

## Interfacing Subversion with Third Party Tools

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1 Introduction

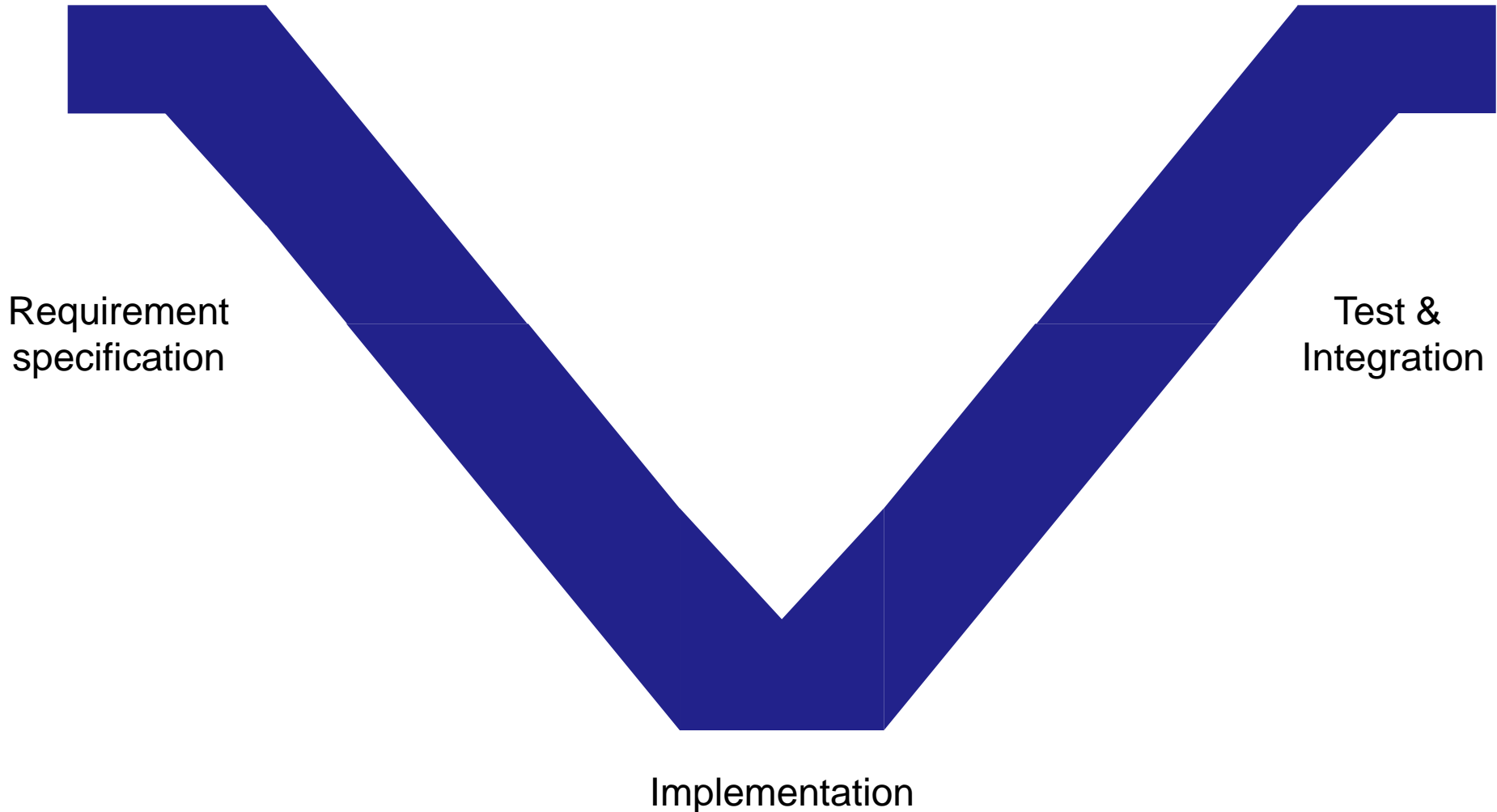
2 Project Details

3 Solution

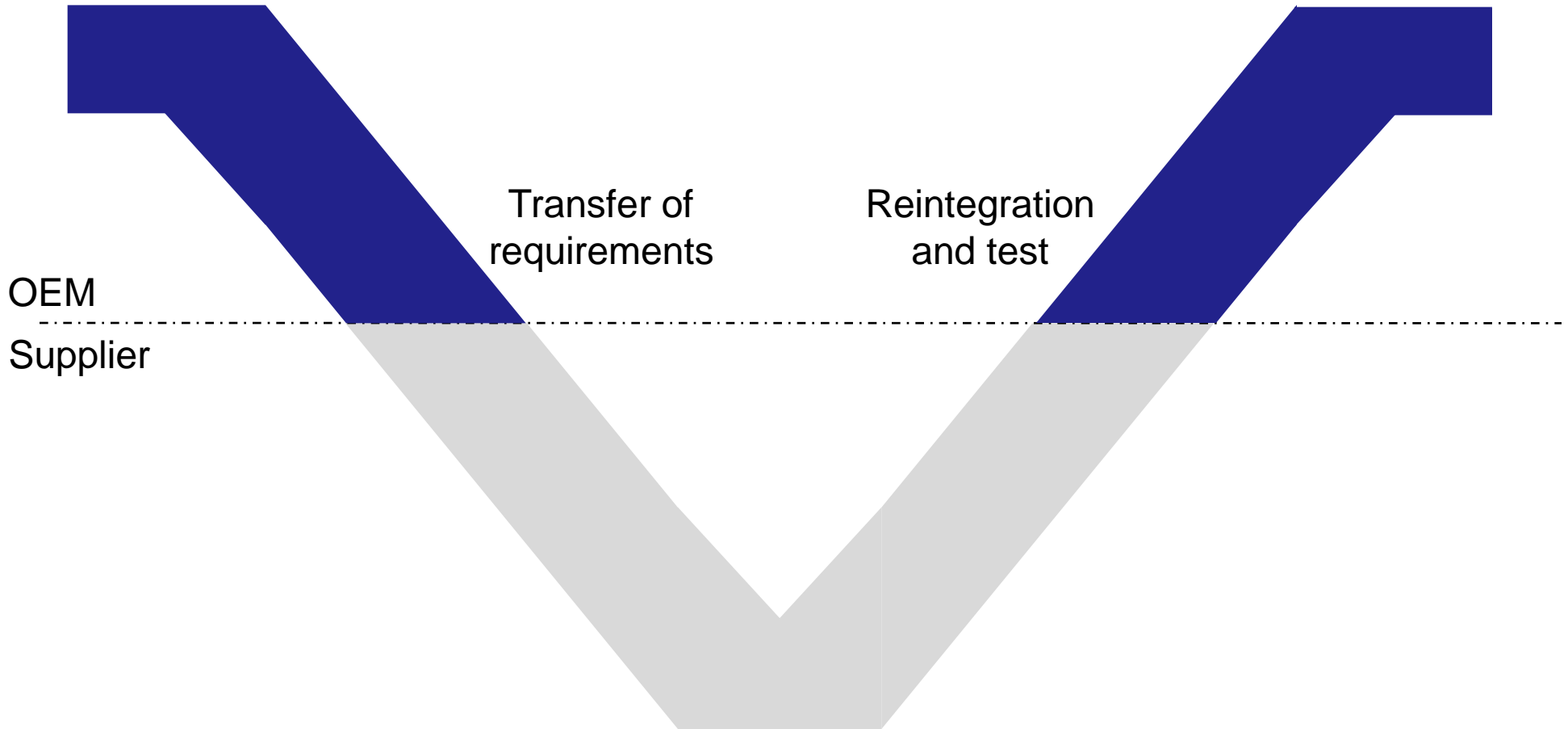
4 System Design

5 Conclusion

# V-Modell (I) – General Concept



# V-Modell (II) – Regular OEM / Supplier Relation



# Needs of OEMs concerning CC&VM

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- Management of product requirements (e.g. „Lastenheft“)
  - Management of integration and test requirements
  - Management of requirements traceability
  - Management of change requests
  - Tracing of change impact on requirements
