Keynote

Der offene Ansatz: Open Source basiertes ALM ganz praktisch

ALMconf 2010 in Stuttgart – 26. bis 28. Oktober 2010

Thomas Obermüller

elego Software Solutions GmbH - © 2010

Welcome & Outline

elego Software Solutions GmbH

"**Open Source basiertes ALM ganz praktisch**"

Agenda

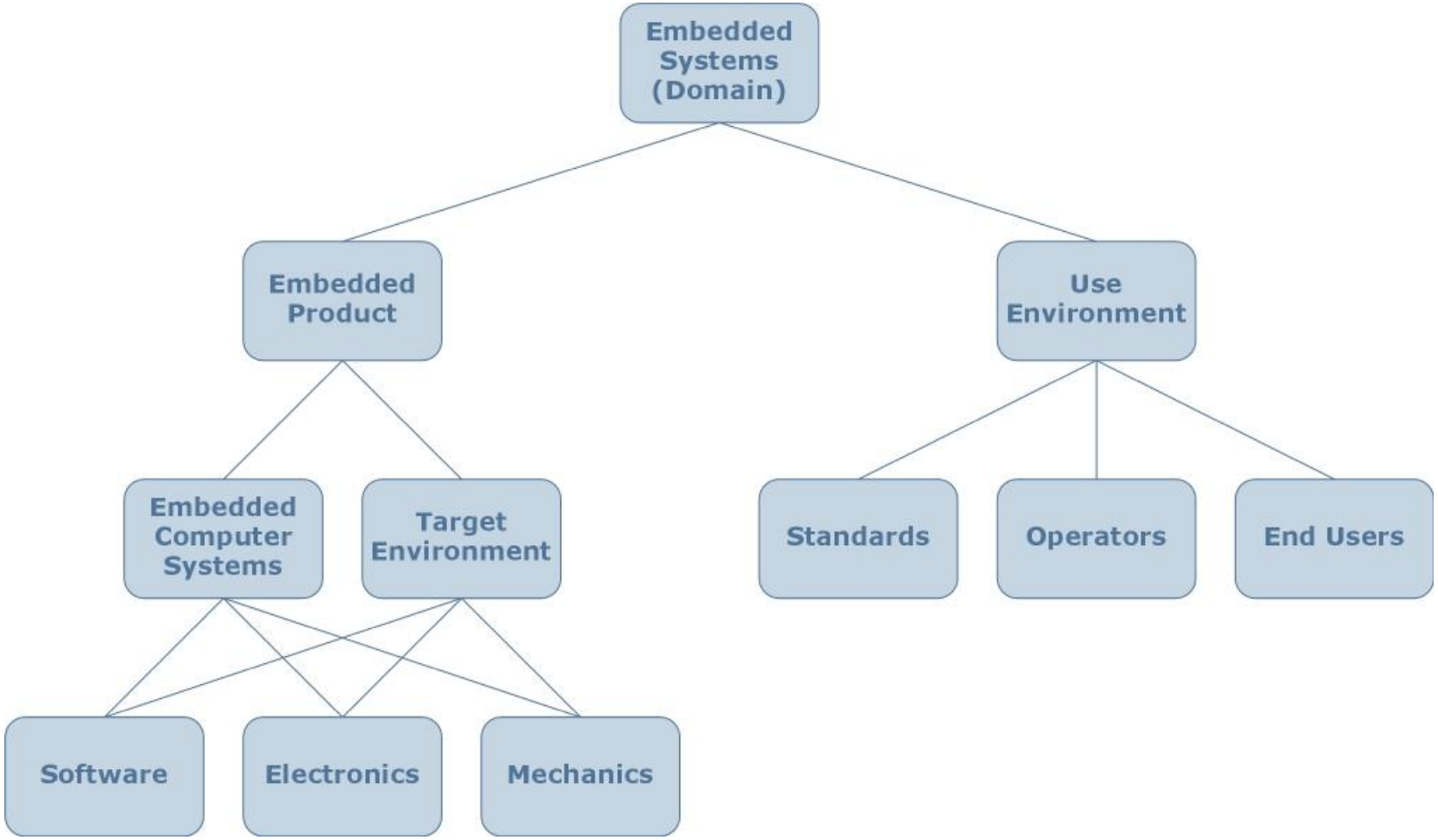
- Application Lifecycle - Produktentwicklung
- Konzepte
- Lösungsansatz

Unternehmen

elego Software Solutions GmbH

- Software Services
  - Leitung und Durchführung komplexer anspruchsvoller Softwareentwicklungsprojekte
- Software CM Services
  - Analyse von CM in Software entwickelnden Firmen
  - CM Beratung und Implementierung
  - CM Training und Coaching
- Contributor Open Source Projekte
  - (D)CVS, Subversion, Modula-3, XEmacs

Komplexität



Toolzirkus

Quelle: http://www.cause.de

Herausforderungen Produktentwicklung

- System Engineering - Entwicklungswerkzeuge
  - Software, Mechanik, Elektronik als Gesamtsystem
  - Heterogene Entwicklungsplattformen und Systeme
  - Anforderungen und Change Requests gelten für das Gesamtsystem
  - Welche Artefakte werden Configuration Items? (CIs)
  - Welche Referenzen gibt es untereinander? (Traces)
  - Abbildung von komponenten-orientierten Produktvarianten (Test)
  - Verwendung von Modellartefakten (Diff- und Mergetechniken?)

Ziele bei der Produktentwicklung

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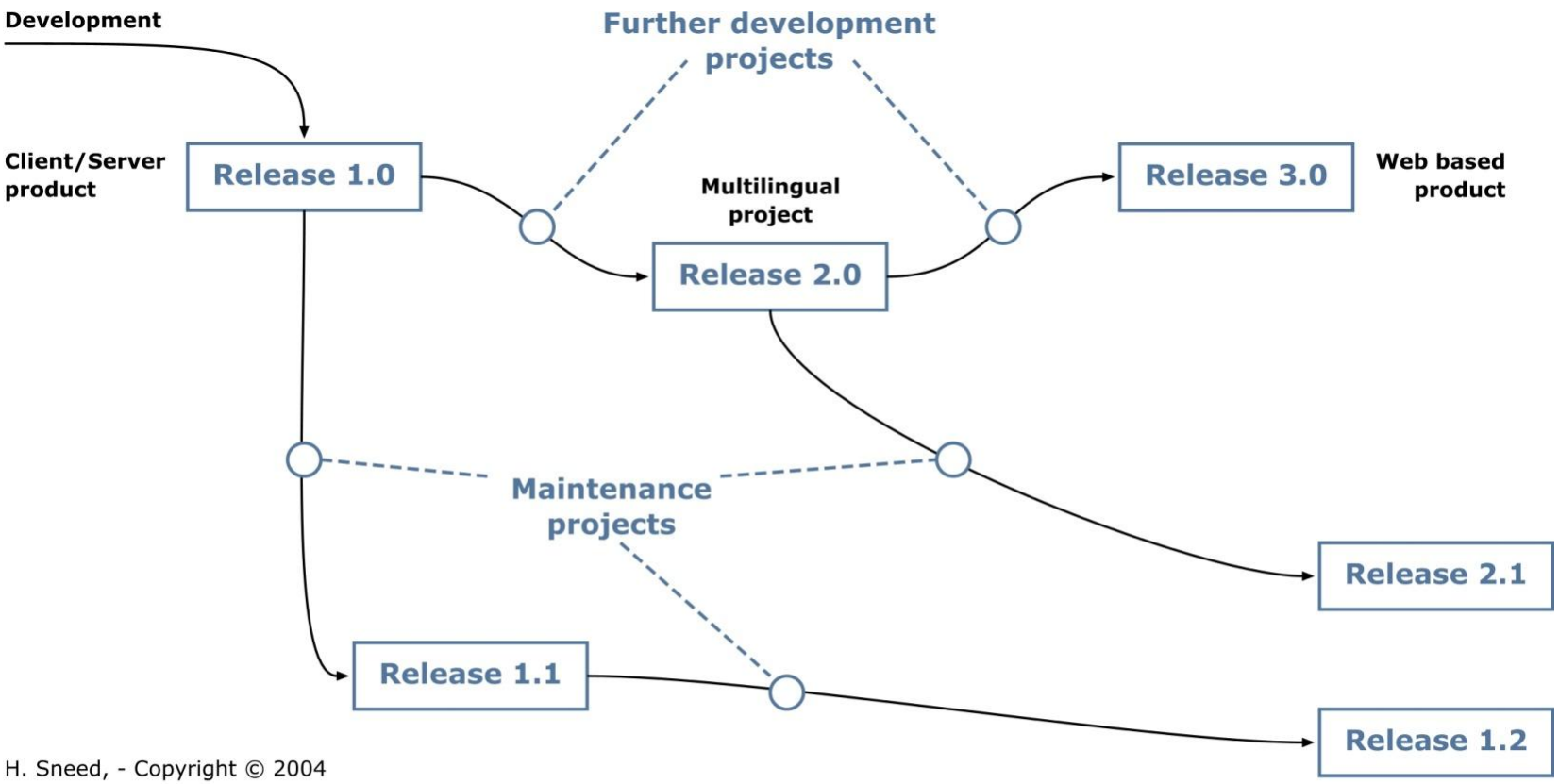
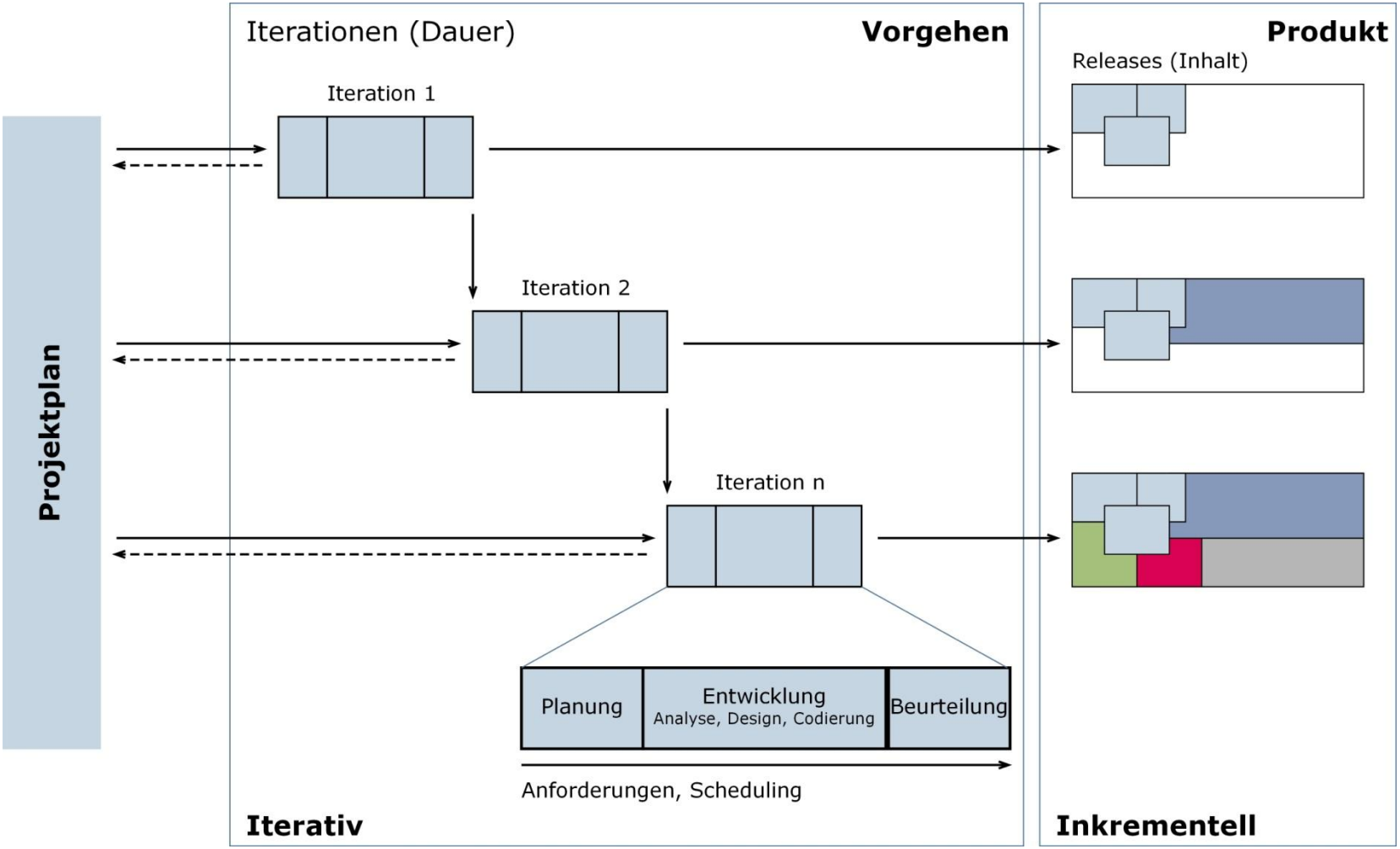
- Verkürzung der Time-to-market für neue Produkte bzw. Produktupdates
- Reduzierung der Entwicklungs- und Wartungskosten
- Erhöhung des Wiederverwendungsgrades
- Qualitätsgewinn durch formalisierte (automatisierte) Prozesse
- Erfüllung von Prozess- bzw- Qualitätsstandards (SPICE, (A)SIL - *(Automotive) Safety Integrity Level , etc.)*
- Effiziente Verwaltung von varianten Produkten von Anforderung bis Test und Rollout

