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TRANSFORMING HOW CARS OF THE FUTURE ARE BUILT

MAINTENANCE ITEM 324:
USE OF TICK IN LIST EXECUTE STATE MACHINE (802.1Q)

OCT. 2021

IEEE contribution

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TRANSFORMING HOW CARS OF THE FUTURE ARE BUILT

8.6.9.2 List Execute state machine

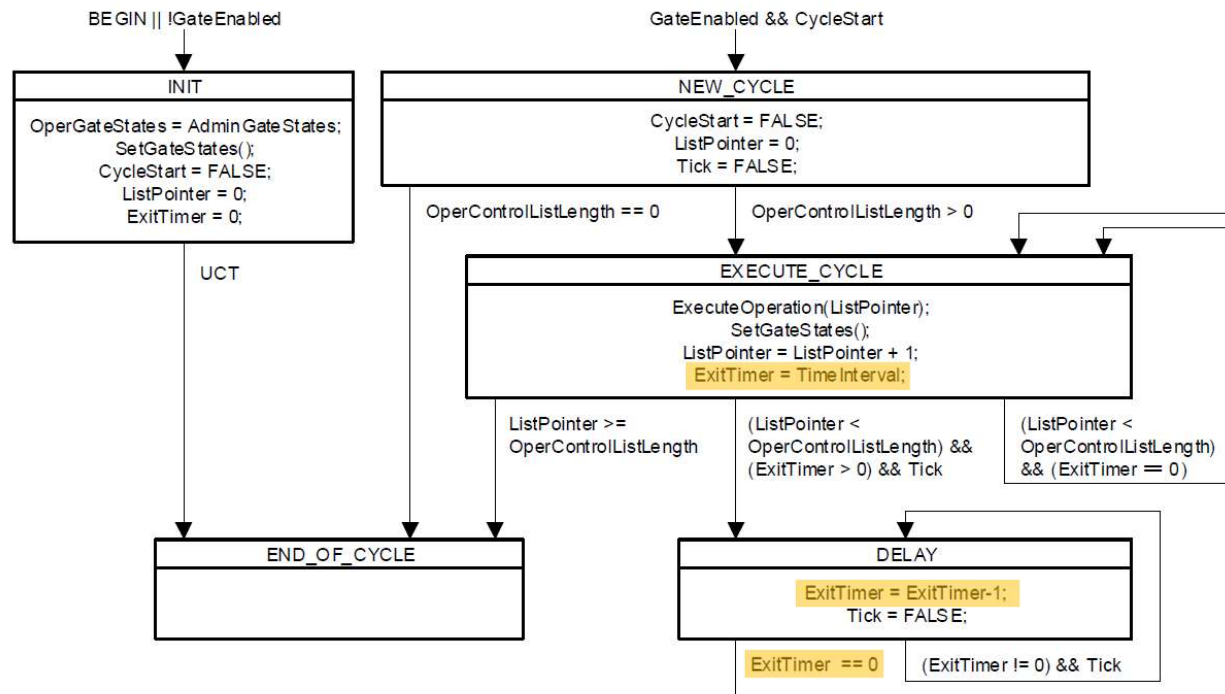


Figure 8-20—List Execute state machine

The State Machine is mandatory!

1 **5.28 End station requirements—Cyclic queuing and forwarding**

2 An end station implementation that conforms to the provisions of this standard for CQF (see Annex T) shall

- 3 a) Support the enhancements for scheduled traffic as specified in 8.6.8.4.
- 4 b) Support the state machines for scheduled traffic as specified in 8.6.9.
- 5 c) Support the state machines for stream gate control as specified in 8.6.10.
- 6 d) Support the management entities for scheduled traffic as specified in 12.29.
- 7 e) Support the management entities for stream gate control as specified in 12.29.
- 8 f) Support the management entities for stream gate control as specified in 12.29.

