

SDP06

Preparing your Statement of the Problem

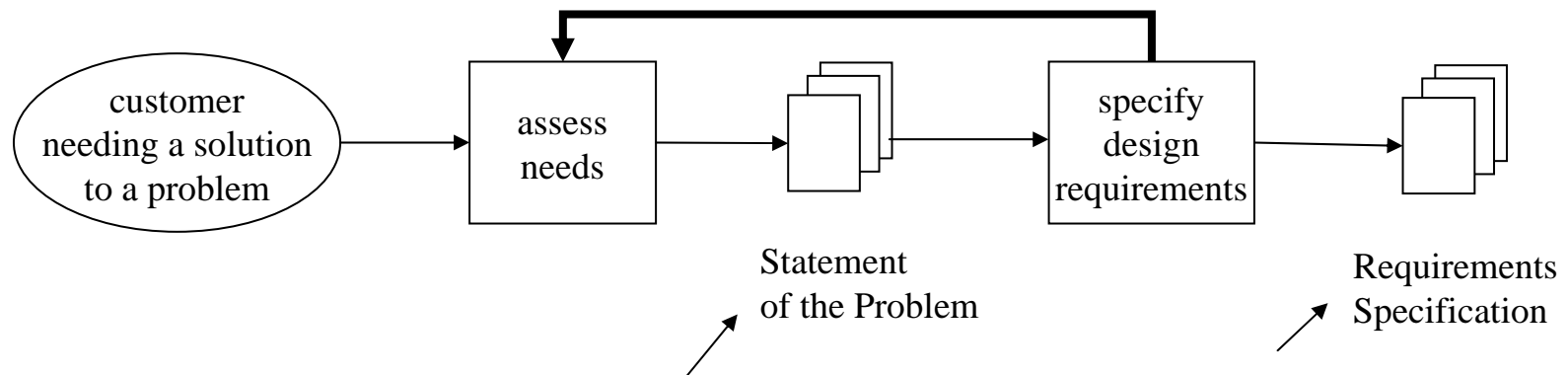
ECE 415

Thu 15 Sept 2005

Upcoming document deadlines:
Statement of the Problem due 22 Sept
Requirements Specification due 29 Sept
System Block Diagram due 06 Oct

Each of these documents are to be
“turned in” by posting them on your
“sdp/sdp06/____” site.

Early Stages in Product Design



In the language of the customer,
normally straightforward, non-technical

(from Salt, Rothery page 23)

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?

The first stage assesses the needs of the customer and organizes the inputs into a statement of the design problem.

The second stage refines the statement of the problem into a technical, quantified specification.

Needs Assessment – Stating the Problem

The problem statement should exhibit the following attributes:

- relatively nontechnical
- language of the customer
- straightforward

for an example, see Case Study, Appendix A,

Techniques for arriving at a problem statement

1. question the customer
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,

There is help in the appendix.

Case Study:

Guitar Tuning Aid

Use the case study document as the
model for your
Statement of the Problem

Lynn Strum
Director of Technology
AGMC

Lynn Strum
hires Rob Sullivan to write a
requirements specification

Subsequently, with the requirements specification in hand, Lynn Strum hires Systems Design Ltd. (SDL) to design the product to Rob's spec.

Sarah Defoe, a senior engineer at Systems Design Ltd. (SDL) is assigned to design the product.

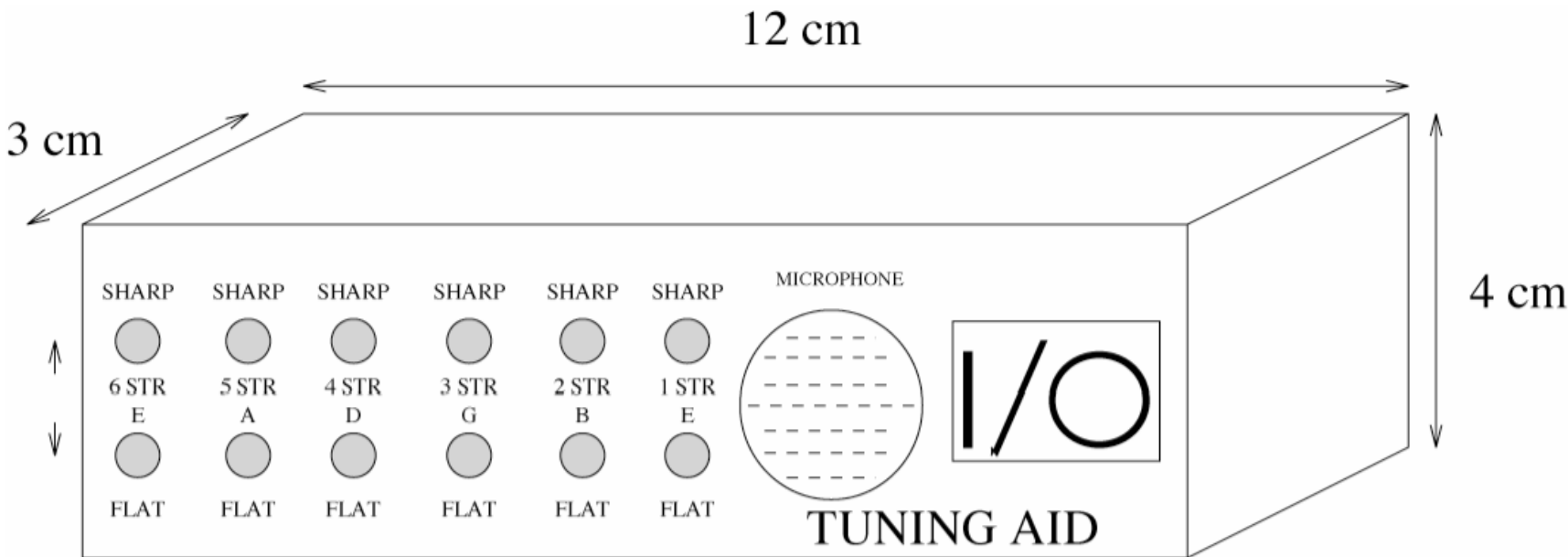
Rob writes a Statement of the Problem prior to writing a technical spec.