Evolution eines Produktes

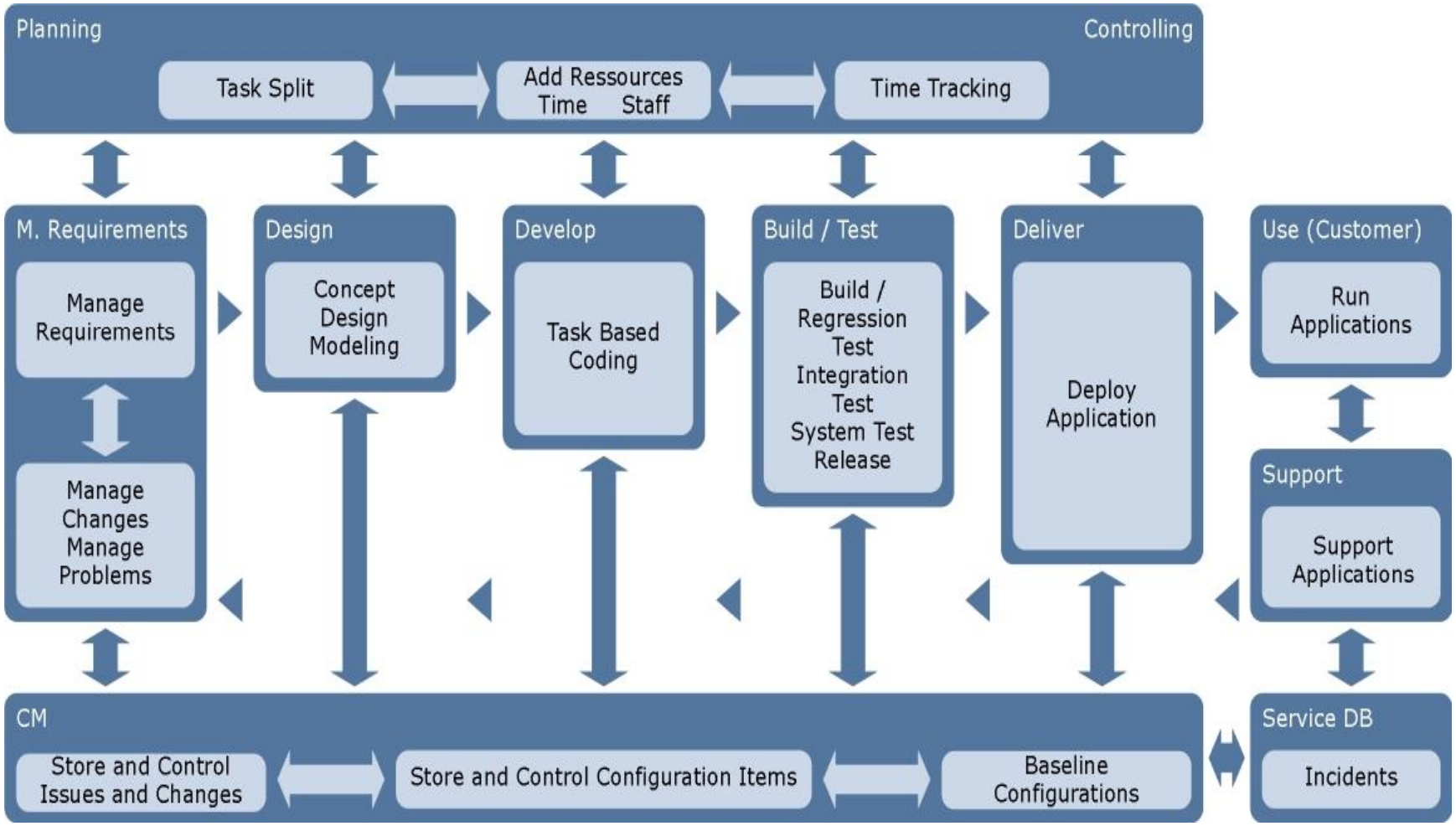


Development | Evolution | Maintenance

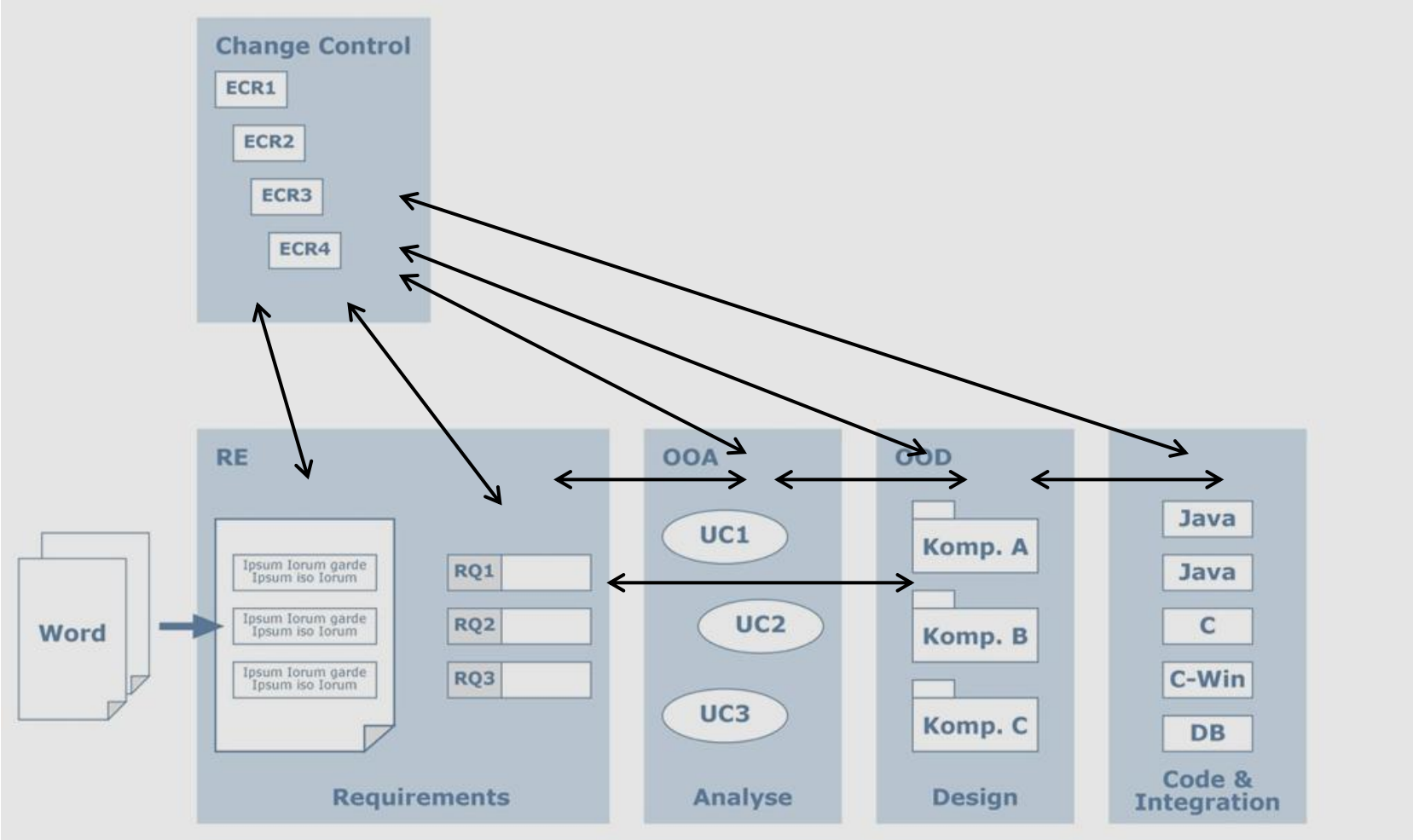
Wie entstehen heute Produkte?



