Advanced Energy Vehicle

Preliminary Design Review (PDR)
AEV Project Objective
(Problem Definition)

INITIAL CONCEPTS
(Brainstorming)

EXPERIMENTAL RESEARCH
(System Analysis) (Programming)

ANALYZE

COMPARE

PT 1
PT 2
PT 3
PT 4

DESIGN DECISION

RESEARCH

FINAL DESIGN

Present AEV Design
Preliminary Design Review

- The PDR demonstrates that the preliminary design meets all system requirements with acceptable risk and is within cost and schedule constraints while establishing the basis for the detailed design.
  - The Performance Tests will establish the system requirements and an established basis to continue with a detailed design.
  - Need to plan ahead! Great for project management to see what is needed to be completed for the project.
Objectives of the PDR

- Ensure that all system requirements have been allocated and the flow down is adequate to verify system performance.
- Show that the proposed design is expected to meet the functional and performance requirements.
- Show sufficient maturity in the proposed design approach to proceed to final design.
PDR Format & Material

- Formal Report
  - Cover Page
  - Table of Contents
  - List of Figures and Tables
  - Body
    - Introduction
    - Selected AEV Concepts
    - Experimental Results
    - Conclusion
  - Appendix
    - CAD Generated Drawings
    - Project Schedule for the Rest of the Project
Project Management Review

- Project Notebook
  - Maintain the Project Notebook
  - Maintain good note-taking practices in documenting
  - Review the grades marks and comments made for each graded summary report for System Analysis 1 – 3 and any other labs the team feels is important to the PDR.
Performance Tests Introduction

- **Performance Test 1**
  - Objective: Create two different AEV vehicles and determine which system is a better energy efficient vehicle.

- **Performance Test 2**
  - Objective: Develop a strategy for programming the AEV to complete the complete operational objectives

- **Performance Test 3**
  - Objective: Complete the objective in the Mission Concept Review (MCR) while improving the energy efficiency

- **Performance Test 4**
  - Objective: Complete the scenario as stated in the Mission Concept Review
Questions?