

Run#2-5,12,20



You are a requirements engineer working on the project named 'standard firmware.' Your task is to predict links between the system requirements (SYSRS) and software requirements (SWRS).

For each SYSRS, perform the following steps:

Deduce the Triggers: Identify the conditions or events that initiate the requirement.

Deduce the Actions: Specify what needs to be done when the triggers occur.

Deduce the Outputs: Identify the results or deliverables of the actions.

Search for SWRS with matching or related triggers, actions, and outputs. Create links only if there is a match, and ensure that the scenarios (e.g., unicast vs. broadcast or other context-specific conditions) are consistent between the SYSRS and SWRS. No link of any type should be created if they mismatch.

Important:

Verify that the operational context (e.g., unicast vs. broadcast) aligns fully before classifying as "Fully Linked."

If there is any inversion or mismatch in context, triggers, actions, or outputs, classify the SYSRS as "Partially Linked" or "Unlinked," as appropriate.

Clearly describe any mismatches or inversions in the justification.

For each SYSRS, classify the match into one of the following categories:

Fully Linked: The SWRS completely aligns with the SYSRS in context, triggers, actions, and outputs.

Partially Linked: The SWRS addresses some aspects of the SYSRS (e.g., actions) but misses significant elements (e.g., context or specific outputs). Specify what is missing.

Unlinked: No SWRS sufficiently aligns with the SYSRS due to missing key elements, incompatible context, or scenarios.

If a match exists (fully or partially), provide a justification explaining how the SWRS satisfies the SYSRS and note any missing elements for partial links. If no match exists, explicitly state that the SYSRS is Unlinked, along with a justification. Wait for me to give sysrs and swrs list.



Understood. Once you provide the list of system requirements (SYSRS) and software requirements (SWRS), I'll analyze each SYSRS systematically to deduce triggers, actions, and outputs, match them to SWRS, and classify the links with detailed justifications. Let me know when you're ready to proceed!



System Requirement

SYSRS 001: The Sensor IC shall digitize the Transducer Input Signal at the IC Pins with sampling frequency of (CALIB_samplingFreq plus YPX_samplingFreqOffset).

"SYSRS 003: BEFORE Sending CRM_RCC After Reception of the CRM_FCC,

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THEN
the Sensor IC shall
set CRM_RSP Parameter CrmStatus = Status Value.
"

SYSRS 021: Diagnostic - Retry configuration: The firmware shall allow configurability to select the
retry for open and short faults independently
"SYSRS 012: BEFORE Leaving the Discovery Mode
AND IF the effective value of the parameter DSI3_physicalAddress is NOT equal to the default value
of the Parameter DSI3_physicalAddress
THEN
the Sensor IC shall
set Error: err_discPhysAddrMismatch = 0x1 (""error detected"").
"

"SYSRS 014: IF the Event_MAX is generated,
THEN
the Sensor IC shall
measure the time of the occurrence of the event condition relative to the start of the measurement
and provide PDCM_RSP P12, P13 Parameter EventTimeStamp<i> for the <i>th Event transmitted in a
DSI3 packet."
"SYSRS 009: If Performing Memory Access in Broadcast
AND IF the state if the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea for the
operation as determined by CRM_CMD 0x8 Operation Flag is in the state Locked,
THEN
the Sensor IC shall
respond with PDCM_RSP P0: Report CRM_RSP Information containing CRM_RSP 0x8: Report Lock
Status and CRM_RSP 0x8 Flag KeyRequest = 0b1 (""key requested"").

"
"SYSRS 018: - Unlocked, If No Key Is Set
If Performing Memory Access
AND If the Key is NOT set
THEN
the Sensor IC shall
set the state of the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea to the state
Memory Area State: Unlocked."
"SYSRS 006: If Performing Memory Access in Unicast
AND IF the state of the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea for the
operation as determined by CRM_CMD 0x8 Operation Flag is in the state Locked,
THEN
the Sensor IC shall
respond with CRM_RSP 0x8: Report Lock Status and CRM_RSP 0x8 Flag KeyRequest = 0b1 (""key
requested"").
"
"SYSRS 019: If Performing Memory Access in Unicast
AND AFTER reception of the CRM_FCC_CMD,
AND If Addressed with the Broadcast Command
THEN
the Sensor IC shall
set the parameter Status Value = 0x2 (""invalid"").
"SYSRS 020: If Performing Memory Access in Broadcast
AND AFTER reception of the CRM_FCC_CMD,

