



Case study: Leveraging IoT to maximize efficiency and process stability in Automotive logistics

BOX ID Systems GmbH

Sigfox Poland

Kraków, 2024



BOX ID – Streamlining transport logistics with IoT/SaaS



BOX ID

Founded 2018

Headquartered Munich / Germany

Mission Statement:
Eliminate Waste
in Transport Logistics



Serving 60+ customers
worldwide



85.000+
connected assets



Strong team with
20 FTE

- Solutions for**
- Reusable Transport Packaging
 - Mobile Asset Tracking
 - Process Monitoring

- Industries served:**
- Automotive
 - Machinery
 - Retail/Wholesale
 - Glas/Windows
 - Cargo/Parcel



Worldwide Partner
Network



Strong Investors e.g.
KPN B.V.



**SaaS and IoT
for Supply Chain**



Reusable Transport Packaging (RTP)

Reusable Transport Packaging:

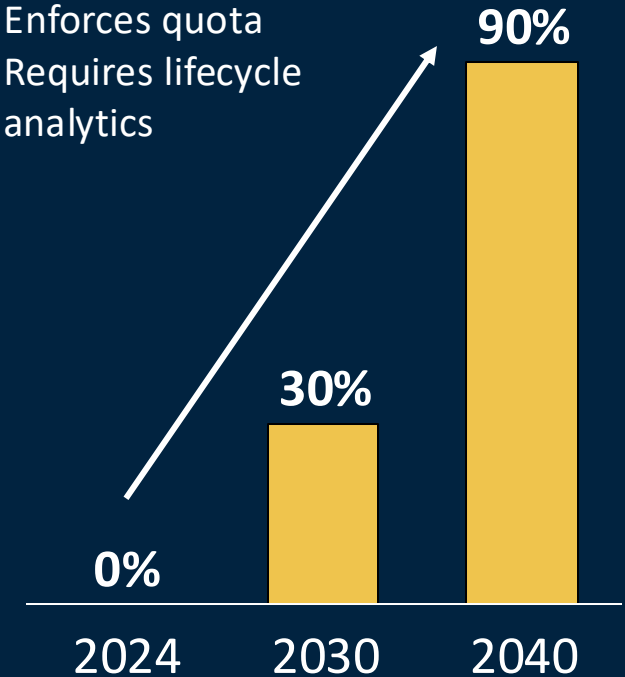
- Is a 107 Billion € worldwide market (in 2023)
- Is focused largely on B2B supply chain
- Is enforced by EU legislation for sustainability



EU Directive 2024

(PPWD 94/62/EC)

- Enforces quota
- Requires lifecycle analytics



Sample fleet values:

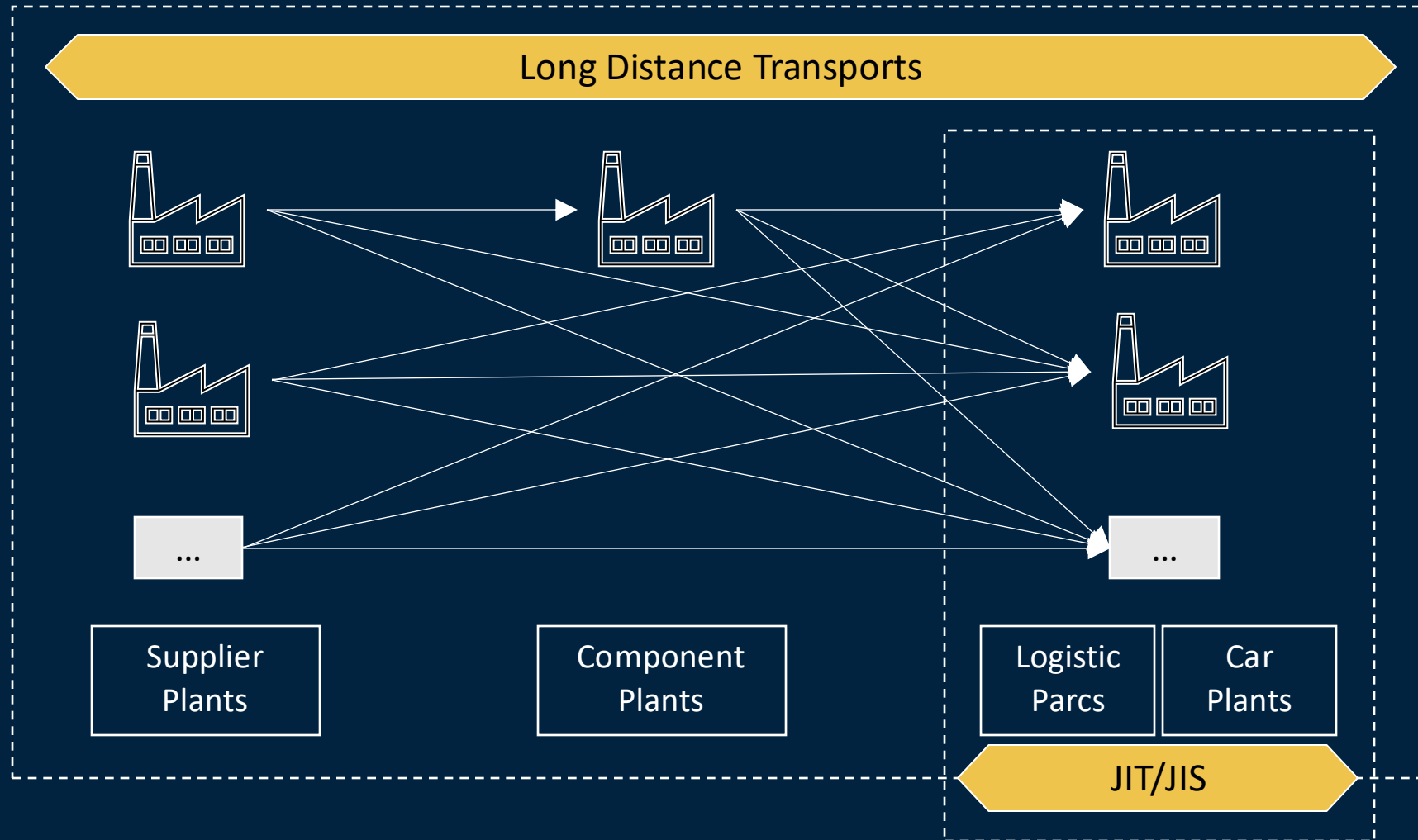
- Carmaker: 750 M€
- Machinery: 50 M€
- Retailer: 15 M€
- Glassmaker: 5 M€



Wasted fleet value per year

- Loss of assets: 3-15%
- Underuse: 8-20%
- Shortages: case specific

Automotive Supply Logistics



Long Distance

Long Distance Transports



JIT/JIS



Problems of the individual load carrier



- Loss or damage due to lack of traceability
- Unplanned downtime due to insufficient location information
- Time lost due to manual searches for unavailable load carriers
- Difficulties in meeting compliance requirements
- Unforeseeable costs due to undetected damage

Lack of traceability and undetected damage
cause costs and downtime

Problems of a load carrier fleets

- Lack of coordination leads to inefficient use
- Difficulty in prioritizing shipments and resources
- Insufficient fleet utilization due to inaccurate information
- Complicated troubleshooting of fleet-wide problems
- High costs due to ineffective route planning and resource allocation

Lack of coordination and inefficient use of the fleet lead to higher costs and delays along the supply chain.

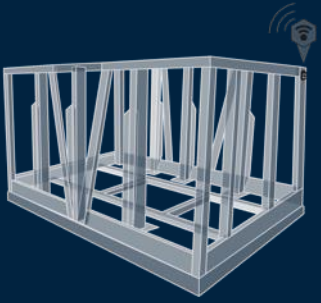


BOX ID an End to End Solution – Involvement of OEM, 3rd Parties, Customers, Distribution services

1 Active Localisation



- ✓ Current location
- ✓ Movements
- ✓ Assignment customer via geofencing



2 SCAN Book entry data



- ✓ Generate booking data: delivery, pickup, customer, order, etc.
- ✓ Native BOX ID Android App
- ✓ Use of existing QR/bar codes

