**Project Requirement for Milestone\_1**

**Project Background:**

Our client has developed an AI system to identify the number of sugarcanes in the picture. This system is used to help Sugarcane planting machine operators to adjust the angle of the machine to control the cane number during the planting. Therefore, there must be a simple interface for the planting operator to read the AI system output result during the driving and plating. As well, the landowner also wants to read the AI system data at the end of the day to have the bigger picture about how is the land growth.

**Project Stakeholders:**

|  |  |
| --- | --- |
| Stakeholders: | Roles |
| Landowner | Identify the overall sugarcane production |
| Machine driver/operator | Planting the Sugarcane |
| Client | Develop AI system |

Table-1

**Project requirements:**

At this stage, we need to decide which database used for our interface because the client data need to store somewhere for our interface to read. As well the interface framework needs to be decided. A different user login system may be required.

1. **About the AI system**
   1. The AI system is a camera mounting on the back of the vehicle, using an 8mm camera shooting video with 10FPS.
   2. Also the AI system will record the GPS data and the time that comes with it.
   3. Therefore, the AI system will output the resulting number, GPS data, time data, and 1 image per 1 square meter. ( although the camera takes 10 images per second, the image is used to train the model, the output image will try to cover the most land but minimized the overlap. The image output is used for the landowner to have a detailed look later. / see 4.a)
   4. The optimal number of sugarcanes per square meter is 8
2. **Data base**
   1. SQLite is one of our client's recommendations due to the nature of their data. The data will have three elements which are time, GPS location, and a number of cane (see table -2).

|  |  |  |
| --- | --- | --- |
| Time D/M/Y/H/M/S/F | GPS | Number of canes |
| 24/03/2020/11:22:22:1 | $GPGGA,18N,07044 W,4,13, M,29.20M,0.1 | 5 |
| 24/03/2020/11:22:22:2 | … | 6 |
| 24/03/2020/11:22:22:3 | … | 8 |
| 24/03/2020/11:22:22:4 | … | 6 |
| 24/03/2020/11:22:22:5 | … | 7 |

Table-2

Each data will be generated by 1/10 of second, during the plant.

1. **Interface for operators (drivers):**
   1. Very simple interface to indicate the driver to adjust the angle of planting machine.
   2. Maybe a sound indicates, or different color of light such as, green is good, yellow is Ok, red is bad.
   3. There could have some research about how to get driver tension but not obstruct the driver.
   4. The driver interface will be run on an 8-inch Android device.
2. **Interface for sugarcane landowner**
   1. Show a GPS map on interface will be ideal (example see image\_1)
   2. The owner can click the map to display the actual picture (optional requirement)
   3. Landowners prefer to use iPad to read the data, (web application is our client suggested)
3. **Other:**
   1. We need four to five prototypes of driver-side interface for them to pick which one they feel most comfortable to use. (the interface can be draw by hand)
   2. Because the device for driver and landowner is different, the cross-platform will be best. (different user login will be even better)
   3. The data input does not matter at milestone 1, we can use existing data to run our prototypes interface. (Reading the real- time data will be optional requirements)

**Project timetable:**

Our client suggests us to have the project proposal by early next week, so we can have more time to work on the actual interface.

A more detailed project timetable will be provided by Ben Li (project manager) after the second meeting.

**Objective for our second meeting:**

1. Discuss understanding of the project requirements.
2. Decide which database we going to use for the interface.
3. Decide framework for the interface
4. Divide the work for each group member about who is doing what.

**Project related website:**

<http://www.davcofarming.com/technologies.html>

<https://www.optisurface.com>

图形用户界面, 图表

描述已自动生成

(image\_1)