D 17 version 2015
ISO 14001 readiness

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Goal of the module: Readiness for implementation, certification, maintenance and improvement of your environmental management system (ISO 14001) in order to:

- increase the satisfaction of interested parties
- improve your environmental performance
- find opportunities for continual improvement

1 Environmental approach

1.1 Background

The first laws on environmental protection emerged in the 70s of last century, given the magnitude of the harmful impacts of modern industry. The environmental protection concept is one of the pillars of sustainable development.

The pollution prevention approach is a must for every responsible company.

The first edition of the international standard of an environmental management system ISO 14001 appeared in 1996. ISO comes from the Greek “isos” (equal). ISO (International Organization for Standardization) was created in 1947.

The 2004 revision of the standard is distinguished by:

- improved compatibility with ISO 9001
- greater clarity of the text
- greater emphasis on continual improvement
- strengthening the conformity evaluation (legal and regulatory)
- further simplification of documentation

The new version of the ISO 14001 standard (second revision) is now published (September 2015): Environmental management systems - Requirements with guidance for use. Buy.

The main novelties are:

- new structure (higher level)
- adding the risk-based thinking (external and internal issues, opportunities)
- management commitment to ensure compatibility between the strategic direction of the company and the policy and environmental objectives
- management fully assumes its responsibility (leadership) of the performance of the environmental management system
- less mandatory documented procedures (documented information to maintain), from 12 it falls to 8
- the concept of preventive action is replaced by the actions to address risks
- terms documented procedure and record are replaced by documented information
- added requirements related to the life cycle and outsourced processes

1.2 Scope

The ISO 14 001 standard (**Environmental management systems – Requirements with guidance for use**) is generic as it can be applied to the management system of any company, without limitations about size, activity or type.

This is a voluntary international standard that allows the certification by an accredited body.

For this it is sufficient that the environmental management system (EMS):

- should be:
  - defined
  - implemented
  - maintained
  - improved

- meet the requirements of the ISO 14 001 standard

ISO 14001 applies to those environmental aspects that top management believes it can control or influence.

1.3 Steps

A well prepared approach is half successful

The approach to implementing an environmental management system goes through several steps. An example of preparation is shown in figure 1-1.

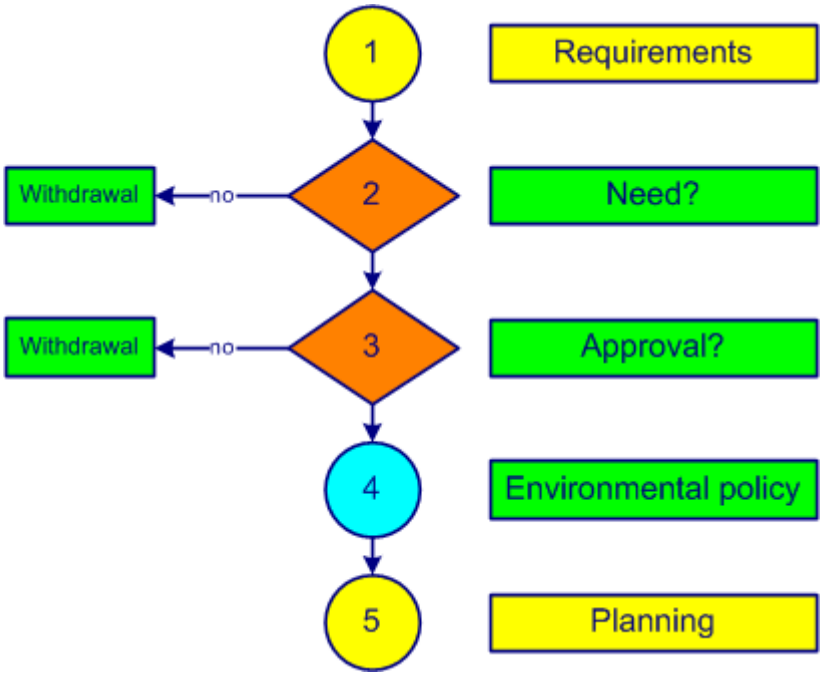


Figure 1-1. EMS preparation

Step one contains the determination of the needs and expectations (**requirements**) of interested parties:

- staff
- customers, consumers
- competitors
- shareholders, investors
- external providers (suppliers, subcontractors, partners)
- organizations and branch associations
- statutory and regulatory authorities

The involvement of top management at its highest level is truly indispensable. The advice of a consultant is often solicited. A status of the management system (or what exists of it) would be welcome at this stage. An external certification body is chosen.

One of the key questions which comes up quickly (**step 2**) is the **need** for this decision. If this is really unnecessary or if the estimated costs of the certification approach exceed the available resources, it is better to give up the idea right now.

The benefits of implementing an environmental management system are often:

- improved image of the company
- one step ahead of the competition
- enhanced environmental protection
- environmental performance evaluated and communicated
- better emergency preparedness
- increased confidence of interested parties
- reduced energy consumption
- staff is aware, consulted, motivated and proud
- reduced insurance costs
- commitment profitable for all
- good practices valorised
- formalization of knowledge
- process control
- compliance obligations up to date

The benefits of the certification of an environmental management system are often:

- new customers
- increased market share
- increase in sales
- better financial performance

More than one and a half million businesses worldwide cannot be wrong!

The internalization of the spirit of the principles and requirements of an ISO standard significantly improves the overall performance of your business, especially when it is not considered as a constraint.

The **third step** shall determine whether this approach receives the **approval** of the staff. A communication campaign is launched in-house on the objectives of an environmental management system (EMS). The staff is aware and understands that without their participation the project cannot succeed.

Have confidence, success will come with the involvement and effort of all!

Define the vision (what we want to be), the mission (why we exist) and the business plan of the company. The next **step** (**4**) begins with the establishment of an outline of the **environmental policy** and environmental objectives. If you do not have a copy of the ISO 14 001 standard, now is the time to get it.

Planning is the last **step** (**5**) of the project preparation for obtaining ISO 14 001 certification. A reasonable period is between 6 to 12 months (each company is unique and specific).Top management commitment is formalized in documented information communicated to all staff. A person is appointed project leader obtaining ISO 14001 certification.

The establishment and implementation of an ISO 14 001 environmental management system are shown in figure 1-2.

