SUBJECT SPECIFIC GUIDELINES

LIFE CYCLE DELIVERY

INTEGRATED RELIABILITY

VERSION 1 | SEPTEMBER 2026


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ABOUT THE IAM

The Institute of Asset Management (the IAM) is a not-for-profit professional body. We are owned and controlled by our Members and committed to remaining independent from commercial and trade associations. We exist to advance the discipline of Asset Management, not only for people and organizations involved in the acquisition, operation, and care of physical assets but also for the benefit of the general public. Our priorities are to promote the generation and application of knowledge, training, and good practice and to help individuals become demonstrably competent.

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IN THIS SSG

LIFE CYCLE DELIVERY
INTEGRATED RELIABILITY

CONTENTS

IN THIS SSG

LIFE CYCLE DELIVERY
INTEGRATED RELIABILITY

CONTENTS

FIGURES

1 PREFACE

1.1 INTRODUCTION TO SUBJECT SPECIFIC GUIDANCE

This Subject Specific Guideline (SSG) is part of a suite of documents designed to expand and enrich the description of the Asset Management discipline as summarized in the IAM's document 'Asset Management – an Anatomy' Version 4 (referred to throughout this document as 'The Anatomy").

The SSGs cover the Subjects in The Anatomy directly as a 'one to one' (where a subject is very broad) or grouped (where subjects are very closely related).

1.2 PURPOSE OF THE SSGS

This document provides guidance for good asset management.

ISO 55001 sets out the requirements necessary for establishing, implementing, maintaining, and improving a management system for asset management. The Global Forum on Maintenance and Asset Management (GFMAM) Asset Management Landscape establishes a globally shared understanding of the subjects which comprise the asset management discipline, emphasizing its wide-ranging nature and breadth of scope. Neither ISO55001 nor the GFMAM Asset Management Landscape explains how to implement asset management.

The Anatomy is a good introduction for people seeking to understand asset management. It is intended to:

- Explain the asset management approach and introduce the asset management subjects;
- Help individuals see how asset management can assist their professional development, and integrate their contribution with the work of colleagues and other teams; and
- Help organizations decide whether to adopt asset management and how to improve their asset management capabilities.

The SSGs develop the next level of detail for each subject in the Anatomy. They are guidance intended to help individuals and organizations by providing a consolidated view of good practice drawn from experienced practitioners across many sectors and geographies.

The SSGs include guidance for simple and complex operational environments, together with real examples from different geographies and sectors, to support the explanatory text. This is because there are widely different operational environments, constraints, cultures and opportunities in asset management. In particular, levels of sophistication, refinement and optimization that are worthwhile and possible in one environment may not represent either a possibility or a worthwhile investment in another. In addition, organizations will be at different stages of adoption of asset management; some may be relatively mature while others are at the beginning of the journey.

The guidance in this SSG recognizes each organization needs the flexibility to adopt its own 'fit-for-purpose' practical approaches and solutions that are economic, viable, understandable, and usable and that organizations will adapt their asset management approaches as part of continual improvement.

1.3 THE SSGs IN CONTEXT

The SSGs are a core element within the IAM Body of Knowledge. They have been peer-reviewed by subject matter experts identified by the IAM Knowledge Leadership Group. They align fully with the IAM's values and beliefs, which relate to the development of excellence in the asset management discipline and the provision of support to those who seek to achieve that level of excellence.

1.4 SSGs AND COMPLEXITY VERSUS MATURITY

It is important to understand and contrast these terms. Put simply:

- The complexity of the organization's operational environment will drive the complexity of the solution required; and
- The maturity of the organization will determine its ability to recognize and implement an appropriate solution.

A mature organization may choose a simple solution, while a naive organization may think that a complex solution will solve all its problems. In truth, there is no universal best practice in asset management - only good practice appropriate for the operating context of any particular organization. What is good practice for one organization may not be good practice for another.

For example, an organization that is responsible for managing 100 assets, all in the same location, could use a spreadsheet-based solution for an asset register and work management system. This is arguably good practice for that organization. However, for a utility business with thousands of distributed assets, this is unlikely to represent a good practice solution.

It is important to understand the organization's complexity and maturity to best apply the guidance in this SSG.

1.5 FURTHER READING

In addition to the Anatomy and SSGs, the IAM provides a range of knowledge and professional development resources, which can be accessed through the IAM website.

