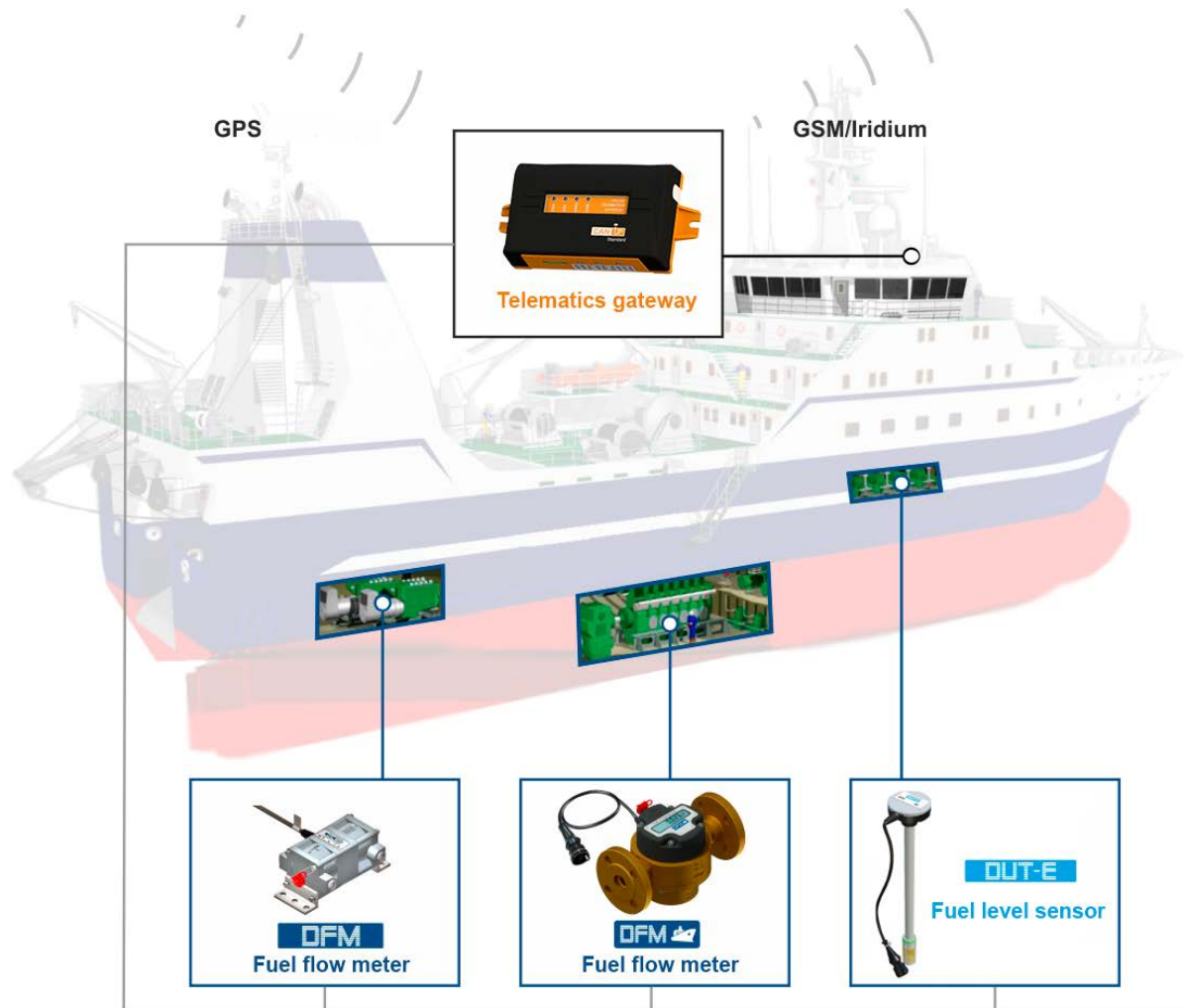


Sea and river vessel telematics



TECHNOTON
ADVANCED VEHICLE TELEMATICS



Sea and river vessel telematics

Application



TECHNOTON
ADVANCED VEHICLE TELEMATICS



River ships and boats



Sea/river ships and boats



Small and medium marine vessels

Advantages of telematics system

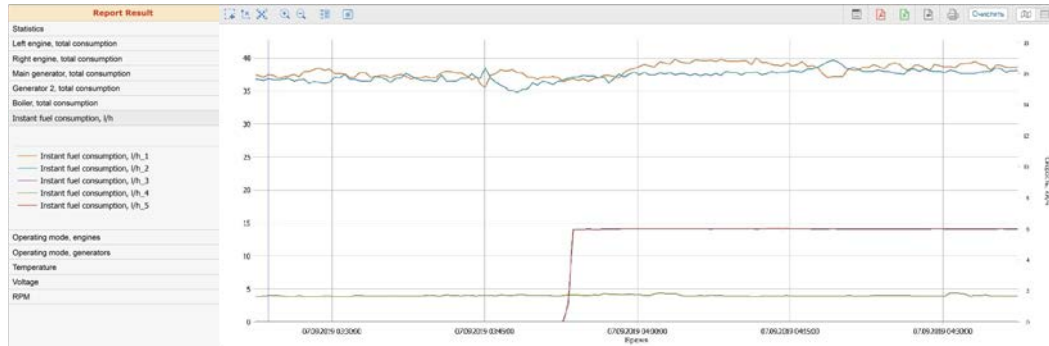
- ✓ Cutting costs for fuel and maintenance
- ✓ Increasing vessel life cycle
- ✓ Reducing vessel idle time
- ✓ Receiving actual information for managerial accounting

Sea and river vessel telematics

