sewio

Budweiser Budvar Brewery
delivered by ICZ

FOOD/BEVERAGES

The project to replace the costly and limiting RFID-powered solution took seven months to complete, while the actual installation took less than one month.

+19%

better system uptime compared to RFID

A Consistent Taste of Beer Requires a Single Production Place, yet Covering 76 Countries

Although the brewery brewed its first batch in 1895, it has been following the 13th century historical tradition of brewing in the town of České Budějovice (Budweis). And the current brand builds on that tradition. Unlike other breweries, Budvar **doesn't allow their beer to be brewed in other facilities around the world under license** in order to keep the quality and the taste of the product which is highly affected by the characteristics of the water coming from artesian aquifers located within the historical brewery. This makes Budweiser strong in its heritage and unique on its market, but at the same time it is also challenging to operate in **76 countries** – from the US to Japan – from only a single place of production and warehousing.

Ten different kinds of beer in production multiplied by the dozens of languages used on the labels makes 360 combinations of products being distributed. At the same time, there are over **20,000 pallets of two sizes within the warehouse**. Every day, the beer is shipped by more than 50 beer lorries.

6 Reasons to Replace an RFID Location System with UWB RTLS

Budweiser Brewery was already using a **passive RFID** solution to minimize human error while operating thousands pallets with hundreds varieties of beers by its type and label. Each forklift had been equipped with an RFID antenna at its chassis and RFID tags were located at each of the tracked pallet positions. While the initial costs of the RFID solution were favorable and the aims to minimize errors were met, there were many aspects that led Budweiser to replace the technology with **UWB powered Sewio RTLS**, namely:

1. **High maintenance** costs of the previous RFID powered system as the antennas got easily desynchronized or even damaged. Not only if the tire pressure suddenly got lower but also simply when the tire got worn out, it lowered the vehicle and the antenna got de-calibrated, desynchronized or even physically damaged. It was not just the cost of a new antenna, but also the service hours and the implicit costs when the forklift was out of operation while waiting for the antenna to be replaced that added to the overall maintenance costs.

2. To correctly read the tag using RFID, forklifts had to slow down when approaching/running over the tags, which translated into a **longer time needed to finish** the job operation.

3. The old system provided only information about the presence of the goods and only at the tracked positions but didn't provide the actual movement – **the true location**.

4. If Budweiser wanted to add an additional room or building to the monitoring, they needed to drill additional tags for each of the tracked positions. To cover each pallets' position, they needed to use 10 tags. Finally, if they wanted to update the pallet positions in the future, they needed to remove the tags and drill them again into their new positions. All of this made **RFID unscalable** and obsolete.

5. Logistic managers wanted to leverage **spaghetti diagrams, heatmaps and metrics such as daily attendance, distance traveled, speed and the OEE** of the forklift fleet that could not be provided by RFID.

Even after the replacement of the technology, the main aim remained the same – to minimize human errors when manipulating with the massive number of products and their variations. Using Sewio's ultra-wideband-powered **real-time location system** the maintenance costs will be minimized, while accuracy and reliability will be increased. Budweiser will be able to easily scale the technology within the whole area. Finally, the project should open the door to further innovation, providing managers with the needed metrics and insights to increase the operational efficiency.

![Sewio logo]

Challenges

Integrating Multiple Systems into a Single Solution

ICZ, the longtime proven partner of Budweiser, was tasked with the **integration of multiple systems**, including Osiris WMS, Sewio RTLS, ERP Aurora 3.0, DCIx by Aimtec, Material Flow Control System by SSI Schäfer, cameras for loading lorries, Wi-Fi operating trolleys and terminals and others into a single system. Such an integration required a deep knowledge of each part of the system, hands-on experience in the field and a good knowledge of the client's processes.

Solution

Indoor Forklift Tracking

The project to replace the costly and limiting RFID-powered solution took seven months to complete, while the actual installation took less than one month. To cover the overall **15,000 m², 70 receivers** (=anchors) were needed. **15 forklifts** have been equipped with UWB tags powered by the vehicle terminal, therefore, not needing to recharge. The movement has been tracked **at a 100-millisecond frequency**. The system is now tracking in a real time more than **20,000 of pallets** of two types.

The integration of **Sewio RTLS and OSIRIS WMS** allows checking whether the forklift operator is picking up the correct pallet with the appropriate load. Then, the same check is done while unloading to notify the operator if they are at wrong the position, and direct them to the right spot.

"It was our pleasure to replace the RFID technology with Sewio RTLS. The smooth cooperation on this project with Sewio and the ease of integrating Sewio into our OSIRIS WMS make it an enjoyable and successful project. Given the smooth operation even in harsh and complicated production and warehouse facilities, Sewio become our first choice when it comes to indoor positioning system for asset tracking."

