

# Mimir

## The Professional Project Guide

Prof. Dr.-Ing. Peter Fromm



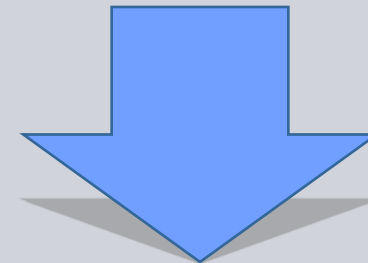
# Content

- Processes and Software Engineering
- Mimir – The Professional Project Guide
- Consortium and Roadmap

# Successful software development?



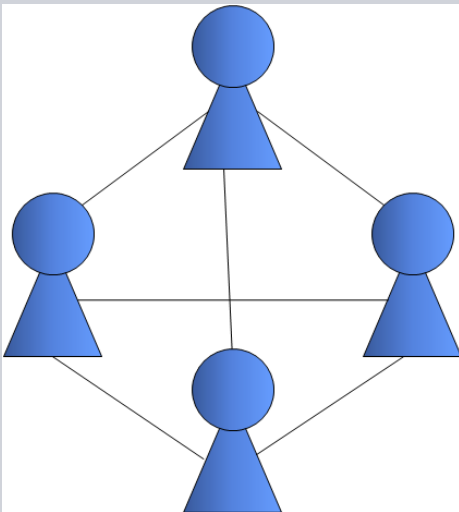
Standish Report 1994:  
85% of software projects shipwreck!!!



Standish Report 2006:  
65% of software projects shipwreck, yet!

## Why projects shipwreck...

- The shipwreck risk of a software project grows exponentially with increasing project complexity and team size.
- Major causes:
  - Increased requirements of communication between the members of the project team
  - Increased risk of misunderstandings
  - „Too many cooks spoil the broth“ – each developer has his own way and they often don't match!



3 Developers → 6 Communication Branches  
7 Developers → 5.040 Communication Branches  
10 Developers → 3.628.800 Communication Branches

# Which process is the right one for my company / for my project?

CMMi

Spice

MISRA

Spiral  
Model

ISO9000

V-Model

Extreme  
Programming



Agile  
Development

RUP

## Standardization Problem (I)

Processes off-the-shelf don't improve generally the development, however they are often counterproductive

- Existing company solutions aren't considered
- Standards like CMMi or Automotive Spice aren't described sufficiently in order to apply them immediately
- Especially for small and middle-size projects a large number of standards like RUP are too oversized and can't adapt easily to new demands
- Generally standard processes give only little methodical support (e.g. coding rules, test techniques, project management methods,...)

## Standardization Problem (II)

For small and medium-sized enterprises the development of a own process is generally not possible due to missing resources

- The development costs of a process conform to CMMi averages ca. 1 Million Euro
- For a successful integration of such a process it is necessary to have experienced employees, skilled process engineers and tool experts

# Mimir – The Professional Project Guide (I)

Mimir - The Professional Project Guide - Mozilla Firefox

file:///ID:/user/50\_stti/20\_Projects/10\_SDS/\_work/index.htm

Meistbesuchte Seiten HDA Knowledge Tools Processes News Games Privat Radio

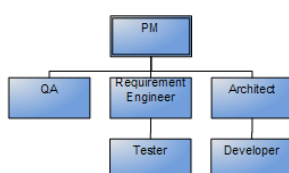
Google CMMI Suchen Rechtschreibprüfung Übersetzen AutoFill CMMI Anmelden

## Mimir - The Professional Project Guide

Home Glossary Index Tools Training Help

- Home
- Roles
- Life Cycle
- Processes
- Methods
- Documents

### Project Roles



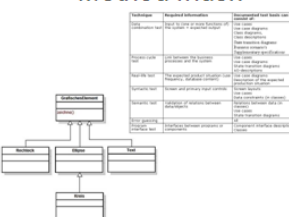
```

graph TD
    PM[PM] --- QA[QA]
    PM --- RE[Requirement Engineer]
    PM --- Arch[Architect]
    RE --- Tester[Tester]
    RE --- Dev[Developer]
  
```

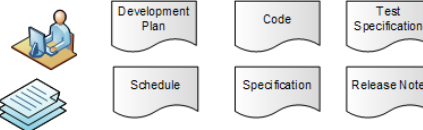
### Project Lifecycle

ID	Task	Feb 2000							März 2000						
		20	21	22	23	24	25	26	27	28	1	2	3	4	5
1	Project Planning	■													
2	Requirement Analysis				■										
3	Architecture				■										
4	Development							■	■	■	■	■	■	■	
5	Testing													■	

### Method Index



### Document Index



- Development Plan
- Code
- Test Specification
- Schedule
- Specification
- Release Note

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## Mimir – The Professional Project Guide (II)

### Mimir –

The Professional Project Guide is a HTML kit...

