



SEG Automotive
delivered by IBCS Hungary

AUTOMOTIVE

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50%

shorter lead time
(from 6 hours to 3)

Innovation That Reduces Emissions Across All Powertrain Technologies

SEG Automotive is closely linked to the history of the automobile. Emerged from the **BOSCH Starter Motors & Generators** division in January 2018, the company stands for more than a century of innovations in its product sector: from the invention of the starter motor and generator to Start/Stop and mild-hybridization. SEG Automotive makes a significant contribution to climate protection by **reducing emissions** across powertrain technologies: Fueled by its passion for innovation, the global supplier is driving the transition towards more efficient combustion engines, 48V hybrids and electrification.

Almost all automotive OEMs worldwide rely on SEG Automotive's global production network, which delivers high-performance, durable and competitive products with uniform quality standards. This global strength has its foundation in a cross-cultural team of over **8,000 employees** in **14 countries** in the world's most important automotive markets.



Gates where the material is booked out.

Streamlining the Booking Process

At SEG Automotive, the warehousing and production are in two separate buildings with a 10-minute-truck-drive time between them. Production orders the material from the warehouse in just-in-time mode. The milk-run operator gets the order from SAP and then picks up the requested assets in the warehouse and carries them to the gates, where they get loaded onto the truck.

To make sure that production gets the right assets, at their right amount, in the right sequence, and at the right time, each batch of assets gets booked out at the gate while leaving the warehouse and booked in at the gates at the side of production. This booking process is **manual, prone to errors and manpower costly**. The booking data is also processed with a **time delay** because it is not recorded immediately when the assets reach the gate.

The main aim of the project was to replace the manual process with **an automated, errorless and fully digital, real-time asset booking and tracking system with the following aims:**

- To limit the cases when some assets have not been booked out despite already having left the warehouse and vice-versa, as these were extending the lead time and making the just-in-time process flawed
- To **reduce or delegate manpower** to another workload away from the current routine and error-prone booking process
- To free the logistic managers **from these replenishment loops** by limiting errors
- To enable the **asset tracking** to make the processes **fully visible and transparent** for all company stakeholders

Challenges

The Battle for Accuracy - UWB RTLS versus RFID

The key feature of the indoor-tracking system was its **accuracy** as the tracked gates are closely positioned next to each other requiring a precision of 30 cm to properly detect the position at the correct gate. Two indoor tracking technologies had been considered – Sewio UWB-powered RTLS and active RFID. Based on the previous IBCS project using active RFID, the solution met only **a 95% correctness of booking signals** as the RFID readers got easily recalibrated by the vibration of machinery or a forklift, or even if they were knocked. Therefore, the reader had to be recalibrated, which took two working days, resulting in additional maintenance costs and the gate tracking system being out of order during that time. Finally, the accuracy of RFID was unsatisfactory as it was causing the wrong identification of material between gates that were close to each other.

Sewio UWB-powered RTLS was tested over three weeks as a proof-of-concept for this use case. Due to the nature of the UWB technology and TDoA methodology powering Sewio, its RTLS solution recorded and reported all – **100% – bookings correctly** and made the system the clear winner for the implementation.

The main challenge for IBCS was to ensure the flawless cooperation between SAP, Voice Picking, the printing solution and Sewio RTLS. To ensure this, IBCS had to install a robust wireless communication system to make data transmission available at any point of the facility and also create a software interface to convert data into the appropriate format for each part of the system.

“We have successfully installed SEWIO’s RTLS locationing system as part of a complex solution for the in-house logistics system of SEG Automotive. It was a challenging project, the first cooperation between Sewio and IBCS Hungary, and we have received all the technical support needed to overcome the difficulties our client was facing. Our goal is to complete more successful implementations with Sewio’s RTLS system as it can deliver a great solution to our customers and it is always a pleasure to work with their team.”



Laszlo Pinter

System Engineer at IBCS Hungary

Solution

Full Tracking of Indoor Logistics Processes

To cover the area for full track and trace and process visibility, **40 anchors** have been implemented to the ceilings and **600 galvanized stacking pallets** have been equipped with the Sewio tags.

Unlike the RFID with a passive tag, the active tag used in the RTLS system allowed it not only to be possible see the actual presence of the asset but its **full tracking**, including the trajectory, and both its real-time and historical data.

To ensure 100% accuracy for tracking the asset movement through the gates the speed/velocity of the moving tracked objects needed to be considered as well.

As the tags are not powered by the milk run's battery, the **optimal balance** between the refresh rate and battery life had to be found. This led to the usage of a higher capacity coin battery with guaranteed 1.5-year lifetime at a 0.5-second refresh rate.

