



## *The Wide Wide World of Functional Safety*

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Australian safety equipment manufacturers, when seeking to tender for contracts in foreign countries, are now being asked for the Safety Integrity Levels of their products.

Welcome to the new and very wide world of functional safety.

Functional Safety as a concept has arisen out of a 1996 industry neutral standard developed by the International Electrotechnical Commission.

This standard introduced for the first time the concept of Safety Integrity Levels as measures of the safety of a given process, and has driven industry, particularly the hydrocarbon processing and oil and gas industries to seek instrumentation solutions that will improve the inherent safety of industrial processes.

Functional Safety evaluates the probability of failure of a safety control system and its elements.

Safety Integrity Levels (SILs) advise the end user of equipment as to whether it will perform safely or, if it fails, will it fail in a safe manner. They range from 1 through to 4 on an ascending scale. It is important to note that no individual product can carry a SIL rating. Individual components or processes, such as instrumentation can only be certified for use within a given SIL environment.

A SIL 3 environment corresponds with the prospect of failure of one in every 10,000 demands placed on the safety system. A SIL 4 is one in every 100,000 demands so placed.

Thus an Australian manufacturer recently discovered that a Russian Coal Mine was requiring a SIL Rating 3 environment for all products that it was seeking to purchase. The manufacturer then had to get its equipment certified for this environment. Not an easy task given that there are so very few certifying agencies worldwide.

Those who are trained to certify functional safety management systems are called Certified Functional Safety Experts and are required to undergo rigorous training in the process application of functional safety. Two TestSafe Staff (Engineers Ajay Maira and Henry Huynh) have been trained in the "process application" mode of functional safety.

In June 2009, TestSafe hosted a Functional Safety seminar for industry with a US expert on the subject Dr. William Goble, and it is envisaged that an outcome of this will be that TestSafe will be able to offer a "one-stop" shop for third party testing of both explosion-protection and functional safety of equipment.



*Reduce the chance of this happening!*