Chapter 11
Management of In-Service Assets

Abstract The aim of this chapter is to outline the organization and functions involved in providing for the management of in-service assets over their lifetime, and to describe the formation of asset management plans for in-service assets. *Outcomes* After reading this chapter you will be aware of the types of activities needed for management of the deployed assets of the organization. This includes the need for having an integrated overview of the deployed assets and of the planning needed to provide support and sustainment of the "fleet" as a whole on a through life basis. You will have seen how asset management plans are developed for an in-service asset fleet as a whole for given planning horizons. You will also be aware of the need for configuration management for the fleet.

11.1 In-Service Assets

In-service assets are those currently deployed for use within the organization. In-service assets may be referred to as a "fleet," regardless of the type of asset. In this chapter the organization and functions involved in providing for the management of in-service assets will be outlined. The development of asset management plans will be considered, leading to the formation of a consolidated asset management plan which forms a basis for budgeting for the fleet.

11.2 In-Service Support Aims

In-service asset support involves ensuring that deployed assets are able to deliver their intended function over their required life. The objectives are to achieve business goals for the deployed assets by providing productive capacity, availability, quality, safety, and meeting regulatory standards. Well directed support policies

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and matching levels of expenditure, including maintenance, will enable the assets to effectively support business goals and will also save money by avoiding premature replacement and reducing the need for additional equipment.

The management of in-service support for any particular capability is based on the logistic support planning undertaken at the acquisition stage, but involves integrating the activities across the range of deployed assets, and dealing with the current circumstances as they evolve over the life of the assets.

11.3 In-Service Support Activities

The following activities are required to support the deployed assets.

Asset continuity planning and management For any particular range of capability the asset support manager will maintain information on the asset capability required, the current deployment of assets; surplus or shortages in asset inventory levels; equipment condition; configuration and modification status; logistic support status; remaining useful life and requirements and plans for deeper maintenance and renewal. This information will be used as a basis for decisions relating to equipment deployment, procurement of spares and replacements, and equipment maintenance policy particularly in regard to overhauls or deeper maintenance, renewal, and disposals.

Maintenance This is a basic requirement which is separate from the function of asset management groups. It may come under the overall control of a Chief Asset Manager. Close liaison and regular feedback between asset management and maintenance is important for the effective delivery of asset performance.

Facilities and resources planning Planning of facilities for maintenance and logistic support across the organization and over the life of the deployed equipment. This requires a maintenance staffing plan, maintenance training plan; balancing of workloads of maintenance staff.

Asset Information Systems Application, development, and support for the asset management and maintenance applications.

Spares and consumables management In the acquisition phase there will normally be an initial buy of equipment, consumables, spares, and rotables. Once the equipment is in service the continued acquisition of consumables, spares, and rotables becomes part of the in-service asset management function. This includes monitoring and controlling stock levels, including such issues as setting reorder controls, establishing reserves and repair pools, monitoring procurement contracts, and creating new contracts as necessary. It will be necessary to keep up-to-date with technical changes and with changes in supplier and support services.

Regulatory issues awareness and response Awareness of and response to needs relating to regulatory issues such as safety, health, environment, and technical properties of the assets. Statutory requirements for inspections and maintenance activities.

Risk analysis and risk management

Technical developments monitoring and response Assessment of the significance of technical developments to operations and asset requirements. Application of technical developments in maintenance, e.g., condition monitoring and proactive asset care rather than a breakdown approach. Care must be taken to ensure that changes are fully substantiated by technically qualified and authorized persons before changes are made.

Development implementation decisions

Technical improvements or modifications will come along from time to time. An issue is how any particular change should be implemented. Factors to be considered are:

- If essential for operational, safety or regulatory reasons, prompt implementation will be required.
- If significantly advantageous but not essential, a phased implementation will be suitable.
- If only moderately advantageous then the change may be effected as and when it becomes convenient to do so.

A policy decision categorizing the change and setting out implementation rules will be needed.