2 SCOPE OF THIS SSG

This document provides guidance for the following subject of asset management:

- **Integrated Reliability**

Purpose & Context
- Organizational Purpose and Context
- Stakeholder Management

Leadership & Governance
- Asset Management Leadership
- Asset Management Policy
- Asset Management System
- Asset Management Assurance and Audit
- Technical Standards and Legislation

Organization & People
- Organizational Arrangements
- Organizational Culture
- Competence Management
- Organizational Change Management

Strategy & Planning
- Demand Analysis
- Sustainable Development
- Asset Management Strategy and Objectives
- Planning
- Shutdown & Outage Strategy & Planning
- Contingency Planning & Resilience Analysis
- Resource Strategy and Management
- Supply Chain Management
- Life Cycle Value Realization
- Asset Costing and Valuation

Asset Management Decision-Making
- Decision-Making

Life Cycle Delivery
- Asset Creation and Acquisition
- Systems Engineering
- Integrated Reliability
- Asset Operations
- Maintenance Delivery
- Incident Management & Response
- Asset Repurposing & Disposal

Information Management
- Asset Management Data and Information Strategy
- Knowledge Management
- Asset Management Data and Information Standards
- Asset Management Data and Information Management
- Asset Management Data and Information Systems
- Configuration Management

Risk
- Risk Management

Review & Continual Improvement
- Monitoring
- Continuous Improvement
- Management of Change

Value & Outcomes
- Outcomes and Impacts

Figure 1 Context of this SSG in relation to the IAM 10-Box Capabilities Model

Figure source: Asset Management – an anatomy (Version 4), The Institute of Asset Management, July 2024

2.1 PURPOSE OF THIS SSG IN PARTICULAR WITH REFERENCE TO ITS 'GROUP'

Note that SSGs exist (or are planned) for all 40 subjects. Considering that Integrated Reliability is a broad topic that covers all stages of the asset life cycle, there will be some overlap with other SSGs; these will be referenced where relevant to allow for further reading.

Also note, due to the nature of the subject, the scope of this SSG, applies only to physical assets and asset systems. Intangible or financial assets are not in scope, and the techniques described within this document do not apply to them.

Finally, this SSG is a revision of a pre-existing SSG on *Reliability Engineering*, which was published in 2016 (i.e. SSG number 16). This revision was prompted by the release of a new Anatomy (i.e. version 4) in 2024, which included significant changes to the definitions of various Asset Management Subjects, including this one, which was broadened to become *Integrated Reliability*.

2.2 WHAT IS INTEGRATED RELIABILITY?

The reliability of an asset is its ability to perform a required function, under a given set of conditions, over its projected life cycle. Or in other words, reliability is an asset's resistance to functional failure. Acquiring a physical asset requires investment, and organizations only do this because the function that the asset will deliver is necessary for the organization to fulfil its goals – i.e. to manufacture products or deliver services. Therefore, it is in the organization's interest to minimize functional failure, to ensure that all potential value is obtained from their asset. This is the goal of Integrated Reliability. What can be done by the organization to minimize the functional failure of its assets over their life cycles to ensure that maximum value is delivered? The Anatomy includes the definition of Integrated Reliability:

> *'Integrated Reliability is a holistic collection of policies, principles, processes, systems, and tools used to deliver, monitor, and improve reliability, Asset Management and life cycle delivery activities towards a system or asset.'*

In essence, Integrated Reliability is the entire suite of policies, processes, systems, and tools that an organization puts in place to minimize the functional failure of its assets throughout their life cycles.

Note that different stages of the asset life cycle present different challenges and opportunities to improve reliability. For example, during the operational phase (generally the longest part of the life cycle), assets are exposed to risks that can cause functional failure, and control measures are put in place to minimize these risks (i.e. maintenance). However, during the design phase, when assets are not yet operational, the opportunity is instead about recognizing potential future failure risks and designing them out to eliminate failure modes entirely (or at least, improving the capacity for recovery, repair, and maintenance). Note that the cost of making such design changes increases significantly at later stages in the life cycle, so it is important to maximize the opportunity at the design stage.

2.3 THE STRUCTURE OF THIS SSG

The reliability challenges faced at each stage of the asset life cycle are different, and this SSG is structured with these differences in mind. The remaining sections of this document will step through each life cycle stage and discuss the specific 'reliability challenges' that are faced at each.

