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CANSO Framework for ANSP Management Systems

CANSO thanks all contributors to this Standard of Excellence 'A Framework for ANSP Management Systems' from the CANSO Quality Workgroup and CANSO Business Excellence Workgroup and in particular Giles Pateman (NATS), Keith Mallam (NATS), Kjersti Disen (Avinor), Jana Surinova (LPS SR) and Jose Antonio Aznar (AENA) as the main authors.

In order to really implement an effective management system, there are lots good practice standards available and supporting consultants and groups that can help. Background information is available on the CANSO Business Excellence Workgroup area and this group can also provide additional support where requested.

Please contact the CANSO Secretariat for more information.

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Executive Summary

A growing number of organisations within the civil aviation sector are adopting standardised management systems to reinforce their performance and guarantee the reliability of their results.

This framework provides a pathway for air navigation service providers (ANSPs) to develop their management systems to ensure that they gain maximum benefit from their processes, activities and actions. It also forms a strong baseline for discussing organisational needs between ANSPs, benchmarking and continuous improvement.

To function effectively, an organisation needs to identify and manage numerous linked activities; this is often achieved through process management.

When used within management systems, such an approach emphasises the importance of:

- Understanding and meeting business requirements
- The need to consider processes in terms of added value
- Obtaining results of process performance and effectiveness
- Continual improvement of processes based on objective measurement

This framework does not supersede either domestic or international regulations and can be used in conjunction with the *CANSO Standard of Excellence for Safety Management Systems*, the *CANSO Standard of Excellence for Auditing* and the *CANSO Fitness Check* which can be found on the CANSO website **www.canso.org**.

1
Context

Over the last decade, a growing number of organisations within the civil aviation sector have adopted standardised management systems to reinforce their performance and guarantee the reliability of their results.

Many ANSPs developed their own management systems to ensure their service performance but this has also been boosted through the need to meet ICAO requirements, implementing quality management systems and procedures in support of ICAO Annexes such as Annex 19 (Safety Management) and Annex 15 (Aeronautical Information Services).

In addition to that, Amendment 72 to ICAO Annex 3 "Meteorological Service for International Air Navigation", effective on 1 November 2001, introduced recommended practices concerning quality control and management of meteorological information supplied to users and in the training of meteorological personnel. Aligned as far as possible with "quality system" provisions in ICAO Annex 15, these provisions recommend conformity with the ISO 9000 series of quality assurance standards.

ANSP management should ensure that standards in operational service delivery and safety are as are good as reasonably practicable, while ensuring cost-efficiency. To deliver and assure that an ANSP is providing an optimal balance of safety, service and value, requires a formal and proactive approach to managing the delivery of ANSP services.

Safety management systems (SMSs) are widespread throughout ANSPs and many ANSPs are now embracing quality management systems (QMSs) to enhance customer satisfaction through continual improvement of internal processes and conformity to customer and applicable statutory and regulatory requirements. In addition more ANSPs are developing and implementing related systems such as environment management systems (EMSs), security management systems (SecMS) and health and safety management systems (H&SMS). It is recognised that many businesses also have dedicated management systems covering other business aspects such as finance, human resources or legal that may be based on very different models. However, all systems follow similar principles and work most effectively when implemented in a coordinated manner.

2
Management System Background

ISO 9000:2005 defines a management system as a 'set of interrelated or interacting elements to establish policy and objectives and to achieve those objectives'. Expanding on this definition, perhaps the clearest interpretation of this is that a business management system is: 'The structure, processes and resources needed to establish an organisation's policy and objectives and to achieve those objectives.'

Traditionally, separate management systems were developed to address issues such as safety, quality, environment, health and safety, finance, human resources, information technology and data protection. Other aspects of running an organisation which need to be managed include corporate social responsibility, data security, risk management and business continuity. The resultant multiplicity of systems is now recognised as wasteful and confusing, and there is a welcome recognition that such standards should have a common format.

A more constructive and pragmatic approach is to focus on the organisation's mission, its stakeholders and their needs, to define how the organisation will satisfy these needs (i.e. its processes) and to be clear about what it needs to do to ensure that these processes are effective.

It is also worth stressing that the 'management system' exists whether or not it has been defined (in the same way as a process exists even if it has not been described in narrative or flowchart format). Especially in very small organisations, people know what to do (and do it) without having to refer to forms, checklists or written procedures.

3
Status of the CANSO Standard of Excellence in Management Systems

The standard promoted by CANSO does not supersede either domestic or international regulations.

This standard draws on the experiences of CANSO members and aims to complement and supplement existing standards rather than mirror any particular standard. We have endeavoured to ensure the integrity of this CANSO Standard of Excellence as far as possible.

This standard provides a pathway for ANSPs to develop their management systems to ensure that they gain maximum benefit from their processes, activities and actions. It also forms a strong baseline for discussing organisational needs between ANSPs, benchmarking and continuous improvement.

CANSO recommends the use of the standard as guidance to CANSO members, but its application is not binding.

The purpose of this standard is to:

- Transfer learning, benchmarking and continuous improvement across the industry
- Provide an overview of the key considerations to developing and integrating management systems within an ANSP
- Provide information on how members can build management systems which are commensurate to the size and complexity of its specific operation
- Provide a path for continuous improvement beyond that required by both international and domestic regulations.

4
Management System Principles

ISO9000 series of standards are based on eight management system principles; this section outlines the 'process approach' and the benefits that it delivers.

The principles listed below can be used by senior management as a framework to guide their organisations towards improved performance:

- A customer focused organisation
- Leadership
- The involvement of people
- Ensuring a process approach
- A systematic approach to management
- A factual approach to decision making
- Mutually beneficial supplier relations
- Continuous improvement

To function effectively, an organisation needs to identify and manage numerous linked activities. An activity using resources, and managed in order to enable the transformation of inputs into outputs, is considered as a process. Often the output from one process directly forms the input into the next.

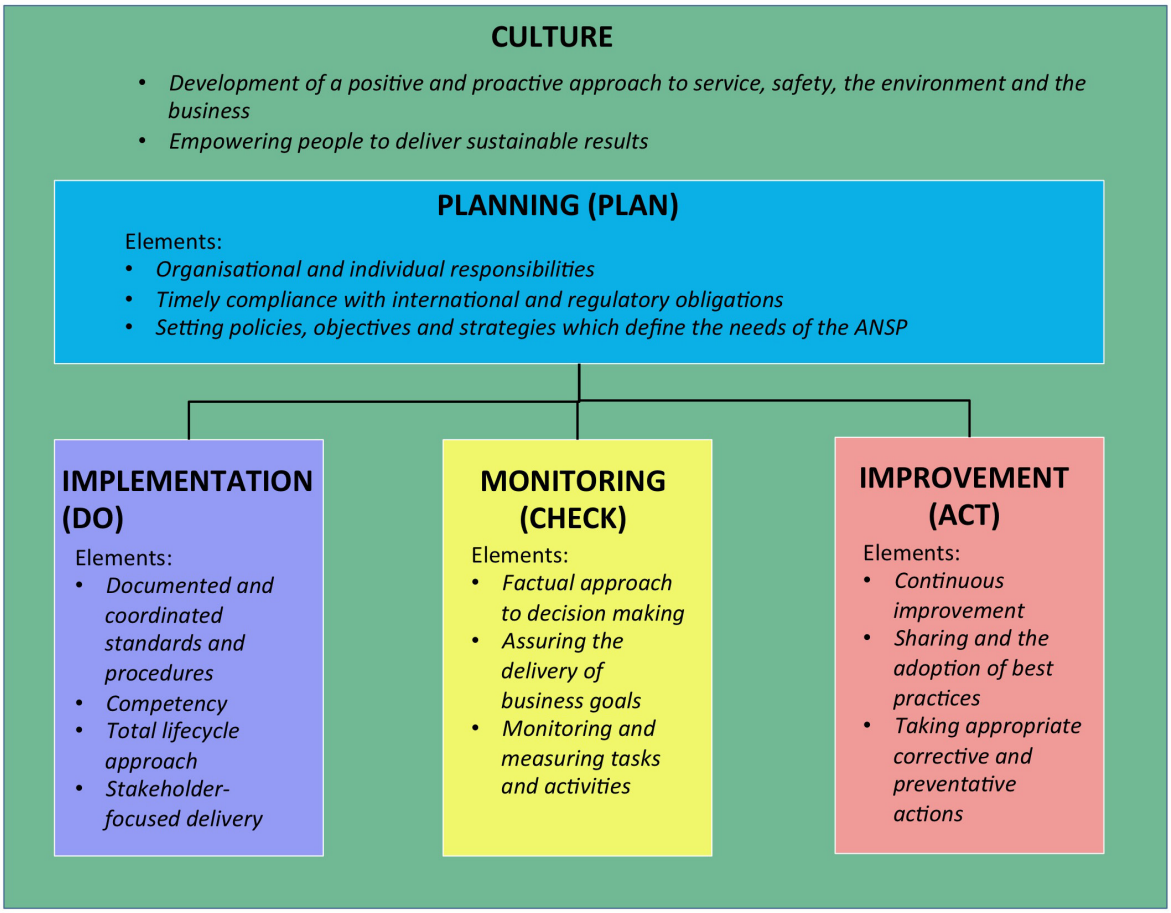
The application of a system of processes within the organisation, together with the identification and interactions of these processes, and their management, are referred to as the "process approach".

