

Solution: Remote access to marine engines over CAN via CAN@net NT Gateway

Country: Germany

Year: 2023

Sector: Engine production



Remote engine start-up and maintenance: Worldwide CAN access through gateway solution simplifies engine start-up

Background

A leading global manufacturer of commercial marine engines will be counting on the proven Ixxat CAN@net NT gateway solution from HMS Networks in the future.

For start-up, maintenance, and diagnostics of engines with several thousand horsepower, numerous parameters have to be read out, interpreted, and configured via the CAN fieldbus for safe acceptance. Until now, the connection between the engine (CAN) and the test software (USB) had to be made locally using USB-to-CAN protocol converters. By contrast, the future solution will have reliable signal conversion from CAN to Ethernet. This will enable customers to perform maintenance and diagnostics tasks in their software applications from anywhere in the world thanks to Ixxat CAN@net NT.

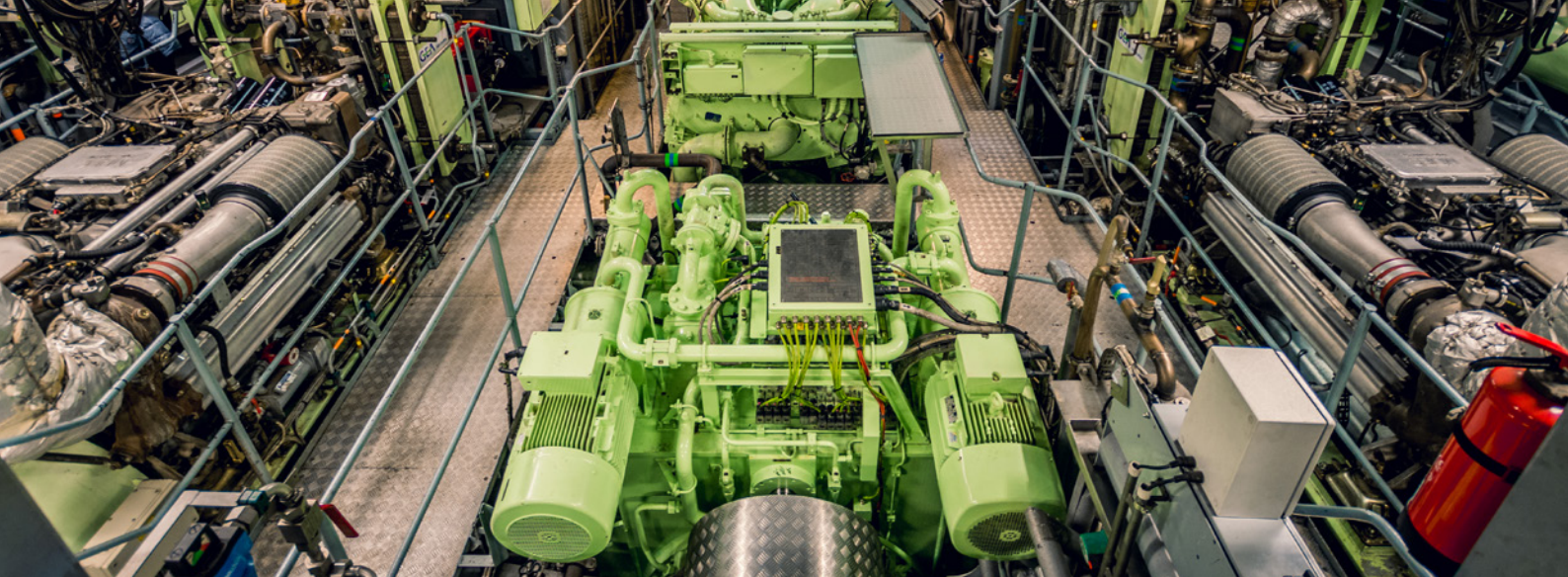
procedures on site, but global communication now makes efficient remote testing possible. In this case, the engines are manufactured and go through the approval process in South America, but the test center is on a different continent. This means a remote connection between two continents is needed for communication between the engine and the test software. The connection needs to provide reliable signal quality while enabling signal conversion between the engine's CAN-based communication and the PC-based software application.