- describing understandable the “best practices” of CMMi
- described from developers for developers, from project managers for project managers, from testers for testers
- that integrates easily existing solutions like templates, development rules, tools, etc.
- that allows easily adaptation to new demands with on-board tools

# Mimir – Entry Area

Via Roles

Via Project Phases

The screenshot shows the Mimir web application interface. At the top, there is a navigation bar with links: Home, Glossary, Index, Tools, Training, Help. A left sidebar contains a menu: Home, Roles, Life Cycle, Processes, Methods, Documents. The main content area is divided into several sections:

- Project Roles:** A hierarchical diagram showing roles: PM (Project Manager) at the top, connected to QA, Requirement Engineer, and Architect. Below Requirement Engineer are Tester and Developer.
- Project Lifecycle:** A Gantt chart showing tasks over time. The tasks are: 1. Project Planning, 2. Requirement Analysis, 3. Architecture, 4. Development, 5. Testing. The chart shows task durations and dependencies across months (Feb 2000 and Mar 2000).
- Method Index:** A table listing various project management methods.
- Document Index:** A collection of document templates represented by icons: Development Plan, Code, Test Specification, Schedule, Specification, and Release Note.

At the bottom of the page, there is a footer: Mimir © HDA / HOOD / Windhoff / Bär, Pfitzer und Partner 2009. All rights reserved. Fertig

Direct Access to Methods

...and Templates

# Mimir – Roles View (I)

Overview  
all Project Roles

Mimir - The Professional Project Guide - Mozilla Firefox

file:///D:/user/50\_stti/20\_Projects/10\_SDS/\_work/roles/roles.htm

Meistbesuchte Seiten HDA Knowledge Tools Processes News Games Privat Radio

Google CMMi

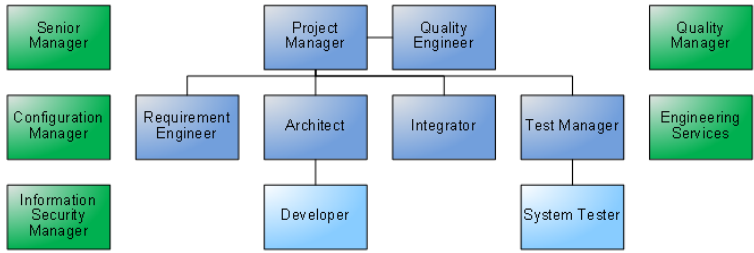
## Mimir - The Professional Project Guide

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### Project Roles

Project roles are templates describing the major activities of all project members. Every team member inside a project is assigned to a certain role. This ensures a clear assignment of tasks inside the team as well as fitting interfaces between all team members.



```

    graph TD
      subgraph Project_Core_Team [Project Core Team]
        SM[Senior Manager]
        PM[Project Manager]
        QEng[Quality Engineer]
        CM[Configuration Manager]
        RE[Requirement Engineer]
        Arch[Architect]
        Int[Integrator]
        TM[Test Manager]
        ISM[Information Security Manager]
        Dev[Developer]
      end
      subgraph Extended_Project_Team [Extended Project Team]
        QMgr[Quality Manager]
        ES[Engineering Services]
        ST[System Tester]
      end
      subgraph Supporting_Roles [Supporting Roles]
        QMgr
        ES
      end
      PM --- QEng
      PM --- RE
      PM --- Arch
      PM --- Int
      PM --- TM
      Arch --- Dev
      TM --- ST
  
```

Legend

- Project Core Team (Blue)
- Extended Project Team (Light Blue)
- Supporting Roles (Green)

Click on the boxes to get more information on the individual roles.