An advantage of the process approach is the continuous control that it provides over the linkage between the individual processes within the system of processes, as well as over their combination and interaction.

The methodology known as "Plan-Do-Check-Act" can be applied to all processes (safety, security, environment, quality, and business activities) and is described below:

When used within the quality management system, such an approach emphasises the importance of:

- Understanding and meeting requirements
- The need to consider processes in terms of added value
- Obtaining results of process performance and effectiveness
- Continual improvement of processes based on objective measurement



All the management systems referred to in this document are based on the same principles. Consequently, they contain some common aspects which are the key issues to consider when integrating systems because they can be performed in a homogeneous and assembled way. For example:

- Quality management systems aim to achieve customer satisfaction by meeting their requirements: they involve the identification of customer requirements, their satisfactory implementation by the prevention and correction of non-conformities, and measurement of the achieved quality.
- In a similar manner, safety management systems aim to ensure the freedom from unacceptable risk in the provision of Air Navigation Services: it requires identifying hazards, to assess the associated risk and to implement risk mitigation means. It also provides assurance that this has been done.

The benefits of management systems for ANSPs are listed below:

COMMON BENEFITS	COMMON ASPECTS
CUSTOMER FOCUS: Consistent delivery of company objectives	Focused objectives that meet the business and customer needs with supporting mechanisms enable the delivery of value-added business activities
LEADERSHIP: Visibility of the values, goals and ethics of the organisation	The right management systems support great leadership by empowering people to deliver optimal performance
PEOPLE: People understand the importance of their role and contribution	Everyone within the organisation, individually and collectively, understands how their activities contribute to the business objectives
PROCESS: Management by processes rather than through organisations	— Performance is delivered through the right people, doing the right things at the right time — Tasks are managed in a coordinated manner for the benefit of the company
SYSTEMS APPROACH: Optimised use of resources	— A systems approach that shows how the inter-related processes contribute to the organisations effectiveness — A structure that supports the development of an organisation's capability
SUPPLIER RELATIONS: Clarity of business dependencies	— Enables supplier relationships that support the long-term objectives of the businesses through clearly understood value propositions — Supports joint development and improvement activities
DECISION MAKING: Right monitoring and actions	— Ensuring that reviews, measures and audits are clearly linked to business outcomes — Decisions can be made on an informed risk-based approach
CONTINUAL IMPROVEMENT: Optimised delivery	— Provides a baseline from which to show demonstrable improvements — Enables improvement to be embedded into day-to-day activities

5
Overview of Management Systems

There are a number of ways to represent a management system; choosing an approach that has the best 'fit' with the organisation increases the likelihood of its adoption by the users. As usability improves, so will compliance to the system. Examples are shown below.

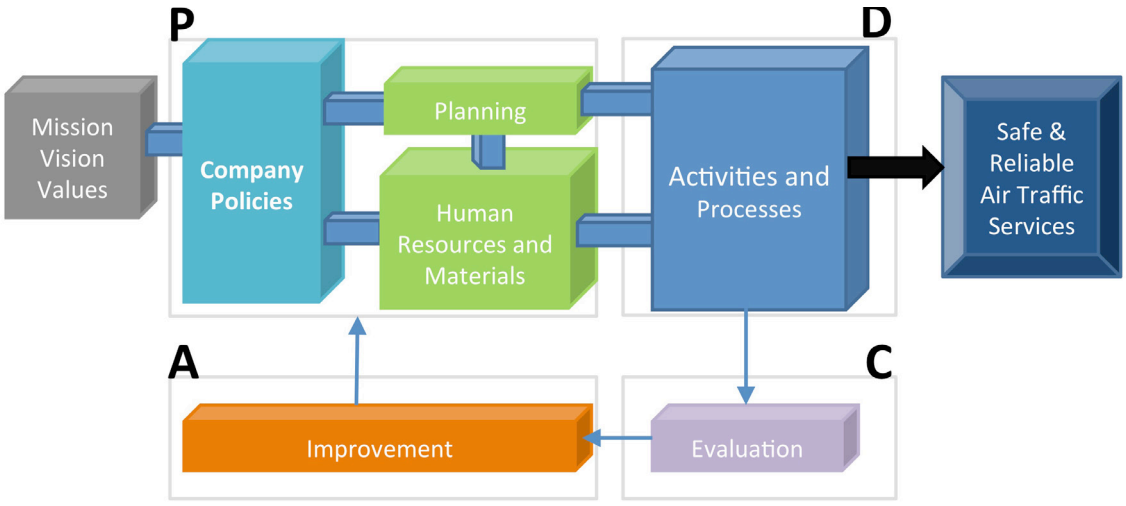
Management systems are implemented for most companies to ensure that they provide sustainable and repeatable results that are aligned to stakeholder needs.

Management systems can be represented in many ways and often contain electronic search functions and role-based views to support user engagement and usage. Listed below are the overviews that are most commonly used within ANSPs; these are not exhaustive and many ANSPs have multiple views to support usability. All types of management systems work on a process view and should be aimed at supporting the needs of the business and empowering individuals to optimise their activities.