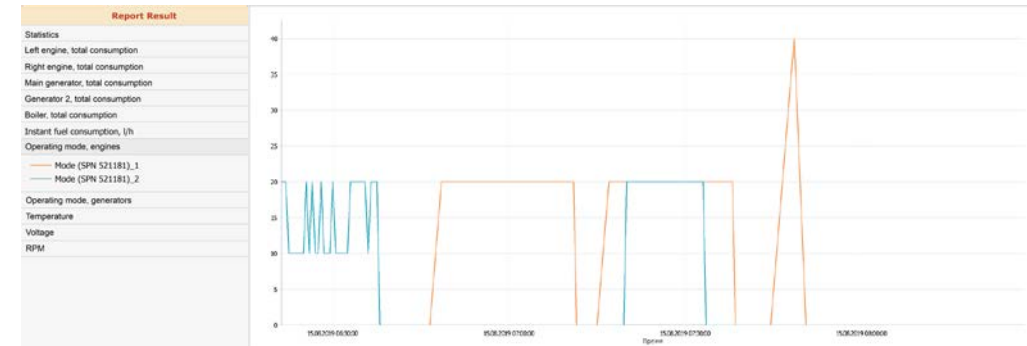
Data display in telematics service



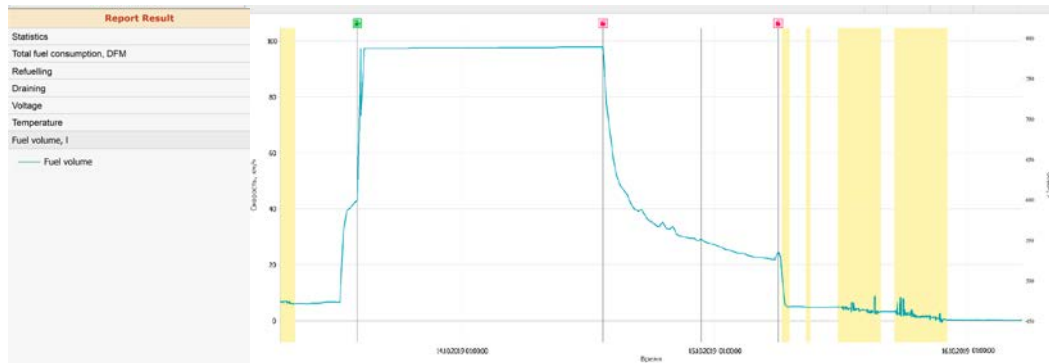
TECHNOTON
ADVANCED VEHICLE TELEMATICS



Fuel consumption



Engine operation modes



Fuel volume in cisterns

Report Result		Date, time	First volume	Final volume	Draining	Amount
Statistics		12.09.2019 04:20:30	788 l	557 l	231 l	1
Total fuel consumption, DFM		15.10.2019 04:20:17	557 l	534 l	23 l	1
Refuelling		22.10.2019 08:30:29	554 l	469 l	64 l	1
Draining						
Voltage						
Temperature						
Fuel volume, l						
— Fuel volume						