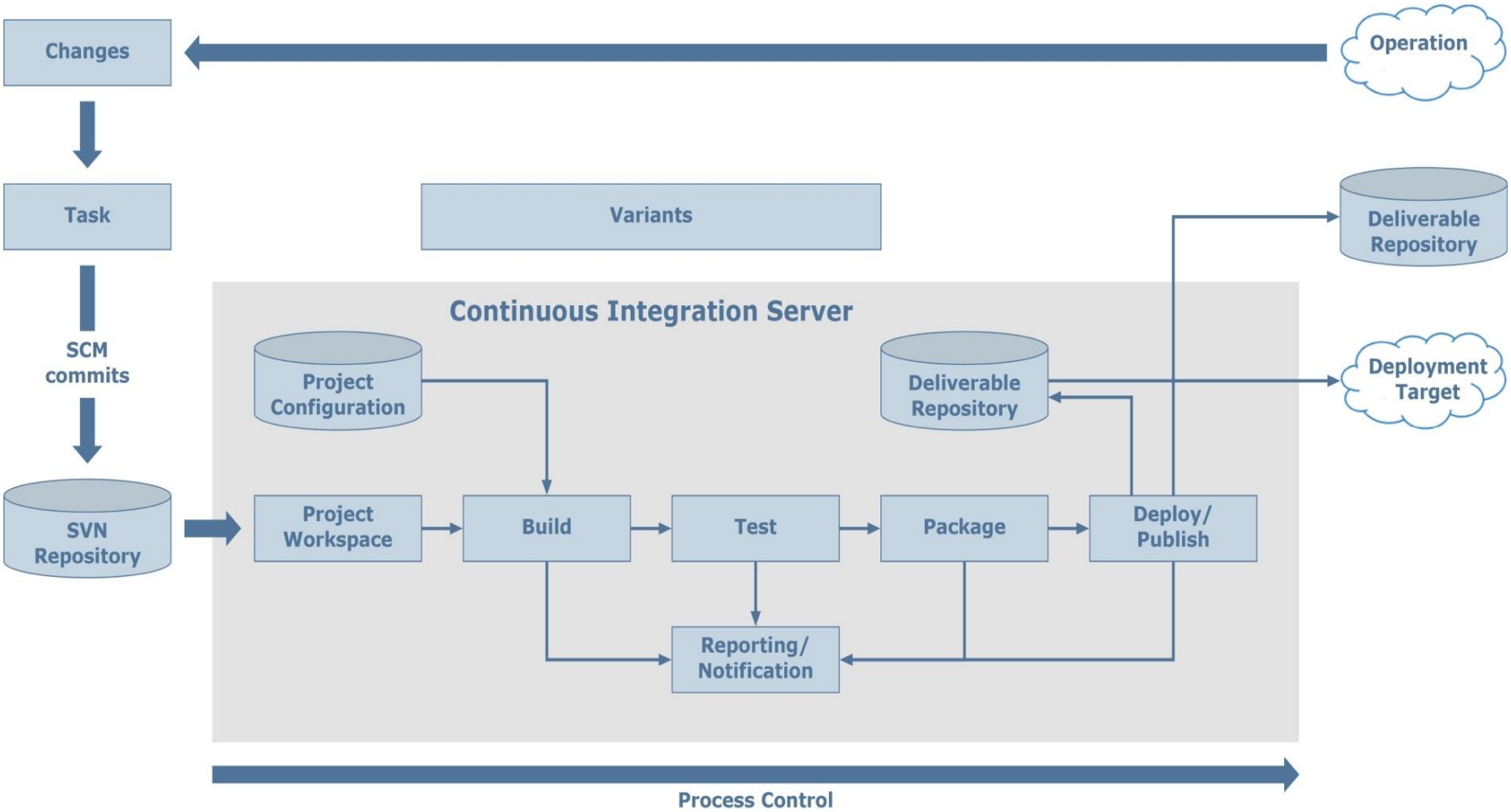
Wie wird entwickelt? Aufgaben-basiert?



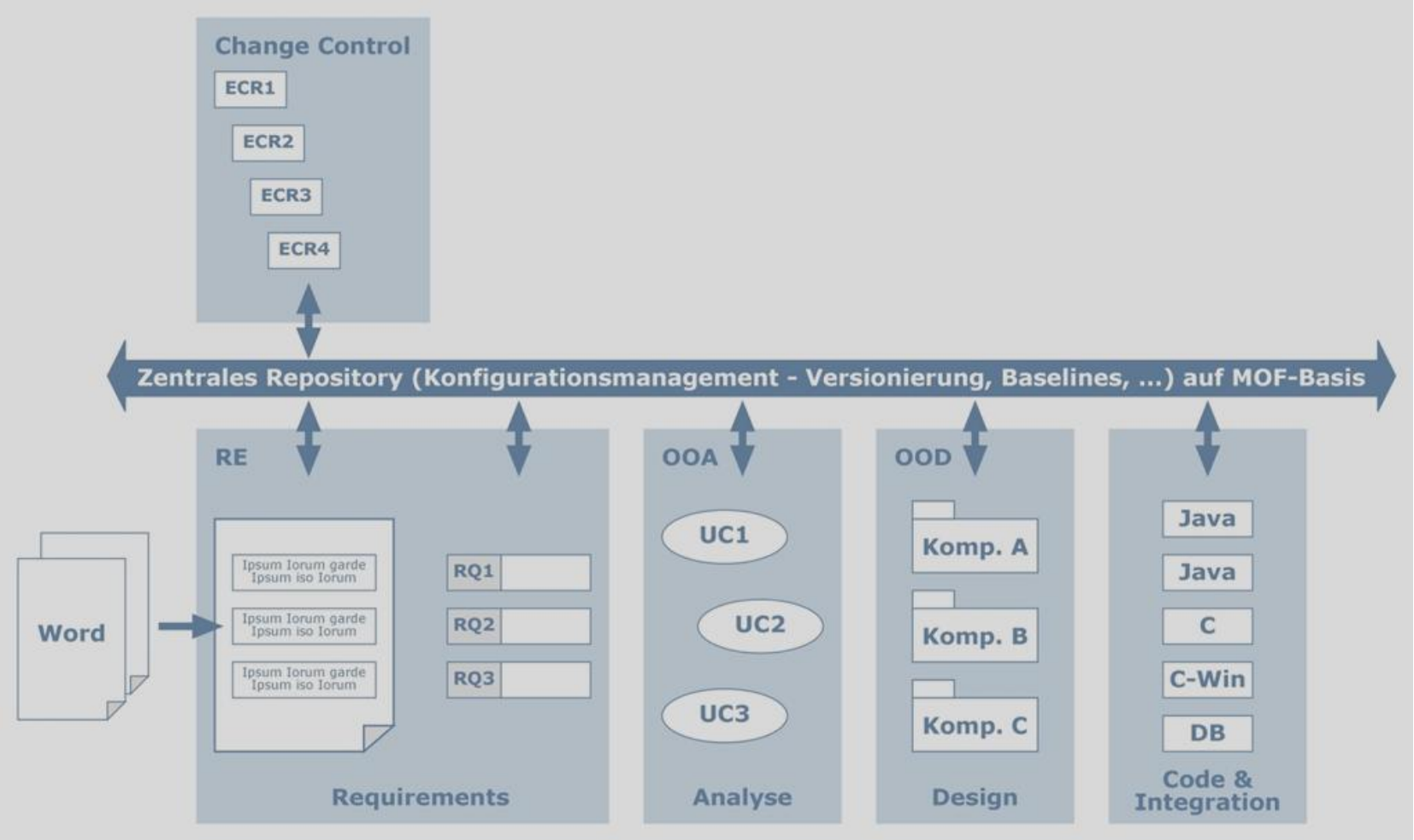
Herausforderung Tool- und Prozessintegration



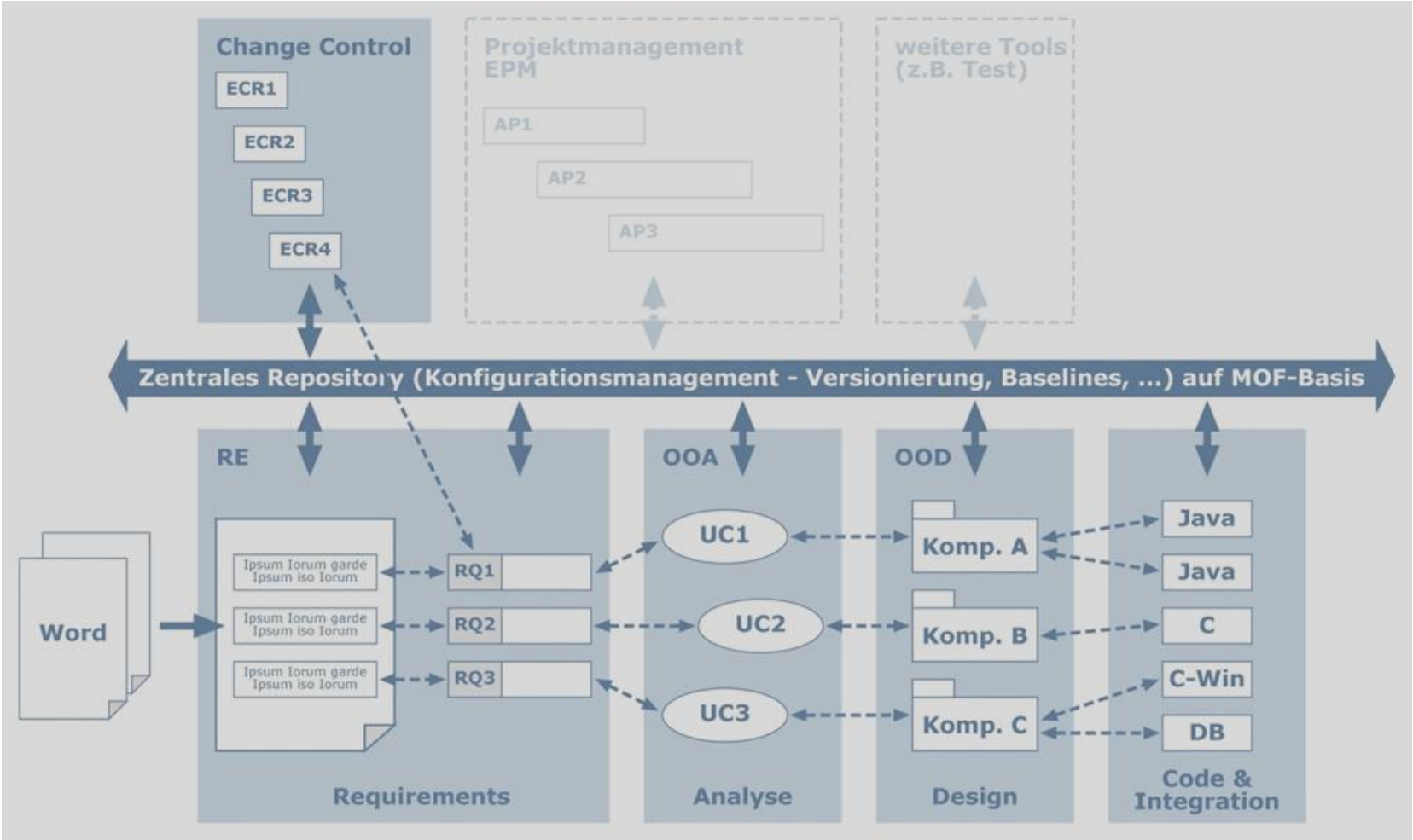
Toolketten vs. Big Player



Konzept eines zentralen Repositories



Integration über ein zentrales Repository



Was wird von einem effizienten ALM erwartet und was wird dazu gebraucht.

