What is ISO-Blue?

Tapping directly into the CAN-bus, ISOBlue is an on-machine server that is connected via a local network. ISO-blue aims to give farmers direct access to their data and be able to use it in a way that benefits the management and efficiency of their operation.

The ISO-Blue project has been around for over ten years and has seen adoption over hundreds of machines to manage data.

Business Case Analysis

Agriculture is approaching a technological age where data and its owners hold all the power. As agriculture ascends into this age, it is important that farmers understand their data and own their data so that it can be used in ways that will increase productivity and create a more sustainable farm market. ISOBlue aims to do just that, and with a telematic display it will unlock real time viewing of this data to better manage the farm operation. This display will allow for the open-source operability to display and collect whatever data may be relevant and useful for a specific farming practice.

Conclusion

The telematics device created for this project will be able to bring many people into the digital agricultural world at an affordable price and allow them to have power over their data in a way that has not been previously possible. There are challenges and opportunities that must be considered when creating the application to make this possible, but the ultimate product should greatly improve the ISO-Blue system currently available. This system should be a viable solution for anyone to use in the industry to better understand what the computers on their machinery are thinking and doing as they are running.

Telematics Display Device

Group BD-2

Telematics Display Project

The goal of this project was to create a display that provides operators the ability to choose what data they can monitor, customize what they see to their needs, and allow cross platform to use between different brand equipment. ISO-Blue hopes to enable a farmer to view and control data without cellular connection that is currently required. This will hopefully open more doors for farmers in rural areas without a high-speed internet connection. ISO-Blue and the wireless display designed within this project will be very valuable and provide a service that is not offered by other currently available products.

Chosen Solution

This project was coded and implemented in Svelte. The team chose svelte because of its ability to combine languages such as, JavaScript, styling libraries, Python, HTML, and other CSS editing. It also needed to be able to talk with "NATS" which is a connection management software that is already living on the ISOBlue system. The environment of choice needed to be able to implement logic, connect to the ISOBlue's software, and design a user-friendly interface for in field use.

Final Design

The final design of our project utilizes a local WiFi network to communicate between the ISOBlue and the display device without the need for internet connection. There are three main screens, the Main Page, the Advanced Debugging Screen, and a GPS map view screen. Dropdowns within each screen make the views customizable to the task being performed or machine that you are in, and the lists of viewable data update based on what the ISOBlue can see and decode. If an internet connection is available, there is also a drop down that allows the user to see other active ISOBlue machines to remotely view machine data.
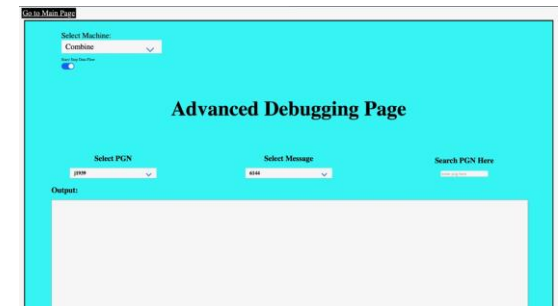
ISO-Blue Main Page

The ISOBlue main page allows you to see decoded live time CAN data coming across the CANBus via the ISOBlue module. Six different gauges are available, and the drop-down lists allow you to customize the data seen. The drop-down lists are automatically filtered to show what is available as decoded information from the ISOBlue.

Advanced Debugging Page

The Advanced Debugging Page allows the user to type in a PGN or select a PGN type from a prefiltered list to see the raw data coming across the CANBus. This page is envisioned to be used by people troubleshooting problems on the CANBus. Data flows in the white box on the screen and can be paused at any time to evaluate the data.