



Whitepaper

Real time piece visibility and data logging for pharmaceutical and life sciences goods in the supply chain

OnAsset is enabling a growing number of companies to establish real time visibility and piece level data for pharmaceuticals in transit

There are an array of disparate players in the supply chain. Each has a critical role, and most generate and exchange some data for the duration the consignment is in their care. There has never been more sources for consignment related data. The diagram below is a simple overview of a complicated structure. We also see

an emergence of providers with orchestration solutions aimed at consolidating and managing the data. In highly dynamic and volatile markets - the challenge is that the players invariably change, and each change requires a new data stream to be patched in.



Mirroring consumers

As consumers our lives are increasingly influenced by phones and other smart devices. They affect the cognitive process, and in many ways, people would be challenged without the convenience and support of devices and the pervasive global mobile infrastructure. We accept that mobile technology has an instrumental role in efficiency and productivity. This raises the question; why don't we do the same thing for assets in transit in the global supply chain?

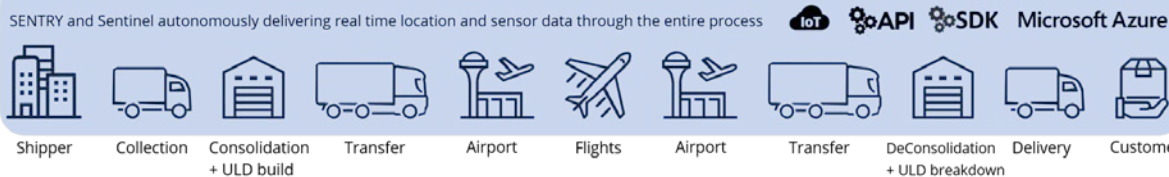
It's all about location

What value does a shipper place on having independently sourced data about goods in their supply chain? One without the suppliers reporting detailed in the diagram above. Now imagine a "thinking supply chain". We as consumers are components of multitudes of monitoring and tracking algorithms that enhance businesses globally and are drivers of growth. We have the technology and communications infrastructure to deliver location and sensor data from goods in transit by any mode from anywhere in the world. These are core data components that enable asset tracking developments to parallel the way in which smartphones drive the consumer market.

There is significant and marked growth in the number of companies deploying real time tracking devices and integrating the derived data into their enterprises. So how is this change happening? Clearly the barrier isn't technology, capability or the ever-present cost argument. Can we say, the barrier is the commitment to change? Smart IoT devices are universal, and their use and deployment is uncomplicated. If consignments and the transportation infrastructure were connected with low cost scalable intelligent technology (just like we, the consumers are connected with our smartphones), there are unlimited opportunities to automate processes. There is no question that if the logistics infrastructure becomes connected to the assets and shipments handled - it will drive efficiency, save time and money and importantly, power AI.



Bluetooth Low Energy 5 Monitor



Autonomous devices

Real time visibility requires the placement of low cost scalable intelligent technology in consignments. The combination of an OnAsset SENTRY cellular gateway device linked to multiple Sentinel BLE devices gives a shipment the intelligence to monitor and report location and sensor values including temperature, humidity, light and shock from around the world. Sentinel is placed inside each box or unit in the consignment in the same way that passive monitors are currently used. SENTRY is added to the outside of one piece of the consignment. This acts as the gateway to receive, store and transmit the piece level Sentinel data. SENTRY also has sensors and delivers ambient temperature data and other conditions. When the devices are placed in the consignment, they are actively reporting location and sensor data to the OAInsight Cloud. The data is visualised in the OAInsight platform available through any PC or mobile device. It is also available through an API for systems integration. Edge computing is enabled with the OnAsset App which turns any mobile device, iOS or Android, into a Sentinel gateway. The mobile device location is used and any Sentinel data in proximity is relayed to the OAInsight Cloud. The user can also see current and historical piece level Sentinel data.

Compliance

OnAsset has been delivering aviation compliant devices for over a decade. Consignments with SENTRY and Sentinel onboard conform with aviation regulations and have airline approvals for carriage. On an aircraft, the SENTRY will enter FlightSafe® mode but continues to receive Sentinel reports in flight. Once landed the stored reports are forwarded to the OAInsight Cloud. OnAsset's aviation compliance expertise is an enabler to enhance pharmaceutical distribution compliance.

Data Logging

Each Sentinel 100L has a memory module that records all sensor values every five minutes. These logs can be recovered remotely at any time

through the OAInsight platform. The recovery process, or Watchlist, can be set retrospectively or scheduled in advance. Each Sentinel can deliver a temperature history for the entire shipment process that can be used for stability and other compliance requirements.

Alarms and Notifications

With a consignment that has the intelligence to report location and sensor values comes the benefit of extensive alarms and location reporting. Each SENTRY and Sentinel has a unique ID that can be associated to the shipper's consignment references. The platform has a Shipment function where start, end and any number of waypoints can be assigned to generate arrival and departure messages. Similarly, alarms can be added for temperature, light, shock and humidity excursions from defined parameters and requirements. The important point here is the autonomy of location and sensor information removing the reliance on third parties. Having the OnAsset API to deliver enterprise grade systems integration is the entry point to AI enablement. It's an area we're very excited about. We call it Cognitive Logistics as outlined in the diagram above.

Deployment

Getting real time monitoring and data logging is a straightforward process. The SENTRY and Sentinel hardware is compact and robust. It can be supplied with calibration certificates and shipped globally. The OAInsight Azure platform is web based with industry standard security. Our devices and API meet the requirements of 21 CFR Part 11 and Annex 11 delivering secure systems for storing, accessing, retrieving and analysing sensor and shipment information.

Let our technology, and its AI capability, help you differentiate your services to the market.

Contact information below.