

Project

# Grundlagen des Software Engineering Fundamentals of Software Engineering

Prof. Dr. Dr. h.c. Dieter Rombach

SS 2016



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- Goal
- Project
- Applied Techniques
- Infrastructure

- Apply engineering methods and techniques for the **systematic development** of software-intensive systems



Requirements  
Engineering



Architectural design



Component  
Engineering



Testing

- Apply engineering methods and techniques for the **systematic development** of software-intensive systems



Requirements  
Engineering &  
Interaction Design



Architectural design



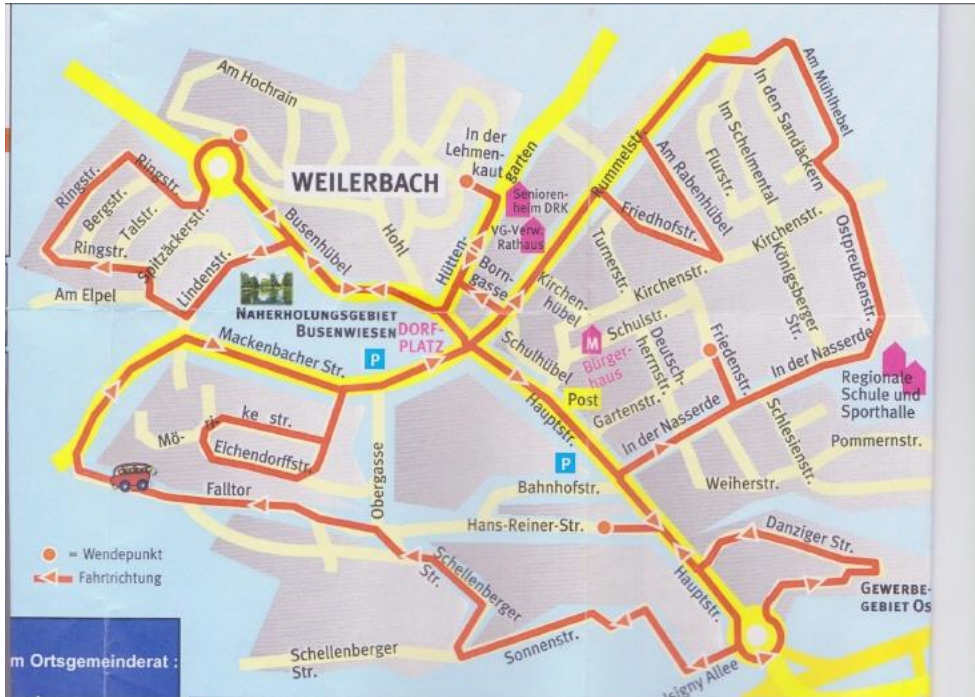
Component  
Engineering



Testing

- This year's project will deal with the development of a mobile people's bus system. The system consists of a mobile app that serves as the people's bus host system and another mobile app for citizens to use the different people's busses. It is intended, that the system will be used within the project Digitale Dörfer (for further information see [www.digitale-doerfer.de](http://www.digitale-doerfer.de)). Real life evaluations with concrete existing people's bus systems are also optionally possible.

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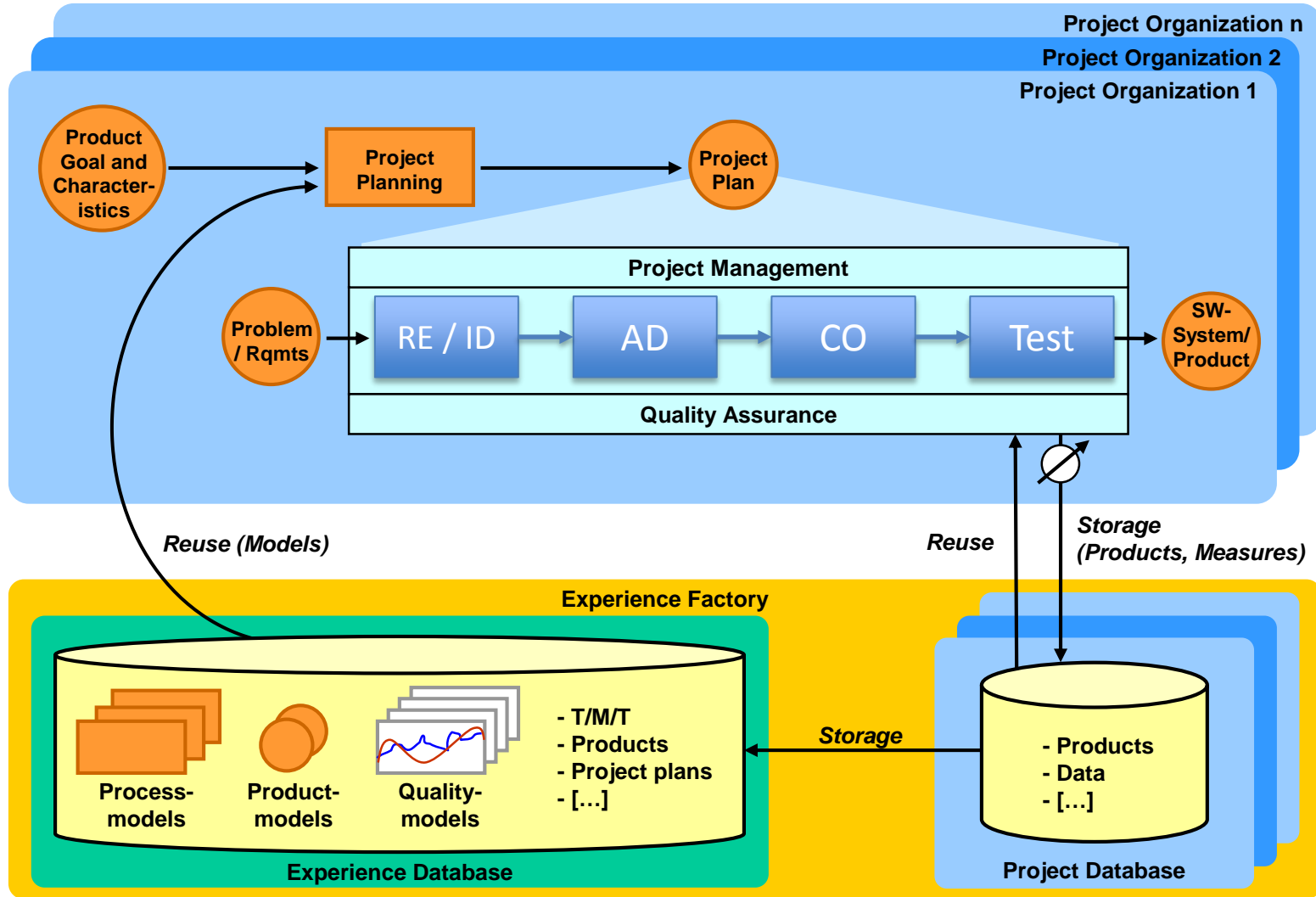