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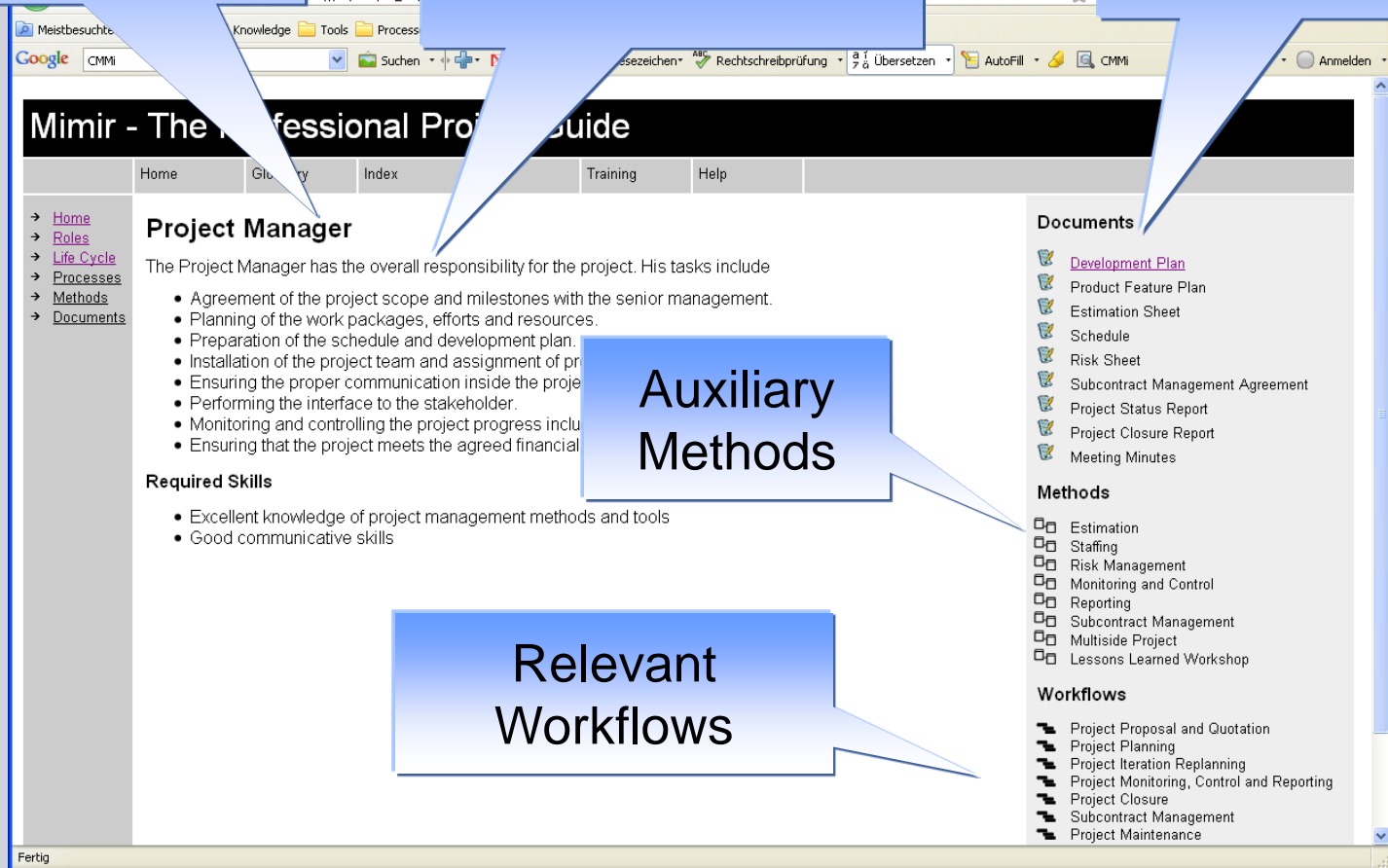
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# Mimir – Roles View (II)

Role Description

Task Description

Relevant Templates



**Mimir - The Professional Project Guide**

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## Project Manager

The Project Manager has the overall responsibility for the project. His tasks include

- Agreement of the project scope and milestones with the senior management.
- Planning of the work packages, efforts and resources.
- Preparation of the schedule and development plan.
- Installation of the project team and assignment of projects.
- Ensuring the proper communication inside the project.
- Performing the interface to the stakeholder.
- Monitoring and controlling the project progress including risks.
- Ensuring that the project meets the agreed financial targets.

