JSP 886
DEFENCE LOGISTICS SUPPORT CHAIN MANUAL

VOLUME 7
SUPPORTABILITY ENGINEERING

PART 10
MANAGE DESIGN THROUGH LIFE
(MANAGING DESIGN INTENT)

VERSION RECORD		
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1.0	23 Jul 12	Initial Issue

Contents

MANAGE DESIGN THROUGH LIFE (MANAGING DESIGN INTENT)

CONTEXT

Definitions

Design Intent. The relationship between a required capability outcome and the design and its realisation in a product, service or solution

Design Organisation (DO). The authoritative body (usually a combination of both MOD and Industry) that is established to carry out the design management through life. It is responsible for ensuring the design is maintained to preserve the original intent of the designer within defined materiel state and operating parameters that it defines to deliver its capability safely.

Overview

1. Systems are intended to be operated, maintained and supported within specified design limits, parameters and constraints during their life. The design of the system needs to be managed through life to provide evidence that any differences between the original design and Design Intent, the known materiel state and operational environment are understood and risk assessed.

2. It is important to ensure sufficient knowledge of the design, the Design Intent and how the design is managed, including design changes, over the lifetime of the system. This allows decisions to be taken on modifications, changes in operating procedures, ageing and specifications for spare parts, along with a full understanding of the effect that these decisions may have on system safety and operational performance. Otherwise, misunderstanding of the original Design Intent can lead to inadequate safety arguments, compromised safety cases and operations that are misaligned with expectations.

3. This policy outlines the activities necessary to maintain and support the equipment in a state that meets the original requirements for which it was originally designed and delivered. It ensures that, within defined operating limits, systems can be used effectively, safely and without undue frequency of failure or adverse effects. This includes maintaining performance and safety as well as activities and controls to upgrade the equipment in a planned and safe way. Managing the design though life, will require:

a. Management of a safety case.

b. Configuration management of the design.

c. Preservation of an understanding of the underpinning design logic[1].

d. Setting of operating and maintenance boundaries.

e. Maintenance of engineering logs and records.

f. Technical Support to users and maintainers.

[1] To include all design drawings, robust & validated registers, CONOPS, Tech Docs, Test Results, HAZOPs, Safety Certification, Supporting Calculations, etc.

g. Support monitoring and reviews.

h. Management of a Supportability Case.

POLICY

4. It is DE&S Policy that Project Teams[2] Manage Design Through Life initially through establishment of a design strategy and a Design Organisation (DO), as soon as the choice of product designer is made. The structure of the DO will detail design responsibilities that are to be comprehensive and are to be maintained throughout the life of a system. This will include supporting delegations that will be promulgated in a clear and unambiguous manner to ensure that all stakeholders understand their roles and responsibilities.

5. This policy applies to all projects including Urgent Operational Requirements[3] (UORs), due to the impact of design on safety and operational effectiveness. The implementation of this policy should be commensurate with project size, complexity and duration. Advice should be sought from Director Technical (D Tech) (see POC at 9a) on the appropriate level of activities to be undertaken. As a minimum, a design strategy and plan should be developed and organisational responsibilities should be agreed.

6. This policy aims to capture the key points required by regulations but is intended to be generic and represents a minimum common requirements set. Where specific regulations exist, such as for Nuclear, Complex Weapons and Air then these take precedence. However, this policy provides direction, together with supporting guidance, that should be followed by Project Teams in managing design through life.

OWNERSHIP AND POINTS OF CONTACT

7. Ownership of Logistics policy in support of the Logistics Process falls to the Assistant Chief of Defence Staff Logistics Operations (ACDS Log Ops) as CDM's Process Architect.

8. This role is exercised through Defence Logistics Working Group (DLWG) and Defence Logistics Steering Group (DLSG) reporting to the Defence Logistics Board (DLB).

9. Director Safety and Engineering (DS&E) sponsors the 'Managing Design Through Life' policy.

a. Enquiries about the policy and related content are to be made to:

DES SE EngPol-1
Elm 0, # MOD Abbey Wood, Bristol BS34 8JH
Tel: Mil: 9679 35066; Civ: 030679 35066

b. Enquiries about the ILS content are to be made to:

DES JSC SCM-EngTLS-PC
Cedar 2A, #3239 MOD Abbey Wood, Bristol BS34 8JH
Tel Mil: 9679 82891; Civ: 030679 82686

[2] The MOD body acting as a customer to the Design Organisation (DO) responsible for ensuring the DO meets all the requirements of the materiel duty holder for that system.