7 **8.6.9 Scheduled traffic state machines**

8 The execution of the gate operations in a Port's gate control list (8.6.8.4) is controlled by three state
9 machines:

- 10 a) The Cycle Timer state machine (8.6.9.1)
- 11 b) The List Execute state machine (8.6.9.2)
- 12 c) The List Config state machine (8.6.9.3)

TimeInterval is an Integer in NanoSeconds

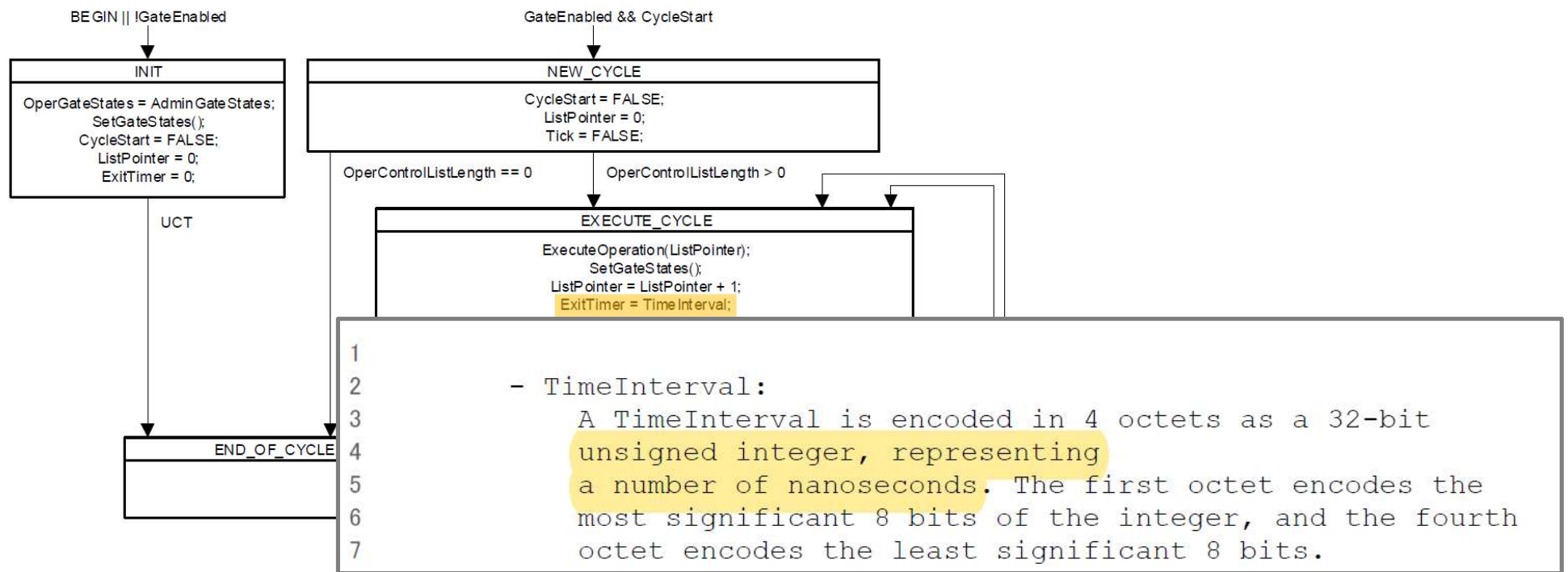


Figure 8-20—List Execute state machine

ExitTimer is an Integer in NanoSeconds

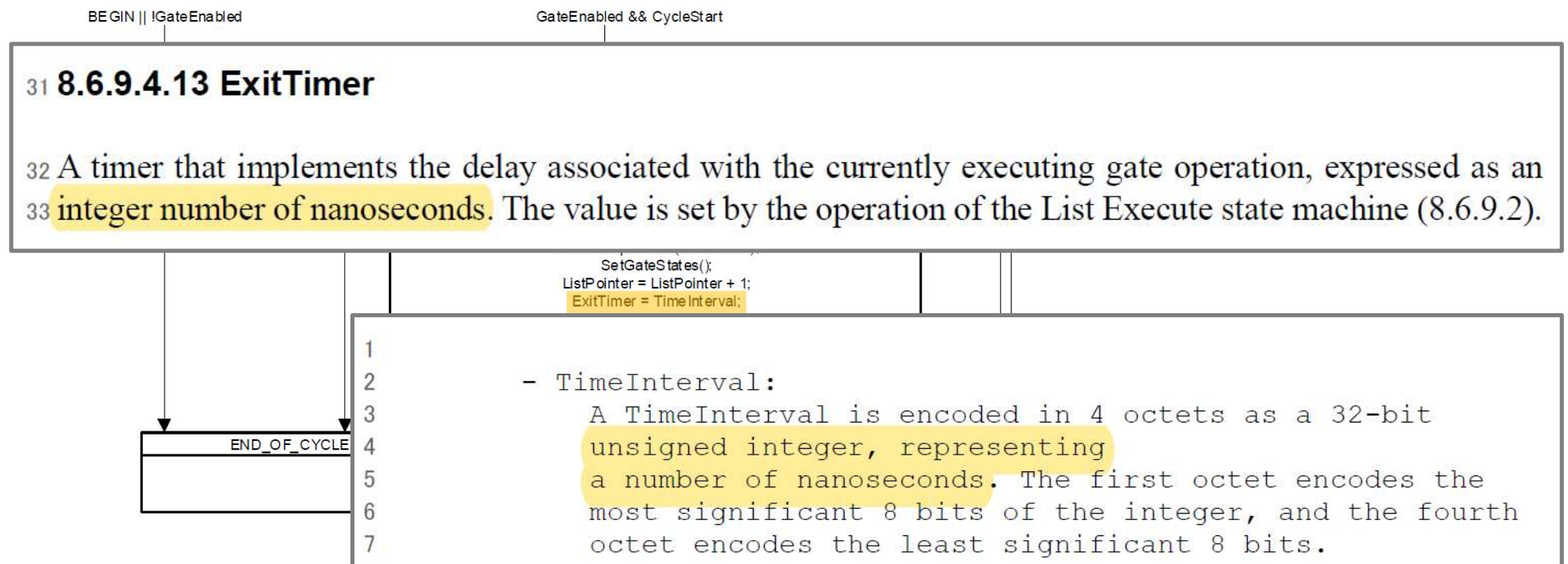


Figure 8-20—List Execute state machine

Tick is set in integer NanoSecond intervals