**Required Skills**

- Excellent knowledge of project management methods and tools
- Good communicative skills

**Documents**

- Development Plan
- Product Feature Plan
- Estimation Sheet
- Schedule
- Risk Sheet
- Subcontract Management Agreement
- Project Status Report
- Project Closure Report
- Meeting Minutes

**Methods**

- Estimation
- Staffing
- Risk Management
- Monitoring and Control
- Reporting
- Subcontract Management
- Multiside Project
- Lessons Learned Workshop

**Workflows**

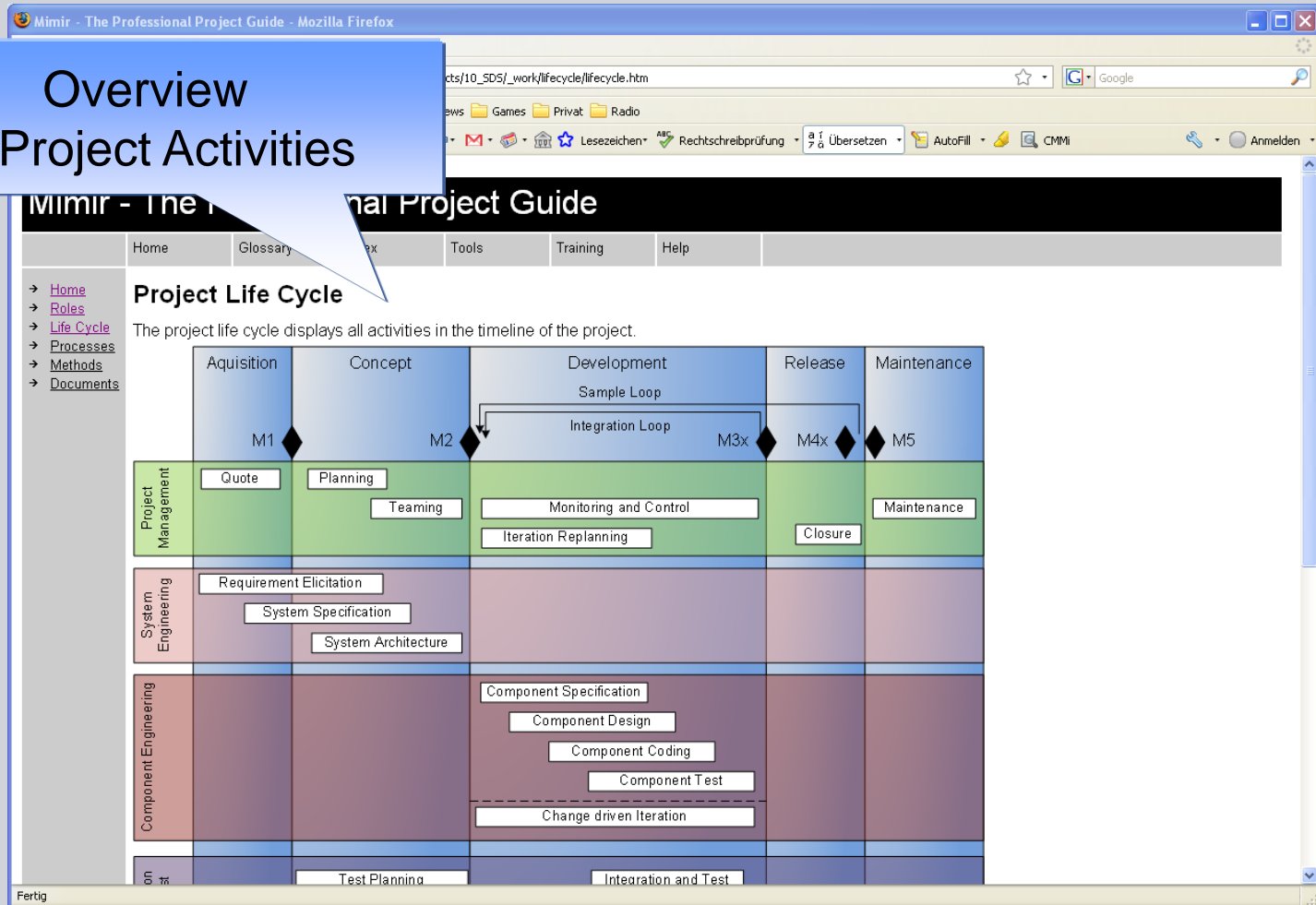
- Project Proposal and Quotation
- Project Planning
- Project Iteration Replanning
- Project Monitoring, Control and Reporting
- Project Closure
- Subcontract Management
- Project Maintenance

Auxiliary Methods

Relevant Workflows

# Mimir – Project Phase View (I)

Overview  
all Project Activities



# Mimir – Project Phase View (II)

Detail Description  
Workflow

Interfaces to other  
Activities

Templates

Auxiliary  
Methods

Involved Roles

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## Workflow: System Architecture

Within the System Architecture workflow, the technical scope of the system is defined, the major decisions related to the applied technology are taken and the architecture describing the components, their interfaces and mandatory design patterns is written. The teaming of the project is rechecked considering the required clarifications between the different components and the integration test as well as the integration strategy are planned. After the architecture phase, the interfaces for the modules are defined and individual developers can start the low level design and implementation.