Sewio RTLS was integrated by IBCS with both the installation and customization of the Voice Picking and mobile printing solutions and also the heavy reconfiguration of the existing WLAN. With many years of experience in these fields, IBCS engineers were able to significantly reduce the time necessary for the implementation.

Solution Numbers:

2,000 m²

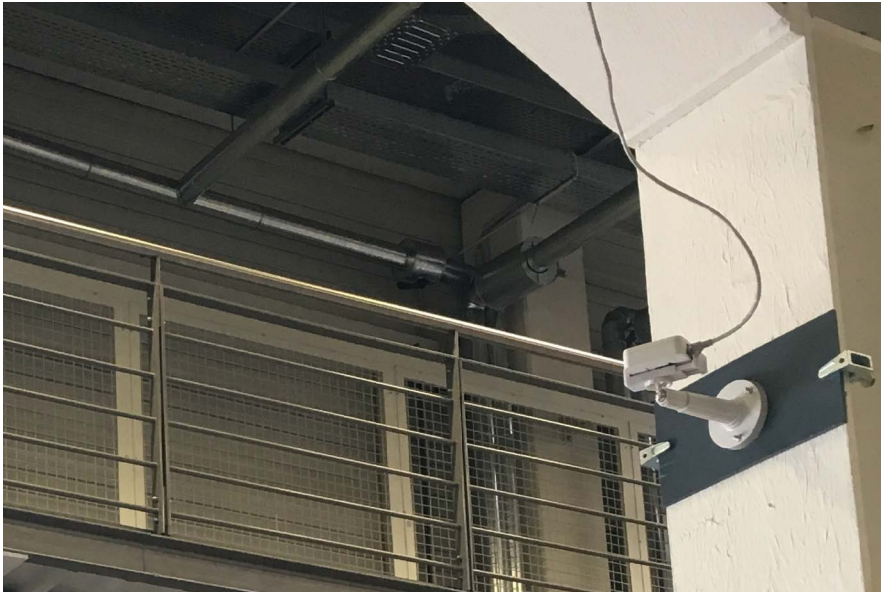
area covered

40

receivers

600

tracked objects



Anchors placement above the gates.

Results

15% Employees Saved for Less Routine Work

The implemented Sewio RTLS integrated perfectly with the current WMS **automated booking in/out process**, allowing the dedication of **15% of employees** over three shifts from the routine operational task to other work. The previously created errors of false and forgotten bookings **were eliminated**, streamlining the overall process. The delayed data was replaced with **real-time insights** moving the just-in-time methodology towards just-in-real-time. Both the eliminated errors and delays in reporting led to **shortening the lead time by 50%, from six to three hours**.

Although it is not certain who was first to say this: “If you can’t measure it, you can’t improve it”, it doesn’t lower the validity of the quote. To allow the **continuous improvement (Kaizen)** of the processes, logistics and supply chain managers obtained **full visibility and transparency** of the asset flow.

“Implementing RTLS turns out to be a great project and a real teamwork of all three parties – us, IBCS and Sewio. As it was a new field of application of indoor tracking, we have faced few challenges including the need of gaining the trust of our colleagues as RTLS is a cutting-edge technology. We’ve made a good choice with both, IBCS and Sewio, and we have invested into reliable and future proof solution.”



Istvan Kovacs

Logistics Manager at Starters
E-Components Generators
Automotive Hungary Kft.

The future plans not only include expanding Sewio RTLS into other halls and facilities of SEG Automotive, including the production hall, but also to cover additional use cases such as real-time route modification, root optimization, congestion avoidance, improved safety using the speed limit check, improving Pick by Voice by Pick by Position and the overall improvement of production efficiency through **digital twin technology** by leveraging the **real-time data provided by Sewio RTLS**.

Results in Numbers:

50%

shorter lead time
(from 6 hours to 3)