3 ERP Data readout



Shipping documents ERP

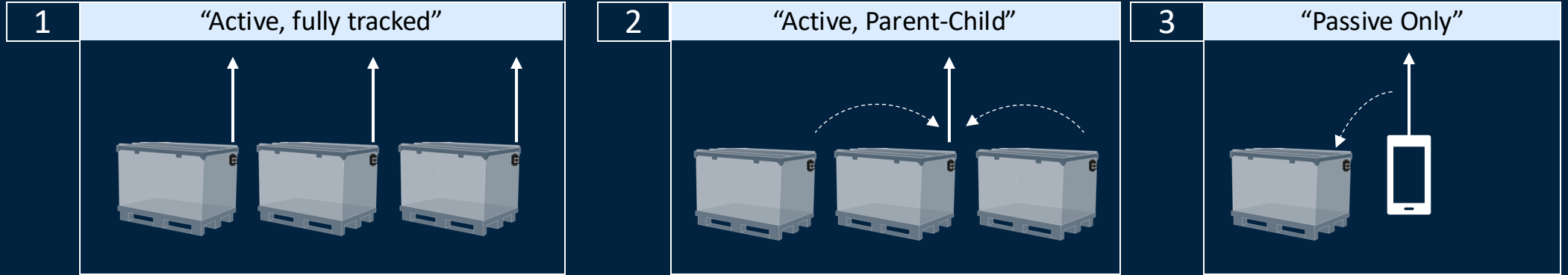
- ✓ Use existing booking data
- ✓ Delivery, Pickup, Customer, Order, etc.

4 Scan Customer



- ✓ Released Notification by customer "Carrier is ready for pickup!"
- ✓ App + special QR code

Connecting fleets of returnable transport items by IoT

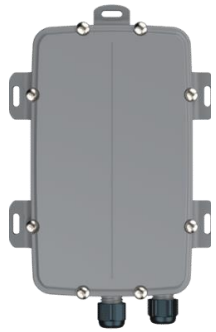


Active Long Range
Active Mid Range
Passive Short Range

Localisation	Network, Wifi, GPS	By Gateway	By Reader Device	
Transmission	Cellular, LPWAN	BLE, SubGhz	QR RFID	
Example Image				
Architecture Examples	1	100%	-	100% opt.
	2	5-10%	90-95%	100% opt.
	3	0%	-	100% opt.

Functional principle – Data acquisition and hardware

Europwide mobile Network, high redundancy



Static Gateway G150
• Ext power supply



Tracker-Gateway
• Lifespan 8+ years.
• In load carriers
• (In vehicles)

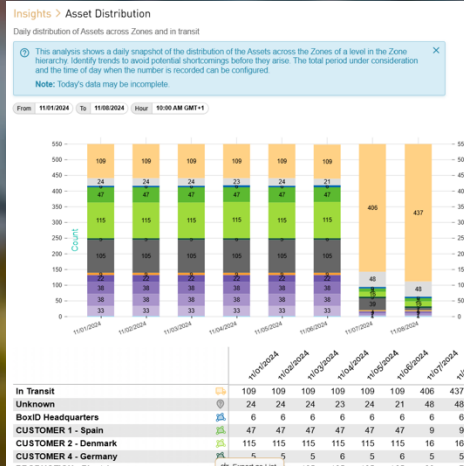
Min Max Assets per Tenant



BLE-tracker Teltonica
• Lifespan 8+ years
• Visibility 80m

One System to gain full control of RTP fleet management and transport logistics improvements

