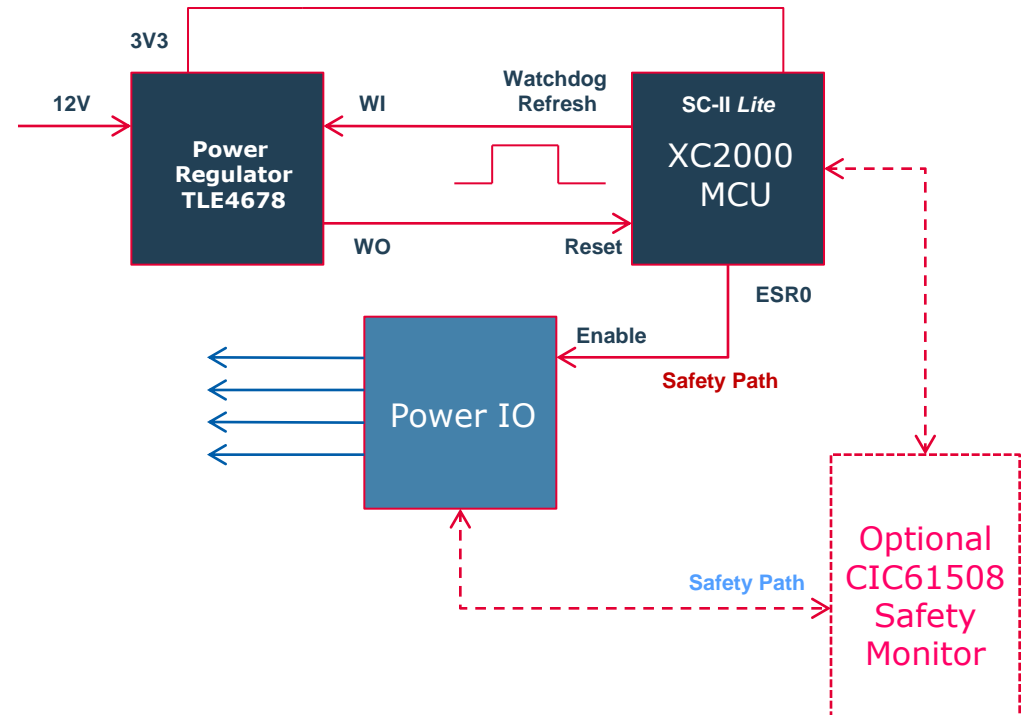


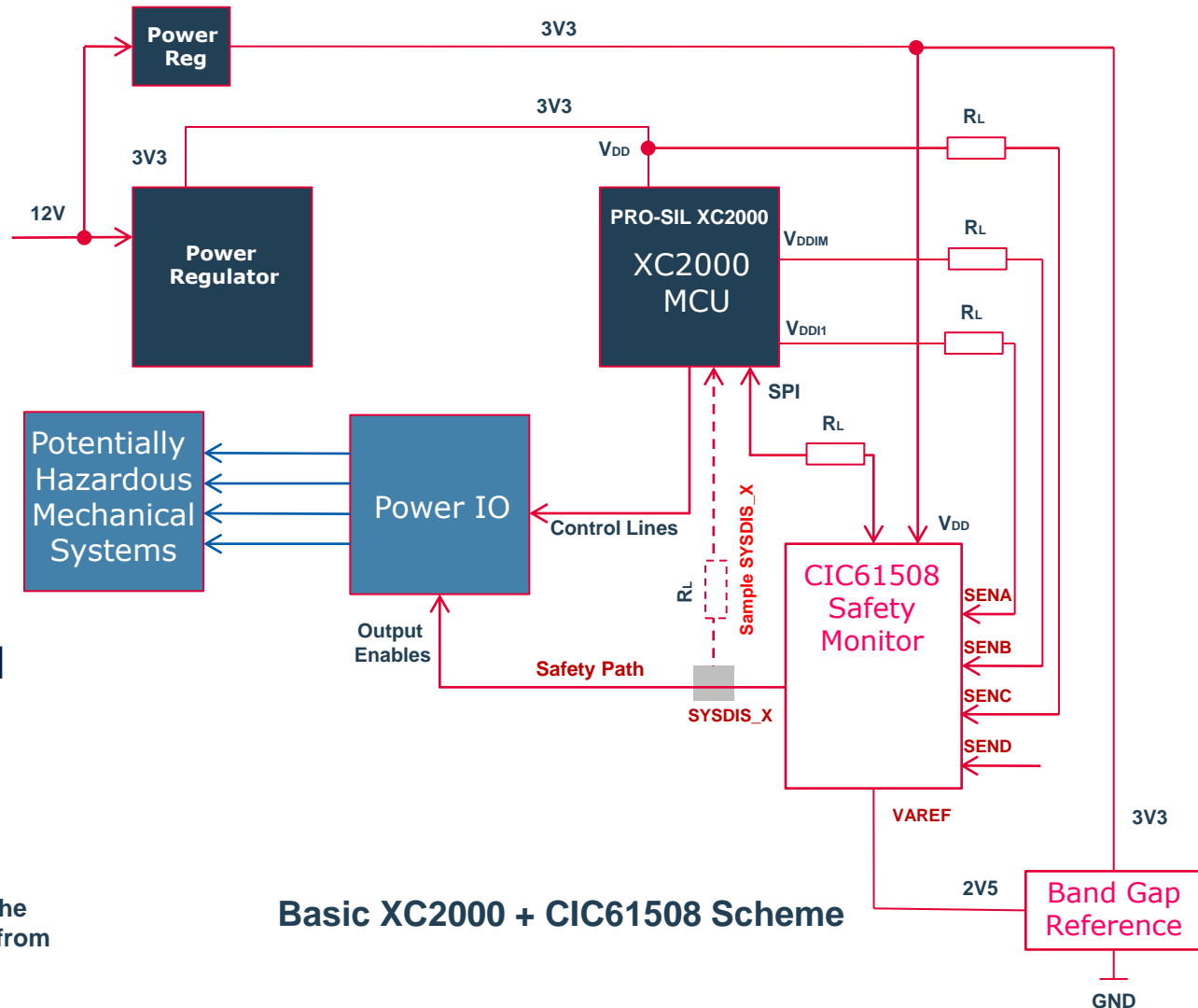
XC2000 For ASIL-B Configuration Concept

- TLE4678 Voltage Regulator With Window Watchdog
- Periodic WI refresh from PRO-SIL XC2000 *Lite* on XC2000 (50ms)
- Safety Path from XC2000 ESR0 pin to critical IO
- Meets or exceeds requirements for ASIL-B
- Easy upgrade to full PRO-SIL XC2000 with optional CIC61508
- Example and application note in preparation.



Basic XC2000 + CIC61508 ASIL-B(D) Scheme

- Minimal scheme for ASIL-B(D).
- XC2000 application monitors CIC61508 power supply and SYS_DIS pins.
- Over-Voltage protection resistors isolate devices - typically 1k5 for a 12V error voltage
- SENx signals assumed to be scaled to 0-2V5 range to suit bandgap reference.



