An Introduction to IEC 61508

As the reliance on electrical, electronic and programmable electronic systems for the execution of complex safety functions continues to increase, the need to comply with industry best practice and demonstrate due diligence becomes paramount. The IEC 61508 standard “Functional safety of electrical/electronic/programmable electronic safety-related systems” provides a framework for best practice.

Delegates attending this course will gain a thorough understanding of the standard and its requirements as well as design implications and key concepts relating to the achievement of functional safety.

Your programme

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<th>Time</th>
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<tr>
<td>08.45</td>
<td>Registration and refreshments</td>
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| 09.00 | Safety and risk concepts  
  • Concept of functional safety  
  • Basis of UK health and safety law  
  • Tolerability of risk. |
|       | Introduction to IEC 61508  
  • History of IEC 61508 and related standards  
  • Structure of the standard  
  • SIL and other key concepts  
  • Role of risk assessment. |
|       | Refreshments                                                              |
| 09.45 | IEC 61508 Part 1: general requirements  
  • The overall safety life cycle  
  • Planning and managing the safety life cycle  
  • Techniques for hazard analysis  
  • Safety integrity levels and system architecture. |
| 12.45 | Lunch  
  Hardware and architectural safety: IEC 61508 Part 2 and guidance on the standard  
  • Architectural constraints  
  • Common cause failures  
  • Failure probabilities  
  • Basic architecture tables. |
| 12.45 | Software requirements: IEC 61508 Part 3 and guidance on the standard  
  • Overview of Part 3  
  • Importance of the software life cycle  
  • Relationship to other parts of IEC 61508  
  • Safety analysis of software and other key issues for Part 3. |
|       | Refreshments                                                              |
| 13.45 | Managing safety critical system development  
  • Assessment and evidence  
  • Competence  
  • Interactions with customers and suppliers  
  • Cost and common mistakes. |
| 17.30 | Discussion and Questions  
  • How does IEC 61508 affect your work? |
| 17.30 | Close.                                                                    |

8 September 2015 (Leatherhead)
**Your Speakers**

*Stephen Hatton - Consultant Safety Engineer, Edif ERA*

Stephen has extensive experience of safety assessment of electronic and programmable electronic systems, focusing particularly on programmable logic controller based systems.

*Dr William Marsh - Lecturer, School of Electronic Engineering and Computer Science, Queen Mary, University of London*

William has been working in the field of software and systems safety and dependability since 1989. His experience has included the development of tools and techniques for static analysis of safe subsets of programming languages. He has audited a number safety-related software development projects and conducted research in new techniques.

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Organisation
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