Software Engineering Essentials

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Software Configuration Management 2

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Learning goals



- 1) Understand the difference between internal promotions and external releases
- 2) Describe a typical workflow how to handle change requests

Six main activities





Configuration item identification

Modeling the system as set of evolving components

2) Promotion management

Creation of versions for other developers

3) Build and release management

Creation of versions for clients and users

4) Change management

Handling, approval & tracking of change requests

5) Branch management

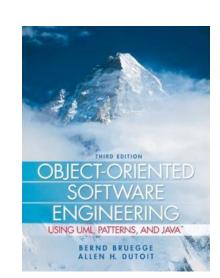
Management of concurrent development

6) Variant management

Management of coexisting versions

covered in the units Build Management and Release Management

Covered in this course



Bruegge, Dutoit: Object-Oriented Software Engineering Using UML, Patterns, and Java (Chapter 13)

1) Configuration item identification



Configuration Item: An aggregation of software, hardware, or both, treated as controlled item in the software project

Example:

- All types of code files
- Drivers for tests
- Analysis or design documents
- User or developer manuals
- System configurations
 (e.g. version of compiler used)

1) Configuration item identification



Not every entity needs to be under control all the time

- 2 Issues:
- 1) What: Selection of configuration items
 - What should be under configuration control?
- 2) When: When do you start to place entities under configuration control?
 - In early days, it was an activity
 - Nowadays it is a project function (from beginning to end of the project)

2) Promotion management



Promotion: a version that is made available to other developers

• Example: every commit in a version control system that is pushed to the remote repository is as promotion

Release: a version that is made available to users

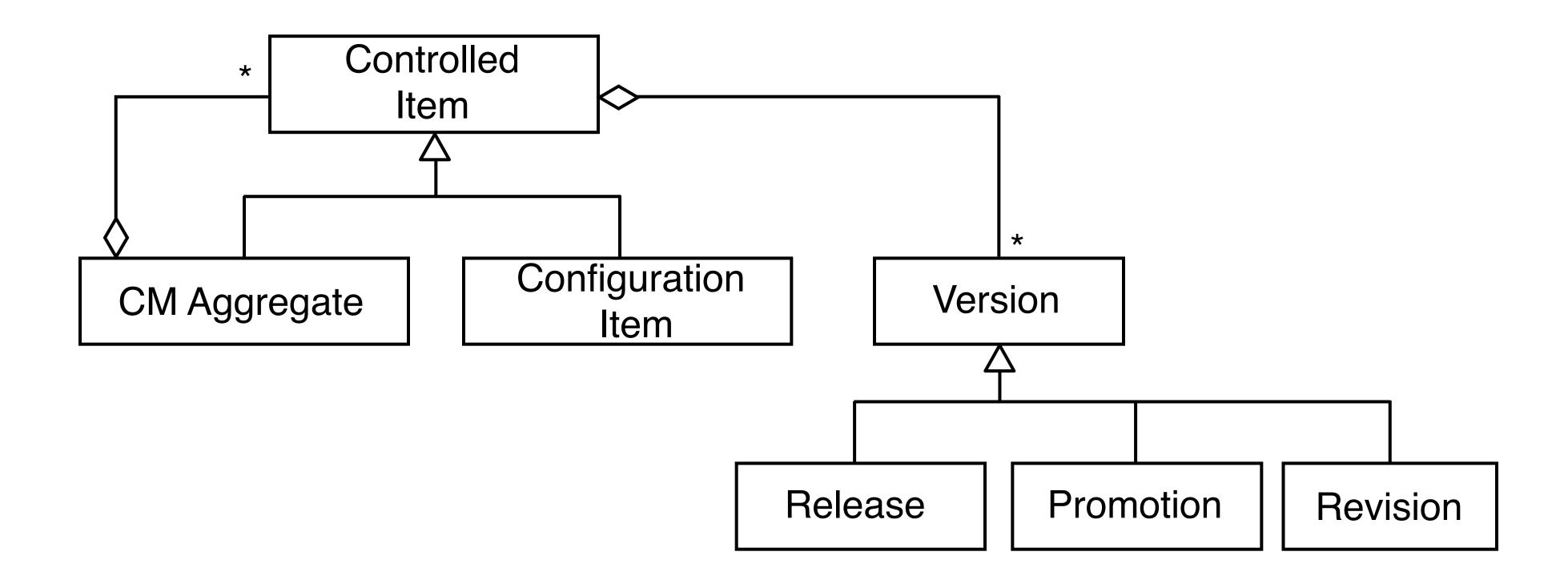
• Example: a potentially shippable product increment at the end of a sprint in Scrum is released to the product owner

