



PLANET LL3 focuses on streamlining logistic processes in flows from China to Europe along the Silk Road by implementing **Internet of Things (IoT)** technologies (based on the **Electronic Product Code Information Services, EPCIS, platform**) and **GS1 standards** that facilitate transmission of data between the partners involved in the e-commerce operations.

### Objectives & Business benefits of the technologies implemented

<b>Sensor Network</b>	<p>The use of sensor system will help to [redacted] and [redacted]. As a result, it is expected [redacted] affecting the cargo condition (exceeding [redacted], as well as [redacted].</p>
<b>EPCIS platform</b>	<p>EPCIS greatest potential in the New Silk Road is in the [redacted], obtaining data on rolling stock and rolling stock components to facilitate preventive maintenance. Thanks to this solution, it will be possible to: track loads in real time, estimate the distance travelled by the vehicle to plan preventive maintenance, as well as the control of vehicle availability. EPCIS Platform will lead to [redacted] due to the lack of detailed information about the delivery, [redacted] in transit to Client.</p>
<b>Internet of Things</b>	<p>IoT devices will be used for developing [redacted] that is based on accurate real-time information rather than static and for [redacted], providing high flexibility of asset tracking.</p>
<b>GS1 Standards</b>	<p>GS1 standards will [redacted] through the usage of a unique and uniform data recorded by all participants of the GS1 system. As a result, it is expected to achieve [redacted].</p>

## Use case 1

# Monitoring and optimization of container flow along the New Silk Road

## Overview

The first use case will focus on **providing access to real time information on cargo coming from China to Poland** along the entire supply chain of the **Rohlig Suus** through application of **IoT** and **AI** to **optimize** and **improve** the **efficiency** and **transparency** of the **supply chain** and **reduce** the **operational costs** and **risks** of the **supply chain**.

## Overall activities and 'AS IS' - 'TO BE' comparison

ACTIVITY 1 IMPLEMENTATION OF SENSOR NETWORK	AS IS	TO BE
<p>Implementation of sensor network - mobile base stations and to collect data on container transport conditions and selected logistic units during transport</p>	<ul style="list-style-type: none"> <li>Limited access to real-time container location information.</li> <li>Lack of information about the condition of the shipment such as temperature, shock, container opening, humidity.</li> <li>Difficult process to prepare for shipment pickup at the terminal due to lack of complete ETA (Estimated Time of Arrival) information.</li> </ul>	<ul style="list-style-type: none"> <li>Shortening the time of transport thanks to faster reaction at individual stages.</li> <li>Providing information on the status and location of goods on an ongoing basis.</li> <li>Reduction of operational errors due to the lack of detailed information about the delivery.</li> </ul>
<p>ACTIVITY 2 INTEGRATION OF OPERATIONAL DATA IN THE SUPPLY CHAIN</p> <p>Use of EPCIS for event data collection and integration with IT systems of business partners and IoT sources</p>	<ul style="list-style-type: none"> <li>Multiple sources, systems from which shipment and transportation data is collected.</li> <li>Lack of a standardized event database.</li> </ul>	<ul style="list-style-type: none"> <li>Clear records of events affecting the cargo condition (exceeding temperature, humidity, shocks, tampering) and a clear division of responsibilities for damages.</li> <li>Confirmed and documented conditions and risks of rail transport.</li> </ul>
<p>ACTIVITY 3 USE OF EGTN FOR ESTIMATION AND PREDICTION OF SELECTED LOGISTIC KPI'S</p> <p>Use of EGTN for:</p> <ul style="list-style-type: none"> <li>→ Volume Flow forecasting</li> <li>→ Carbon Footprint Prediction</li> <li>→ ETA forecasting</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to schedule activities at the cross-dock terminal due to late information about shipments.</li> <li>The need for precise determination of CO2 emissions at each stage of the transport process.</li> </ul>	<ul style="list-style-type: none"> <li>Possibility of planning further activities after transport (e.g., production) with an accurate Volume Flow and ETA.</li> <li>Ability to monitor CO2 emissions during the entire transport process, for different modes of transport, both rail and road.</li> </ul>

## Use case 2 Optimization of e-commerce flows in global supply chains

### Overview

The second use case will address the **standardization of information flows** and **digitalization of interactions** between actors within the **Polish Post network** and the **monitoring shipments** on the **New Silk Road**, including rail transport, in terms

### Overall activities and 'AS IS' - 'TO BE' comparison

<p><b>ACTIVITY 1</b> <b>INFORMATION FLOW</b> <b>STANDARDIZATION IN SUPPLY</b> <b>CHAINS</b></p> <p>Application of GS1 standards for monitoring e-commerce parcel shipments from China to Poland</p>	<p>Necessity of a uniform and standardized identification of the shipments handled within a common IT system and the exchange of information and electronic documents throughout the supply chain.</p>	<p>chain correctness.</p>