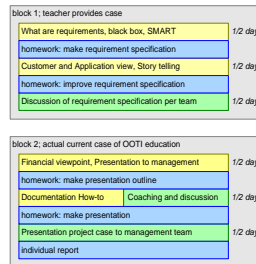


# Lecture Requirements Engineering

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## Abstract

This article describes the Requirements Engineering session part of the Software Engineering block in the OOTI curriculum of the Technical University Eindhoven. The focus of this course is on capturing and managing requirements. The notion of key drivers and story telling will be introduced as a means to capture and manage. During the course an exercise is used based on video distribution via satellite. The students have to elicit the requirements for the required systems, working in teams of 4 students. Every student writes an individual report about the exercise.

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# 1 Introduction

This article describes the Requirements Engineering session part of the Software Engineering block in the OOTI curriculum of the Technical University Eindhoven. Trainer is the author of this article Gerrit Muller.

The focus of this course is on capturing and managing requirements. The notion of key drivers will be introduced as a means to capture and manage. A case is used as learning vehicle. The students have to perform the requirements analysis in this case. The findings of the requirements analysis have to be presented to a management team and then to be written down in a requirement specification.

# 2 Program

The lecture program is:

| time      | subject   |
|-----------|---|
| Session 1 | What are requirements, black box, SMART               |
| Session 2 | Customer and Application view, Story telling          |
| Session 3 | Discussion of requirement specification per team      |
| Session 4 | Financial viewpoint, Presentation to management       |
| Session 5 | Documentation How-to, Coaching and discussion session |
| Session 6 | Presentation of project case to management team       |

The time in between lectures is to be used to perform a case study. The case study will be explained on the first half day. Half a day must be used to explore the case, During the next half lecture day the status of the case will be discussed and clarifications will be given. At the end of the block the case should be finished and the results will be presented and discussed. The course is closed by writing a summary of the case findings (per group) and lessons learned per individual, see section 4. Figure 1 shows the schedule of the course on a timeline.

# 3 Case Description

A video content distribution company is planning to deliver video which can be transferred to a local box in the house of the consumer via satellite. Figure 2 shows a diagram of the system.