  - Control of change fulfillment on component / sub-system level
- Full fledged tool landscape for Change, Configuration and Version Management (CC&VM) on the system / subsystem level is necessary

# Out of OEM's scope of activities

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Not required ...

- Implementation of product requirements in Software or Hardware
- Tracing of requirement changes to code elements
- Control of change fulfillment on implementation level

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2 **Project Details**

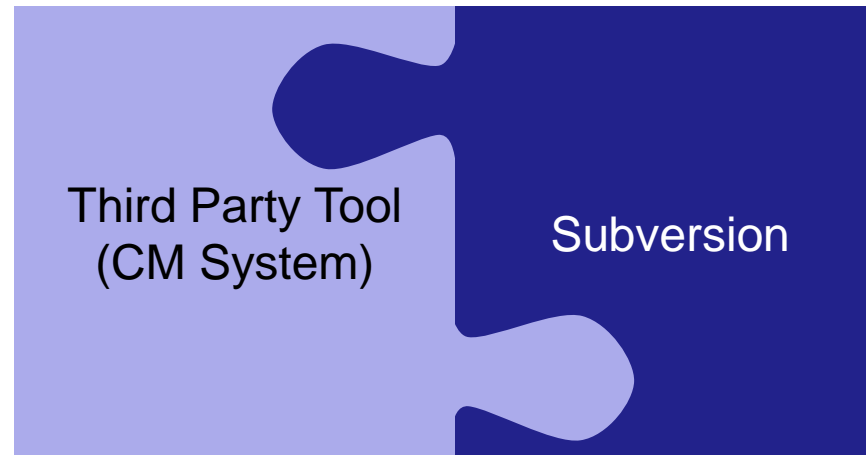
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# Project Setting