5.1 Management system based on Plan-Do-Check-Act principles

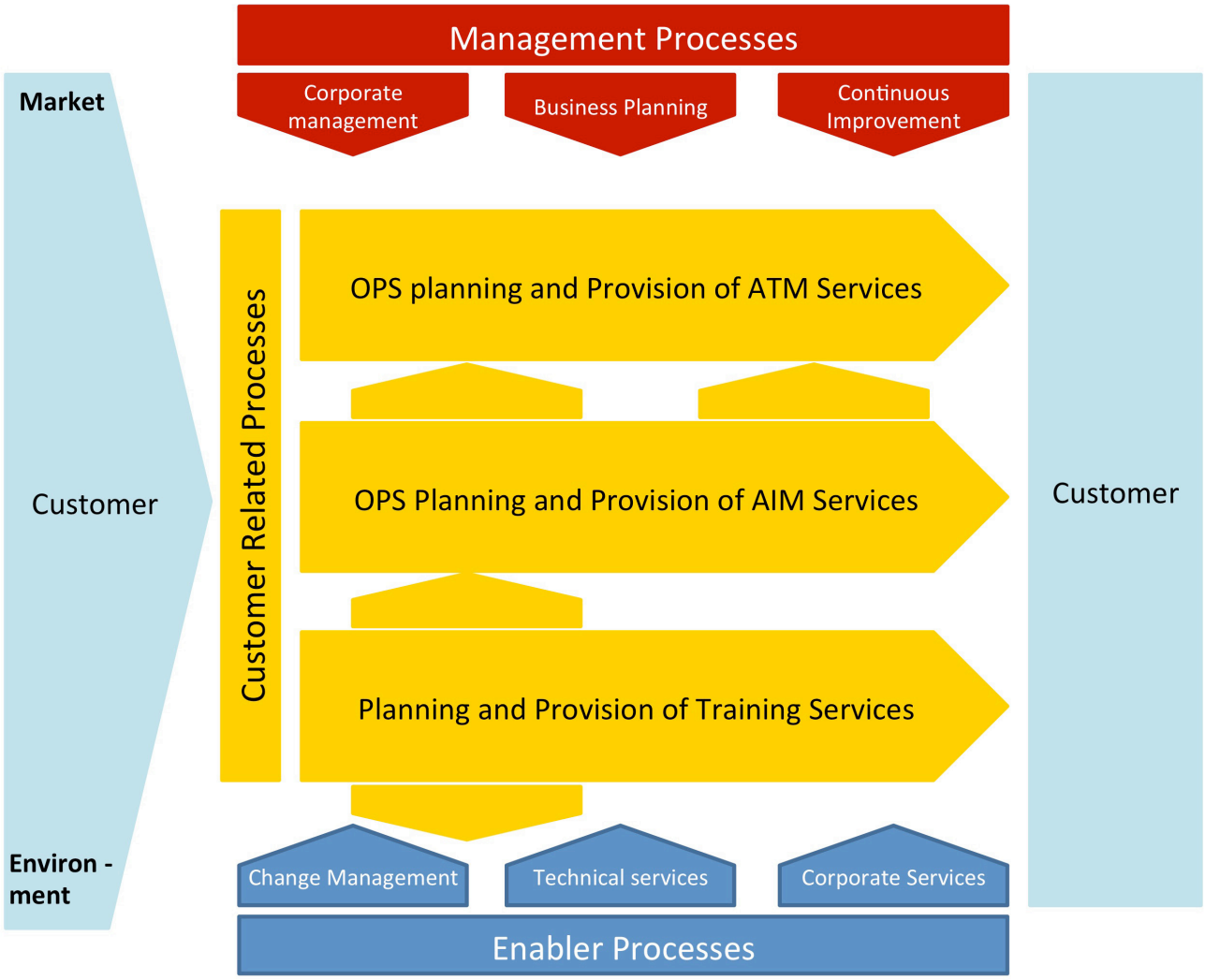
This highlights clear traceability from an ANSP vision, though its processes to deliver customer orientated results.

This representation focuses the ANSP on clear outcomes, assurance mechanisms and improvement activities. Many local management systems and safety management systems are based on this representation.



5.2 Management system based on the value-chain approach

This representation focuses on the main lifecycles of the business and how stakeholder needs are captured and met. It recognises that management processes and support processes support many of the core processes and so have a looser connectivity. This is the most common approach to management systems for ANSPs.



5.3 Management system based on a functional breakdown

The representation is generally focused on the major functions of an ANSP and shows clear links from individual policies to related processes.

This approach is useful for smaller ANSPs or ANSPs that are just starting to develop their management systems; however, it can limit the effectiveness of an ANSP as functions can overly-focus on their own objectives above those of the wider business.

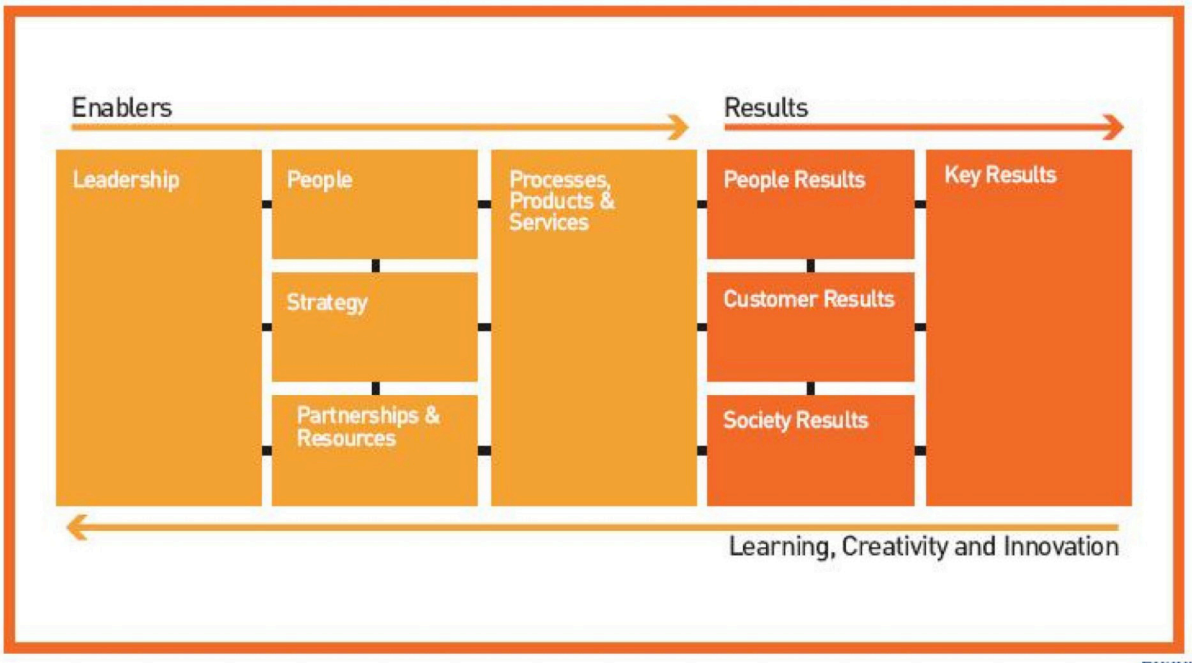
Example of Process vs Department Matrix

DEPARTMENT \ PROCESS AREA	Architectural Design	Asset Management Planning	Business Planning	Training & Competence	Finance & Governance	Operations / Production	Human Factors	Incident Management	Inventory Management	Investment Management	Management System	Ordering	Programme & Project Management	Plant Maintenance	Quality	Resource Planning & Management	Safety & Security	System Engineering Management	Tenders and Supplier selection
Airspace	✓	✓		✓												✓			
Asset Management		✓			✓				✓	✓			✓				✓		
Business Development					✓	✓													✓
Engineering	✓	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	
Finance		✓			✓	✓				✓			✓			✓			
FM	✓							✓					✓			✓			
Corporate Governance			✓	✓	✓	✓				✓	✓			✓					
HR				✓		✓										✓			
Human Factors	✓			✓		✓	✓												
International																			
Operations				✓		✓	✓	✓	✓					✓		✓			
Programmes					✓		✓			✓		✓	✓		✓	✓	✓		✓
Quality & Inspection				✓		✓					✓		✓		✓				
Safety	✓	✓				✓		✓								✓			
Security						✓		✓								✓			
Supply Chain Management					✓	✓			✓			✓							✓
Strategy	✓	✓	✓	✓	✓	✓				✓	✓								
Training				✓		✓	✓												

5.4 Management system based on performance delivery

Models such as EFQM (European Foundation for Quality Management) or ITIL (Information Technology Infrastructure Library) provide useful overviews of the key constituent parts of a management system and provide a mechanism for developing and delivering a service-orientated lifecycle.

These approaches are particularly useful for benchmarking with other industries and focusing on the delivery of an ANSP's service.