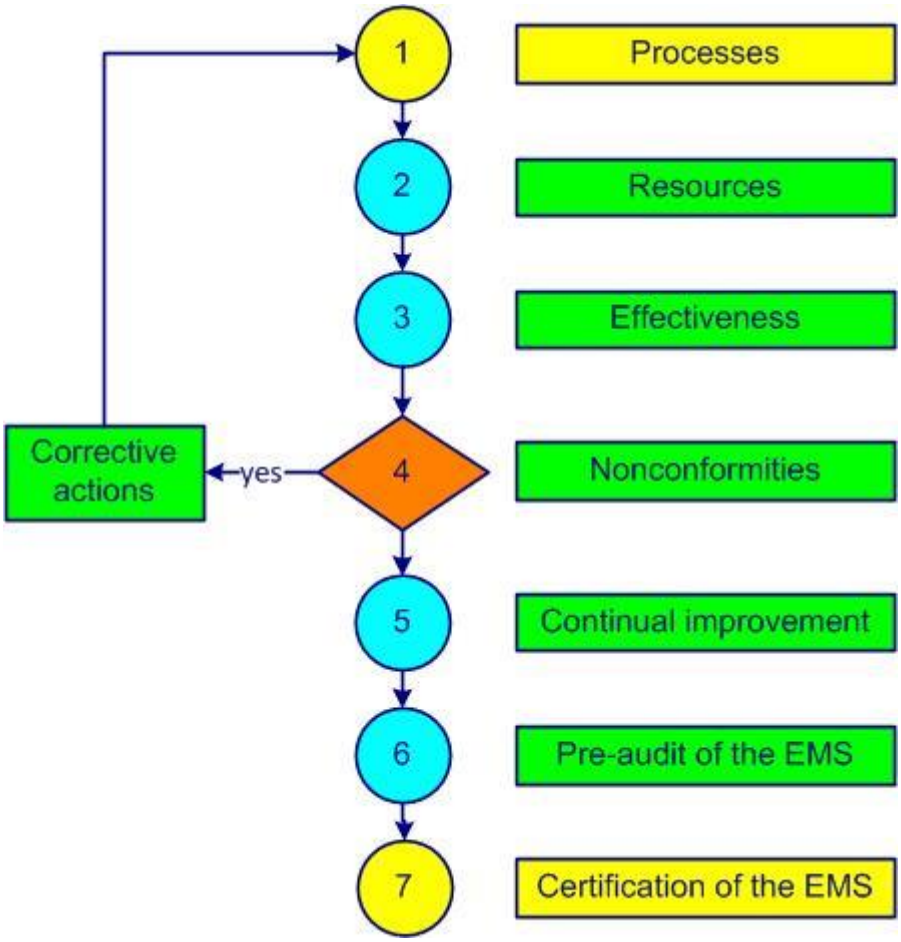


Figure 1-2. EMS implementation

Step 1 aims to identify and determine the **processes,** interactions, owners and responsibilities. The outline of certain documented information is written down. The needs, expectations and requirements of all interested parties are analysed. With the participation of as many people available the first drafts of the various documented information (job descriptions, documented information to maintain, work instructions, process sheets) are written.

In **step 2** the **resources** to achieve the environmental objectives are set. Planning tasks, responsibilities and time frames are established. Internal staff and subcontractors are aware of significant environmental impacts. Training of internal auditors is taken into account.

Step 3 allows you to define and implement methods to measure the **effectiveness** and efficiency of each process (indicators). Internal audits are used to evaluate the degree of implementation of the system (identification of environmental aspects and impacts, compliance obligations).

Nonconformities of all kinds are listed in **step 4**. An outline of the different waste is established. Sorting of corrective action is introduced. Emergency situations with potential impacts on the environment are listed. The responses (actions and reactions) to emergency situations are established and documented.

A first meeting with the tools and applications of the **continual improvement** process is made in **Step 5**. Major risks are identified, risk management objectives are planned and opportunities for improvement in environmental performance are found. Activities related to the identified significant environmental aspects are planned and implemented. A legal watch is accomplished. Internal and external communication is established and formalized.

To conduct the **pre-audit of the EMS** (**step 6**) documented information is checked and approved by the adequate persons. A management review allows evaluating applicable compliance obligations. The environmental policy and objectives are finalized. An environmental manager from another company or a consultant can provide valuable feedback, suggestions and recommendations.

When the system is accurately implemented and followed, the **certification of the EMS** by an external body is a breeze, a formality (**step 7**).

An appropriate method for evaluating the performance of your environmental management system is the RADAR logic model of excellence EFQM (European Foundation for Quality Management) with its 9 criteria and overall score of 1000 points.

1.4 PDCA cycle

The Deming cycle (figure 1-3) is applied to control any process. The PDCA cycle (Plan, Do, Check, Act) is a universal basis for continual improvement.