Change Management Whenever changes are implemented, a change management process should be applied, so as to ensure that changes are assessed, managed, effectively controlled and communicated. The aim is to ensure maximum benefit is achieved from the proposed changes and that there are no adverse effects to health and safety, no damage to plant or equipment, legislative requirements are upheld and negative impacts on performance are avoided.

Configuration management Maintaining records of the configuration status of in-service equipment. Input into modification decisions, planning upgrades including making equipment available, timing of work and facilities and contract management.

Deeper maintenance awareness and planning Awareness of the status of equipment in regard to deeper maintenance needs. Planning for deeper maintenance, for example, planning site shutdowns across the organization, so as to minimize impact on business goals and to be consistent with maintenance resource availability. Arranging deeper maintenance contracts.

Outsourcing Strategy and contracts for maintenance and related support activities.

Replacement analysis Reviewing the condition and supportability of equipment, life cycle cost review and management, input to economic life decisions and to repair/replace strategy.

Continuous Improvement Continuous Improvement means continually seeking to make improvements in procedures and processes. The accumulation of small improvements can, over time, achieve substantial benefits. Care must be taken to

ensure that changes are fully substantiated by technically qualified and authorized persons before changes are made. Pilot studies and a formal review of possible consequences are recommended before a proposed improvement is adopted.

Disposal

Planning and Budgeting for all of the above.

11.4 Organization for In-Service Support

The structure required for the organization of in-service asset support is shown in Figs. 2.4 and 11.1 where we see in-service asset support as part of the activity of each asset management group.

The in-service asset support group manages at the strategic level, the activities involved in logistic and technical aspects of deployed assets. The detailed activity of maintenance will be carried out by maintenance departments and workshops which may be part of an operating division or may come directly under the asset management function, or may be outsourced. Engineering, finance, and legal staff work with the in-service support personnel to provide integrated management of the support functions. In a smaller or decentralized organization, in-service asset management may combine with maintenance management roles.

Staff in the in-service support group will be drawn from experienced maintainers, experienced operations personnel, technical or engineering support personnel, particularly those familiar with the relevant equipment.

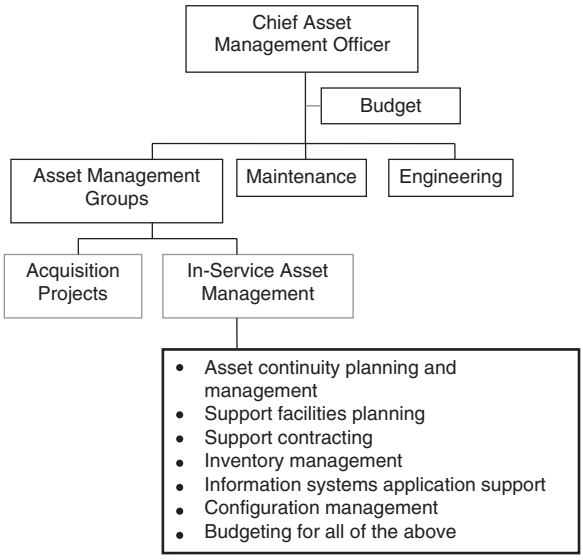

Fig. 11.1 Organization for management of in-service assets

11.5 Engineering and Technical Services

The role of engineering and technical services is to develop, maintain, and apply technical knowledge of the main areas of activity. They deal with the more technical aspects of equipment operation and sustainment and provide a resource which can respond to technical problems which cannot be resolved by line managers and maintainers. They maintain contacts with original equipment manufacturers (OEMs), with local support services and with suppliers. They maintain knowledge of technical developments, including condition monitoring techniques. They carry out studies of technical problems leading to improvements in reliability, maintainability, and availability. Depending on organizational size and dispersal, they may be centralized to a greater or lesser extent with company asset management. Technical changes to assets, operations, or maintenance regimes must be cleared by the appropriate technical authority before implementation.