Preventing fuel theft

Sea and river vessel telematics

Tasks



Fuel consumption monitoring – engines, generators, boiler



Machine running time tracking – engines, generators, boiler



Monitoring bunkering volumes and fuel residue in supply tank



Preventing fuel theft

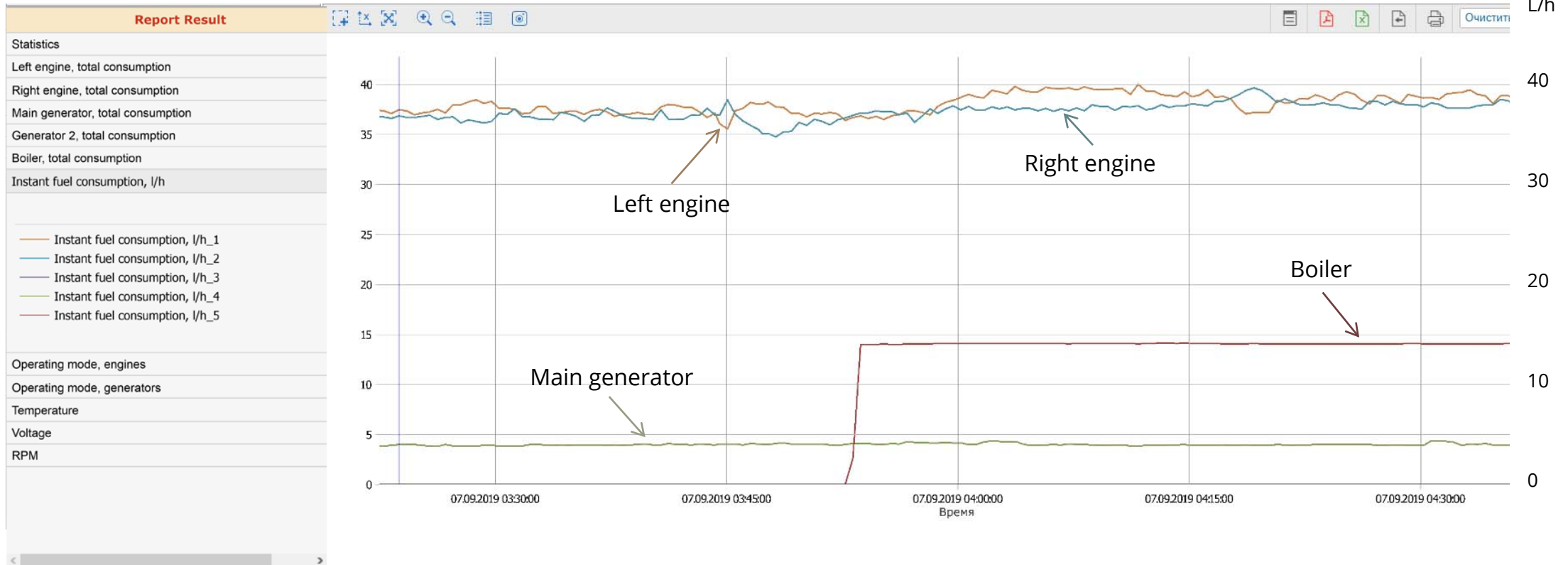


Operation parameters monitoring by ship crew



Remote engine diagnostics

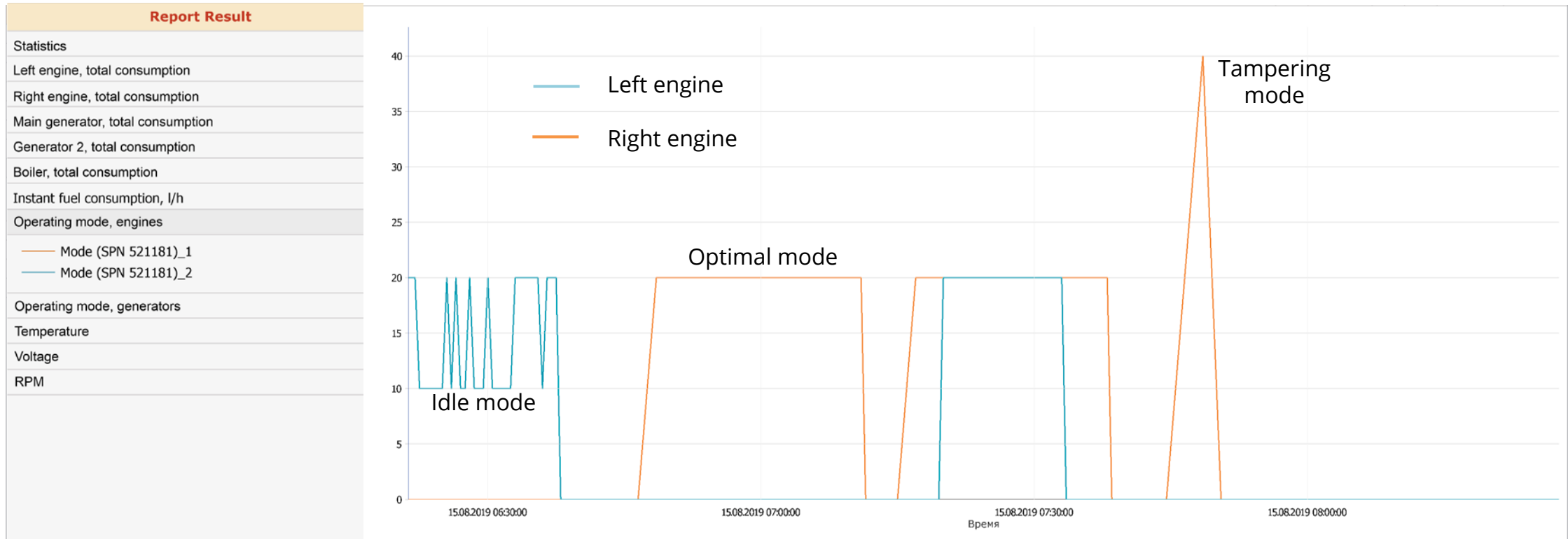
Task/ Fuel consumption monitoring



Exact fuel consumption accounting of each consumer– engines, generators, boilers



