33.2.4.7 State diagrams

pse_reset + error_condition *
(mr_pse_enable = enable)

E

mr_pse_enable =
disable

DISABLED

pi_powered ⇐ FALSE

Disabled

mr_pse_enable =
enable

IDLE

pi_powered ⇐ FALSE
mr_valid_signature ⇐ FALSE
pse_dll_enabled ⇐ FALSE

(mr_pse_enable = force_power) *
!error_condition * !ovld_detected *
!short_detected *

Test

TEST_MODE

pi_powered ⇐ TRUE

(short_detected +
ovld_detected) *
(mr_pse_enable =
force_power)

mr_pse_enable =
enable

pse_ready * !power_applied *
(mr_pse_enable = enable)

START_DETECTION

start tdet_timer
do_detection
mr_pd_class_detected ⇐ 0
pd_requested_power ⇐ 2

TEST_ERROR

pi_powered ⇐ FALSE

mr_pse_enable = enable

do_detection_done *
tdet_timer_not_done

tdet_timer_done

DETECT_EVAL

start tpon_timer

A   B

Searching

(signature = invalid) + (signature = open_circuit)

C

SIGNATURE_INVALID

(mr_pse_alternative = A) +
((mr_pse_alternative = B) *
(signature = open_circuit))

CLASSIFICATION_EVAL

(mr_pse_alternative = B) *
(signature ≠ open_circuit)

BACKOFF

start tdbo_timer

(signature = valid) * (class_num_events = 0) *
pse_available_power ≥ pd_requested_power) * ted_timer_done

(signature = valid) * (class_num_events = 0) *
pse_available_power ≥ pd_requested_power) * ted_timer_done

(pd_requested_power ≤
pse_available_power) *
ted_timer_done

tdbo_timer_done

[(pd_requested_power > pse_available_power) + ted_timer_not_done] *
(class_num_events = 0) * (signature = valid)

POWER_UP

pi_powered ⇐ TRUE

(pd_requested_power > pse_available_power) + ted_timer_not_done

Delivering
Power

[(tinrush_timer_not_-
done * legacy_powerup)
+
tinrush_timer_done] *
power_applied *
tpon_timer_not_done *
(PSE_TYPE = 2)

D

power_not_available *
!short_detected *
!ovld_detected *
tmpdo_timer_not_done *
!option_vport_lim

POWER_DENIED

UCT

tpon_timer_done

[(tinrush_timer_not_done * legacy_powerup) + tinrush_timer_done] *
power_applied * tpon_timer_not_done * (PSE_TYPE = 1)

SET_PARAMETERS

set_parameter_type

UCT

POWER_ON

DLL_ENABLE

pse_dll_enabled ⇐ TRUE

pse_dll_capable *
!pse_dll_enabled

UCT

(PSE_TYPE = 2) *
(pd_dll_power_type = 2) *
(parameter_type = 1)

D

tmpdo_timer_done * !short_detected
!ovld_detected * !power_not_available * !option_vport_lim

tinrush_timer_done * (legacy_powerup + !power_applied + (I_Port ≥ I_inrush))

short_detected +
ovld_detected +
option_vport_lim

ERROR_DELAY

start ted_timer
pi_powered ⇐ FALSE
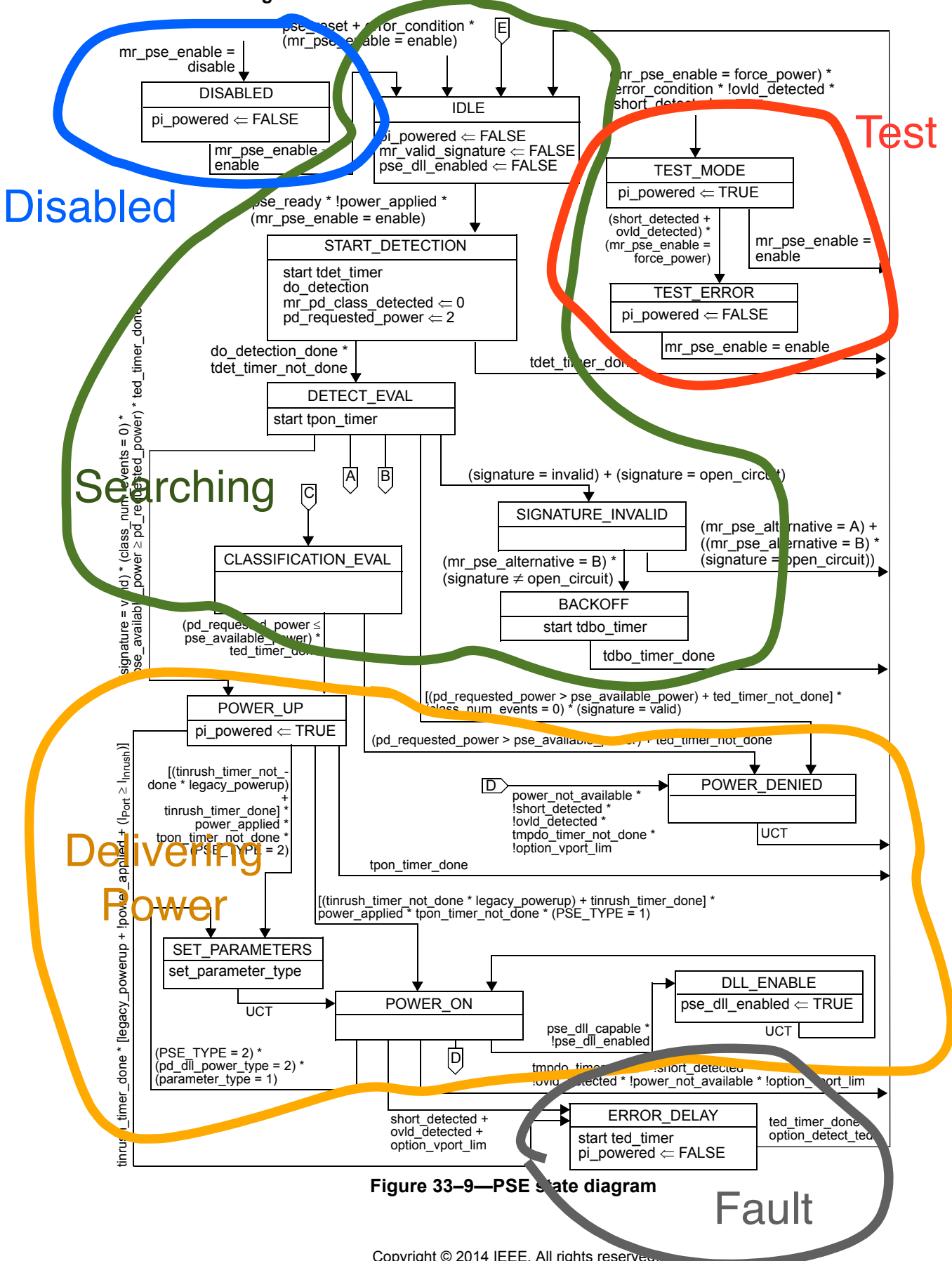
ted_timer_done
option_detect_ted

Fault

Figure 33–9—PSE state diagram

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