SEMA Pedagogy

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Abstract

The pedagogical path of the SEMA course. How the assignments during the course and during the homework build toward the final deliverable.

Distribution

This article or presentation is written as part of the Gaudí project. The Gaudí project philosophy is to improve by obtaining frequent feedback. Frequent feedback is pursued by an open creation process. This document is published as intermediate or nearly mature version to get feedback. Further distribution is allowed as long as the document remains complete and unchanged.

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status: draft
version: 0
Systems Architecting Top View

- customer value proposition
- business proposition

system requirements

- drives
- enables

drives

system design & technology
Main Responsibilities Systems Engineering

Systems Engineering: **Fitness-For-Purpose**

Achieving customer and business key drivers via key performance parameters of system based on technical expertise

- **Customer** ~5 key drivers
- **Business** ~5 key drivers
- **System** ~10 key performance parameters
- **Subsystems** ~10 key concepts, technologies, decisions
Final Homework Deliverable: T-shaped Presentation

- **societal trends**
- **opportunities**
- **problems**
- **needs**
- **business/market competition trends**
- **opportunities**
- **problems**
- **needs**
- **customers stakeholders**
- **key drivers**
- **concerns applications**
- **product project**
- **system functions**
- **key performance**
- **design and concepts**
  - functional, physical
  - quantified
- **specific aspects**
  - functional, physical
  - quantified
- **technology**
  - critical or new
- **business quantification**
- **risk analysis**
- **conclusions and recommendations**
- **summary how solution answers needs**
- **why choices are appropriate**
- **summary and conclusions**

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4 Gerrit Muller

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SEMApresentationTshape
Final Course Week Deliverable: Elevator Pitch

Selling and explaining the proposal while managing expectations and engaging management in design and technology challenges.
Assignments during the Course

1. elevator

C **Customer objectives** | A **Application** | F **Functional** | C **Conceptual** | R **Realization** | + **Life cycle**

2. exploring the case
3. story telling | 4. use case | 5. dynamic behavior
6. block diagram

7. context and workflow

8. customer key driver graph | 9. budget based design
10. concept selection

11. business plan | 12. change analysis

13. line of reasoning
14. thread of reasoning
15. quantified chain of models
16. credibility and accuracy
Panorama Photo of Classroom

SEMA classroom September 2017, photo: Yang Yang Zhao
1/3: Capture course results as electronic visualizations (PowerPoint/Visio)

2/3: Transform into draft T-shaped presentation

final: T-shaped presentation plus individual reflection