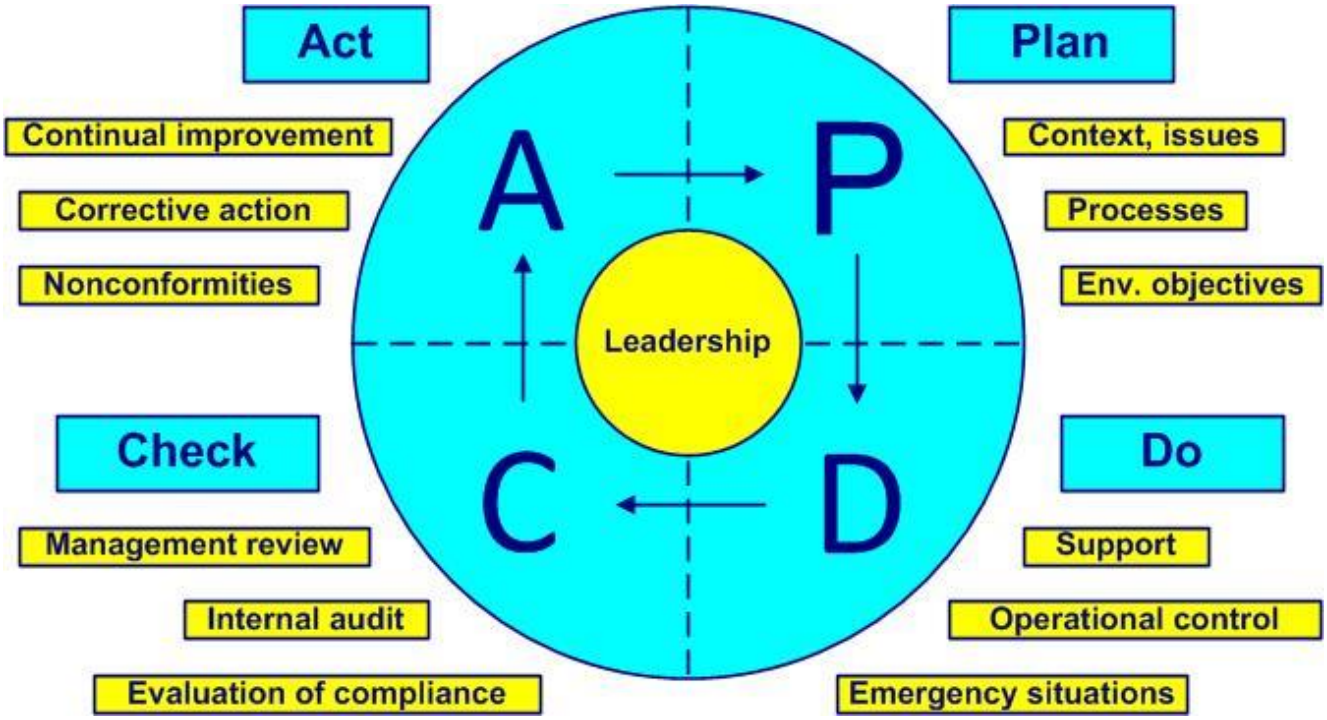


Figure 1-3. Deming cycle

- Plan – define context, issues and processes, establish environmental policy and objectives, demonstrate leadership (clauses 4, 5 and 6)
- Do – realize, develop, implement processes, demonstrate leadership, control the life cycle, bring support, respond to emergencies (clauses 5, 7 and 8)
- Check – Compare, verify, analyse, demonstrate leadership, conduct audits and management reviews (clauses 5 and 9)
- Act – adapt, demonstrate leadership, treat nonconformities, react with corrective actions or find new improvements (new PDCA cycle), (clauses 5 and 10)

2 Standards, definitions and books

2.1 Standards

The common points between ISO 14001 and ISO 9001 version 2015 are manifold in form and content.

Another demonstration of the close relationship between the two management system standards is ISO 19011 (2011): "Guidelines for auditing management systems."

The ISO 14004: 2016 standard "Environmental management systems - General guidelines on principles, systems and technical implementation" contains many explanations, practical tips and examples.

ISO 14031: 2013 "Environmental Management - Environmental performance evaluation - Guidelines" shows how to set up and use of environmental performance evaluation (EPE) and the analysis of the life cycle to find improvement points. With the help of indicators its commitment to compliance with legal and regulatory requirements, pollution prevention and continuous improvement can be evaluated.

ISO 14005 "Environmental management systems - Guidelines for the phased implementation of an environmental management system, including the use of environmental performance evaluation" shows how to implement an environmental management system in 3 phases, 19 clauses and 72 steps.

ISO 14044: 2006 "Environmental management - Life cycle assessment - Requirements and Guidelines" specifies requirements and provides guidelines for conducting life cycle assessments.

ISO 14063: 2010 "Environmental Communication" provides guidance on general principles, policy, strategy and activities relating to internal and external environmental communication.

ISO 14050: 2009 "Environmental management - Vocabulary" provides definitions of basic concepts, directly related to environmental management.

ISO 31000: 2009 "Risk management - Principles and Guidelines" establishes the principles and risk management process, risk assessment and risk treatment.

All these standards and many more can be ordered in electronic or paper format on the ISO site.

More than 28 000 standards (in English and other languages) are available on the Public.Resource.Org site.

2.2 Definitions

The beginning of wisdom is calling things by their proper names. Chinese proverb

Some terms and definitions used in relation with the EMS:

Competence: *personal skills, knowledge and experiences*
Conformity: *fulfilment of a specified requirement*
Corrective action: *action to eliminate the causes of nonconformity or any other undesirable event and to prevent their recurrence*

Documented information: *any support allowing the treatment of information*
Effectiveness: *capacity to realize planned activities with minimum efforts*
Efficiency: *financial relationship between achieved results and used resources*
Environment: *space in which any organization functions*
Environmental aspect: *every element of an organization that interacts with the environment*
Environmental impact: *every change in the environment caused by an organization*
Environmental objective: *environment related, measurable goal that must be achieved*
Environmental performance: *measurable results of the environmental management system*
Indicator: *value of a parameter, associated with an objective, allowing the objective measure of its effectiveness*
Interested party: *person or group that can affect or be affected by a company*
Management system: *set of processes allowing objectives to be achieved*
Process: *activities which transform inputs into outputs*
Organization (company): *a structure that satisfies a need*
Requirement: *explicit or implicit need or expectation*
Risk: *probability of occurrence of a potential hazard*
Top management: *group or persons in charge of the organizational control at the highest level*

In the terminology of management systems do not confuse:

- accident and incident
  - an accident is an unexpected serious event
  - an incident is an event which can lead to an accident
- anomaly, defect, dysfunction, failure, nonconformity, reject and waste
  - anomaly is a deviation from what is expected
  - defect is the non-fulfilment of a requirement related to an intended use
  - dysfunction is a degraded function which can lead to a failure
  - failure is when a function has become unfit
  - nonconformity is the non-fulfilment of a requirement in production
  - reject is a nonconforming product which will be destroyed
  - waste is when there are added costs but no value
- audit, inspection, auditee and auditor
  - an audit is the process of obtaining audit evidence
  - an inspection is the verification of the conformity of a process or product
  - an auditee is the one who is audited
  - an auditor is the one who conducts the audit
- audit programme and plan
  - an audit programme is the annual planning of the audits
  - an audit plan is the description of the audit activities
- calibration and gauging
  - calibration is the verification of a value found related to a standard (troy weight)
  - gauging is the positioning of reference marks
- control and optimization
  - control is the achievement of an objective
  - optimization is the search for the best possible results
- customer, subcontractor and supplier
  - a customer receives a product
  - a subcontractor provides a service or a product on which a specific work is done
  - a supplier provides a product
- effectiveness and efficiency
  - effectiveness is the level of achievement of planned results
  - efficiency is the ratio between results and resources
- follow-up and review

    - follow-up is the verification of the obtained results of an action
    - review is the analysis of the effectiveness in achieving objectives
- inform and communicate
    - to inform is to give someone meaningful data
    - to communicate is to pass on a message, to listen to the reaction and discuss
- objective and indicator
    - an objective is a sought after commitment
    - an indicator is the information on the difference between the pre-set objective and the achieved result
- organization and enterprise, society, company
    - organization is the term used by the ISO 9001 standard as the entity between the supplier and the customer
    - enterprise, society, company are examples of organizations
- process, procedure, product, activity and task
    - a process is how we satisfy the customer using people to achieve the objectives
    - a procedure is the description of how to conform to the rules
    - a product is the result of a process
    - an activity is a set of tasks
    - a task is a sequence of simple operations

Remark 1: the use of ISO 14 001 definitions is recommended. The most important thing is to determine for everyone in the company a common and unequivocal vocabulary.

Remark 2: the customer can be also the user, the beneficiary, the trigger, the ordering party, the consumer

Remark 3: documented information is any information which we must maintain (procedure *) or retain (record* *).*

Remark 4: the term "compliance obligations" introduced in ISO 14001 is equivalent to the terms "statutory and regulatory requirements" and "legal and other requirements".

