



Internet of Things SL  
Sensing Assets

## LANDSCAPE

- Multiple jurisdictions
- Variable connectivity
- Disparate IT systems
- High value merchandise

## BUSINESS DRIVERS

- Reduce cost of shipping by sea
- Utilise One Belt One Road strategy
- Ensure physical security of product shipment
- Monitor temperature, humidity & shock at all times
- Ensure real-time visibility of cargo for SLAs

## CHALLENGES

- Huge distances covered
- Multiple jurisdictions
- Variable connectivity
- Huge extremes of temperature and humidity
- Challenging reverse logistics
- Challenging third party security SLAs

# CARGO TRACKING ON THE NEW SILK ROAD AN IOT TELEMATICS USE CASE

Transporting high value cargo across central Asia by train creates two problems.

First, the containers have to travel across some of the most inhospitable terrain on the planet and deal with extreme changes of temperature. To make the service viable, new 45ft and 53ft temperature-controlled reefer containers have been developed with a large, integrated diesel generator set that can power the reefer unit for the 14 to 18 days needed for the journey. This opens up the route to a wider range of temperature-controlled goods including pharmaceuticals, chemicals and food. But malfunctions can still happen and the containers need to be monitored to ensure that the correct temperature is being maintained.

Second, wherever there is high value cargo, there are criminals. Containers need to be monitored constantly to check for theft and tampering – not easy when they are travelling across the steppes of Central Asia.

## HIGHLIGHTS

This is where the Internet of Things (IoT) and machine-to-machine telematics devices come into play. IoT SL was already supplying tracking devices and sensors that allow operators to monitor the location, security and condition of their shipments 24/7 and look for temperature changes, door opening and other intrusions.

In a recent test case, an attempt to open the doors of a container that was crossing Kazakhstan triggered an alarm that caused a helicopter to scramble to assess the situation. In addition to providing security, these devices can also allow the container temperature to be adjusted remotely.

Problem solved? Not quite: the remoteness of this route throws up one more challenge – data transmission. Many of the regions on the Silk Road Economic Belt do not have strong (or any) GSM network coverage. To deal with this, we utilised dual-mode satellite-GSM devices that will automatically switch from default GSM to satellite transmission whenever GSM drops out, ensuring that the cargo can be traced along the whole route, without any black holes.

All of this technological excellence will help to ensure that the New Silk Road, like its illustrious predecessor, will drive economic growth and boost trade across the globe.



GT 2000 Device

## OUTCOME

Our clients are very pleased with the value delivered from our deployment of container tracking, security and condition monitoring.

The visibility and operational efficiency now available is essential to their continued growth and profitability and expansion of their use of the new Silk Road.