

Learning to speak 'TRUCK'

Thanks to new technology, modern commercial vehicles are telling their users their maintenance requirements; the difficulty is understanding what it is they are saying, according to speakers from Scania GB and Verizon Connect



The servicing of vehicles hasn't really changed in 50 years; service levels generally alternate small-medium-small-large, contends Aaron McGrath, Scania GB services technical manager. Technology is continuing to advance, and that brings with it benefits in engine combustion technology, exhaust emissions and powertrain efficiencies.

Also, the way that trucks are used really varies from customer to customer, operation to operation, and in different parts of the country. Just in long haul, for instance, one customer might run a truck mainly on flat roads, on the motorway network, that rarely stops and rarely cools down. The wear and tear would be quite different compared to one running across hilly terrain with steep inclines, or from a tipper used on and off road in harsh, dusty environments.

McGrath points out that in the past it would have been difficult for the service agent to know how each operation changes every day. For this reason, Scania has moved away from the one-size-fits-many approach and brought out an entirely flexible maintenance system. One of the core components in flexible maintenance is the communicator unit (pictured above), embedded in the vehicle, which sends data for all of the different sensors, and which has been fitted as standard to Scania trucks since 2012.

Data from the vehicle – engine load, start-stop frequency, idle time, average fuel consumption, total driving time, PTO usage – is sent to Scania servers, processed, and the data then delivers a tailored maintenance plan. If the customer's usage changes, the plan recalculates in real time in

between workshop visits. Today, there are 42,500 Scania vehicles using connected data.

Dan Lancaster, Verizon Connect client executive, argues that there are two ends of the spectrum of predictive maintenance technologies. At one end is entry-level telematics; a black box plugged into the OBD port, for example. That might measure simple metrics such as position, time and date stamp, arrivals and departures, mileage, miles per gallon and engine hours.

This data is used to produce scorecards, user-friendly reports with red/amber/green colour schemes. These might analyse instances of factors such as trip fuel efficiency, hard acceleration, non-productive idling and seatbelt usage, for example.

The second type is manufacturer-connected technology, OEM accredited, which communicates with the engine management system's diagnostic codes using CAN-Bus technology standards such as J1939. Having recorded the data, the back end of the system can then fire off maintenance actions – these are based on information such as engine

overspeeds, fluid levels and DPF regenerations.

For example, the Verizon Spotlight app (pictured below) not only tells users where the vehicle is and what type of work it is doing, it also breaks down fuel efficiency, when the truck was last serviced, what work was carried out and the follow-up actions.

Such systems, according to Lancaster, can filter out most of the raw data, the 'white noise', to find the information that reveals insights into driver safety and performance, and produces alerts when a parameter exceeds a limit – known as an exception basis. "The art is to compress the information and represent it in dashboards or scorecards," he says.

Lancaster estimates that a basic Verizon telemetry system – including driver behaviour, safety and data from the engine management system – might cost £11-£13/vehicle/month, including standard support. Scania's McGrath says that a variety of packages are available; the monitoring package is free for 10 years, but the control package might be £20-£30/vehicle/month.

A concern raised in the Q&A relates to the way that OEMs assign codes to engine parameters; a single model might have many thousands. As each manufacturer's coding scheme is different, operators would struggle to track one particular parameter across a mixed fleet.

In response, McGrath points out that some codes, such as the automated braking programme, are intentionally kept confidential out of safety concerns. He also states that OEMs are working together; FMS standards are documented online (<https://is.gd/rehiba>). ■