## PLAN DES BÜRGERBUS WEILERBACH TAG BIS FREITAG (AUSSER AN FEIERTAGEN)

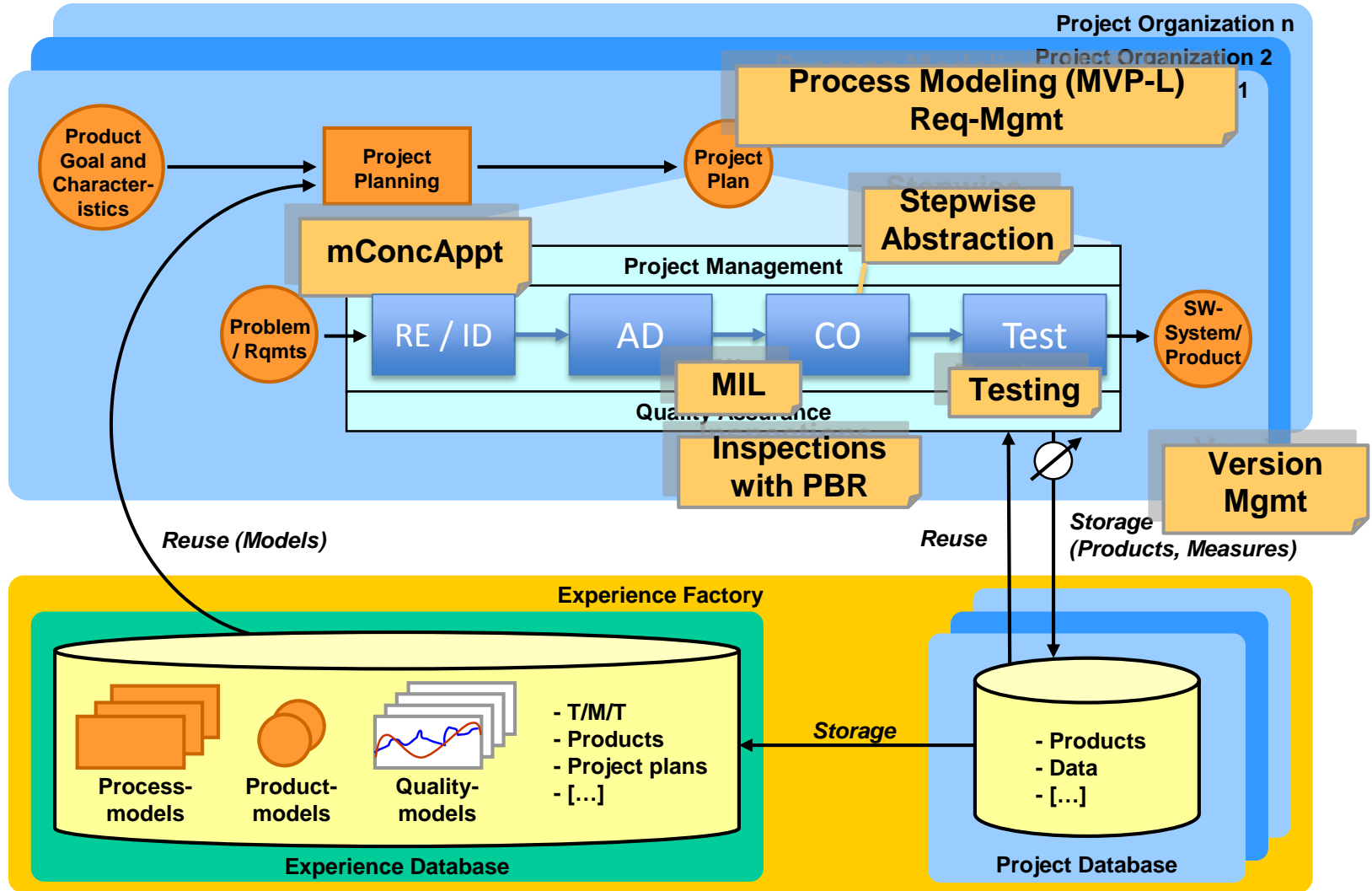
Bürgerbus fährt stündlich um 9:00, 10:00, 11:00, 14:00 und 16:00 Uhr