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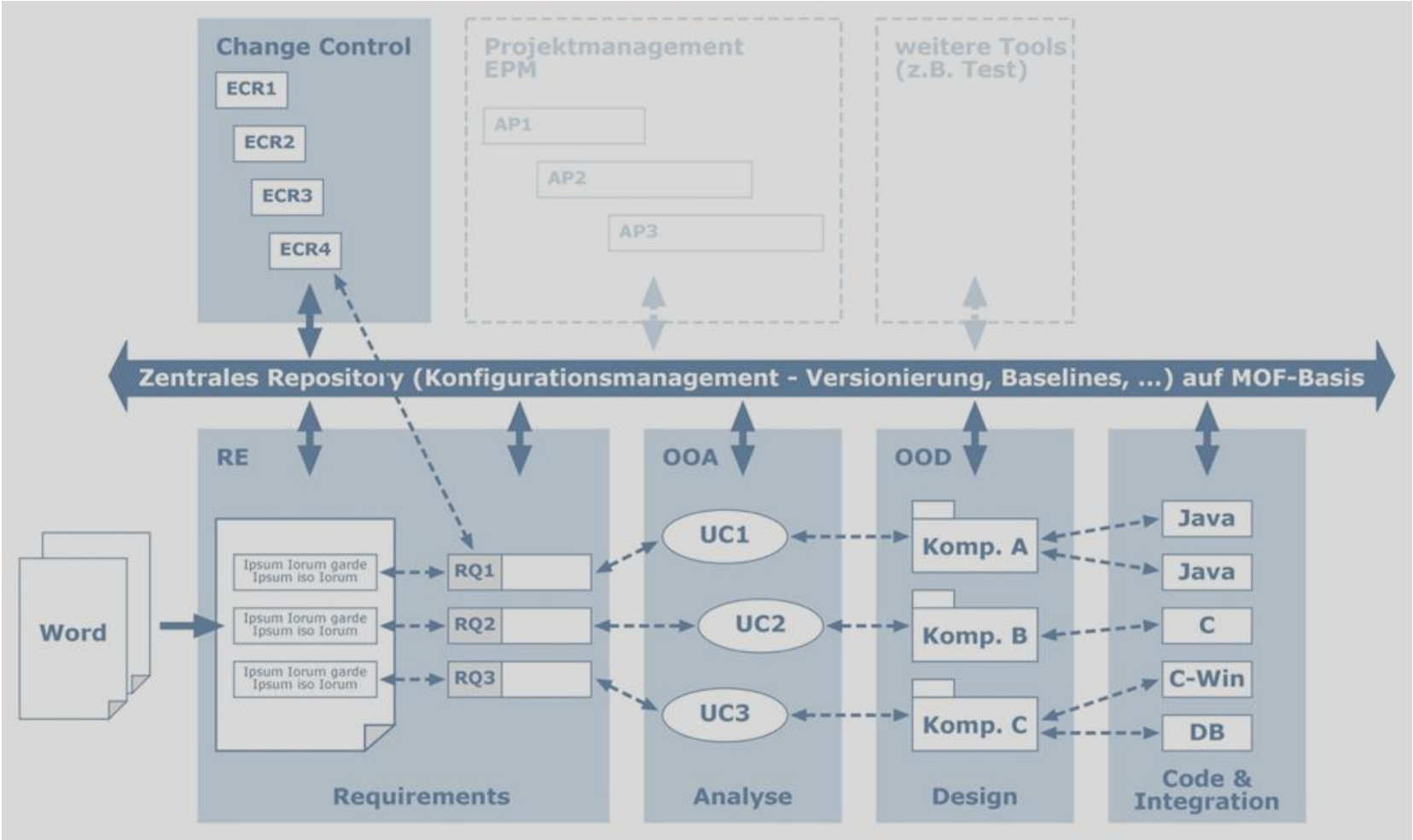
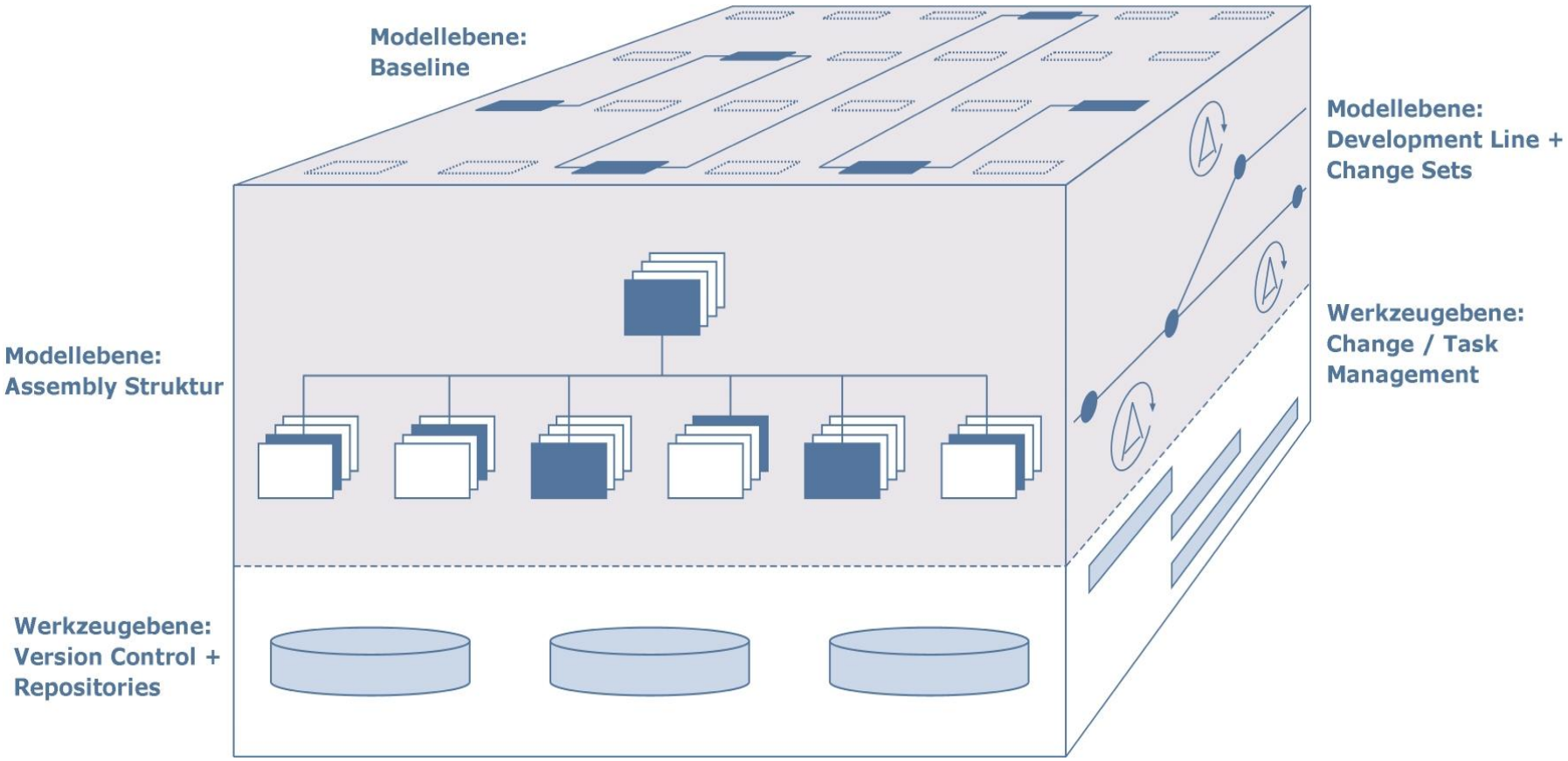
- Planungssichere Meilensteine-> Baselines Lifecycle
- Parallele und variante Produktentwicklung-> Code Lines
- Rückverfolgbarkeit von Requirements, Tasks zu Code und Test -> Task-based Developement
- Saubere Produktarchitektur -> Assemblystruktur
- Strategie für Messungen der Qualität und Build-Mechanismen
- Single point of data -> Toolintegration
- Durchgänger Entwicklungsprozess -> Prozessintegration
- **→ Sauber implementiertes Configuration Management**

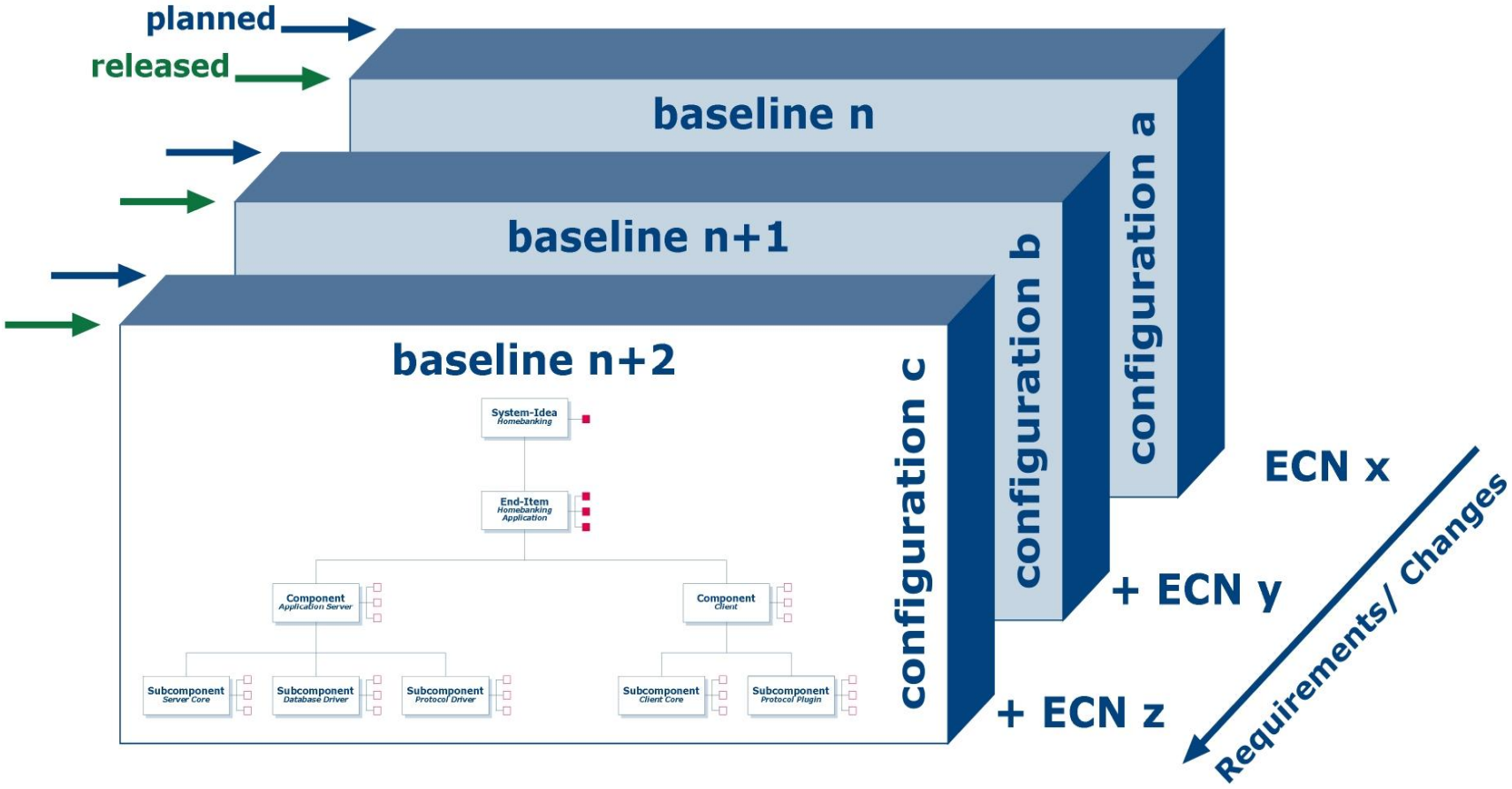
Integration über ein zentrales Repository (2)