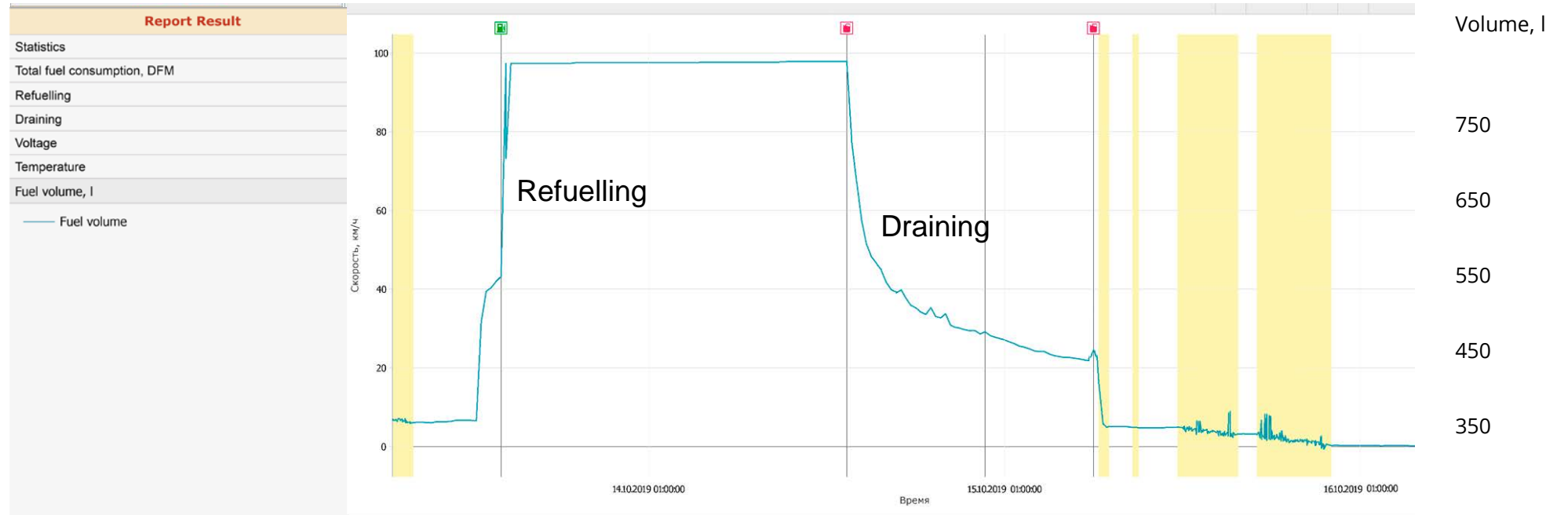
Task/ Machine running time tracking



Operation monitoring of each diesel engine by operating modes



Task/ Bunkering and supply tank monitoring



Measurement of fuel volume filled into tank

Drawing up "volume-to-mass" correspondence table of fuel given out

Monitoring fuel residue inside supply tank

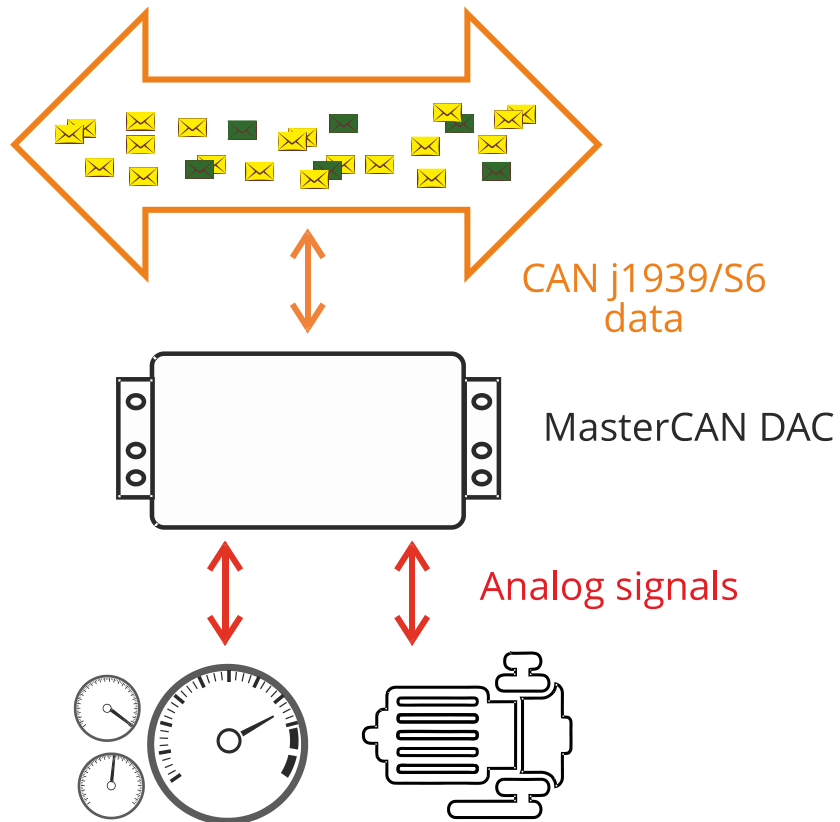


Task/ Preventing fuel thefts

Report Result	Date, time	First volume	Final volume	Draining	Amount
Statistics	12.09.2019 04:20:30	788 l	557 l	231 l	1
Total fuel consumption, DFM	15.10.2019 04:20:17	557 l	534 l	23 l	1
Refuelling	22.10.2019 08:30:29	554 l	469 l	64 l	1
Draining					
Voltage					
Temperature					
Fuel volume, l					
— Fuel volume					

Preventing fuel theft from tanks and fuel lines

Task/ Integration of signals from standard and additional equipment



Sending digital data from telematics system to dashboard and analog gauges:

- Fuel level and volume.
- Fuel temperature.
- Temperature and pressure of technical liquids.