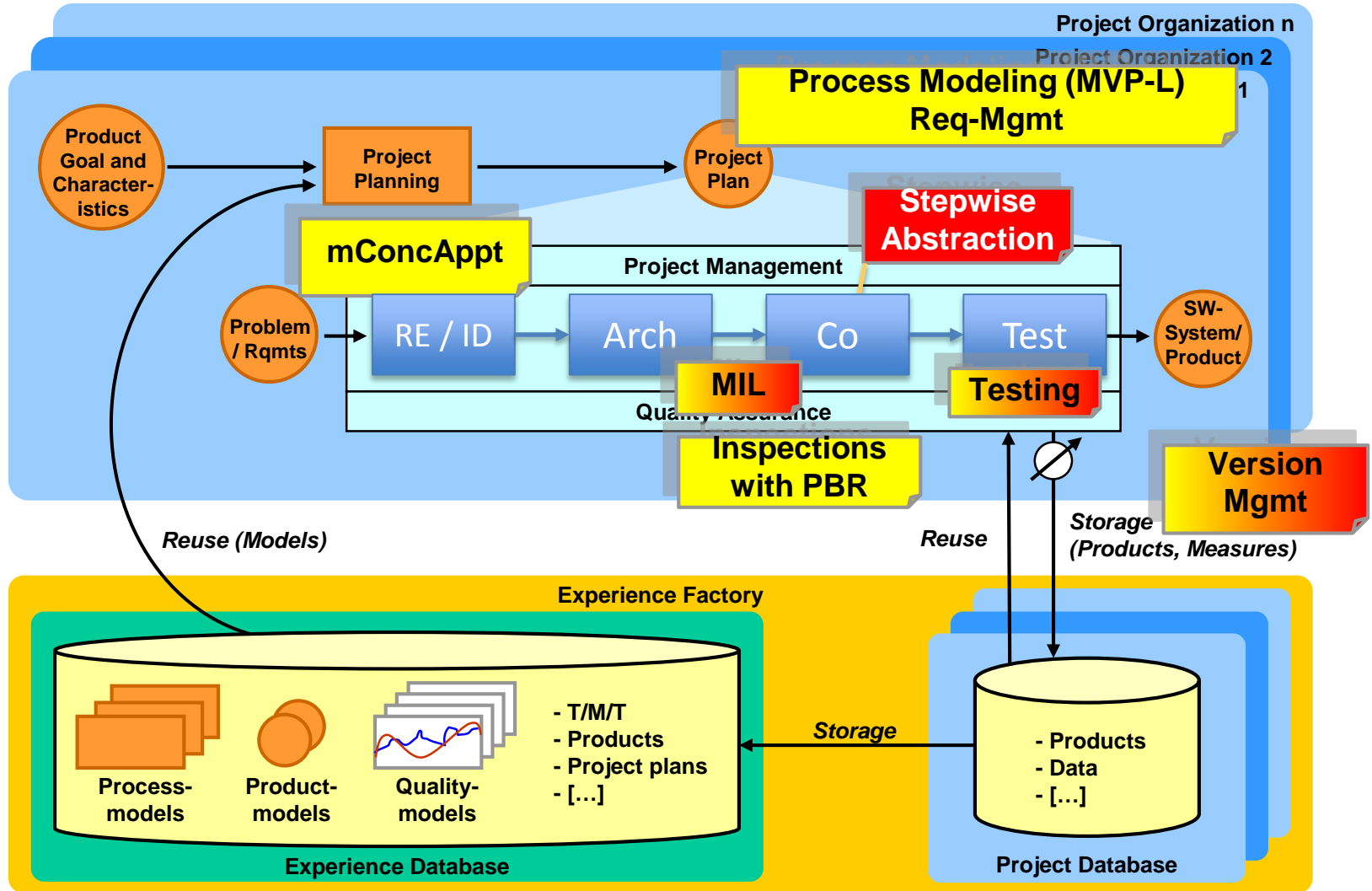


Abfahrtszeit	Wendepunkt	Ankunftszeit
09:00	Hauptstr. / Isigny Allee	09:00
09:01	Hauptstr. / Sonnenstr.	09:01
09:03	Hauptstr. / Schellenberger Str.	09:03
09:04	Hauptstr. / Busenberger Str. / Sandhübel	09:04
09:05	Hauptstr. / Verbindung Heinrich Koch Str.	09:05
09:06	Hauptstr. / Verbindung Heinrich Koch Str.	09:06
09:08	Hauptstr. / Schellenberger Str. / Blumen-Janke	09:08
09:09	Hauptstr. / Mackenbacher Str. / Getränke Schick	09:09
09:10	Hauptstr. / Mörickestr. / von Brentano Str.	09:10
09:11	Hauptstr. / Eichendorferstr. / Übergang Falltor	09:11
09:12	Hauptstr. / Mackenbacher Str. / Kreuzung Obergasse	09:12
09:13	Hauptstr. / Rummelstr. / Parkplatz Borngasse	09:13
09:14	Hauptstr. / Hüttengärten / Seniorenheim	09:14
09:14	Hauptstr. / Beethoven- / Mozartstr. / In der Lehmenkaut	09:14
09:15	Hauptstr. / Hüttengärten / Weilerbacher Reisebüro	09:15
09:16	Hauptstr. / Busenhübel / Metzgerei Schröder / Florale Werkstatt Janke	09:16
09:16	Hauptstr. / Busenhübel / Kreuzung Lindenstr.	09:16
00:18	Hauptstr. / Am Hochrain / Zum Geißrech drehen	00:18
09:19	Hauptstr. / Ringstr. / Kreuzung Talstr. (oben)	09:19
09:19	Hauptstr. / Ringstr. / Kreuzung Talstr. (unten)	09:19
09:20	Hauptstr. / Spitzackerstr. / Am Elpel	09:20
09:21	Hauptstr. / Lindenstr. Hausnummer 13	09:21
09:22	Hauptstr. / Hauptstr. / Parkplatz Barbarossa Bäckerei Reisebüro Lowak, Fahrschule Schneider	09:22
09:23	Hauptstr. / Hauptstr. / Apotheke / Tee- und Bastelstube Rutz	09:23