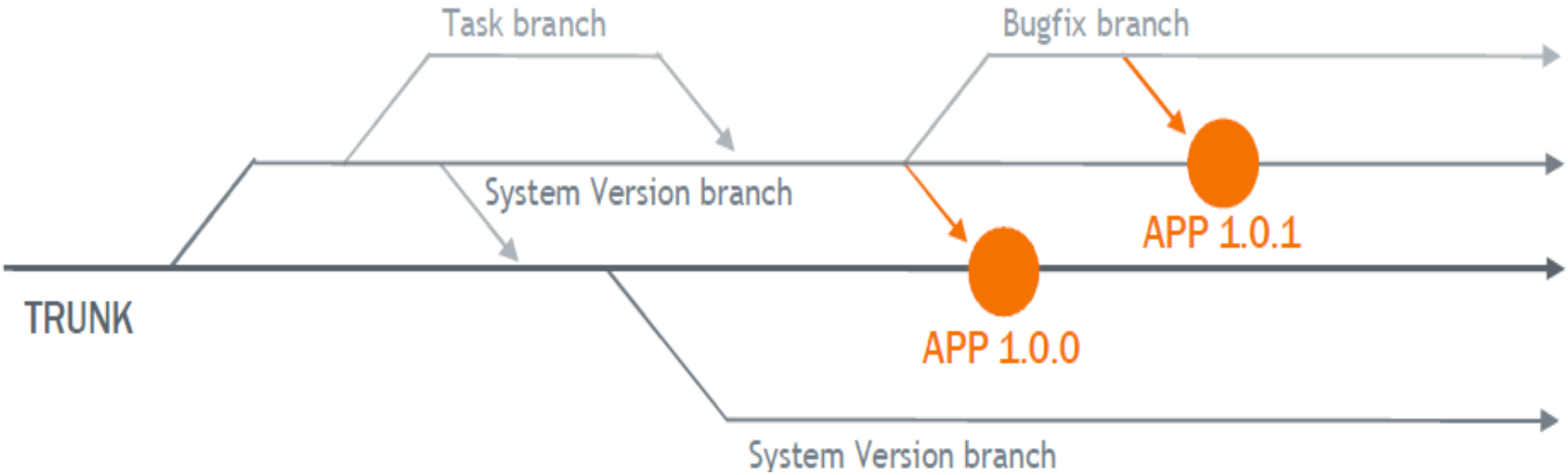
CM–orientierter und modell-basierter Ansatz



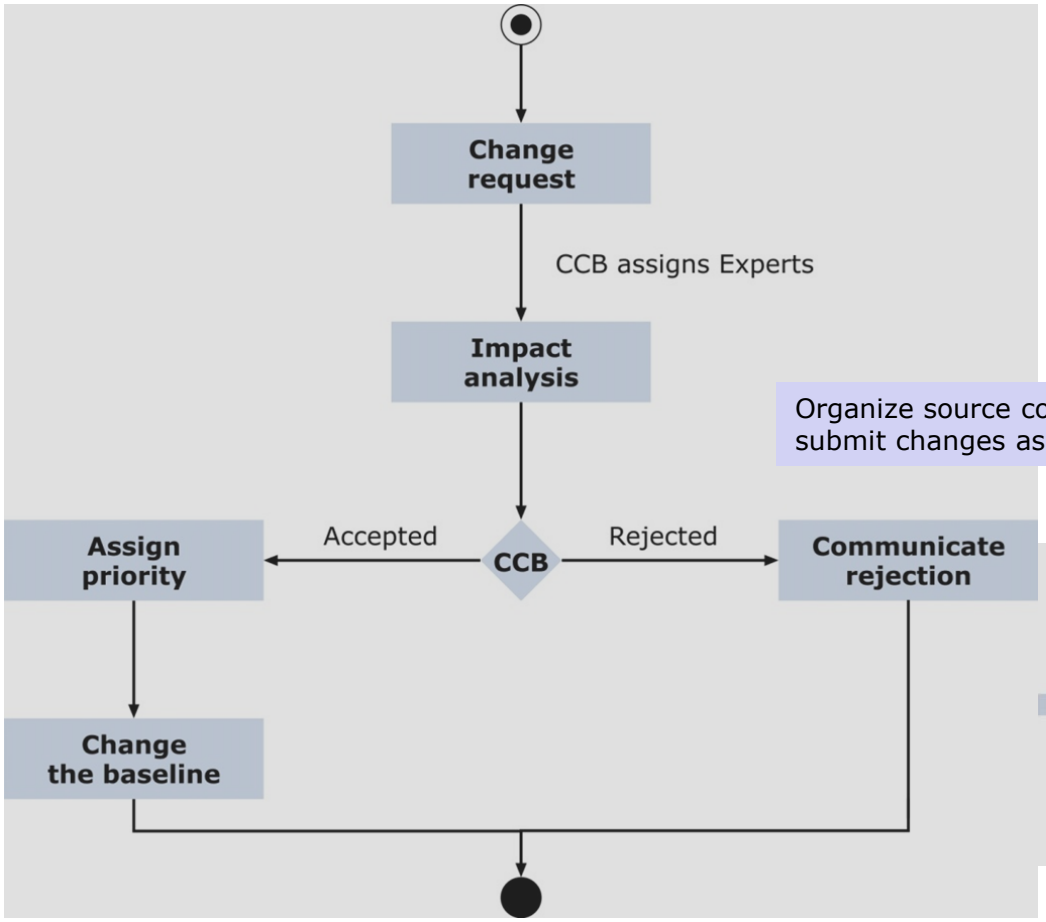
Baseline Lifecycle



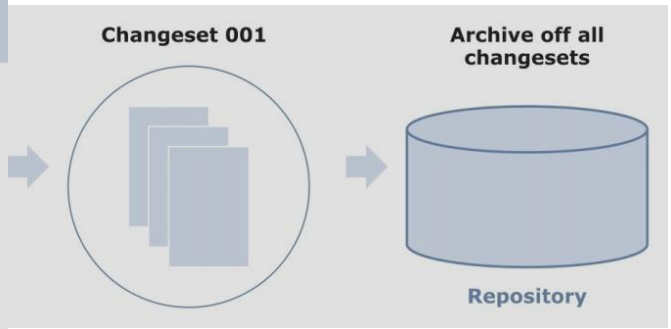
Developement Lines



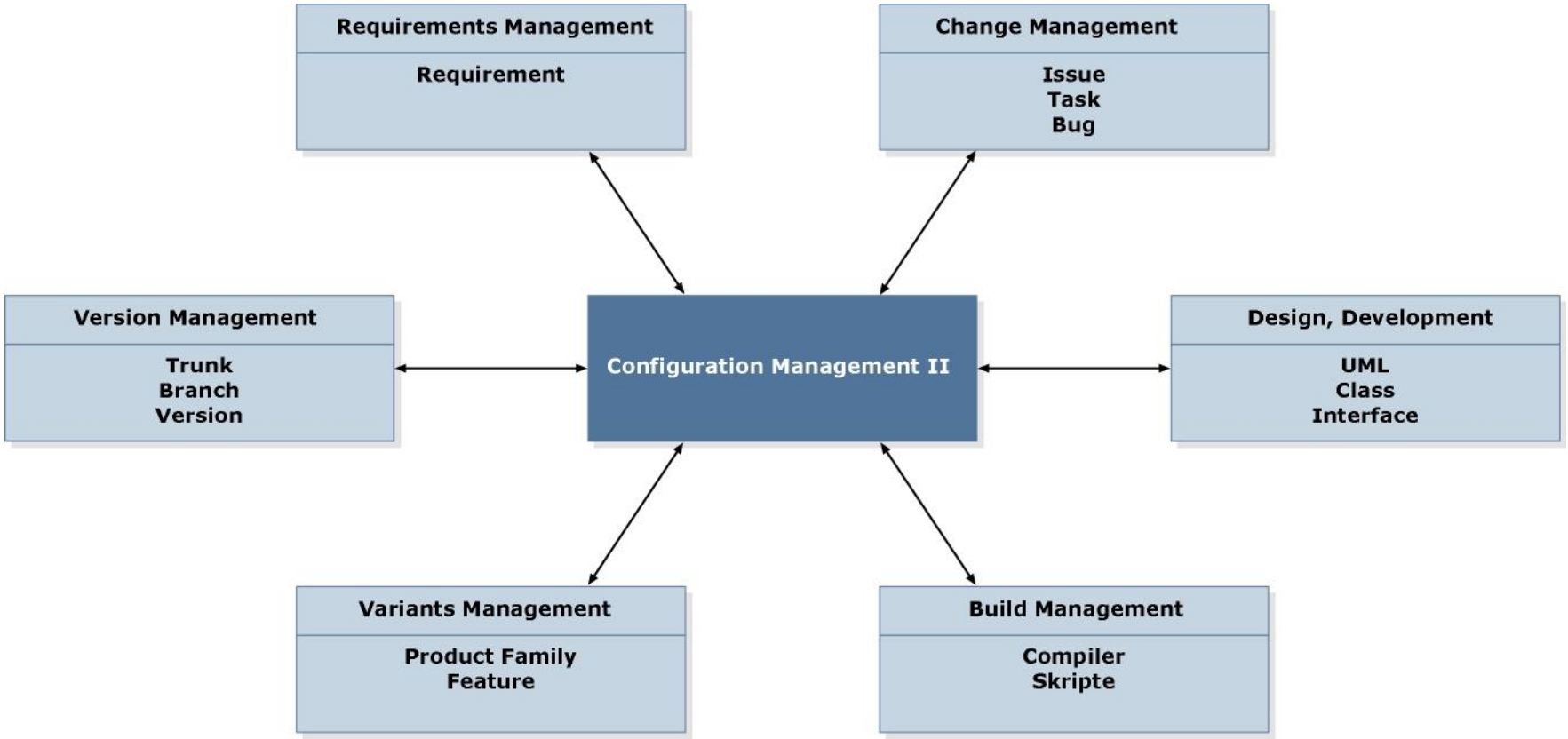
Taskmanagement



Organize source code changes by taskoriented units of work and submit changes as a **Task Level Commit**.