**Preconditions:**

- The requirements have been analyzed and a first model is available

Note: After generating the architecture, usually an update of the requirements cannot be implemented as originally planned. The generation of the architecture should be organized as an incremental process.

**Post Conditions:**

- Architecture document is released
- Implementation tasks are assigned
- Integration planning is available
- Integration Test Specification is released
- Development team is briefed

**Workflow Overview:**

```

    graph TD
      SRS[Software Requirement Specification] --- PM[Project Manager]
      SRS --- Arch[Architect]
      SRS --- Int[Integrator]
  
```

**Workflow**

- System Specification
- System Architecture
- Teaming
- Component Specification

**Documents**

- Software Architecture
- Integration Test Specification
- Integration Plan

**Methods**

- UML
- Design Guidelines
- Naming Conventions
- Test Case Design
- Staffing
- Risk Management
- Review Techniques

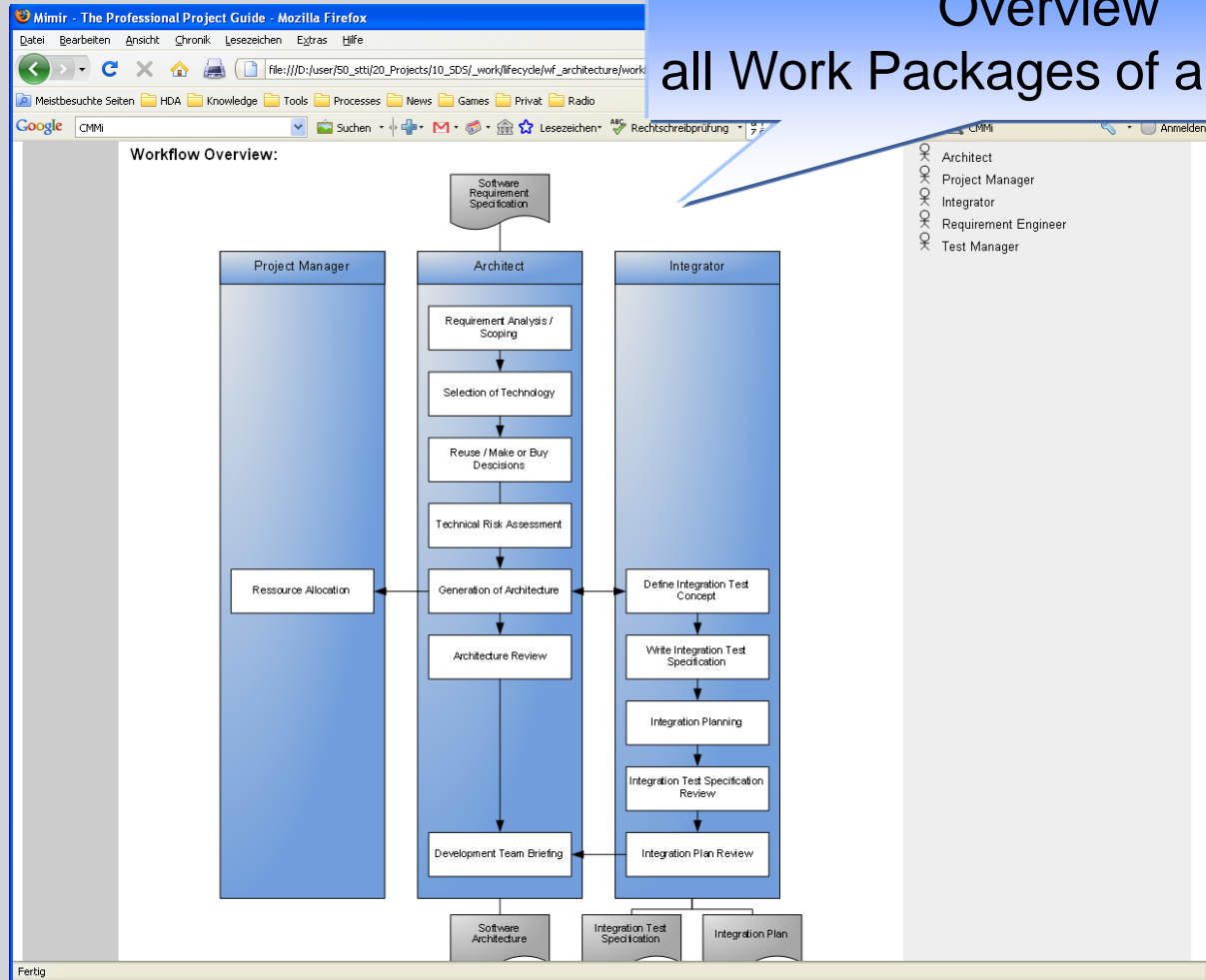
**Roles**

- Architect
- Project Manager
- Integrator
- Requirement Engineer
- Test Manager

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# Mimir – Project Phase View (III)

Overview  
all Work Packages of a Workflow



# Mimir – Project Phase View (IV)

## Detail Description Work Package

### Work Package Descriptions:

Requirement Analysis / Scoping

Architect, Software Project Manager, **Requirement Engineer**, Test Manager

The Requirement Engineer together with the Software Project Manager, Architect and the Test Manager discuss the outline of the project. The aim of the briefing is to give the Architect and the Test Manager an overview of the project and to hand over all relevant stakeholder documents.

