

## The Problem or Background to the Project

- For farmers and owners there is fast and easy way to identify problem areas in paddocks.
- Satellite photos are possible but they are only updated once a fortnight
- Owners & Agronomists can drive around for a long time to identify areas of interest.

## Objectives for this Project

The end objective for this project is to provide users with a system that will import varying types of images and provide analysis to the user. This analysis will automatically identify areas of interest and tag those locations for sending to multiple locations. The aim is to also provide historical information as well.

Initial rollout is to be a system that will enable the user to identify manually areas of interest and save the locations.

## Overview Process and Requirements

Initially the process will be that the pilot will fly a drone over the farm and take photos. The system will import those photos and create an orthomosaic with GPS co-ordinates built in.

The user will be able to select a date; the system will load the respective orthomosaic photo for the user to view. The user will be able to select and save a GPS location for an area of interest. They will be able to add notes to that saved location.

When they have selected all the areas of interest – they will be able to copy all of those locations and notes for pasting in an e-mail, to be sent to an agronomist. The agronomist will visit and take any tests required for identification of the issue

The future process will be that the images taken by the drone will be of multiple spectrums and the system will import these images as well and create multiple orthomosaics. The user will be able to select the area and type of analysis required and the system will select and analyse the required image, and overlay the analysis result over the underlying photo, the top layer will be transparent enough for the underlying photo to be visible. The user will be able to send data from the analysis to multiple locations – farm machinery for example – as well as the agronomist.

[illegible]

| No. | Details                                                                                                                                                                                                                                          |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | On click, open “Import” Dialog box for the user to select the import location and the files to be imported<br>Once selected, then import images and then stitch together all images in the import location to create an ortho-mosaic.            |
| 2   | On click, open the calendar selection, default date is to be today’s date. Once date is selected, import ortho-mosaic for that date into the image area (area 3)                                                                                 |
| 3   | Once image is loaded, user is able to Zoom in, Zoom out and Pan. On right mouse click, the option for user is to Save Geo-Location, if selected, then save Geolocation in area 4. User left clicks and holds to pan, scrolls to zoom in and out. |
| 4   | Once a Geo-location has been saved, the user has the option of adding notes.                                                                                                                                                                     |
| 5   | On click, copy geo-locations and notes to clipboard.                                                                                                                                                                                             |

- Rapid development
- Stable platform & future proof
- Hardware local to user
- GNU-Linux as far as practical