11.6 Asset Management Plans

11.6.1 ISO 55000 Definition and Requirements

The term "Asset Management Plan" is defined in ISO 55000 as:

"documented information that specifies the activities, resources and timescales required for an individual asset or grouping of assets to achieve the organization's asset management objectives."[1]

Thus, ISO 55000 defines an Asset Management Plan as referring to a specific asset or group of assets, and involving specifying:

- Activities
- Resources
- Timescales.

ISO 55001 states that "the organization shall establish, document and maintain asset management plans…"[2] Thus asset management plans are a required feature for compliance with the standard.

An *asset management plan* as defined in ISO 55000 is a conventional plan for managing an asset or group of assets. This is *different from* the ISO 55000 definition of the *Strategic Asset Management Plan* (*SAMP*), despite the similarity in the name. The SAMP is discussed in a later chapter.

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[1] ISO 55000 at Clause 3.3.3.

[2] ISO 55001 at Clause 6.2.2: "The organization shall establish…asset management plans…".

11.6.2 Life Cycle Asset Management Plan

There are two very distinct types of asset management plans which arise in practice. The first is the Life Cycle Asset Management Plan which was discussed in the chapter on Life Cycle Costing. A Life Cycle Asset Management Plan is a plan formed by identifying the maintenance, repair, and overhaul activities for the particular asset type.

For example, for an aero engine of a given type, we plan the series of maintenance actions required, based on its flying hours from new, including when the engine would require heavy maintenance and eventual replacement. The plan would also tell us, the facilities that were required and the spares and labor needed at various stages for engines of this particular type.

11.6.3 Planning-Period Asset Management Plan

A Planning-Period Asset Management Plan is a plan that is for the management of a whole portfolio of assets over a given time period, such as 1, 5, or 10 years. This is the type of plan that we need for developing budget proposals for the management of our in-service assets.

In the aero engine case, the planning-period asset management plan considers all the aero engines of a given type, and possibly of several types where their need for resources interacts. The planning-period plan draws information from the Life Cycle Asset Management Plans of individual engines or engine types to create a plan for a given time period for the portfolio as a whole.

To give another example, suppose that we are managing a vehicle fleet. The Life Cycle Asset Management Plans for a given type of vehicle are the plans for vehicles of that type, usually developed from the manufacturers' specifications, showing their servicing requirements, augmented by estimates for repairs, assembly or component replacements, and so on. The Planning-Period Asset Management Plan is the plan for a given period of time for the whole facility which involves a mixture of vehicles of various types of varying numbers, varying ages, and with varying demands.

The Planning-Period Asset Management Plans form the basis for budgetary proposals for CAPEX and OPEX to provide ongoing support for sustainment of the fleet. The Planning-Period Asset Management Plans should align with the Life Cycle Asset Management plans for individual assets, and with the business operating requirements.

11.6.4 Planning Overview

In this chapter we consider Planning-Period Asset Management Plans. We shall assume that Life Cycle Asset Management Plans are available.

Asset management planning focuses on the alignment of assets with the requirements of an organization to enable maximum return of value. The aim is to produce plans over given time horizons, which are achievable from all perspectives, that is, operationally, financially, and in terms of the required assets and supporting services. This involves the integration of:

- operational plans,
- financial plans and
- asset management plans.

The asset management plans will take into account the life cycle activities and logistic support needed to sustain the assets. The planning process will involve the creation of asset management plans for individual assets or groups of assets which will be coordinated with operational plans and the financial plans.

Plans for individual assets or groups of assets will feed up into a *consolidated asset management plan* which typically will involve some prioritization and selection from the lower level plans. Figure 11.2 illustrates the process in a schematic way. The consolidated asset management plan is integrated with the operational plan and the financial plan and budget at business level to produce a coordinated set of plans for the organization.

Inputs to the asset management planning process are both "Top Down" and "Bottom Up." Top-Down inputs will be in response to changes from external sources, such as market demand, product changes, technical changes, or changes in the business structure or strategy. These will directly affect the business plan and this in turn will affect the asset management plans. Bottom-Up inputs will come from the need to replace or upgrade equipment, changes in service level expectations or technical change.

