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DTI – Dipartimento Tecnologie Innovative

Formazione Continua

ISO 10007 – Guidelines for Configuration Management

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Aim of ISO 10007:2003*

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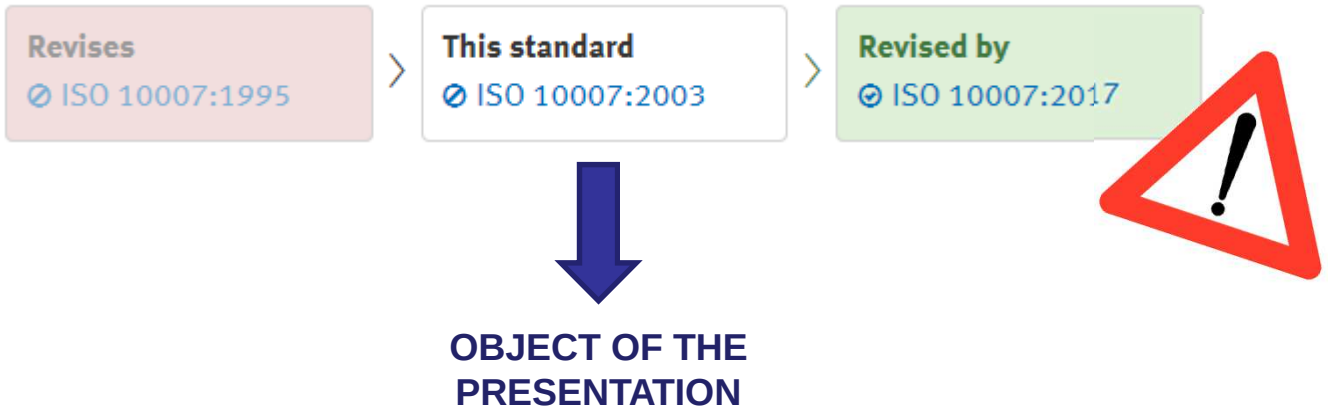
- ISO 10007:2003 gives guidance on the use of configuration management within an organization. It is applicable to the support of products from concept to disposal.
- It first outlines the responsibilities and authorities before describing the configuration management process that includes configuration management planning, configuration identification, change control, configuration status accounting and configuration audit.
- Since ISO 10007:2003 is a guidance document, it is not intended to be used for certification/registration purposes.