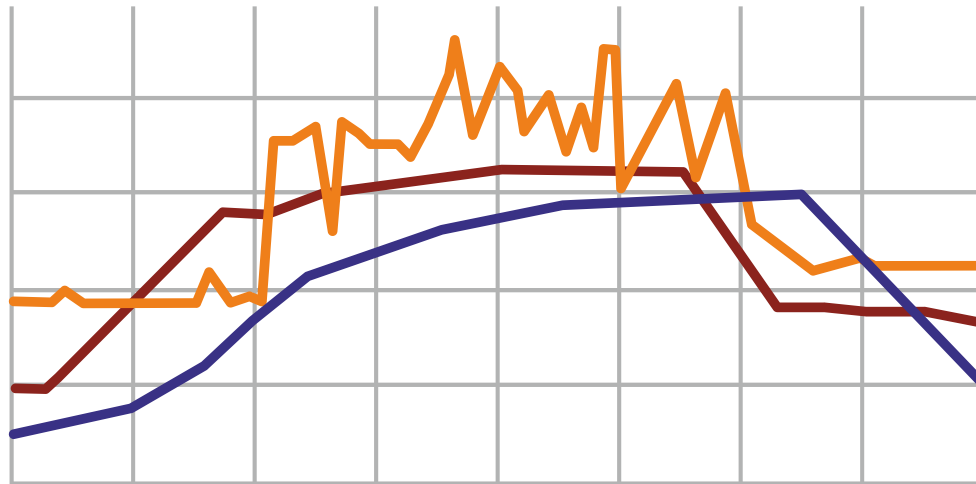
Control of pumps or other standard equipment using telematics system data