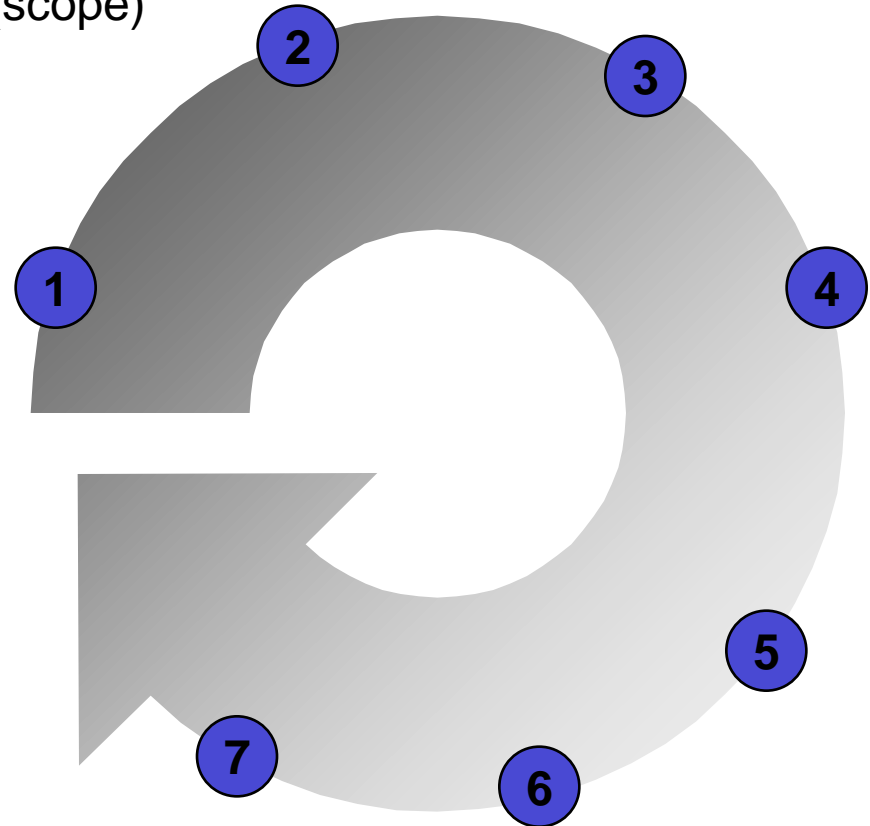
- Sub-system development formerly conducted by supplier
- Reintegration of supplier development into the customer's organization
- Need to introduce CC&VM also on the implementation level
- Secure consistency over the current tool landscape and the newly introduced tools
- Subversion was chosen as version control tool



