Module Information on the Stakeholders part of the ESA Course

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Abstract

Introduction to the Stakeholders part of the Embedded System Architecting course.
Abstract
The stakeholder part of the Embedded Systems Architecting (ESA) course is described. The program existing of 6 modules is described. The course format, iterating theory, illustration and interaction is explained.
Complementing Forms

Theory
- dull
- passive

Insight

Practical Illustration
- vivid
- passive

Interaction
- vivid
- active

Spin-off:
- cross-fertilization

Abstraction

Exercise
Template of One Session

<table>
<thead>
<tr>
<th>Time</th>
<th>Interaction</th>
<th>Lecture</th>
<th>Lecture</th>
<th>Interaction</th>
<th>Exercise</th>
<th>Presentation and Discussion</th>
<th>General Feedback &amp; Interaction</th>
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</thead>
<tbody>
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<td>13:15</td>
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</table>
Course Program

block 2, 2 days
block 1, 3 days

product creation and system architecture in business context
role and task of the system architect; psycho-social side
How to: document present
requirements capturing

case: CAF-views
case: CR-views

roadmapping; story telling
case: prepare presentation
case: from story to design

product families and generic developments and consolidate present to management evaluation

ESA Course, Stakeholders Part 5 Gerrit Muller
version: 2.1 July 31, 2014 ESACprogramStakeholders
Rules of the Broadcast Part

- Please write your questions/remarks/statements on yellow stickers and attach them at the end on the P-flip.

  *These will be used in the interactive section for discussion and to increase insight.*

- Short clarification questions are welcome,

  *Discussion will take place in the interactive part.*

- Stupid questions don’t exist. Learning is based on safe and open interaction.

  *Very individual-oriented questions can be referred to a break or after the session.*
Rules of the Interactive and the Practice Part

• Your contribution is essential.

• Don’t monopolize the time. Everyone, also the quiet people, should have the opportunity to contribute.

  *The facilitator will intervene if the contribution is limited to a small group of participants.*

• Respect the contribution of others.

  *Opinions can’t be wrong, difference of opinion is normal and called pluri-formity.*

• The course format is highly experimental and based on improvisation, constructive proposals are welcome.

  *It is your course! Regular evaluations will give the opportunity to influence the rest of the course.*
Evaluation of the Expectations

Please write your name and expectations with a marker on one A4 page.

Describe your expectations as one-liner or in a few keywords.

These pages will be displayed on the wall of the room.

At the end of the course we will look back on these expectations, with the purpose of two-way learning.
Abstract
The Gaudí project is described. The goals of the project, the way of working, and an outline for the period 2001 to 2003. The deliverables in terms of documents are positioned by means of a two-dimensional map. Courses based on the Gaudí material are described. The current status of the courses is given.
Goals of the Gaudí Project

• Consolidate existing Systems Architecting Methods
  evaluate, reflect, generalize
• Make the Systems Architecting art more accessible
  case descriptions
• Enable the education of (future) System Architects
  curriculum, course material
• Research new or improved Systems Architecting Methods
  industry as laboratory
Modular approach

course
all slides

module

presentation

reader

book

paper or chapter

section

figure

The Gaudí Project
11 Gerrit Muller

version: 3.0
July 31, 2014
GPdocumentModularity
Show Early to Get Feedback

leading principle:
show documents under construction
but clearly show their status

The Gaudí Project
version: 3.0
July 31, 2014
Growth of the System Architect

- root technical knowledge
- generalist technical knowledge
- business, application insight
- process insight
- psychosocial skills
Positioning Courses

- Root technical designer
- Technical generalist
- Business, application insight
- Process insight
- Psycho-social interests

Gaudi courses

- Performance Architecting System Performance
- Modeling System Modeling and Analysis
- CAFCR Multi-Objective System Architecting and Design
- SARCH System Architecting
- Platforms and Evolvability Architecting Evolvable Product Families
Positioning Books

root
technical
designer

technical
generalist

business, application insight

process insight

psycho-social
interests

Architecting
System
Performance

CAFCR
Architectural
Reasoning

Systems Architecting

Supporting Processes

Composable Architectures

Human Measure

Architecting System Performance

System Modeling and Analysis: a Practical Approach

CAFCR PhD thesis

The Gaudí Project version: 3.0
July 31, 2014
Gerrit Muller
Concurrent Incremental Approach

1999
jun | jul | aug | sep | oct | nov | dec | jan | feb | mar | apr | may | jun | jul | 2000

Exploration:
What
How
For whom
By who
When

Infrastructure:
Tools
Website
Contacts

Contents:
Generation
Publication
Courses
Feedback

Evaluation

Infrastructure:
Improvements
Visibility

Contents:
second wave

The Gaudí Project
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version: 3.0
July 31, 2014
GPmasterPlan
# Outlook 2010-2012