Promotion management defines workflows, activities and best practices how and when to create promotions

→ We will cover more in the unit about distributed version control

Object model for configuration management



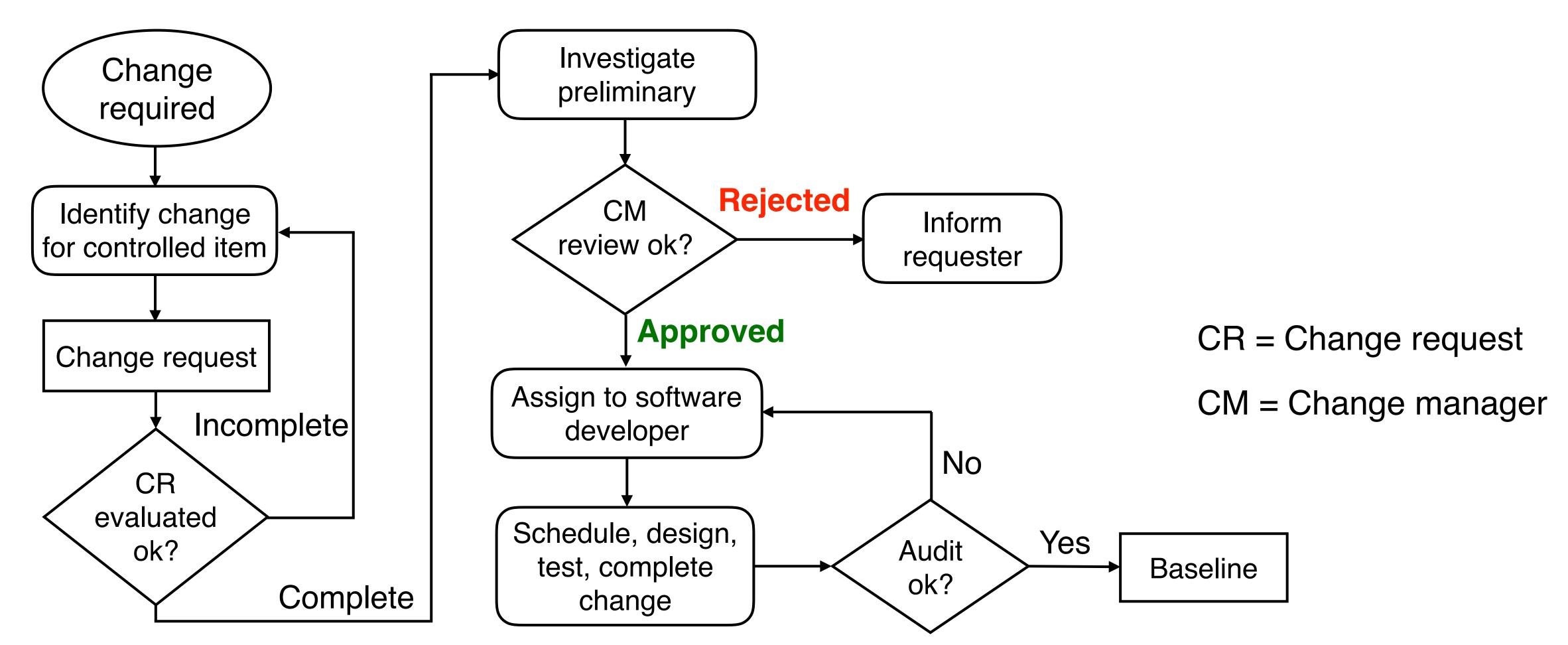


4) Change management



The handling of change requests

Example:



Change policies



The purpose of a change policy is to guarantee that each promotion or release conforms to commonly accepted criteria

Examples for change policies:

- No developer is allowed to promote source code that was compiled with errors
- No baseline can be released without being beta-tested by at least 500 external testers