

Avancier Methods (AM)

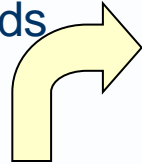
in both **MANAGE** and **GOVERN** phases

Manage change

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Manage change

▶ For 4th level process definition see the detailed methods



Initiate

- Register sources of change
- Identify potential change
- Analyze change request
- Evaluate the change
- Plan the change effort
- Implement change
- Release, review and close change

Govern

- Respond to oper'l change
- Monitor the portfolio(s)
- Govern migration/delivery
- Initiate construction

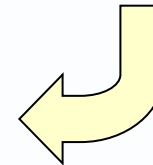
Manage

- Manage stakeholders
- Manage requirements
- Manage business case
- Manage readiness & risks

Architect

Plan

For change to operational systems
top down command and control
For change to requirements
more agile and adaptive



- ▶ The organisation, processes and documentation needed to manage changes in a way that enables the evolution of a system.
- ▶ Used in:
 1. Manage change to requirements
 2. Manage change to the architecture description of operational systems

Change Management

Organisation	Processes	Documentation
Change advisory board Change administration Change reviewers Change implementers	Change control Configuration management	Baseline configurations Configuration items Requests for change (RFC), Impact statements

The two facets of change management

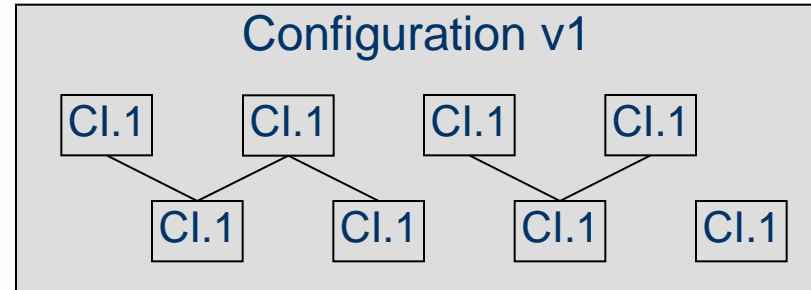
- ▶ **Configuration management**
- ▶ Change control

Change management

The organisation and processes needed to both

- exercise change control to a baseline, and
- perform configuration management.

- ▶ A collection of configuration items.
- ▶ The items in a configuration are usually inter-related and inter-dependent to some extent.



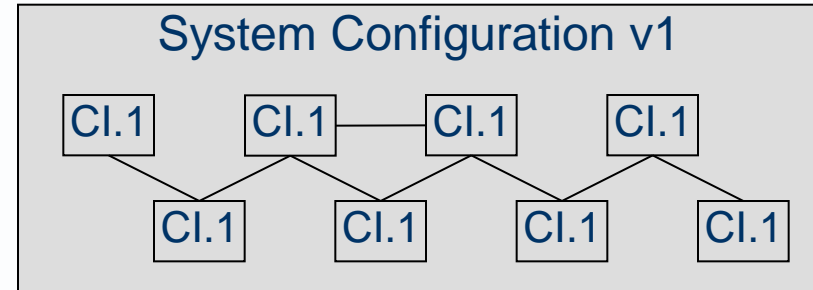
Configuration Item

An item in a baseline configuration.

Could be a requirement, a source code component or a hardware device.

Can be at any level of granularity.

- ▶ A kind of configuration in which *all* the configuration items are inter-related directly or indirectly.



Baseline configuration

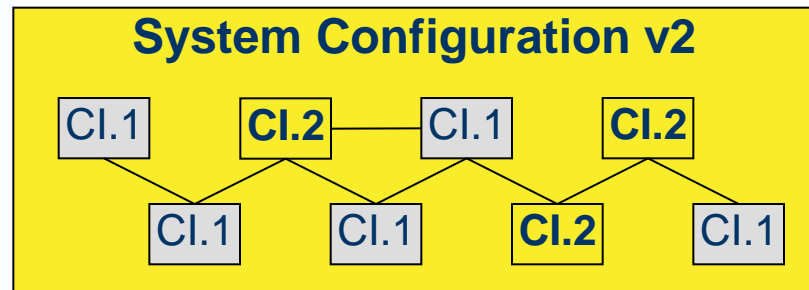
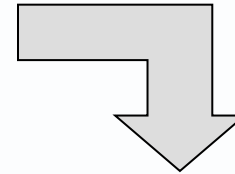
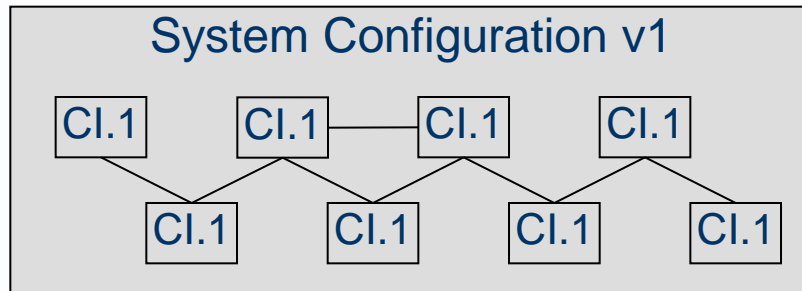
A specification or product that has been formally reviewed and agreed upon. The basis for further development.