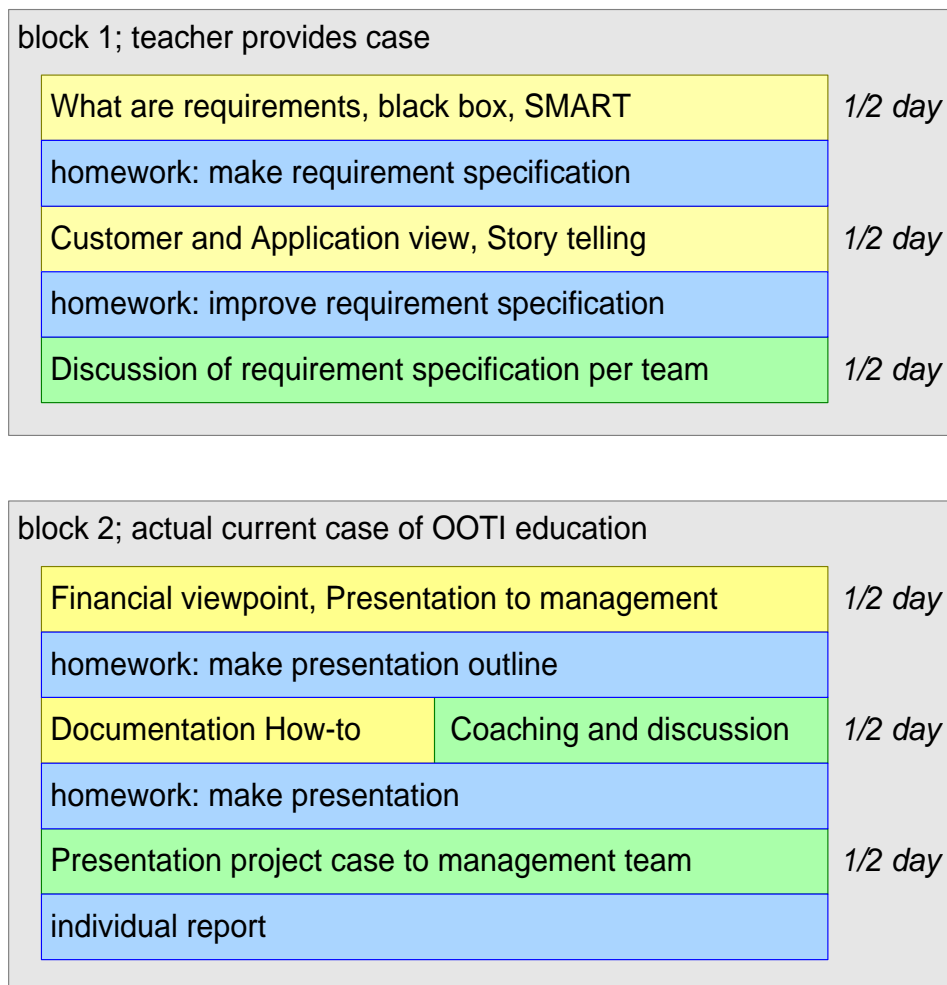


Figure 1: Schedule of the course

## 4 Instruction for the case

The case is performed in 4 groups of 3..5 people, working together on the same problem. Instructions for the case:

1. Block 1 session 1: Make an initial requirements specification
2. Block 1 session 2: Improve and complete requirements specification
3. Block 2 session 4: Make an outline of a presentation of maximum 10 minutes, target audience: management team of your company
4. Block 2 session 5: Prepare and exercise presentation

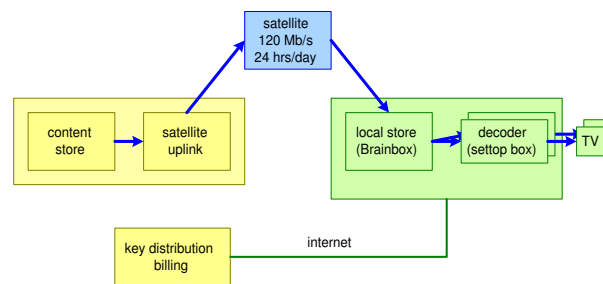


Figure 2: The block diagram of the Cyber Video company system

5. Block 2 session 6: Write an individual report reflecting on: requirement specification, management presentation, lessons learned and how to do it next time.

Recommended way of working:

1. Make a black box view of the system
2. Make some initial drafts and designs to explore the problem.
3. Make a story which helps to understand the products, make sure to use the criterions for a story.
4. Look from all stakeholder points of view towards the problem and identify what they need and what they expect.
5. Analyze the information obtained so far and extract the underlying requirements.
6. Abstract the key drivers behind the requirements.
7. Make a top-down description of the requirements.

Every group will present its findings on day 5, followed by a short discussion. This presentation is to the management team of the company which will make these products and some invited lead customers.

Create a *Requirement specification* which can be used as the starting point of the design. On day 6 a coaching session is held to discuss the results so far, on day 7 the requirement specifications are reviewed.

Write an individual summary of the entire process, maximum 2 A4's, touching the following questions:

- What are the most important lessons you learned from these exercise (requirement specification, management presentation)?

- Which roles did the members of the group play during the exercise?
- How would you approach such a problem the next time?
- Which stakeholders understand your group presentation? Are they happy with the presentation?

Don't answer all these questions perfectly, finish the summary in at most half a day.

## 5 Acknowledgements

The case used in this course is derived from the case defined by Sjjir van Loo for use in the course SW architecture. The case defined by Sjjir is further reduced in this course to stimulate the students in the requirements exploration, reflecting real-life situations which often start rather ill-defined.

I thank Sjjir van Loo for providing his course material. I also thank Dieter Hammer and Harold Weffers for the initial discussions and for the suggestion to use this case.

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## History

### **Version: 1.2, date: September 19 2003 changed by: Gerrit Muller**

- major update to reflect new OOTI project based learning cycle

#### **Version: 1.1, date: September 19 2003 changed by: Gerrit Muller**

- added documentation how to
- changed the case from CD shop to video satellite distribution
- added writing of the requirements specification to the course

#### **Version: 1.0, date: October 3 2002 changed by: Gerrit Muller**

- removed roadmapping from the course material
- added customer view, application view and story howto
- changed the case description accordingly
- the program is described decoupled from the actual days

#### **Version: 0.4, date: June 13 2002 changed by: Gerrit Muller**

- minor change

#### **Version: 0.2, date: September 21 2001 changed by: Gerrit Muller**

- updated OOTIcourseSchedule

#### **Version: 0.1, date: October 31 2000 changed by: Gerrit Muller**

- Created, no changelog yet

#### **Version: 0, date: december 14 1999 changed by: Gerrit Muller**

- Created, no changelog yet