09:24	Hauptstr. / Hans-Reiner-Str. / Onkel Toms Hütte (Fuchs Lubritech, Ara)	09:24
09:25	Danziger Str. / Penny / Paulus Fachmarkt / Edeka / Netto	09:25
09:26	Danziger Str. / Dietz / Aldi	09:26
09:27	Danziger Str. / Zemo	09:27
09:29	In der Nasserde / Kreuzung Deutschherrnstr.	09:29
09:30	Friedenstr. / Ärztehaus / Friedhof	09:30
09:31	In der Nasserde / Regionale Schule	09:31
09:32	In der Mitte der Ostpreußenstr. (Nr. 8)	09:32
09:34	In den Sandäckern	09:34
09:34	Am Mühlhebel 8	09:34
09:35	In den Sandäckern / Kreuzung im Schelmental	09:35
09:35	Rummelstr. / Utec	09:35
09:36	Rabenhübel / Parkplatz Rabenest	09:36
09:36	Kirchenstr. / Friedhof Nord	09:36
09:37	Friedhofstr. / Kreuzung Turnerstr.	09:37
09:38	Rummelstr. / VG	09:38
09:39	Rummelstr. / Parkplatz Borngasse	09:39
09:40	Hüttengärten / Seniorenheim	09:40
09:40	Beethoven- / Mozartstr. / In der Lehmenkaut	09:40
09:41	Hüttengärten / Weilerbacher Reisebüro	09:41
09:42	Hauptstr. / Parkplatz Kreissparkasse / Barz / Spar	09:42
09:42	Hauptstr. / Apotheke / Tee- und Bastelstube Rutz	09:42
09:43	Hans-Reiner-Str. / Onkel Toms Hütte (Fuchs Lubritech, Ara)	09:43
09:44	Danziger Str. / Penny / Paulus / Edeka / Netto	09:44
09:46	Danziger Str. / Dietz / Aldi	09:46
	zurück zum Kreisell...	









Steffen Hess	Christian Wolschke	Anne Hess	Sebastian Müller	Malte Brunnlieb
New feature requests	Project Management Issue Tracker	Requirements Engineering / Interaction Design with mConcAppt in Wiki	Entries in Wiki for test reports  Test cases	Architecture  Git commits  Jenkin builds  Code