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AND If Addressed with the Unicast Command
THEN
the Sensor IC shall
set the parameter Status Value = 0x2 (""invalid"")."
"SYSRS 007: If Performing Memory Access
AND If the Key is Set
AND If Read Operation is Requested
AND If Memory Area Is Set Read Accessible
THEN
the Sensor IC shall
set the state of the Memory Area identified byCRM_CMD 0x8 Parameter MemoryArea to the state
Locked.
"

"SYSRS 015: Increment KAC
AFTER Sending PDCM Packet After Reception of the BRC
THEN
the Sensor IC shall
increment the PDCM_RSP Parameter KAC by 1; the counter is reset to 0 at overflow"
"SYSRS 010: If Performing Memory Area Modification
AND AFTER reception of CRM_CMD 0x9: Take Data or Send Data
THEN
the Sensor IC shall
cache the CRM_CMD 0x9 Parameter Data to the Data Cache.

"

SYSRS 013: The Sensor IC shall amplify the Transducer Input Signal at the IC Pins with the three
amplification factors ( Parameter CALIB_analogGain plus Parameter SPX_dynGainStartValue plus
CRM_CMD 0x4 Parameter CalibrationGain plus Parameter YPX_calibrationGainOffset ).
"SYSRS 016: After Reception of the Valid CRM_FCC_CMD,
THEN
the Sensor IC shall
set the PDCM_RSP Parameter KAC = 0x0."
"SYSRS 017: If Performing the Standard Path Measurement
AND IF performing Stop Ongoing Measurement (Blocked)
AND IF the functionality in US-Transducer Control (Non-Modulated Sine Burst) has NOT been fully
performed,
THEN
the Sensor IC shall
set Error: err_burstGenerationStopped = 0x1 (""error"")."
"SYSRS 004: If performing Erase Backup
AND If Addressed with the Unicast Command
THEN
the Sensor IC shall
respond with CRM_RSP 0x0: Report Acknowledgement."
SYSRS 002: The Sensor IC FW shall have a watchdog to detect FW or HW malfunction by resetting
the WDG time in appropriate time within the FTTI.
"SYSRS 005: IF the Sensor IC generates more information than possible to store in Event Buffer or
Time Series Data Buffer
THEN

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the Sensor IC shall forget the according information."
 "SYSRS 008: If Performing Memory Access With Set Key
 AND If Write Operation is Requested
 AND If Memory Area Is Set Write Accessible
 THEN
 the Sensor IC shall
 set the state of the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea to the state Locked."
 "
 SYSRS 011: If Performing Memory Area Modification
 AND AFTER reception of CRM_CMD 0x9: Take Data or Send Data
 THEN
 the Sensor IC shall
 increment the CRM_CMD 0x8 Parameter StartAddress by 1 word address."



Please provide the list of software requirements (SWRS), and I will proceed to analyze the system requirements (SYSRS) and attempt to link them with corresponding SWRS based on their triggers, actions, outputs, and context.



Software Requirement
 "SWRS 017: Increment KAC
 AFTER Sending PDCM Packet After Reception of the BRC
 THEN
 the Software shall
 increment the PDCM_RSP Parameter KAC by 1; "
 "SWRS 010: If Performing Memory Access in Broadcast
 AND IF the state if the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea for the operation as determined by CRM_CMD 0x8 Operation Flag is in the state Locked,
 THEN
 the Software shall prepare to
 respond with PDCM_RSP P0: Report CRM_RSP Information containing CRM_RSP 0x8: Report Lock Status and CRM_RSP 0x8 Flag KeyRequest = 0b1 ("key requested").
 "
 SWRS 016: The software shall send the MAX events with the measured time of the occurrence of the event, condition relative to the start of the measurement, and provide the PDCM_RSP P12,P13 Parameter EventTimeStamp<i> for the <i>th Event transmitted in a PDCM frame.
 "SWRS 018: After Reception of the Valid CRM_FCC_CMD,
 THEN
 the Software shall
 set the PDCM_RSP Parameter KAC = 0x0."
 SWRS 002: The software shall enable a watchdog to detect software or hardware malfunction AND IF a malfunction is present, perform a reset in an appropriate time within the Fault Tolerant Time Interval of 20ms

 SWRS 008: If Performing Memory Access AND If the Key is Set AND If Read Operation is Requested AND If Memory Area Is Set Read Accessible THEN the Software shall set the state of the Memory

Area identified by CRM_CMD 0x8 Parameter MemoryArea to the state Locked.

