

## Problem Definition Assignment

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Due Tuesday, October 13, 2009 (by 5:00 p.m.)

A standard and important phase of the design process is the development of a clear problem statement. As discussed in class, the problem definition phase can be broken down into three essential phases:

- *Clarification of objectives.* I.e., break down the general design objective of building a contest winning entry into more specific and concrete objectives.
- *Establishing functions and sub-functions.* Work out a detailed list of the functions needed by your device(s).
- *Setting specifications and constraints.* Set specifications for as many of your objectives and functions as possible. Also, make a list of the overall constraints that have to be respected by your device(s).

In this assignment, you need to flesh out a detailed problem definition that covers these three key issues. You can use the structured design methods we briefly reviewed in class (objective trees, function input/out diagrams, or function trees). Or, you can use any other approach that you like. But, you need to cover *at least* these three areas. Your homework will be judged as follows:

- Did you really think through all of the objectives, or did you just go through the motions?
- Did you really flesh out the key issues?
- Are the functions you chose really meaningful for the contest, and did you really capture all of the functions needed for competition?
- Are your specifications complete and realistic? Will you be able to measure or test your device against your specifications?