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Willog
COMPANY
INTRODUCTION

EWCI-02

Willog fosters trust through customer communication

Logistics is evolving; digital transformation is essential for corporate success.

Willog offers **logistics condition monitoring solutions** with proprietary devices and software. By ensuring cargo and assets **maintain optimal condition**, Willog enhances supply chain management, saving time and costs.

Customers benefit from maintaining product quality and stability, preventing issues during transportation, through Willog's tailored solutions.

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Offering visibility to products in transit blind spots

Logistics information systems integration and automation

Real-time location monitoring

Willog solutions

Product condition monitoring

Data deviation alerts

Identification of issue-prone areas

Expected Benefits

Lead Time Management

Risk Management

Operational Efficiency Improvement

Consulting

We offer tailored solutions based on client's business, product, and delivery methods.

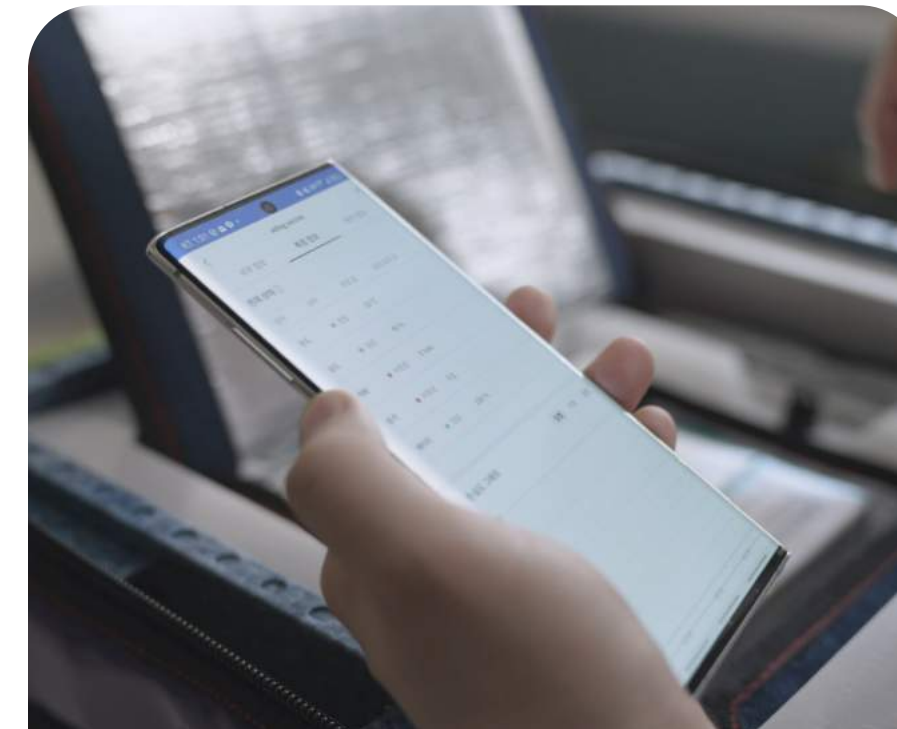# Delivering consulting to after-sales management with expertise
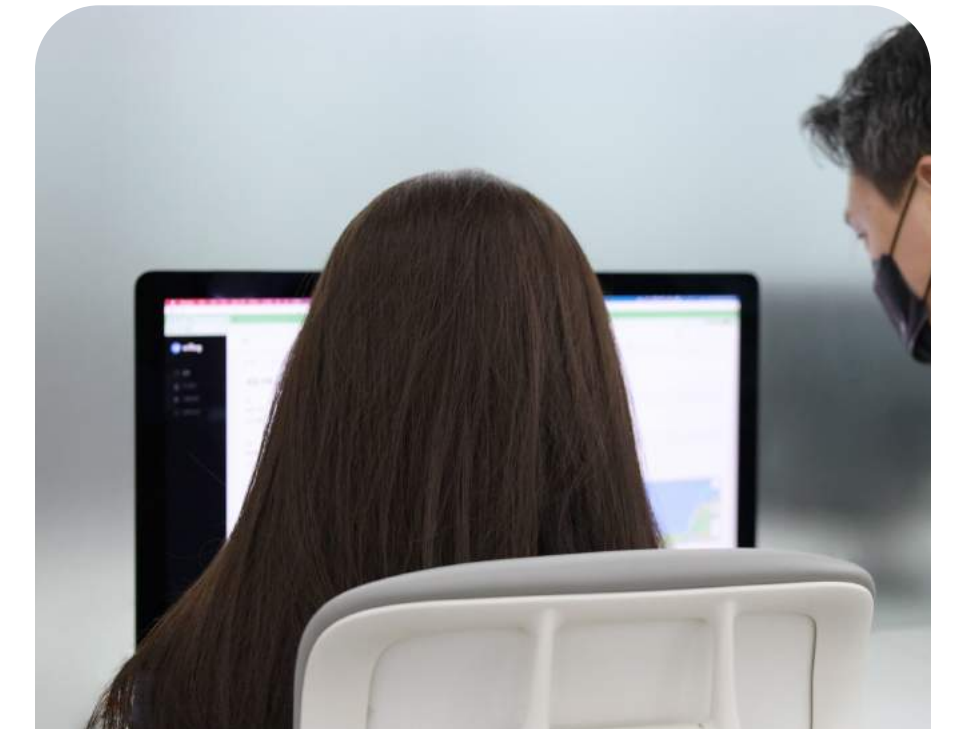
Step 1

Evaluation

Step 2

Service implementation and design

Step 3

Testing and Improvement

Step 4

Introduction and implementation

Step 5

Operation and after-sales management

42 patents and IP rights secured, along with international standard certifications attained

All Willog sensor devices hold domestic and international technical certifications, including ilac MRA(Validation/Calibration).