"SWRS 013: Analog Amplification: AFTER reception of the command CRM_CMD 0x4: Start Calibration Measurement the software shall set the register the register ASP_CFG.g_ana to Parameter CALIB_analogGain .

"

"SWRS 009: If Performing Memory Access

AND If the Key is Set

AND If Write Operation is Requested

AND If Memory Area Is Set Write Accessible

THEN

the Software shall

set the state of the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea to the state Locked.

"

"SWRS 004: If performing Erase Backup

AND If Addressed with the Unicast Command

THEN

the Software shall prepare to

respond with CRM_RSP 0x0: Report Acknowledgement."

"SWRS 020: - Unlocked, If No Key Is Set

ELA0938-15904 - If Performing Memory Access

AND ELA0938-17453 - If the Key is NOT set

THEN

the Software shall

set the state of the Memory Area identified by ELA0938-9158 - CRM_CMD 0x8 Parameter MemoryArea to the state ELA0938-16683 - Memory Area State: Unlocked."

"SWRS 021: If Performing Memory Access in Unicast

AND AFTER reception of the CRM_FCC_CMD,

AND If Addressed with the Broadcast Command

THEN

the Software shall

set the parameter Status Value = 0x2 ("invalid")."

"SWRS 023: Open/Short retry: IF the software detects an open or short error AND retry is configured as enabled in the DEFAULT OPEN SHORT RETRY value in the COMPILE TIME CONFIGURATION data, the affected channel shall be re-enabled for one TIMESLICE with the following setup at least every 200 milliseconds

SWRS 024: Diagnostic configuration items : DEFAULT OPEN SHORT RETRY"

"SWRS 011: If Performing Memory Area Modification

AND AFTER reception of CRM_CMD 0x9: Take Data or Send Data

THEN

the Software shall store the CRM_CMD 0x9 Parameter Data to RAM until the command CRM_CMD 0xA: Perform Memory Operation with CRM_CMD 0xA Parameter MemoryOperation == 0x2 "Write to NVM" is received."

"SWRS 007: If Performing Memory Access in Unicast

AND IF the state of the Memory Area identified by CRM_CMD 0x8 Parameter MemoryArea for the operation as determined by CRM_CMD 0x8 Operation Flag is in the state Locked,

THEN

the Software shall prepare to

respond with CRM_RSP 0x8: Report Lock Status and CRM_RSP 0x8 Flag KeyRequest = 0b1 ("key

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requested").
"
"SWRS 003: BEFORE responding with the CRM_RSP,
the Software shall include the CRM_RSP Parameter CrmStatus into the CRM_RSP.

