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

September 6, 2020
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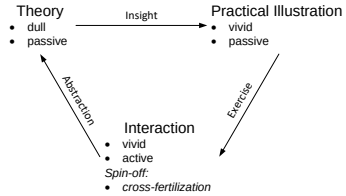

Information Masters Course The Context of Embedded System Design

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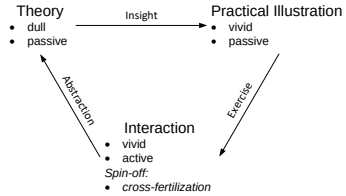
Abstract

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 thorughout 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.



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Program

session	subject
lecture 1	introduction, requirements capturing
lecture 2	story telling, customer views
lecture 3	product creation in business context
lecture 4	roles and tasks in product creation
lecture 5	how to: document, present
lecture 6	roadmapping
lecture 7	product families, platforms
lecture 8	presentation by teams

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

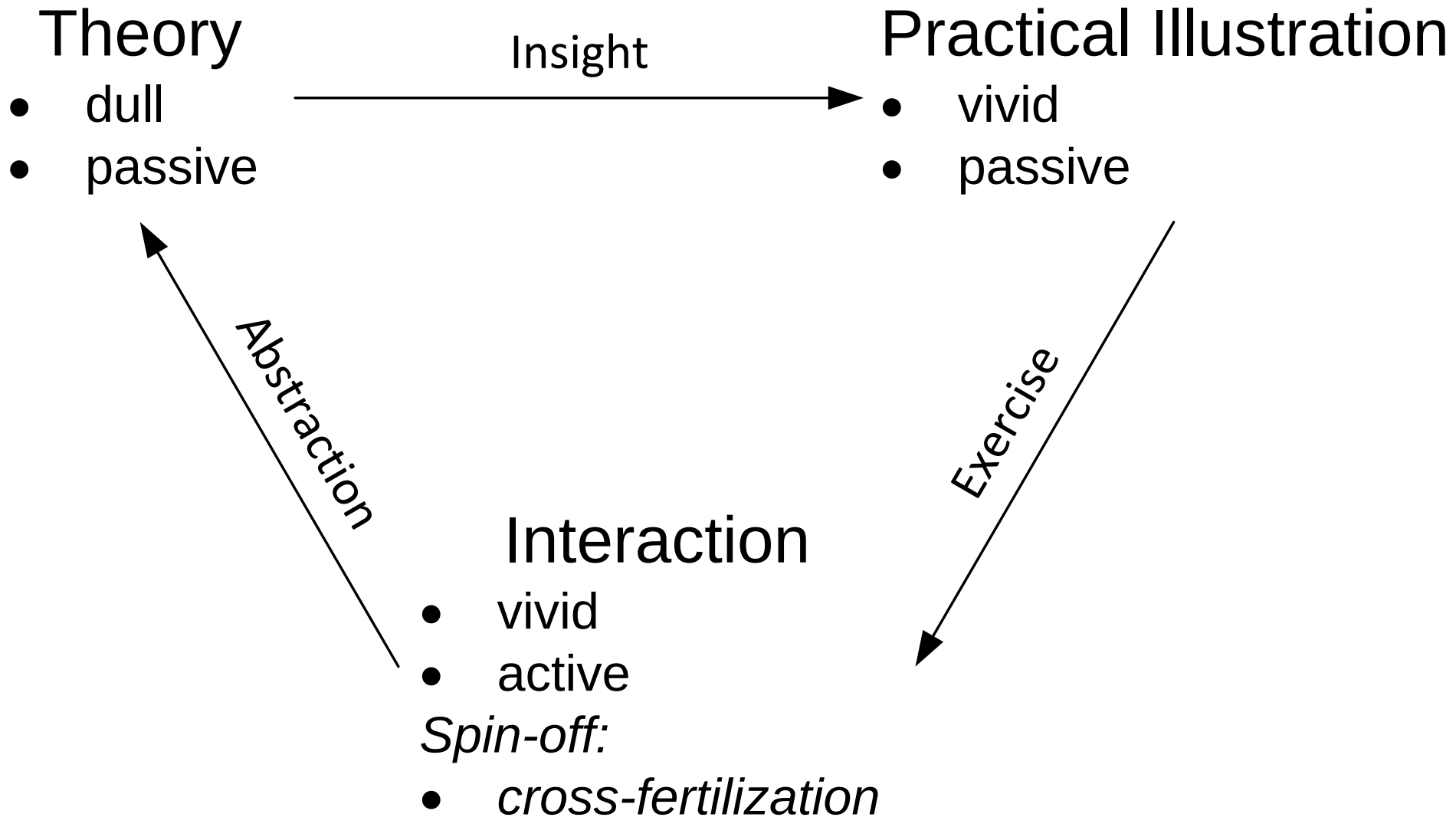
Exercises Roadmapping

- 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
Insight
Practical Illustration
vivid
passive
Abstraction
Exercise
Interaction
vivid
active
Spin-off:
cross-fertilization

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 pluriformity.
- 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.