Josef Černý
Head of Logistics Operations at
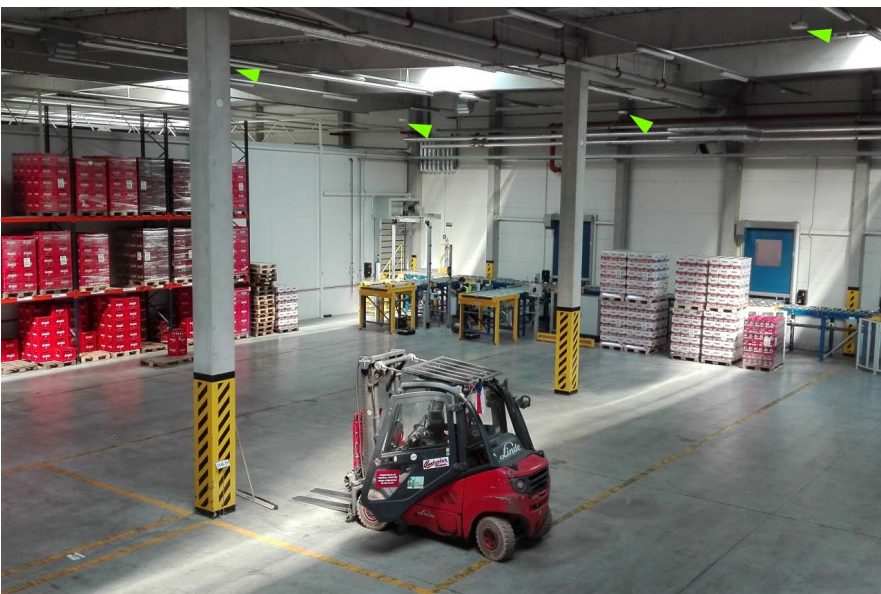ICZ a.s.

Solution Numbers:

15,000 m²
area covered

70
receivers

15
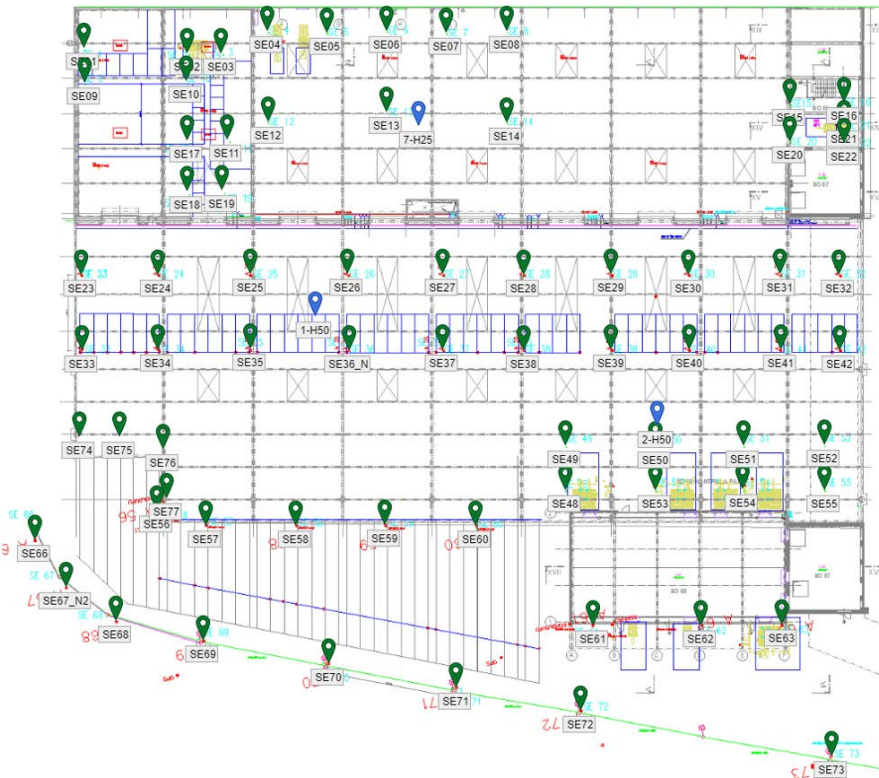tracked objects

30 cm
accuracy

Tag placement on the forklift.

Anchors placement.

Overview of the installation of anchors indoor.

Results

Maintenance Reduction and Improved Scalability

The main aim of replacing the maintenance-cost-heavy RFID solution with UWB RTLS and bringing a **significant reduction in total cost of ownership** was met. Also the **system uptime went up by 19%** (from 80% uptime using RFID to 99% uptime using Sewio's UWB powered RTLS).

On top of this, logistics managers got metrics such as **daily attendance, distance traveled and utilization of each forklift**. To increase the efficiency of the fleet and better utilization of the space, they are also taking advantage of the newly acquired **spaghetti diagrams and heatmaps** to visualize the flow and reveal the traffic density, the actual path for each machine at a given time, where the machines drive (and shouldn't) and where and at what time the biggest bottlenecks happen.