Sea and river vessel telematics

Task/ Remote engine diagnostics



TECHNOTON
ADVANCED VEHICLE TELEMATICS



- Engine RPM
- Motor oil pressure
- Coolant temperature



Fuel consumption change



Fuel temperature in fuel line



Oil and coolant temperature/pressure



RPM



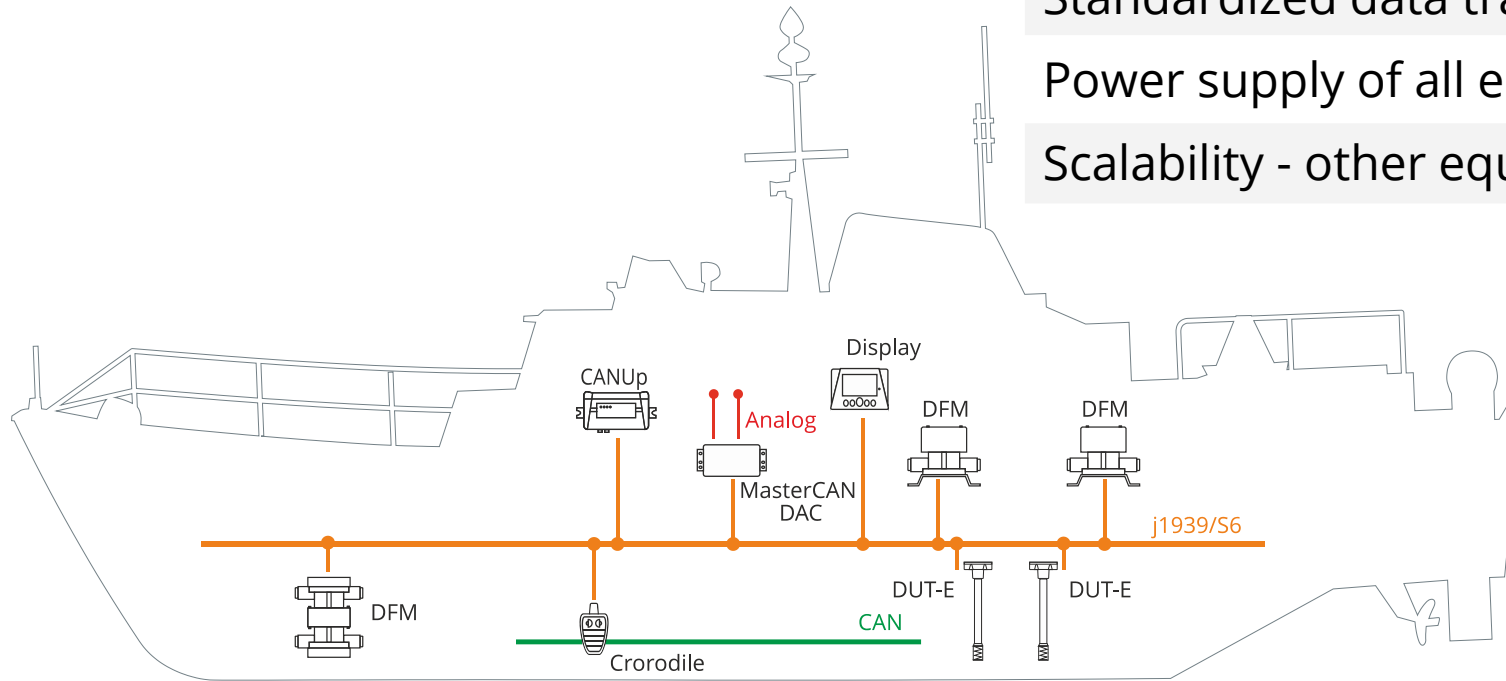
Active and saved error codes

S6 Technology

Standardized data transfer protocol of all sensors

Power supply of all equipment form a single point

Scalability - other equipment can be added later



Cabling system of S6 Technology uses bus principle and allows connecting onboard equipment to a single CAN-port of telematics gateway

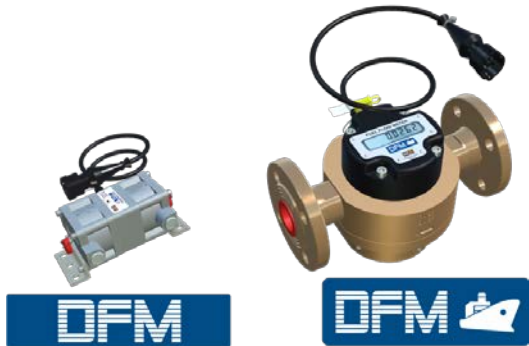
Sea and river vessel telematics

Equipment/ Fuel flow meters



TECHNOTON

ADVANCED VEHICLE TELEMATICS



Fuel rate measurement, fuel consumption monitoring and machine running time tracking, total and split by engine operating modes.

Measures diesel fuel, heating oil, naval fuel oil.

Flow range 0,001 – 25 m³/h, fuel temperature up to 130 °C

Sea and river vessel telematics

Equipment/ Fuel level sensors



TECHNOTON

ADVANCED VEHICLE TELEMATICS



- Measurement of fuel residue (level and volume) in tank.
- Measurement of tank refilling volumes.
- Detection and alerts on fuel draining from tank.
- Fuel temperature measurement.
- Suitable for all diesel fuel types, inaccuracy is 1%.

Sea and river vessel telematics

Equipment/ Telematics gateway



TECHNOTON
ADVANCED VEHICLE TELEMATICS



Data receiving from information buses, standard or additional sensors.

“On board” data processing on the vessel units operation and reports transmission to the telematics server.

Various channels for reports sending : 2G, 3G, SMS, e-mail, Wi-Fi, Watson, MQTT, Amazon.

Sea and river vessel telematics

Equipment/ CAN tools



TECHNOTON

ADVANCED VEHICLE TELEMATICS



MASTERCAN

CANCrocodile – safe non-intrusive (no electrical contact) data reading from CAN buses, data transfer to telematics unit.

CAN Display – gathering and showing data from CAN bus, standard or additional analog and CAN j1939 sensors.

CAN i/o module – integration of analog signals of standard equipment to telematics system and vice versa.