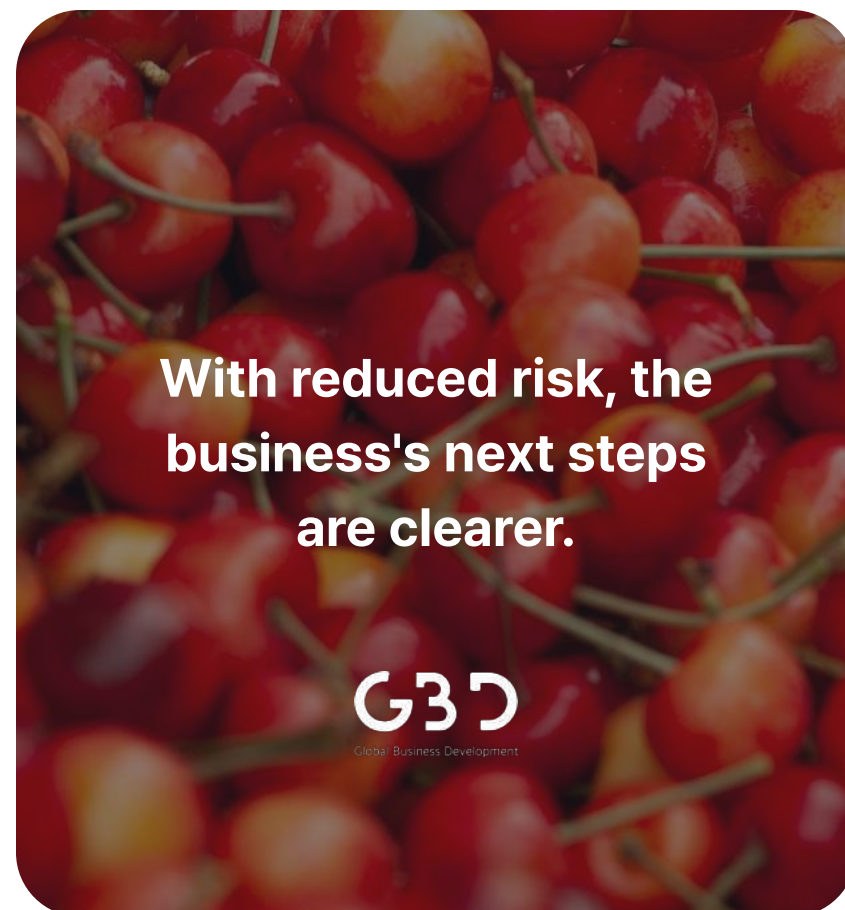**Technical patents**

+31

Design patents

+11

- International Standards ISO 14001 (Environmental Management System)
- ISO 27001 (Information Security Management System)
- ISO 27017 (Cloud Information Security Guidelines)

A trusted firm producing valuable data

Willog manages products from over 30 companies worth more than 300M USD.

We swiftly addressed unforeseen situations with precise data collection.

YONGMA LOGIS

I didn't anticipate condition monitoring innovation to drive such significant changes.

Pharmaceutical Company C

With reduced risk, the business's next steps are clearer.

GBD

Abbott

BAYER

HYUNDAI

KIA

POSCO INTERNATIONAL

CJ

CJ LOGISTICS

OSSTEM IMPLANT

YONGMA LOGIS

DONG-A ST

GEOYOUNG

GC Wellbeing

DONGJIN SEMICHEM CO.,LTD.

Dong Sung CHEMICAL

OVIS

Alcon

KOLON PHARMA

Lbridge

Chong Kun Dang Pharm.

DH PHARM

UNIMED PHARM INC.

Hana Pharm Co., Ltd.

Whan In Pharm.

Dongkwang Pharm

Myungmoon Pharm. Co., Ltd.

BCWORLD PHARM

SHIN POONG PHARM. CO. LTD.

HANLIM PHARM.CO.,LTD.

ECOVICE

Kurly

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History

Willog Continues to grow

2024
May • Selected as a Global ICT Future Unicorn
Apr • Launched vehicle monitoring solutions
Mar • Released 12 types of sensor devices

2023
Dec • Selected for Scale-up TIPS
Sep • Launched export-import container monitoring solutions
Oct • Secured Series B investment
May • Launched warehouse monitoring solutions
Feb • Initiated joint development of "Damage Measurement Method for Goods in Transportation" with the Korea Automotive Research Institute
Jan • Signed MOU with Seoil E&M for expansion to Japan

2022
Nov • Received commendation from the Minister of Land, Infrastructure and Transport at 2022 Korea Logistics Awards
• Received the Chairman's Award from the Small and Medium Business Administration at the 2022 Smart Korea Forum
• Obtained 3 ISO certifications for information security and environmental management system
• Signed MOU with global logistics company Ecovice Origin
Jun • Entered into a partnership with GBD Chile
• Launched bio-monitoring solutions for courier and logistics companies
Apr • Selected as a First Penguin-type startup by the Credit Guarantee Fund
Feb • Obtained ISO 9001:2015 certification (Quality Management System)

2021
Dec • Launched maritime transportation monitoring solutions
Nov • Secured Series A Round 2 Investment
• Established Corporate Research Institute
Oct • Established Silicon Valley Branch in the U.S. (San Jose, CA)
• Selected for TIPS
• Venture Enterprise Certified
Aug • Launched biological product transport management solutions
Jul • Secured Series A Investment
• Relocated to new office in Seolleung

2020
Dec • Won Incheon Creative Economy Innovation Center Director's Award
Nov • Ranked 1st in 2020 Logistics Startups
• Received commendation from the Minister of Land, Infrastructure and Transport
Mar • Selected for the 10th Youth Startup Academy

2019
Jul • Technology development and prototype production

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Willog moves towards the global market

Willog aims to globalize logistics transparency through its capabilities and network.