* source: www.iso.org

Contents of ISO 10007:2003

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ISO 10007: introduction

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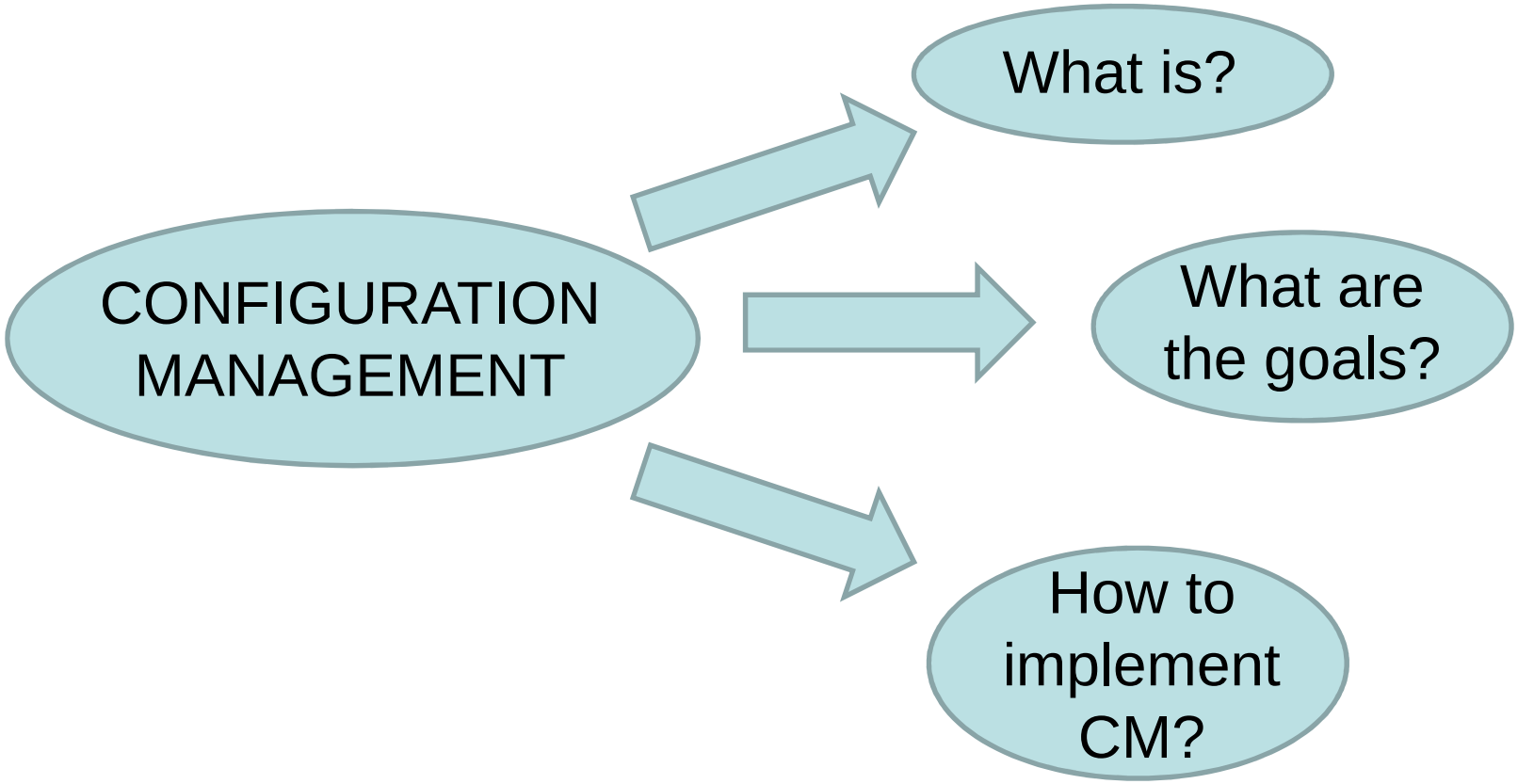
"..The purpose of this International Standard is to enhance common understanding of the subject, to promote the use of configuration management, and to assist organizations applying configuration management to improve their performance…"