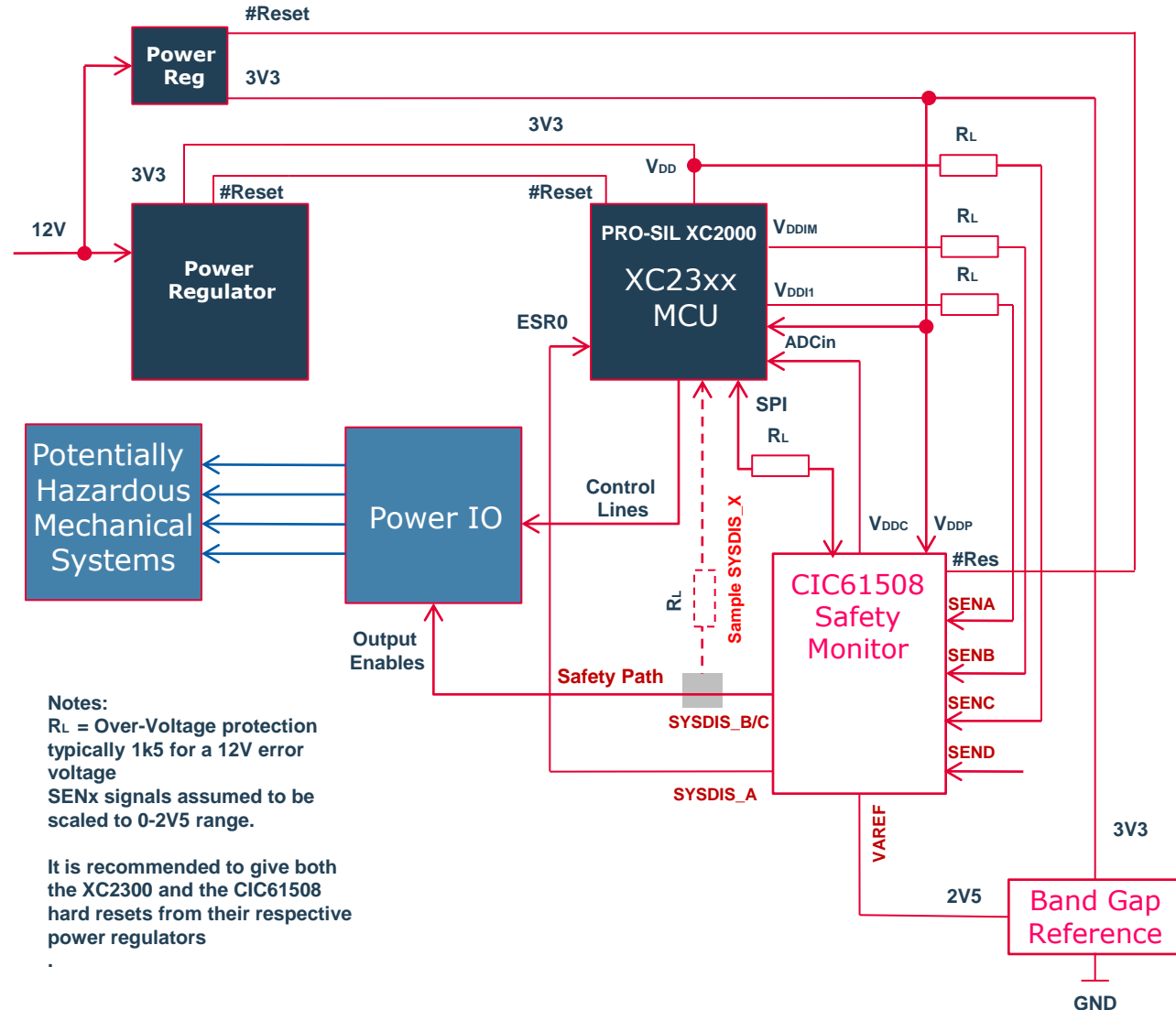
Basic XC2000 + CIC61508 Scheme

Note: It is recommended to give both the XC2300 and the CIC61508 hard resets from their respective power regulators.