Based on this, the Architect defines the scope of the system under design (i.e. the software system which will be developed) and agrees it with the Software Project Manager. The scope contains a detailed list of system aspects which are in-scope as well as aspects which are out of scope.

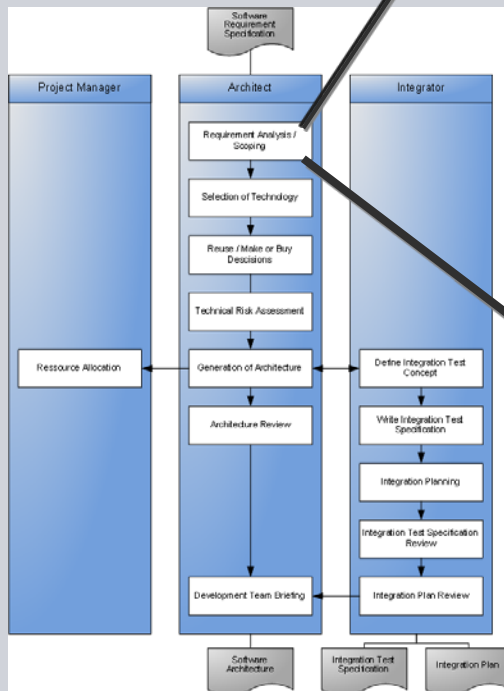
In addition, the following aspects are defined:

- Interfaces to other external systems (e.g. other systems connected via a network)
- Needed variants

Justification: Without a defined scope and clearly defined boundaries the risk of fundamentally wrong design decisions due to misunderstandings in the team is very high.

Output: Software Architecture Document: Chapter Scope

Task-Id: SW.AR.010 / Mandatory





# Mimir – Method Index

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→ Life Cycle  
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→ **Methods**  
→ Documents

## Method Index

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- [Requirements Engineering](#)
- [Software Engineering](#)
- [Test Engineering](#)
- [Configuration and Change Management](#)
- [Quality Assurance](#)
- [Quality Management](#)

---

### Project Management

- Estimation
- Risk Management
- Staffing
- Monitoring and Control
- Reporting
- Lessons Learned Workshop
- Subcontract Management
- Multiside Project Management

---

### Requirements Engineering

- Systematic Requirement Analysis
- Specification Guidelines
- Traceability
- Special Requirements