Central Asia

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U.S. branch

Southeast Asia

South America

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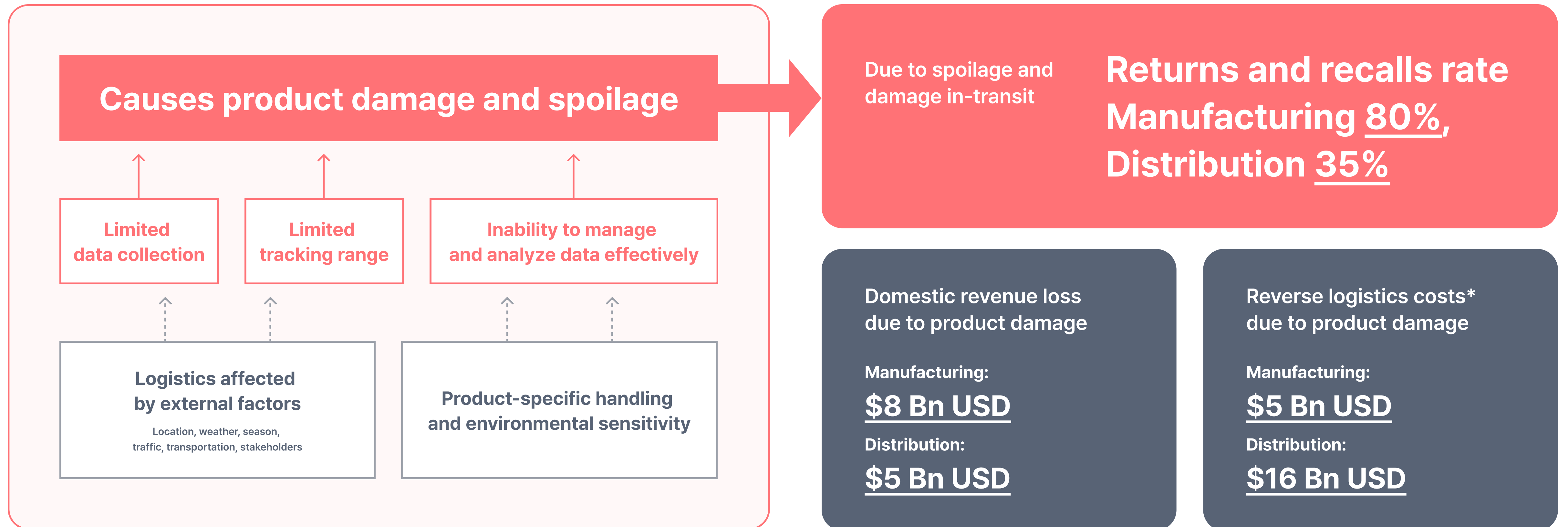
Logistics Condition Monitoring Solutions

- Willog Devices
- Willog Dashboard

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Pain Points of Logistics

Source: Statistics Korea, 2020 Business Logistics Cost Survey
* Reverse logistics costs: Logistics (transportation) costs incurred for retrieving items from the destination for returns and disposal.

Causes product damage and spoilage

- Limited data collection
- Limited tracking range
- Inability to manage and analyze data effectively

Logistics affected by external factors

Location, weather, season, traffic, transportation, stakeholders

Product-specific handling and environmental sensitivity

Due to spoilage and damage in-transit

Returns and recalls rate Manufacturing 80%, Distribution 35%

Domestic revenue loss due to product damage

Manufacturing:

$8 Bn USD

Distribution:

$5 Bn USD

Reverse logistics costs* due to product damage

Manufacturing:

$5 Bn USD

Distribution:

$16 Bn USD

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Logistics Condition Monitoring Solutions

