IIS "Blaise Pascal"

Classe V° C indirizzo Informatico

Evaluation of FOSS for Electronic Circuit Simulation

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school year 2012-2013

Outline

- Goal
- Requirements analysis
- Project planning
- Milestones
- Assessment
- Teams and coaches

Goal

- The aim of the project is to provide an evaluation of the most commonly used Free and Open Source Software (FOSS) for electronic circuit simulation
  - Comparing them with a commercial product: the National Instruments Multisim software

- English as "*vehicle language*"

Requirements

- Unambiguous description of needs or desires
  - **System functions (functional requirements)** - what the system is supposed to do (e.g. system should provide a rich component library)
  - **System attributes (non-functional requirements)** - characteristics of the system (e.g. response time, usability, ...)
  - **Use cases** (narrative descriptions, stories or cases of using a system)

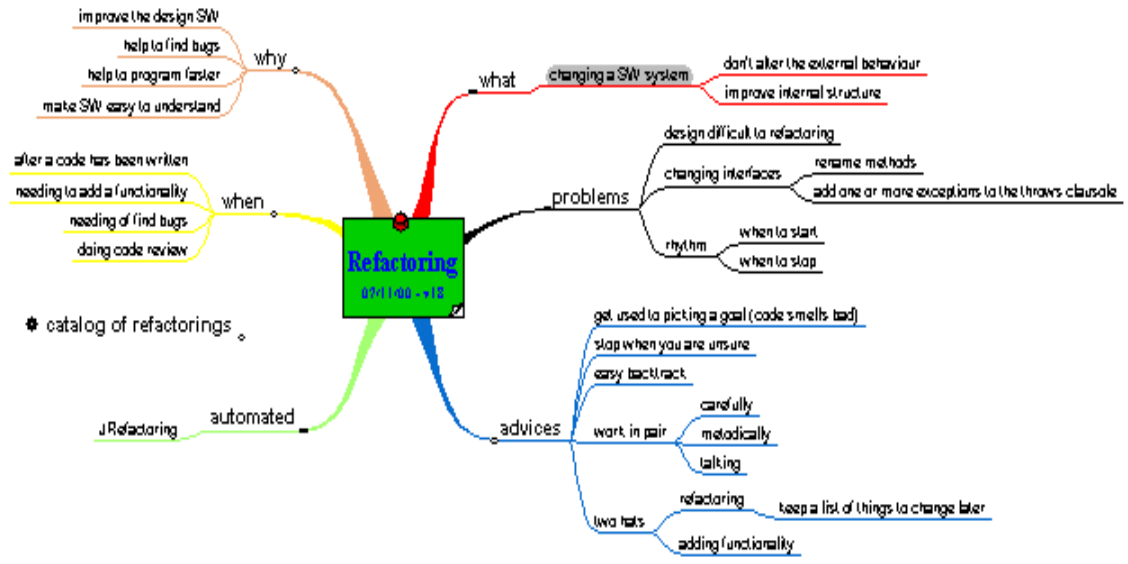
Requirements Analysis

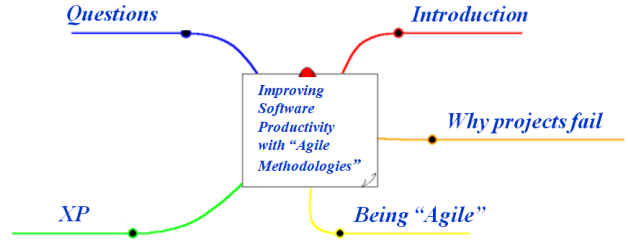
- End-users
  - Students (III, IV or Vth year at high school)

- Define use cases
  - In the field of analog and digital electronics
  - **Identify the test circuits**
    - Significant enough to test software performance

Requirements Analysis - Tools

- Concept maps
  - ***Webspiration***
  - ***Cmap***
  - ***Bubbl***
  - ***XMind***
- Presentation
  - ***PowerPoint***
  - ***Impress***
  - ***Prezi***
  - ***Google Document***