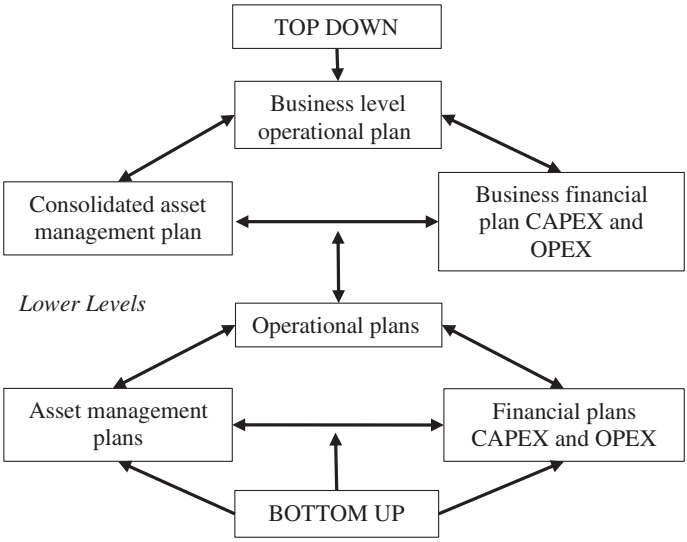

Fig. 11.2 Business and asset planning process overview

It is important that the asset management plans respond to all these inputs. The resulting changes in the plans will lead to financial proposals to support the necessary physical changes. There must then be an effective business-level response, so that funding is available, and is suitably delegated, in order to keep the assets in step with the business strategy.

11.6.5 Asset Management Plan Inputs

The elements that go into making an asset management plan for a group of assets can be summarized as follows:

- Identification of the assets planned for in the plan (includes asset register references)
- Outline of business objectives and plans for which the assets are required
- Identification of responsibilities in relation to the plan
- Asset criticality, priority
- Forecast demand
- Demand management
- Service levels planned and current actual
- Maintenance activities including overhaul or refurbishment
- Remaining lives
- Renewal plan
- Support services, e.g., spares, maintenance facilities, information systems
- Risk and contingency
- Communication
- Asset values
- Configuration management
- Change management.

11.6.6 Planning Considerations

Asset management plans will be developed for major assets or groups of assets. The plans combine operational, capital, and maintenance aspects of the management of the assets and form the basis for input into the CAPEX and OPEX budgets. For any given major asset or asset group, the asset management plan will cover the following points:

- Identify and list the relevant assets, any related projects (e.g., existing acquisitions or disposals in progress) and specifically related systems and facilities.
- Summarize the current role of, need for and criticality of the assets including operational and financial significance.
- Report on the current status of the asset in terms of condition, performance, functionality, regulatory compliance, and maintenance cost (including reliability, availability, maintenance backlog) of the asset.

- Compare the status of the asset with current service standards and operational and regulatory requirements.
- Predict the status and performance over the planning period.
- Identify where the asset is performing below the required standard now, or at projected times in the planning period.
- Identify actions required to maintain the assets to the required standard over the planning period. Actions involved may be: Do Nothing, Replace, Refurbish, Modify, Augment.
- Preliminary review, financial analysis, and business case.
- Take the results for this asset or asset group forward for consideration in the Consolidated Asset Management Plan.

11.6.7 Consolidated Asset Management Plan

A consolidated asset management plan is plan which consolidates information from individual asset management plans and applies to a stated time period. The consolidation process may involve some coordination and prioritization. The creation of a Consolidated Asset Management Plan is a step in developing the financial budget needed to support the assets and the asset management system.

Having developed plans for individual major assets and groups of assets, we take these forward for consideration in the consolidated asset management plan. This plan, as the name suggests, consolidates the requirements from the individual asset management plans into a single plan across the business. The actions arising from the individual plans are now treated as follows:

- Bring forward actions from individual asset management plans
- Review actions from integrated standpoint
- Prioritize actions
- Financial analysis and business case
- Final approval process
- Create project plans for acquisitions, refurbishments, disposal, etc.