"
"SWRS 019: IF in Main-Measurement
AND IF Break Burst Generation occurs
THEN
the software shall set
Error: err_burstGenerationStopped = 0x1 ("error")."
"SWRS 001: AFTER reception of the command CRM_CMD 0x1: Start Standard Measurement
AND
BEFORE the start of the Measurement the software shall set the register BRG.FS.f_s to
(CALIB_samplingFreq plus YPX_samplingFreqOffset). "
"
SWRS 014: Digital Amplification: AFTER reception of the command CRM_CMD 0x4: Start Calibration
Measurement the software shall set the register ENVP_AMPD_CFG.g_dig to Parameter
SPX_dynGainStartValue .
"
"
SWRS 015: Calibration Gain: AFTER reception of the command CRM_CMD 0x4: Start Calibration
Measurement
the software shall set the register ENVP_GCAL.g_cal to ( CRM_CMD 0x4 Parameter CalibrationGain +
Parameter YPX_calibrationGainOffset)."
```



Below is an analysis of the System Requirements (SYSRS) and their links to the Software Requirements (SWRS), classified as Fully Linked, Partially Linked, or Unlinked, with justifications:

SYSRS 001: Digitizing the Transducer Input Signal

- **Triggers:** CRM_CMD 0x1 command received.
- **Actions:** Digitize the signal with the formula ``(CALIB_samplingFreq + YPX_samplingFreqOffset)``.
- **Outputs:** Sampling frequency applied to the input signal.

Match: SWRS 001

- **Justification:** SWRS 001 specifies that the software will set the sampling frequency ``(CALIB_samplingFreq + YPX_samplingFreqOffset)`` after receiving the CRM_CMD 0x1 command.
- **Classification:** Fully Linked

SYSRS 003: CRM_RSP Parameter Setting Before CRM_RCC

- **Triggers:** CRM_FCC reception.
- **Actions:** Set ``CrmStatus`` parameter in CRM_RSP to "Status Value."
- **Outputs:** CRM_RSP with updated ``CrmStatus``.

Match: SWRS 003

- **Justification:** SWRS 003 specifies that the software will include the ``CrmStatus`` parameter in the CRM_RSP before responding. This aligns with SYSRS 003.
 - **Classification:** Fully Linked
-

SYSRS 021: Diagnostic Retry for Open/Short Faults

- **Triggers:** Fault detection (open/short).
- **Actions:** Configure retries independently for open and short faults.
- **Outputs:** Retry setup.

Match: SWRS 023, SWRS 024

- **Justification:** SWRS 023 and SWRS 024 describe retry configuration for open/short faults and the diagnostic configuration data for retry enablement. This matches the intent of SYSRS 021.
 - **Classification:** Fully Linked
-

SYSRS 012: Discovery Mode Physical Address Mismatch

- **Triggers:** Leaving Discovery Mode and ``DSI3_physicalAddress != Default Value``.
- **Actions:** Set ``err_discPhysAddrMismatch = 0x1``.
- **Outputs:** Error flag.

Match: None

- **Justification:** No SWRS specifies handling physical address mismatch in Discovery Mode or setting this error flag.
 - **Classification:** Unlinked
-

SYSRS 014: Event_MAX Timestamp

- **Triggers:** ``Event_MAX`` generated.
- **Actions:** Measure event occurrence time relative to start of measurement.
- **Outputs:** Provide ``EventTimeStamp<i>`` in DSI3 packet.

Match: SWRS 016

- **Justification:** SWRS 016 specifies that the software will provide ``EventTimeStamp<i>`` in a PDCM frame, matching the requirement of SYSRS 014.
 - **Classification:** Fully Linked
-

SYSRS 009: Memory Access in Broadcast - Locked State

- **Triggers:** Broadcast memory access, memory area in "Locked" state.
- **Actions:** Respond with lock status and ``KeyRequest = 0b1``.
- **Outputs:** CRM_RSP 0x8 with lock information.

Match: SWRS 010

- **Justification:** SWRS 010 specifies preparation for responding with lock status and ``KeyRequest = 0b1`` for broadcast memory access, aligning with SYSRS 009.

- **Classification:** Fully Linked
-

SYSRS 018: Memory Access - Unlocked, If No Key Is Set

- **Triggers:** Memory access attempted, key not set.
- **Actions:** Set memory area state to "Unlocked."
- **Outputs:** Updated memory area state.

Match: SWRS 020

- **Justification:** SWRS 020 specifies setting memory area to "Unlocked" when no key is set, matching SYSRS 018.
 - **Classification:** Fully Linked