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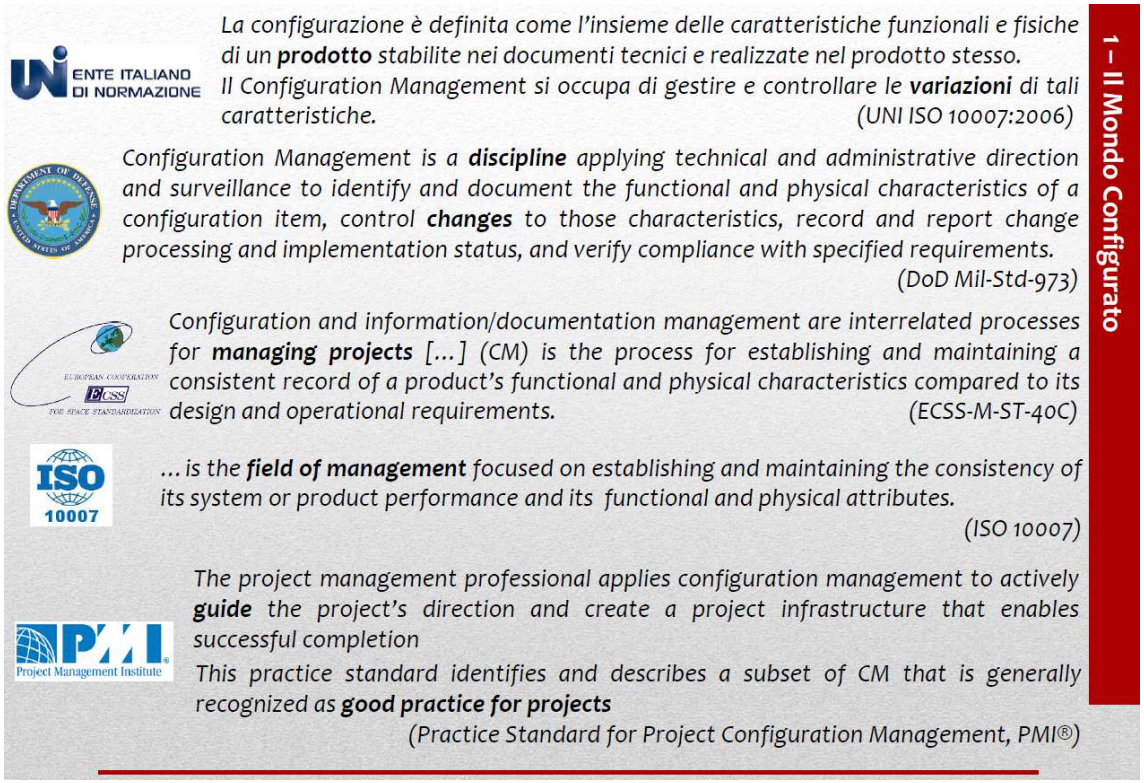
- What is the Configuration Management?

  "..Configuration management is a management activity that applies technical and administrative direction over the life cycle of a product, its configuration items, and related product configuration information.."



source: AgireMondoConfigurato-8-2-2017, D. Di Lorenzo

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- What are the goals of Configuration Management?

  "..Configuration management documents the product's configuration. It provides identification and traceability, the status of achievement of its physical and functional requirements, and access to accurate information in all phases of the life cycle.."

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- How to implement Configuration Management?

  "..Configuration management can be implemented based on the size of the organization and the complexity and nature of the product.."

There isn't a fixed rules!
Of course, it's depending on your processes, products, policies, company maturity, environment, field of application etc etc.
The ISO 10007 explain this over:

- Chapter 4: CM Responsibility
- Chapter 5: CM Process

ISO 10007: chapter 4
CM Resposibility

- 4.1 Responsibilities and authorities

  The organization should identify and describe responsibilities and authorities related to the implementation and verification of the configuration management process.

  The following should be considered:

  – the complexity and nature of the product;
  – the needs of the different product life cycle stages;
  – the interfaces between activities directly involved in the configuration management process;
  – the identification of the dispositioning authority.

ISO 10007: chapter 5
CM Process

- 5.1 General
- 5.2 Configuration management planning
- 5.3 Configuration identification
  - 5.3.1 product structure and selection of configuration items
  - 5.3.2 product configuration information
  - 5.3.3 configuration baselines
- 5.4 Change Control
  - 5.4.1 General
  - 5.4.2 Initiation. Identification and documentation of the need for change
  - 5.4.3 Evolution of change
  - 5.4.4 Disposition of change
  - 5.4.5 Implementation and verification of change
- 5.5 Configuration status accounting
  - 5.5.1 General
  - 5.5.2 Records
  - 5.5.3 Reports
- 5.6 Configuration audits

ISO 10007: chapter 5
CM Process

- 5.2 Configuration management planning

  Configuration management planning is the foundation for the configuration management process. The output of configuration management planning is the configuration management plan.

  The configuration management plan for a specific product should:
  - be documented, approved and controlled,
  - identify the configuration management procedures to be used,
  - make reference to relevant procedures of the organization wherever possible, and
  - describe the responsibilities and authorities for carrying out configuration management throughout the life cycle of the product.