11.6.8 Plan Summary

The resulting consolidated plan consists of the follow main elements.

- Schedule of major maintenance activities, e.g., shutdowns or refurbishments.
- Changes in resource allocations by location, quantity, and time.
- Schedule of proposed acquisitions with timings.
- Schedule of proposed disposals with timings.
- CAPEX and OPEX financial plan or proposal with business case.
- Allocation of responsibilities in relation to the plan.

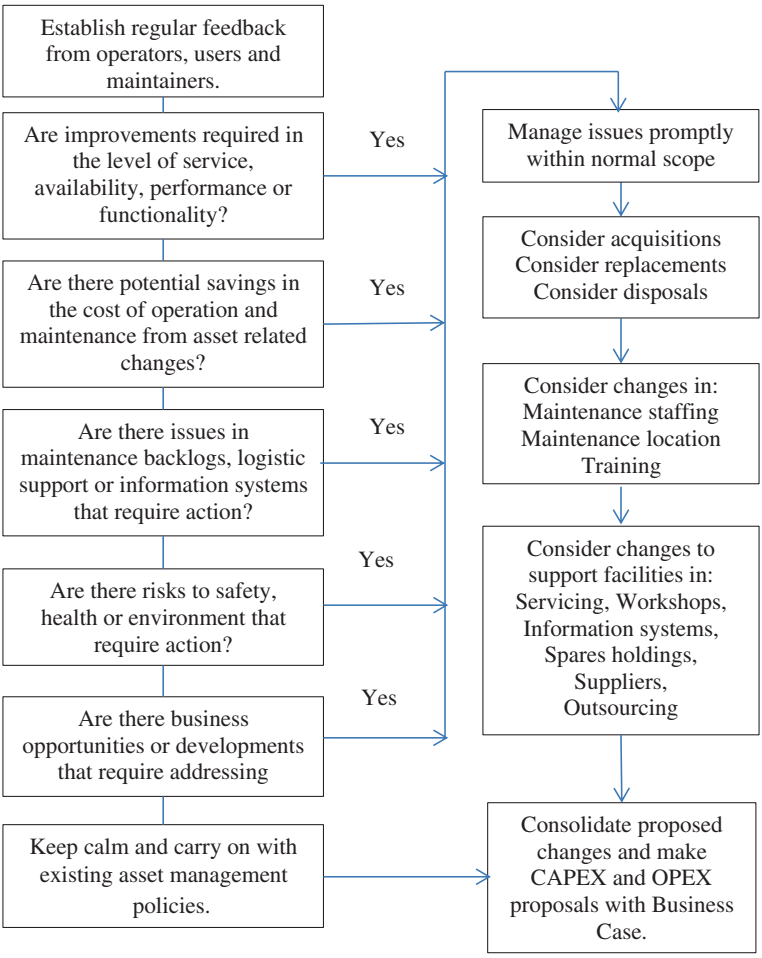

Fig. 11.3 In-service asset management, planning, and budgeting

The consolidated asset management plan goes forward as part of the budgeting process. This process is summarized in Fig. 11.3.

11.7 Time Period (e.g., 5 Year) Asset Management Plan

11.7.1 Introduction

There is a requirement within organizations for a document which provides an overview of the current and projected asset plan over various time periods, e.g., a 5- or 10 year horizon. This document is not a budget submission but is based

on a combination of the agreed or projected budget commitments over the planning period. This document outlines the current assets and their status, the drivers, external and internal, which influence current asset requirements, and the asset plans and expenditures for given future planning periods. I shall refer to this document as the 5 Year Asset Management Plan, although variations on this title may be preferred or already exist in organizations, and the actual planning horizon can be longer or shorter. This document is of interest to a range of stakeholders, including senior management, asset managers, and managers in areas outside of the asset management team.