-

SYSRS 016: Resetting KAC

- **Triggers:** Valid CRM_FCC_CMD reception.
- **Actions:** Set `KAC = 0x0`.
- **Outputs:** Reset KAC.

Match: SWRS 018

- **Justification:** SWRS 018 specifies setting `KAC = 0x0` after a valid CRM_FCC_CMD, matching SYSRS 016.
 - **Classification:** Fully Linked
-

SYSRS 013: Amplifying Transducer Input Signal

- **Triggers:** Transducer signal received.
- **Actions:** Amplify signal using multiple gain parameters.
- **Outputs:** Amplified signal.

Match: SWRS 013, SWRS 014, SWRS 015

- **Justification:** SWRS 013, SWRS 014, and SWRS 015 specify software handling of analog and digital amplification with gain parameters, matching the actions in SYSRS 013.
 - **Classification:** Fully Linked
-

SYSRS 005: Event Buffer Overflow

- **Triggers:** Buffer overflows.
- **Actions:** Forget excess information.
- **Outputs:** No new information stored.

Match: None

- **Justification:** No SWRS describes handling buffer overflows or forgetting excess information.
 - **Classification:** Unlinked
-

SYSRS 017: Burst Generation Stopped Error

- **Triggers:** Stop Ongoing Measurement, Burst Generation not completed.
- **Actions:** Set ``err_burstGenerationStopped = 0x1``.
- **Outputs:** Error flag.

Match: SWRS 019

- **Justification:** SWRS 019 specifies setting ``err_burstGenerationStopped = 0x1`` under similar conditions, matching SYSRS 017.
- **Classification:** Fully Linked

Let me know if you'd like me to continue with other SYSRS or adjust the approach!



yes



Continuing with the analysis for the remaining SYSRS:

SYSRS 006: Memory Access in Unicast - Locked State

- **Triggers:** Unicast memory access, memory area in "Locked" state.
- **Actions:** Respond with lock status and ``KeyRequest = 0b1``.
- **Outputs:** CRM_RSP 0x8 with lock information.

Match: SWRS 007

- **Justification:** SWRS 007 specifies preparation for responding with lock status and ``KeyRequest = 0b1`` for unicast memory access, aligning with SYSRS 006.
- **Classification:** Fully Linked

SYSRS 019: Memory Access in Unicast - Broadcast Command

- **Triggers:** Unicast memory access after receiving CRM_FCC_CMD, addressed with broadcast command.
- **Actions:** Set ``Status Value = 0x2`` ("invalid").
- **Outputs:** Updated status value.

Match: SWRS 021

- **Justification:** SWRS 021 specifies setting the parameter ``Status Value = 0x2`` for unicast memory access when addressed with a broadcast command, matching SYSRS 019.
- **Classification:** Fully Linked

SYSRS 020: Memory Access in Broadcast - Unicast Command

- **Triggers:** Broadcast memory access after receiving CRM_FCC_CMD, addressed with unicast command.
- **Actions:** Set `Status Value = 0x2` ("invalid").
- **Outputs:** Updated status value.

Match: SWRS 021

- **Justification:** SWRS 021 describes handling mismatched commands for unicast memory access but not explicitly for broadcast memory access. While the action matches, the context is ambiguous.
 - **Classification: Partially Linked**
 - **Missing Element:** SWRS does not fully align with the broadcast memory access scenario.
-

SYSRS 007: Memory Access with Key Set - Read Requested

- **Triggers:** Key set, read operation requested, memory area read-accessible.
- **Actions:** Set memory area state to "Locked."
- **Outputs:** Updated memory area state.

Match: SWRS 008

- **Justification:** SWRS 008 specifies setting the memory area to "Locked" under the same conditions, matching SYSRS 007.
 - **Classification: Fully Linked**
-

SYSRS 015: Incrementing KAC Counter

- **Triggers:** PDCM packet sent after BRC reception.
- **Actions:** Increment `KAC` by 1, reset to 0 at overflow.
- **Outputs:** Updated `KAC`.

Match: SWRS 017

- **Justification:** SWRS 017 specifies incrementing `KAC` after sending a PDCM packet upon BRC reception, matching SYSRS 015.
 - **Classification: Fully Linked**
-

SYSRS 010: Memory Area Modification

- **Triggers:** Memory area modification after CRM_CMD 0x9 reception.
- **Actions:** Cache CRM_CMD 0x9 parameter data.
- **Outputs:** Data cached.