For other definitions, comments, explanations and interpretations which you don't find in this module and in annex 06 you can consult:

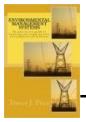
- ISO 9000: 2005 - Quality management systems. Fundamentals and vocabulary, (ISO, 2005)
- Introduction and support package: Guidance on the Terminology used in ISO 9001 and ISO 9004 (Document ISO/TC 176/SC 2/N 526R2, 2008)
- Quality management system – Indicators and synoptical tables (FD X50 - 171, ISO, 2000)

2.3 Books

Books for further reading on performance and environment:

-

Joseph Cascio et al, ISO 14000 Guide: The New International Environmental Management Standards, McGraw Hill, 1996

- Philip Stapleton, Margaret Glover, EMS: An Implementation Guide for Small and Medium-Sized Organizations, USEPA, 1996
- Gregory Johnson, The ISO 14000 EMS Audit Handbook, St Lucie, 1997
- John Kinsella, Annette McCully, Handbook for Implementing an ISO14001 Environmental Management System, Shaw Environmental, 1999
- A. J. Edwards, ISO 14001 Environmental Certification Step by Step, Elsevier, 2004
- Ken Whitelaw, ISO 14001 Environmental Systems Handbook, Elsevier, 2004
- Syed Imtiaz Haider, Environmental Management System ISO 14001: 2004: Handbook of Transition with CD-ROM, CRC Press, 2010
- Naeem Sadiq, Asif Khan, ISO14001 Step by Step: A Practical Guide, IT Governance Publishing, 2011
-  Trevor Price, Environmental Management Systems: How to boost organizational environmental performance, CreateSpace, 2014
- Terry Bush, ISO 14001 154 Success Secrets - 154 Most Asked Questions On ISO 14001 - What You Need To Know, Emereo Publishing, 2014
- Milton Denth, The ISO 14001:2015 Implementation Handbook, ASQ, 2016

When I think of all the books still left for me to read, I am certain of further happiness.
Jules Renard

3 Process approach

3.1 Process

The word process comes from the Latin root procedere = go, development, progress (Pro = forward, cedere = go). Each process transforms inputs in outputs creating added value and potential nuisances.

A process has three basic elements: inputs, activities, outputs.

A process can be very complex (launch a rocket) and relatively simple (audit a product).

A process is:

- repeatable
- foreseeable
- measurable
- definable
- dependent on its context
- responsible for its suppliers

A process is determined among others by its:

- title and type
- purpose (why?)
- beneficiary (for whom?)
- scope and activities
- initiators
- documented information
- inputs
- outputs (intentional and not intentional)
- constraints
- people
- material resources
- objectives and indicators
- person in charge (owner) and actors (participants)
- means of inspection (monitoring, measurement)
- mapping
- interaction with other processes
- risks and potential deviations
- opportunities for continual improvement

A process review is conducted periodically by the process owner (cf. annex 01).

The components of a process are shown in figure 3-1:

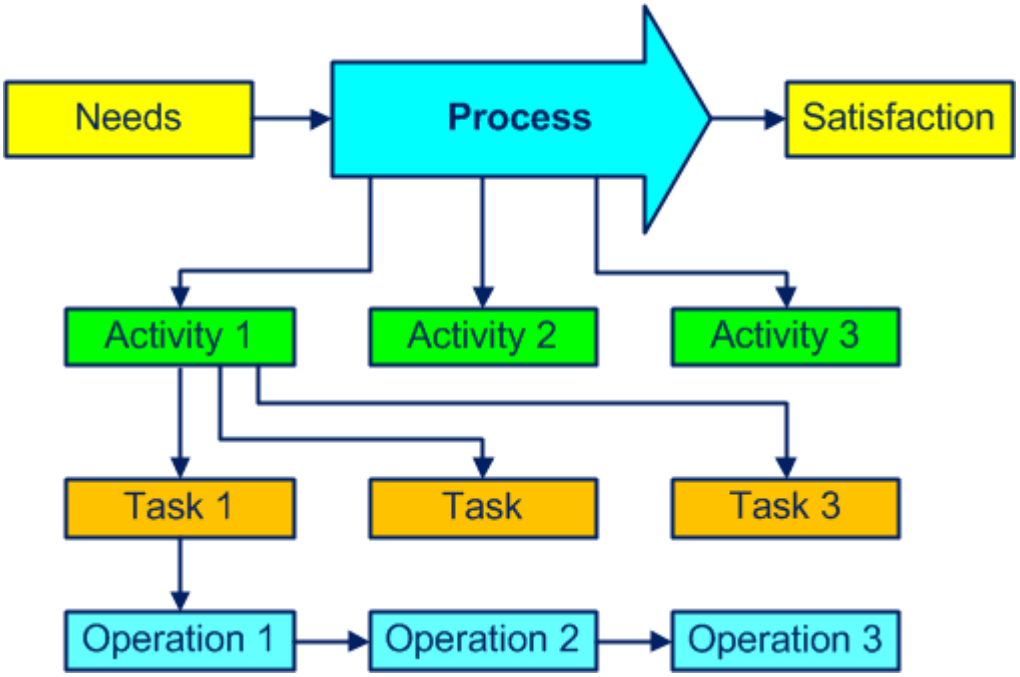


Figure 3-1. Components of a process

Figure 3-2 shows an example that helps to answer some questions:

- which materials, which documents, which tools? (inputs)
- which title, which activities, requirements, constraints? (process)
- which products, which documents? (outputs)
- how, which inspections? (methods)
- what is the level of performance? (indicators)
- who, with what competence? (people)
- with what, which machines, which equipment? (material resources)

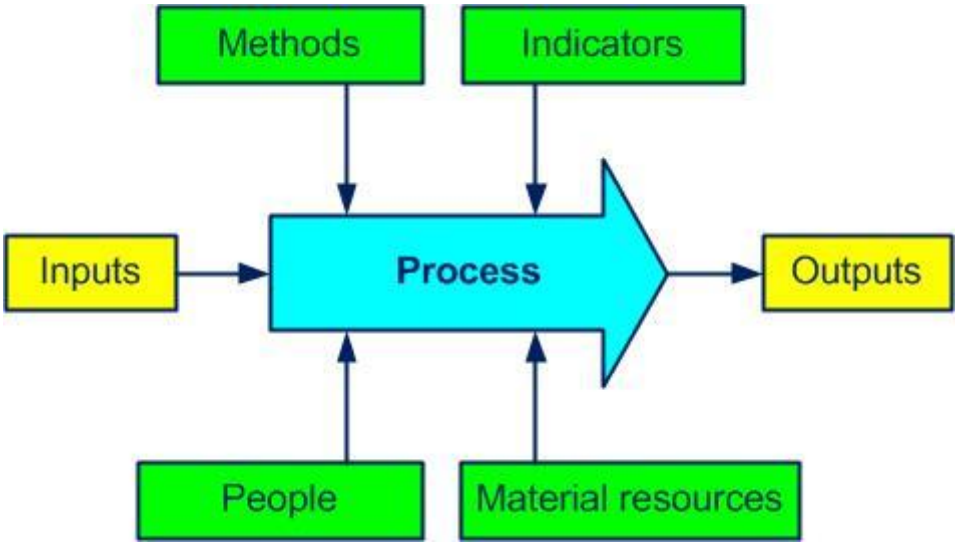


Figure 3-2. Some elements of a process

Often the output of a process is the input of the next process.