Our devices collect logistics data for visibility and swift issue response via alerts, enabling data-driven quality management during transit.
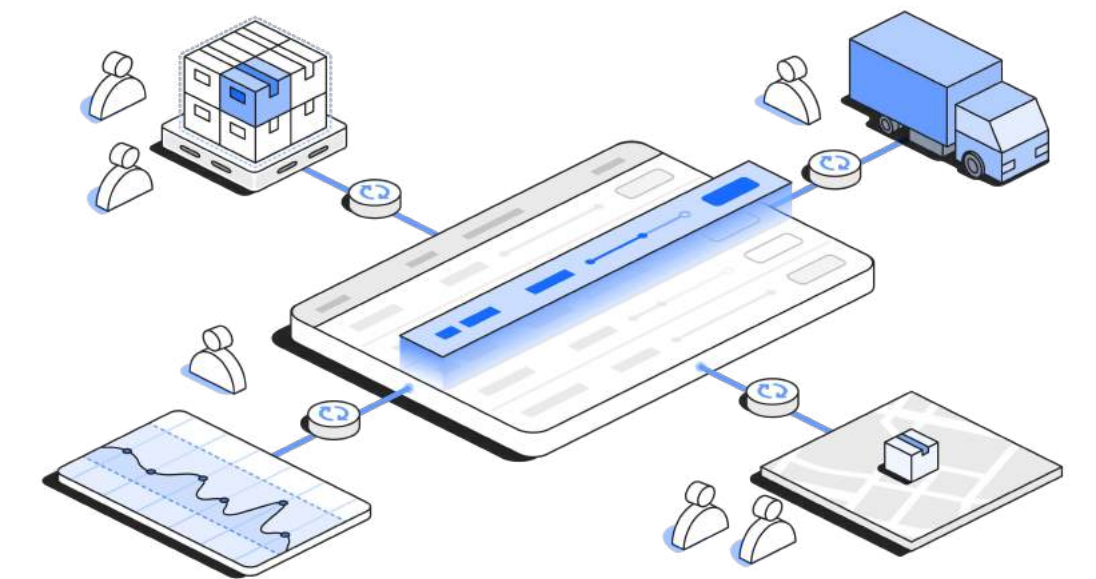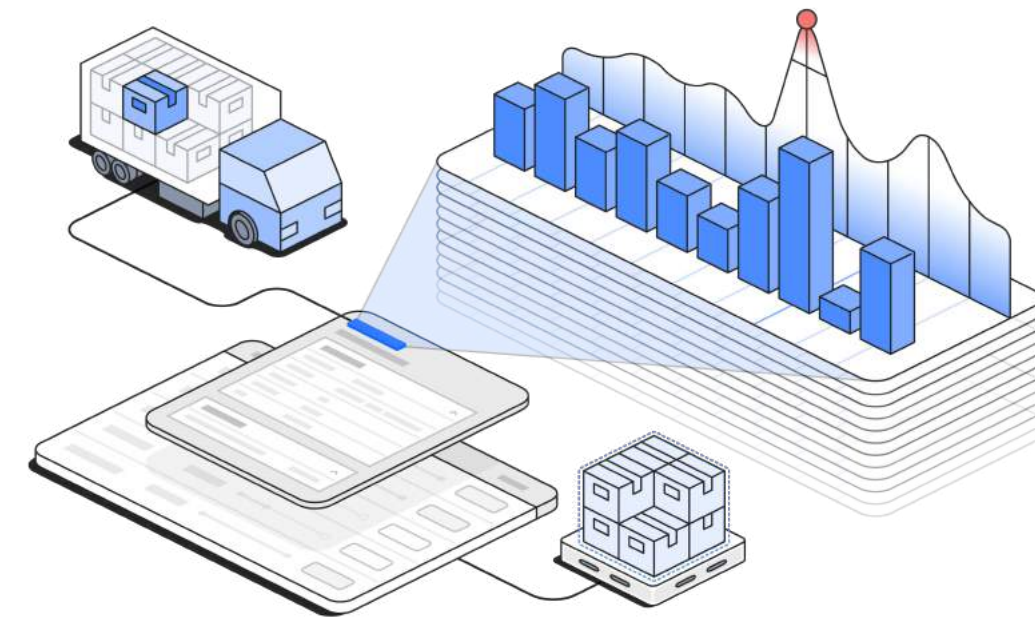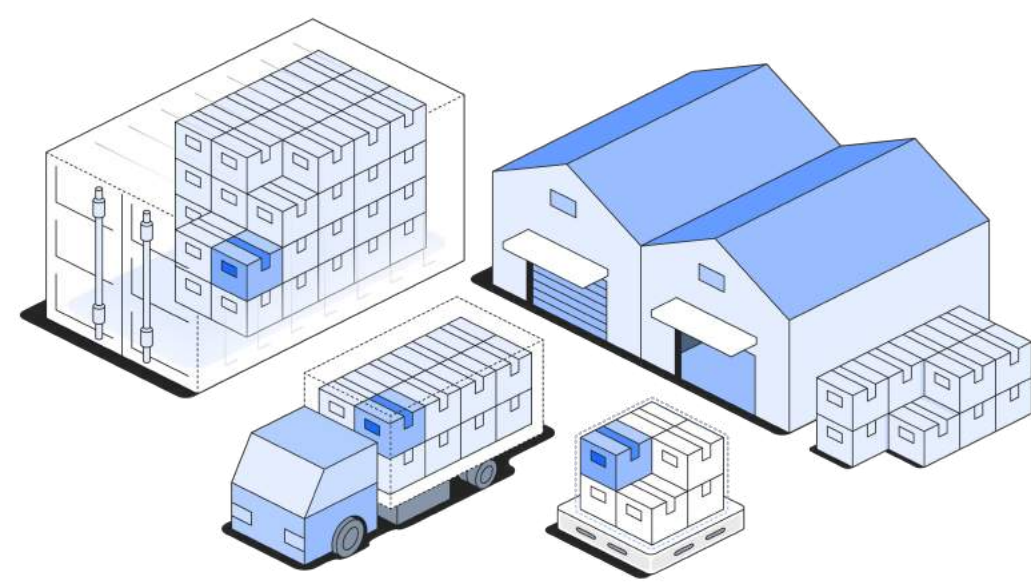
Applicable to various fields requiring product quality management

Our solutions serve pharmaceuticals, logistics, food/ agriculture, sensitive cargo, and maritime transport.

Seamless product quality control in-transit

Pre-integrating sensors with product info, we collect temperature, humidity, and impact data aligned with product traits.

Thorough risk management through data

Temperature alerts prompt swift response, while accumulated data aids clear cause analysis.

Streamlined logistics processes

Stakeholders can intuitively view product status and location history via data for rational decision-making.

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Applicable fields

- Box/Bio Monitoring
- Warehouse Monitoring

Applicable fields

Pharmaceutical and fresh food (manufacturers, wholesalers, distributors)
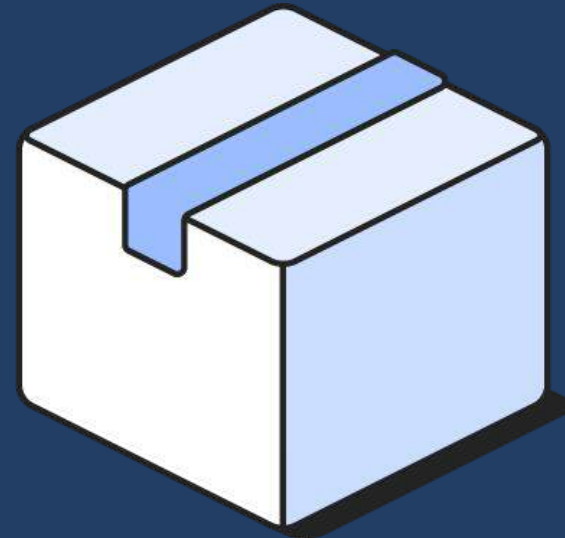
Box/Bio Monitoring

- Managing location and temperature/humidity for pharmaceutical transport containers and reusable commerce boxes
- Manage product temperature records by invoice and order number
- Collect temperature data and send alerts for deviations during delivery

