



CUSTOMER CASE

# HOW MOBILE IOT IS TAKING SONY'S SMART TRACKING TO THE NEXT LEVEL



Connecting things. It's all about people.

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## CONTENTS

SUMMARY	3
BACKGROUND	3
VISILION FROM SONY	3
THE OPPORTUNITY	4
CONNECTED TRACKERS GIVE VISIBILITY	4
THE LOGISTICS SOLUTION	4
THE HEALTHCARE SOLUTION	5
VISILION IN ACTION – FROM TRACKING PARTS ON THE SILK ROAD TO VENTILATORS IN TIME-PRESSURED HOSPITALS	6
CUSTOMER BENEFITS	7
LEARNINGS FROM INSTALLING VISIBILITY	8
FUTURE OUTLOOK	8
ABOUT VISILION	8
FURTHER INFORMATION	9

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## SUMMARY

Visilion, an innovative service from Sony, is leading the way in asset tracking devices with LTE-M connectivity. This new technology enables long battery lifetime and superior global coverage and is the perfect solution for companies that rely on real-time data to keep track of vital equipment and cargo.

## BACKGROUND

The Visilion asset tracking and supply chain visibility solution was created by Sony Network Communications Europe, bringing IoT-based innovation to the logistics and healthcare sectors. With the number of connected devices expected to rise from hundreds of millions to billions over the next few years, smart tracking is becoming a clear expectation for asset owners and companies transporting high-value goods.

In logistics, a new value chain is being constructed around the ability to accurately track not only the location of goods but also their condition, with sensors collecting information on temperature,

shock and tilt as required. Powered by worldwide connectivity, highly granular information is being brought together with advanced data processing and sharing capabilities.

As traditional supply chains struggle to address the challenges of the COVID-19 pandemic, access to real-time data is more vital than ever. Timely tracking is set to become an essential ingredient of future supply chains, enabling greater precision and an optimal combination of just-in-time and just-in-case methodologies – as well as the productivity enhancements that the post-pandemic world will demand.

## VISILION FROM SONY

Sony Network Communications Europe (SNCE) both contributes to and draws on the strengths of the whole Sony Group. Sony with valuable experience of the mobile industry has substantial research and development resources – and is based nearby in Lund – and actively participates in the standardization of cellular IoT within 3GPP.

SNCE spearheads new product and service development within network communication services – to drive enterprise value for business customers worldwide.

The development team at Sony studied several verticals and based on the results the Visilion platform developed. The resulting platform enables two different solutions – outdoor tracking for the logistics sector and indoor tracking for the healthcare sector.

## THE OPPORTUNITY

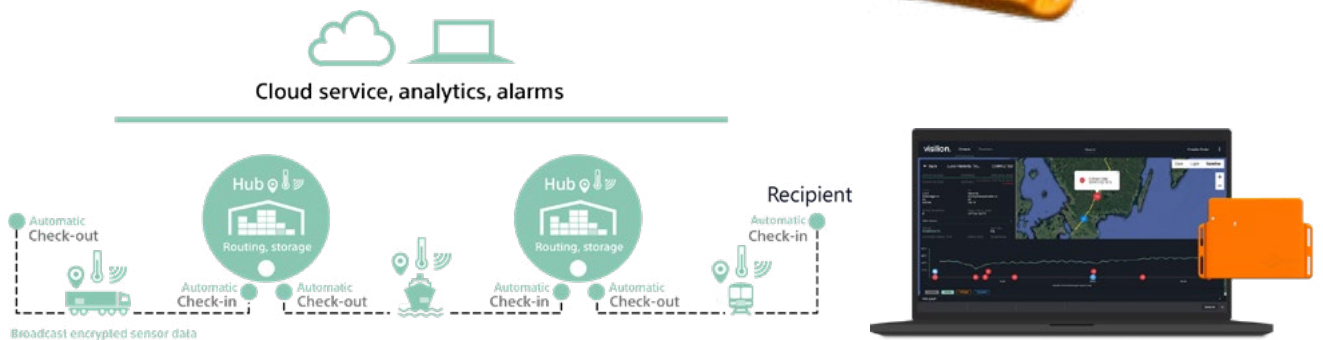
In recent years, tracking has been heavily hyped, leading to a relatively crowded marketplace with multiple suppliers offering a variety of different business models. Now tracking solutions are gaining traction in the real world and being adopted by businesses everywhere.

The COVID-19 pandemic has accelerated this process by focusing attention on the need for agility in the

supply chain and by highlighting the importance of being able to locate cargo in real time. It's no longer an option to move critical goods around in the supply chain without having clear visibility into where they are. Visilion not only enables this visibility but also enables companies to understand and take action based on the data received from their devices.

## CONNECTED TRACKERS GIVE VISIBILITY

At the heart of Visilion's offering are physical trackers that customers can affix to medical equipment or shipping crates. The trackers have a slim form factor, not just for aesthetic reasons but so they can be attached to equipment easily, or even slid into the document package which usually accompanies a cargo crate.



