To: Dr. Hayes

From: Handikkumar Patal, Wesley Shiflet, Seungchan Yang

Subject: Use Cases for Solar Car Team – lap time recording utility

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Our use cases are two distinct cases for recording solar car race lap times. They are outlined below:

Semi-automatic mode for Lap time

Actor: User

Goal: Setting multiple teams’ lap time information

Trigger: the user uses graphical interface of the system.

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| --- | --- |
| User | System |
| 1. The user inserts multiple teams’ number or name.  2. Manual entry mode, the user insert new lap times.  3. The user edits to previously recorded lap times. | 1. The system has name of each team.  2. It saves the new lap times data from the user. 3. It displays the new data.  4. It preserve recorded data in the case of a program crash or unexpected loss of power |

Automatic recording of solar car race

Actor: User

Goal: Record lap times and save data locally to disk and upload to remote/cloud storage.

Trigger: The user will start the automatic mode

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| --- | --- |
| User | System |
| 1. The user start the automatic mode.  2. The user watches the automatic system is recording lap times.  3. The user should also assist the automatic system whenever it fails to detect a car passing the finish line.  4. The user can stop the automatic system when the race is over | 1. The system is initiated by user.  2. It examines the camera feed frame-by-frame to detect numbers in the picture, which is the best indication for the presence of a race car and which team the car belongs to.  3. It recognizes the number, determine which team it is, and hit the lap button of the corresponding team  4. It also awaits its termination from the user.  5. It save data locally to disk and upload to remote/cloud storage. |