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Applicable fields

Temperature management for refrigerated and frozen warehouses and Facility validation (GMP, GSP, HACCP)
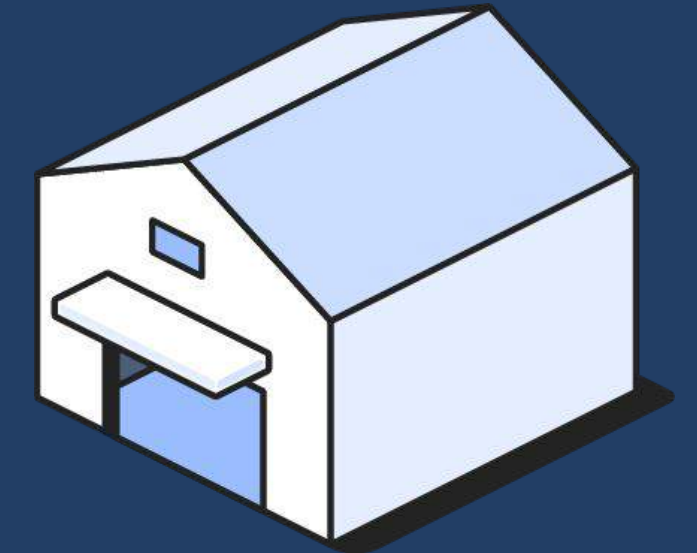
Warehouse Monitoring

- Temperature management for cold chain manufacturers and facilities adhering to GMP, GSP, HACCP certifications
- Application for device data collection and settings adjustment
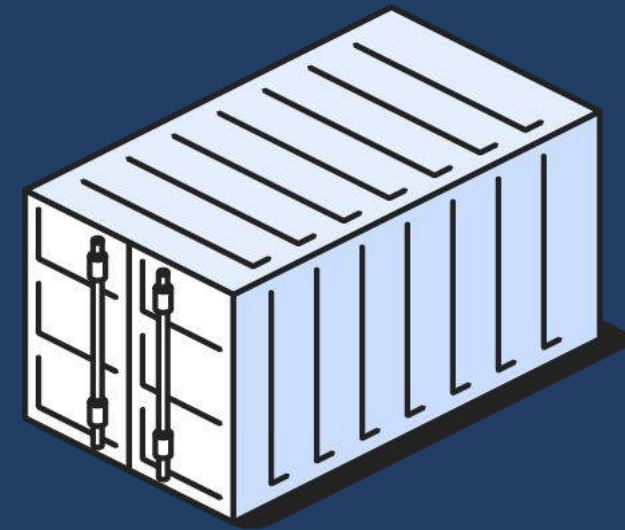- View temperature/humidity measurements by location, manage via reports

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Applicable fields

- Export-Import Container Monitoring
- Vehicle Monitoring

Applicable fields

High-value sensitive cargos, including semiconductor, display, and other electronics

Export-Import Container Monitoring

- Manage location, temperature, and humidity for export/import from domestic land to international transportation
- Track vehicle location, route, and temperature via devices
- Retrieve temperature/humidity data and manage reports
- SMS alerts for temperature deviations and measured temperatures

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Applicable fields

Fresh food manufacturers, distributors, retailers, 2PL - 4PL
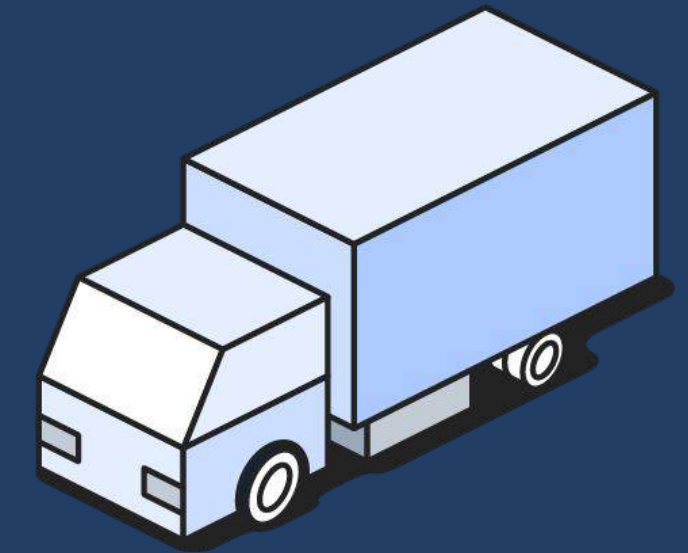
Vehicle Monitoring

- Management of cargo vehicle location, temperature, and humidity for fresh food stakeholders, using owned or contracted vehicles
- Real-time tracking of vehicle location, routes, and temperature via app and devices
- Temperature data collected upon delivery or arrival, with SMS alerts for deviations

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Impact of logistics conditon monitoring solutions

Monitoring product movement in the supply chain reduces uncertainty and establishes efficient transportation, maintaining company competitiveness.

Pharmaceutical company A

- Responded to temperature deviations in 11.1% of shipments
- Prevented **$18M** revenue loss
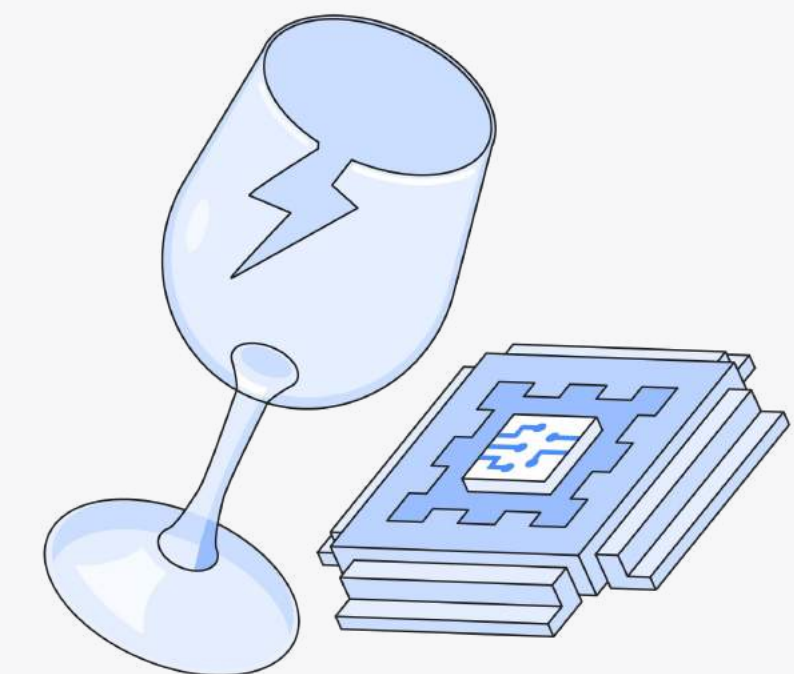- Reduced costs, restored revenue competitiveness

Food company C

- Identified **60%** of return causes
- Boosted customer satisfaction

Manufacturing company D

- Shipped **$10M+** monthly
- Averaged 10% deviation detected, prevented via real-time monitoring

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Willog Devices

By pre-mapping Willog devices with product information, we seamlessly collect temperature, humidity, and impact histories in logistics environments like containers, warehouses, and vehicles. This minimizes human intervention and enhances reliability.

