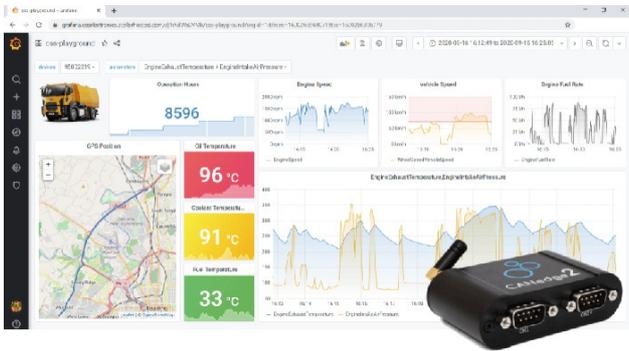


# CAN Newsletter Online

OPEN-SOURCE

## Visualizing CAN data in telematics dashboards

CSS Electronics have recently enabled to visualize CAN data in free, open-source telematics dashboards.



Telematics dashboard J1939 (Source: CSS Electronics)

### How it works

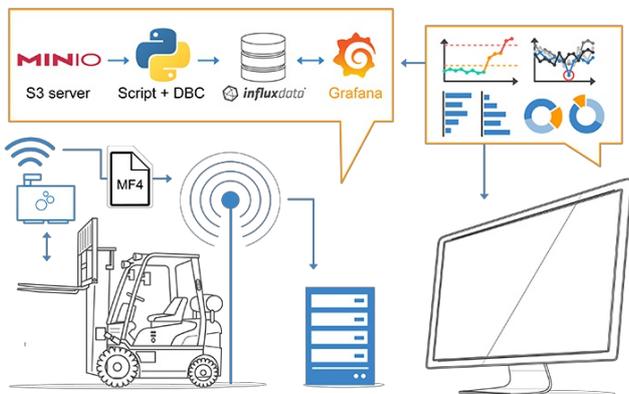
The CANedge2 sends CAN/LIN data to the end users own server (self-hosted or cloud). To visualize this data, the user can deploy a plug-and-play Python script. The script auto-processes the raw CAN data into physical values via DBC decoding. The output is pushed to a database, which is linked to Grafana - where the browser dashboards are built and shared by the user. The solution can be cloud-based, self-hosted, or a mix - and can be set up in 15 minutes, said the company. Further, it scales from one device to any number of devices.

### CAN dashboard use cases

Visualizing CAN data in browser dashboards has several use cases:

- OEMs can visualize data from prototype fleets during field testing
- Warehouses can set up predictive maintenance for forklifts/AGVs
- Mining operators can monitor fleet utilization to optimize costs
- Fleet managers can track assets and remotely diagnose issues
- OEMs can offer telematics services towards customers

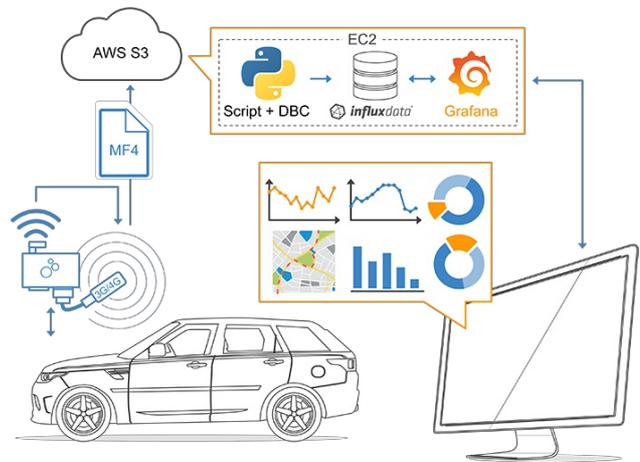
CAN data is used in many diverse use cases - for example, the dashboard needs may be very different for OBD2 car telematics, J1939 heavy-duty telematics, or marine telematics. Here, the Grafana solution is suitable as it allows end users to customize their dashboards, said the company.



Warehouse telematics dashboard (Source: CSS Electronics)

The CANedge2 tool is for OEM (original equipment manufacturers) engineers, who need to record CAN/LIN data to an SD card - and auto-push the data via Wifi to their own server (self-hosted or cloud).

Recently, the company has added support for integrating the recorded CAN data with Grafana, an open-source telematics dashboard. This allows end users to create free and customizable browser dashboards to visualize DBC-decoded physical values, set data-based alerts and perform diagnostics and analyzes. To see the dashboards in action, users can try out the [online playground](#) or watch an [intro video](#) on the company's website.



Internet of Things telematics dashboard (Source: CSS Electronics)

In addition, some use cases involve processing of J1939 transport protocol data or UDS data. Here, the open source Python API and script examples enable it to modify the data workflow. Finally, CAN data is often sensitive. To address this, the CANedge2 enables secure CAN logging, while the entire dashboard solution can be self-hosted, ensuring that data and DBCs are not shared externally.

The company explained, a core focus in the CANedge design has been on interoperability - ensuring integration with different software tools. For example, device configuration is done via the JSON Schema, data is logged in the MF4 format, Wifi transfer uses the S3 interface, and CAN decoding is done via DBC files. Further, all software/API tools are free and open-source.

Martin Falch, co-owner at CSS Electronics: "We believe open source is the future. Our end users increasingly demand open tools and interoperability. For some, it's a wish to contribute to development - while for others, it's a way of reducing vendor lock-in. We see this particularly with younger engineers - and it's a trend we expect to see rising rapidly in the coming years."