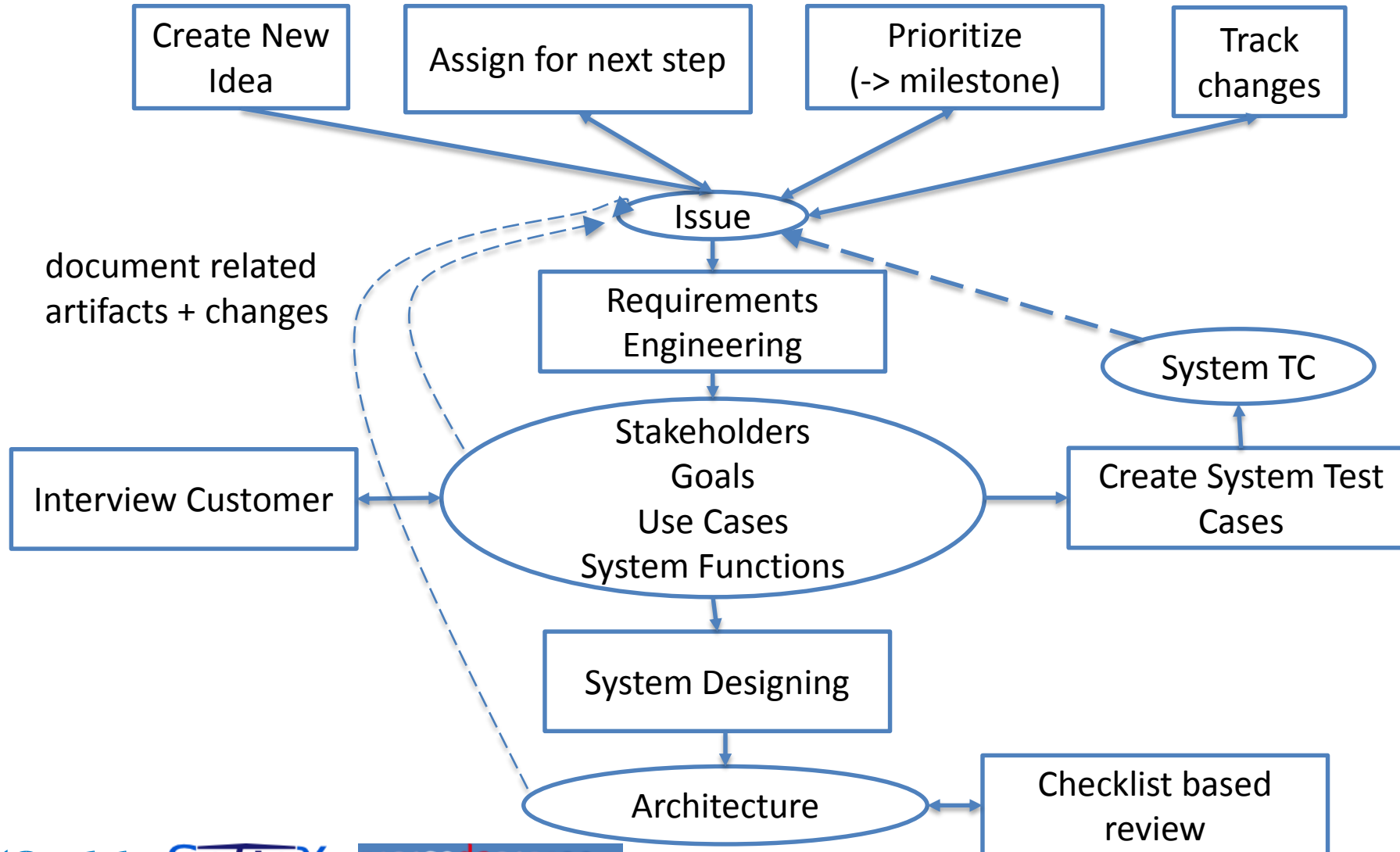
- **Project environment is provided**
  - Technical support: Christian Wolschke, Thomas Schneider

