

# Establishing full communication with electronic engines

*A Czech-based controls and monitoring manufacturer has developed a reliable range of engine specific controllers capable of full communication with electronic engines; an approach that has won the support of major engine manufacturers and customers alike*



The Swedish Road Administration's (SRA's) Venus car ferry incorporates four IntelliGen PLS

One of the biggest challenges facing engine control manufacturers is the need to communicate fluently with electronic engines and above all speak the same language. Generally this ability is achieved through the well known J1939 communication protocol, borrowed from the automotive industry and now adopted by many engine manufacturers and engine controllers alike.

Acting as the communication link J1939, based on the CAN bus creates an interface with the engine ECU (Engine Control Unit), integrating many of the traditional engine accessories offering a standard range of information common for all engine types.

At face value many of the products on the market offer a simple "plug and play" solution incorporating the J1939 CAN bus interface. This enables a set range of basic diagnostic information to be read directly from the engine ECU. However, the values that can be read are limited to rpm, water temperature, oil level, engine hours and consumption and nothing more. ComAp quickly realised the need to develop a more intelligent solution - the goal being to get more from the relationship between the engine and the controller.

Radim Girgas has worked closely on the product development: 'Each manufacturer uses its own proprietary control of engine speed and related issues. So when initially developing solutions for Volvo, Scania and GM it was necessary to develop different SW branches to enable synchronising as well solving the different diagnostic functions for each manufacturer. Whilst "one size fits all" for simple controllers - to get more out of the engine it is essential to know which clone of J1939 is present.'

## A wider range of solutions....

From a basic simple Auto Mains Failure (AMF) controller using only a standard J1939 connection, to engine specific solutions, the company now offers one of the widest range of proven and reliable

controllers for communicating with electronic engines.

**IntelliLite** the entry level AMF controller offers a general interface implemented for all J1939 based ECU interfaces. This makes the controller very simple to connect to any engine controlled with such an ECU, but restricts it to displaying only basic information that is common to all J1939 based interfaces.

**IntelliGen**, used for AMF, parallel to mains and island parallel gen-sets offers a number of engine specific solutions for Volvo Penta, Scania and GM. The advantages of engine specific solutions are two fold. Firstly, IntelliGen, unlike other similar products, controls the ECU for both synchronising and power control and this is achieved in different ways for each J1939 branch. The other reason is that this "branching" enables the IntelliGen controller to display a wider range of information from the particular ECU, including specific alarms and diagnostic messages.

At an early stage the company received interest from Volvo Penta who initially was looking to use ComAp controllers as standard equipment for its marine applications. This led to a complete audit of how the Czech manufacturer designed and developed products generally, but with a specific focus on electronic engines. As a result ComAp and IntelliGen are now recognised by Volvo Penta as offering an effective and intelligent solution to communicating with its electronic engines.

A recent application of the Volvo Penta IntelliGen is the car ferry 'Venus' operated by the Swedish Road Administration incorporating four IntelliGen PLS controlling four Volvo D12D engines, which feature very low exhaust emissions due to the highly advanced and entirely electronically controlled fuel system. Christian Johansson, for Volvo Penta described the load sharing capability of the controllers: 'The control system continually measures the load on each

engine. If the load is low, only one engine is used and if both engines are driving, the system ensures that each engine carries exactly the same load and that they work at the same rpm. This minimises the load on the drive belts and couplings and optimises power for manoeuvring.'

**IntelliSys** controllers are designed for CHP, parallel to mains and island parallel gen-sets providing connection to any ECU known so far. However different manufacturers have adopted their own form of CAN protocols, in the case of MTU or even different transmission medium (RS232) in the case of Caterpillar. In these cases the only solution is to provide a communication bridge, which translates the data to and from the ECU and the controller. The powerful i-CB configuration tool does just that, allowing the user to choose and select only the information they require.

An additional benefit is that the i-CB has not only the CAN bus interface, but other standard types of interfaces making it very flexible for different ECU connections. So far engine specific solutions are available for MTU/MDEC and CAT/CCM.

ComAp controllers can monitor engine status from virtually anywhere in the world, having phone, mobile phone or internet connection giving even greater levels of communication. From the beginning the company listened to customers and talked to the manufacturers and as a result have a more clearly defined approach to the problem. It now offers the broadest range of controllers compatible with electronic engines and have a proven track record where it matters the most - in the field.

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## Internet Links

[www.comap.cz](http://www.comap.cz)

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