Figure 2 below illustrates this, showing the life cycle stages in purple and their associated challenges in grey. Following from this, the table in Figure 3 outlines the structure of this SSG, with one section corresponding to each challenge in turn. Each challenge is stated as a concise question, which will be addressed in that section through the discussion

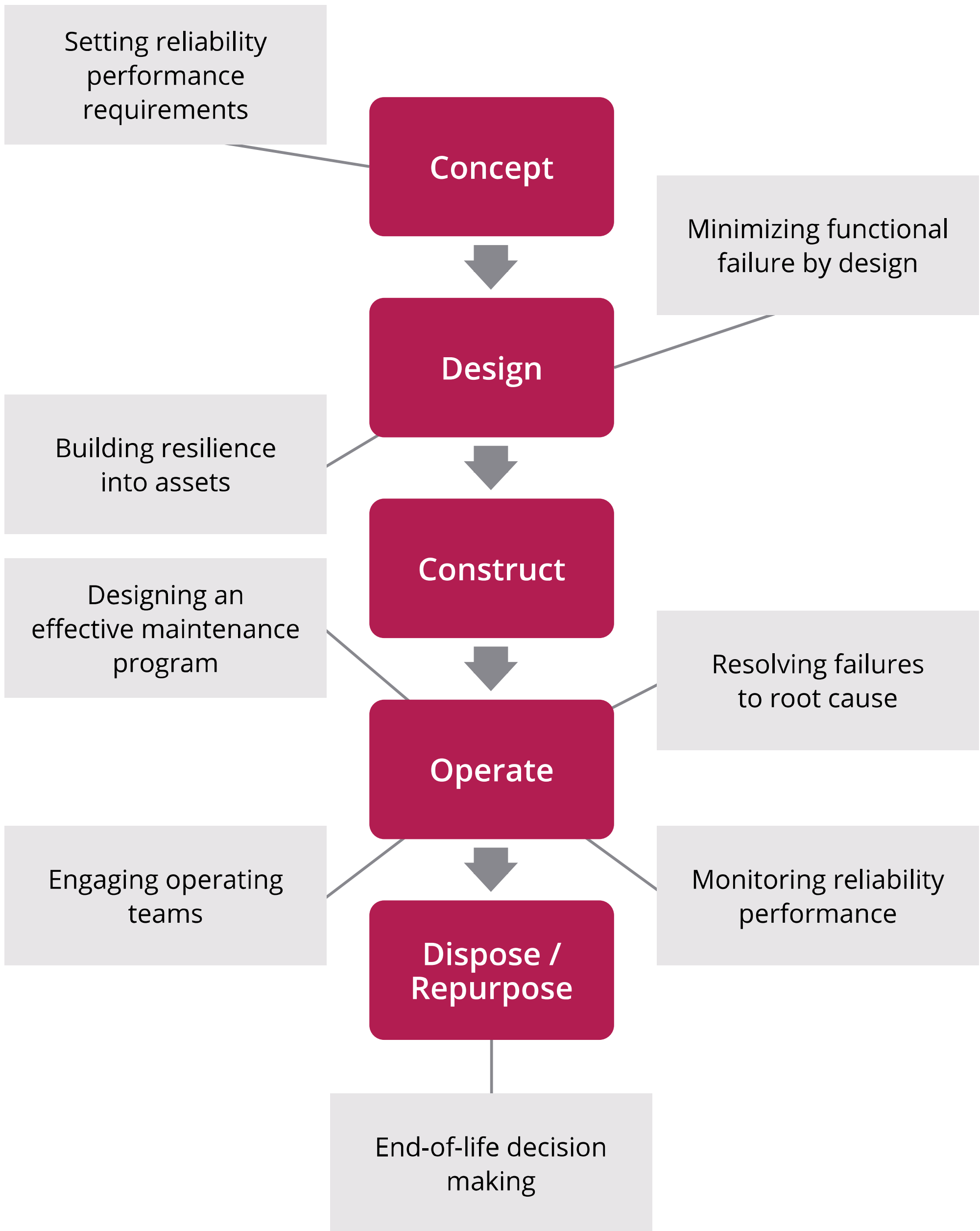

Figure 2 The reliability challenges faced throughout the asset life cycle