31 8.6.9.4.13 ExitTimer

32 A timer that implements the delay associated with the currently executing gate operation, expressed as an
33 integer number of nanoseconds. The value is set by the operation of the List Execute state machine (8.6.9.2).

5 8.6.9.4.16 Tick

6 A Boolean variable, set to TRUE by an implementation-specific system clock function at one nanosecond
7 intervals, that controls the decrementing of the ExitTimer variable (8.6.9.4.13). This variable is set FALSE
8 by the operation of the List Execute state machine (8.6.9.2).

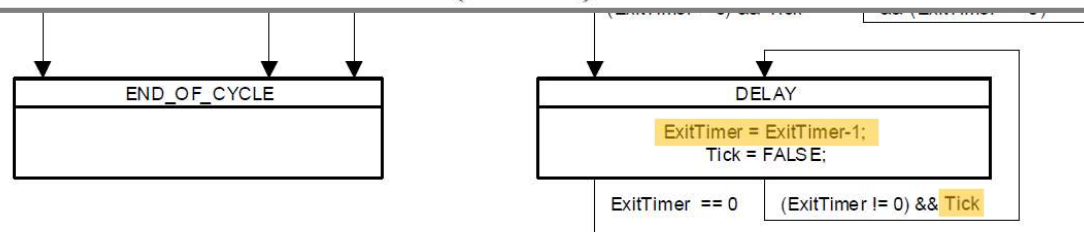
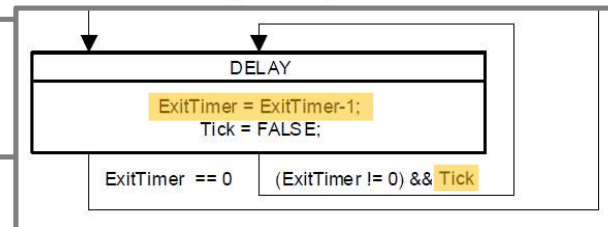


