

# UC #1 SYSRS - SWRS



i will provide you a system and its linked software requirement. Can you tell me if the latter sufficiently details the former? if not, please explain the issue and suggest revisions.



Yes, I can help with that. Please provide the system requirement (SYSRS) and the linked software requirement (SWRS), and I'll review them to determine if the software requirement sufficiently details the system requirement. If there are any gaps, I'll explain the issue and suggest revisions.



SYSRS 021: Diagnostic - Retry configuration: The firmware shall allow configurability to select the retry for open and short faults independently "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 : Parameter - DEFAULT OPEN SHORT RETRY"



## Analysis of SYSRS 021 and SWRS 023 & SWRS 024:

**SYSRS 021** requires the firmware to allow configurability for selecting retries independently for open and short faults. The focus is on:

1. Configurability for both open and short faults.
2. Independent configuration for retries.

**SWRS 023** focuses on retrying open/short errors when detected, with a specific condition that the retry is enabled in the **DEFAULT OPEN SHORT RETRY** parameter, part of **COMPILE TIME CONFIGURATION**. The retry is executed with a setup every 200 milliseconds.

**SWRS 024** defines the parameter **DEFAULT OPEN SHORT RETRY** as part of the diagnostic configuration items, but it does not provide further details on how this affects independent retry configuration.

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## Evaluation:

**SWRS 023** partially addresses **SYSRS 021**, but there are some gaps:

- **SYSRS 021** emphasizes independent configurability for open and short faults. However, **SWRS 023** doesn't clarify how open and short fault retries are configured separately. The statement "if retry is enabled in DEFAULT OPEN SHORT RETRY" implies a single retry configuration for both fault types, lacking the necessary independent configurability.
- There is no mention of whether the retry for open and short faults can be configured separately, which is essential according to **SYSRS 021**.

**SWRS 024** provides the **DEFAULT OPEN SHORT RETRY** parameter, but it does not explain how it supports independent retry configuration for open and short faults, as required by **SYSRS 021**.

## Suggested Revisions:

1. **SWRS 023** should be updated to clarify how retries for open and short faults are configured **independently**. For example:
  - "IF the software detects an open or short error AND the retry for **open** or **short** faults is configured as enabled in the corresponding **DEFAULT OPEN SHORT RETRY** values in the COMPILE TIME CONFIGURATION data, the affected channel shall be re-enabled..."
  - This would ensure that the configuration for retries can be applied independently for open and short faults, aligning with the system requirement.
2. **SWRS 024** should be updated to specify separate parameters for open and short retries:
  - "Parameter - **DEFAULT OPEN RETRY** and **DEFAULT SHORT RETRY** in the COMPILE TIME CONFIGURATION."
  - This will support the independent configurability required by **SYSRS 021**.

## Conclusion:

- **SWRS 023** does not fully detail the configurability for retries of open and short faults independently, as required by **SYSRS 021**.
- Revising **SWRS 023** and **SWRS 024** to include independent configuration for open and short retries will ensure compliance with **SYSRS 021**.



please revise the linked requirements according to your analysis



## Revised Requirements:

### SWRS 023: Open/Short Retry:

#### Original:

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.

#### Revised:

IF the software detects an open or short error AND retry is configured as enabled in the corresponding **DEFAULT OPEN RETRY** or **DEFAULT SHORT RETRY** values 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. The retry for open and short faults shall be configured independently.

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#### SWRS 024: Diagnostic Configuration Items:

##### Original:

Parameter - DEFAULT OPEN SHORT RETRY.

##### Revised:

Parameters - **DEFAULT OPEN RETRY** and **DEFAULT SHORT RETRY** for open and short fault retries, respectively, in the COMPILE TIME CONFIGURATION. These parameters allow independent configuration of retry mechanisms for open and short faults.

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#### Explanation of Revisions:

- **SWRS 023:** The wording now ensures that retries for open and short faults are configured independently, satisfying the requirement of **SYSRS 021**. It also introduces separate parameters for open and short retries to make the configurability clear.
- **SWRS 024:** The parameter definition is updated to include separate parameters for **open** and **short** retry, enabling independent configuration as required by the system.

This revision ensures that the software requirement (SWRS) fully addresses the system requirement (SYSRS) for independent retry configurability for open and short faults.

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