

CASE

STUDY

TCMS for Shunting Locomotives Tülomsas (Turkey)



Applications:

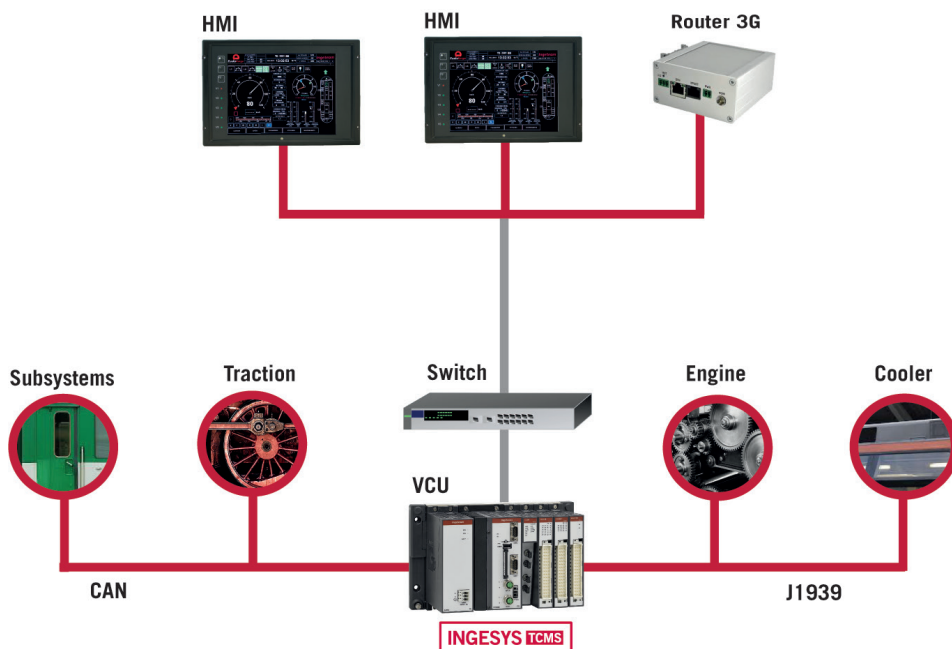
Rolling Stock Control & Monitoring Solution.

In 2019, Ingeteam supplied the TCMS systems for seven new-generation, diesel-electric locomotives to the Shunting Locomotive manufacturer TÜLOMSAS.

Ingeteam supplied the TCMS based on a modular INGESYS IC3 solution with EN50155 and EN45545-2 railway certification.

The TCMS application has been developed and commissioned entirely by the Shunting Locomotive Manufacturer.

TCMS solution for Shunting Locomotives



Ingeteam's TCMS solution for Shunting Locomotives

INGESYS TCMS Components	Technical Features
	1x24 V Power Supply Module 1xCPU (2 CAN + 2 Ethernet with 8 I/O Backplane) 1x2 CAN Bus Module 3x32 Digital Input Module 1x32 + 1x 16 Digital Output Module 1x16 Analogue Input Module
System	INGESYS TCMS General Features
	Wide range of processing units, I/O modules, communications modules, etc. Distributed I/O architecture based on CAN buses, MVB, ETHERNET DIN 41612 F connectors or terminal blocks for I/O modules
Programming	IEC61131-3 standard languages C/C++ MATLAB®/SIMULINK®
	Events and data log module Active alarms and historical data viewer Events viewer Remote access for parameterising and diagnostics via web services
Integrated supervision	Centralised supervision of the information on all vehicles Architecture in the cloud (centralised diagnostics data) Communication between trains and station using GSM, WLAN, GPRS links
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Centralised supervision	Soft and Host Standby redundancy Redundant power supply and I/O topologies Communications redundancy Hotswap modules
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High Availability	Soft and Host Standby redundancy Redundant power supply and I/O topologies Communications redundancy Hotswap modules
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Standards	EN 50155:2007 [Class TX (-40°C at +70°C)] EN 45545-2
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INGESYS TCMS