The functional safety standard IEC 61511 provides a framework for managing instrumented safety systems in the process sector with the overall objective to ensure that the safety systems reliably deliver sufficient risk reduction to reduce risk to acceptable levels.

IEC 61511 has remained essentially unchanged since 1996 when it was first released in the USA in the form ISA S84. A revised edition has now been prepared and is expected to be released by the end of 2015. The revision is still subject to discussion and debate but there is basic agreement on the main changes.

This paper outlines:
• A brief history of the standard
• An overview of how the standard works to achieve reliable risk reduction
• The changes that are likely to be adopted
• Why those changes are necessary.

As owners, end users, designers, installers, operators or maintainers, we all have a duty of care in managing hazards. Due diligence means that we have to demonstrate a reasonable level of compliance to appropriate standards and practices.

Over the past 20 years the ISA S84 / IEC 61511 standard has been applied widely and shown to be practicable. It is unarguably the most appropriate standard to apply for instrumented safety systems in the process sector. The changes are intended to make the standard simpler and should improve the level of compliance that can be readily achieved.

Regulators now expect users to demonstrate a reasonable level of compliance to the standard. Owners, end users and EPC/EPCM contractors will need to improve and to formalise the way they execute engineering activities in order to comply with the standard requirements.