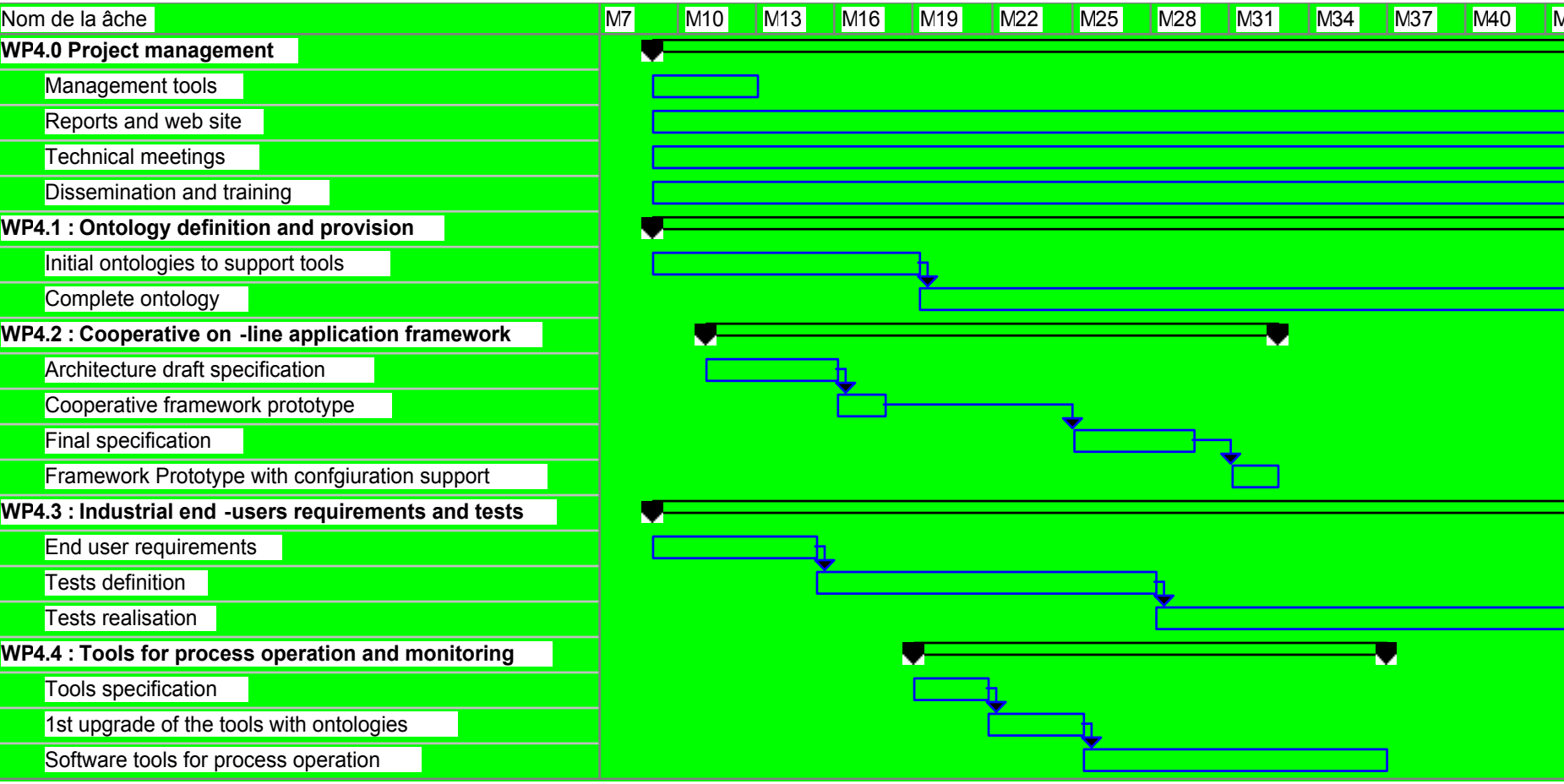




Project Planning

- Resources
  - Traditional or on-line dictionary
  - ...
- Activities
  - Break down each activity into smaller tasks
    - Estimate the effort for each task
  - Assign responsibilities to team members
- Set up a timetable
- Observation and continual feedback
  - Record data at least once a day in your project log
  - Make a multimedia storyline of the project, supervised by the coach

