Factfiles

The Institution of Engineering and Technology

SaRS SAFETY AND RELIABILITY SOCIETY

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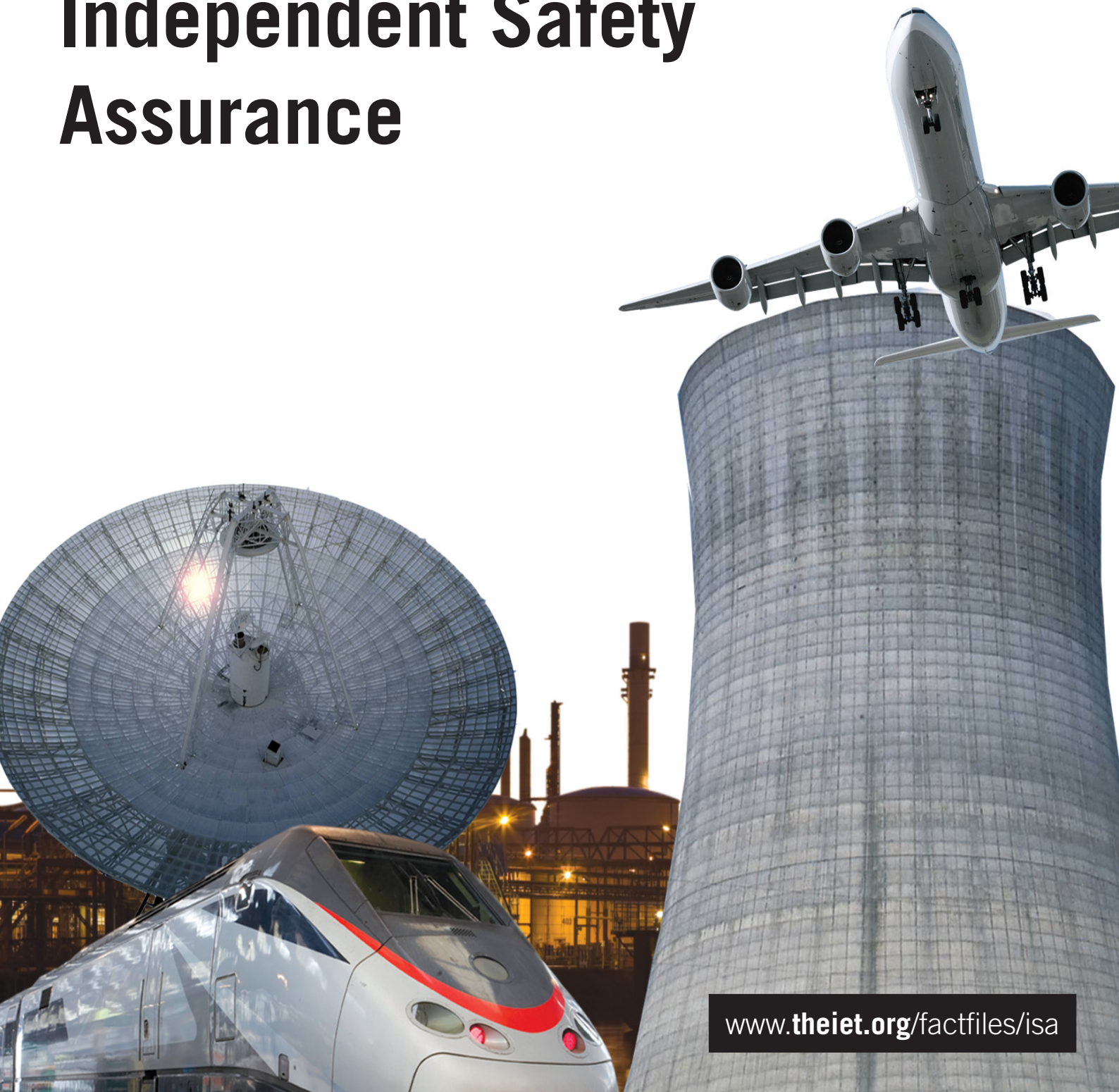
Documents useful to Independent Safety Assurance



www.theiet.org/factfiles/isa

1. Safety or Safety related Standards

General Safety related Standards

- BS EN 61508, Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems
- BS EN 61511: Functional safety - Safety Instrumented Systems for the process industry sector
- HMSO Statutory Instruments 1999 No. 743. The Control of Major Accident Hazards Regulations 1999 (COMAH) - ISBN 0 11 082192 0.
- European Seveso Directive, 1982 (Council Directive 81/501/EEC) reviewed 1996 and adopted as Seveso II Directive

Military Safety related Standards

(Note: The current issue Def Stans can be obtained freely from http://www.dstan.mod.uk. DStan can also supply obsolescent (00-55) or cancelled versions (00-54, 00-58 and the old issues of 00-56) on request.)