Figure 8-20—List Execute state machine

The concept of TickGranularity is not implemented

31 8.6.9.4.13 ExitTimer

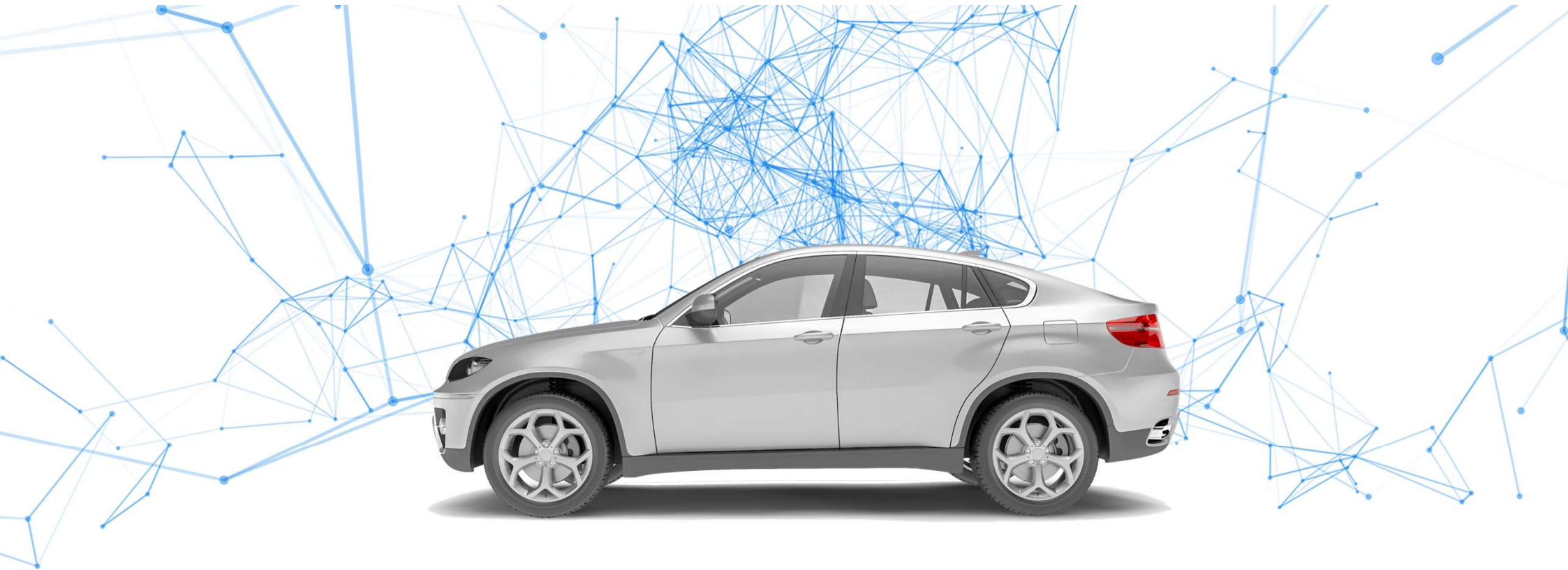
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5 8.6.9.4.16 Tick

6 A Boolean variable, set to TRUE by an implementation-specific system clock function at one nanosecond
7 intervals, that controls the decrementing of the ExitTimer variable (8.6.9.4.13). This variable is set FALSE
8 by the operation of the List Execute state machine (8.6.9.2).

9 NOTE—While the state machine is documented on the basis of a nanosecond clock “tick,” it is anticipated that real
10 implementations will use a wide variety of clocks that differ in frequency accuracy and granularity. Hence, the
11 management parameters specified in 12.29 allow a management station to discover the characteristics of an
12 implementation’s cycle timer clock (TickGranularity) and to set the parameters for the gating cycle accordingly.



THANK YOU

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