11.7.2 Relationship to the SAMP

The 5 year Asset Management Plan is an asset management plan in the sense defined in ISO55000.[3] That is to say, it focusses on activities, resources, and timescales. The SAMP,[4] which is discussed in a later chapter, by contrast, focusses on "how to" information on the asset management system as a whole. The SAMP is particularly relevant for ISO55000 accreditation as it describes how the broad requirements of the standard are to be met. The SAMP and the 5 Year Asset Management Plan will have some material in common. The extent to which they are merged or linked into a single document is at the discretion of the organization.

11.7.3 Role of the 5 Year Asset Management Plan

The 5 year Asset Management Plan serves the following purposes:

- Informs senior management and other stakeholders of the current role and status of assets
- Informs senior management and other stakeholders of the current role and status of asset management and the systems used to support it
- Summarizes asset management plans for both assets and support services over the designated planning horizon
- Links the current business plans and asset management plans
- Links the asset plans to the CAPEX and OPEX budgets.

[3] ISO 55000 at Clause 3.3.3.

[4] Defined at ISO 55000 Clause 3.3.2.

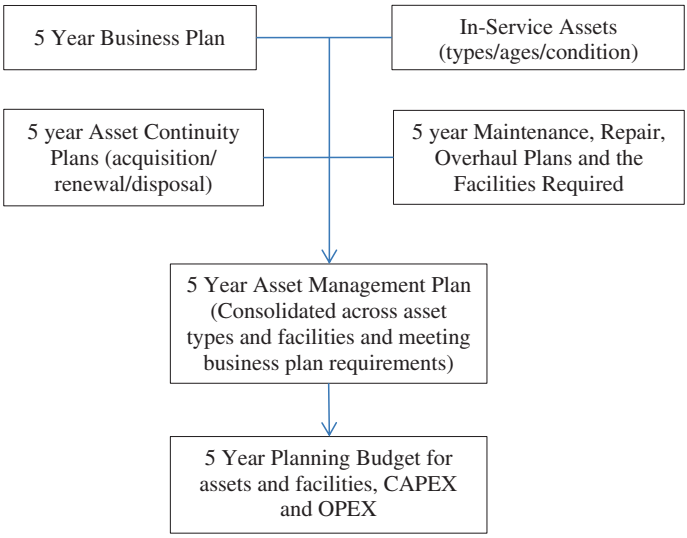

Fig. 11.4 Development of the 5 year asset management plan

11.7.4 Development of the 5 Year Plan

Development follows the outline in Fig. 11.4.

11.7.5 Outline Contents of a 5 Year Asset Management Plan

An outline of the contents of a 5 year Asset Management Plan document is as follows:

1. Title
2. Foreword
3. Executive Summary
4. Introduction

    4.1. The Organization and its Context
    4.2. Objectives
    4.3. Stakeholders
    4.4. Leadership
    4.5. Policy, Vision, and Mission Statements
    4.6. Organizational Diagram
    4.7. Organizational Roles
    4.8. Regulatory Environment

5. Planning Process
    5.1. Purpose of Plan
    5.2. 5 Year Asset Management Plan Development Framework
6. Asset Description
    6.1. Key Asset Summary
    6.2. Maps, Schematic Diagrams, Flowcharts
    6.3. Current Utilization
    6.4. Asset Age and Condition Summaries by Asset Type
7. Asset Management Drivers
    7.1. Strategic Drivers
    7.2. Market Drivers
    7.3. Specific Demand Drivers
    7.4. Technological Factors
    7.5. Demand Management
8. Levels of Service
    8.1. Definition of Levels
    8.2. Targets
    8.3. Performance
    8.4. Service level Plans and Strategies
9. Plans
    9.1. Capacity
    9.2. Availability
    9.3. Maintenance and logistic facilities and equipment
    9.4. Information systems, procedures, analysis
    9.5. Risk, emergency response
    9.6. Safety
    9.7. Environment
    9.8. Monitoring and Improvement
10. Financial Summary
    10.1. Developments
    10.2. Continuity
    10.3. Maintenance
    10.4. Asset Disposal
    10.5. Projected Budget for Relevant Planning Periods
11. Appendices
    11.1. Definitions
    11.2. Abbreviations and acronyms
    11.3. References.