## THE LOGISTICS SOLUTION

The Visilion solution for logistics includes a web portal with intuitive user interface. Users can follow their shipments on a digital map and respond to alarms and calls to action. They can also utilise the system's reporting and analytics capabilities to identify bottlenecks in the supply chain.

Based on its long experience, the Visilion development team has an in-depth understanding of consumer user interfaces and can contextualise data in a way that makes it easy to understand. Added to this is the team's knowledge of where and how to utilise the data between the device and the cloud to keep energy consumption to a minimum.

### VISION EMPOWERS LOGISTICS USERS TO:

- Get control over your supply chain
- Keep deliveries flowing smoothly
- Reduce costs by e.g. optimising transit times, inventory and ETAs
- Minimise theft and losses with e.g. alerts for route deviations, shock detection
- Strengthen communication and trust with customers
- Meet internal governance and external supply chain requirements



Visilion insights tracking goods along a logistics route

## THE HEALTHCARE SOLUTION

The Vision solution for healthcare is a complete real-time location system (RTLS) consisting of tags, observers, software, a cloud backend and an app – accessible on tablets, computers and smartphones.

The tags are attached to equipment, and Wi-Fi based devices ('observers') are installed at key locations in the hospital. The position of the tagged equipment is picked up by the observers and displayed on digital maps so hospital staff can easily find what they need. The hospital's on-site Wi-Fi network is used for access to the service, while tags and observers communicate via BLE (Bluetooth Low Energy).

Vision improves patient care by helping to avoid delays or errors, and it also reduces the frustrations experienced by staff. Even more importantly, hospital managers can extract aggregated usage data from the system to verify workflow assumptions, improve productivity and inform purchase decisions. Vision is not just an RTLS; it's a strategic tool.



### VISION EMPOWERS HEALTHCARE USERS TO:

- Locate shared equipment quickly and easily
- Use data to verify workflow assumptions, increase productivity
- Reduce patient waiting times and strengthen focus on care
- Make data driven investment decisions

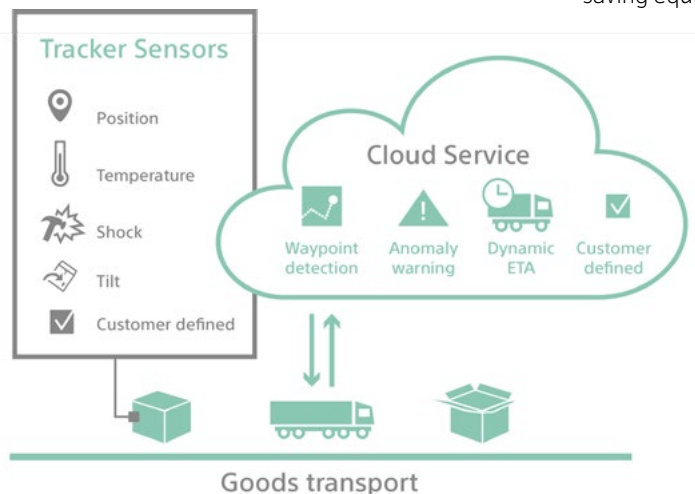


# VISION IN ACTION – FROM TRACKING PARTS ON THE SILK ROAD TO VENTILATORS IN TIME-PRESSURED HOSPITALS

Although it's early days for Visilion, the team has already engaged with customers to enable transport capabilities from the start to the end of the journey that can combine a rail and ocean, multimodal transport set-up. One specific initiative supports the global packaging and processing giant, Tetra Pak, in the critical task of delivering spare parts. As a supplier of equipment and packaging material to the global food and beverage industry, Tetra Pak's business involves both complex needs and sensitive products. Efficient logistics along the Silk Road can make all the difference for a customer who's waiting for spare parts to keep a factory running.

In the healthcare sector, Visilion is currently working with partners to develop advanced tracking capabilities and support customers, located primarily in Europe and the US. The solution has already been deployed in several hospitals, creating a valuable feedback loop for the Visilion development team.

During the corona pandemic, health services and the companies that supply them have been under unprecedented pressure. Visilion's outdoor tracking solution has been providing visibility of critical equipment like ventilators in the supply chain, ensuring it arrives at its destination on time and in good condition. Meanwhile Visilion's indoor tracking solution has allowed hospital staff to locate life saving equipment when they need it most.



Visilion tracking critical parts along the logistics journey for a client

## CUSTOMER BENEFITS

### LONG BATTERY LIFE AND LOW ENERGY CONSUMPTION

The Visilion team made low energy consumption a development priority. Several different modes are provided in order to balance the demands of real-time communications and battery consumption – which of course varies according to the use case. Typically, a Visilion tracker's battery can last from two months to one year between charging.

### FUTURE-PROOF CONNECTIVITY FOR LOGISTICS

The choice of connectivity technology must be made early on in any product development process, since it is such a crucial part of product performance. But the decision can be challenging when both technology and the market are moving fast.