Can be changed only through formal change management.

E.g. a contract, a requirements catalogue, architecture documentation, or a hardware configuration.

System configuration versions

- ▶ defined by
- ▶ the set of configuration items contained
- ▶ the item versions.

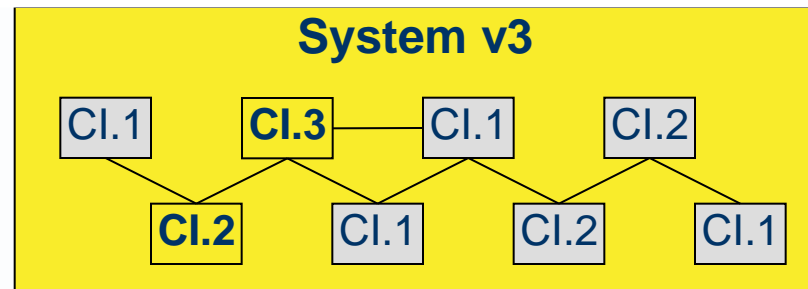


Configuration management

The organisation, processes and documentation needed (within change management) to establish a baseline configuration and apply changes to that baseline configuration.

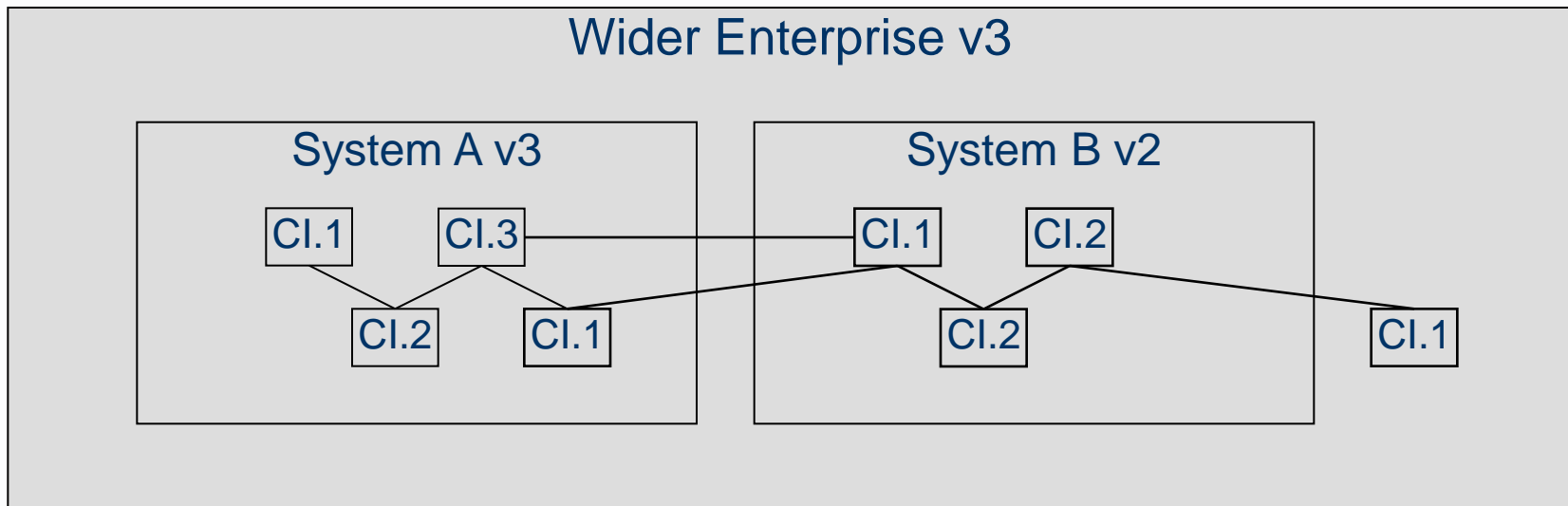
This includes work to

- ▶ Identify and document items and their versions
- ▶ Define dependencies between items.
- ▶ Apply rules for the addition, update and removal of configuration items.
- ▶ Report the status of configuration items and changes.



Configuration item size

- ▶ “A configuration item can range from an entire system (hardware, software, documentation) to a single hardware component.” ITIL



The challenge of change management is to

- ▶ Enable change yet
- ▶ Maintain the integrity and quality of a whole system
 - by making sure the configuration items are consistent with each other, and work together.

