SDP05

The
Requirements
Specification

ECE 415
Thu 23 Sept 2004
...a quick review
Needs Assessment – Stating the Problem

The problem statement should exhibit the following attributes:

- nontechnical
- nonquantifiable
- complete
- specifiable

Techniques for arriving at a problem statement

1. question the customer (virtual customer, the “customer” within)
2. differentiate needs and wants
3. explore project boundaries
4. input/output analysis
5. preview the user interface
6. survey design attributes
7. identify conflicting needs
8. prepare a draft operations manual

for an example, see Case Study, Appendix A,

Two-stage approach for developing a requirements specification

Need for iteration

- Refining the problem statement raises questions about the customer’s needs
- Specifying the requirements raises questions about the problem statement

In the language of the customer, normally straightforward, nontechnical and nonquantifiable.

concise statement of what the design will accomplish and a presentation of the criteria by which the finished design will be evaluated. It documents the answers to:

- What, exactly is the design team to do?
- How, will everyone know when the design is done?
What comes after the Requirements Specification?
How is the Requirements Spec used?
Why is it important to thoughtfully consider the Req Spec?

Product design is expensive!
Again... the two stage process
The Req Spec can be thought of as a technical restatement of...
...the Problem Statement.

Oddly enough...
A search for solutions must be avoided.

Needs...

[Honda Civic]
...and wants.

[Honda Civic Si with JDM engine]
It is the job of the engineer to translate the customer’s wants into a problem statement that reflects true needs.
Conflicting design needs

Consider the
Apple iPod
There is help in the appendix:

Guitar Tuner

Use the guitar tuner case study as a model for your Req Spec
AGMC’s CONCEPTION OF FINISHED UNIT

LEDs are to be brand zzz or equivalent
The energizing current must be between 10 and 20 ma

FACE PLATE SPECIFICATION
I/O Analysis
[page 29]

User Interface
[page 30]
Survey Design Attributes
[page 31]

Identify Conflicting Needs
[page 31]
Further preparations...
1. Search out expert sources
Further preparations...
2. Analyze similar designs

Further preparations...
3. Conduct tests or experiments
Req Spec organization:

- Background
- The Deliverables
- Special Restrictions
- Principle of Operation
- User Interface
- Input
- Output
- Acceptable Tests
- .. For tuning accuracy
- .. For LEDs
- Product Cost
- Dispute Resolution Mechanism

The assignment:

- The Requirements Specification
- Consult syllabus for assignment details
- Deadline: in class, next week (Th 30 Sept 2004)
- Refer to the grading sheet
- Refer to Chap. 3 and Appendix A
Requirements Specification

- Team effort
- One RS per team
- Work closely with your advisor
- Blank grading sheet will be posted on site - download - and fill in
- Completed left-hand column of grading sheet must be reviewed by advisor
- Use completed grading sheet as cover sheet
- 7 page limit
Same bat time
Same bat channel