



# Shipping portal for temperature sensitive shipments

The AntTail shipment portal supports pharmaceutical logistic and quality management in their needs to prove that the quality of all their temperature-controlled shipments is maintained correctly during each shipment and hand-over. This shipping portal, combined with AntTail's temperature sensors, provides a complete shipping report for each shipment and direct warnings when exceptions occur. The sensors and shipping portal service can be used for a range of packets (pallet, shipping box, pack outbox, SKU, reefer) and in different kind of shipping lanes (internal, external, last mile).

The temperature data of the AntTail sensors is automatically synchronized with the AntTail back-office (AntCloud). After read out, the temperature data is directly combined with shipment data, resulting in an auditable shipment report that serves as proof of delivery for the shipment receiver. When excursions are detected in the AntCloud, alarms and supporting data are sent automatically to the decision makers responsible for shipments and product quality, so they can take appropriate actions based on actual data.

## What is AntTail's solution?

AntTail sensors measure temperature and store the data in their internal memory with a five-minute interval. AntTail sensors use a Bluetooth protocol to synchronize measurements to our AntCloud (AntTail central back office) where all sensor data is collected. The sensors are read out wirelessly and automatically as soon as a sensor is in the vicinity of a gateway. The same sensors can also be synchronized quickly and easily with the AntTail smartphone app.



*AntTail solution component*

AntTail sensors always measure temperature (Always-on). Alarms are selected and evaluated in the AntCloud. Hence no cumbersome setting or programming of alarm parameters and start time in the individual logger itself is required.

## Data completeness for transparency.

As soon as the temperature data is available in the AntCloud, it is combined automatically with relevant shipping data and shipment reports are created. Also, exceptions are reported automatically and alarms are sent to assigned stakeholders, such as quality managers and logistic partners. If an anomaly is detected in the cold chain, this timely and complete reporting allows fact (data) based decisions that yield short response and/or correction times.

## The Shipping portal on the AntCloud

Shipments and shipment data are managed in the Shipping portal of the AntCloud. The shipping portal provides all functions to monitor, store and report the temperature and shipment data of temperature sensitive shipments.

Customers get their own private shipping portal, which can be accessed from different locations worldwide via a web browser. Shipment preparation, proof of delivery reports, alarm status, management information, all is available for users with the right authorization via the custom shipment portal

Optionally, the AntCloud can be connected with other ICT systems to couple logistic and/or QA information automatically. Via custom made API rest services, the AntTail services can be integrated with e.g. ERP, databases or other logistic control systems of the pharmaceutical company.

The Shipment portal manages the shipment data. Shipment data includes e.g. transport data (e.g. shipment bill number, departure and arrival times and location information), product quality data (alarm levels, delays) and shipment stakeholders (those who will get a report or warning).



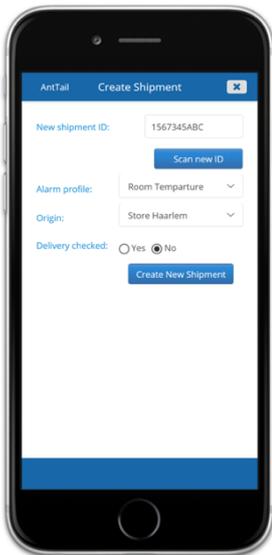
# Shipping portal for temperature sensitive shipments

Replacing your existing dataloggers and monitoring solutions with AntTail's seamless monitor solution immediately delivers cost and quality benefits, even if only a part or single shipping lane is monitored.

## Where do I start?

Although any kind of integration and customization of shipment management with the AntCloud portal is possible, you can start directly and simple to experience the advantages of the standard shipping portal and the ease of AntTail data collection by only using a smart phone with the AntTail app.

## Example: Create shipment in AntTail app



At the origin, i.e. the start, of the sending, the shipment and AntTail sensor can be configured easily. The barcode that is already in place in your standard shipment process is used as shipping ID in the AntCloud, allowing easy reference to other logistics systems. This barcode is scanned in the App in order to create a new shipment. In the app the origin and alarm profile are selected and the start of shipment is defined by the time the sensor ID is coupled

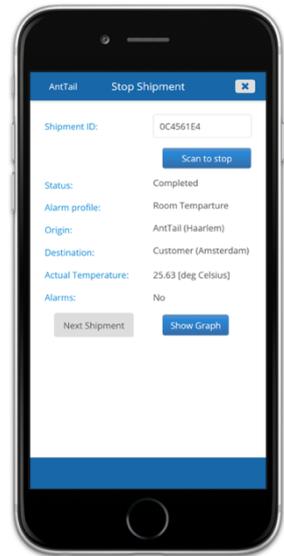
with the shipment ID. Optionally, an on-time delivery check for a shipment can be configured.

## Example: Receive shipment in AntTail App

The receivers of your shipments can also use the AntTail app. At first use, the receiver will enter his user contact information and e-mail. A two-factor authentication code and (optional) additional instruction are sent to validate the user e-mail.

The smartphone app reads out the sensor within the shipment wirelessly and sends all encrypted sensor data directly to the AntCloud, where it is stored and the alarm is evaluated. The result of the alarm evaluation is sent back to the smartphone directly. This ensures that all data is stored in the AntCloud when a smartphone is used to inspect a shipment.

When a shipment arrives at an end-point the status and quality of the shipment should be logged before hand-over. With the AntTail app a receiver scans the barcode ID of the delivered package for arrival and at the same time the AntTail app reads the sensor data. Thereafter the receiver can see the actual temperature, alarms, graphs and shipment status in the App.



Furthermore, the AntCloud directly sends an e-mail with the shipment report to the receiver. And, if applicable, an alarm warning is sent at the same time to the shipper as well. These steps can be executed with the smartphone without opening the parcel, as the sensor is read out wirelessly.

After the shipment and storage, the AntTail sensors can easily be re-used for any new shipment. At any time and location and as often as you like, the sensors can be activated and coupled to a new shipment. This encourages re-use and reduces unnecessary waste.

AntTail provides transparency in the supply chain. AntTail designs and delivers products and services that monitor the temperature of medicine during transport and storage from manufacturer to end user. Smart sensors allow pharmaceutical companies, health providers and logistic service providers to monitor the temperature of shipments online and assure product quality. AntTail's cloud based secure SaaS-solution works with existing cold chain solutions, avoiding investments and complex implementations.

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