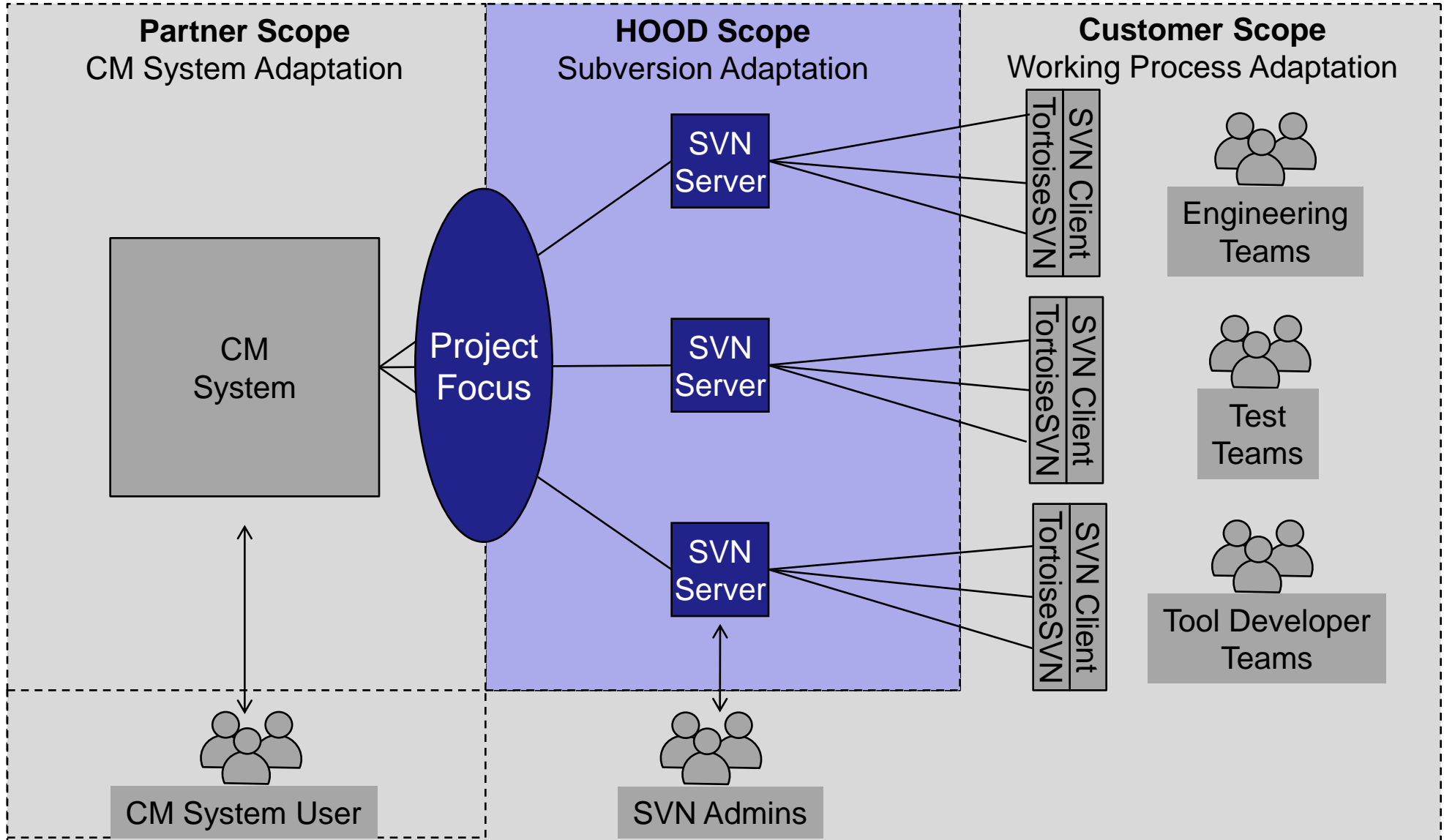
# Project Roadmap

1. Elicitate and specify of customer requirements
2. Define interfaces to the existing tool landscape (scope)
3. Develop design requirements
4. Implement and test subversion adaptation
5. Integrate into existing landscape

Project duration: 6 months



# Project Scope and Focus



1 Introduction

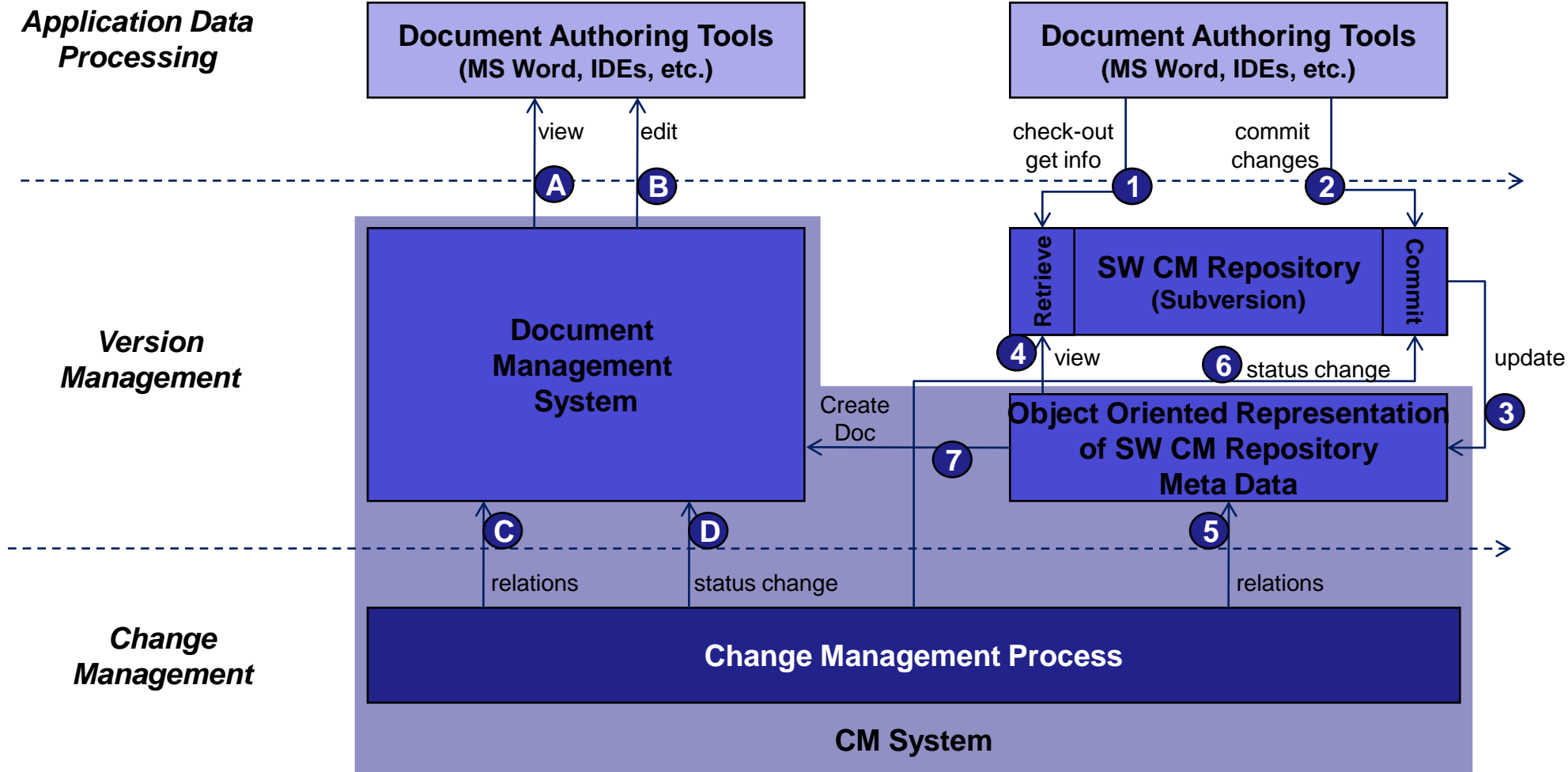
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# Solution Vision



