

Management Systems

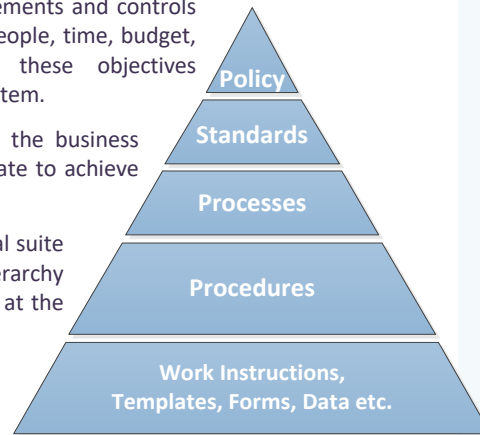
A Management System defines how a business plans, implements and controls its activities to achieve objectives using its resources (e.g. people, time, budget, plant, equipment). The quality and consistency of these objectives (outputs/achievements) rely on an effective management system.

The complexity of a management system will depend on the business activity and size. Multiple management systems may integrate to achieve different objectives.

A management system is generally described in a hierarchical suite of documents; the lower-level documents within the hierarchy support and provide detail on the requirements established at the higher-levels.

Documents within a management system describe processes and provide instructions on how objectives are to be met through defined, measurable actions with assigned responsibilities.

A management system is not only documentation; *it is also implementation, monitoring and review.*



Documentation Framework

Common documents in a Management System:

- > **Policies:** set-the-scene; providing guidelines, rules and principles that give broad direction. Policies define the intention and objectives of the business. Policies set targets (for example: product quality) and guide strategic planning.
- > **Standards:** define expectations and performance metrics, setting benchmarks that the business must meet or exceed. These may be generated internally or be external standards (for example: Australian Standards).
- > **Process:** a set of interrelated activities that require the use of resources to transform inputs into outputs (add value). A process can be represented by a process map, which illustrates the key activities and their interrelation, providing an overview of what needs to be done. Every process has specific procedures, work instructions and data that define scope, responsibilities, steps and outcomes. See example processes below.
- > **Procedures** describe in detail the individual steps needed to achieve (implement) the objectives, expectations and benchmarks set in policies and standards; as well as activities defined within a process. Procedures describe explicitly what must be done, when and by whom.
- > **Work instructions, templates and forms** are tools to address and enable specific steps in a procedure, providing further detailed guidance and consistency.

Management Systems Related to Engineering Organisations

There are many types of management systems, some of which are described by national and international standards, including:

- > ISO 9000 Quality management systems standards
- > ISO 14000 Environmental management standards
- > ISO 45001 Occupational health and safety management systems
- > ISO 50001 Energy management systems – Requirements with guidance for use
- > ISO 55000 Asset management
- > AS/NZS 4801:2001 Occupational health and safety management systems
- > AS/NZS ISO/IEC/IEEE 15288:2015 Systems and software engineering - System life cycle processes

There is no published standard for Engineering Management Systems.

Engineering Management Systems – Example Processes

A business that designs a product could have the following processes:

- > **Engineering Management Process**, including:
Requirement Specification – Design – Hazard Identification – Design Review – Design Verification – Design Validation – Document Management
- > **Project Management Process**, including:
Planning – Meeting – Request for Information – Project Risk Management – Document Management

Processes will interact with one another. For example, an output of one process (e.g. a service, software, decision, report) may be an input in another process. Processes must therefore be managed within a management system.