

The EFSM is the tuple $S = (Q, \Sigma_1, \Sigma_2, q_0, V, \Lambda)$,

where

$Q = \{\text{dormant, init, idle, monitoring, safe_shutdown, error_diagnosis, final}\}$

$\Sigma_1 = \{\text{kill, start, init_ok, begin_monitoring, moni_crash, init_crash, idle_crash, retry_init, idle_rescue, moni_rescue, shutdown, sleep}\}$

$\Sigma_2 = \{\text{retry++}, \text{moni_err_msg}, \text{idle_err_msg}, \text{init_err_msg}, \text{retry}=0\}$

$q_0 : \text{dormant}$

$V : \text{retry} = \{0, 1, 2, 3\}$

$\Lambda_{\text{unrefined}} = \{$

1. $\rightarrow \text{dormant}$

2. $\text{dormant} \xrightarrow{\text{kill}} \text{final}$

3. $\text{dormant} \xrightarrow{\text{start}} \text{init}$

4. $\text{init} \xrightarrow{\text{init_ok}} \text{idle}$

5. $\text{init} \xrightarrow{\text{init_crash} / \text{init_err_msg}} \text{error_diagnosis}$

6. $\text{init} \xrightarrow{\text{kill}} \text{final}$

7. $\text{idle} \xrightarrow{\text{begin_monitoring}} \text{monitoring}$

8. $\text{idle} \xrightarrow{\text{idle_crash} / \text{idle_err_msg}} \text{error_diagnosis}$

9. $\text{idle} \xrightarrow{\text{kill}} \text{final}$

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10. monitoring  $\xrightarrow{kill}$  final
11. monitoring  $\xrightarrow{moni\_crash/moni\_err\_msg}$  error_diagnosis
12. error_diagnosis  $\xrightarrow{kill}$  final
13. error_diagnosis  $\xrightarrow{moni\_rescue}$  monitoring
14. error_diagnosis  $\xrightarrow{retry\_init[retry \leq 3]/retry++}$  init
15. error_diagnosis  $\xrightarrow{idle\_rescue}$  idle
16. error_diagnosis  $\xrightarrow{shutdown[retry > 3]/retry=0}$  safe_shutdown
17. safe_shutdown  $\xrightarrow{kill}$  final
18. safe_shutdown  $\xrightarrow{sleep}$  dormant
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The EFSM of the init state is the tuple $S = (Q, \Sigma_1, \Sigma_2, q_0, V, \wedge)$,

where

$Q = \{\text{boot_hw}, \text{senchk}, \text{tchk}, \text{psichk}, \text{ready}\}$

$\Sigma_1 = \{\text{hw_ok}, \text{sen_ok}, \text{t_ok}, \text{psi_ok}\}$

$\Sigma_2 = \{\}$

$q_0 : \text{boot_hw}$

$V = \{\}$

$\Lambda_{\text{refined}} = \{$

1. $\rightarrow \text{boot_hw}$

2. $\text{boot_hw} \xrightarrow{hw_ok} \text{senchk}$

3. $\text{senchk} \xrightarrow{sen_ok} \text{tchk}$

4. $\text{tchk} \xrightarrow{t_ok} \text{psichk}$

5. $\text{psichk} \xrightarrow{psi_ok} \text{ready}$

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