You can find some examples of process sheets in the document pack D 02 and a list of processes in annex 02.

Any organization (company) can be considered as a macro process, with its purpose, its inputs (customer needs and expectations) and its outputs (products/services to meet customer requirements).

Our preference is to identify a process using a verb (buy, produce, sell) instead of a noun (purchases, production, sales) to differentiate the process from the company's department or documented information and recall the purpose of the process.

The processes are (as we shall see in the following paragraphs) of management, realization and support type. Do not attach too much importance to process categorizing (sometimes it's very relative) but ensure that all the company's activities fall at least into one process.

3.1.1. Management processes

Management processes are also known as piloting, decision, key or major processes. They are part of the overall organization, elaboration of the policy, deployment of the objectives and all required checks. They are the glue of all the realization and support processes.

The following processes can be part of this family:

- develop strategy
- develop the environmental policy
- deploy objectives
- plan the EMS
- acquire and manage people
- manage risks
- establish process ownership
- conduct management review
- conduct an audit
- communicate
- improve
- measure satisfaction of interested parties

3.1.2 Realization processes

The realization (operational) processes are related to the product, increase the added value and contribute directly to customer satisfaction.

They are mainly:

- design and develop
- purchase
- produce
- maintain equipment
- receive, store and deliver
- inspect
- control nonconformities
- anticipate emergencies
- implement corrective actions
- sell
- manage waste

3.1.3 Support processes

The support processes provide the resources necessary for the proper functioning of all other processes. They are not directly related to a contribution of the product's added value, but are still essential.

The support processes are often:

- control documentation
- perform environmental analyses
- acquire and maintain infrastructure
- provide training
- manage inspection means
- keep the legal watch up to date
- keep accountability
- manage staff

3.2 Process mapping

The process mapping is par excellence a multidisciplinary work. This is not a formal requirement of the ISO 14 001 standard but is always welcome.

The 3 types of processes and some interactions are shown in figure 3-3:

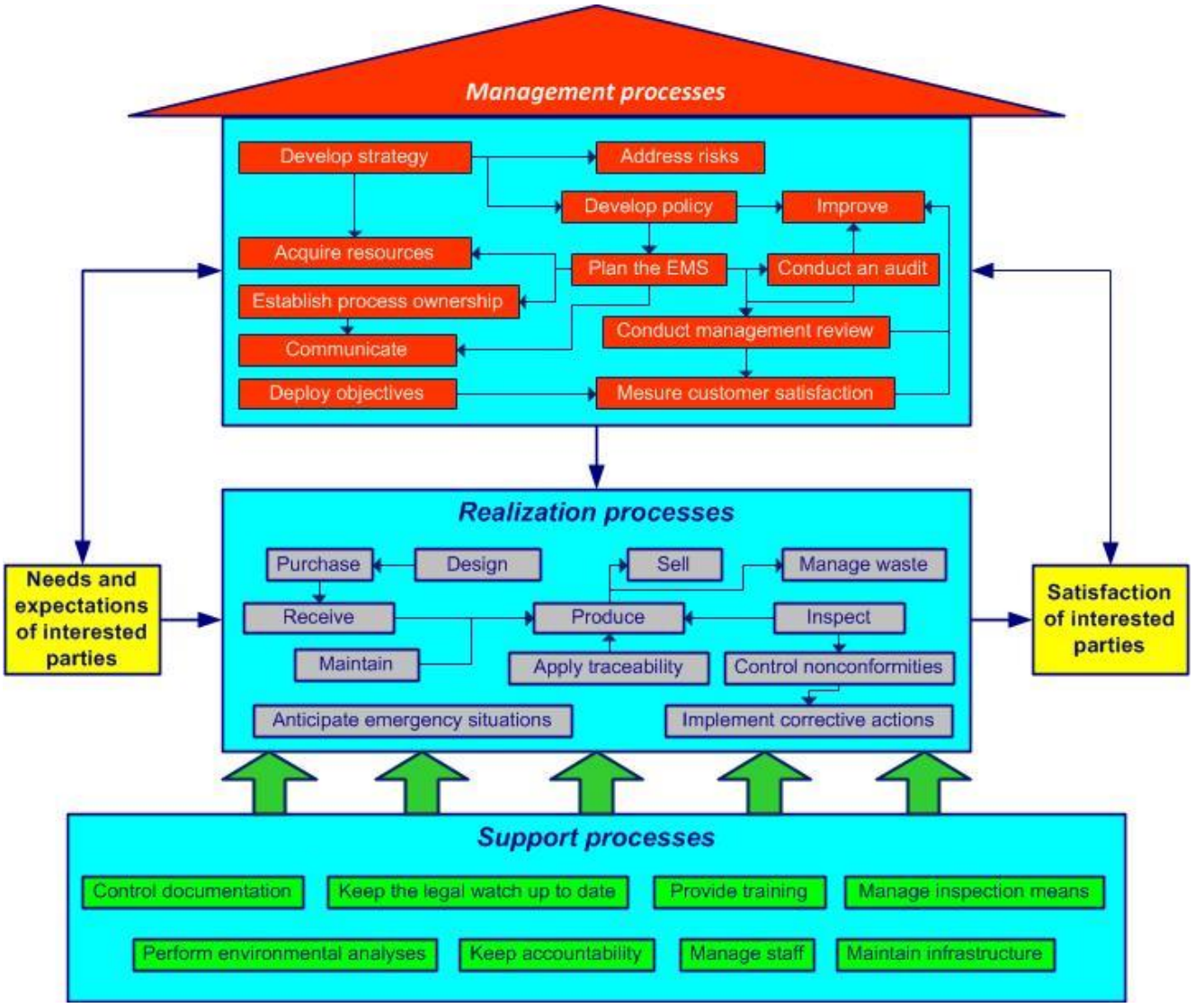


Figure 3-3. Process house

In the outputs do not underestimate the unwanted products such as waste, nuisances, rejects.