[3] Whilst UORs should only be procured for the duration of the Operation for which they are required, recent events have seen UORs being subsequently taken into core. Therefore PTs should make a judgement and de-risk future core activities by securing design information where this may be a likely eventuality.

c. Enquiries about accessibility of the document are to be made to:

DES JSC SCM-SCPol-Editorial Team
Cedar 1A, #3139 MOD Abbey Wood, Bristol BS34 8JH
Tel: Mil: 9679 82700; Civ: 030679 82700

MANDATED REQUIREMENTS

10. It is a key requirement that the design must be managed through life to enable the platform, system or equipment to meet its original performance requirements whilst ensuring safe operation, maintenance and support.

KEY PRINCIPLES

11. The DO is the technical authority for all decisions that may impact the design, operation, maintenance and support of the system. To ensure technical decision making is carried out by suitably authorised, qualified, experienced and informed personnel the DO must put in place and control appropriate delegations internal and external to the DO. It must also provide technical advice to owners of other logistics functions, e.g. Logistic Support Committee, Configuration Change Management Committee, Maintainers, Operators, etc.

12. The coherence and integrity of the delivered design baseline, (drawings documents, assumptions, trade-offs, supporting logic and decisions etc) are captured, stored in appropriate and accessible media, then maintained through life to be used as a reference against any proposed change to the system.

13. The DO will control design changes in accordance with Configuration Management Policy[4] from the finalised design, through life, to system disposal. Any alterations to the design, irrespective of their origin, must be validated against the approved design and Design Intent before formal incorporation or implementation.

14. The DO will ensure that authoritative standards and guidance on design, maintenance, training, system operation and support are published to ensure design, materiel state and operating parameters are applied and controlled within known and defined boundaries. This will ensure that systems are operated and maintained safely, in line with the designer's assumptions.

15. The DO will publish and control appropriate technical documentation necessary to operate, maintain, repair, support and dispose of systems throughout its life.

16. In meeting the Safety Management Requirements of DEFSTAN 00-56 the DO will have responsibilities for providing design information into the safety case process and ensuring the design is controlled to minimise safety risks that have been identified and quantified. Risks are to be at least Tolerable and As Low As Reasonably Practicable (ALARP).

17. The DO is responsible for formally assessing the implications of departures from existing processes (e.g. maintenance), operating envelopes or design assumptions,

[4] JSP 886 Volume 7 Part 8.12: Configuration Management.

quantifying the risks of such departures to ensure safe operations are not unknowingly compromised.

18. Changes to the operational, technological, legislative and regulatory environment and other changes that may have an impact on safety and Design Intent are monitored and implemented by the DO.

ASSOCIATED STANDARDS AND GUIDANCE

19. The following publications provide further guidance and/or policy:

a. JSP 430: Management of Ship Safety and Environmental Protection.

b. JSP 454: Land Systems Safety and Environmental Protection.

c. JSP 520: Ordnance, Munitions and Explosives Safety Management System.

d. Military Airworthiness Authority (MAA) Regulatory Publications (MRP).

e. JSP 886 Volume 5 Part 2A: Configuration Management of Land Equipment.

f. JSP 886 Volume 7 Part 5: Management of Support Information.

g. JSP 886 Volume 7 Part 5.01: Management & Exploitation of Equipment Generated System Information.

h. JSP 886 Volume 7 Part 8.03 (A – D): Maintenance

i. JSP 886 Volume 7 Part 8.05: Technical Documentation.

j. JSP 886 Volume 7 Part 8.11: Quality Management.

k. JSP 886 Volume 7 Part 8.12: Configuration Management.

l. JSP 886 Volume 7 Part 8.13: Obsolescence Management.

m. JSP 886 Volume 7 Part 9: Supportability Case.

n. BRd 1313: Maintenance Management in Surface Ships.

o. BRd 8593(17): Addition and Alteration (A&A) Procedures and Modifications In Surface Ships.

p. DEFSTAN 00-45: Using Reliability Centred Maintenance to Manage Engineering Failures.

q. DEFSTAN 00-56: Safety Management Requirements for Defence Systems.

r. DEFSTAN 02-28: Configuration Management Nuclear Submarines.

s. DEFSTAN 02-41: Requirements for Configuration Management of Surface Warships.

t. DEFSTAN 05-57: Configuration Management of Defence Materiel.