

2020 Formula Hybrid Scoring Sheet – Project Management Plan

TEAM: Lafayette College

SCOPE (06/10)

Comments on Scope: The team did not participate in the dynamic events during last year's competition. Are the root causes of the problems encountered understood? What actions are being taken by this year's team to avoid a reoccurrence of these problems?

The team's primary goals are not stated clearly, but can be extracted from the Scope Statement. Primary goals: (1) delivering a fully functional car to the race track (2) this car is rules compliant enabling it to pass all inspections quickly and allowing it to participate in all dynamic events.

The implied secondary goals are: (1) design and build a custom Accumulator Monitoring System (2) design and build a custom enclosure, CarMan (3) design and build an improved chassis. These custom designs introduce a degree of risk into the project. Why are these custom designs necessary? What attributes are being improved and what will be the improved performance features over last year's car? What benefits does the team gain by taking these risks?

Important milestones are highlighted in the Scope Statement; a table of additional milestones across the project timeline is included in the appendix. The team has a good set of checkpoints for use in monitoring project progress.

OPERATIONS (06/10)

Comments on Operations: Is the Lafayette Motorsports Statement of Work the same as the Scope included in this Project Plan? If not, include the goals from the Statement of Work in the upcoming Progress Report.

The team organization structure includes engineering and administrative functions. In the organization chart include names of the individuals responsible for each position.

Overall team leadership is shared by 2 Project Managers, 1 overseeing electrical and the other overseeing mechanical activities. The team is comprised of 25 members. A degree of autonomy exists between the mechanical and electrical segments in the structure. But it is not clear where responsibility for integration of sub-systems into a completed race car along with testing and tuning activities reside.

Align the Team System Structure with the Organizational Structure schematic so that the cascading of functions from Mechanical or Electrical leadership extends to more detailed technical responsibilities.

The Work Breakdown Structure (WBS) is missing. But the Team System Structure diagram resembles a high-level WBS. Adding several more functional layers to this diagram along with administrative functions will create the WBS. System integration and testing must be added to the WBS. Ideally, the project timeline is based on the WBS.

The critical path is not clearly visible or labeled in the Gantt chart. Is there significance to the different colors of the tasks included in the overall Gantt chart?

A great deal of project schedule information is made available in the link given in Appendix C. It shows that a detailed project schedule exists that will require careful Project Management oversight. Late deliverables must be minimized so as not to compress the available time for completion of downstream tasks.

Six weeks is allocated to Systems Integration and Testing; approximately another six weeks is allocated to Dynamic Testing. Provide more detail into the tasks that will be performed during these two intervals. Remember, the team did not participate in the dynamic events last year. It is important to understand the root causes of this and have a clear plan for eliminating these problems this year. Specifying the correct verification and test activities is a way to guard against a reoccurrence of these problems.

The budget for this project is approximately \$28,000. A good summary of budget items and current expenditures is included in Appendix D. But additional information is needed on how the team will obtain the funding for meeting this budget requirement. How much money has been raised to date?

RISK MANAGEMENT (10/10)

Comments on Risk Management: Four high impact, high risk tasks have been identified. Effective contingency plans have been developed to mitigate these risks.

The Accumulator Pack container is a high impact, high risk task because of staffing issues. If this task begins to fall behind schedule, additional staff will be assigned. Has a date been specified indicating the latest that the container can be completed without seriously affecting completion of the overall project? This date is an important indicator for making the decision on additional allocation of staff.

EXPECTED RESULTS (04/10)

Comments on Expected Results: Quantify project primary goals to serve as measures for "Expected Results". Creating a test plan is not an Expected Result but part of the WBS and project schedule.

The acceleration specification is a good Expected Result. Setting an acceleration target of 0-60 mph in less than 3 seconds gives designers information needed for making design decisions and a target to reach in testing and vehicle optimization efforts. How was this acceleration value determined; what was the basis for setting this as the target?

The goal of passing all technical inspections can be quantified by specifying that this will be achieved on the first day of the competition. Accomplishing this requires verification activities and adjustments to be performed prior to vehicle transport to the track, not at the track where activities will be chaotic and reactionary.

Quantifying project goals into “measures of success” gives team members tangible objectives to work towards in their design and optimization activities. These values will also serve as indicators for when tasks are completed or for setting priorities for the allocation of resources.

Measures of success are usually extensions of the primary and secondary goals identified in the project scope. In the list of Expected Results given, this linkage is not clear.

CHANGE MANAGEMENT (03/10)

Comments on Change Management: The Change Management section is inadequate. A schematic of the process should be included in the appendix. What information is requested in the “google form”? Include a copy of the “google form” in the appendix. What is the target interval from submission of the “google form” to a decision of acceptance or rejection of the proposed change?

“Add this request to your IPR”. What is the IPR? What are the “Monday meetings”? What is covered at these meetings? Are additional meetings held at other times covering other topics

“Advisors” are not shown in the organization chart. How do they fit into the project team?

It appears that the team’s communication plan includes face-to-face meetings, email, and Slack. Has this been an effective way to communicate with all 25 members of the project team, quickly, clearly, and completely?

Will the team keep a log of all change requests submitted? This log can serve as a good reference for next year’s team on unexpected problems that might arise.

DOCUMENT QUALITY: (03/5)

Comments on Document Quality: There is variation in font size at several points in the document. This gives the document an unprofessional appearance.

The section on Expected Results appears to have been written as a requirement for a course, not as part of a formal Project Plan. Again, this gives the document an unprofessional appearance.

The Change Management section is not well written and does not convey sufficient information to a reader for understanding the process.

Less: penalty for late submission: (00/55)

Total: 32/55