- Def Stan 00-54, Requirements for Safety related Electronic Hardware in Defence Equipment, Interim Issue 1, MOD, March 1999
- Def Stan 00-55, Requirements for Safety related Software in Defence Equipment, Issue 2, MOD, August 1997.
- Def Stan 0056, Defence Standard 0056 “Safety management Requirements for Defence Systems”, Issue 2, MOD, December, 1996.
- Def Stan 00-56, Safety Management requirements for defence systems, MOD, Issue 3 Dec 2005.
- Def Stan 00-56, Safety Management requirements for defence systems, MOD, Issue 4, Jun 2007.
- Def Stan 00-25 Human Factors for Designers of Systems, Principles and Process, MOD, 2004.
- Def Stan 00-58, HAZOP studies on system containing programmable electronics, MOD,1996
- MIL-STD-882D, Standard Practice for System Safety, Department of Defence, 10 February 2000

Aviation Safety related Standards

- DO-178B/ED-12B, Software Considerations in Airborne Systems and Equipment Certification, RTCAEUROCAE, 1992.
- RTCA/DO-248B or EUROCAE/ED-94B, Final Report for Clarification of DO-178B, 2001
- EUROCONTROL, Safety Case Development Manual, Edition 2.0, 12 September 2005.
- ARP4754, Certification Considerations for Highly Integrated or Complex Aircraft Systems, SAE International, November 1996.
- Joint Aviation Requirements for Large Aeroplanes, JAR25, 27 May 1994
- Joint Aviation Requirements for Normal, Utility, Aerobatic and Commuter Category Aeroplanes, JAR 23, 11 March 1994
- Joint Aviation Requirements for Small Rotorcraft, JAR 27, 6 September 1993
- ARP4761, Guidelines and methods for conducting the safety assessment process on civil airborne systems and equipment, Society for Automotive Engineers, December 1996

Rail Safety related Standards

- BS EN 50129, Railway applications. Communications, signalling and processing systems. Safety related electronic systems for signalling, 2003
- BS EN 50126, The Specification and Demonstration of Reliability, Availability, Maintainability and Safety of Railway Applications, British Standards, 2000

Motor Safety related Standards

- MISRA, Development Guidelines for Vehicle Based Software, MIRA Ltd, CV10 0TU, 1994, ISBN 0 9524156 0 7.
- MISRA, Report of the Use of Controllability for the Classification of Automotive Hazards, MIRA Ltd, CV10 0TU, 2006.
- MISRA, Guidelines for the Safety Analysis of Vehicle Based Programmable Systems, MIRA Ltd, CV10 0TU, 2006.

2. Quality Standards useful to ISA

- ISO/TS 16949, Quality Management Systems - Particular Requirements for the Application of ISO 9001:2000 for Automotive Production and Relevant Service Part Organisations, 2002.

3. Other useful development guides/standards

- IEC 60300-3-5, Dependability Management - Application Guide - Reliability Test Conditions and Statistical Test Principles.
- IEC 61124, Reliability Testing - Compliance Tests for Constant Failure Rate and Constant Failure Intensity.
- ISO/IEC 15228, Systems lifecycle Processes, International Electro-technical commission, Brussels, 2001
- IEEE 1220, Application Management of Systems Engineering Processes, the Institute of Electrical and Electronics Engineering, New York, 1998
- INCOSE Systems Engineering Handbook, version 2A, INCOSE, http://www.incose.org
- IEC 61882, Hazard and Operability Studies, International Electro-technical commission, Brussels, 2001
- IEC 60050-191, International Electrotechnical Vocabulary, Chapter 191: Dependability and Quality of Service. International

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Electrotechnical Commission, http://www.iec.ch
- HSE document: Reducing Risks, Protecting People (R2P2). (2001) - ISBN: 07176 21 51 0.
- MoD, MODAF Partners. MODAF Handbook, technical specification for MODAF, MOD, 2005.
- DoD, Architecture Framework Working Group, DODAF version 1 - Deskbook, Department of Defence 2004.
- Object Management Group. Unified Modeling Language (UML) Specification: Infrastructure, Version 2.0, ptc/03-09-15 http://www.omg.org

4. Safety Competence

- IET/BCS, Competence Criteria for Safety-related System Practitioners. 2007, IET.

Useful Text books

- Leveson NG, Safeware: System Safety & Computers, Addison Wesley, 1995.
- Dailey KW, The FMEA Handbook, DW Publishing, 2004.

5. ATC related guidance

- Annex 2 to the Convention on International Civil Aviation: Aerodromes. Rules of the Air, ICAO, Ninth Edition, July 1990
- Appendix A to ATM Operational Concept Document, AN-Conf/11-WP/4, September 2003
- Civil Aviation Authority, Directorate of Airspace Policy, Unmanned Aerial Vehicle Operations in UK Airspace - Guidance, CAP722, 29 May 2002
- ESARR3, Use of Safety Management Systems by ATM Service Providers, Edition: 1.0, Edition Date: 17-07-200
- ESARR4, Risk Assessment and Mitigation in ATM, Edition: 1.0, 05 April 2001
- SRC policy Document 1: ECAC Safety Minima for ATM, Edition 1.0, 14 February 2001
- SRC Policy Document 2: Use of Safety Nets in Risk Assessment and Mitigation in ATM, Edition: 1.0, 28 April 2003
- EUROCONTROL, Air Navigation System Safety Assessment Methodology, SAF.ET1.ST03.1000-MAN-01, 30 April 2004, Edition: 2.0. http://www.eurocontrol.int

6. Inspecting, Certifying, conforming

ISO/IEC 17000 Series of Standards
- 17020 General criteria for the operation of various types of bodies performing inspection
- 17025 General requirements for the competence of testing and calibration laboratories
- 17021 Conformity assessment - Requirements for bodies providing audit and certification of management systems
- 17011 Conformity assessment - General requirements for accreditation bodies accrediting conformity assessment bodies
- 17024 General requirements for bodies operating certification of persons

In addition, although strictly not standards the ISO Guides are references and could be included:
- ISO/IEC Guide 65:1996 General requirements for bodies operating product certification systems
- ISO/IEC Guide 62:1996 General requirements for bodies operating assessment and certification/registration of quality systems
- ISO/IEC Guide 66:1999 General requirements for bodies operating assessment and certification/registration of environmental management systems

Please send suggestions for improvements, for example of other open access sources of data, for consideration by the Working Group to:
- isawg@theiet.org

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