Sewio's UWB RTLS also enabled Budvar for **19% increase of warehouse utilization** and its indoor tracking has **become an inseparable part of the plans for the development of a new warehouse** to meet the increased demand for unique beer and its taste as a true product of heritage.

Sewio accompanied other modern technologies at Budweiser, which contributed to the award for the Best Logistic Project of 2018 granted by the Czech Logistics Association.

"While the initial costs for RFID versus UWB are almost identical, UWB undoubtedly outperforms RFID thanks to lower maintenance costs, lower risk of damage and higher accessibility of the system."

Pavel Pánek
Head of Logistics at Budweiser Budvar

Results in Numbers:

+19%
better system uptime
compared to RFID
(UWB: 99% versus RFID: 80%)

19%
increase of warehouse
utilization

7 months
deployment time

sewio

Key Factors for Choosing Sewio RTLS

- The ability to **easily set an unlimited number of virtual zones** that can be updated on a single click anytime in the future to adapt on updates of logistic processes

- **The 30 cm accuracy** which allows full flexibility and variability of virtual zones without any changes into infrastructure

- **Continuous Track and Trace** – unlike RFID and other technologies providing only presence detection

- Unlike RFID and Bluetooth, Sewio's UWB-based technology works with **higher precision**

- **99% system uptime** compared to previously used RFID system with 80% uptime

- The ability to **scale the system easily and quickly** to track more objects and expand the system to more halls

- **Low maintenance** comparing to previous RFID based system

- **Support by a Sewio expert** at the facility

- A 24/7 up-and-running service

- Short time for deployment (seven months)

Tracking forklifts using Sewio RTLS.
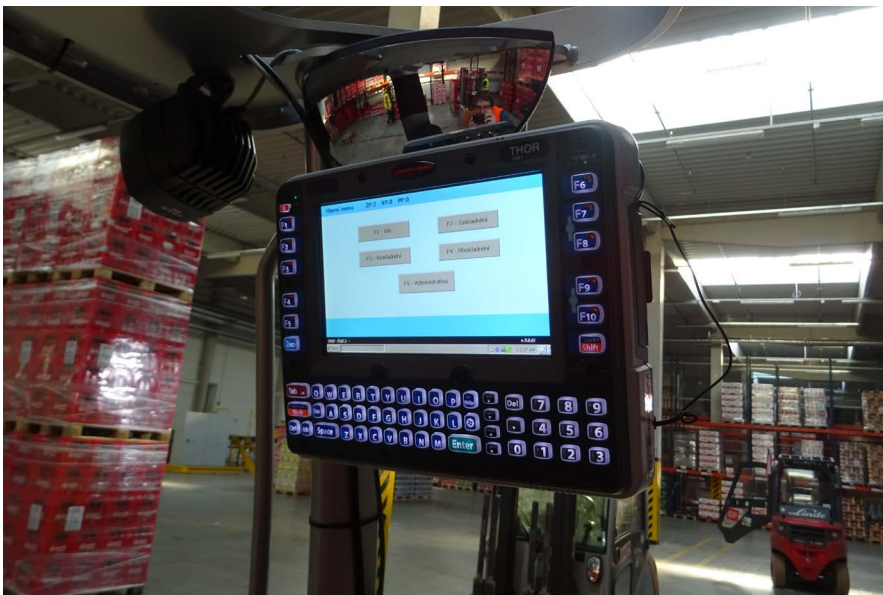
The terminal at each forklift displaying the instructions.

Partner

The ICZ Group is an important IT provider and system integrator that offers a wide range of services reaching from consultancy, through the supply of information systems, to the complete acceptance of networks under its administration.

The supply of the ICZ Group covers the areas of application software, safety, and infrastructures, mainly for the sectors of public administration, healthcare, defence, transportation, finances, production, logistics, and telecommunications.

Besides the Czech Republic and the Slovak Republic, the ICZ group also operates in other countries.

ICZ Prague
Na hřebenech II 1718/10
140 00 Prague
Czech Republic
https://www.iczgroup.com/en/

Sewio Networks s.r.o.

Sewio Networks is a manufacturer of a **real-time location system (RTLS)** for indoor tracking that drives business results for companies in the intralogistics, retail, sport, entertainment and livestock industries. Sewio system is built on **ultra-wide band technology (UWB)** and delivered with RTLS Studio, remote management and visualization software.

It gives partners and customers a precise, easy-to-integrate, reliable and fully scalable IoT solution for indoor tracking that allows process visibility, boosts production efficiency, simplifies the inventory process and increases safety. Founded in 2014, Sewio is headquartered in the Czech Republic with offices in Germany and France. Sewio has 70+ system integration partners and powers customers in 37 countries. Customers include: Volkswagen, Budvar, Pirelli, Matador, TPCA, Škoda.

JIC INMEC, Purkynova 649/127
612 00 Brno
Czech Republic
https://www.sewio.net/