---

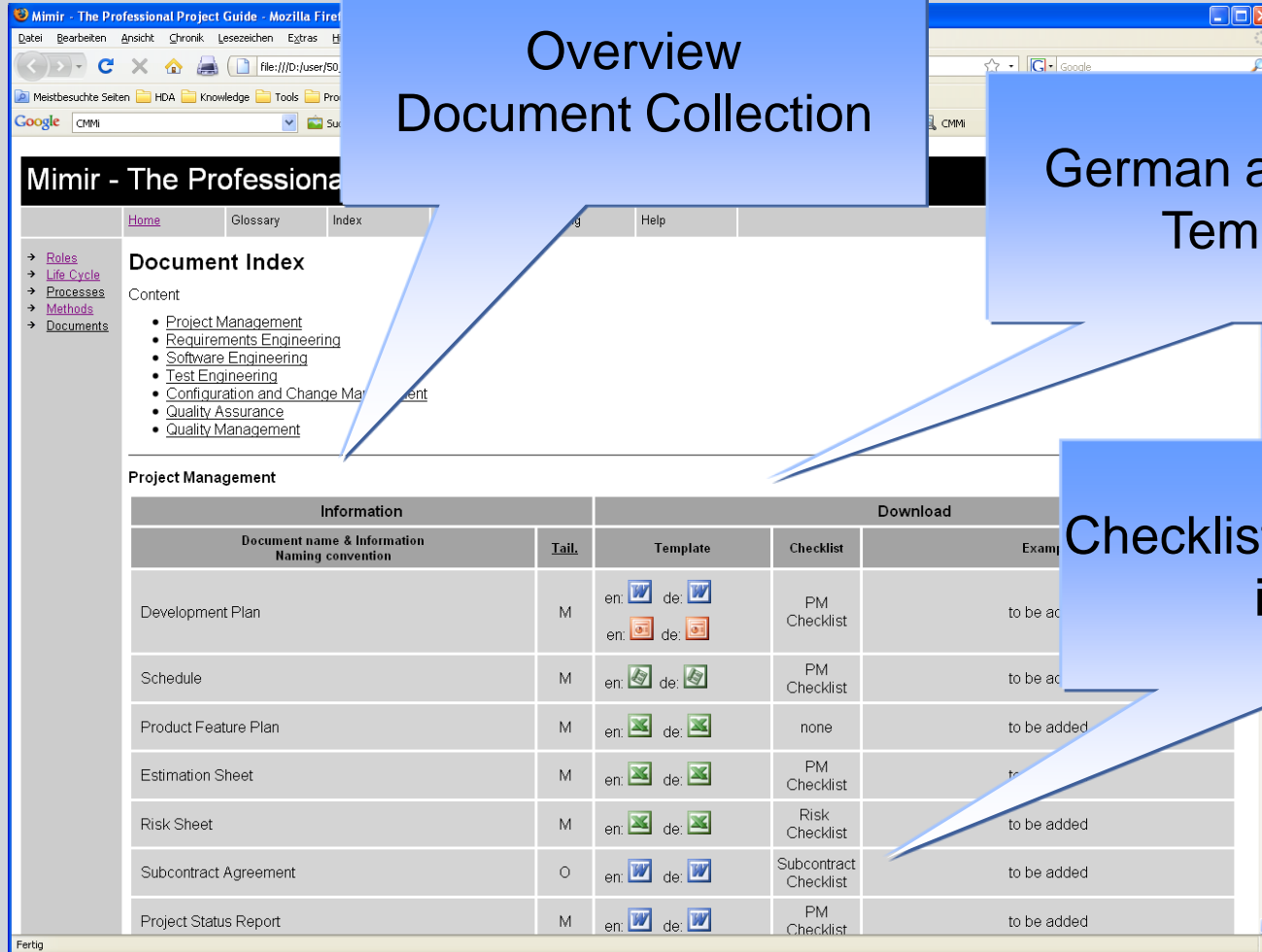
### Software Engineering

- Naming and Code Structure Conventions
- Design Guidelines and Patterns
- UML
- C-Coding Guidelines

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Comprehensive Method Collection inclusive

# Mimir – Document Index



**Overview Document Collection**

**German and English Templates**

**Checklists and Examples inclusive**

**Mimir - The Professional Project Guide**















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**Document Index**

Content

- Project Management
- Requirements Engineering
- Software Engineering
- Test Engineering
- Configuration and Change Management
- Quality Assurance
- Quality Management

**Project Management**

Information		Download			
Document name & Information Naming convention	Tail.	Template		Checklist	Example
Development Plan	M	en:  de: 		PM Checklist	to be added
Schedule	M	en:  de: 		PM Checklist	to be added
Product Feature Plan	M	en:  de: 		none	to be added
Estimation Sheet	M	en:  de: 		PM Checklist	to be added
Risk Sheet	M	en:  de: 		Risk Checklist	to be added
Subcontract Agreement	O	en:  de: 		Subcontract Checklist	to be added
Project Status Report	M	en:  de: 		PM Checklist	to be added