# Derived Requirements

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In order to fulfill the different use cases the following core requirements need to be fulfilled

1. On each commit:  
Update object relational representation of Subversion objects in the CM System
2. Access Subversion server content from the CM System
3. Execute commands on the Subversion server based on actions in the CM System
4. Collect content from the Subversion server in a ZIP file
5. Cooperate closely with CM System adaptation project

# Standard Subversion Interfaces

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- Commandline client
  - Access repository content
  - Access meta information
  - Conduct Subversion operations
  
- Open-Source API
  - Direct, programmable replacement for commandline client
  - Provides a more object oriented way of working on Subversion
  - Available in mutiple languages (e.g. Java)
  
- Hook scripts
  - Integrated into the client-server commit interaction
  - Start-Commit, Pre-Commit, Post-Commit
  - Lock / Un-lock
  - Pre-Revpropchange, Post-Revpropchange

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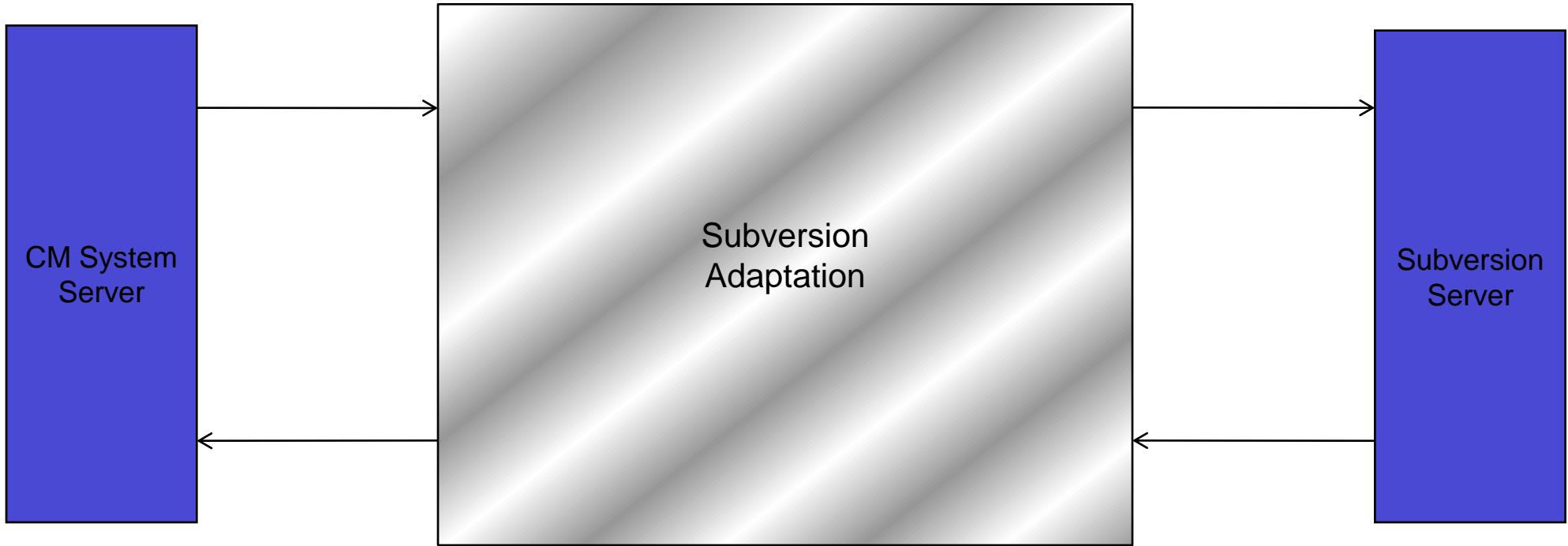
2 Project Details

