**System Development Review**

**Objective**

The System Development Review (SDR) is a refinement of the information presented in your Critical Design Review that focuses on your system development status. Its primary purpose is for you to show your ability to communicate your work to others effectively in a conference-style presentation form. Its secondary purpose is to give you an opportunity to present your project implementation progress and issues to the class and instructors.

**Presentation**

Each team will have 22 minutes total, 15 minutes for presentation followed by 7 minutes of Q & A. Use, but do not exceed or fall short by more than two minutes, your full 15 minutes of presentation time – there is plenty to describe.  Plan on using a team laptop to present, since ensuring that videos, or animations, or other content elements run on another laptop can be tricky. However, have one team member upload your presentation to Canvas so we have a copy for archival purposes and all teams have the same deadline.

**Examples**

Top MRSD SDR presentations from last year are posted along with this assignment. These are not perfect models, in part because the content guidelines are continually refined – the ultimate guide is the SDR Guidelines document you are reading now.

**General guidelines**

* A reasonable rule of thumb for presentations is one slide per minute, but this will depend on various factors, such as whether you have animations, so be guided by the time limit, and create however many slides fit into that.
* Everyone on the team should play a role in the presentation.
* Attend all presentations so all teams have an audience. We will start on time, so ***be there a few minutes early***. It goes without saying that you must be there for your team’s presentation. If you are absent on the day you are not presenting, you will lose 2 out of the 20 possible points.
* Do not use physical props to describe concepts. The idea is to give a talk as you would at a technical conference, or within a company to your CEO or CTO; in both cases, brevity and focus are crucial.
* Use videos, animations, and any other illustrative presentation techniques that Powerpoint or other presentation software allows.
* Assume a general technical audience; i.e., don't assume your listeners have special knowledge.
* In general, and especially for elements that would be too lengthy if presented in full (e.g. system requirements or multi-level functional architecture), pretend you are presenting to your company's CEO to get permission to build the system - what do you think he or she would like to hear most?
* Refine those parts of your presentation that have been presented before based on feedback already received and lessons learned during the first semester.

**Delivery**

You will be graded on your delivery (item 6 in the rubric at the end of this document) as well as content. Practice as a team ahead of time; include the practice of smooth handoffs from one speaker to another. Adhere to the length limit, speak clearly and without stumbling, face the audience, keep your hands out of your pockets, and be prepared to answer questions crisply and coherently.

**Content**

The System Development Review (SDR) consists of the following components:

1. Project description
2. Use case
3. Requirements modifications
4. Current system status
5. Project management

Items 1-3 should involve summaries/refinements/revisions of what you have presented earlier. Items 4 & 5 are the meat of the SDR.

Content component descriptions

1. Project description. This is a **refined** project description consisting of user needs and your resultant proposed method of meeting them. It focuses on end results, not the details of the technology.
2. Use case. Give a brief use case coupled with a **graphical representation** of the system in its **use case/mission environment**. N.B.: In the SDR, this item should be far less notional than in earlier presentations. It should include photographs and/or videos of your real system in action. Show the *full* system concept graphically, not just your robot. For your robot, show photos/videos of the real system.
3. Requirements modifications. If there are any changes to the requirements stated in the Critical Design Review in December, present them here. If none, simply include a slide stating that there are no changes.
4. Current system status. For each of your major subsystems, cover the following:
5. Functional description of subsystem (cover mechanical, sensing/electronic, programming / control aspects as appropriate)
6. Current stage of development
   1. Depiction(s) – design drawings, photographs, schematics, brief video clips, etc.
   2. Current level of functionality
   3. Modeling, analysis, characterization, results of completed tests
   4. Challenges faced
7. Major remaining challenges
8. Project management
9. Schedule status. Answer these key questions:
   1. Are you behind, ahead of, or on schedule?
   2. If behind, how will you catch up?
10. Test plan. Present a concise high-level test plan for the remainder of the fall semester including the Fall Validation Demonstration.
    1. Identify capability milestones for these remaining fall-semester Progress Reviews (PR):
       1. PR 10
       2. PR 11
    2. Describe the Fall Validation Demonstration (and Encore) in greater detail than the other capability milestones. Use graphics as much as possible to make the following things clear:
       1. The location and needed equipment.
       2. The sequence of events.
       3. The quantitative performance metrics that your system will be measured against.
11. Budget status. Answer these key questions:
    1. What is your total budget?
    2. How much/what percentage have you spent to date?
    3. Do you have extra budget for emergencies, and have you stocked extra critical parts?
12. Risk management
13. Provide an update on the risks you identified in the Critical Design Review (CDR) and have been tracking/addressing since then.
14. As you did for the CDR, present the following, updating both tables to reflect any changes since the CDR:
    * 1. A Risk Management table with Risk ID, Risk, Requirement, Type, Likelihood, Consequence, Mitigation.
      2. A Risk Likelihood-Consequence Table
15. Focus on the highest-profile risks in the relatively short time remaining

| **System Development Review Element** | **Weight** |
| --- | --- |
| 1. Project description | 0.2 |
| 2. Use case | 0.4 |
| 3. Requirements modifications | 0.4 |
| 4a. Current system status: Functional descriptions | 1.0 |
| 4bi. Current system status: Depictions | 0.7 |
| 4bii. Current system status: Current functionality | 2.3 |
| 4biii. Current system status: Modeling, analysis, test results | 2.3 |
| 4biv. Current system status: Challenges faced | 1.2 |
| 4c. Current system status: Major remaining challenges | 0.7 |
| 5a. Project management: Schedule status | 0.4 |
| 5b. Project management: Test plan | 1.1 |
| 5c. Project management: Budget status | 0.3 |
| 5d. Project management: Risk management | 1.1 |
| 6a. Length | 0.7 |
| 6b. Intelligibility, flow, demeanor, audience connection | 1.5 |
| 6c. Handling of Q & A | 0.7 |
| **Total:** | 15 |