Realtime asset distribution



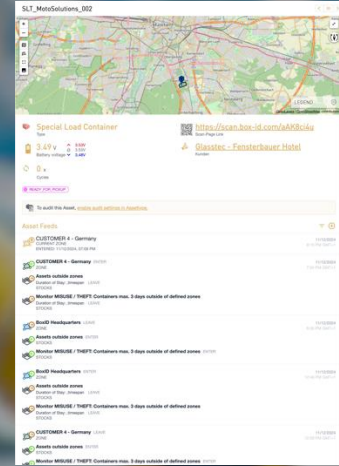
Pareto based dwell times

Insights > Stock Dwell Time
Dwell times of Assets in Stocks

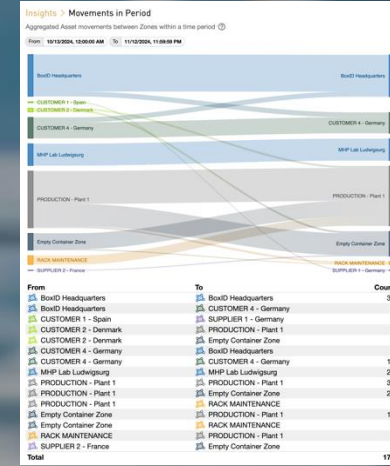
This insight shows the Assets' dwell times in Stocks of both current and completed Stays. Note: Stays that started before the configured start date are not included, even though they might have not been completed yet.

Asset	Asset Type	Stock	Entered	Left	Start Of Overstay	Overstay	Duration
SLT_0196	Roll Cont.	Empty	10/09/2024	11/06/2024	2:09 days	3:00 days	28:09 days
SLT_0195	Roll Cont.	Empty	10/09/2024	11/06/2024	1:55 days	2:55 days	26:55 days
SLT_0194	Roll Cont.	Empty	10/09/2024	11/06/2024	0:05 days	0:05 days	26:05 days
SLT_0001	Large Loo	Empty	10/09/2024	11/06/2024	0:09 days	0:09 days	26:09 days
SLT_0001	Roll Cont.	Empty	10/09/2024	11/06/2024	0:07 days	0:07 days	26:07 days
SLT_0004	Large Loo	Empty	10/09/2024	11/06/2024	0:33 days	0:33 days	26:33 days
SLT_0004	Roll Cont.	Empty	10/09/2024	11/06/2024	0:22 days	0:22 days	26:22 days
SLT_0001	Roll Cont.	Empty	10/09/2024	11/06/2024	0:07 days	0:07 days	26:07 days
SLT_0199	Special Loo	Empty	11/01/2024	11/06/2024	0:01 days	0:01 days	26:01 days
SLT_0198	Special Loo	Empty	10/11/2024	11/06/2024	0:01 days	0:01 days	26:01 days
SLT_0000	Large Loo	Empty	10/09/2024	11/06/2024	-0:01 days	0:01 days	27:36 days
SLT_0002	Roll Cont.	Empty	10/10/2024	11/06/2024	-0:24 days	0:01 days	27:36 days
SLT_0003	Large Loo	Empty	10/10/2024	11/06/2024	-0:32 days	0:01 days	27:67 days
SLT_0002	Roll Cont.	Empty	10/10/2024	11/06/2024	-0:35 days	0:01 days	27:64 days
SLT_0197	Special Loo	Empty	10/10/2024	11/06/2024	-0:47 days	0:01 days	27:52 days
SLT_0199	Special Loo	Empty	10/10/2024	11/06/2024	-0:50 days	0:01 days	27:49 days
SLT_0199	Special Loo	Empty	10/10/2024	11/06/2024	-0:50 days	0:01 days	27:43 days
SLT_0198	Special Loo	Empty	10/10/2024	11/06/2024	-0:50 days	0:01 days	27:41 days
SLT_0198	Special Loo	Empty	10/10/2024	11/06/2024	-0:51 days	0:01 days	27:40 days
SLT_0194	Roll Cont.	Empty	10/10/2024	11/06/2024	-0:07 days	0:01 days	27:52 days