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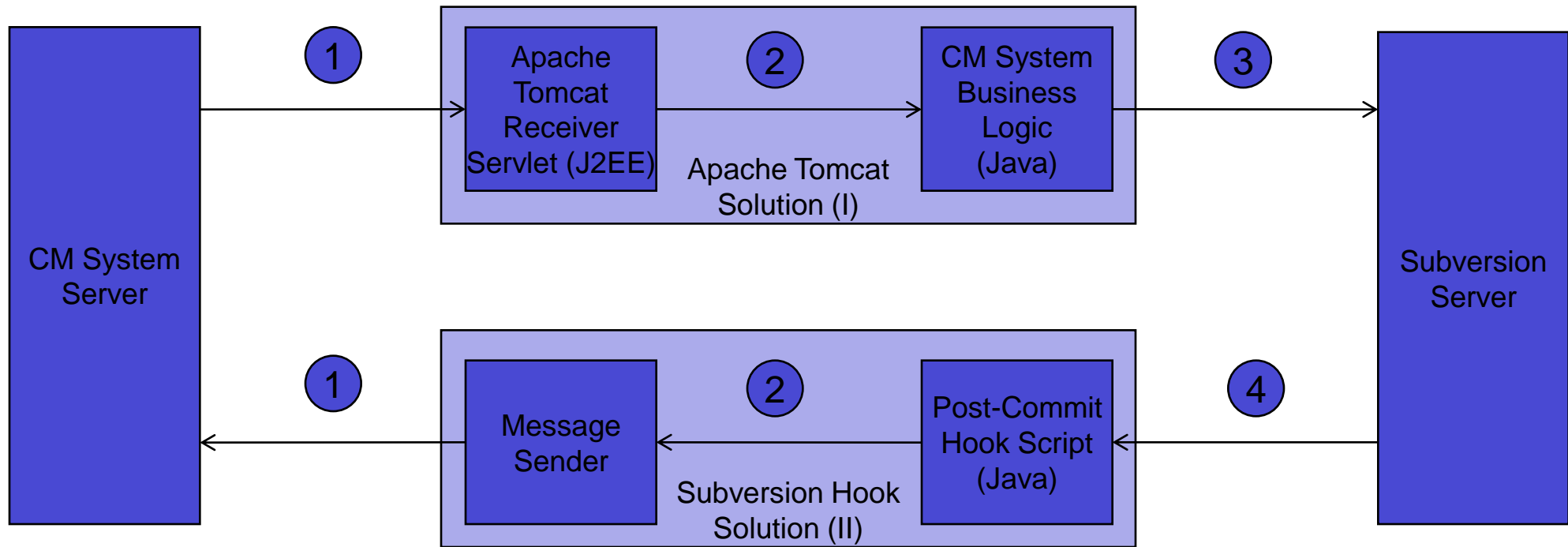
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# System Design (I) – Top Level

