JSP 602 Instruction	1025	**Applicability**	Applications, Data/Information, Infrastructure, Network/Communications, Security
Configuration Identity	Version: 01.02 Amended: 2009-03-02 Reviewed: 2006-06-16	**Epoch Applicability**	2005 - 2009

JSP 602: 1025 - Safety Related Systems

Outline

Description: SR Systems are systems that have the potential to adversely impact human wellbeing or the environment. Any software in these systems that could affect safety is designated SR Software. Safety Critical Systems are those SR Systems where the safety impact would be particularly severe, such as where failure may lead directly to loss of life. Safety Critical Software is defined similarly. The precise definitions of these terms vary depending on the standards being applied and the domain of application. Within the MOD, the usual definitions are those given in Interim Def Stan 00-56 Issue 3. The acquisition of services (such as through a PPP arrangement) is subject to the same requirements. The terms 'System' and 'Equipment' should be interpreted to include such situations.

Reasons for Implementation: The MOD has a legal obligation to ensure the safety of its equipment throughout procurement, operation, maintenance and disposal. Military equipment is becoming increasingly reliant on electronic systems to deliver advanced capability. Consequently, the safe operation of equipment depends on the electronics and the software components performing as required.

Issues: Equipment based on electronics and software is often highly complex and has the potential to exhibit behaviour that is subtle or difficult to predict. Where such behaviour may have an impact on safety, action must be taken to reduce this potential. There are many potential problems with the acquisition of SR Systems, particularly software. As a result, a rigorous approach to both the managerial and technical aspects of the acquisition process is essential. An effective approach to managing safety should not only result in increased safety but it is also likely to improve the effectiveness of the equipment.

This leaflet is intended to contain sufficient information to enable projects to determine which SR requirements are applicable to them, and to also provide references to more detailed information contained within the AMS. It covers the principle items of UK SR policy, and as such it is not intended as an exhaustive list because individual projects may be required to follow more specific SR policy. It is, therefore, incumbent upon each project to ensure that they are aware of all other SR policy that may be applicable to them.

Guidance: For functional safety, the implementation of safety policy is usually carried out via the application of standards. It is the responsibility of the Integrated Project Team leader, in consultation with any relevant authorities, to ensure that the standards selected for a project are capable of meeting the requirements of the relevant JSP. The key standard for SR Systems and SR Software is Interim Def Stan 00-56 Issue 3 - Safety Management Requirements for Defence Systems. The use of this standard is highly recommended for all projects. If alternative standards

are used, then it will be necessary to justify why they can be considered to be acceptable alternatives to the Def Stans. Guidance on the acquisition of SR Systems and Software is also published in the AMS.

Policy

Strategic

1025.01: General MOD Safety Policy

1025.01.01 For all systems and/or projects it is mandatory that they manage safety in accordance with MOD policy:

1025.01.01.01 JSP375, MOD Health and Safety Handbook

Contains the high level MOD policy on safety although it concentrates on Occupational Health and Safety

1025.01.01.02 JSP418, MOD Environment Manual

Contains the high level MOD policy on environmental issues and a subset of specific issues

Comment: JSP375 and JSP418 (together with Def Stan 00-56 part 1 mandated below), are the primary MOD policy documents; the other JSPs are domain-specific applications of MOD policy for functional (i.e. equipment) safety. These functional safety JSPs require the production of a Safety Case to demonstrate and justify the safety of the system. Mandatory requirements for managing environmental issues are/will be contained in the Environment Management Systems of the MOD and its Agencies.

1025.01.01.03 JSP520, OME Safety Management System

Contains the MOD OME Safety Policy.

1025.02: Safety Management Requirements

1025.02.01 All projects shall manage their safety requirements as directed by the following standard:

1025.02.01.01 Def Stan 00-56 Safety Management Requirements for Defence Systems. This standard shall be used to determine the level of safety management for a procurement. Part 1 of the standard is mandated and Part 2 provides guidance.

The MOD policy for safety management of all procurements and in-service equipment. It describes the safety management of systems and services.

Comment: Def Stans 00-54 and 55 covering the safety management of software and hardware systems have now been Superseded by Interim Def Stan 00-56 issue 3. POSMS and POEMS manuals provide details of how the required management processes might be implemented.

1025.03: Health and Safety Requirements

1025.03.01 All MOD procurements or in-service systems shall comply with the health and safety requirements described in JSP375 MOD Health and Safety Handbook.

1025.04: Environmental Management Requirements

1025.04.01 All procurements and in-service systems shall comply with JSP418 The MOD Environment Manual.

Deployed

1025.05: General MOD Safety Policy

As for Strategic domain.

1025.06: Safety Management Requirements

As for Strategic domain.

