

Raspberry Pi - Wind Turbine Analytics - Charter

Product Owner: Mark Masteller - Assistant Professor - Matanuska-Susitna College

Project Manager: Elgin Bradley

Purpose of Project: Coordinate with stakeholder/Product Owner to define and state desires for the project goals.

Business Case: Provide a technical solution for Mat-Su College's Renewable Energy Program allowing for data collection and statistical analysis from Southwest Energy SkyStream 3.7 Wind Turbine utilizing Raspberry Pi running SkyView 2.0 to communicate.

Benefit: This solution means to benefit UAA by garnering additional interest in the sustainable energy program at MSC. Additionally, this project will create strong connections with Open EI and Wind for School programs with the end goal being additional grant-funded projects for the department.

Key Deliverables.

1. Establish the business context and importance of a specific problem or issue
2. Describe the current conditions of the problem
3. Identify the desired outcome
4. Analyze the situation to establish causality
5. Propose countermeasures
6. Prescribe an action plan for getting it done
7. Map out the follow-up process

Statement of Work.

As a team, we will investigate, plan, and develop an implementation of data collection and reports functionality via a Web Page hosted through a Raspberry Pi. This process will include the setup of the Raspberry Pi, with the X-bee2 ("Zigbee") sensor, to communicate with the turbine to download data. Additionally; use the Raspberry Pi to publish data available via the internet to allow access so that anyone with the right access can see the data (this will likely be folks in Kansas, Fairbanks and me here on campus).

We will investigate the possibility of using a pre-built software solution or the necessity of developing an in house built solution. We will provide written recommendations as to which solution we feel, based on the data we have gathered, is the proper way to implement the project to best meet the requirements as set forth by the stakeholder. We will attempt, in the case of a pre-built solution, to provide a sandbox version of the webpage to demonstrate the functionality of the solution.

Completion Date.

This project is to be completed by April 30th.

Project Resources, Budget, Staff, and Vendors.

No resources are required for this project beyond what is information is available online to the project management team. A budget will be assessed when required. No spending authority has been authorized for any member of this project.

Project Management Staff:

Dane Straub,

Project Manager; Additionally serves as an Intermediary team member between involved organizations and product owner; technical specialist.

Elgin Bradly,

Intermediary team member between involved organizations and product owner; technical specialist.

High-Level Assumptions and Constraints.

The basic assumption of time constraints and working within the confines of pre-existing policies and infrastructure to implement a solution to store and report/host collected data. Additionally, constraints by lack of budget and implementation staff are present.

Risk Assessment:

Little or no risk exists to the project as no budget has been designated to this project. If the project is not implemented as designed, the product owner will continue to operate in the current capacity until another solution can be devised.