

## Project Proposal

### Comprehensive Weather Forecasting Mobile App.

#### Outline:

The aim of this project is to produce an Android application for the purpose of attaining the most accurate and timely weather forecast for a specific location. In New Zealand there are multiple weather providers that expose their weather data to the public by various means. This Android application will use web services to pull weather data from a selection of the most reliable weather providers, and present it in a meaningful manner.

Since the app will get weather information from multiple providers, there will be some challenges associated with data consistency. Once the data has been retrieved, it will need to be manipulated in order to get everything in a consistent format. The app will then present an *averaged* reading, while also allowing the user to view forecast information by provider. The primary value of this approach is in allowing the user to view discrepancies between weather providers.

The intended users of this application are dairy, sheep and mixed cropping farmers; all of whom spend most of their time working outdoors and make crucial business decisions based on the weather. In addition to helping make timely business decisions, this app will serve as a good tool for tracking the weather while away from the farm. If all providers are consistently reporting good weather at the farm then perhaps holidays and trips to agriculture conventions can be extended. Likewise if reports consistently describe bad weather, trips away from the farm can be shortened.

#### Functional Requirements

This application shall:

- Get weather data from at least three external web services.
- Manipulate fetched data to make it consistent.
- Present forecast information clearly.
- Algorithmically produce an *averaged* forecast from all the fetched data and present it to the user.
- Allow the user to view forecast information fetched from each individual provider
- Allow the user to view short range forecasts in addition to long range forecasts.
- Allow the user to fetch weather information for their current location or a location that they specify.

#### Additional [nice to have] Requirements

- Send push notifications when abnormally bad weather is forecast.
- If a good weather provider does not expose a public api, the application could fetch their webpage and scrape the HTML for the weather data.