Sensoneo announces WatchDog – The ultimate service monitoring device for waste collection vehicles.

Sensoneo, **a global provider of smart waste management solutions, has introduced its new innovative solution designed to ease the digitalization of the waste collection industry, drive efficiency, and support the introduction of easy-to-run PAYT models - one of the key tools motivating citizens to produce less waste and sort it properly. The WatchDog solution enables haulers to automatically track and record all actions made during the waste collection process without the need for any manual handling. Over the past few months, the solution has been successfully tested in operation at customer locations in two different climate zones and is now ready to be deployed anywhere in the world.**

Motivation for the development of WatchDog

Waste collection is one of the most critical services that cities provide every single day. The increasing volumes of waste, growing urbanism, and climate change concern drive cities to deploy new **innovative ways to manage this high-priority service**. The lack of efficiency and accurate data are the most common challenges, and the deployment of **„Pay-as-you-throw" models** seems to be one of the most promising solutions. It introduces the principle of justice and incentivizes citizens to reduce waste by being charged based on how much waste they generate.

The common obstacles of the incentive programs are **operational complexity, high related costs, and the accuracy of data**. The current available tools typically combine different types of handheld readers and manual recording which negatively affect the duration and logistics of the waste collection process. In addition, the data gathered are also subject to human error.

„Our goal was to develop a tool that removes these obstacles and, at the same time, combine several modules into one - fleet management, vehicle tracking, and automatic service verification. In principle, we wanted to enable customers to automatically obtain accurate and reliable data on all activities during waste collection - regardless of whether they collect bags or dump containers or what kind of vehicle they use," Martin Basila, CEO of Sensoneo.

What is Sensoneo's WatchDog?

WatchDog is the service monitoring solution that enables customers to automatically track and record all actions made during the waste collection process. Using WatchDog, customers can **identify bins and bags authorized for waste collection, verify pick-up, update bin inventory, identify fraud, and accurately record all the routes made - and have it all done automatically.**

The solution consists of a **main unit**, which is placed on top of the vehicle, **four adjustable ultra-high frequency short-and-long-range RFID antennas**, and **RFID tags or stickers** that are placed on waste bins or bags. WatchDog offers a wide range of communication interfaces that provide unlimited scalability and the ability to easily connect multiple devices.

What makes the solution revolutionary?

1. **ALL-IN-ONE**
   Instead of combining multiple devices and systems for fleet management, truck tracking and service verification, WatchDog includes everything in a single device using highly innovative technologies to maximize data accuracy, ensure correct GPS tracking, and to guarantee secure data backup.

2. **VERSATILITY**
   WatchDog can be installed in any type of vehicle, not just standard waste collection trucks, and the installation takes, on average, about one hour. By adjusting the position of the antennas, customers can set the range in which they wish to identify the authorized bins/bags and verify the collection service, so the solution can be customized to meet their specific criteria.

3. **ACCURACY**
   The Multi-satellite GNSS system (GPS, QZSS, GLONASS, Galileo, BeiDou) and Three Dimensional Automotive Dead Reckoning (3D ADR) technology ensure that WatchDog always tracks the correct vehicle position, even when driving through high-rise building areas or tunnels. WatchDog guarantees GPS accuracy to 2,5 meters CEP. According to test operations, GPS accuracy varies between 1-2 meters.

4. **AUTOMATION**
   Service verification is fully automatic, so customers can 100% rely on the accuracy of the data and the crew does not need to bother with manual handling, which often complicates, prolongs, and increases the cost of the collection process.

5. **RELIABILITY AND RESILIENCE**
   The Uninterruptible power supply ensures the data are safely stored; even in the case of a sudden break down of the vehicle. Watchdog is resistant to extreme temperatures and weather conditions, and it can easily handle high-humidity locations.

Opportunities for both cities and waste collection companies

Haulers are given the opportunity to **digitalize the waste collection process** and to **make their operations more transparent and efficient**. The easy identification of unauthorized bins and automatic inventory updates allow them to **stop collecting unpaid trash and prevent fraud**.

„*We believe that the possibility to use a single device to manage the fleet, track the trucks, and verify the service, is a great advantage for haulers. We paid great attention to the choice of technologies to ensure maximum data accuracy and provide an enterprise-grade solution that is easy to deploy, flexible, and offers easy scalability. We hope that the automatic service verification will also support the haulers concerning the increasing demand for PAYT models*," added Martin Basila, CEO of Sensoneo.

Cities and municipalities can benefit from **easy to run Pay-as-you-throw (PAYT) models**, powered by the automatic service verification. PAYT models are available for curb side collection of both bins and bags.

Complementary with the Sensoneo portfolio

The WatchDog device perfectly complements other tools from the Sensoneo portfolio – in-house developed sensors that provide **remote monitoring of containers** and facilitate **dynamic waste collection**; a **Route Planning** tool to automate generation of **optimal collection routes**; a **Navigation app** for specific needs of waste collection vehicles; and **Collection Efficiency Analysis** that **evaluates the actual efficiency of the operations**, identifies weak points, and suggests improvements. All combined, customers are provided with the world's most innovative and comprehensive smart waste management technology, which is ready to bring out the best of waste digitalization for their business.

About Sensoneo

Sensoneo is an enterprise-grade smart waste management solutions provider that enables cities and businesses to manage their waste efficiently, lower their environmental footprint and improve the quality of services.

Through its unique smart waste management technology, Sensoneo is redefining the way waste is managed. The solution combines in-house produced Smart Sensors that monitor waste in real-time with advanced tracking equipment and sophisticated software providing cities and businesses with digital transformation, automation of critical daily operations and data-driven decision making

capabilities; which results in transparent waste streams, the optimization of waste collection routes, frequencies, and vehicle loads, and the ability to easily introduce incentive programs encouraging less waste production.

Sensoneo smart waste management has attracted interest from cities and businesses around the world and the solution has been installed in numerous locations across Europe, North America, South America, The Middle East, Australia, and New Zealand. For more information about how Sensoneo can help you manage your waste smarter, please visit www.sensoneo.com.

Sensoneo is [one of the companies which won EIC Accelerator grant](#) that enhances development and scaling of projects supporting the goals of the European Green Deal. The company is a proud member of international organization Proptech for Good, Proptech Slovakia, and Circular Slovakia