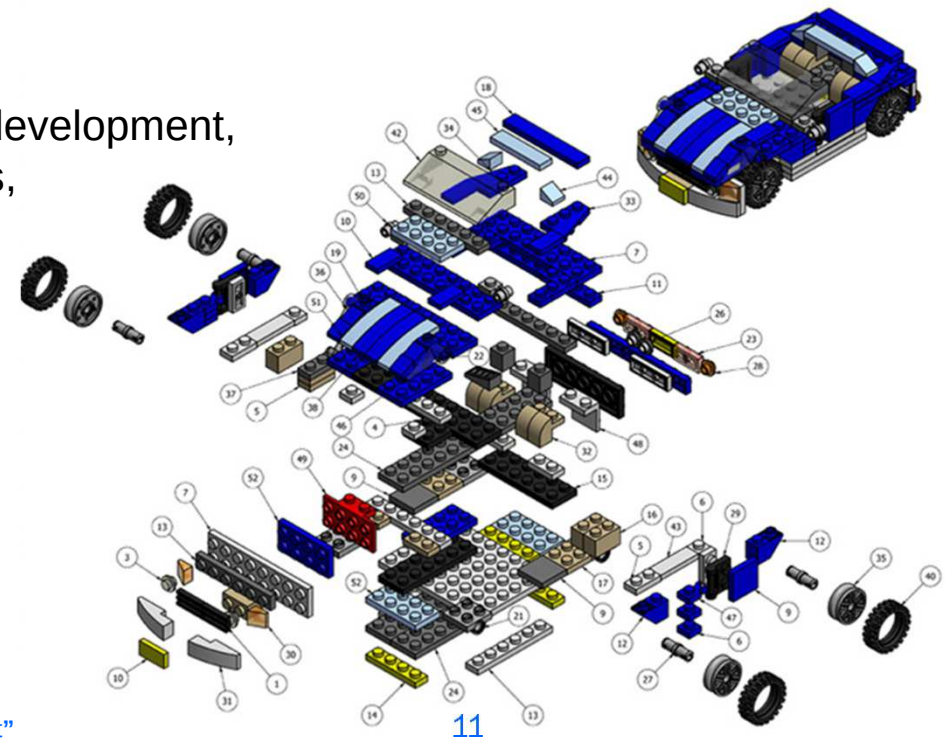
ISO 10007: chapter 5
CM Process

- 5.3 Configuration identification

  Configuration items should be identified using established selection criteria. Configuration items should be selected whose functional and physical characteristics can be managed separately to achieve the overall endues performance of the item.

  Selection criteria should consider:
  - statutory and regulatory requirements,
  - criticality in terms of risks and safety,
  - new or modified technology, design or development,
  - interfaces with other configuration items,
  - procurement conditions, and
  - support and service.

  The number of configuration items selected should optimize the ability to control the product.



ISO 10007: chapter 5
CM Process

- 5.3.2 Product configuration information

  Product configuration information comprises both product definition and product operational information.

  This typically includes:
  - requirements
  - specifications
  - design drawings
  - parts lists
  - software documents
  - test specifications
  - maintenance
  - operating handbooks.

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ISO 10007: chapter 5
CM Process

- 5.3.3 Configuration baselines

  A configuration baseline consists of the approved product configuration information that represents the definition of the product.

ISO 10007: chapter 5
CM Process

- 5.4 Change Control

  After the initial release of product configuration information, all changes should be controlled

  The process for controlling the change should be documented, and should include the following:
  - a description of, justification for, and record of the change
  - a categorization of the change, in terms of complexity, resources and scheduling
  - an evaluation of the consequences of the change
  - details of how the change should be implemented and verified.

