exSILentia: SRS$^{C\&E}$ Plug-In

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PLUG-IN

Raise your Safety Requirements Specification to the power of C&E

What is the position of the Safety Requirements Specification in the Safety Lifecycle?

- It is an input to the conceptual design phase
- But some requirements aren't defined until after the conceptual design is complete

The exSILentia team has raised the creation of the SRS to the power of C&E, defining a clear separation between process and design requirements, and at the same time automatically generating a Cause and Effects (C&E) Matrix, saving you hours and hours of engineering time.

SRS C&E

Safety Requirements Specification Cause and Effect Matrix

exida makes your functional safety lifecycle compliance easier

The System SRS with C&E Matrix Plug-in, SRS$^{C\&E}$, will enhance your process requirements collection and optimize your detailed design requirements communication. The automatically generated Cause and Effect Matrices for the various Safety Instrumented Functions ensure the final conceptual design logic is adequately communicated to the detailed design engineers. The SRS$^{C\&E}$ plug-in therefore raises the standard SRS template to the power of C&E. The exSILentia team at exida is confident that this optional exSILentia tool will be of high value to you in performing your Safety Lifecycle activities.

SRS$^{C\&E}$ Position in the Lifecycle

The information that is required to be documented in a Safety Requirements Specification covers information developed in the SIL selection phase as well as information developed in the Conceptual Design / SIL verification phase. For example specific application level diagnostic requirements like external comparison of analog signals or the implementation of partial valve stroke testing are determined during the SIL verification but also need to be documented in the safety requirements specification document. A single pre-conceptual design SRS is consequently not sufficient.

The exSILentia® SRS$^{C\&E}$ plug-in defines a Process SRS and a Design SRS. The Process SRS addresses those requirements that are derived from the SIL selection and that form the input into the conceptual design evaluation; the Design SRS handles all requirements that are derived from the SIL verification and that form the input into the detailed design.

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System Level SRS Documents:

- All requirements that are common to all SIFs
- General SIS requirements
- General SIF requirements
- Specification of aspects to be addressed for each SIF specifically

Process SRS Documents:

- Equipment
- Process Safe State
- SIF Test Interval
- Overall Response Time
- Protection Method
- Trip Reset
- Maximum Spurious Trip
- Rate
- Diagnostics
- Manual Shutdown
- Regulatory Requirements
- Notes
- Demand Source
- Demand Rate
- Demand Mode
- Additional Mitigation
- Startup Overrides
- Related Interlocks
- Maintenance Overrides
- Operating Modes
- Mission Time
- Special Requirements
- Non-safety actions

Design SRS Documents:

- Information obtained from Conceptual Design
- Sources for Common cause failures
- Survivability
- SIF Diagnostics
- Startup, re-start requirements
- Environmental Extremes
- Interfaces
- Equipment P&ID references

More Information at www.exsilentia.com

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