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td><strong>Education</strong></td>
<td>SE master program</td>
<td>Reflective Practice yr 3</td>
<td>SE PhD program</td>
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<td></td>
<td>Reflective Practice yr 2</td>
<td>System Design</td>
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<td>Systens Engineering</td>
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<td></td>
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<td>Bachelor level</td>
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<tr>
<td><strong>Research</strong></td>
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<td>staffing</td>
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<td></td>
<td>Methodology</td>
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<td>Research Agenda</td>
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<td>local: SESG, BUC alumni,</td>
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<tr>
<td></td>
<td>strategy&amp;roadmapping, KSEE</td>
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<td></td>
<td>ESI Sr architecten</td>
<td></td>
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<tr>
<td></td>
<td>global: architectingforum.org, SoSE network</td>
<td>INCOSE academic forum, symposium, CSER, SEANET</td>
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<td><strong>Tools, website</strong></td>
<td>navigation and search</td>
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<td>ideas are welcome!</td>
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<td><strong>Book publication</strong></td>
<td>Systems Architecting</td>
<td>Multi-view Architecting</td>
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</tr>
<tr>
<td></td>
<td>in Context</td>
<td>and Modeling</td>
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*The Gaudí Project*

18  Gerrit Muller

version: 3.0
July 31, 2014
GPoutlook20102012
Gaudí Process

• frequent releases
• early accessibility (in infancy stage)
• encouragement of further distribution
• aimed at maximum feedback
## Courses based on Gaudí Material

<table>
<thead>
<tr>
<th>Course</th>
<th>Abbreviation</th>
<th>Duration (in days)</th>
<th>Participants per course</th>
<th>Target audience</th>
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<tbody>
<tr>
<td>System Architecture</td>
<td>SARCH</td>
<td>5</td>
<td>16</td>
<td>architects, stakeholders of architects</td>
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<tr>
<td>Management SARCH</td>
<td>MSARCH</td>
<td>2</td>
<td>16</td>
<td>management teams</td>
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<tr>
<td>Embedded Systems Architecting; Stakeholders</td>
<td>ESA</td>
<td>3</td>
<td>16</td>
<td>potential architects</td>
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<tr>
<td>Requirements Engineering as part of OOTI curriculum</td>
<td>OOTI</td>
<td>5</td>
<td>12-18</td>
<td>post-doctoral students</td>
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<td>Embedded Systems context</td>
<td>EScontext</td>
<td>4</td>
<td>30</td>
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<tr>
<td>Execution Architecture (with Ton Kostelijk)</td>
<td>EXARCH ASP</td>
<td>4..5</td>
<td>16</td>
<td>SW designers, architects</td>
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<tr>
<td>Multi-Objective System Architecting and Design</td>
<td>MOSAD</td>
<td>3..5</td>
<td>16</td>
<td>designers, architects</td>
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<tr>
<td>System Modeling and Analysis</td>
<td>MA611</td>
<td>3..5</td>
<td>16</td>
<td>designers, architects</td>
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## Status of Courses

<table>
<thead>
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<th>Course</th>
<th>Abbreviation</th>
<th>number of courses upto March 2008</th>
<th>appr. total participants</th>
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<td>System Architecture</td>
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<td>Management SARCH</td>
<td>MSARCH</td>
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<td>Embedded Systems Architecting; Stakeholders</td>
<td>ESA</td>
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<td>Requirements Engineering as part of OOTI curriculum</td>
<td>OOTI</td>
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<td>125</td>
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<tr>
<td>Embedded Systems context</td>
<td>EScontext</td>
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<td>Execution Architecture (with Ton Kostelijk)</td>
<td>EXARCH</td>
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<td>Multi-Objective System Architecting and Design</td>
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## Course Modules

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<th>No.</th>
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<th>SARCH</th>
<th>ESA</th>
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<tr>
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<td>Course information (course-specific), Gaudí project</td>
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<tr>
<td>1</td>
<td>Positioning the system architecture process, product creation process</td>
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<td>Role and task of the system architect</td>
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<td>+</td>
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<td>3</td>
<td>Requirements capturing</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>4</td>
<td>System architect toolkit</td>
<td></td>
<td>+</td>
<td></td>
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<td>5</td>
<td>Roadmapping</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>6</td>
<td>Product families, generic developments</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>7</td>
<td>Documentation, reviewing and other supporting processes</td>
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<td>+</td>
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<td>8</td>
<td>The role of software in complex products</td>
<td>+</td>
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<td>9</td>
<td>Psycho-social side</td>
<td>+</td>
<td></td>
<td>some</td>
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<td>10</td>
<td>Wrap up, expectations, how to continue, evaluation</td>
<td>+</td>
<td>+</td>
<td></td>
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<tr>
<td>11</td>
<td>Human Resource Management wrt architects</td>
<td>+</td>
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</tbody>
</table>
CyberVideo case

- Content store
- Satellite uplink
- Satellite 120 Mb/s 24 hrs/day
- Local store (Brainbox)
- Decoder (settop box)
- TV
- Key distribution
- Billing
- Internet