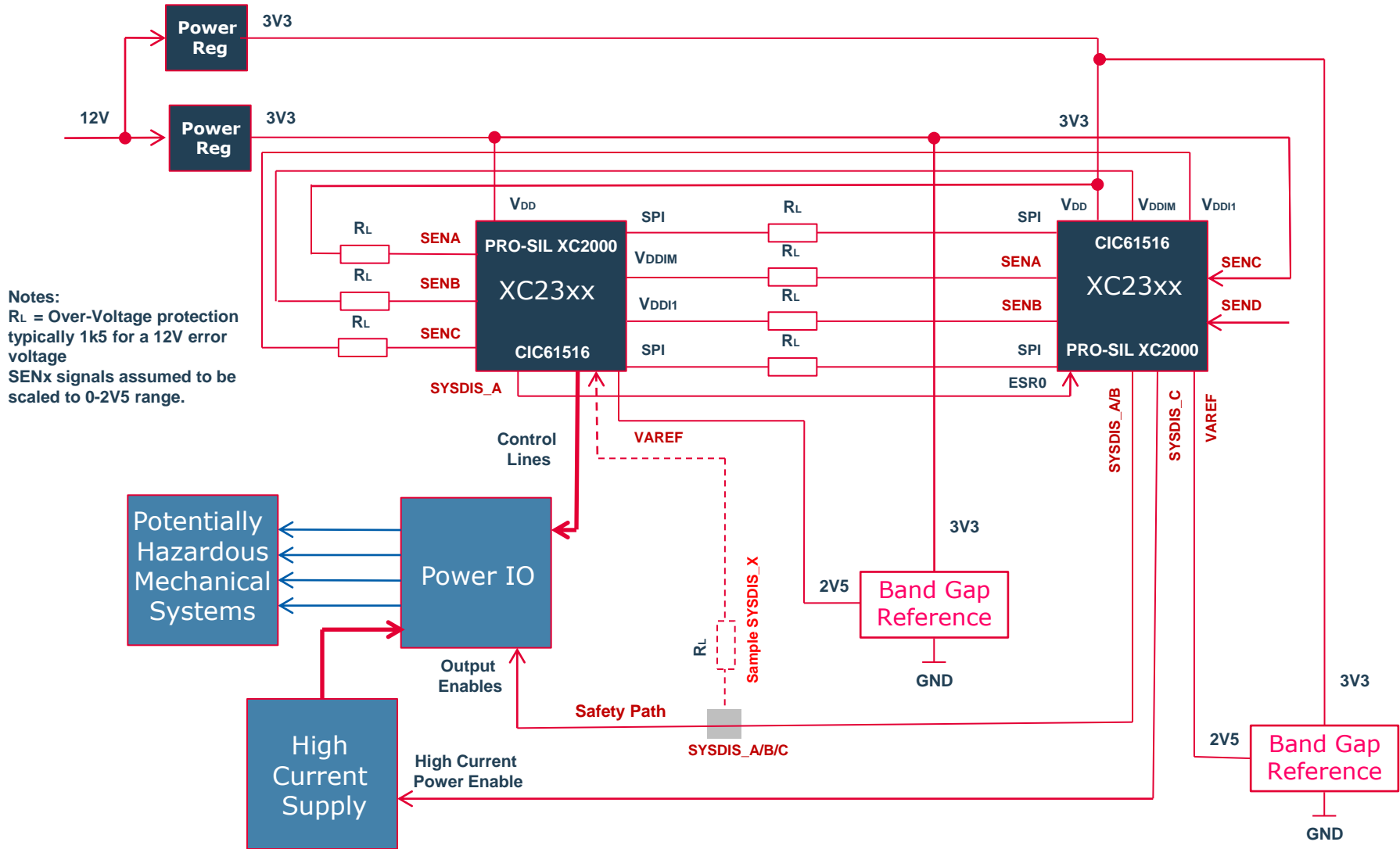
Advanced XC2000 + CIC61508 Scheme

Advanced XC2000 + CIC61508 Scheme

- Allows occasional random failures to cause a complete system restart.
- XC2000 can check CIC61508 supply and core voltages (optional)
- SYSDIS_A acts as a reset into XC2000 ESR0 input.
- If CIC61508 enters DISABLED mode, it resets XC2000 via ESR0. XC2000 restarts and sends wake-up reset request to CIC61508 to restart it. System restarts
- System stabilises again in ACTIVE mode.
- Further DISABLED modes cause restart.
- Continual resets and restarts must be avoided.
- XC2000 user code must handle reset requests from CIC and must keep a record of how many reset events have occurred.