The mapping among other things lets you:

- obtain a global vision of the company
- identify the beneficiaries (customers), flows and interactions
- define rules (simple) for communication between processes

To obtain a clearer picture you can simplify by using a total of about fifteen core processes. A core process can have several sub-processes, for example a process "develop the EMS" can involve:

- develop strategy
- develop policy
- manage risks
- plan the EMS
- deploy objectives
- acquire resources
- establish process ownership
- improve

Two other process examples (design, figure 3-4 and produce figure 3-5):

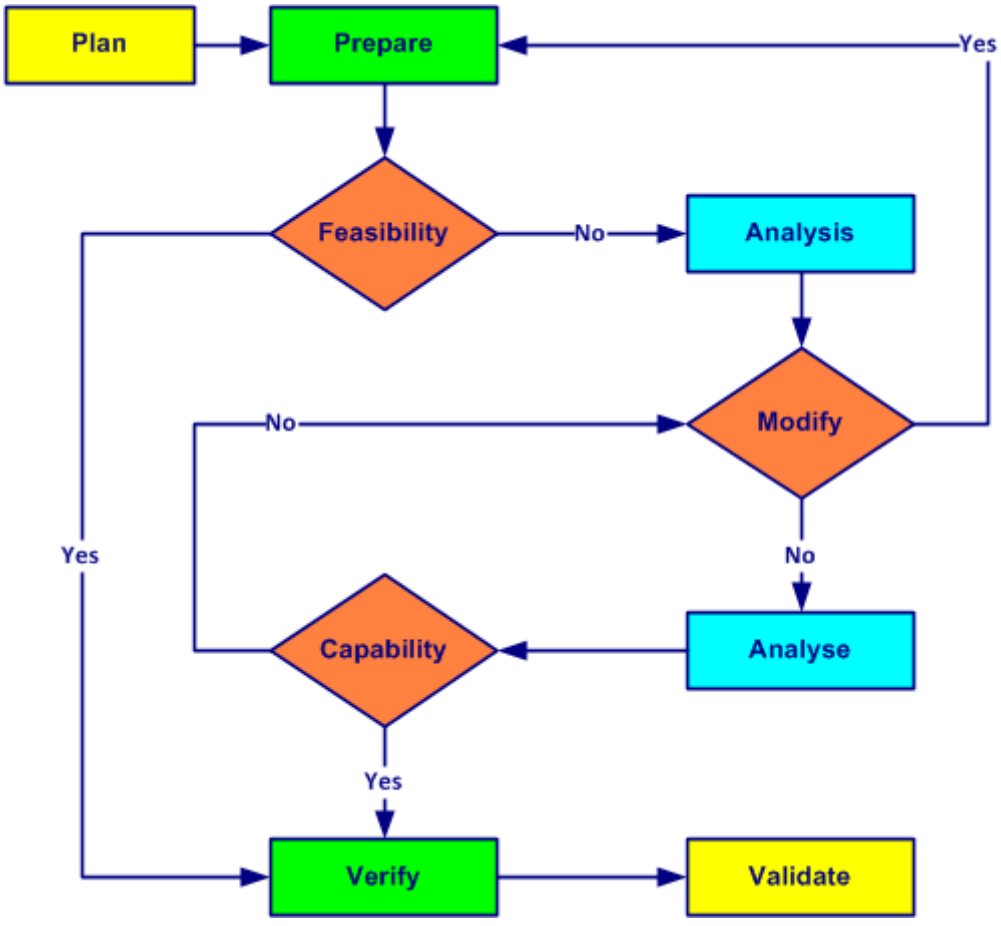


Figure 3-4. Design process

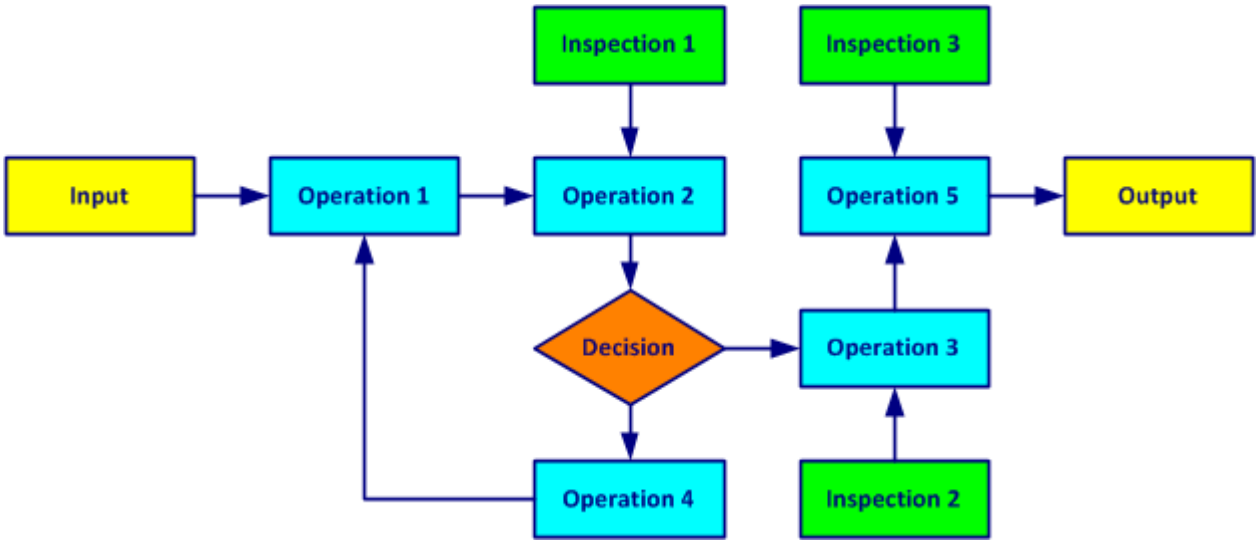


Figure 3-5. Produce process

3.3 Process approach

Simple solutions for now, perfection for later

The process approach contributes enormously to the efficient management of the company (cf. annex 13).

Process approach: *management by the processes to better satisfy customers, improve the effectiveness of all processes and increase global efficiency*

The process approach included during development, implementation and continual improvement of an environmental management system allows one to achieve objectives that are related to satisfaction of interested parties and environment protection as is shown in figure 3-6.

