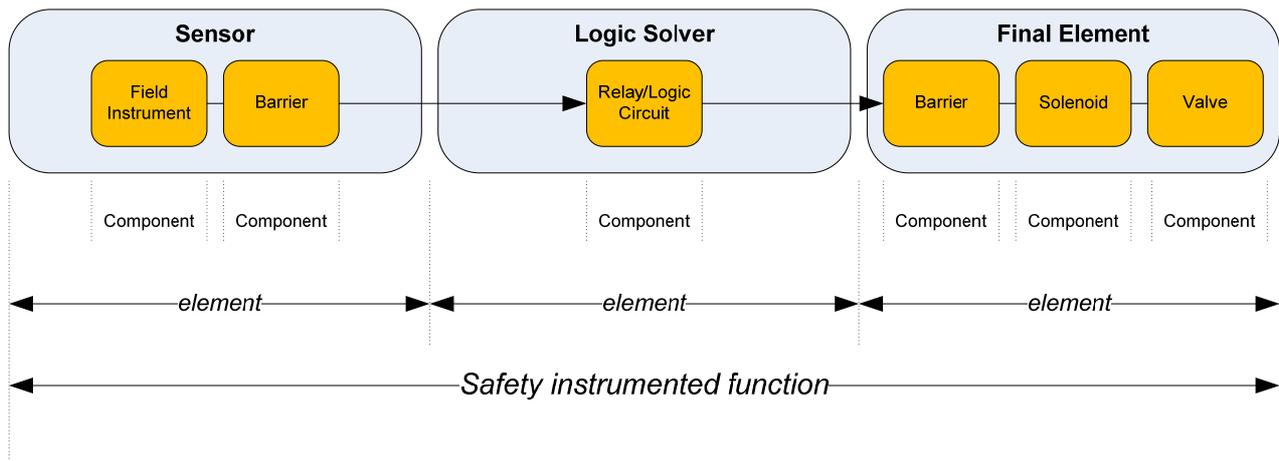


Process Safety Forum

Learning Brief #2 – Issued on 07 January 2013

CDOIF: Demonstrating Prior Use Elements of a Safety Instrumented Function

The Chemical and Downstream Oil Industries Forum (CDOIF)¹ has recently published guidance to help duty holders prepare a demonstration of 'Prior Use' for a component of a Safety Instrumented Function (SIF). A simple SIF can be described as having three elements, with each element having a number of components, as follows:



For a SIF designed to achieve a specific safety integrity level, BS EN 61511 has architectural requirements for the subsystems that comprise that SIF (i.e. the sensors, logic solver and final elements as shown above). These architectural requirements are in addition to the failure measure requirements for the intended safety integrity level – BS EN 61511 Clause 11.4. The architectural requirements are expressed in terms of hardware fault tolerance – the number of dangerous failures that a subsystem can tolerate and still perform its function as intended.

If the end user wishes to reduce the hardware fault tolerance requirements for a specific SIF, they can gather evidence to meet the 'Prior Use' requirements described in BS EN 61511 Clause 11.5.3. This allows the end user to reduce the hardware fault tolerance requirements by 1 – see BS EN 61511 Clause 11.4.4. The demonstration of 'Prior Use' in BS EN 61511 is solely related to allowing a modification of the hardware fault tolerance needed for a specific safety integrity level.

The CDOIF Guideline on '*Demonstrating prior use of elements of a safety instrumented function in support of BS EN 61511*' can be found on the UK Health and Safety Executive's website here: <http://www.hse.gov.uk/>

Please note that the guidance is subject to a review and may be updated; if this is the case then a new learning brief may be issued.

Note 1: CDOIF is a collaborative venture formed to agree strategic areas for joint industry / trade union / regulator action aimed at delivering health, safety and environmental improvements with cross-sector benefits.

The Process Safety Forum has been set up to provide an industry association platform whereby initiatives, best practice, lessons from incidents and process safety strategy can be distilled and shared across sectors, to influence our stakeholders (including the Regulators), and to drive the process safety management agenda. The Process Safety Forum consists of representatives from UKPIA, TSA, CIA, OGUK, CBA, RSSB, ENA, ECIA, UKLPG and NIA. For further details contact: PSF.Secretary@gmail.com.