Domänenmodell des ALM



Konkreter Lösungsansatz

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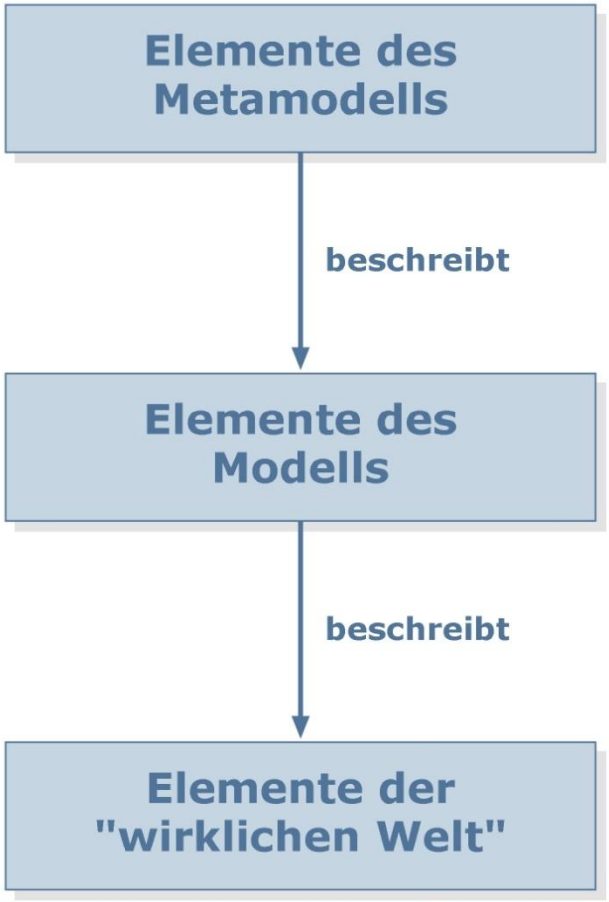
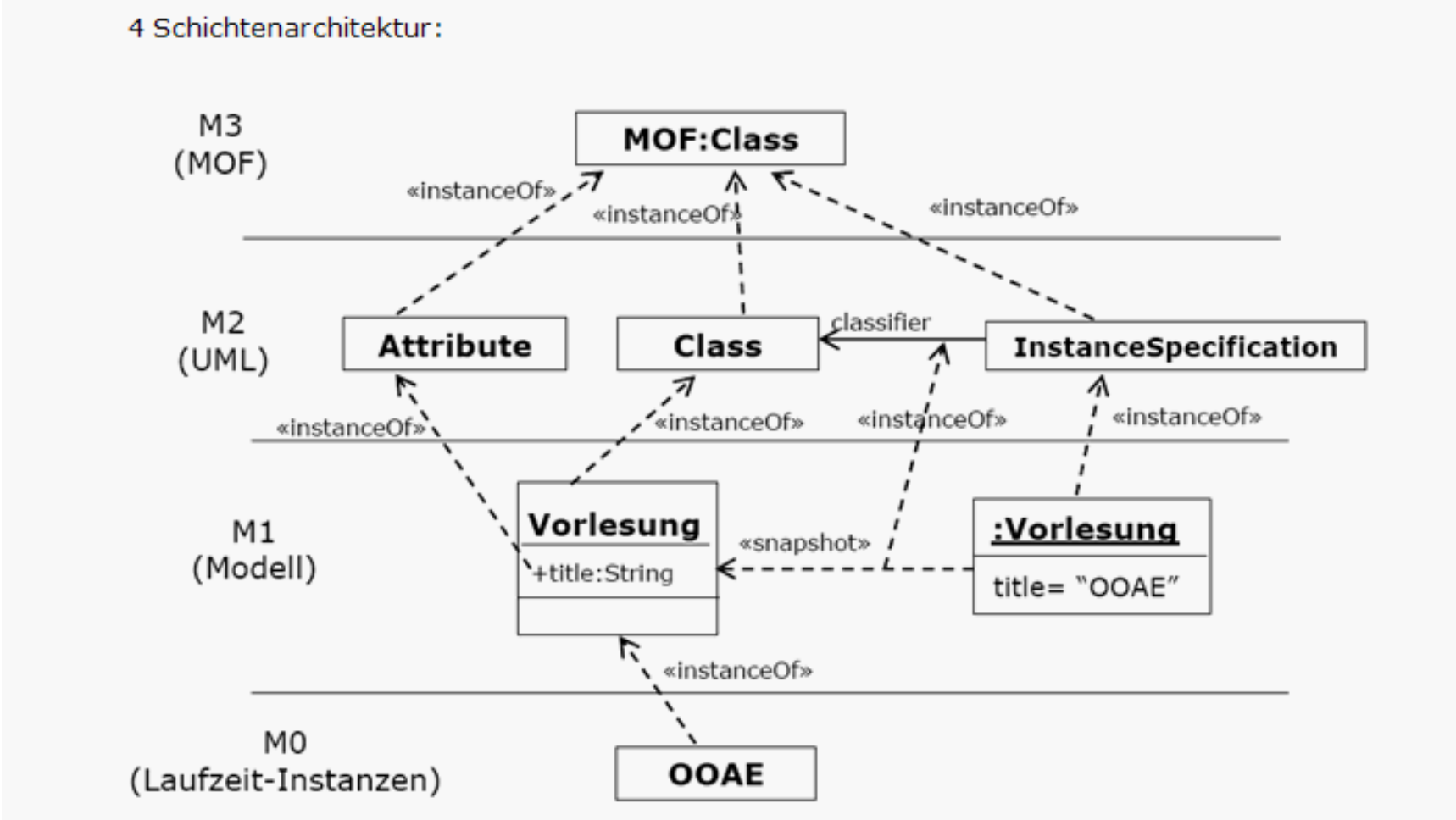
- MOF-basiertes Domänenmodell zu den ALM Teilbereichen
- Leicht erweiterbare und an zusätzliche Bedürfnisse anpassbare Eclipse-RCP-Applikation
- Das Kernkonzept von Impact sind Baselines.
  - Eine Baseline repräsentiert den geordneten Übergang von einer Produktversion zur nächsten.
  - Die Baseline aggregiert Detailinformationen aus den Disziplinen und verwaltet sie persistent im Modellrepository.