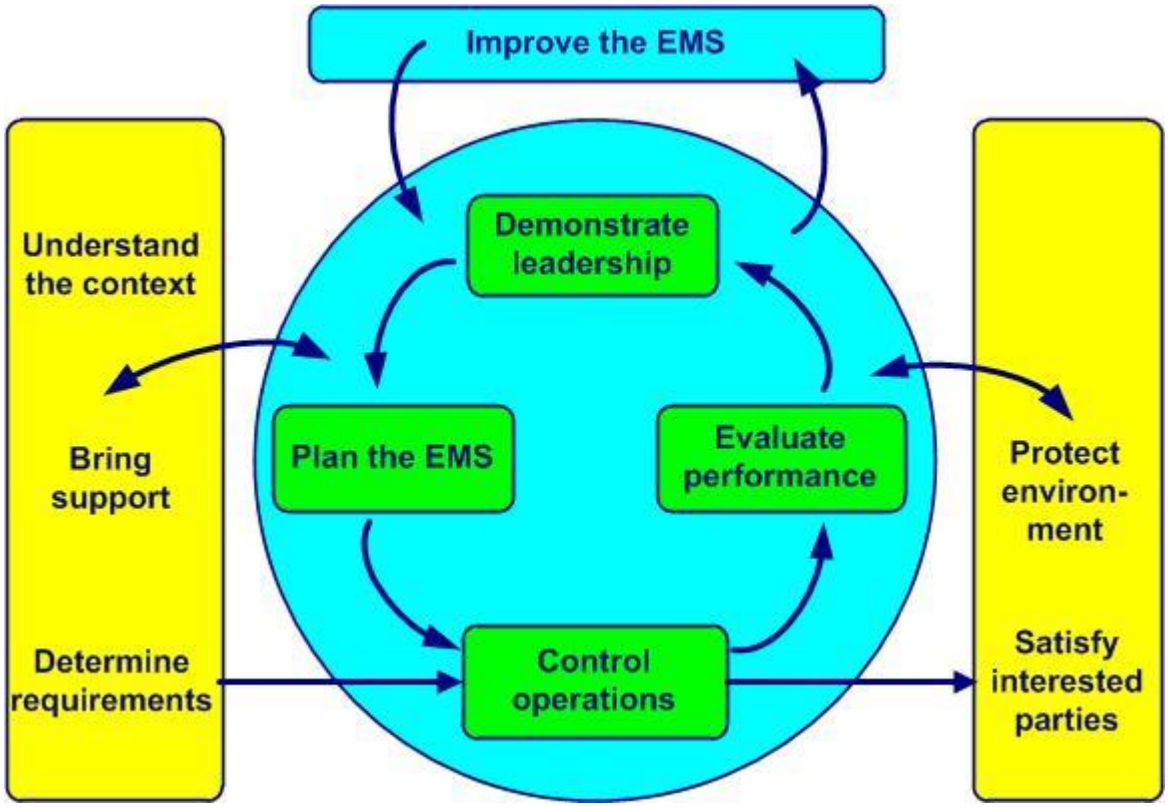


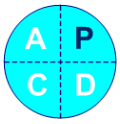
Figure 3-6. Model of an EMS based on process approach and continual improvement

Process approach:

- emphasizes the importance of:
  - understanding and complying with customer requirements
  - prevention so as to react to unwanted elements such as:
    - incidents
    - accidents
    - nuisances
    - waste
    - rejects
  - measuring process performance, effectiveness and efficiency
  - permanently improving objectives based on pertinent measurements
  - process added value
- relies on:
  - methodical identification
  - interactions
  - the sequence and
  - process management which consist of:
    - determining objectives and their indicators
    - directing related activities
    - analysing obtained results
    - permanently undertaking improvements
- allows one to:
  - better view inputs and outputs and their relationship
  - clarify roles and responsibilities
  - judiciously assign necessary resources
  - break down barriers between departments
  - decrease costs, delays, wastes
- and ensures in the long run:
  - control
  - monitoring and
  - continual improvement of processes

Process approach **is not**:

- crisis management ("You will not solve the problems by addressing the effects")
- blaming people ("Poor quality is the result of poor management." Masaaki Imai)
- priority to investments ("Use your brain, not your money." Taiichi Ohno)



4 Context of the organization

4.1 The organization and its context *(requirements 1 to 2)*

The two most important things do not appear in the company's balance sheet: its reputation and its people. Henry Ford

To successfully implement an environmental management system we must understand and evaluate everything that can influence the reason for being and business performance. Some key activities:

- develop a thorough diagnosis of the unique context in which your company exists taking into account the issues:
  - external environment such as:
    - social
    - regulatory
    - economic
    - technology
  - internal such as:
    - specific aspects of the corporate culture:
      - vision
      - rationale, purpose, mission
      - core values
    - staff
    - products and services
    - infrastructure
- analyse the factors that may influence the achievement of business objectives
- establish significant environmental impacts that could affect or be affected by the company (sub-clause 6.1.2)

The SWOT and PESTEL analyses can be useful for relevant analysis of business context (cf. annex 09).

A list of external and internal issues is carried out by a multidisciplinary team. Each issue is identified by its level of influence and control. Priority is given to issues with great influence and poor control.

Good practices

- *diagnosis of the context includes the main external and internal issues*
- *the core values as part of the corporate culture are taken into account in the context of the company*
- *the list of environmental aspects and impacts is regularly updated*

Bad practices

- *some issues of the context of the company are not taken into account*
- *some environmental impacts are not taken into account*
- *the environmental impacts are not prioritized*

4.2 Needs and expectations of interested parties *(requirements 3 to 5)*

There is only one valid definition of a business purpose: to create a customer. Peter Drucker

To understand the needs and expectations of interested parties we must begin by identifying those who may be affected by the environmental management system such as:

- employees
- customers
- external providers
- owners
- shareholders
- bankers
- distributors
- competitors
- citizens
- neighbours
- social and political organizations

A list of interested parties is carried out by a multidisciplinary team. Every interested party is identified by its level of influence and control in connection with the business context. Priority is given to interested parties with great influence and poor control.

True story

The customer is king but we still can fight against rudeness. Example of the restaurant La petite Syrah in Nice and its coffee prices:

"A coffee".....7 €
"A coffee, please".....4,25 €
"Hello, a coffee, please"....1,40 €

Anticipating the reasonable and relevant needs and expectations of interested parties is:

- meeting the requirements of protection of the environment
- preparing to address risks
- finding improvement opportunities

When a requirement is accepted it becomes an internal requirement of the EMS.

A review of product and service requirements (including up to delivery) is conducted to:

- identify commercial processes
- ensure that these requirements can be met and are:
  - explicit
  - implicit
  - compliance obligations

    - specific to:
        - the company
        - the customer and other interested parties
- identify and address gap situations

This review is performed after receipt of the order and prior to acceptance thereof. A feasibility study may be undertaken.

Good practices

- *the list of interested parties is updated*
- *the needs and expectations of interested parties are established through meetings on site, surveys, roundtables and meetings (monthly or frequent)*
- *the application of compliance obligations is a prevention approach and not a constraint*

Bad practices

- *compliance obligations are not taken into account*
- *city sanitation regulation defining the discharge conditions to the network is not identified as a compliance obligation*
- *the expectations of interested parties are not identified*

4.3 Scope of the environmental management system *(requirements 6 to 13)*

In many areas, the winner is the one who is best informed. André Muller

The scope (or in other words the perimeter) of the environmental management system is defined. If exclusions exist a justification is provided. When a requirement cannot be applied a justification is included in the documented information that is maintained and is available to any interested party.

