Client Questionnaire

ECE 3810

Gathering Customer Requirements

In their mind, your customer likely has a clear picture of what the system that they would like designed and constructed looks like. More importantly, they know what the device does. Your job as an engineer is to find out what is in the mind of your customer.

Your customer is not likely to give you measurable requirements as they will not typically have the technical skills to tightly specify their desired system. It will be your job, after gathering the customer's requirements, to translate the customer's vision into engineering requirements.
Requirements that you can measure to determine success or failure.

Lead your customer through the following interview and take copious notes while they talk. If the customer wants to draw you pictures, by all means let them draw. Note that they may show you or tell you about a common object that represents a property of the system; if so, take note of that object.

System

- ❏ Please describe what the completed system does. *(Ask the following questions if needed.)*
  - ❏ What information and/or action does the system create?
    The system will broadcast wireless electricity in a ten mile radius.
  - ❏ What does the user have to do to the system?
    The system must be set up and maintained. Users will need a receiver on premise to hook into the building's wiring.
  - ❏ How long does the system operate on its own?
    Indefinitely, unless maintenance or outage.
  - ❏ Are there safety concerns?
    Are there any health concerns of those living within the radius? No large magnets or uncertified electrical equipment within 100 yards of the coils while operating.

Physical Properties

- ❑ What is the size of the system?

The equipment must fit on a 2,000 sq. ft property. Height restriction up to 100 ft. Parts must be able to fit on an 18 wheel semi.

- ❑ What is the weight of the system?

After installation, system will weigh 8-10 tons

- ❑ How long does the system have to operate?

Without need of complete major part replacement for 35 years.

Design

- ❑ Are there any conditions that make the this system easier to design?
    - Existing lot for construction
    - Existing infrastructure in homes that will need only slight modification. (Receivers)
    - Existing concept.
    - Many existing electrical components can be utilized in the design.

- ❑ Are there any designer constraints?
    - The technology has never been commercially used on such a big scale.
    - System must not disturb nearby residences.
    - System must not disturb air traffic.
    - System must not disturb cellular traffic.

Environment

- ❑ Where does the system operate?
    - ❑ What is the temperature range?

      -20 F - 110 F
    - ❑ What is the humidity range?

      0-90 %
    - ❑ Are there any special operating conditions? (e.g. high vibration, shock, dust, etc.)
        - Must function in rain
        - Must withstand lightning
        - Earthquake safe

Power Supply

- ❏ What powers the system?

  The system is powered from a nearby electrical generation plant.
  The system must also have a backup generator to perform emergency procedures if necessary

Costs

- ❏ What does the system cost? (*Free is not an option.*)
  - ❏ One time costs

    $100,000,000
  - ❏ Ongoing/maintenance costs

    $60,000 / month
  - ❏ Does it require a software license?

    No

User Interface

- ❏ Is the UI responsive?

  Yes, it uses a keyboard and monitor with a terminal interface.
- ❏ Is the system easy to operate for a first time user?

  A manual is required, technical training is recommended.