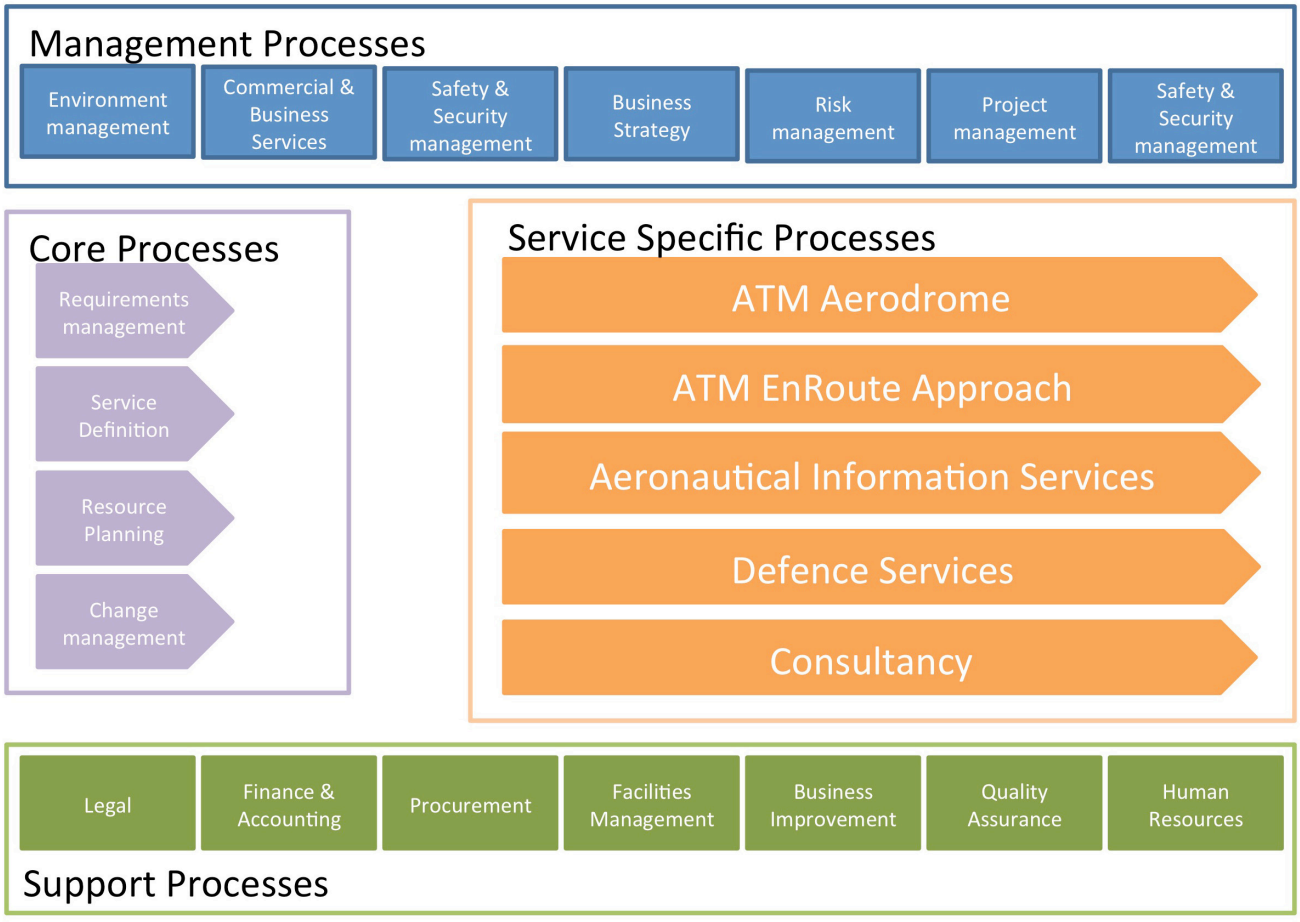


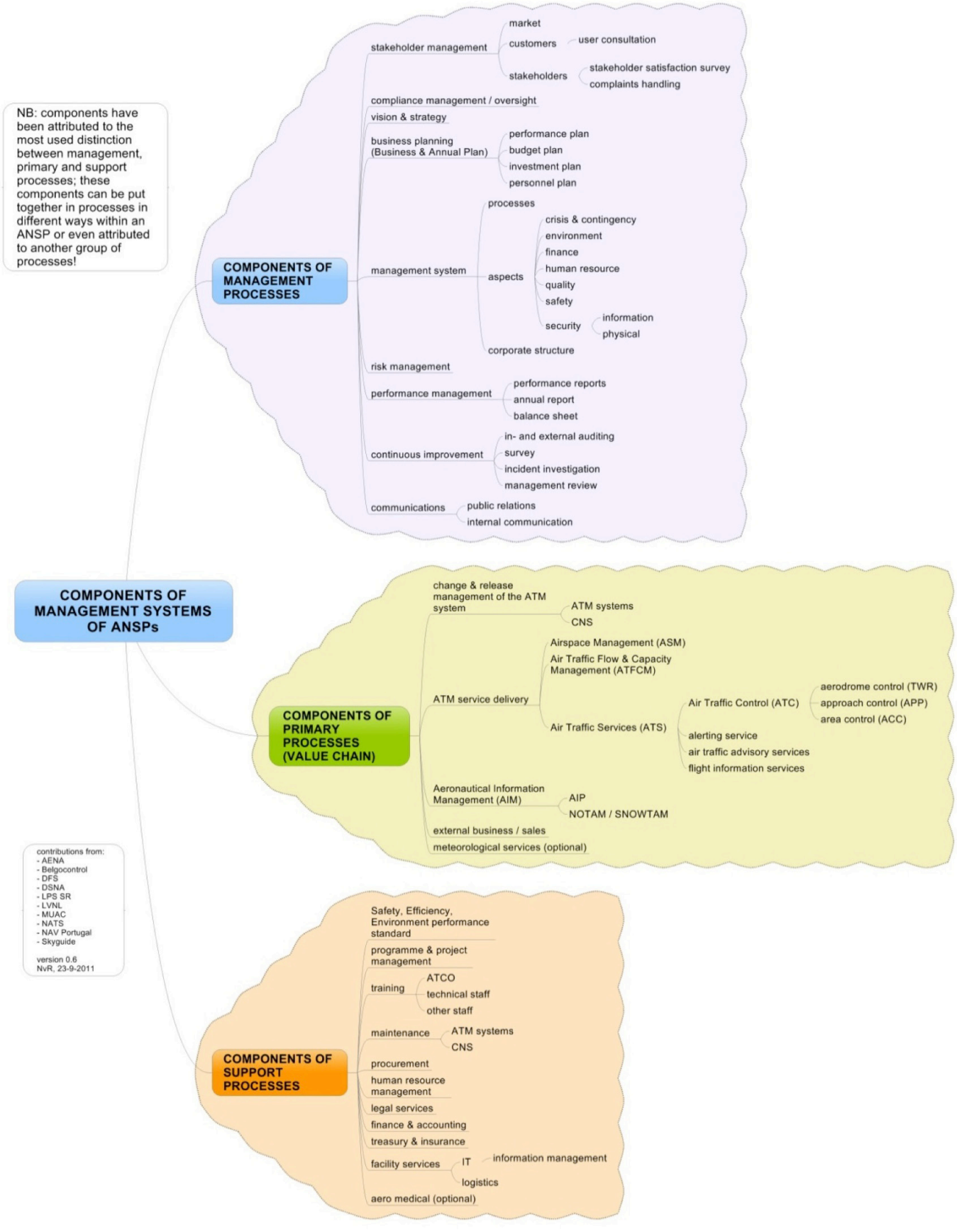
5.5 Management system based on product, geography or business type (e.g. centres, airports, CNS and AIM)

This representation is generally used where the business needs of different parts of the business are significantly different, however this approach often works best when combined with functional or value-chain approaches to ensure that best practices and shared services are coordinated wherever possible.