To determine the scope of the EMS the specific context of the company is taken into account:

- issues (cf. sub-clause 4.1)
- dangerousness of products and services in a life cycle perspective
- corporate culture
- environment:
    - social
    - financial
    - technology
    - economic
- requirements of interested parties (cf. sub-clause 4.2)
- compliance obligations
- outsources processes

Good practices

- *the scope is relevant and available upon request*
- *the scope takes into account the entire life cycle of products*

Bad practices

- *some products are outside the scope of EMS without justification*
- *paint shop is not included in the scope of the EMS*
- *the scope is obsolete (the new subsidiary is not included)*
- *environmental aspect not taken into account*

4.4 Environmental management system *(requirements 14 to 15)*

If you cannot describe what you are doing as a process, you do not know what you're doing. Edwards Deming

The requirements of the ISO 14001 standard include:

- the environmental performance and
- the control of business processes

To do this the context and issues are taken into account and:

- the environmental management system is:
  - established
  - documented (a simple and sufficient documentation system is set up)
  - implemented and
  - continually improved
- the environmental policy, objectives, resources and the work environment are determined
- environmental requirements are integrated into business processes
- risks are identified and actions to reduce them are established (cf. sub-clause 6.1)
- the core necessary EMS processes are controlled:
  - corresponding resources are ensured
  - the inputs and outputs are determined
  - the necessary information is available
  - owners are appointed (responsibilities and authorities defined)
  - sequences and interactions are determined
  - each process is measured and monitored (established criteria)
  - objectives are set and performance indicators analysed
  - actions for continuous improvement of processes are established
- an environmental diagnostic is carried out, environmental aspects are identified and significant environmental impacts are determined
- audits and reviews of the EMS are performed regularly
- an action plan allows to apply the environmental policy, achieve the objectives and improve business performance
- history of emergencies, incidents and nonconformities are evaluated, potential emergencies are identified, evaluated and methods are implemented to respond

The requirements of the ISO 14001 standard are shown in figure 4-1:

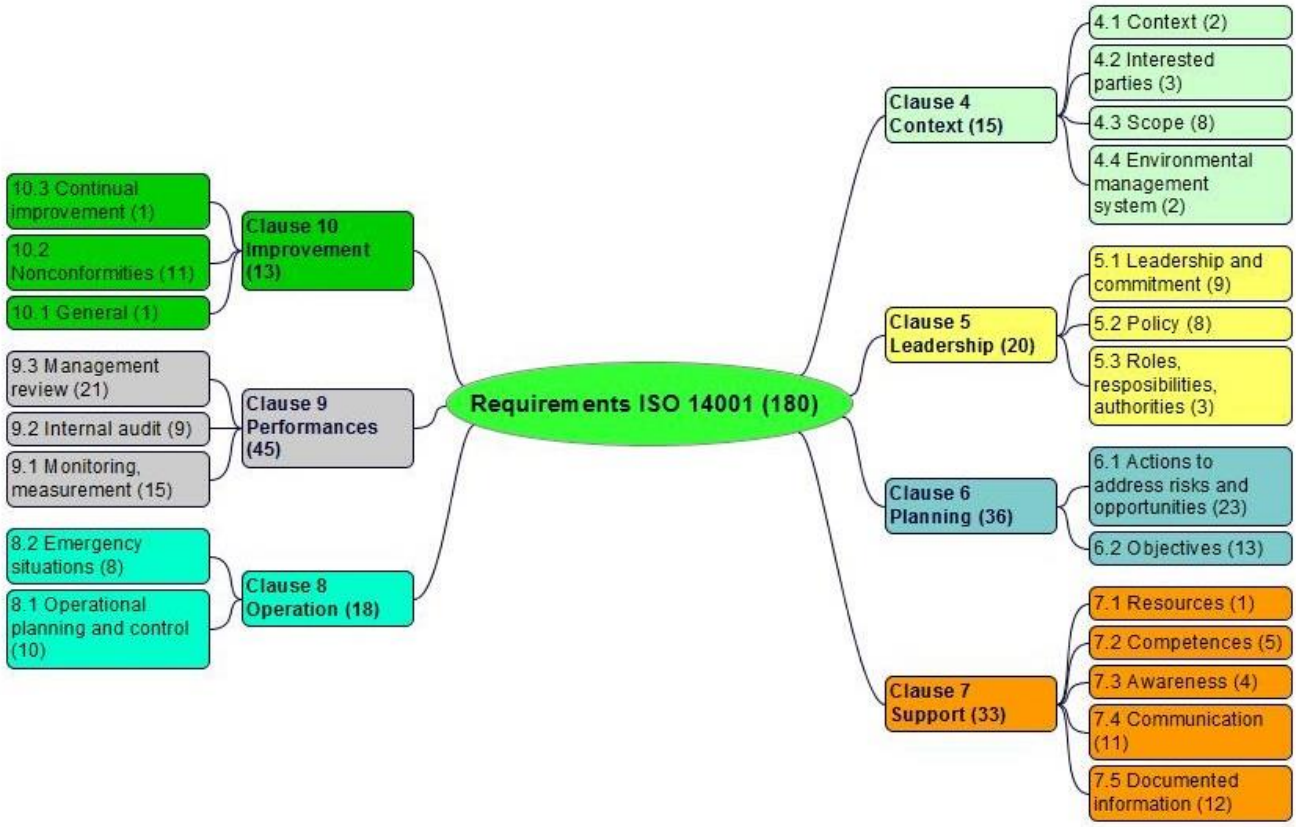


Figure 4-1. Requirements of the ISO 14 001 (2015) standard

Good practices

- *process mapping has enough arrows to show who is the customer (internal or external)*
- *for a process it is better to use a lot of arrows (several customers) rather than to forget one*
- *reveal the added value of the process during the process review*
- *the analysis of process performance is an example of continual improvement evidence of the effectiveness of the EMS*
- *top management regularly monitors the objectives and action plans of the EMS*
- *commitments of top management on prevention and continuous improvement are widely diffused*

Bad practices

- *some process outputs are not set correctly (customers not considered)*
- *process effectiveness criteria not established*
- *process owner not formalized*
- *outsourced processes not identified*
- *many real activities are not identified in any process*
- *control of outsourced services not described*
- *sequences and interactions of certain processes are not identified*
- *criteria and methods for ensuring effective processes not determined*
- *monitoring the effectiveness of certain processes not established*
- *the EMS resources do not allow achieving environmental objectives*
- *the EMS is not updated (new processes not identified)*