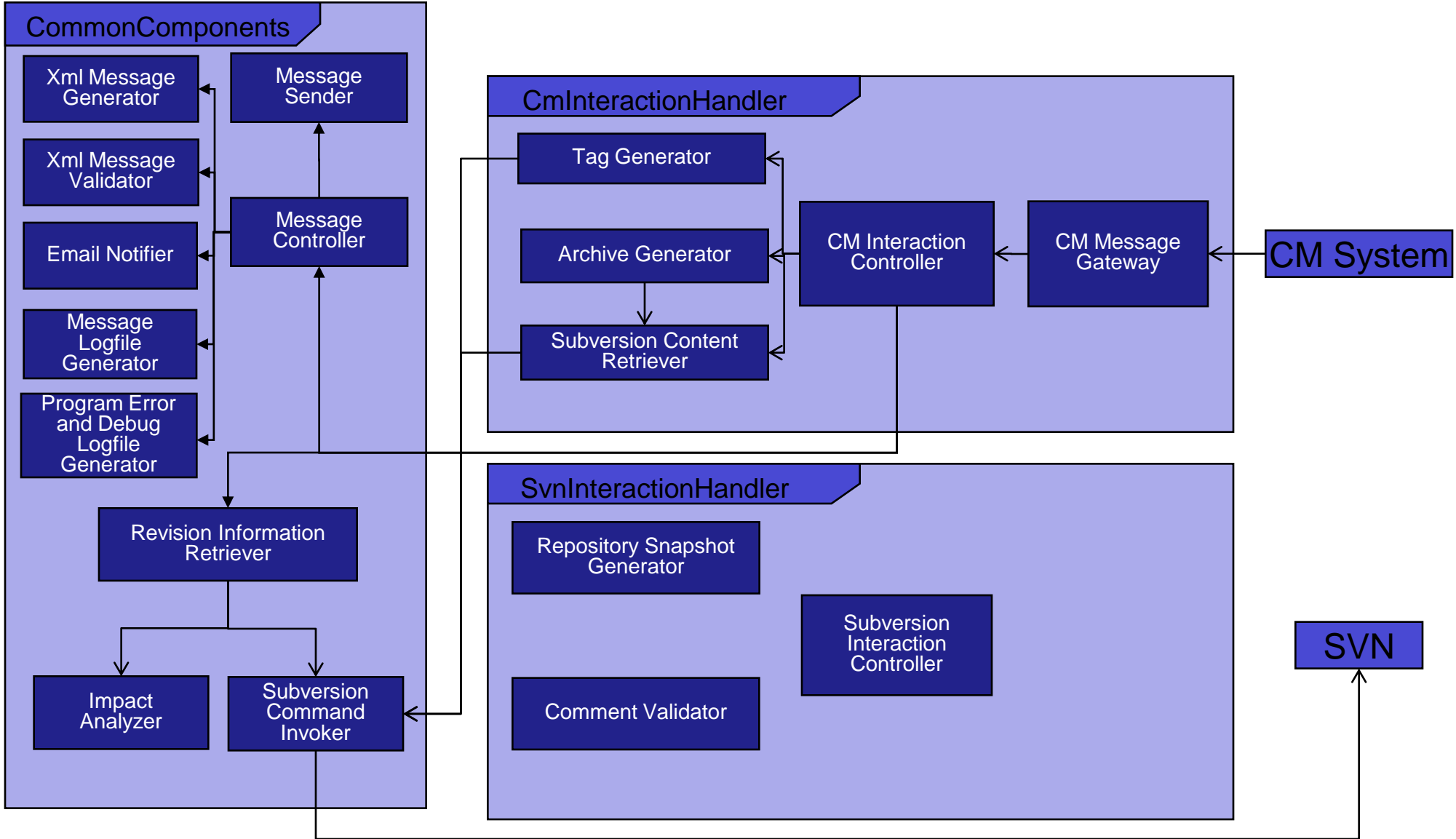


# System Design (II) – Top Level

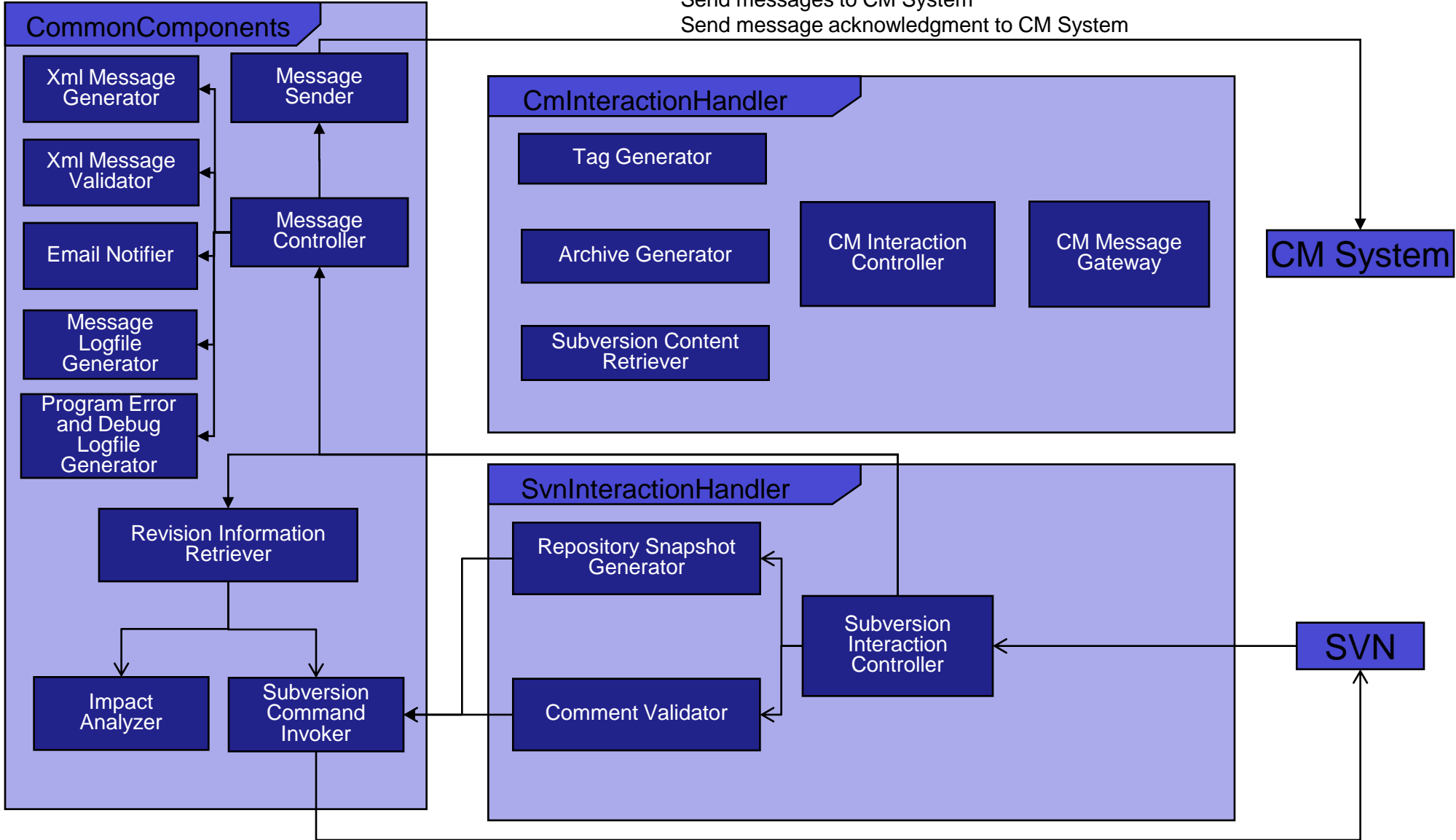


- 1: XML formatted message wrapped in HTTP
- 2: Internal communication
- 3: Subversion commandline client
- 4: Subversion post-commit hook activation

# System Design (IV) – Low Level



# System Design (III) – Low Level



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# Experiences

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- Java well suited for Subversion development
- Subversion Commandline client quite sufficient
- Early prototyping proved very valuable