6
Overview of ANSP management system

When planning a management system the key processes should be identified and structured according to organisational need. All ANSP schemes are different depending on context, history and culture though many share similar elements. The diagram on the next page highlights the various aspects of a potential breakdown of processes and sub-processes within an ANSP (based on examples from ANSPs within the CANSO Business Excellence Workgroup).




COMPONENTS OF MANAGEMENT SYSTEMS OF ANSPs
NB: components have been attributed to the most used distinction between management, primary and support processes; these components can be put together in processes in different ways within an ANSP or even attributed to another group of processes!
COMPONENTS OF MANAGEMENT PROCESSES
stakeholder management
market
customers
user consultation
stakeholders
stakeholder satisfaction survey
complaints handling
compliance management / oversight
vision & strategy
business planning (Business & Annual Plan)
performance plan
budget plan
investment plan
personnel plan
management system
processes
aspects
crisis & contingency
environment
finance
human resource
quality
safety
security
information
physical
corporate structure
risk management
performance management
performance reports
annual report
balance sheet
continuous improvement
in- and external auditing
survey
incident investigation
management review
communications
public relations
internal communication
COMPONENTS OF PRIMARY PROCESSES (VALUE CHAIN)
change & release management of the ATM system
ATM systems
CNS
ATM service delivery
Airspace Management (ASM)
Air Traffic Flow & Capacity Management (ATFCM)
Air Traffic Services (ATS)
Air Traffic Control (ATC)
aerodrome control (TWR)
approach control (APP)
area control (ACC)
alerting service
air traffic advisory services
flight information services
Aeronautical Information Management (AIM)
AIP
NOTAM / SNOWTAM
external business / sales
meteorological services (optional)
COMPONENTS OF SUPPORT PROCESSES
Safety, Efficiency, Environment performance standard
programme & project management
training
ATCO
technical staff
other staff
maintenance
ATM systems
CNS
procurement
human resource management
legal services
finance & accounting
treasury & insurance
facility services
IT
information management
logistics
aero medical (optional)
contributions from:
- AENA
- Belgocontrol
- DFS
- DSNA
- LPS SR
- LVNL
- MUAC
- NATS
- NAV Portugal
- Skyguide
version 0.6
NvR, 23-9-2011

7
Management system evolution

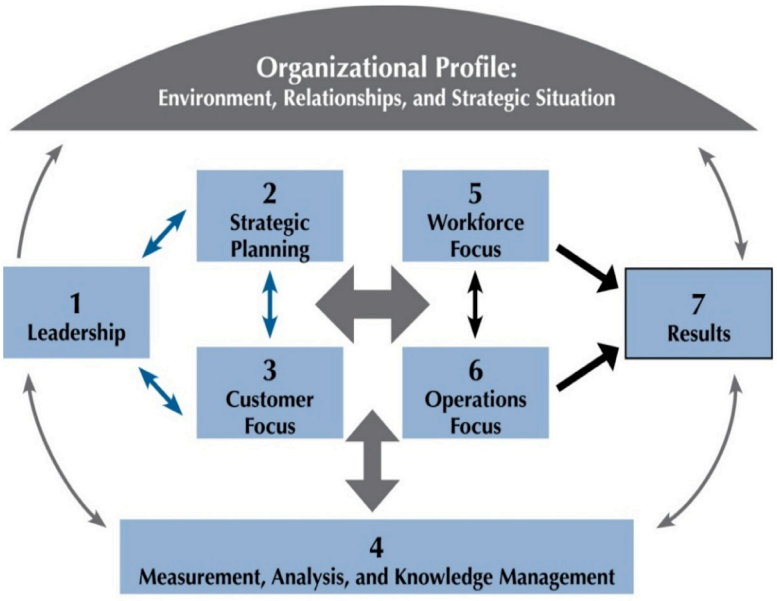
A management system will find itself under constant review, either by users identifying errors or opportunities for improvement while using an individual process, or by third party assessors. Periodically a management system requires a structured high level review to ensure it continues to support the organisation's strategies and high level plans. This section outlines some best practice frameworks to set up management systems and also the phases a management system goes through as it evolves.

In order to really implement an effective management system, there are lots good practice standards available and supporting consultants and groups that can help. The CANSO Business Excellence Workgroup can provide additional support when requested.

7.1 Overview of Management System Guidelines

The implementation of management systems will evolve over time and to be most effective these systems need to focus on the specific needs of the ANSP while providing sufficient flexibility for the evolution of the ANSP. There are many frameworks that can be used to support ANSPs to support the development and maturity of their management systems. The most prevalent ones in our industry are:

- **Baldridge Excellence Programme:** Criteria for Performance Excellence from the National Institute of Standards and Technology (example overview shown below).
- **ISO 9001/2008 and ISO 9004/2009:** Quality Management Systems & Guidelines for Performance
- **EFQM Excellence Model:** Non-prescriptive framework for organisational management systems from the European Foundation of Quality Management.
- **CMMI:** A process improvement training and appraisal program that covers the implementation of a maturity model from Carnegie Mellon University.



From Baldrige Performance Excellence Program, *2013, 2013–2014 Criteria for Performance Excellence* (Gaithersburg, MD: U.S. Department of Commerce, National Institute of Standards and Technology, http://www.nist.gov/baldrige/publications/business_nonprofit_criteria.cfm).

7.2 Typical Steps in Developing a Process (or Management System)

How well a management system meets its objectives will depend on how effective and efficient the business operations are in practice. So the design (or recognition) of an organisation's management system relies on an implicit or explicit acceptance of the need for each of the component parts.

The following diagram shows a thought process that may help to develop a specific process or process set (pictures are included for representative purposes only).

- Steps 1-4 (on the left hand-side of the diagram) focus on the process champion / owner aligning activities, processes and people to meet the strategic outcomes of the ANSP (embedding good practice)
- Steps 5-7 (on the right-hand side of the diagram) focus on the process champion / owner optimising the implementation of the processes.

1. Recognise The Business Drivers

- Strategy, Stakeholder and Customer needs and any external interfaces and drivers

2. Understand the Business Activities

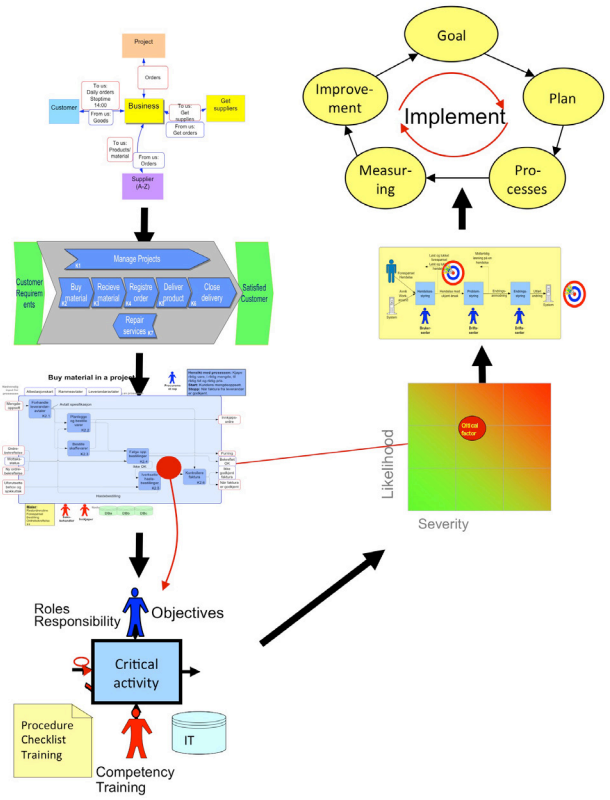
- Activities and the relationship between activities, key processes and strategic objectives

