

Systems Engineering and Project Management (Motivation)

Prof. Dr. Franz Wotawa

Institute of Software Engineering and
Artificial Intelligence

wotawa@tugraz.at

Introduction

- 1.0 VO 716.111 „Systems Engineering and Project Management” WS 2025
- **Content:** *The lecture deals with the **basics of system development and project management**. Students are introduced to the modeling of systems using the Unified Modeling Language (UML) and the extended and modified language SysML. SysML and UML are introduced using practical examples. In the area of project management, the basic concepts and issues, as well as their practical implementation, are discussed*

Lecture dates

- MI 19.11.2025, 13:00-15:00, HS i12
- MI 3.12.2025, 13:00-15:00, HS i12
- MI 10.12.2025, 13:00-15:00, HS i12
- MI 17.12.2025, 13:00-15:00, HS i12
- MI 21.1.2025, 13:00-15:00, HS i12
- MI 28.1.2025, 13:00-15:00, HS i12

- Old recordings of this lecture (in German) are available on TUBE! (Link in the Teach Center)

Content

	Content description
1	Introduction
2	What is system engineering?
3	Introduction into UML/SysML
4	SysML Requirement Diagram
5	UML Use Case Diagram
6	UML Class Diagrams
7	Block Definition Diagrams
8	Component Diagrams
9	Activity Diagram
10	Sequence Diagram
11	State Machine Diagram
12	Project Management introduction
13	Project Management methods and techniques

Exam

- In a lecture hall
- No books, notes, etc allowed!
- Write text for answering every question.
- Dates in the winter term 2025/26:
 - 3.12.2025
 - 29.1.2026
- Dates in the summer term 2026:
 - Will be published in TU Graz Online!

Recommended books



NASA/SP-2007-6105
Rev1

NASA Systems Engineering Handbook



SYSTEMS ENGINEERING FUNDAMENTALS



January 2001

SUPPLEMENTARY TEXT
PREPARED BY THE
DEFENSE ACQUISITION UNIVERSITY PRESS
FORT BELVOIR, VIRGINIA 22060-5565

Figures, methods, and concepts from these books are used in the slides of this lecture.

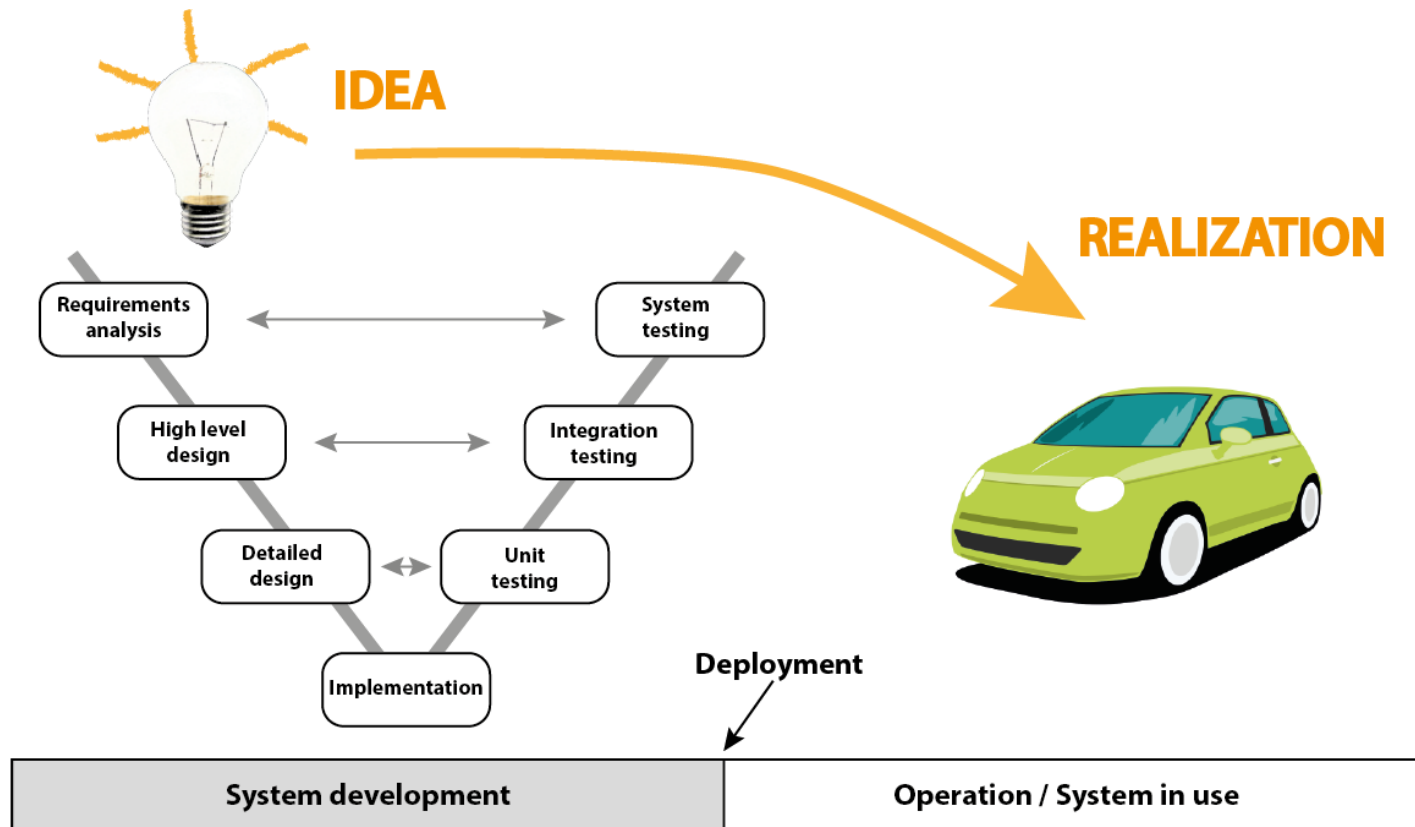
Further information

- Web side of this course with further information, notes and slides is on the Teach Center:

`https://tc.tugraz.at/main/course/view.php?id=3354`

Challenge

IDEA → PRODUCT



Challenges

- Systems are becoming bigger and bigger!
 ➔ 100 to 100 Million parts
- Systems comprise
 - Hardware (mechanical parts, electrical parts, electronics,...)
 - Softwarethat need working together.



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Linked in

What is Systems Engineering?

...and Project Management