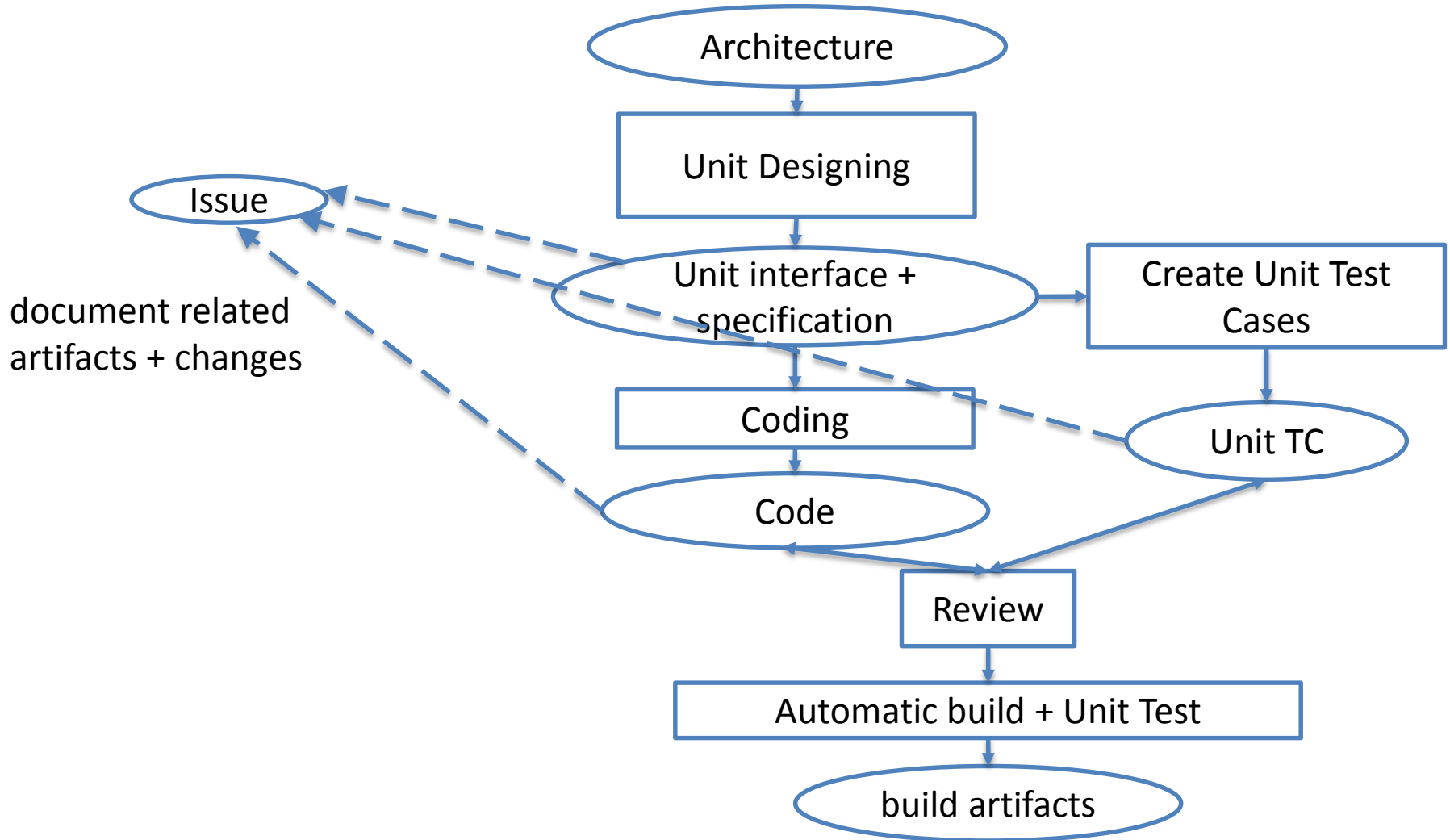


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- **Kick-off Meeting**
- **4 Iterations**
  - Each iteration consists of
    - Requirements & Interaction Design
      - PBR: Test cases and customer interview
    - Architecture
      - Checklist-based review
    - Coding
      - Code reviews
    - Testing
  - Each iteration ends with testate
- **Final Presentation**
  - with Prof. Rombach
  - Date: t.b.d.

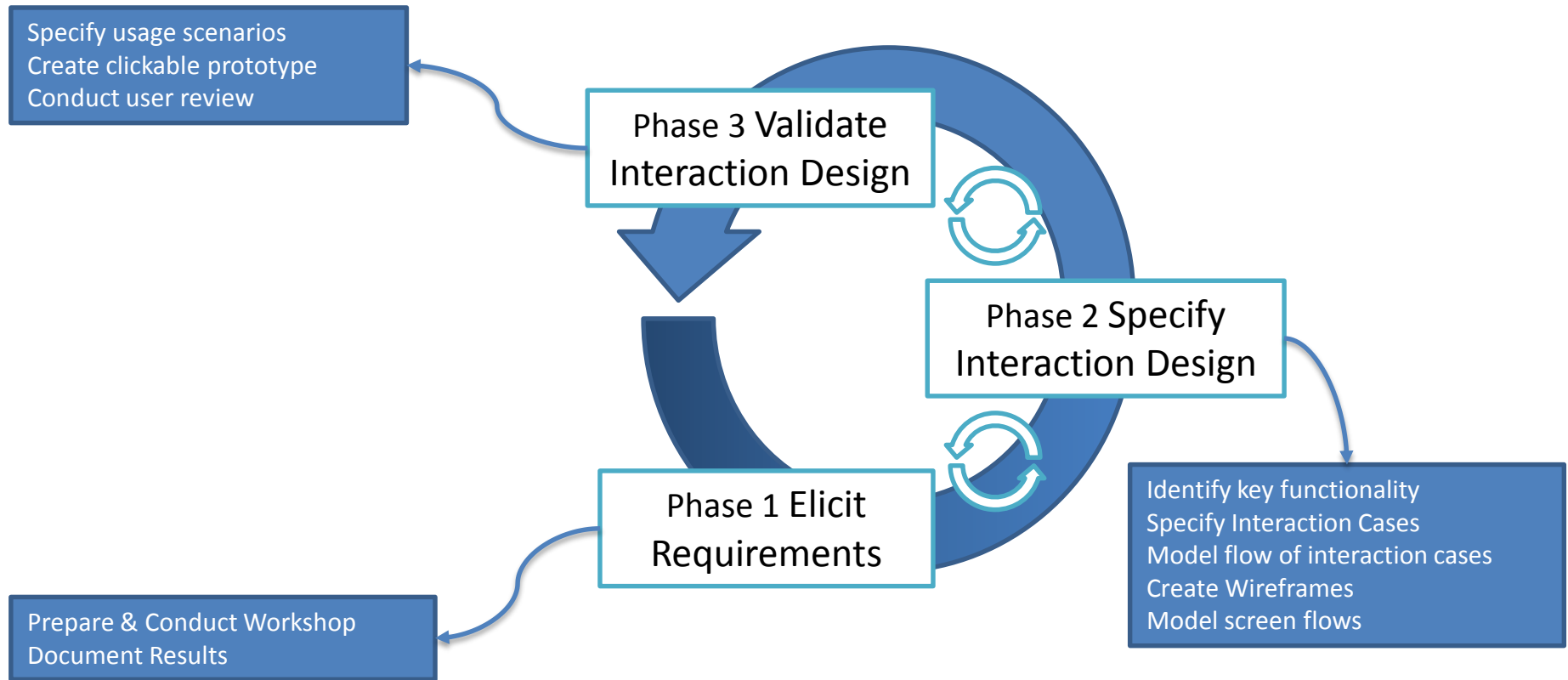
	April				May				June				July				
CW	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Iter 1			1	1	1	1											
Req +Des			1	1													
Co					1												
QA						1											
Iter 2							2	2	2								
Req +Des							2										
Co								2									
QA									2								
Iter 3										3	3	3					
Req +Des										3							
Co											3						
QA												3					
Iter 4													4	4	4		
Req +Des													4				
Co														4			
QA															4		
Buffer																X	
Finalize																	X