3. Identify Critical Processes

- Understanding the key processes, their coordination, dependencies and key outputs

4. Recognise Roles and Responsibilities

- Ensure that key roles and responsibilties are captures and that ownership is defined



7. Implementation and Improvement

- Implement appropriate processes and ensure that a culture of implementaiton and continuous improvement is embedded

6. Measure Effectiveness

- Implement appropriate KPIs and performance measure to ensure the continues effectiveness of the management systems

5. Identify Business Risks and Prioritise Processes

- Understand any associated risks and impacts of processes to support prioritisation of management needs

7.3 Typical Stages in Developing a Management System

With higher levels of management system maturity, ANSPs will obtain more consistency in their delivery but there is an overhead associated with this. Whatever system is developed should reflect the needs of the business and be cost effective. In particular, lower levels of management system maturity may provide the most value for smaller or simpler ANSPs. The following table shows how the maturity of a complete management system could be assessed and includes a general comparison to some equivalent capability models (CANSO Fitness Check Pt 1, CMMI and ISO9004):

General Capability Maturity Stages	Example Equivalents		
	FCPt1	CMMI	ISO9004
NO FORMAL APPROACH: No systematic approach evident, no results, poor results or unpredictable results. Only some (localised) working procedures or instructions in place.	1	1	1
FUNCTIONALLY-FOCUSED: Within ANSPs management systems are initially established to demonstrate compliance with legal obligations. — Activities organised by function — Focus on legal obligations and compliance — Documented key activities — Defined legal accountabilities — Listed local processes	2	1 -> 2	1 -> 2
SYSTEM APPROACH: By creating a coordinated approach to business-wide process management the company can bring together different domains (such as safety, security, engineering etc.) to create a harmonised approach to business delivery. Processes are defined and there is a systematic process-based approach: — Coordinated processes — Optimised business systems — Business-wide roles and activities defined consistently — Consistent and sustainable application	3-4	3	3
MEASURED APPROACH: Once a management system is embedded within an ANSP, where necessary, and in particular for larger ANSPs, management systems can be used to help optimise business performance through measuring the effectiveness of activities that are used to achieve business outcomes — Data driven conformance to objectives — Improvement trends established — Decisions based on sound and complete information	4	4	3-4
OPTIMISING: Finally, by embedding a continuous improvement culture ANSPs focus on evidence-based optimisation based on the relationship between processes and business outcomes. — Improvement focused culture — Strongly integrated processes — Benchmarked — Addressed the needs of current and emerging interested parties	5	5	4-5

7.4 Potential Challenges to Management System Evolution

What barriers can make it difficult for a management system to achieve its objectives? Unfortunately, there are several:

- The traditional (departmental/ functional) budget and reporting structures within an organisation can introduce or even reinforce conflicts within departments and make it difficult for those involved to work together
- Management behaviour may not match the approach which staff are told to follow.
- Objectives may not be clear or may be conflicting
- Policies may conflict and many systems may lack clarity
- Although it is commonly accepted that the process view of business life is the most constructive way to view operations, the level of understanding of these concepts is often well short of what is required

8
Major Considerations

Gaining acceptance of a management system, especially a new system, requires careful thought. This section considers a variety of aspects such as culture, organisation, technology that should be taken into account during the development activity.

8.1 Business Culture

The importance of the management system should be championed by the senior management team. They should provide the momentum to the business to develop, adopt and maintain an effective management system that is resilient to organisational and people changes that continues to meet the needs of the business.

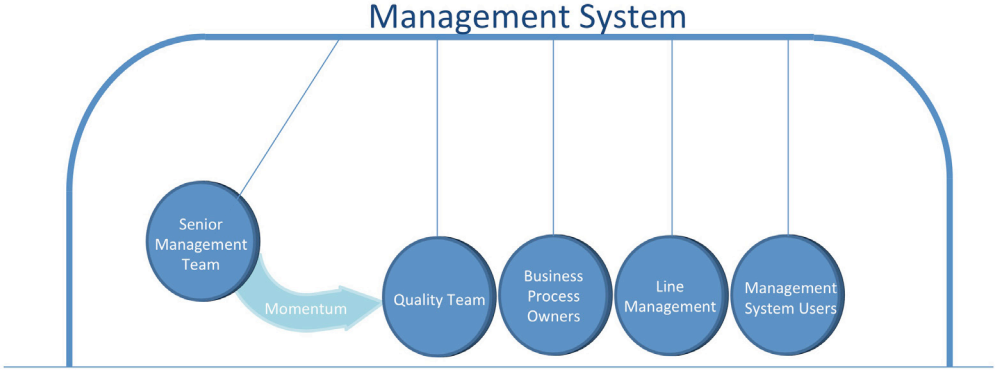
Without this momentum the management system is likely to remain static and/or become ineffective. The greater the visibility of senior management commitment to the management system, the easier it will be to ensure it accurately captures business best practices and is adopted by all staff, as illustrated in the diagram below.

It is important that staff understand the need to follow defined processes to ensure consistent delivery of objectives. However, everyone should be actively encouraged to identify opportunities for more effective working but these should be managed to control and assess any risks resulting from changes.

While the management system is often administered and governed by the quality function, ownership should be dispersed throughout the organisation. The identification and empowerment of business process owners (or champions) is pivotal to the adoption of the processes across the business. Business process owners are best placed to understand the needs of the business and the level of granularity required within the documentation.

It is important to find the right level of detail for process documentation. In general, over-prescription could reduce the effectiveness of individuals but equally an absence of detail could lead to variations in application and potentially the output quality. In general, less prescriptive documentation is needed for personnel with greater experience or capability.

The management system should reflect how the business operates, consistently satisfies the needs of its customers and effectively engages with its suppliers. The management system should be seen as a means of helping the business develop and deliver rather than simply used to constrain and govern the business.



8.2 Organisational Structure and Business Processes

Organisations are often structured around disciplines such as engineering, finance, human resources and these are often managed as individual departments. This enables common skills to be grouped in one area and enables effective people management. Consequently policies, processes and procedures also tend to be developed in these departments.

The activities needed to provide services and ensure customer satisfaction, are generally not performed by one single department or unit and processes that are implemented across departments need to be carefully aligned to reduce the risk of business inefficiencies.

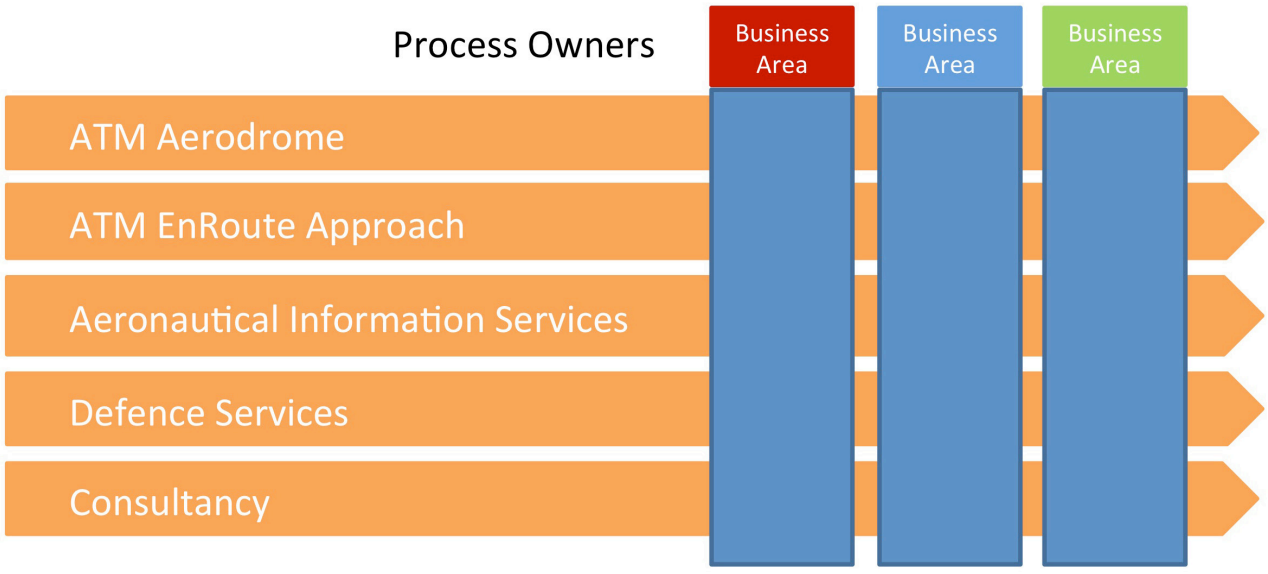
Processes can be viewed as one continuous flow of activities that involve different departments.

