The hardest single part of building a software system is deciding precisely what to build. No other part of the conceptual work is as difficult as establishing the detailed technical requirements, including all the interfaces to people, to machines, and to other software systems. No part of the work so cripples the resulting system if done wrong. No other part is more difficult to rectify later. [Brooks, 1987]

I. Summary

Your team shall continue with the problem analysis from the first phase of the course project, but this time using more advanced, (semi-)formal notations with richer ontologies.

For this phase of the problem analysis, you will be doing a second round of elicitation, analysis, specification and validation of the system you developed in the first phase – in the style of the H.O.P.E (Helping Our People Easily), while accommodating some new changes to the preliminary definition of the system.

More specifically, your team's task is to develop:

- **Product Specification:**
  - Enterprise/domain/world/business modeling, using OO (module on enterprise/business/systems modeling), GO/AO (modules on goal-oriented elicitation and non-functional requirements).
  - Software requirements modeling and specification, using OO/GO/AO.
Process Specification:
- Functional process modeling, using IDEF/UML to model your own team’s RE process.
- Non-functional process modeling (using the NFR Framework/KAOS).


II. Changes to the Preliminary Definition

Your team needs to introduce some changes to your system – e.g., the scope, the features, etc., in the following style:

If not already, your system must address:
- Safety
- Technical feasibility
- Maximal utilization of sensors (temperature, accelerometer, light, microphone, camera, etc. - e.g., for a medical alarm fall detector, image/object/scene recognition.
- The system shall abide by the HIPPA policies and regulations or there should be a disclaimer.

III. The Deliverable

Your description should be elegant and comprehensible. Your deliverable should be available as both online (one URL per team member) and off-line specifications (submission of one copy per team).

Your deliverable should include:
- a Vision Document
- a WRS Document for the product
- a Process spec.
- a Final Project Plan
- Presentation slides.

1. The Process Specification:

Your process specification should show all the iterations your team has gone through, each involving the modeling and prototyping of your own HOPE system. In other words, specify what activities your team has carried out, who have been involved, in the project phases I and II, and what the relationship is between the two phases, in terms of the inputs and outputs – I.e., in the style of IDEF0.

2. Issues:

As with the first part of the course project, discuss any issues (e.g., incompleteness, inconsistency, ambiguity, redundancy), in your WRS, that you/your team has encountered in further carrying out the
problem analysis, while using ontologically richer notations. As with the first deliverable, discuss how you have resolved the issues by describing options considered, tradeoffs analysed, and decisions made.

3. The Product Requirements Models and Specification:

You are to develop a Vision Document and a WRS, using RE-Tools.

4. A Prototype

Develop a running prototype, based on the mockup prototype which you constructed as part of the deliverable I. Your prototype should be functional, in some way- even if it’s incomplete. A user manual should also be produced.

5. Was your estimation of the creeping rate reasonable?

Justifications as to Why to Choose your System.

Describe why your team believes your product will be better than, or at least as good as, the products from other teams.

Many concepts – Carefully use a systematic process in making your decisions:

{Problem, Solution} * {Process, Product} * {F, NF} * {Why-What-How, 4-Variable, Reference, 4-Worlds} * {S, D |= R} * {Elicitation, Specification, Validation} * {SA, OO, GO}