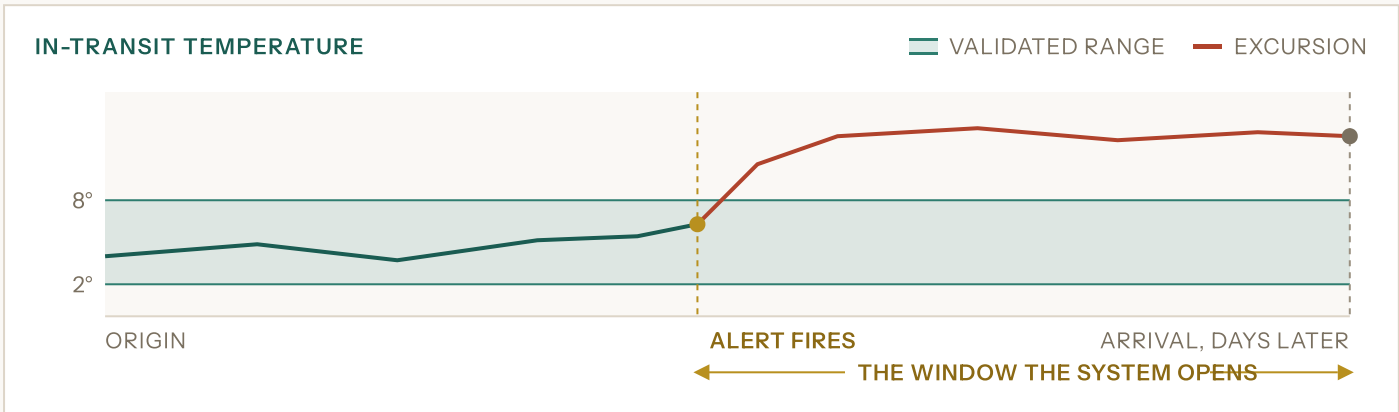


First-in-class temperature monitoring across 40+ global transportation lanes

Excursions in a pharmaceutical cold chain are rarely detected in time. The fix was infrastructure, not process.

DETECTION WINDOW | ONE EXCURSION, TWO MOMENTS OF KNOWING



BEFORE REACTIVE DETECTION

Compromise discovered at delivery. Regulatory exposure. No intervention. Full loss absorbed.

40+	4	Zero
LANES IN SCOPE	CONTINENTS	IN-TRANSIT VISIBILITY

AFTER INTERVENTIONAL

An excursion triggers an immediate alert, opening a window to act while the product is still moving.

REROUTE

REPLACE

ESCALATE

- 01 PHYSICAL LAYER**

Monitoring devices specified and deployed across active lanes in every region.
- 02 DIGITAL LAYER**

Integration to surface temperature and location data in near real time.
- 03 ROLLOUT**

Phased by region, with vendor selection across technology and logistics partners.

OUTCOME | Roughly 20% fewer excursions and 60% faster detection. A reactive posture became an interventional one.

Temperature-sensitive pharmaceutical products were moving across more than 40 global transportation lanes and no one could see them in real time. When temperatures deviated, the only indication was the product itself, compromised on arrival.

Excursions were a known problem. There was simply no infrastructure that would have made a different response possible.

The work was to build one. A global real-time temperature and location monitoring system was designed and deployed from scratch, the company's first, across four continents and more than 40 active lanes.

The 60% detection improvement reflects that shift. The 20% reduction in excursions reflects both mid-transit intervention and the operational discipline that came with visibility.

RESULTS

~20%

Fewer excursions on monitored lanes

~60%

Faster excursion detection

40+

Lanes across four continents

BUILD

First

In-class capability for the company

Note: the track and trace program was later retired for strategic reasons unrelated to its performance. The results above reflect the capability while it was in operation.