

Controlling temperature and generator operation in reefer containers

⚠️ Challenge

Transportnoye Agentstvo LLC is a well-known freight carrier in Siberia, Russia. One of the company's principal business areas is rail transportation in refrigerated containers from Siberia to the Far East and back.

The company faced a number of problems related to generators that maintain the proper temperature in containers. The operation of generators was inefficient and required onsite maintenance:

- The generator engine could only be started or stopped manually.
- Long-distance transportation required large volumes of fuel, and it was not always possible to refuel the GenSet diesel generator while transporting a container.
- The company wanted to use one generator set for two containers at once.

🔧 Solution

[AvtoScan](#) developed a solution for remote monitoring of generators in reefer containers.

- The AvtoScan specialists installed telematics hardware on mounted GenSet generators and inside containers. The [Wialon](#) monitoring platform is responsible for remote control and receiving data from devices.
- The generator can be started remotely both by using Wialon and sending an SMS message to the [Galileosky 7x](#) terminal.
- Special sockets for automatic power switching between refrigeration units were made. Sockets are controlled via Wialon commands or in automatic mode according to an algorithm (regardless of whether there is a GSM/GPS connection).
- A Maxwell MS-3DA4880 three-phase solid-state relay was used to control power switching between refrigerated containers.
- Refrigeration units were equipped with [Escort TD-BLE](#) temperature sensors and [Italon 1000](#) fuel level sensors. Data from sensors is also collected in Wialon. If the temperature inside a container is beyond the acceptable range, the customer is notified.

🏆 Results

Thanks to the solution developed by AvtoScan, the client can now easily maintain the required temperature regime in reefer containers remotely, transport larger cargo volumes, and not worry about the lack of fuel in generators.

✅ 30% fuel savings

Such fuel savings became possible due to the remote generator control in refrigeration units.

✅ Twice more products

Can now be transported using one GenSet to power two refrigeration units.

✅ Cargo safety

Online monitoring of the temperature regime and generator parameters allows you to maintain the quality of transported products.

Company profile

🏆 **IoT project of the year nomination:** Cold chain transportation

Industry: Railway

Hardware

🔧 [Galileosky 7x](#)

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