# Project Achievements

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- Tracability from customer needs over system requirements to design and finally to implementation
- Impact and cost of change requests could easily be estimated
- Successful integration with CM system adaptation through good interface definition
- Subversion adaptation now in productive use
- Customer states, it is „Easy to use and maintain for developers“



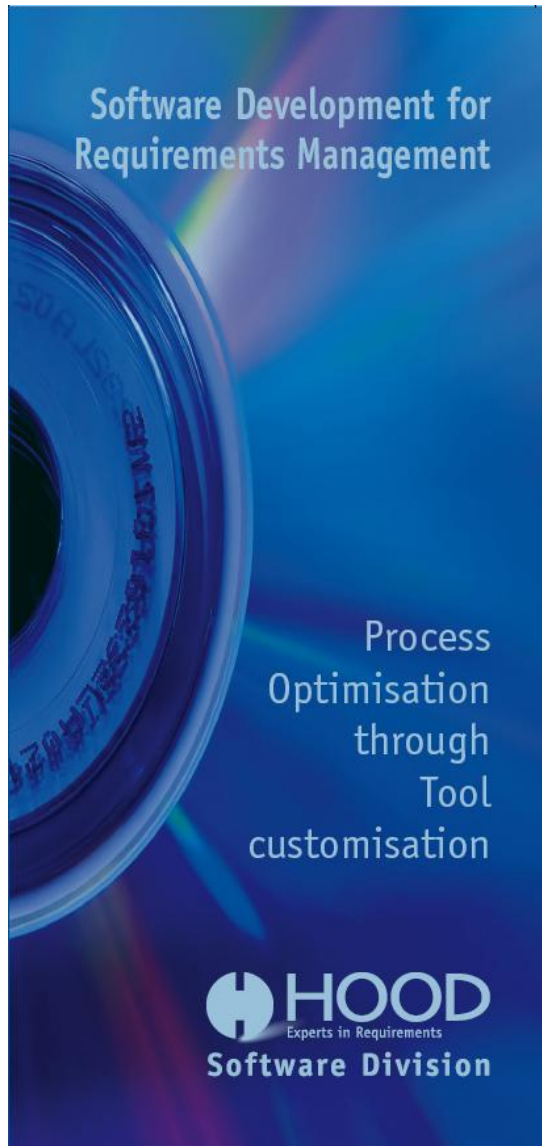
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Thanks for your attention!  
Questions & Discussions



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