Local vs. global communication: the challenge

Marine engine start-up, diagnostics and maintenance are technically demanding processes that call for high-performance communication tools. In the past, the production facility had to run the software for the associated engine test

CUSTOMER BENEFITS

- ✓ Worldwide access to engine data for maintenance and diagnostics
- ✓ Easy installation and start-up
- ✓ Reduced costs thanks to optimized processes
- ✓ Rugged design ideal for use in the field



The inadequate transfer rates for VPN access in some countries are an additional challenge; delays and performance deficits are to be expected.

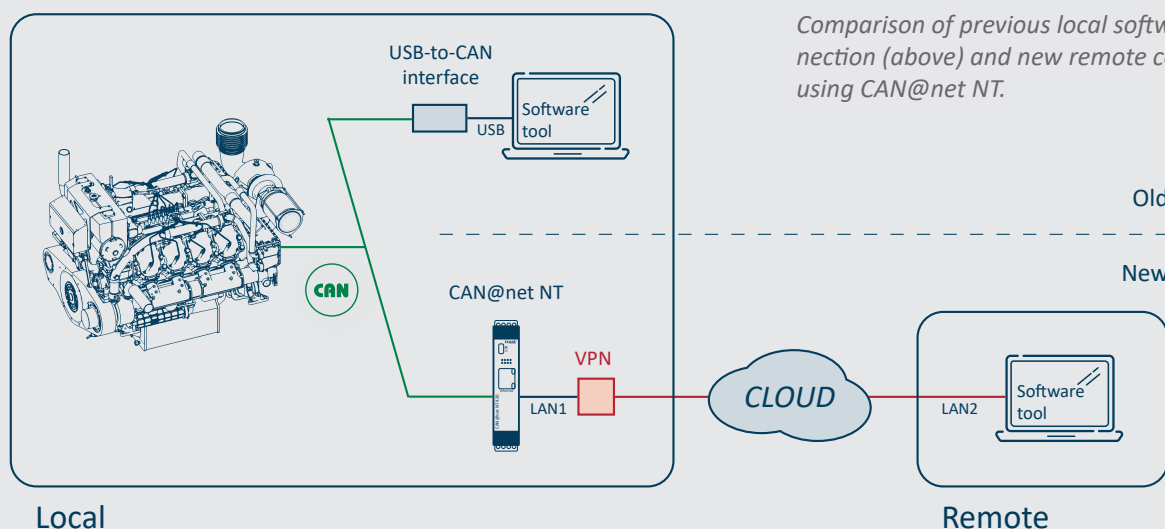
The solution: engine diagnostics using VPN and CAN@net NT gateway

A CAN line from the engine is connected directly to the CAN@net NT 100 gateway via a 9-pin D-sub connector. The CAN signal is converted to Ethernet in the gateway and then sent via LAN (RJ45 interface) to a VPN connection. Depending on the mode being used, the CAN@net NT provides high-performance filtering and mapping functionalities for the conversion. To enable stable communication despite low VPN and internet transfer rates, checking the CAN status readout cycle time and increasing it to at least one second is recommended.

This ensures high signal transmission quality even over very long distances. The PC system then receives the data signal from the internet and transfers it via LAN to the diagnostics software, which reads in, interprets, and processes the required test parameters.

High system reliability and easy installation

Not only can the CAN@net NT series bridge great distances, it also provides a high level of protection for connected components thanks to galvanic isolation (1 kV for 1 second), which also increases system reliability. The devices support all standard bit rates (5 to 1000 kbps) and save time and money thanks to their simple and quick installation and start-up.



Comparison of previous local software connection (above) and new remote connection using CAN@net NT.

For more information, see
<https://www.hms-networks.com/p/1-01-0332-20000-can-net-nt-200>

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