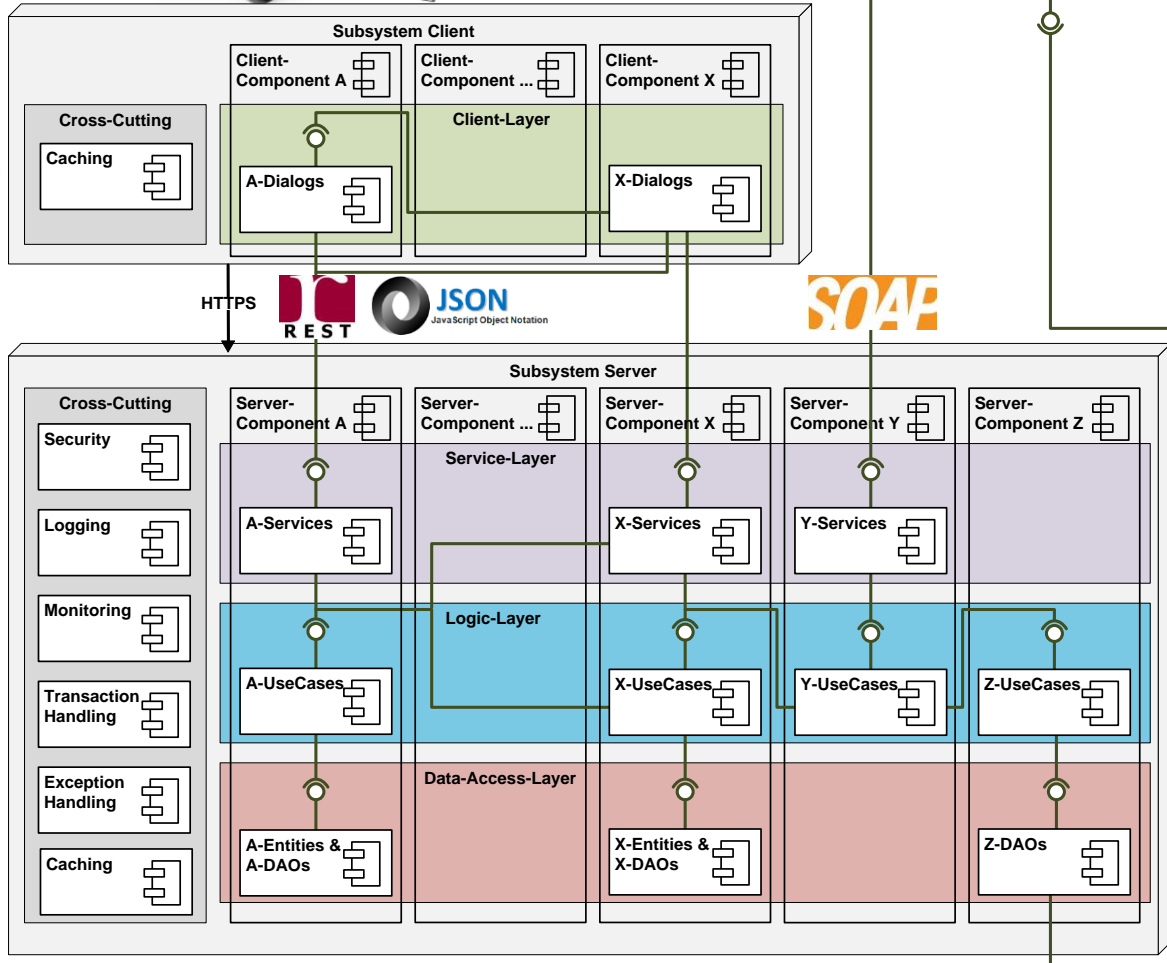




See „mConcAppt@GSE2016.docx“ for detailed guidance



	OASP4J 	OASP4JS 	OASP4NET 
Client	<ul style="list-style-type: none"> <li>▪ Currently not addressed</li> <li>▪ JavaFx planned</li> </ul>	<ul style="list-style-type: none"> <li>▪ AngularJS</li> <li>▪ Best-Practices</li> <li>▪ Modules</li> <li>▪ Sample Application</li> <li>▪ Application Template</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not planned</li> </ul>
Server	<ul style="list-style-type: none"> <li>▪ JEE-Standards</li> <li>▪ Best-Practices</li> <li>▪ Modules</li> <li>▪ Sample Application</li> <li>▪ Application Template</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not planned (node.js)</li> </ul>	<ul style="list-style-type: none"> <li>▪ In Progress</li> </ul>