Bearing in mind that some Visilion devices will be in use in the field for years to come, it was very important to choose a type of connectivity with wide coverage and guaranteed longevity. Visilion chose LTE-M\* as its main connectivity technology, in order to be prepared for a future in which 2G and 3G cellular networks are being phased out from some markets. LTE-M provides more than enough bandwidth for all data communications and future-proofs Visilion's tracking devices, while providing excellent global coverage.

2G (GPRS) serves as a back-up technology and to ensure coverage across the world, which is vital in logistics operations that cross national, regional and continental divides. LTE-M is part of the 5G family, built on 4G technology and backed by the industry organisation, GSMA.

### RELIABLE CONNECTIVITY FOR HEALTHCARE

The Visilion development team looked at several connectivity options for the system's tags and observers before settling on BLE. Their selection criteria included energy-efficiency, accuracy, latency, robustness, range, price of tags and suitability for indoor positioning.

Designed for smaller data loads, Bluetooth is an energy-efficient technology. It gives continuous position updates (every 2 seconds) and a long battery life (up to 7 years). The only potential issue with Bluetooth is that its low energy consumption is achieved at the cost of shorter range (max 30 meters). But this is easily solved by placing Visilion observers in electrical sockets at strategic points around the hospital, in such a way as to reach all tagged equipment.

### GLOBAL CONNECTIVITY WITH TELENOR CONNEXION

In its quest for unlimited global connectivity and a future-oriented partner with a strong portfolio of global roaming agreements, the Visilion team turned to Telenor Connexion – a partner that also brings valuable experience in service delivery, customer support and consulting.

***“Telenor Connexion has been at the forefront in supporting IoT connectivity with global coverage, which makes them a very strong collaboration partner for us. Additionally, they intend to play an important role in the future development of the IoT ecosystem.”***

Erik Lund, the business head of Visilion.

\*LTE-M stands for Long Term Evolution (4G), category M1 and it's a radio technology standard that allows IoT devices to connect directly to a 4G network, without a gateway and on batteries. LTE-M is particularly suitable for IoT applications that are low cost, use low data rates, require long battery lives and operate in locations that are hard to reach. Supported by all major mobile equipment, chipset and module manufacturers, LTE-M networks will co-exist with 2G, 3G, and 4G mobile networks and benefit from all the security and privacy features of mobile networks.

## LEARNINGS FROM INSTALLING VISIBILITY

The Visilion team continues to learn about how best to serve its customers as part of the IoT ecosystem. The service platform is aligned with four to five high-level use cases. However, the team understands that success will require humility.

***“As an outsider, you can’t walk into manufacturing companies and tell them to work differently.”***

***“We need to first listen and understand exactly what each customer needs, taking all the details and complexities of their business into account. Shipping washing machines is obviously very different from transporting fresh produce.”***

Fredrik Wendel,  
Head of product & development at Visilion.

To encourage uptake, customers can start with e.g. just 100 shipments and see how Visilion works. A customised solution can then be developed to meet their exact needs.

In healthcare, the challenges are slightly different. Hospitals are crying out for time-saving technologies, but the sector is known for its caution and slow decision-making processes. Sony has noticed that once Visilion is in place and delivering benefits, hospital managers are more willing to invest in scaling up to other buildings and sites.

## FUTURE OUTLOOK

The Visilion development team is currently working on major transport units such as roll cages or pallets within long trailers. Tracking devices make it possible to register units going in or out of a delivery point. This represents the next level of integrated transport and larger trackers can take on the additional role of being a hub for smaller trackers. Looking ahead, the product range will eventually include devices that work equally on a carton or warehouse shelf as on a railway carriage or shipping container.

## ABOUT VISILION

Visilion from Sony is a real-time asset tracking and supply chain visibility solution. Tracking devices continuously collect and upload information about goods in transit, empowering users to get control over their deliveries and improve business performance. In healthcare Visilion combines advanced trackers and a cloud service to enable rapid location of shared equipment in hospitals. It saves staff time and provides hospital managers with valuable data on the usage and condition of tracked assets.





## FURTHER INFORMATION

LTE-M vs NB-IoT, A guide exploring the differences.

Sony Network's Vision

Explore how Volvo Cars provide world-class connected car experiences

Astrata: Managed connectivity to propel fleet management




Connecting things. It's all about people.

### ABOUT TELENOR CONNEXION

Telenor Connexion is the specialized IoT company within the Telenor Group, one of the world's major mobile operators. Building on more than 20 years of experience, Telenor Connexion provides global IoT connectivity and cloud services to enterprises with large fleets of connected devices as well as third-party service providers.

Telenor Connexion manages more than 10 million connected things in more than 190 countries for global customers including Volvo, Scania, Hitachi, Verisure Securitas Direct and Husqvarna. With headquarters and tech centre located in Sweden, the company has regional sales representation in the UK, US, Germany, Italy, South Africa, Singapore, South Korea, China, Malaysia and Japan.

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