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Real-time Sensor Devices

Model	Data Collected	Measurement Range (Temperature)	Measurement Range (Humidity)	Applicable Areas
T70	Temperature, Humidity, Location	-25 ~ +70°C	20~90%	Vehicle / Import and Export Monitoring
T71P	Temperature, Location	-40 ~ +80°C (Probe)	-	Box(Bio) / Import and Export Monitoring
T72P	Temperature, Location	-200 ~ +80°C (Probe)	-	Box(Bio) / Import and Export Monitoring
R30	Temperature, Humidity, GPS, Shock	-30 ~ +70°C	20~90%	Box(Bio) / Vehicle / Import and Export Monitoring
R30P	Temperature, GPS, Shock	-30 ~ +70°C(Probe)	-	Box(Bio) / Vehicle / Import and Export Monitoring
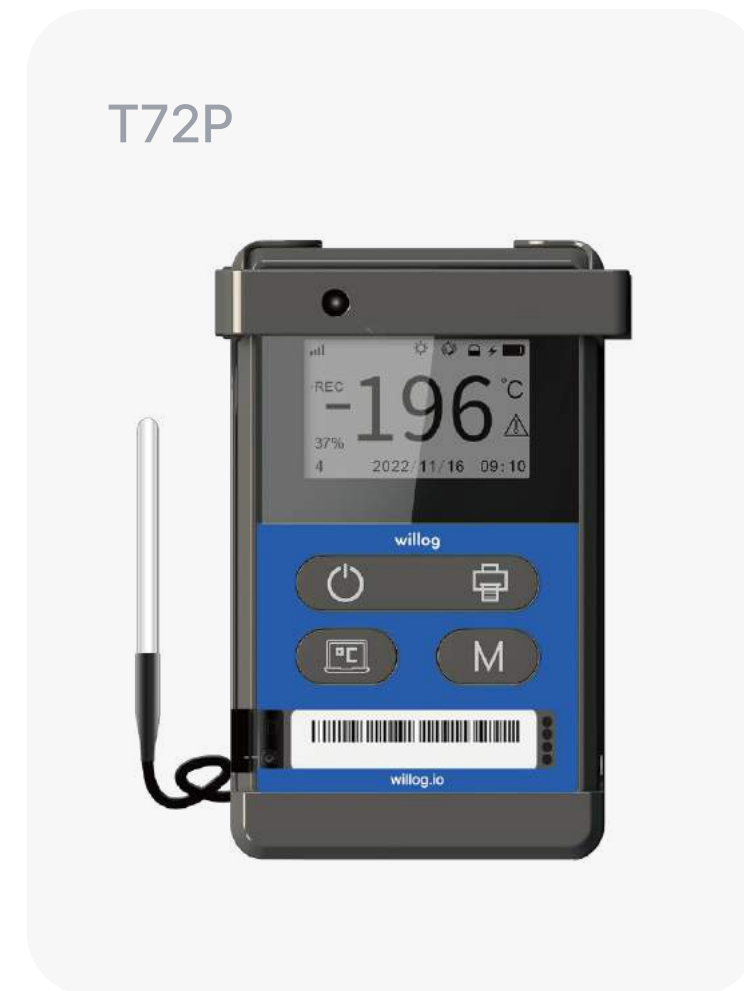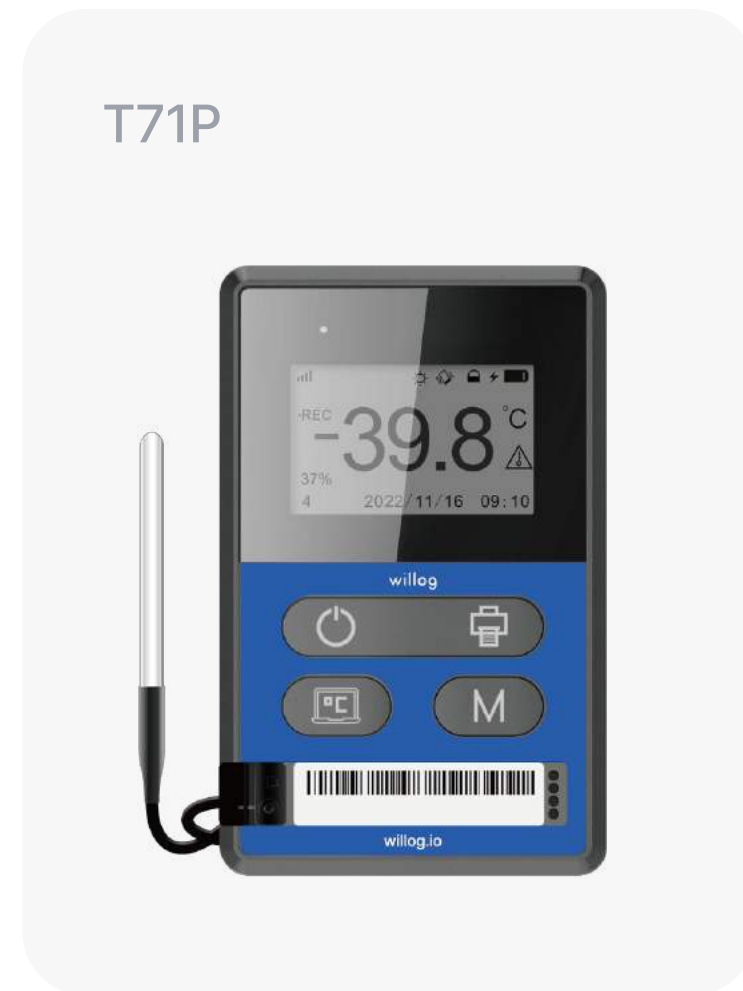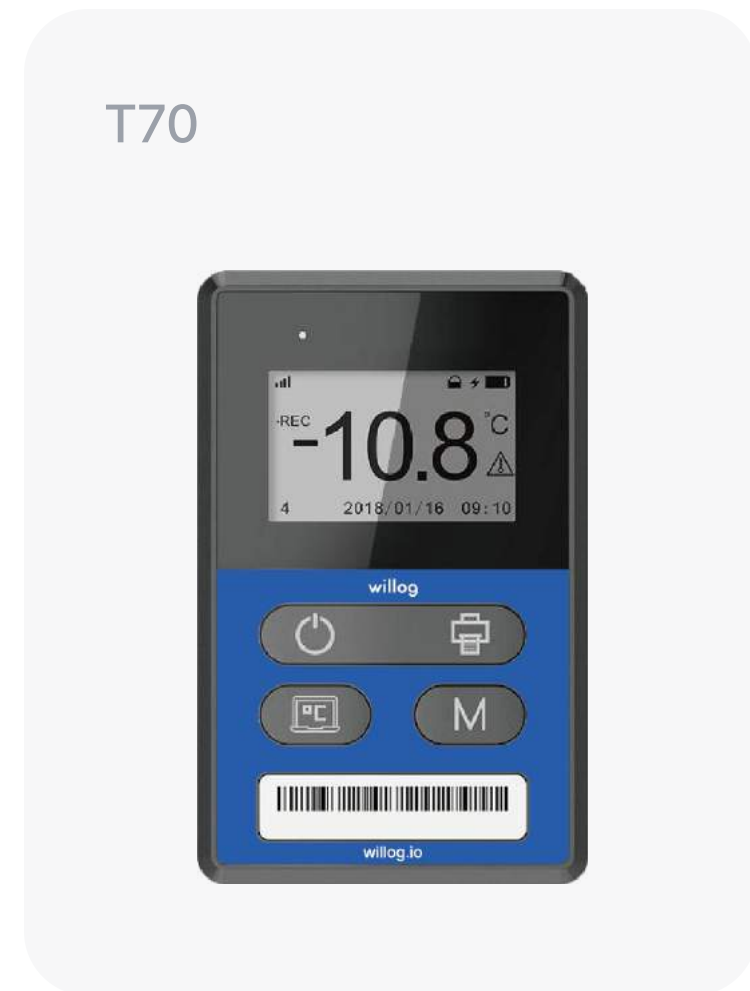
T70