Rob's task:
Translate the customer's wants into
a problem statement that reflects
true needs.

(Refer to Chapter 3 and Appendix.)

Rob begins with a needs analysis:

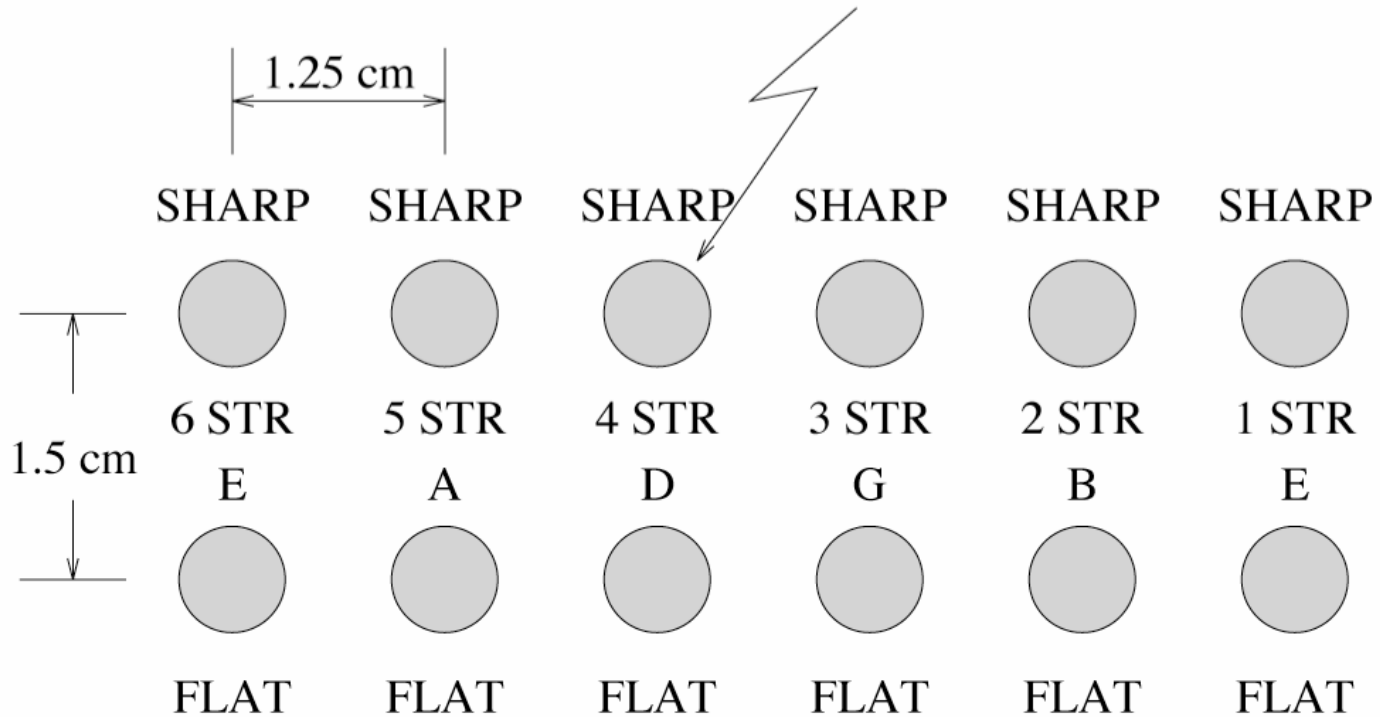
- consult with stakeholders (p119)
 - develop user interface concept (p120)
 - I/O analysis (p120)
 - write draft user manual (p122)
 - complete statement of the problem (p123)
- (get paid)