11.8 Configuration Management[5]

Configuration management involves keeping track of technical details of the assets in a fleet in regard to all the factors which are important for operation and maintenance. It provides information for operators, maintainers, and engineers in dealing with activities relating to the assets. A configuration management plan should be established as part of the logistic support plan. If configuration management is lacking, an organization can easily find itself with an unknown mixture of equipment configurations, creating problems for operations, maintenance, and logistic support. Configuration management is important in relation to change management.

11.8.1 Configuration Management Example

Consider an organization which operates a large fleet of buses, perhaps as many as 1,000. Buses will have been bought at different times and will have different specifications. Configuration management involves keeping track of the details of the buses in the fleet in regard to all the factors which are important for bus operation and maintenance. The operators of the buses will need to have up-to-date information for each bus regarding such factors as: the number of seats, standard of comfort, audio or video equipment on board. Older buses may be subject to different regulatory design rules from newer buses. Some buses may have been upgraded, for example, by adding seat belts, but this may not apply to all buses which are otherwise similar. Maintenance personnel will require access to drawings and specifications for maintenance and repair tasks.

11.8.2 Configuration Description

The configuration description of a capability is a description, usually held in a computer database, which gives details of the configuration. The fields in the configuration description need to be defined as a preliminary to creating the configuration descriptions for the relevant assets.

Configuration management, including drawings and all relevant details, is required for:

- Land,
- Buildings,
- Machinery and equipment,

[5] ISO 10007 Configuration Management.

- Water, electricity and gas supply,
- Drainage,
- Sewerage,
- Roads,
- Bridges,
- Embankments and civil works,
- Piping and instrumentation in chemical, oil, and gas plant,
- Software and electronic systems installed in or used with assets.

11.8.3 Configuration Management Process

The configuration management process involves creating the configuration description, coordinating, controlling, approving and recording configuration changes, and auditing physical configurations to ensure that the necessary capability is deliverable. Without tight configuration management, capability can be lost due to the loss of essential components or features, through shifting priorities and lack of awareness of the capability requirements.

11.8.4 Configuration Change Control

Configuration change control involves the analysis of proposed changes, combining technical and business viewpoints, and the application of a formal procedure for the approval of agreed changes. Changes need to be evaluated in regard to their functional and logistic implications before being implemented. Records of actual configurations are made and changes are recorded as they are implemented. Awareness of and adherence to design and construction standards is an important factor in the approval of configuration changes. The configuration change control process should ensure that related technical information is updated as changes occur. Configuration audits should be carried out to ensure that configuration records are being maintained.

11.9 Exercises

11.9.1 Self-Assessment Quiz 9.1

1. What are “in-service assets”?
2. Name four activities involved in the management of in-service assets.
3. What is the difference between a life cycle asset management plan and a planning-period asset management plan?

4. What top-down factors can influence the management plan for in-service assets?
5. What bottom-up factors can influence the management plan for in-service assets?
6. Identify four reasons for having a time period (e.g., 5 year) asset management plan

11.9.2 Configuration Management Exercise

1. What is configuration management?
2. Why is configuration management needed?
3. List ten characteristics of a bus which you would expect to feature in configuration management data.

11.10 Exercise Solutions

11.10.1 Self-Assessment Quiz 9.1 Solution

1. *What are "in-service assets"?*

   a. In-service assets are those currently deployed for use within the organization.

2. *Name four activities involved in the support of in-service assets.*

Any of the following:

- Asset continuity planning and management
- Maintenance
- Facilities and resources planning
- Asset Information Systems applications and developments
- Regulatory issues awareness and response
- Spares and consumables management
- Technical developments monitoring and response
- Configuration management
- Change Management
- Deeper maintenance planning
- Outsourcing management
- Replacement analysis
- Disposal
- Continuous Improvement
- Planning and Budgeting for all of the above.

