Masters Course The Context of Embedded System Design, Module 0, Information

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Abstract
Introduction to the Masters Course The Context of Embedded System Design

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Abstract
The Masters Course The Context of Embedded System Design is a course for students following the masters “Embedded Systems”. The course material is based on the SARCH course Systems Architecting. However, more and shorter exercises are added, and a common case is used throughout the course.

The course addresses a wide spectrum of issues in relation with system architecture, such as: processes, business, role and task of the system architect (team), generic Developments (re-use, platforms) requirements, roadmapping, and skills.
<table>
<thead>
<tr>
<th>session</th>
<th>subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>lecture 1</td>
<td>introduction, requirements capturing</td>
</tr>
<tr>
<td>lecture 2</td>
<td>story telling, customer views</td>
</tr>
<tr>
<td>lecture 3</td>
<td>product creation in business context</td>
</tr>
<tr>
<td>lecture 4</td>
<td>roles and tasks in product creation</td>
</tr>
<tr>
<td>lecture 5</td>
<td>how to: document, present</td>
</tr>
<tr>
<td>lecture 6</td>
<td>roadmapping</td>
</tr>
<tr>
<td>lecture 7</td>
<td>product families, platforms</td>
</tr>
<tr>
<td>lecture 8</td>
<td>presentation by teams</td>
</tr>
</tbody>
</table>
Case: Intelligent Greenhouse

Teams of 3 to 5 students

Describe the context of the Intelligent Greenhouse, one subject/section per week. Every lecture one subject will be discussed. Send the resulting section within one week to the teacher.
Filename: Team<Teamnumber>Subject<subjectnumber>
Filesize <100 kB prevent mailbox overflow :-(

At the end: present an overview to the Management Team. Send complete description within two weeks to the teachers:
gerrit.muller@esi.nl; joris.van.den.aker@esi.nl
Exercises Requirements

1. Describe a “Intelligent Greenhouse”: What does it look like, what can it do?
2. Identify Stakeholders and concerns
3. Discuss the technological opportunities and challenges
4. Make a key driver map
Exercises Story Telling

- 1 Create a story
- 2 Improve the story, with the criteria for stories in mind
- 3 Derive a case description from the story
- 4 Make a design to satisfy the case description
Exercises Product Creation

- 1 Identify the processes within your own company.
- 2 Make a design of the product
- 3 Make a work breakdown structure
- 4 Propose an organizational structure, quantify the size of the groups.
Exercises Roles and Tasks

- 1. Determine the most critical system functions and performance aspects
- 2. Propose an integration plan
- 3. Perform a risk assessment
- 4. Improve the organizational structure
Exercises Documentation and Presentation

- 1. Analyse the costs of the product creation, manufacturing and sales
- 2. Analyse the income
- 3. Make multi-year business forecast
- 4. Make a presentation outline for the presentation to the Board of Management
Exercises Roadmapping

- 1 Identify Market trends
- 2 Identify Technology Trends
- 3 Make a product roadmap proposal
- 4 Integrate Market, products, technology into 1 roadmap and identify Process and People issues
Exercises Product Families

- 1 Identify the members of the product family
- 2 Identify the synergy between the members of the family
- 3 Identify the member specific functionality
- 4 Propose a balanced product family approach
Structure

Theory
- dull
- passive

Practical Illustration
- vivid
- passive

Interaction
- vivid
- active

Spin-off: cross-fertilization

Abstraction

Exercise
Rules of the Interactive Parts

• 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.
Rules of the Broadcast Parts

- 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.*