
16.851 - SATELLITE ENGINEERING MEMORANDUM

TO: 16.851 FACULTY
FROM: STUDENTS
SUBJECT: PROBLEM SET #1 QUESTION DEFINITION
DATE: 9/7/2003

Motivation:

To provide ease of launch vehicle selection given spacecraft design specifications.

Problem Statement:

Design a launch vehicle decision tool. Given specific payload constraints, such as payload mass, payload dimensions, number of spacecraft, required launch frequency, minimum reliability, and desired orbit, output the launch vehicles that satisfy those requirements. The design tool then should be able to optimize the selection on other criteria such as cost or reliability and output information needed for other design considerations such as launch site and fairing specifications. The tool will be capable of being updated with current launch vehicle specifications as they are available (reliability, thrust, availability, etc.)

Approach:

First, a literature survey will be performed to gather currently available launch vehicle specifications. This data will be stored in a standardized data structure for ease of future updates. Next, a selection flow chart will be laid out to prioritize down selection criteria/logic for the software tool. The software tool will then be coded incorporating the data and selection logic. The tool will allow the user to control the number of input constraints.