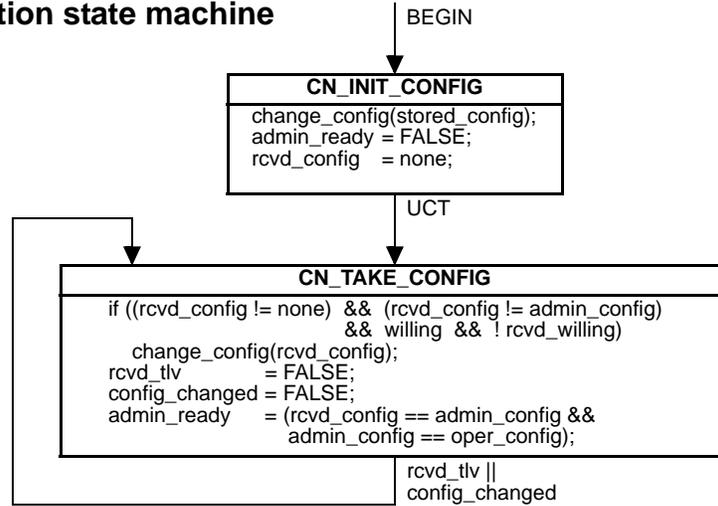
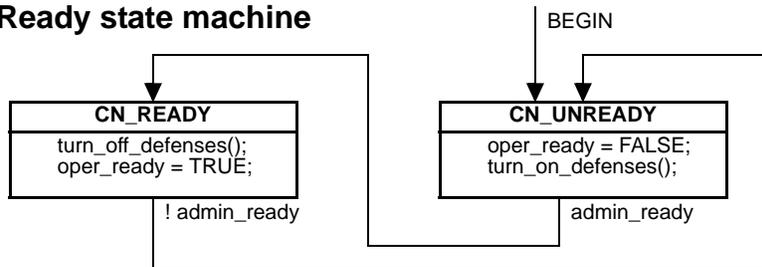


## Per-port per-priority state machines for LLDP TLVs for CN

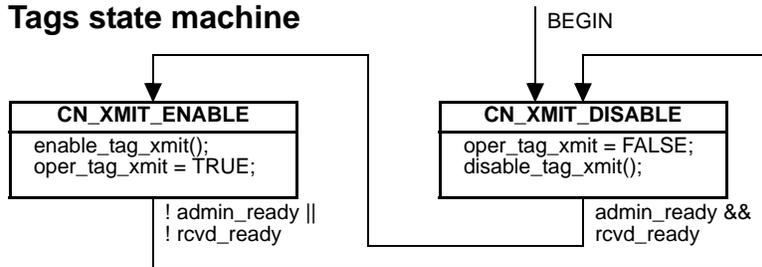
### Configuration state machine



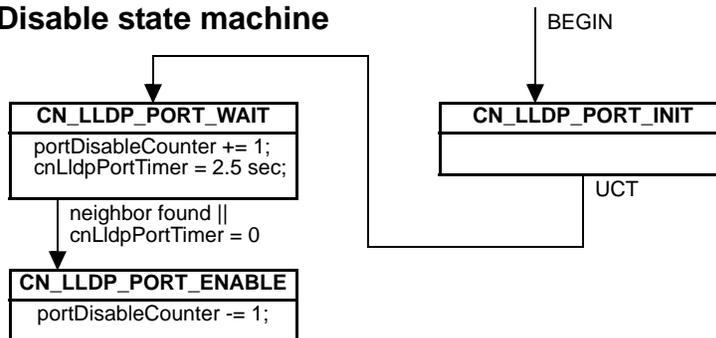
### Receive Ready state machine



### Transmit Tags state machine



### M/RSTP Disable state machine



## Notes:

- 1) UCT = UnConditional Transfer (fall through).
- 2) BEGIN is the usual initialization signal. It is asserted when the port is not operational.
- 3) There is one set of state machines per port per CN Priority.
- 4) The Configuration state machine runs whenever the CN TLV is received on the port or the local configuration changes. It can update the local configuration based on CN TLVs received. It compares the received configuration to the local configuration, and sets the output, admin\_ready, that drives the Receive Ready and Transmit Tags state machines.
- 5) admin\_ready is set (TRUE) by the Configuration state machine when the configuration of the port and priority matches that of the neighbor, else is reset (FALSE).
- 6) The Receive Ready state machine is driven by admin\_ready. Its purpose is to turn on or off the defense of its Port and priority. That defense remaps all frame received on the CN Priority to a best-effort priority.
- 7) The Transmit Tags state machine is driven by both admin\_ready and the receipt of the Ready flag in the neighbor's LLDP CN TLV. It enables the output of CN-tagged frames. This state machine provides oper\_tag\_xmit as an output that is not transmitted in the CN LLDP TLV, but may be useful in an end station for enabling CN applications.
- 8) The M/RSTP Disable state machine is a proposal for a Bridge Port. It disables the spanning tree from using the Bridge Port until either an LLDP neighbor is found or a timer (2.5 seconds is proposed) expires. The "neighbor found" exit condition from the CN\_LLDP\_PORT\_WAIT state will be tied to the LLDP MIB. This state machine ensures against an interruption of CN service when a new inter-bridge LAN is connected, at the cost of a timeout when connecting to a bridge or station that does not run LLDP.

Rather than defining a control for the spanning tree protocol that is peculiar to CN, Clause 17.19.18 of IEEE Std 802.1D-2004, which defines the portEnabled variable, can be modified to add a fourth bullet:

- d) portDisableCounter equals zero.

and a new clause 17.19.20 inserted:

### **17.19.20 portDisableCounter**

An unsigned integer. This variable can be atomically incremented or decremented by any protocol in the bridge (e.g., DCBx) to control portEnabled (17.19.18).

- 9) The rcvd\_xxx variables are set whenever the LLDP TLV is received for my priority. If the neighbor is lost to LLDP, rcvd\_tlv = none, rcvd\_ready = FALSE, rcvd\_willing = FALSE, and config\_changed = TRUE.
- 10) oper\_config and oper\_ready are transmitted in the LLDP TLV. Whenever either one changes, LLDP switches to fast mode and transmits three PDUs at one per second.
- 11) xxx\_config includes only those configuration variables that must match between two systems. change\_config (new\_config) may run in 0 time, or it may take some time. If it runs in 0 time, it sets admin\_config = oper\_config = new\_config and config\_changed = TRUE. If it takes time, it sets admin\_config = new\_config, oper\_config = invalid, and when the reconfiguration completes, oper\_config = new\_config and config\_changed = TRUE. change\_config() can be called outside this state machine.