# The Consortium

## Praxis not theory – best practices sharing



Configuration and  
Change Management

Software Engineering and  
Quality Assurance



Requirements  
Engineering

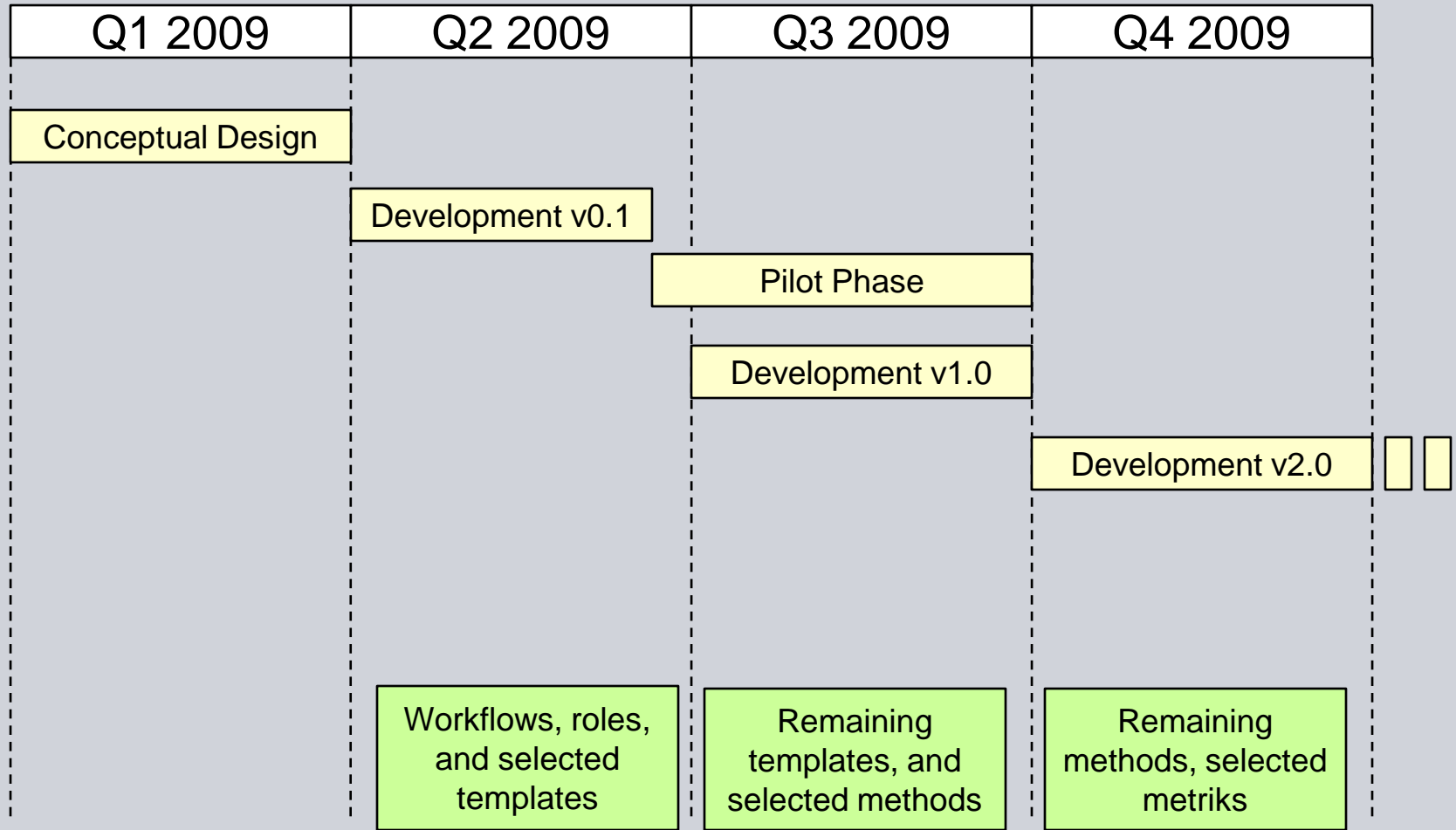


Project Management, Test Management,  
and Quality Management

# BÄR PFITZER & PARTNER

Ingenieure und Betriebswirte

# Roadmap



## And who is Mimir?

**Mimir** is a figure in Norse mythology renowned for his knowledge and wisdom who is beheaded during the Æsir-Vanir War. Afterward, the major god Odin carries around Mimir's head and it recites secret knowledge and council to him.

(Wikipedia)



## Contact

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