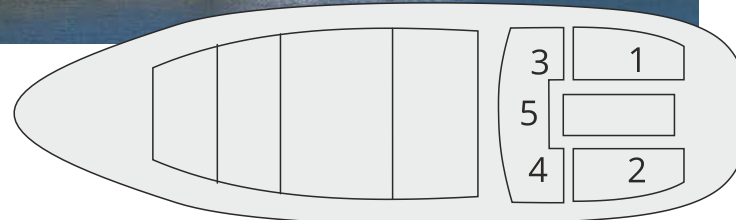
Sea and river vessel telematics

Case/ River cargo ship



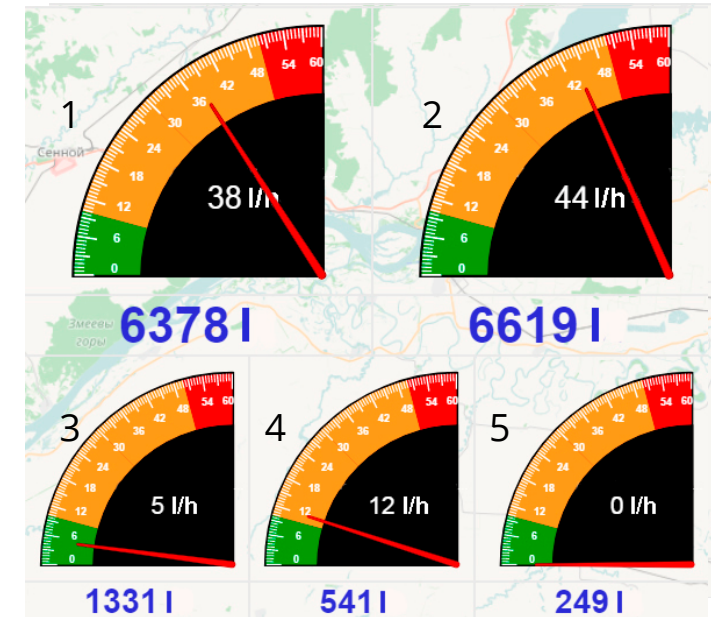
TECHNOTON

ADVANCED VEHICLE TELEMATICS



Instant and total fuel consumption:

1 - left engine, 2 - right engine, 3 - main genset, 4 - auxiliary genset, 5 - boiler.



Real-time monitoring of instant and total fuel consumption, each engine's hours of operation.
Real fuel consumption appeared to be two time less, than quota.

Economy – **56 USD per hour** of ship operation.

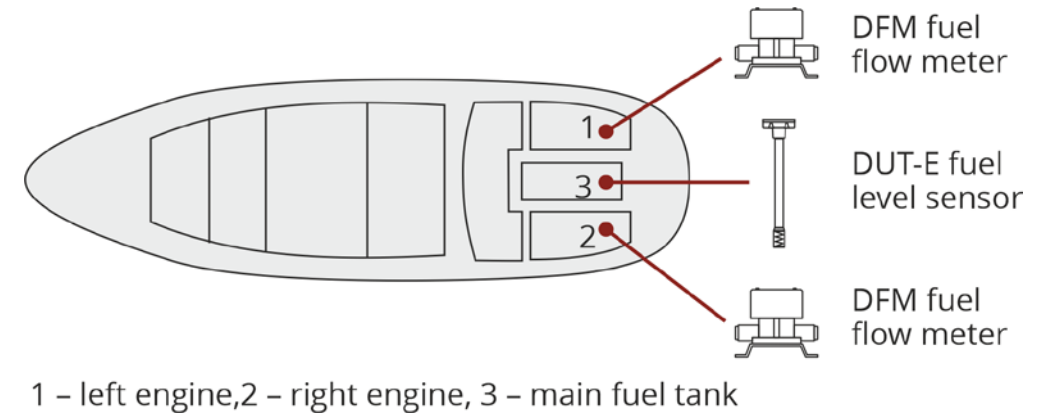
Sea and river vessel telematics

Case/ Marine vessel



TECHNOTON

ADVANCED VEHICLE TELEMATICS



Fuel consumption, engine operation time and fuel volume in tank are monitored online. Fuel theft from tank was minimized.

Savings – **125 USD per operation hour!**

Summary



Reliable information gathered by vessel telematics system provides fleet owners opportunity to:

- ✓ eliminate fuel theft and reduce overall fuel costs;
- ✓ monitor real operation time and exclude machinery idling;
- ✓ check engine health and avoid extra repair costs;
- ✓ lower maintenance expenses and extend lifetime of engines;
- ✓ increase transparency of operations and accounting data.

Sea and river vessel telematics

Learn more



Official web-pages



www.jv-technoton.com

More about S6 Technology



rd-technoton.com

More about IoT Burger Technology



rd-technoton.com

Document center



www.docs.jv-technoton.com

YouTube channel



[/c/technotonen](https://www.youtube.com/c/technotonen)

Follow us in social media



[/company/technoton](https://www.linkedin.com/company/technoton)



[/technoton](https://www.facebook.com/technoton)