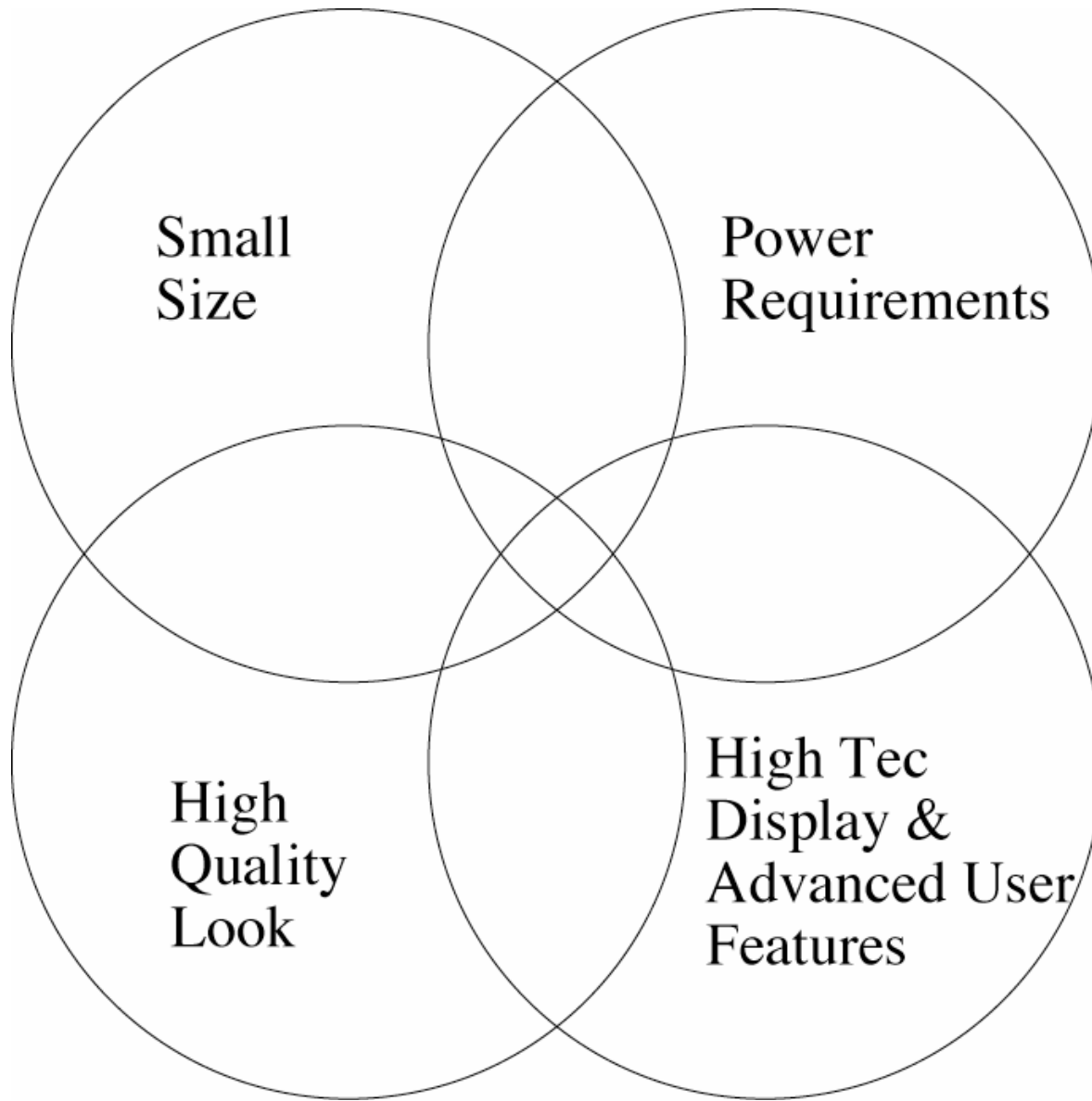
AGMC's CONCEPTION OF FINISHED UNIT

LEDs are to be brand zzz or equivalent

The energizing current must be between 10 and 20 ma



FACE PLATE SPECIFICATION



**Small
Size**

**Power
Requirements**

**High
Quality
Look**

**High Tec
Display &
Advanced User
Features**

Helpful material in Chapter 3: Requirements Analysis

User Interface
[page 30]

Survey Design Attributes

[page 31]

Identify Conflicting Needs
[page 31]

Draft Operations Manual/
User's Manual
[page 34]

Sections of the Statement of the Problem

1. Background
2. The Design
3. Deliverables of the Design Project

Needs Assessment – Stating the Problem

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for an example, see Case Study, Appendix A,