The two facets of change management

- ▶ Configuration management
- ▶ **Change control**

Change management

The organisation and processes needed to both

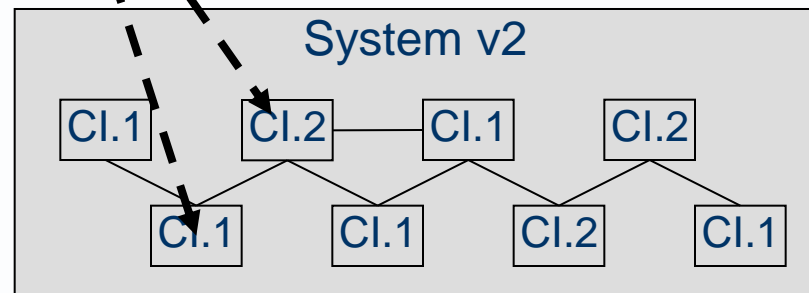
- exercise change control to a baseline, and
- perform configuration management.

- ▶ The organisation, processes and documentation used to control what changes are made to the configuration of a system.

Change Control

The organisation and processes needed within change management to:

- Monitor the potential sources of change
- Record change requests
- Perform impact analysis
- Decide which changes should be made.



- ▶ The organisation, processes and documentation you need to evolve a large and complex system **safely**

- ▶ E.g.
 - an airplane
 - a railway network
 - the cash machines of a bank.
 - the configuration of any software configuration whose integrity is vital, whose results must be perfect.

How does top down change control work?

- ▶ Organisation: responsibility is taken relatively
 - High up the management chain
 - Widely across the enterprise

- ▶ Process: formal change control process is followed to
 - Monitor events
 - Record change requests
 - Analyse impacts of change
 - Determine actions
 - Process changes

- ▶ Change control is *proactive*
 - Improvements are made with caution
 - And because improvement steps are infrequent, many small changes tend to be batched up into a large release

- ▶ **Customer and supplier change advisory boards**
 - Formal change control boards manage customer-owned formal baselines.
 - Internal supplier review boards manage supplier-controlled information.
 - Joint boards manage jointly owned information.
- ▶ **Change control board domains**
 - Business change board
 - IS (application and data) change board
 - IT (infrastructure and ITSM) change board
- ▶ **Change control board levels**
 - High-level board – perhaps meets monthly.
 - Middle-level board – perhaps meets weekly.
 - Low-level board – perhaps meets daily.

Change control process

- ▶ About the organisation and processes needed to control changes to a system configuration

Register sources of change
Identify potential change
Analyze change request
Evaluate the change
Plan the change effort
Implement change
Release, review and close change

Register sources of change

- ▶ Business change
- ▶ IS (application and data) change
- ▶ IT (infrastructure and ITSM) change

Register sources of change

Identify potential change
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Identify potential change

- ▶ **New function:** formulated as a requirement.
- ▶ **Problem:** formulated in a problem report.
- ▶ **Change request:** proposed in a request for change

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Request for Change (RFC)

“Form used to record details of a request for a change to any Configuration Item within an Infrastructure or to procedures and items associated with the Infrastructure.” ITIL

Analyze change request

- ▶ Analyse change impact
- ▶ Determine technical feasibility
- ▶ Update the business case.

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Impact analysis

Analysis of the effects of a change (perhaps a new requirement or deliverable) to find the effects of that change.

How does it impact what has been done so far?

How does it constrain what is planned for the future?

Leads to an impact analysis report.

Evaluate the change

- ▶ Approve the change
- ▶ Deny the change
- ▶ Postpone change

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Plan the change effort

- ▶ Analyze change impact in more detail
- ▶ Create change plan

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Implement change

- ▶ Execute change
- ▶ Test change
- ▶ Update documentation

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Release, review and close change

- ▶ Release change
- ▶ Verify change made
- ▶ Close change

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For change to operational systems

top down command and control?

For change to requirements

more agile and adaptive?

- ▶ The organisation, processes and documentation you need to evolve a large and complex system **safely**

- ▶ E.g.
 - an airplane
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But

- **Costly and bureaucratic**
- **Slows progress**
- **Stifles change, agility and continuous improvement**

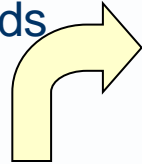
Agile Willing and able to speedily respond to change.

- ▶ A large and complex system can be built more quickly and cheaply without top-down change control...
- ▶ ***If you can accept***
 - Some temporary integrity and quality failures
 - The need to refactor the system configuration
- ▶ **Agile change management is discussed elsewhere**

See “Adaptive Architecture”

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