### BOOT\_TestAndConfigureAdditionalHW\_TCAHW

#### BOOT\_TCAHW\_Decrementer

This function checks for interrupt occurrences and reports failure when there are none.

Prototype:

void BOOT\_TCAHW\_Decrementer(boolean\_t\* p\_PBIT\_Failed,

ts\_PBIT\_Results\* p\_PBIT\_Results)

Parameters:

Function return : Not used

p\_PBIT\_Failed (W) : PBIT status

p\_PBIT\_Results(W) : PBIT results

Calls:

BOOT\_TCAHW\_EnableDecrementerIT

BOOT\_TCAHW\_LoadDecrementerWith500us

BOOT\_TCAHW\_DisableDecrementerIT

LIBBSP\_CMN\_isElapsed

Preconditions:

None

##### Input Data

Data:

ExpectedDecrementerIT\_Raised: boolean\_t

DecrementerIT\_TestUnderway: boolean\_t

Preconditions:

None

##### Output Data

Data:

ExpectedDecrementerIT\_Raised: boolean\_t

DecrementerIT\_TestUnderway: boolean\_t

##### Requirements

REQ\_SDDD\_BOOT\_000xx-0x

*[COV.REQ\_SRD\_BOOT\_0068]*

BOOT\_TCAHW\_Decrementer

|  |  |  |
| --- | --- | --- |
|  | Causes | |
| Effects | [Initialize the Decrementer interruption state]  [Initialize the Decrementer interruption test state]  [Set the {Timer}]  **[**Enable Decrementer interruption**]**  **[**Load the Decrementer with 500us**]**  **[**Wait for the Decrementer interruption to occur within a 1ms timeout**]**  [Check the Decrementer test state]  **[**DisableDecrementer interruption**]** | |
| [No interruption has occurred] | [An interruption has occurred] |
| Set {p\_PBIT\_Failed} to TRUE  Set {p\_PBIT\_Results->DecrementerIT\_PBIT\_Failed} to TRUE | No effect |

[Initialize the Decrementer interruption state]: set {ExpectedDecrementerIT\_Raised} to FALSE.

[Initialize the Decrementer interruption test state]: set {DecrementerIT\_TestUnderway} to TRUE.

[Set the {Timer}]: set the {Timer} to 1000

**[**Enable Decrementer interruption**]** corresponds to the following call:

**BOOT\_TCAHW\_EnableDecrementerIT**

* **Function return:** Not used

**[**Load the Decrementer with 500us**]** corresponds to the following call:

**BOOT\_TCAHW\_LoadDecrementerWith500us**

* **Function return:** Not used

**[**Wait for the Decrementer interruption to occur within a 1ms**]**: While {timer} is equal to 0 and ExpectedDecrementerIT\_Raised is equal to false, **[wait].**

**[wait]** corresponds to the following call:

**LIBBSP\_CMN\_isElapsed**

* **Function return:** {timer}
* **IN**: 1000

[Check the Decrementer test state]: set {DecrementerIT\_TestUnderway} to FALSE.

**[**DisableDecrementer interruption**]** corresponds to the following call:

**BOOT\_TCAHW\_DisableDecrementerIT**

* **Function return:** Not used

[No interruption has occurred]: {ExpectedDecrementerIT\_Raised} is equal to FALSE.

[An interruption has occurred]: {ExpectedDecrementerIT\_Raised} is different from FALSE.

Traceability: Refined

Rationale:

Mean of verification: Test

[END\_REQ\_SDDD\_BOOT\_TCAHW\_Decrementer\_00168-01]