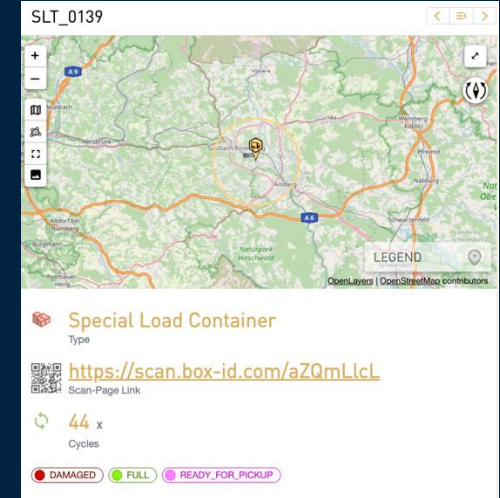
Asset history



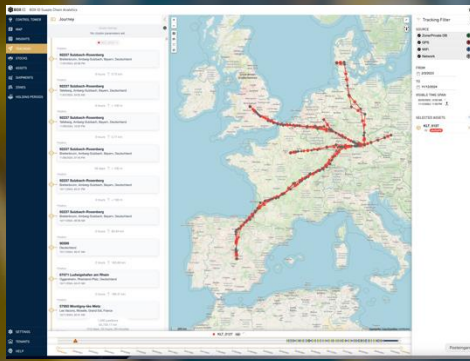
Material Flow control



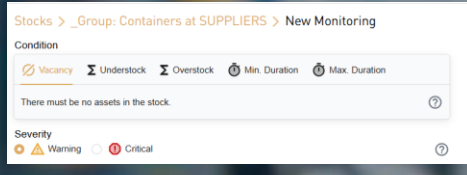
Asset Overview



Asset journey analytics



Asset stocks monitorings



Zones & Subzones control



Individual Control Towers



Scan Page based communications

SCAN-PAGE LINK

<https://scan-box-id.com/aZQmLlcl>

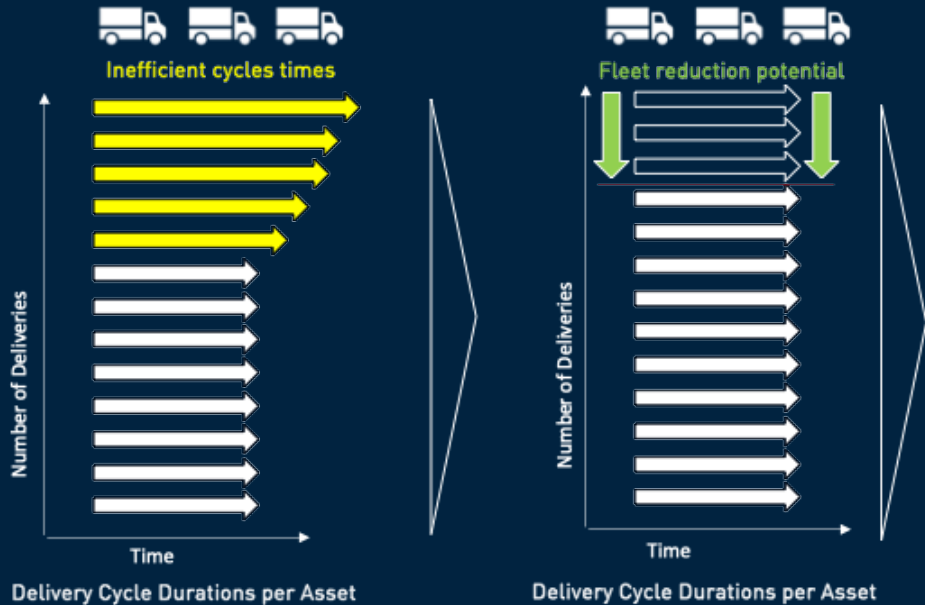
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+ Data Sharing

■ VIDEO
TO BE
ADDED

Benefits

Long Distance Transports



Fleet Reduction Potential



ROI



Hidden annual monetary potential*



JIT/JIS

BOXID RTP Management for Automotive

- Streamlining operations
- Avoiding breaking the sequence
- Frozen stock CAPEX reduction
- Full cycles management and visibility

- Highly scalable solution for large corporates
- Large fleet management capabilities
- High saving potential hidden in cycle durations
- ROI realisation in <1.8 years
- Reduction potential of fleet sizes up to 25% for long distance transports
- Additional transparency benefits in JIT/JIS cycles

*RTP Replacement value 1000€; 4000 RTPs in Fleet;
20% of the Fleet with extended cycles (30 days instead of 10 days);
hidden unoptimized potential of 533k€





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**Thank you
for your attention**