

# Monitoring the use of freight containers

## PROBLEM

The client specializes in importing goods to Russia and uses third-party container shipping services to transport cargo from abroad.

Before dispatching a container to a destination point, the shipping company usually waits for its optimal load. During this period, unscrupulous carriers often use customers' freight containers for their purposes. In such cases, the containers arrive back with great wear and tear. It means additional expenses for the client: the cost per container starts at \$ 2,000. **The client would like to prevent illegal exploitation of property or, at least, to be able to get a refund for it.**

Tracking freight containers is not an easy task. Before choosing the equipment, one needs to take into account a whole list of aspects:

- The container does not have an autonomous power supply for GPS devices.
- Severe weather conditions exclude the use of most autonomous power supplies and housings for trackers.
- The containers are transported abroad, move between countries, and often get to the areas with the weak satellite signal.
- There is no safe and reliable place in the container to install tracking equipment.

## SOLUTION

Wialon's partner, [Geoservice](#), Russia, has developed a solution for detecting unauthorized use of freight containers. Since there was no ready-made equipment on the market that would meet all the project requirements, the integrator designed the device specifically for the client.

- Geoservice made software and hardware configurations as energy efficient as possible and used lithium polymer batteries with increased capacity. Tests in climatic chambers showed: it was possible to achieve **autonomy of the device for up to 180 days**. Several operation modes allow for adjusting the number and frequency of the tracker "wake-ups" and **controlling energy consumption**.
- The device required a housing that could be securely attached to the container and was able to withstand severe weather conditions. Placing the tracker inside is not an option – the metal wall of the container makes it difficult for a GPS/GSM signal to pass through.
- Geoservice specialists have successfully coped with this problem. **They 3D-printed a protective hermetically sealed housing** that followed the shape of the vent hole cover.

### COMPANY PROFILE

#### COUNTRY:

Russia

#### INDUSTRY:

Long-haul transportation

#### MONITORING UNIT:

Freight vehicle

#### WEBSITE:

geosmt.ru



THE HOUSING WITH THE TELEMATICS EQUIPMENT INSIDE, FIXED ON THE WALL OF THE FREIGHT CONTAINER

- **International SIM-cards with automatic roaming settings** ensure continuous data transmission. The Wi-Fi module helps pinpoint the location in areas where the satellite signal is not available.

- Via [Wialon Hosting](#), the customer receives notifications on geofences (e.g., arrival at customs, border crossing) and important events (changes in lighting, temperature, impact). Hence, **the client knows not only when the container is moved, but can also determine what's going on with it:** e.g., an unscheduled removal from the warehouse, loading, and unloading.

- The final version of the device has a whole list of other features important for the project. For example, there are RFID tags and a BLE module inside the case. As a result, the client can **effortlessly detect and identify** both the containers themselves and trackers installed on them. Well, there is also a sensor that snaps dismantling or opening of the housing. It ensures that an unscrupulous carrier does not remove trackers from containers.

## RESULTS

Geoservice developed a telematics solution that helps the client identify unreliable carriers without any effort. Now, the trading company does not only quickly find out that somebody illegally exploits its property, but also uses the collected data for filing damage compensation claims. More than a hundred containers are already under the control of telematics.



### 180 DAYS OF BATTERY LIFE

For 6 months, the device can track a container without recharging or changing the battery.



### IN ANY WEATHER

The equipment can withstand temperatures from -40 to +80 degrees Celsius.



### REDUCING COSTS

The solution eliminates the possibility of unauthorized container use and extends its service life.



### WORLDWIDE

Thanks to the international SIM card, the location of the container can be tracked along the entire route.

## IMPLEMENTED PRODUCTS



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