Part of the maturing of the management system should ensure that the key business processes reflect the purpose of the organisation and not just individual departments (see diagram below).

Similarly the development of the management system can be expected to result in changes to the organisation's structure as roles and responsibilities are created and developed.

When implementing a management system, the processes should be designed to support the business strategy. This requires the business to have a clear understanding of the strategic direction, objectives and goals. These may change periodically and the management system should continue to support these.

The organisation should use its management system to understand the end-to-end processes of the business while ensuring that key functions clearly understand their roles and accountabilities. Good practice is for organisational structure to be aligned to key processes.



8.3 Documentation Management

The effectiveness of any management system is predicated on how easy it is to use. In designing an effective management system, careful consideration should be given to the following:

8.3.1 Who are the users?

Understanding who will be the primary users of the document management system will help determine the level of detail required in the various types of documentation. This will vary between disciplines, the competency/experience of the users and depending on the importance of processes. There should be careful consideration of the language, terms of reference and acronyms to avoid potential misunderstanding or confusion (especially if referenced by external personnel or across multiple-business areas). These issues will also influence what level of worked examples and guidance is required.

8.3.2 How is it going to be used?

It is important to understand how documentation will be used and accessed. For example, the use of hyperlinks is useful when accessing documents electronically but do not help if using paper-based copies. Equally, if personnel tend to use paper-based copies of document, then version control and the release of updates is important. It is also important to ensure that there are sufficient copies of any paper-based procedures available as required; in particular for emergency procedures.

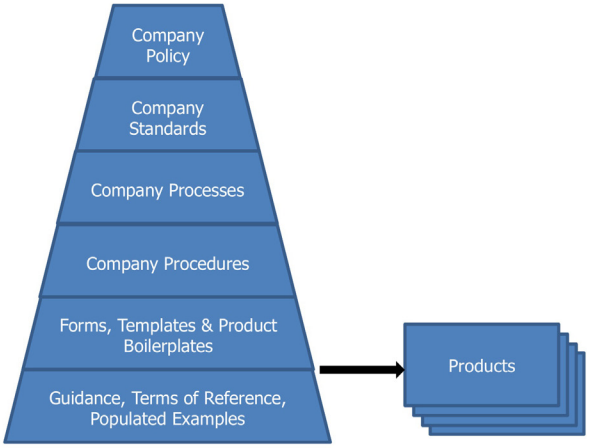
8.3.3 Taxonomy

The key for a well-designed and documented management system is to understand the relationships between documentation types, their purpose and how they will reference each other. If every document attempts to reference all documents to which it relates, this would be incredibly labour intensive to maintain so establishing effective rules is important. Above is an example of how documents might be related. When developing processes, consideration should be given to how documents are related, how the underlying processes may interact and how errors in implementation (through mis-reading or mis-application) can be avoided.

Guidance around branding, copyrighting, language or restrictions may need tailored appropriately. When considering new process development, finding and adapting an existing standard is usually less effort then writing and maintaining a bespoke standard for the business.

8.3.4 External considerations

The document management system is often used as a means of demonstrating how legislation and regulation is to be adhered to. An effective mechanism to clarify which parts of the document management system are impacted by changes to specific legislation and regulation is important. While a matrix may exist to clarify this aspect, it is recommended that the documents themselves refer to the actual legislation or regulation they support. The benefit of this approach increases the visibility of any externally referenced material and will help ensure that the impact of any amendments are effectively assessed to ensure continued compliance.



8.3.5 Maintenance

Having an effective change control mechanism is critical if all elements of the management system are to remain interconnected, reflect current practice and remain fit for purpose. Key considerations for this process are:

- Change accountabilities – who may authorise the change?
- Review – who should be part of the review? It is important to identify the appropriate individuals or group to review documents and these should be competent and authorised to do so. Key stakeholders may also be included in any reviews to ensure that the impact of updates has been assessed.
- How will the change be communicated? Identify the appropriate mechanisms for notifying individuals or groups of document changes to ensure that all interested parties are aware of these changes. Training and key messages about frequently asked questions should also be considered.
- How will the change be monitored for effectiveness? Consideration should be given to the implementation of a process to measure the effectiveness of the change.

8.4 Documentation Usability and Usage

Management systems remain most effective when they are used regularly. Real value can be had if the ability to assess the usability of the management system is built in from the beginning. This data will help give the assurance that the management system is effective and support the management review process as described in ISO9001. Potential measures that could be developed include:

- If web based, a measure on document hits can be used as an indicator of usage. However, this is not fool proof as it could be the same person repeatedly accessing the document
- Documentation churn – monitoring how stable the management system is. If a document remains unchanged or changes regularly these may be indicators that it is respectively, either not relevant or ineffective. Determining a suitable level is subjective but trends can be monitored and acted upon as required
- Understanding and monitoring the differences between major and minor changes will help determine the reason for change which in turn will help to determine the suitability of the management system
- Compliance auditing should be a suitable indicator of how well the processes are being applied and analysing the findings will help determine any systemic issues that may impact the management system as a whole. Are current accepted working practices reflected in the documentation?

There are a number of criteria that should be considered when thinking about the usability of the management system. While this is not an exhaustive list, these criteria are based on best practice:

- How accessible it is and can it be navigated through multiple views such as role based, function based, hierarchy based, etc.?
- How easy it is to gain an overview of the system (e.g. a high level picture)?
- How easy it is to find documentation. Search function – key words, document title, function, etc.?
- Use of appropriate language – business language, making it easy to understand.
- Processes well defined including the dependencies and connections to others. How easy it is to move between these processes, single click or up and down a menu?

- Is there clearly defined guidance, worked examples or a section for frequently asked questions and are these maintained?
- Is the documentation in a common format?
- Is it clear what the process is expected to accomplish (defined objective)?
- Are there mechanisms for feedback, comments, and suggestions to continually improve the management system?
- Is there training material or guidance material to explain the context, structure and purpose of the management system as a whole?

8.5 Process Ownership

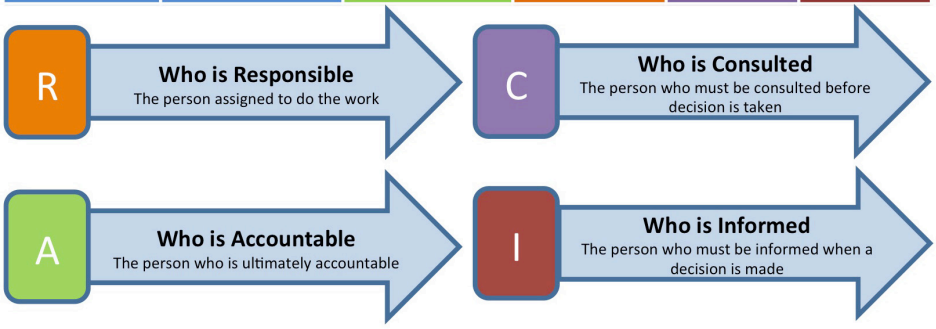
When setting up a management system, one of the key considerations is the subject of ownership. Who should own the various levels of policy, process, procedure and documentation and what are their accountabilities? If this is unclear or poorly defined, conflicts may arise which will inevitably result in localised working practices being established that will undermine the management system as a whole. Having someone identified who has ultimate accountability for each document will enable this area to be managed. This would traditionally be known as the process or policy owner. However the process owner should not work in isolation as the success of the management system is dependent on the majority of users recognising the benefits of the prescribed practices and implementing them as they were designed. To this end, the development of all documentation should involve the key stakeholders, giving each the opportunity to contribute as appropriate. The process owner would then have the final say as to what was published.