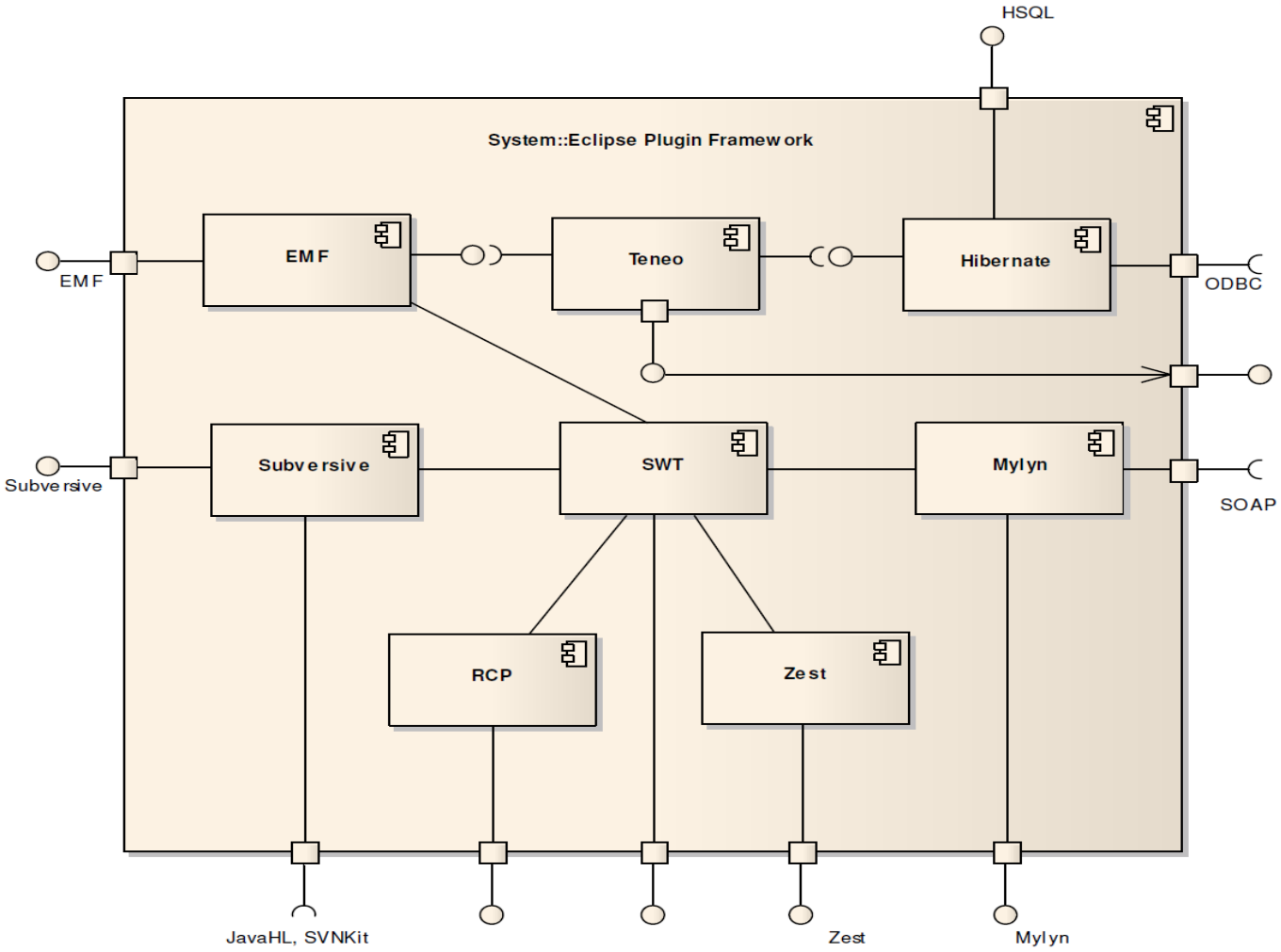
(Meta-)Modellierung



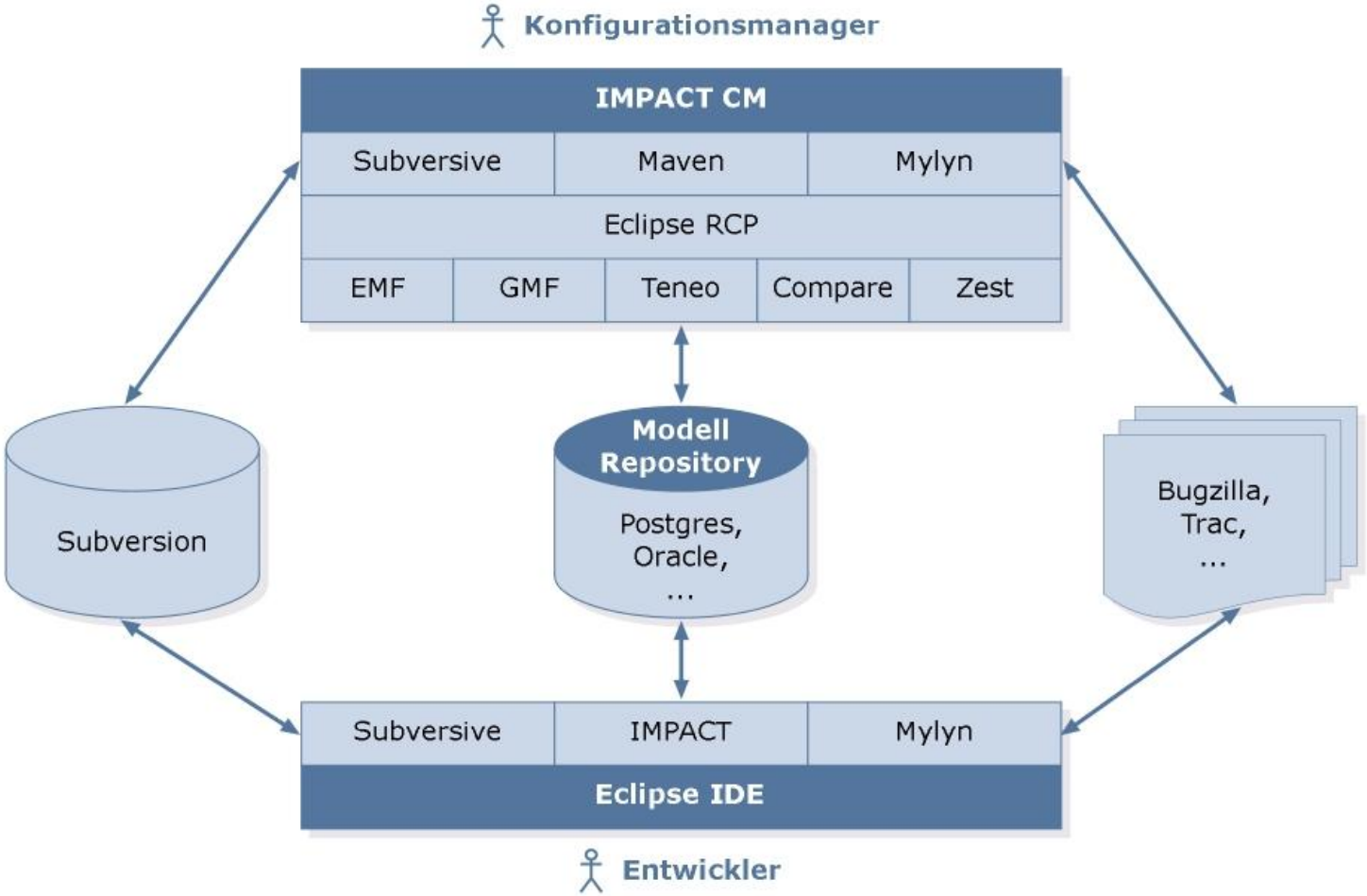
MOF 4-Schichtenmodell



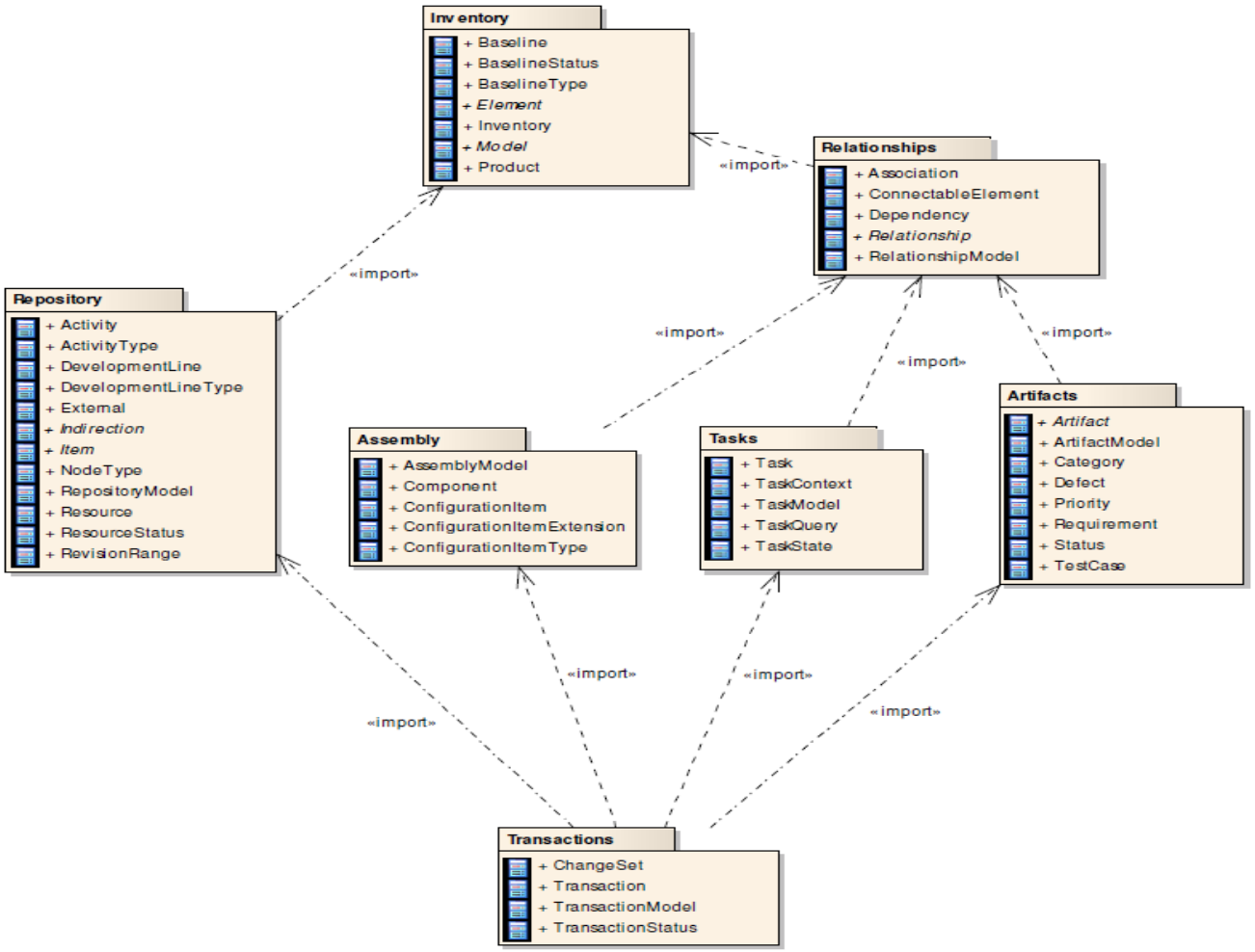
Eclipse PlugIn Framework



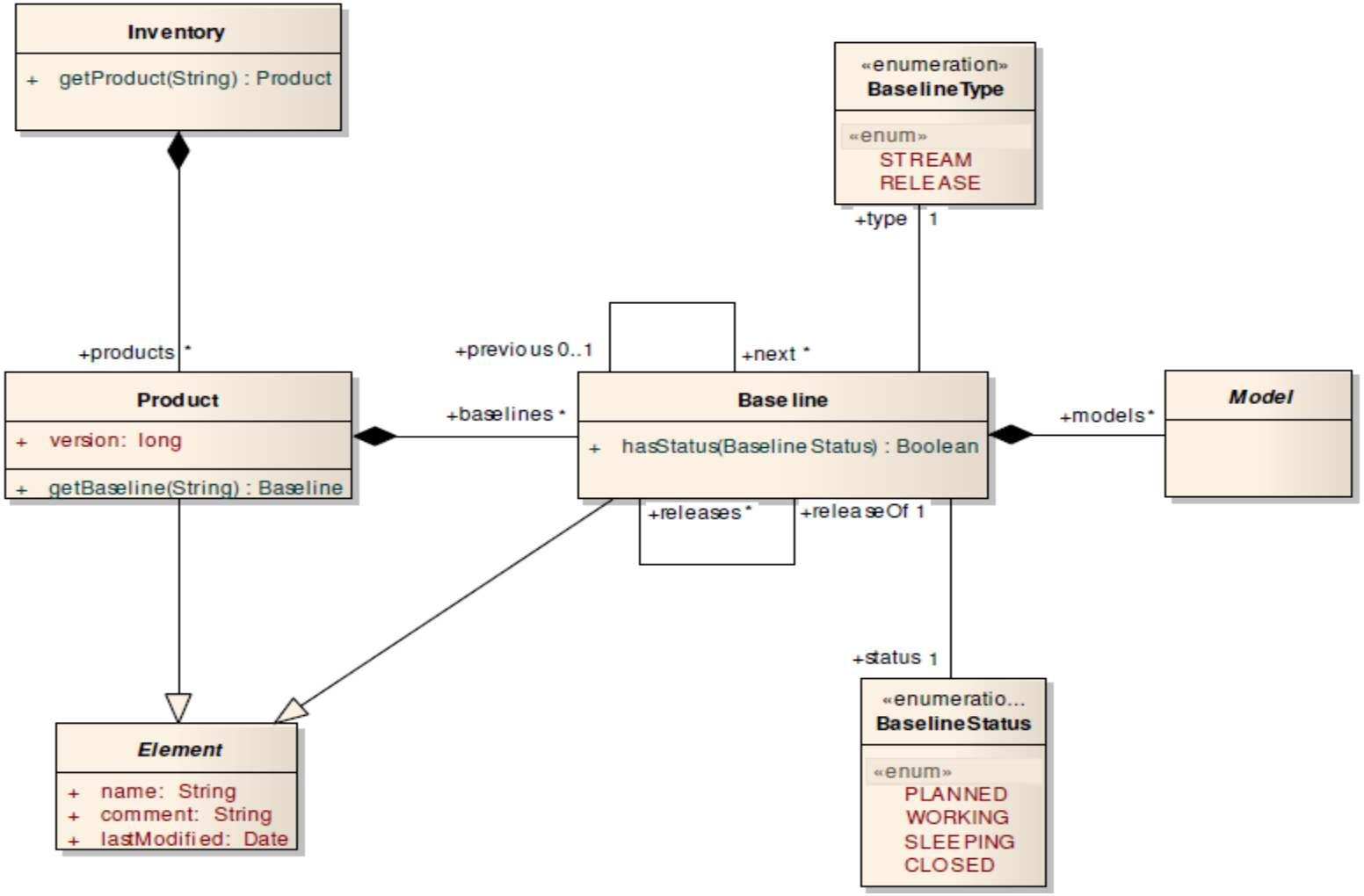
Technologie



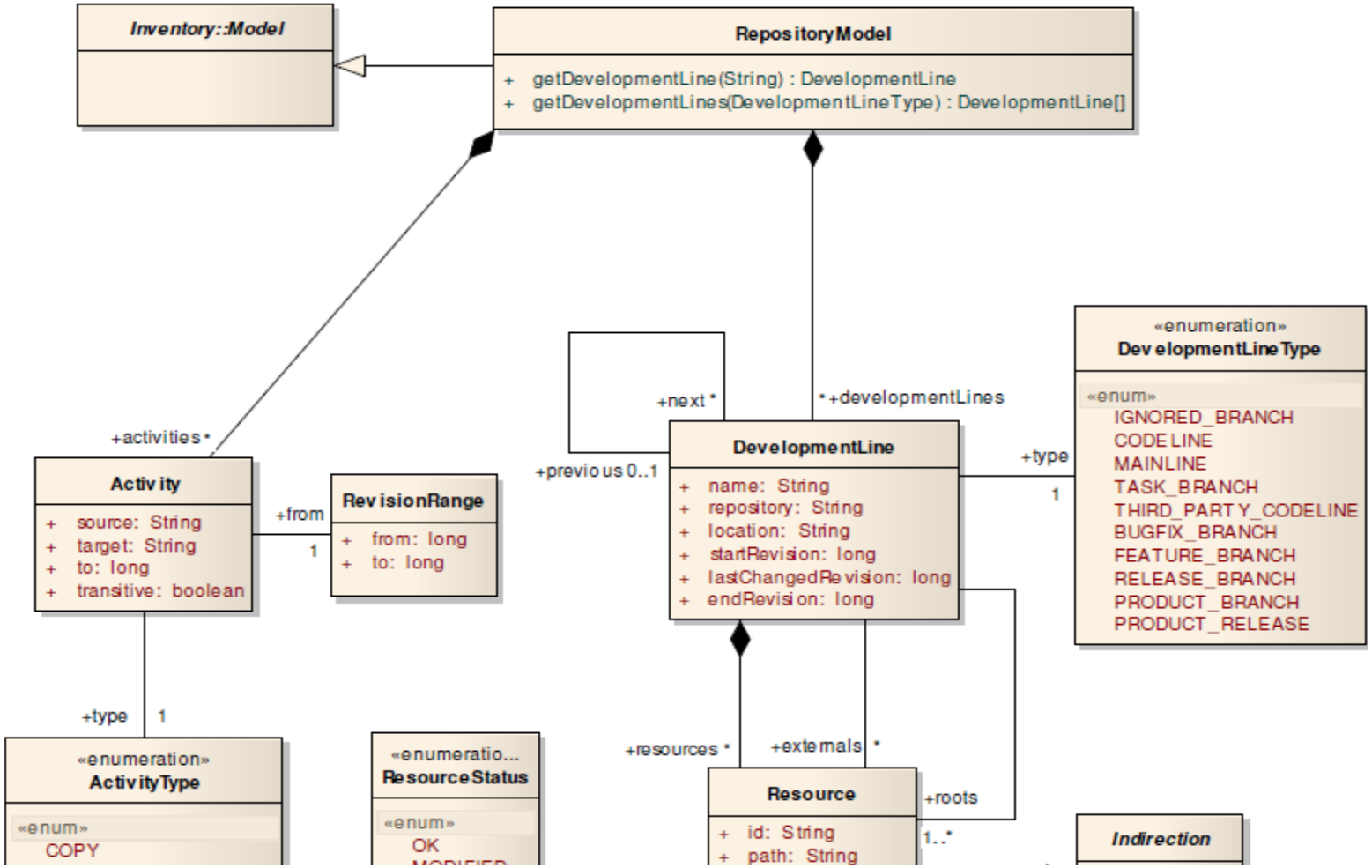
Konkretes "Domänenmodell"



Metamodell - Inventory



Metamodell – Repository (Ausschnitt)



Entwicklung - Lizenzmodell

```
/*
 *  Impact CM: Taking configuration management to the next level
 *
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 *
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 */
```
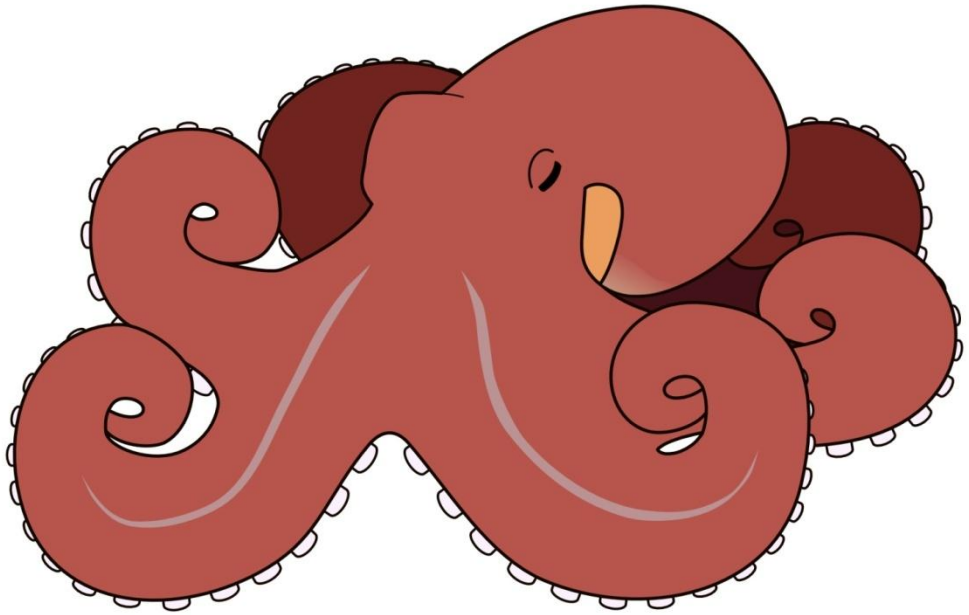

Lösungsansatz