1025.07: Health and Safety Requirements

As for Strategic domain.

1025.08: Environmental Management Requirements

As for Strategic domain.

1025.09: Airworthiness Requirements

1025.09.01 All projects providing equipment for MOD aircraft shall comply with the following standard:

1025.09.01.01 JSP553, Regulation of Airworthiness for MOD Aircraft

This covers the MOD functional safety policy for Air systems

Comment: JSP553 describes the Safety Management System adopted by the Ministry of Defence for the management and regulation of military aircraft airworthiness. It sets out the policy and associated arrangements agreed by the Defence Aviation Safety Board, and applies to all UK Military aircraft, including UAVs. It is mandated for all concerned with airworthiness and safety policy, the acquisition process, the development and maintenance, issue and management of the Release to Service and other Service-initiated changes of an operational or engineering nature.

1025.10: Ship Safety Regulations

1025.10.01 All projects providing equipment for MOD ships and submarines shall comply with the following standard:

1025.10.01.01 JSP430, MOD Ship Safety Management

This covers the MOD functional safety policy for Sea Systems

Comment: JSP430 covers all maritime platforms including surface vessels, submarines, boats and other floating structures. It shall be applied to all of the above platforms, their equipment, and their acquisition management processes whether directly procured for, owned by or operated on behalf of the MOD.

1025.11: Safety Management of Land Systems

1025.11.01 All projects providing equipment for MOD Land Systems shall comply with the following standard:

1025.11.01.01 JSP454, Procedures for Land Systems Equipment Safety Assurance contains the MOD functional safety policy for Land Systems

Deployed (continued)

Comment: JSP454 is to be applied by those IPT Leaders and service personnel responsible for providing, supporting and operating land systems equipment, facilities and services It describes how IPTLs and service personnel are to manage safety for equipment and systems for which they are responsible. They should be used for all Land Systems equipment (including hardware, software and support equipment) but excluding air and sea-borne systems which are described above.

1025.12: Safety Management of Nuclear Propulsion Systems

1025.12.01 All projects providing equipment for MOD Land Systems shall comply with the following standard:

1025.12.01.01 JSP518, Regulation of the Nuclear Propulsion Programme

This contains the MOD functional safety policy for Nuclear Propulsion Systems. It is classified as Restricted.

Comment: It covers the regulation of MOD's Nuclear Propulsion Programme. It is Mandated for Nuclear propulsion systems. It describes safety management during procurement and in-service operation of such systems.

Tactical

As for Deployed domain.

Remote

As for Strategic domain.

Responsibility for Implementing the Policy

Implementation of this policy shall be the responsibility of all MOD Projects and their suppliers.

Procedure

Procedures for implementing safety policy can be found in the following: POSMS and POEMS.

Relevant Links

JSP375 - MOD Health and Safety Handbook can be found here.
(http://www.mod.uk/dsef/ohs/jsp375.htm)

AMS guidance on JSP553 - Regulation of Airworthiness for MOD Aircraft can be found here.
(http://www.ams.mod.uk/ams/content/docs/jsp553.htm)

JSP418 - MOD Environment Manual can be found here. (http://www.defence-estates.mod.uk/publications/jsp/jsp418/jsp418_environment_manual.pdf)

JSP430 - MOD Ship Safety Management can be found here. (http://www.nakmo.co.uk/)

AMS guidance on JSP454 - Procedures for Land Systems Equipment Safety Assurance can be found here. (http://www.ams.mod.uk/ams/content/docs/extlinks/400r.htm)

AMS guidance on JSP518 - Regulation of the Nuclear Propulsion Programme can be found here. (http://www.ams.mod.uk/ams/content/docs/sse/environment_safety/eands.htm)

AMS guidance on Safety related systems and software can be found here. (http://www.ams.mod.uk/ams/content/topics/pages/2610.htm)

Def-Stan-0056 - Safety Management Requirements for Defence Systems can be found here. (http://www.dstan.mod.uk/data/00/056/02000300.pdf)

A glossary of terms and abbreviations used within this document is available here.

Instructions on how to read a JSP602 leaflet are available here.

Compliance

Stage	Compliance Requirements
Initial Gate/DP1	MOD Projects shall submit a formal declaration that they have read and understood the policy and sought guidance from the SME(s). A draft safety case shall be produced for any safety related or safety critical procurements at initial gate.
Main Gate/DP2	MOD projects shall produce a more detailed safety case showing that risks can be managed to tolerable levels. This shall be submitted as evidence of compliance with this policy.
Release Authority/DP5	MOD projects shall produce a 'Transition to Service and In-Service' safety case. This must be signed off to allow release to service. The signed-off safety case shall be submitted as evidence of compliance with this policy.