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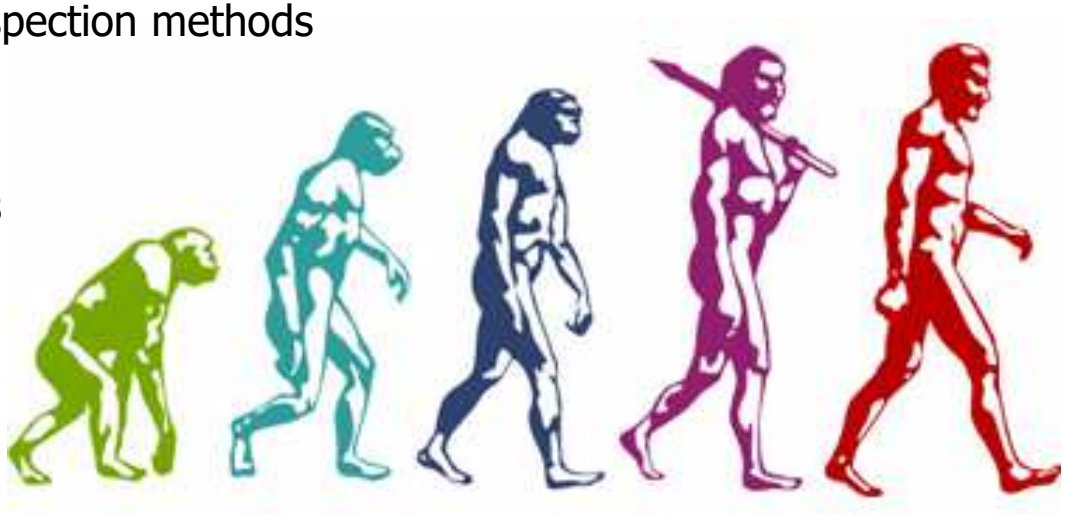
ISO 10007: chapter 5
CM Process

- 5.4 Change Control →**5.4.3 Evaluation of change**
- The extent of any evaluation should be based on the complexity of the product, the category of the change, and should include the following:
  - the technical merits of the proposed change
  - the risks associated with the change
  - the potential impact on contract, schedule and costs
  - the relevant statutory and regulatory requirements
  - the interchangeability of configuration items and the need for their re-identification
  - the interfaces between configuration items
  - the manufacturing, test and inspection methods
  - inventory and purchases
  - delivery activities
  - customer support requirements



ISO 10007: chapter 5
CM Process

- 5.5 Configuration status accounting → **5.5.2 Records**
- Configuration status accounting records are created. These records allow for visibility and traceability and for the efficient management of the evolving configuration.

- To protect the integrity of the product configuration information and to provide a basis for the control of change, it is recommended that configuration items and related information be held in an environment:
  - that is commensurate with the conditions required (e.g. for computer hardware, software, data, documents, drawings),
  - that provides protection from corruption or unauthorized change,
  - that provides means for disaster recovery, and
  - that permits retrieval.

ISO 10007: chapter 5
CM Process

- 5.5 Configuration status accounting → **5.5.3 Reports**

  Reports of varying types will be needed for configuration management purposes. Such reports may cover individual configuration items or the complete product.

  Typical reports include:
  - a list of product configuration information included in a specific configuration baseline
  - a list of configuration items and their configuration baselines
  - details of the current revision status and change history
  - status reports on changes and concessions, and
  - details of the status of delivered and maintained products concerning part and traceability numbers and their revision status