IMPACT CM

Impact

File Edit Window Action Help

Workspaces Product Products Impact Subversion Save Overview Console Properties Preferences Update Help

Impact

Products/Baselines

	Status	Last Modified	Active Development Line	Revision
Stable Trunk				
Unstable Trunk				
Agile Release				

Synchronization Overview

http://impact/svn/stableTrunk HEAD

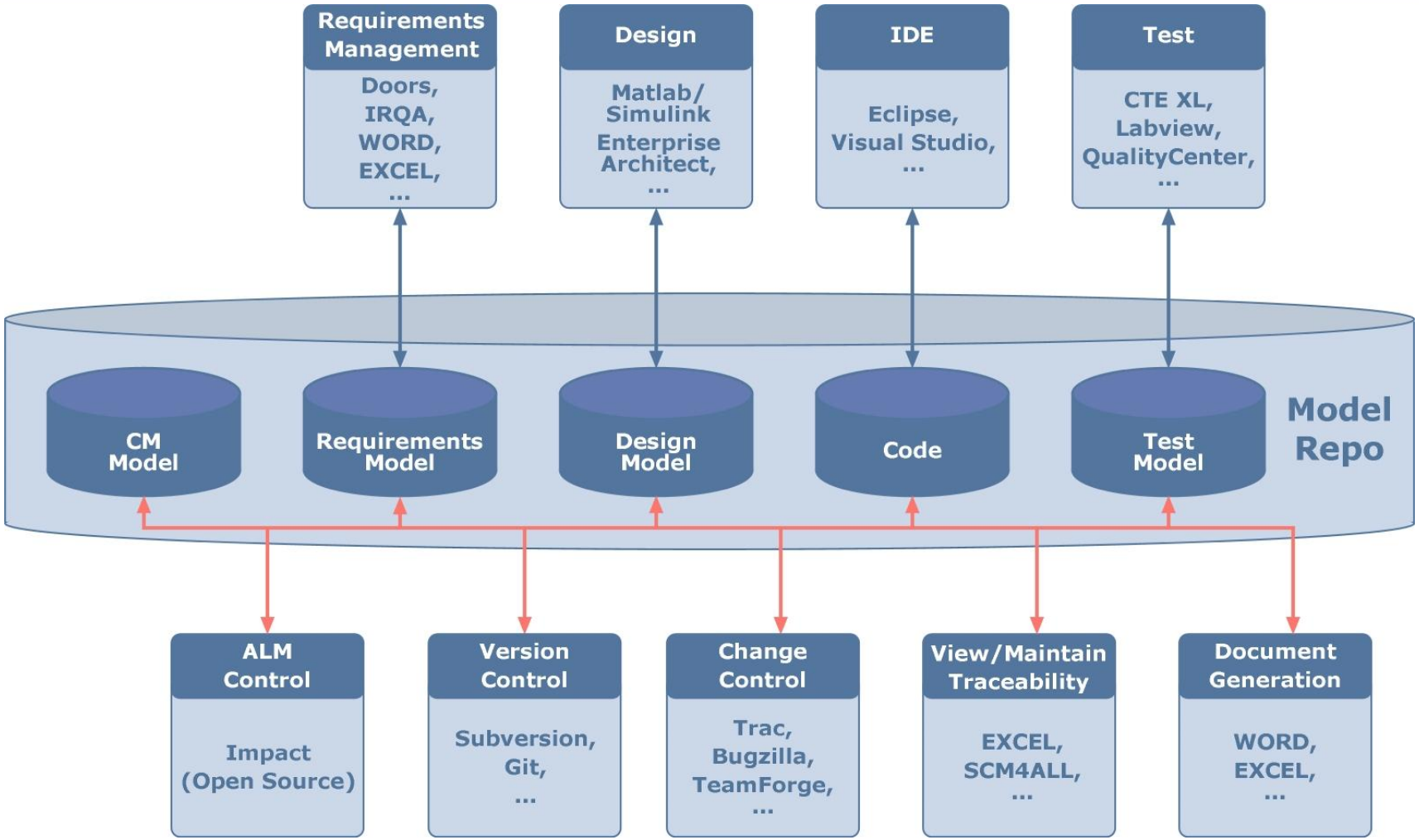
Product	Baseline	Source Development Line	Revision			Target Development Line	Type

Traverse SVN History Preview Import from SVN Compact Auto

Inventory Tasks Repository ChangeSets Assembly Artifacts

Selected Nothing

Toolintegration mittels Impact



Vielen Dank für Ihre Aufmerksamkeit!