15%

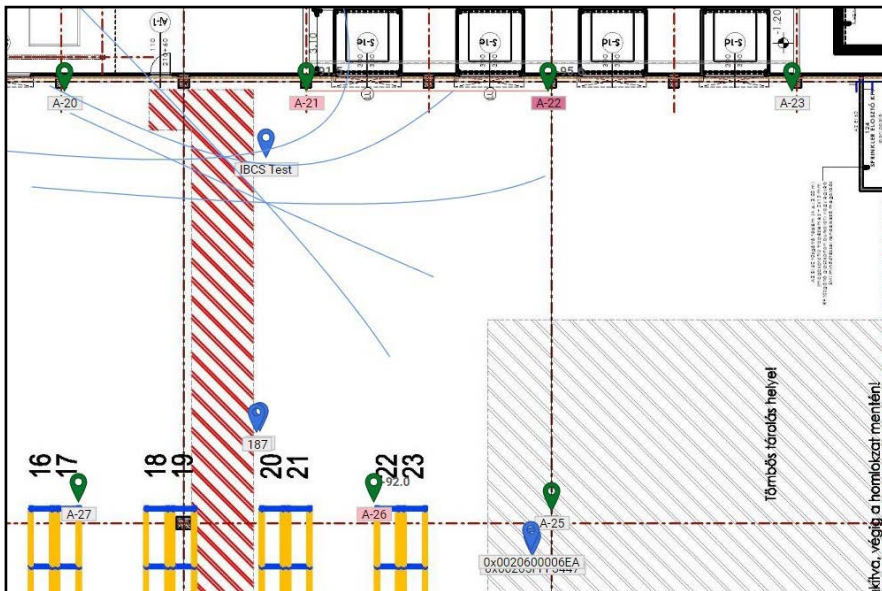
employees saved
for less routine work

99,9%

reliability versus 95% when
comparing RTLS to RFID

4 months

implementation time



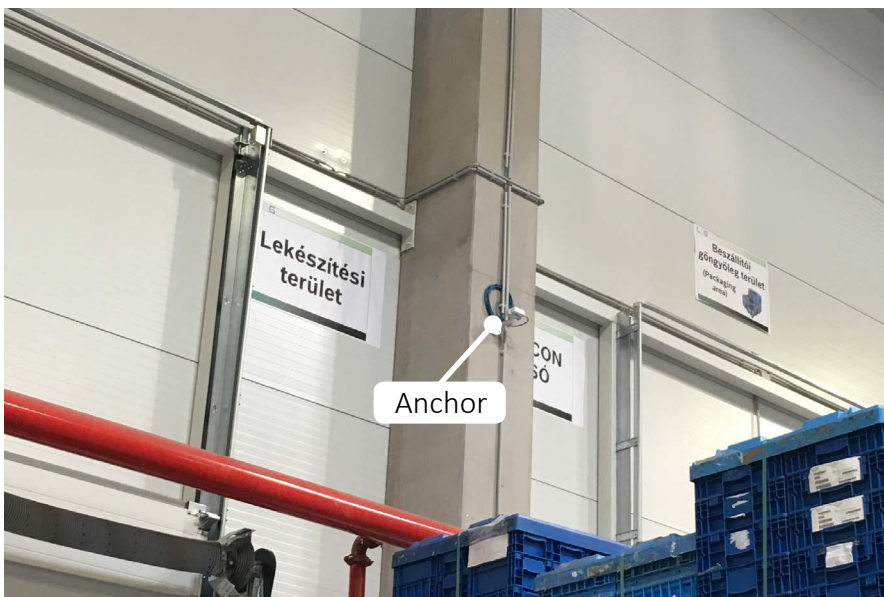
Overview of the installation of anchors within the facility.

Key Factors for Choosing Sewio RTLS

- **30 cm accuracy** which allows the full flexibility and variability of virtual zones without any changes of infrastructure
- The guaranteed **long battery life** of 1.5 years, even with the short refresh rate needed for tracking movement, decreases the total cost of ownership
- The ability to easily set **an unlimited number of virtual zones** that can be updated with a single click at any time in the future to adapt to the updates of processes
- **Continuous track and trace** – unlike RFID and other technologies that provide only presence detection
- **Low maintenance and higher reliability** compared to RFID-powered systems
- The ability to **scale the system easily and quickly** to track more objects and expand the system to more halls
- Unlike RFID and Bluetooth, Sewio's UWB-based technology works with higher precision and can work **in harsh metallic and variable environments**



Tag placement on the galvanized stacking pallet.



Anchor placement above the gates.

Partner



IBCS Hungary is part of the IBCS Group the premier Enterprise Mobility Systems Integrator in the emerging markets of Eastern Europe, providing **end-to-end barcode, UWB and RFID solutions** that increase performance, efficiency and productivity within the enterprise, reduce costs and realize competitive advantage.

Founded in 1992 and based in Budapest, IBCS Hungary is the trusted strategic partner for customers seeking seamless communication across different technologies, by challenging the marketplace and going the extra mile, to ensure the delivery of technology solutions that work the first time.

Our customers operate in sectors like retail, transport and logistics, warehousing, manufacturing and healthcare and we support them with the most innovative tools in the field of voice picking, barcode technologies, warehouse management systems, and software development for quick and accurate inventory. Our commitment is Relentless Innovation.

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Manufacturer

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.

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