The use of a RACI (Responsible, Accountable, Consulted, Informed) matrix (as shown in the diagram below) is an effective means of providing clarity as to who should be involved for each document; roles should be by job title and function rather than by named individual to ensure these remain robust to organisational change. RACIs are best implemented when focusing on critical or key roles. An example of a typical RACI and how it may be structured is included.

Typical responsibilities of a process owner are to:

- Own a defined business process area
- Define and coordinate company practices for processes, systems, tools and reports
- Ensure the relevance and good practice of process set
- Measure application - usability, efficiency and effectiveness

Activity Description	Roles				
	Department manager	Activity manager	Process manager	Function 1	Function 2
1	R	A	I	I	C
2	C	I	R	A	I
3	R	A	I	I	C
4		A	R	C	I



- Ensure the optimum use of defined processes and tools
- Ensure adequate training and mentoring of users

Process management is not about additional checks, governance or restrictive processes but it is the on-going activity of delivering sustainable, effective and efficient outcomes delivered by all staff.

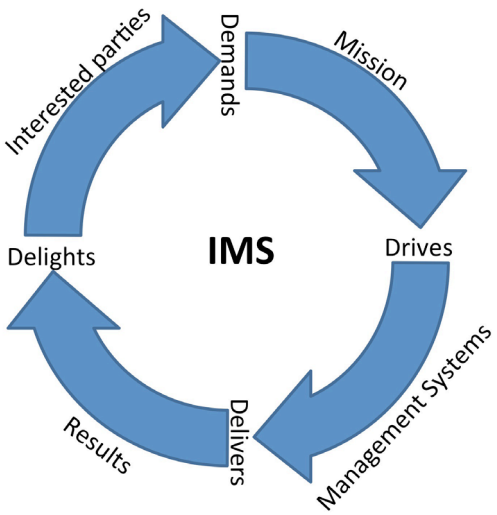
8.6 Process Integration

What is an Integrated Management System?

An integrated management system (IMS) is a management system which integrates all components of a business into one coherent system to enable the achievement of the businesses goals and objectives. However this may not always be practical or desired. Partially integrated management systems are those where key elements may have been integrated such as safety and quality, finance or environment and health and safety, or any combination of pre-existing discipline-focussed management systems. This approach is more common when looking to standardise around common processes and activities. Equally a business may decide to have integrated processes rather than systems, i.e. a common change management or audit process that applies across multiple management systems.

There is no single perfect approach to developing an integrated management system; each organisation needs to take its corporate culture and the nature of its business into consideration when deciding how far it wants to take the integration. However, every organisation choosing to integrate at any level may benefit from:

- Reduced duplication and therefore costs – a reduction in amount of documentation, single location to find information required, reduced maintenance costs.
- Reduced risks and increased productivity – risks are more likely to be effectively managed when reviewed from all angles. Proactive collaborative working will help reduce financial, operational and reputational risks.
- Increased focus on business goals – improved visibility of business goals and objectives will help ensure they are coordinated and avoid internal conflicts. Processes may be optimised to achieve business goals.
- Eliminate conflicting responsibilities and relationships – able to identify any potential overlapping responsibilities and clarify accountabilities.
- Better decision making – providing a complete view of the impact of the various elements of the business and drive more effective sustained improvement.



- Harmonised and optimised practices – identifying opportunities to standardise working practices where benefits are tangible and eliminate duplicated effort. Drive the development of coordinated solutions to business-wide problems.
- Effective training and development – the integration of the systems and key processes should drive standardisation and a natural reduction in the need for specialised or bespoke training. This in turn should help to develop a consistent approach to staff development, improving motivation and an understanding of business capabilities.

Integrating the management system is a complex task and can be impacted by a wide variety of factors. Barriers to integration may include:

- Failure to gain senior management commitment – without which any integration is unlikely to succeed.
- Vested interests – where existing functions may be integrated and responsibilities are to be realigned, natural resistance may arise in part due to a lack of expertise in the other integrated disciplines. The political climate of the organisation will impact the effectiveness of integration.
- No business drivers for integration – if the business as a whole does not recognise the benefit of integration or there is no business objective to integrate, this will result in resistance across the organisation to apply the required effort. When balancing priorities this will always be at the bottom of the list.
- Absence of a common framework – integrating different management systems that are based on different standards and which are structured around different models may be too confusing to attempt. Even the common ISO standards such as ISO 9001, 14001 and 18001 are all slightly different; if you add finance or information security systems the practicality of integrating may be very complex and likely to result in both confusion and a potential reduction in performance.
- Fear of the unknown – failure to fully understand the disciplines being integrated by those affected may lead to an underestimation of the consequences of integration. Integration is not simply merging the documentation; it will involve understanding all the competencies, as well as the cultures, in the affected areas. The ambiguity of these issues may discourage process owners from supporting the integration.
- An organisational culture that resists change – if staff are operating independently, they may see any change as negative and the concept of cooperation and coordinating activities may be difficult for them. Forcing change in these situations will only add to the resistance. This should be addressed by educating staff of the benefits at both an organisational and personal level.
- Organisational size and complexity – in large organisations the sheer number of people that would be impacted by the integration process may be too big a risk or cost to adopt the activity. Organisations over multiple locations with bespoke management systems, or where each location is delivering a different service, may resist any centralised integration. They may not be able to balance the potential benefits against the risk to their operation.

8.7 Process Assurance

When developing or improving the management system it is important to give thought to how you may assure the business that it is effective and efficient. As with any system there are a number of key questions to answer:

- Will it deliver the required results?
- How will it be maintained (up to date)?
- How do we ensure that it will be followed?
- How do we ensure that it will be complete and fit for purpose?

Having a clear understanding of the goals and objectives for the management system and who the key customers are is vital if effective assessment criteria are to be established to determine its level of success.

There are many different ways in which this may be attempted and a broad array of data that could be collected as part of this process. Developing an assurance plan will help determine the most effective means of assessment and should ensure that a considered and appropriate approach is taken to gathering relevant usable data.

Below are a number of approaches that may be considered for the assurance plan:

Internal Audits - Audits should not just look at compliance to the management system but also its effectiveness. They should assess whether the management system still meets the needs of the business, supports the business strategy and is appropriate for its users. IT should also help to safeguard the business against key risks. See the CANSO standard of excellence, "Improving Business Performance through Auditing" for further information.

Usability and Usage Measures - As detailed in section 8.4 above, if the system is not being used it is often ineffective. The suggested measures in this section should be reviewed and acted upon regularly and included in the management review activity.

Surveys - The users of the management system are the customers of that system. It is very useful to periodically sample the views of the customers against the objectives of the system and seek their views on potential improvement opportunities. This data will help prioritise activities when used together with other performance data.

Management Review - Top management are often required to review the management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. Where implemented, this review should include assessing opportunities for improvement and the need for changes to the management system, including goals and objectives. This may provide a regular forum for the review of how key processes support the business and provide assurance that appropriate actions are taken. This approach could also help ensure the management system remains effective and efficient.

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