



## **CASE STUDY: AMBIENT TEMPERATURE MAPPING**

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## Phase 1: Why are Ambient Temperature Studies important?

- **Maintaining product temperature stability is key for temperature controlled shipments:**
  - To ensure the product inside the packaging is stable, we need to know what the outside temperature is during the shipment transit
  - Ambient Temperature profiling provides the data needed to determine which packaging best suits the needs of the bio-pharmaceutical product
  
- ▶ **In Q2 2010, LifeConEx began looking into mapping Ambient Temperatures that bio-pharmaceutical products were experiencing on their trade lanes in order to:**
  - Manage risk by understanding the ambient temperature ranges the shipment will encounter during transit throughout each season- spring, summer, winter, fall
  - Enact continuous improvement of the LifeConEx Cold Chain Consultative Assessment by gathering data to better determine packaging needs of existing clients
  - Create additional data feeds into the LifeConEx Integrated Data Portal (LifeTrack) assisted the Life Science Service Center process monitoring team in shipment handling and mitigating risk
  - Reduce the number of packaging types needed by utilizing the same packaging types in areas with similar ambient temperature ranges
  - Control the packaging cost by effectively selecting the packaging type best suited for our client's needs
  
- ▶ **Key to the project was the type of data logger that would be used. The device would need to be:**
  - Technology that was compliant with pharmaceutical industry regulations
  - Simple to operate with the capability to provide data quickly on the receiving end
  - Cost effective in comparison to other solutions in the market
  
- ▶ **After researching and testing various options, LifeConEx selected DHL Solution & Innovation's SmartSensor RFID device as the primary device used in the Ambient Temperature Monitoring Project (ATMP).**
- ▶ **The selection was made due to the relative ease of use of the device and data portal, the flexibility of the device to be used in multi-modal transportation, options for re-usability, simple return logistics, quick data recovery, and the cost effectiveness of the device (less than half the price of competitors).**

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## Phase 2: Ambient Temperature Monitoring Project

In late 2010, a LifeConEx Customer, expressed interest in the temperature mapping project. LifeConEx adapted their mapping project to meet the Customers specific requirements, resulting in the Ambient Temperature Monitoring Project.

The project, which started in December 2010, covers shipments from the Northeast U.S. to twelve zones around the world. These zones are representative of the Customers global cold chain network.

LifeConEx provided the Customer with DHL SmartSensors and a handheld RFID reader as part of the project cost. Sensors were distributed to key DHL locations globally and DGF stations and Consignee's were trained in partnership between DSI and LifeConEx to retrieve and return the sensors.

The return logistics of the project entailed the sensors being returned to either LifeConEx, or DSI for downloading. An additional option is for the reading of the sensor at the consignee or DGF destination location.

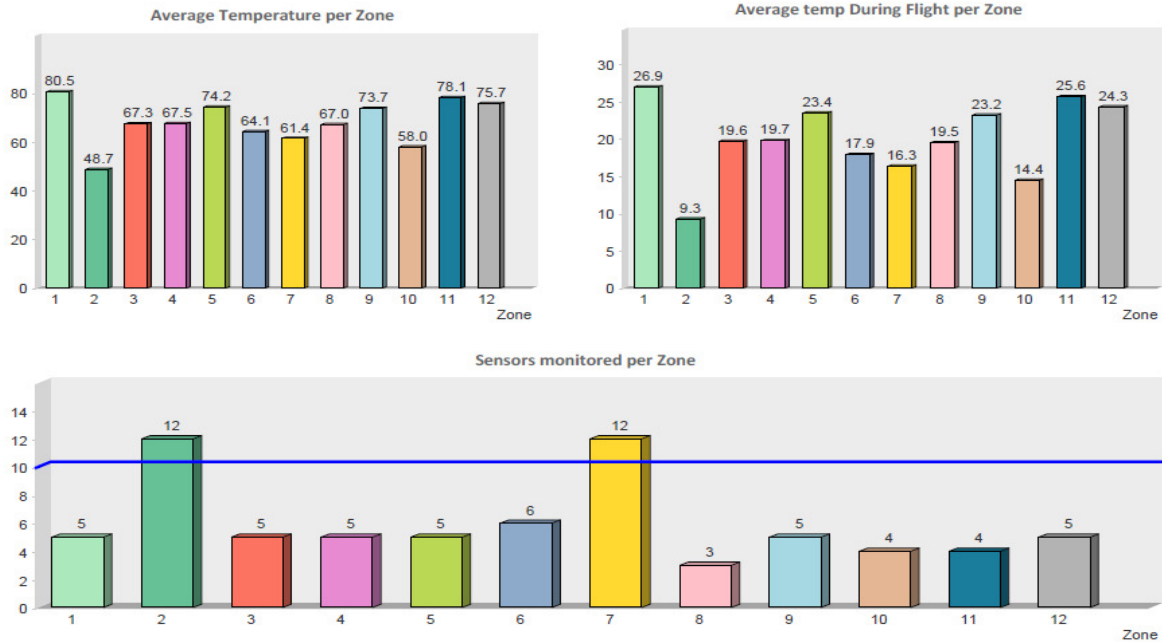
The current network consists of readers placed in DGF stations in: PHL, CLE, CDG, and ICN; as well as in the Customers locations in PHL and EWR. DGF stations that have been trained to receive and return the sensors include the following stations: SYD, LHR, DUB, AMS, JNB, SIN, and PTY.

Consignees in various global locations were also trained in identifying, recovering and returning sensors. More stations will be trained as we expand the project.

As of June 2011 the project has covered over 30 trade lanes originating from PHL and JFK.

Station	Average	Maximum	Minimum
PHL	11.3	22.0	3.3
BA066	11.1	18.8	7.5
LHR	11.5	18.8	0.8
BA632	11.1	18.8	7.5
ATH	11.1	18.8	7.5
JFK	15.6	25.9	3.3
AF023	11.4	22.0	3.3
CDG	11.4	22.0	3.3
AA109	13.1	29.3	-13.6
NRT	18.8	25.9	9.2
BRU	21.8	29.3	12.5
ORD	21.8	29.3	12.5
BOS	11.8	17.6	0.8
CLE	-0.1	3.3	-13.6
FRA	-0.1	3.3	-13.6

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## Phase 3: Future Expansion

LifeConEx plans to expand the project in 2012 to cover inbound shipments into the U.S. as well as export shipments from other U.S. origins, pending the successful completion of the project.

With DSI's continued development of the GSM sensor, LifeConEx would not only like to include this sensor in the ATMP project, but would additionally like to incorporate GSM sensors into the majority of LifeConEx projects and trade lanes to improve on the quick release of data at the destination. The faster the consignee has the trip data, the faster they are able to release their bio-pharmaceutical product into the market.

The end goal is for the incorporation of Ambient Temperature Mapping into a stand-alone LifeConEx service utilizing the DSI RFID and GSM SmartSensors.

The continued use of RFID SmartSensors in current and future LifeConEx projects and the addition of the GSM will further strengthen the relationship between DSI and LifeConEx.



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### **ABOUT LifeConEx**

*LifeConEx offers peace of mind as the only industry-specific, end-to-end cold chain management solutions provider for the life science industry worldwide. With oversight of the entire global landscape, LifeConEx designs and orchestrates the shipment process end-to-end proactively and reactively, assuring the integrity of your product's desired condition. You will experience shorter cycle times, a reduction in temperature excursions, and far fewer damages than typically experienced by shippers. LifeConEx it & Live your Life.*

*LifeConEx is supply chain party neutral (airlines, forwarders, truckers, packaging, and technology).*