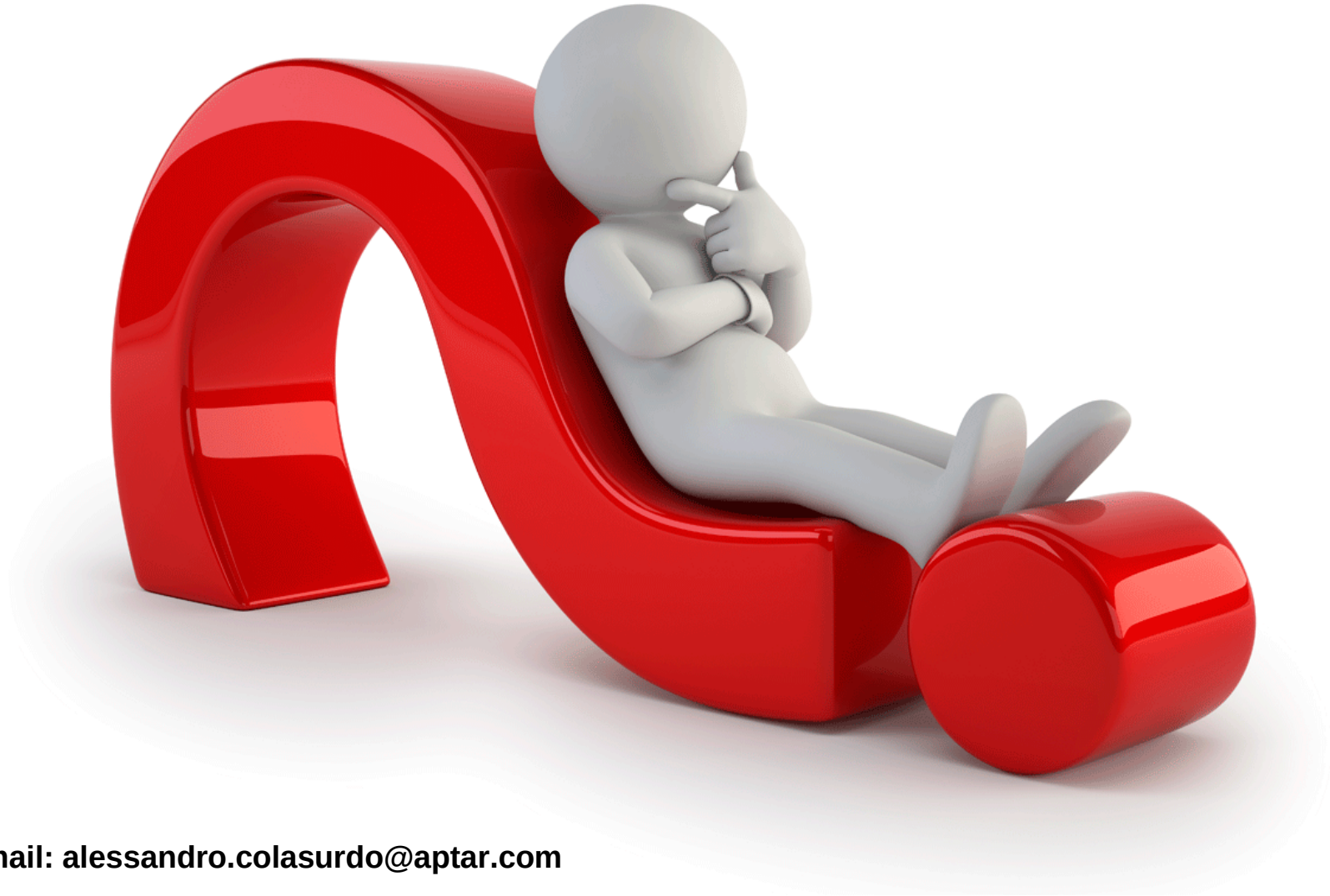
ISO 10007: chapter 5
CM Process

- 5.6 Configuration audit
- Configuration audits should be performed in accordance with documented procedures to determine whether a product conforms to its requirements and product configuration information.
- There are two types of configuration audits:
  - *a functional configuration audit:* this is a formal examination to verify that a configuration item has achieved the functional and performance characteristics specified in its product configuration information;
  - *a physical configuration audit:* this is a formal examination to verify that a configuration item has achieved the physical characteristics specified in its product configuration information. A configuration audit may be required before the formal acceptance of a configuration item. It is not intended to replace other forms of verification, review, test or inspection, but will be affected by the results of these activities.

Final consideration about the ISO 10007:2003

- PRO: This norm explains at high level how to deal with configuration management, it explains also the importance of configuration management defining responsibilities, change control and the necessity to keep track of configuration management baseline.

- CONS: it's leaking of tools and methods for the management of the configuration.



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