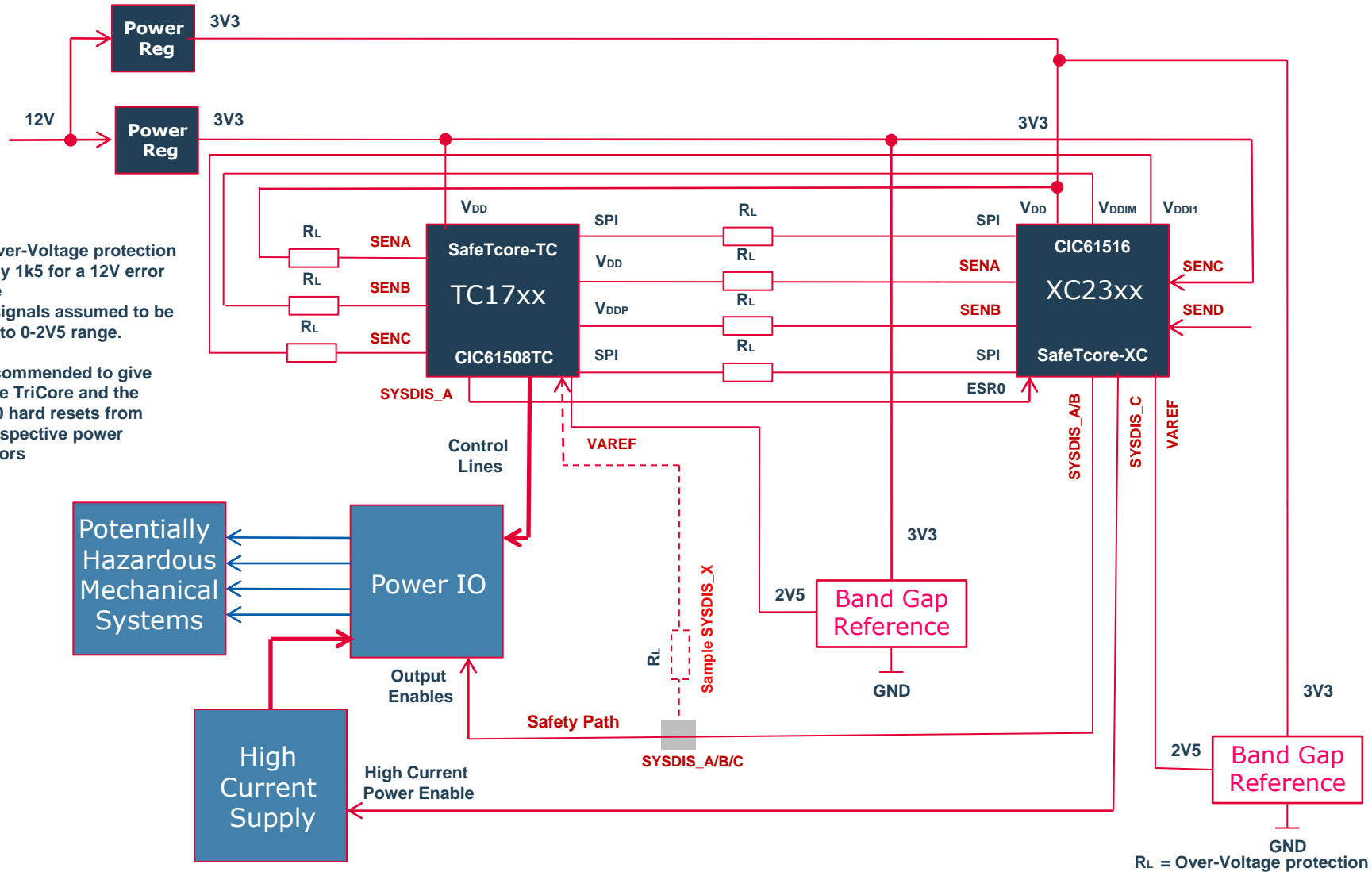
Cross-Linked Dual XC23xx Safety System Concept



Cross-Linked TC17xx + XC23xx Safety System Concept

Notes:
 RL = Over-Voltage protection typically 1k5 for a 12V error voltage
 SENx signals assumed to be scaled to 0-2V5 range.