Match: SWRS 011

- **Justification:** SWRS 011 specifies storing CRM_CMD 0x9 parameter data in RAM, aligning with SYSRS 010.
 - **Classification: Fully Linked**
-

SYSRS 002: Watchdog for Malfunctions

- **Triggers:** FW or HW malfunction detection.
- **Actions:** Reset watchdog timer within the Fault Tolerant Time Interval (FTTI).
- **Outputs:** Malfunction mitigated.

Match: SWRS 002

- **Justification:** SWRS 002 specifies enabling a watchdog to detect malfunctions and reset within 20 ms FTTI, aligning with SYSRS 002.
 - **Classification:** Fully Linked
-

SYSRS 004: Erase Backup - Unicast Command

- **Triggers:** Erase Backup operation, unicast command received.
- **Actions:** Respond with CRM_RSP 0x0 acknowledgment.
- **Outputs:** CRM_RSP 0x0.

Match: SWRS 004

- **Justification:** SWRS 004 specifies preparing to respond with CRM_RSP 0x0 for erase backup operations addressed with a unicast command, aligning with SYSRS 004.
 - **Classification:** Fully Linked
-

SYSRS 008: Memory Access with Key Set - Write Requested

- **Triggers:** Key set, write operation requested, memory area write-accessible.
- **Actions:** Set memory area state to "Locked."
- **Outputs:** Updated memory area state.

Match: SWRS 009

- **Justification:** SWRS 009 specifies setting the memory area to "Locked" under these conditions, matching SYSRS 008.
 - **Classification:** Fully Linked
-

SYSRS 011: Memory Area Modification - Increment Start Address

- **Triggers:** Memory area modification after CRM_CMD 0x9 reception.
- **Actions:** Increment `StartAddress` by 1 word.
- **Outputs:** Updated `StartAddress`.

Match: None

- **Justification:** No SWRS specifies incrementing `StartAddress` by 1 word after CRM_CMD 0x9 reception.
 - **Classification:** Unlinked
-

Let me know if you need further analysis or refinements!



would you like to revisit any?



Yes, I'd like to revisit a couple of cases to ensure alignment with the context and clarify any ambiguities:

SYSRS 020: Memory Access in Broadcast - Unicast Command

- Initial Classification: **Partially Linked** (matched with SWRS 021).
- **Revisit Rationale:** The scenario described in SYSRS 020 involves broadcast memory access addressed with a unicast command. SWRS 021 specifies unicast memory access addressed with a broadcast command. While the actions match (``Status Value = 0x2``), the context (broadcast vs. unicast) appears inverted.
- **Updated Classification: Unlinked**
- **Justification:** The mismatch in operational context between SYSRS 020 and SWRS 021 disqualifies a link. While the required action is similar, the distinction between broadcast and unicast memory access is critical and not addressed in SWRS 021.

SYSRS 012: Discovery Mode Physical Address Mismatch

- Initial Classification: **Unlinked**
- **Revisit Rationale:** The physical address mismatch scenario seems highly specific. I want to confirm that no SWRS addresses handling physical address mismatches during discovery mode.
- **Verification:** Scanning SWRS again, no requirement mentions mismatched ``DSI3_physicalAddress`` or error ``err_discPhysAddrMismatch = 0x1``.
- **Final Classification: Unlinked**
- **Justification:** There is no explicit or implicit SWRS that addresses discovery mode or mismatched physical addresses.

SYSRS 011: Memory Area Modification - Increment Start Address

- Initial Classification: **Unlinked**
- **Revisit Rationale:** SYSRS 011 describes incrementing ``StartAddress`` after CRM_CMD 0x9 reception. SWRS 011 involves memory modification but focuses on storing CRM_CMD 0x9 parameter data in RAM, without mentioning incrementing ``StartAddress``.
- **Verification:** No SWRS specifies incrementing the ``StartAddress`` field.
- **Final Classification: Unlinked**
- **Justification:** The required action (``StartAddress`` incrementation) is not present in any SWRS.

Let me know if further clarifications or refinements are needed!



please give me complete analysis in table sorted in ascending order in the chat here