Project Planning - Tools



Project Planning - Milestones

- Milestones are synchronization points between development team, coach and customers (i.e. teachers)
- Milestones usually correspond to the delivery of some project artifacts
- Milestones are decision points:
  - Decide if the expected work items have been really completed
  - Schedule updating
  - Reworking of the last iteration if problems have been discovered

Milestones

22/12

- Software assignment
- Start keeping an accurate and up-to-date *project log*

7/01

- Deliver a first release of the *technical glossary* and *project log*

Milestones

14/01

- Deliver a first draft of the tutorial

21/01

- Presentation: a short tutorial *(by a member of each group)*

Milestones

28/01

- Deliver a preliminary analysis and plan document
  - **Including a draft version of test circuits**
- Questions
- Take stock of the progress made

04/02

- Presentation test-based use cases *(by a member of each group)*

Milestones

11/02

- Deliver a draft final report
  - Including: analysis, planning, evaluation
- Questions
- Take stock of the progress made

Milestones

18/02

- Presentation of the work done *(by a member of each group)*
  - Performance evaluation, strengths and weaknesses
  - Make a comparison with Multisim

25/02

- Deliver the final report
- Deliver the technical glossary
- Deliver the final project log

Milestones

04/03

- Coach's presentation
  - Coach's role, groups at work, problems, ...
- Technical coach's presentation
  - Deliver comparative tables based on the data gathered along with his comments

11/03

- Multimedia editor's presentation

Assessment

- Rubric as an assessment tool to measure students' work
- Students’ assessment
  - 30% teamwork
    - Method
    - Assignment of responsibilities
    - Planning skills
      - Feedback (gather raw data on the effort expended and other metrics of interest) and possibly planning again
  - 70% individual work
    - Presentations

Presentation Rubric

ORGANIZATION	Audience cannot understand presentation because there is no sequence of information.	Audience has difficulty following presentation because student jumps around.	Audience can follow presentation because student presents information in logical sequence.	Audience is involved in the presentation because student presents information in a logical, interesting sequence.
PRESENTATION	Student uses imprecise language and presentation is not clear. OR Student simply reads the slides.	Student presents the material in quite a clear way. The language form is not always appropriate or is mostly memorized using simple structures.	Students presents the material clearly. The language form is accurate with appropriate vocabulary.	Student presents the material with clarity and confidence. The language form is accurate with rich vocabulary. S. holds attention of the audience with the use of direct eye contact.
SUBJECT KNOWLEDGE	Student does not have grasp of information; S. can't answer questions about the subject.	Student is uncomfortable with information and is able to answer only rudimental questions.	Student is at ease with expected answers to all questions but fails to elaborate.	Student demonstrates full knowledge by answering all class questions with explanation and elaboration.
CREATIVITY	Student uses insufficient or superfluous graphics.	Student sometimes uses graphics supporting text and presentation.	Student manages a good balance between graphics and text.	Student manages a good balance between graphics and text. The presentation is very original and holds the audience's attention.
USE OF TIME	The presentation is too long or too short (6 minutes longer/shorter)	The presentation exceeds the time frame (4 minutes longer/shorter)	The presentation mainly stayed within the allotted time frame (2 minutes longer/shorter)	The presentation is within the allotted time.

Teams

- *Bartoli, Bianchi, Cremaschi*
- *Campani, Cardace, Vacondio*
- *Camerini, Costi, Yu*
- *Castagnetti, Catellani, Franceschi*
- *Mazzoni, Prandi, Zanni*
- *Pè, Rosi, Zara*

- *Carrea* plays the multimedia editor role
- *Bonini* plays the coach role
- *Travaglioli* plays the technical coach role