**HTML5**



**JSR303**



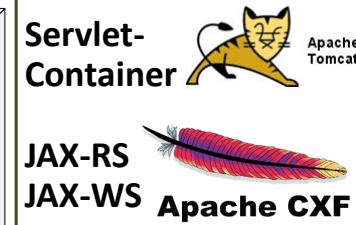
**JMX**



**Java**



**Servlet-Container**

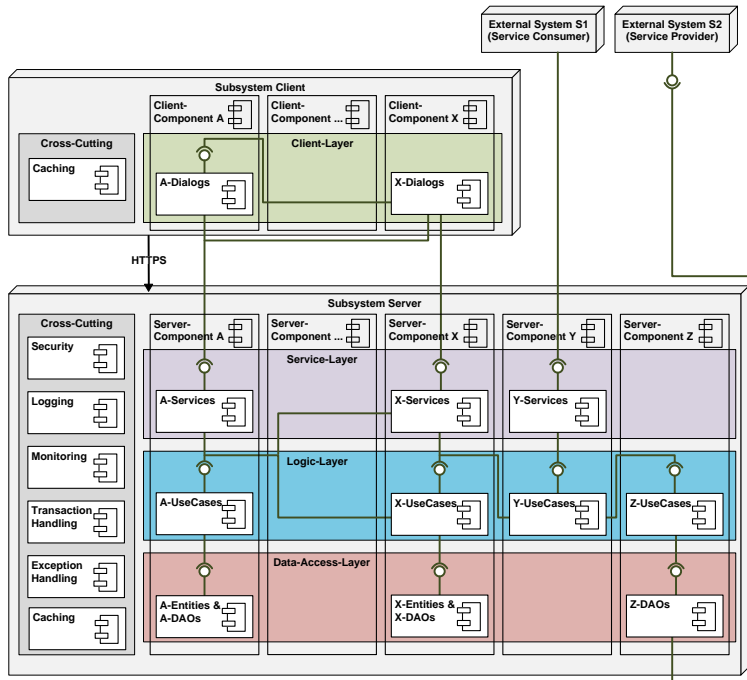


**JSR330 CDI**



**JPA**





```

> oasp4j-example-application [oasp4j-sample develop]
├── src/main/java
│   ├── io.oasp.gastronomy.restaurant
│   │   ├── general
│   │   ├── offermanagement
│   │   │   ├── common
│   │   │   │   ├── api
│   │   │   │   └── base
│   │   ├── dataaccess
│   │   │   ├── api
│   │   │   ├── impl.dao
│   │   ├── logic
│   │   │   ├── api
│   │   │   ├── base.usecase
│   │   │   ├── impl
│   │   ├── service
│   │   │   ├── base
│   │   │   └── impl.rest
│   └── calermanagement
    
```

- **Infrastructure**
  - Git for source code management (SCM)
  - Jenkins
  - At least one Mac & Win10 for mobile builds
- **Follow the guidelines of the OASP!**
- **Think in use cases. Trace use cases to components.**
- **Testing**
  - Try to perform your tasks test-driven (TDD) by unit tests
  - Implement consumer-based tests

- **You will work as ONE Team**
  - gseprojekt@cs.uni-kl.de
- **Three groups exist**
  - Group 1: Backend
    - gseprojekt1@cs.uni-kl.de
  - Group 2: Citizen App
    - gseprojekt2@cs.uni-kl.de
  - Group 3: Bus App
    - gseprojekt3@cs.uni-kl.de
  - "Group 4": Supervisors
    - gseprojekt4@cs.uni-kl.de
- **You will only be able to finish your tasks if you continuously work on them**
  - 8 ECTS Points -> 240 hours, 13 weeks -> ~ 18,5 hours/week

# Your Names

Gruppe	Name
	1 Jay Bonkile
	1 Sriram Kumar Srinivasan
	1 Ricarda Rosemann
	1 Muhammad Zeeshan
	1 Mohammad Baniasad
	1 Hafiz Ahsan Raza
	2 Marcel Müller
	2 Johann Heinz
	2 Dominik Skalnik
	2 Steffen Benjamin Holzer
	2 Patrick Müssig
	2 Tim Dellman
	2 Maissa Kerkeni
	3 Mher Ter-Tovmasyan
	3 Charel Irrthum
	3 Patrick Pschorn
	3 Sascha Müller
	3 Sviatlana Shukailava
	3 Erik Grüner
	3 Oliver Säger

- **Sign participation declaration**
  - you agree your result to be public and reusable
- **Get access to our lab**
  - Physical keys
- **Get access to**
  - PCs in lab
  - Github project
  - Jenkins-Server
- **Read guidelines for working**
- **Start to work**



- For requirements elicitation
- On Friday, April 22, in 32-439 at 13:15 h
- Preparation is necessary