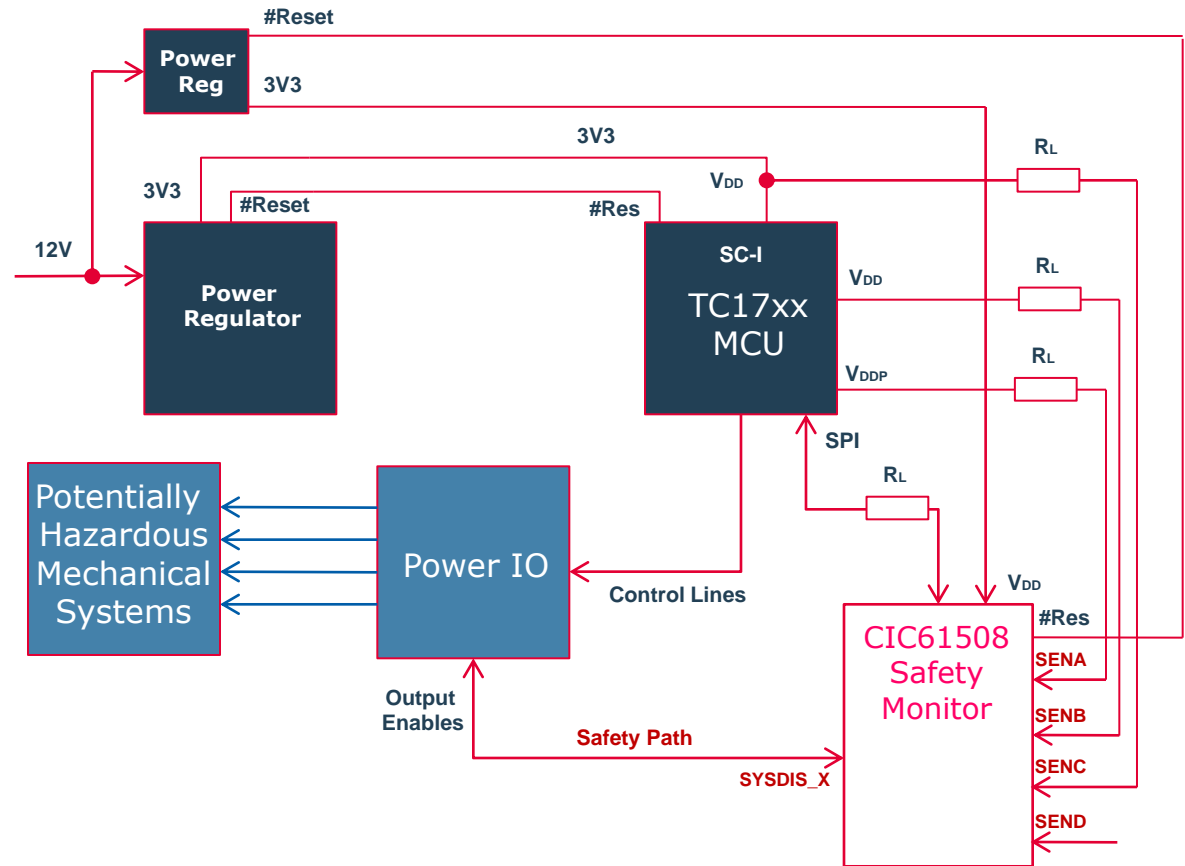
It is recommended to give both the TriCore and the XC2300 hard resets from their respective power regulators



RL = Over-Voltage protection

Basic Tricore + CIC61508 ASIL-B(D) Scheme

- Minimal scheme for ISO26262 ASIL-B(D).