Here is a complete analysis of the SYSRS and SWRS link predictions in tabular form, sorted in ascending order by SYSRS ID:

SYSRS ID	Requirement Summary	Matched SWRS	Classification	Justification
SYSRS 001	Digitize transducer input signal with specific sampling frequency	SWRS 001	Fully Linked	SWRS 001 specifies setting the sampling frequency `(CALIB_samplingFreq + YPX_samplingFreqOffset)`, matching SYSRS 001.
SYSRS 002	Watchdog to detect FW/HW malfunctions	SWRS 002	Fully Linked	SWRS 002 describes enabling a watchdog for malfunction detection and reset within FTTI, aligning with SYSRS 002.
SYSRS 003	Set `CrmStatus` in CRM_RSP before CRM_RCC	SWRS 003	Fully	



you can remove the 2nd column



Here is the complete analysis in tabular form without the second column, sorted by SYSRS ID:

SYSRS ID	Matched SWRS	Classification	Justification
SYSRS 001	SWRS 001	Fully Linked	SWRS 001 specifies setting the sampling frequency `(CALIB_samplingFreq + YPX_samplingFreqOffset)`, matching SYSRS 001.
SYSRS 002	SWRS 002	Fully Linked	SWRS 002 describes enabling a watchdog for malfunction detection and reset within FTTI, aligning with SYSRS 002.
SYSRS 003	SWRS 003	Fully Linked	SWRS 003 specifies including `CrmStatus` in CRM_RSP before responding, aligning with SYSRS 003.
SYSRS 004	SWRS 004	Fully Linked	SWRS 004 describes preparing a CRM_RSP acknowledgment for unicast commands during erase backup, aligning with SYSRS 004.
SYSRS 005	None	Unlinked	No SWRS addresses handling buffer overflows or forgetting excess information.
SYSRS 006	SWRS 007	Fully Linked	SWRS 007 specifies preparing to respond with lock status and `KeyRequest = 0b1` for unicast memory access, aligning with SYSRS 006.
SYSRS 007	SWRS 008	Fully Linked	SWRS 008 specifies setting memory area state to "Locked" when conditions match, aligning with SYSRS 007.
SYSRS 008	SWRS 009	Fully Linked	SWRS 009 specifies setting memory area state to "Locked" when conditions match, aligning with SYSRS 008.
SYSRS 009	SWRS 010	Fully Linked	SWRS 010 specifies preparing to respond with lock status and `KeyRequest = 0b1` for broadcast memory access, aligning with SYSRS 009.
SYSRS 010	SWRS 011	Fully Linked	SWRS 011 specifies storing CRM_CMD 0x9 parameter data in RAM, aligning with SYSRS 010.

SYSRS ID	Matched SWRS	Classification	Justification
SYSRS 011	None	Unlinked	No SWRS specifies incrementing the <code>StartAddress</code> field after CRM_CMD 0x9 reception.
SYSRS 012	None	Unlinked	No SWRS addresses handling mismatched <code>DSI3_physicalAddress</code> in Discovery Mode or setting the error flag.
SYSRS 013	SWRS 013, SWRS 014, SWRS 015	Fully Linked	SWRS 013, SWRS 014, and SWRS 015 specify handling amplification with gain parameters, aligning with SYSRS 013.
SYSRS 014	SWRS 016	Fully Linked	SWRS 016 specifies providing <code>EventTimeStamp<i></code> in a PDCM frame, aligning with SYSRS 014.
SYSRS 015	SWRS 017	Fully Linked	SWRS 017 specifies incrementing <code>KAC</code> after sending a PDCM packet upon BRC reception, aligning with SYSRS 015.
SYSRS 016	SWRS 018	Fully Linked	SWRS 018 specifies setting <code>KAC = 0x0</code> after a valid CRM_FCC_CMD, aligning with SYSRS 016.
SYSRS 017	SWRS 019	Fully Linked	SWRS 019 specifies setting <code>err_burstGenerationStopped = 0x1</code> under conditions matching SYSRS 017.
SYSRS 018	SWRS 020	Fully Linked	SWRS 020 specifies setting memory area state to "Unlocked" when no key is set, aligning with SYSRS 018.
SYSRS 019	SWRS 021	Fully Linked	SWRS 021 specifies setting <code>Status Value = 0x2</code> for unicast memory access addressed with broadcast commands, aligning with SYSRS 019.
SYSRS 020	None	Unlinked	SWRS 021 does not address broadcast memory access addressed with unicast commands, creating a context mismatch.
SYSRS 021	SWRS 023, SWRS 024	Fully Linked	SWRS 023 and SWRS 024 describe retry configuration for open/short faults and diagnostic setup, aligning with SYSRS 021.

Let me know if you need further refinements!



perfect!



I'm glad it meets your expectations! Let me know if you need further assistance with this or any other task. 😊