3. *What is the difference between a life cycle asset management plan and a planning period asset management plan?*

   a. A Life Cycle Asset Management Plan is a plan formed by identifying the maintenance, repair and overhaul activities for the particular asset type over its whole or remaining life.

b. A Planning-Period Asset Management Plan is a plan is for the management of a whole portfolio of assets over a given time period, such a 1, 5, or 10 years. This is the type of plan that we need for developing budget proposals for the management of our in-service assets.

4. *What top-down factors can influence the management plan for in-service assets?*

   a. Market demand,
   b. Product changes,
   c. Technical changes,
   d. Changes in the business structure or strategy,
   e. Changes to the business plan.

5. *What bottom-up factors can influence the management plan for in-service assets?*

   a. Need to replace equipment
   b. Need to upgrade equipment
   c. Need to maintain, restore, or upgrade the service level
   d. Technical or regulatory changes affecting operations or maintenance.

6. *Identify four reasons for having a planning-period* (*e.g., 5 year*) *asset management plan.*

   a. Informs senior management and other stakeholders of the current role and status of assets
   b. Informs senior management and other stakeholders of the current role and status of the systems used to support the assets
   c. Summarizes asset management plans for both assets and support services over the designated planning horizon
   d. Links the current business plans and asset management plans
   e. Links the asset plans to the CAPEX and OPEX budgets.

11.10.2 Configuration Management Solutions

1. *What is configuration management?*

   a. Configuration management involves keeping track of technical details of the assets in a fleet in regard to all the factors which are important for operation and maintenance.

2. *Why is configuration management needed?*

   a. If configuration management is lacking, an organization can find itself with an unknown mixture of equipment configurations, creating problems for operations, maintenance, and logistic support. Configuration management is important in relation to change management.

3. *List ten characteristics of a bus which you would expect to feature in configuration management data.*

Configuration data will include:

- Registration number
- Year of manufacture
- Make and model
- Engine type
- Engine serial number
- Fuel type
- Fuel capacity
- Kerb mass
- Length
- Width
- Height
- Wheelbase
- Turning circle
- Maintenance data document reference
- Engineering drawings reference
- Headlight type
- Transmission type
- Cruise control yes/no
- Number of seats
- Upholstery type
- Seat belts fitted yes/no
- Air conditioning yes/no
- Audio system
- Entertainment system
- Sunroof
- Navigation system
- Stop distance
- Tyre size and type.

11.11 Roll Over

Bruce pulled in beside Norm on the beach at Cable Bay. He jumped down and got a Darwin stubbie from the Esky.

"You got a new ute?" he asked.

"No, I cleaned it," said Norm.

"What about the roll-bar, that's new. Who put it on?"

"That little fabrication shop near the old pearl luggers. We all have them now. We've got a contract to do Non-Destructive Testing on the gas pipelines. Our boss

rolled his ute on a trip to Uranus Island and was lucky only to break his arm, so now it's become a safety thing. Weren't you supposed to get roll-bars ages ago?"

"Too right. It was after we had a fatal down by the dinosaur footprints. They sent out an engineer, Tom Peirce—I knew him from uni—and he drew up plans for roll-bars. But nothing happened. I saw him again later and he said that the engineering branch had said that they couldn't approve it because there wasn't an official standard to check it against."

"Sounds like a cop-out. They don't want to sign off and then get blamed if it's not perfect."

"Anyway, Tom said the operations people pushed them on it and they decided to do some tests. Apparently his design only covered 90 % of situations."

"90 % would be better than 0 %."

"There was another problem. We bought these utes over a few years and some were imported, some locally assembled from kits and some modified since in various ways. So the configurations are all over the shop, and apart from the original purchase records there is no documentation."

"So they would have to look at every vehicle separately. Not short of money are they?"

"Short of money! Not Canberra. No, there were actually going to do it, but someone pointed out that these utes were past their replacement age anyway so it wasn't worth doing."

"But you're still driving them!"

"Yes, but there is a big fleet replacement project in the works. Could come through any time—but I'm not holding my breath."

"Let's hope that you hold on to your head."

"Hey, look at that chick on the last camel."

"Wow!"