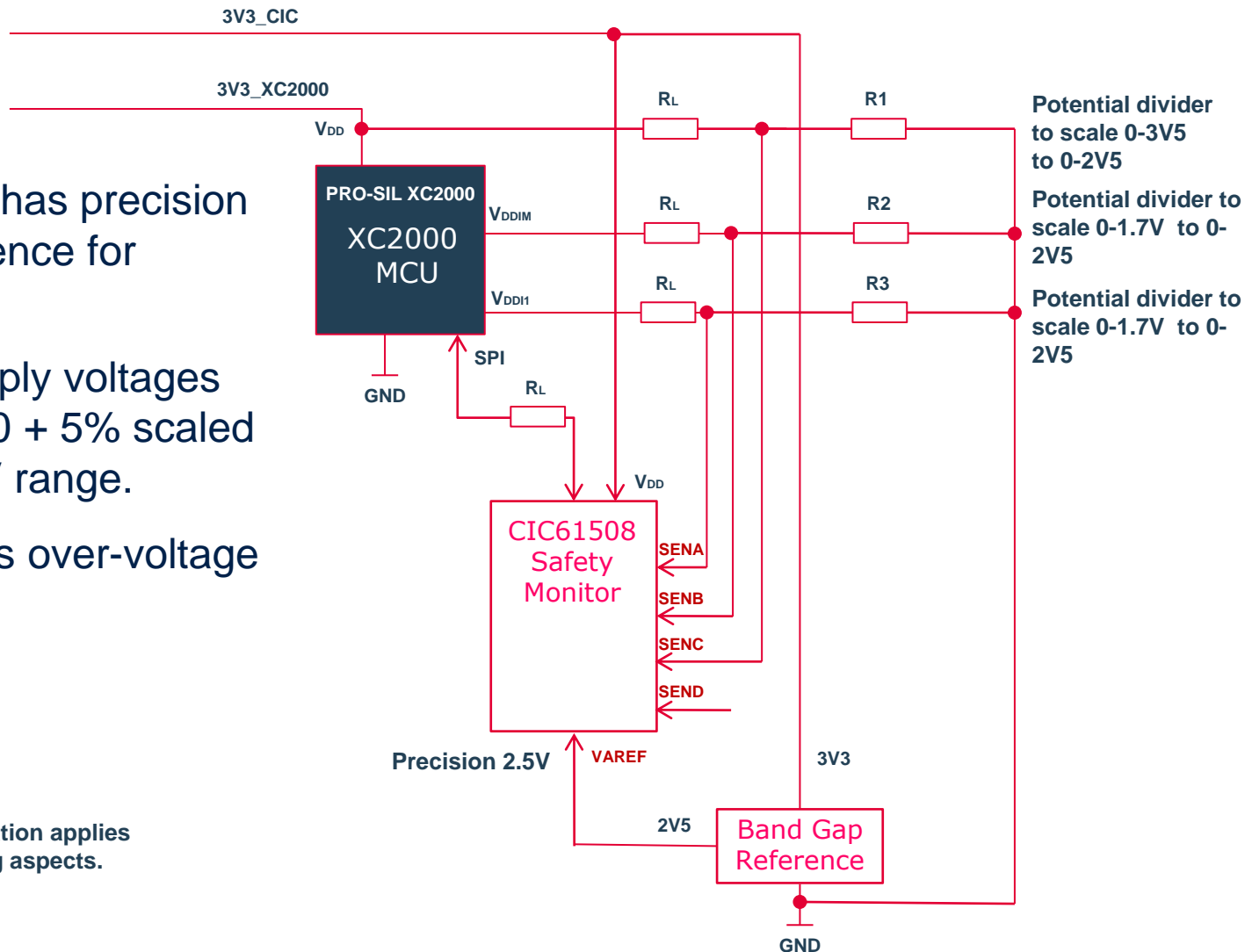
Notes:

RL = Over-Voltage protection

It is recommended to give both the TriCore and the CIC61508 hard resets from their respective power regulators

CIC61508 Analog Inputs

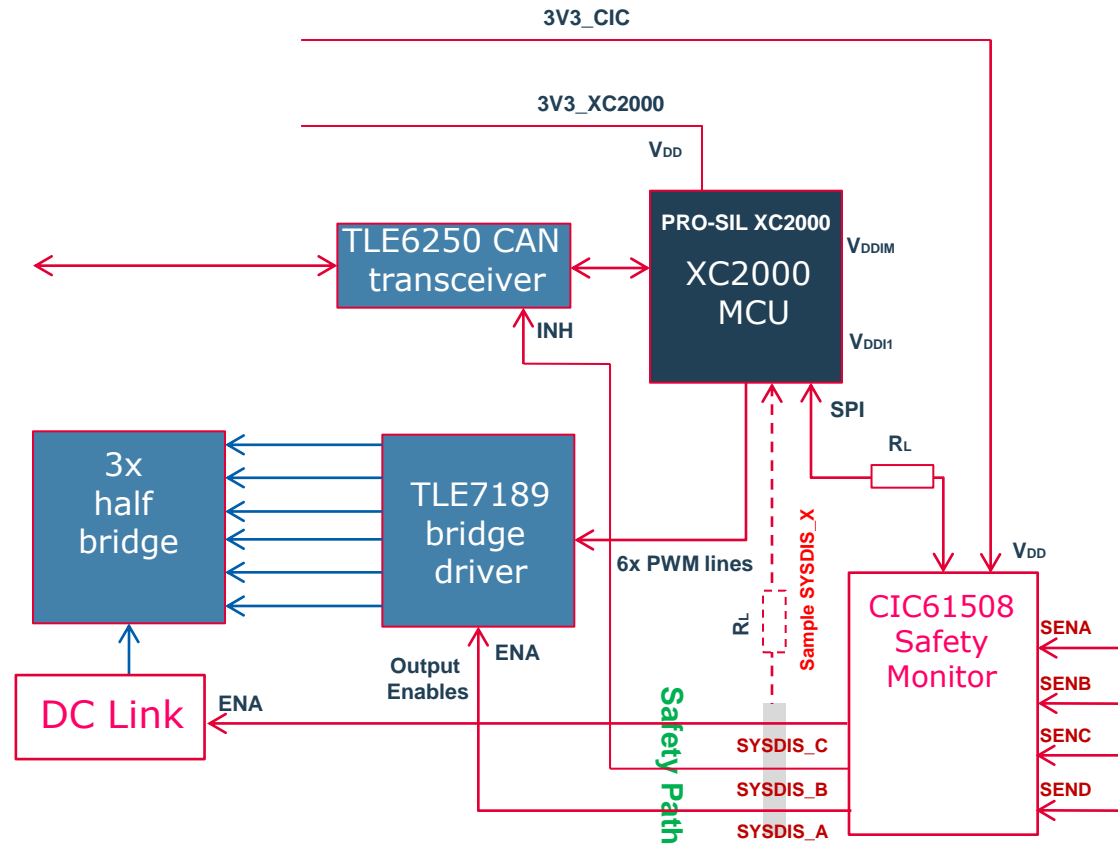
- CIC61508 has precision 2.5V reference for VAREF.
- Power supply voltages for XC2300 + 5% scaled to 0 – 2.5V range.
- R_L provides over-voltage protection.



Note: This illustration applies only to the analog aspects.

CIC61508 Safety Path

- Safety path prevents malfunctioning XC2000 from interacting with the outside world.
- SYSDIS_A disables bridge driver chip.
- SYSDIS_B disables CAN transceiver to prevent random transmissions.
- SYSDIS_C disables high voltage DC link.



Basic XC2000 + CIC61508 Scheme