T71P

T72P

R30

R30P

Sensor Devices

Model	Data Collected	Measurement Range (Temperature)	Measurement Range (Humidity)	Applicable Areas
B20	Temperature	-40 ~ +80°C	-	Vehicle Monitoring
B30 / V20	Temperature, Humidity, Shock	-30 ~ +70°C	20~90%	Vehicle / Import and Export Monitoring
B30P / V20P	Temperature	-25 ~ +70°C(Probe)	-	Box(Bio) Monitoring
B40	Temperature, Humidity	-40 ~ +85°C	10~90%	Warehouse Monitoring
B40P	Temperature	-40 ~ +85°C(Probe)	-	Box(Bio) Monitoring

B20

B30 / V20

B30P / V20P

B40

B40P
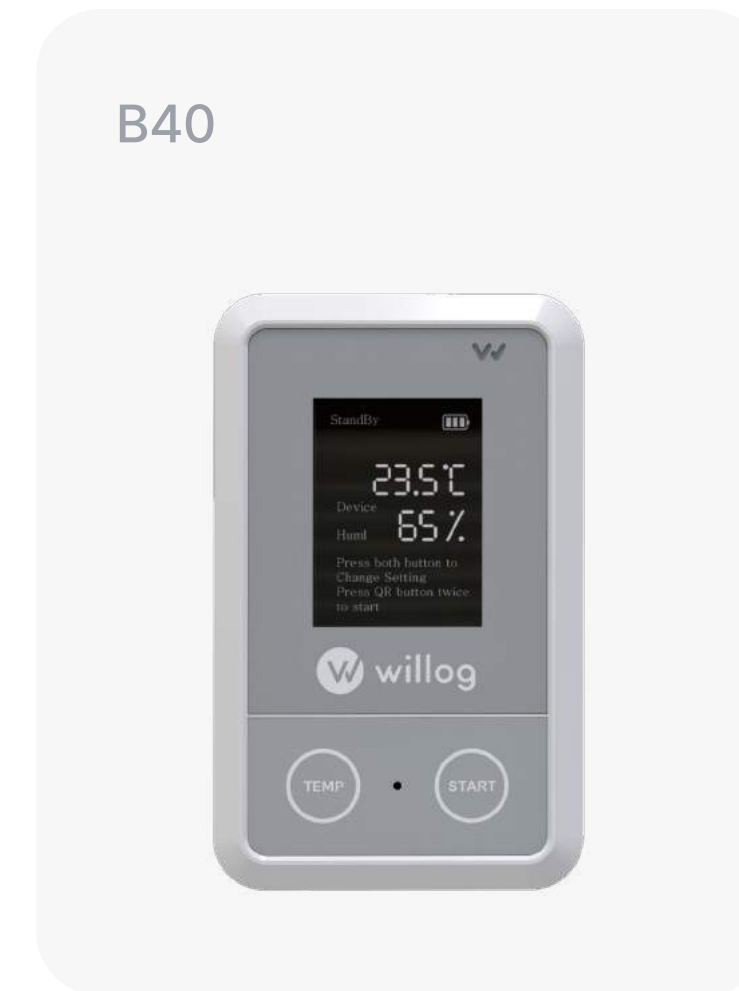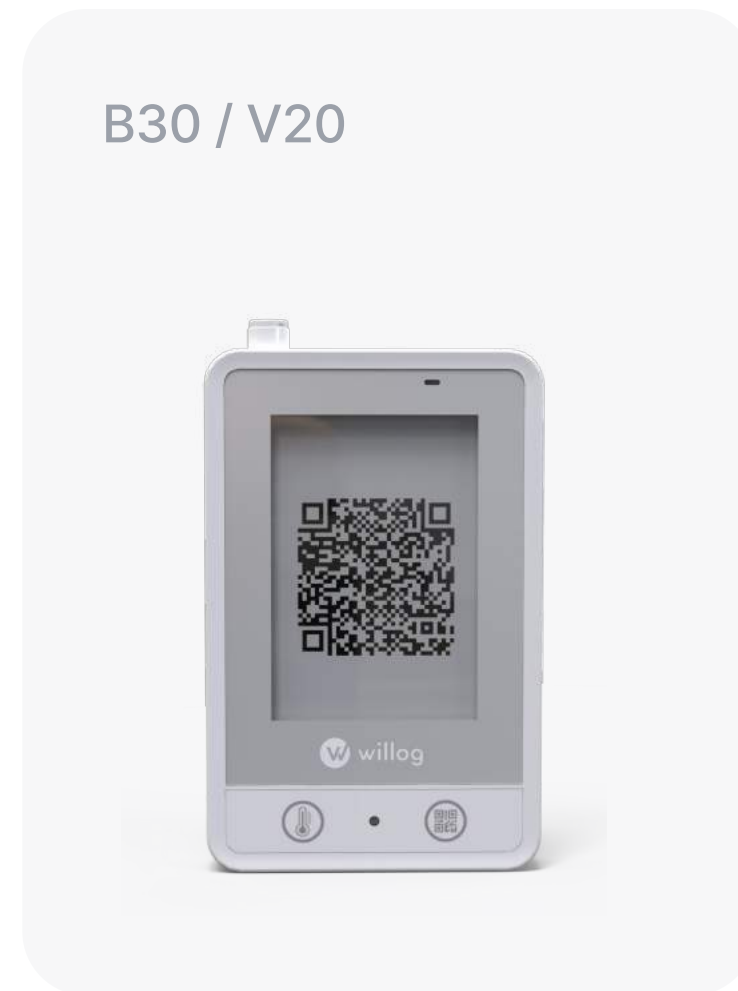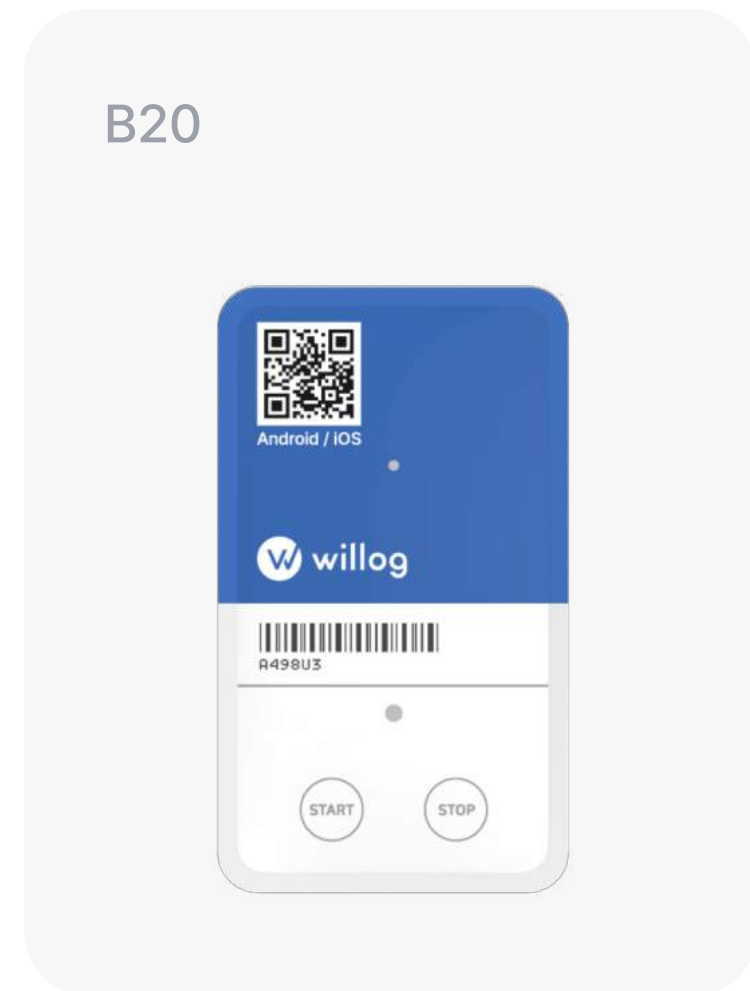
Gateway

Model	Data Collected	Applicable Areas
GW-C20	Location, V20P Measurement Data	Box(Bio) / Warehouse Monitoring
GW-A20*	Location, B20 Measurement Data	Vehicle Monitoring

GW-C20

GW-A20   * Connect to a tachometer to use as a vehicle temperature recorder.

Willog Dashboard

The Willog dashboard allows you to monitor logistics temperature, humidity, impact, and location history. Quickly identify and respond to issues.

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Real-time integrated monitoring

- Track product information and transportation history by integrating with product databases or corporate systems.
- Monitor domestic and international transportation locations, temperature, and humidity.
- Receive real-time alerts for quick response to issues, minimizing losses.

	Type	Status	Delivery history	PoD
...	All	No response	Shipped 22/07/18 08:53 — Delivered 22/07/18 15:58	✕ Can't issued
		Delayed	Shipped 22/07/18 09:12 — Delivered 22/07/18 15:58	✕ Can't issued
		MKT excursion	Shipped 22/07/18 11:34 — Delivered 22/07/18 15:02	✕ Can't issued
		Damaged	Shipped 22/07/18 07:21 — Delivered 22/07/18 11:47	✕ Can't issued

⚠

**Excursion occurred
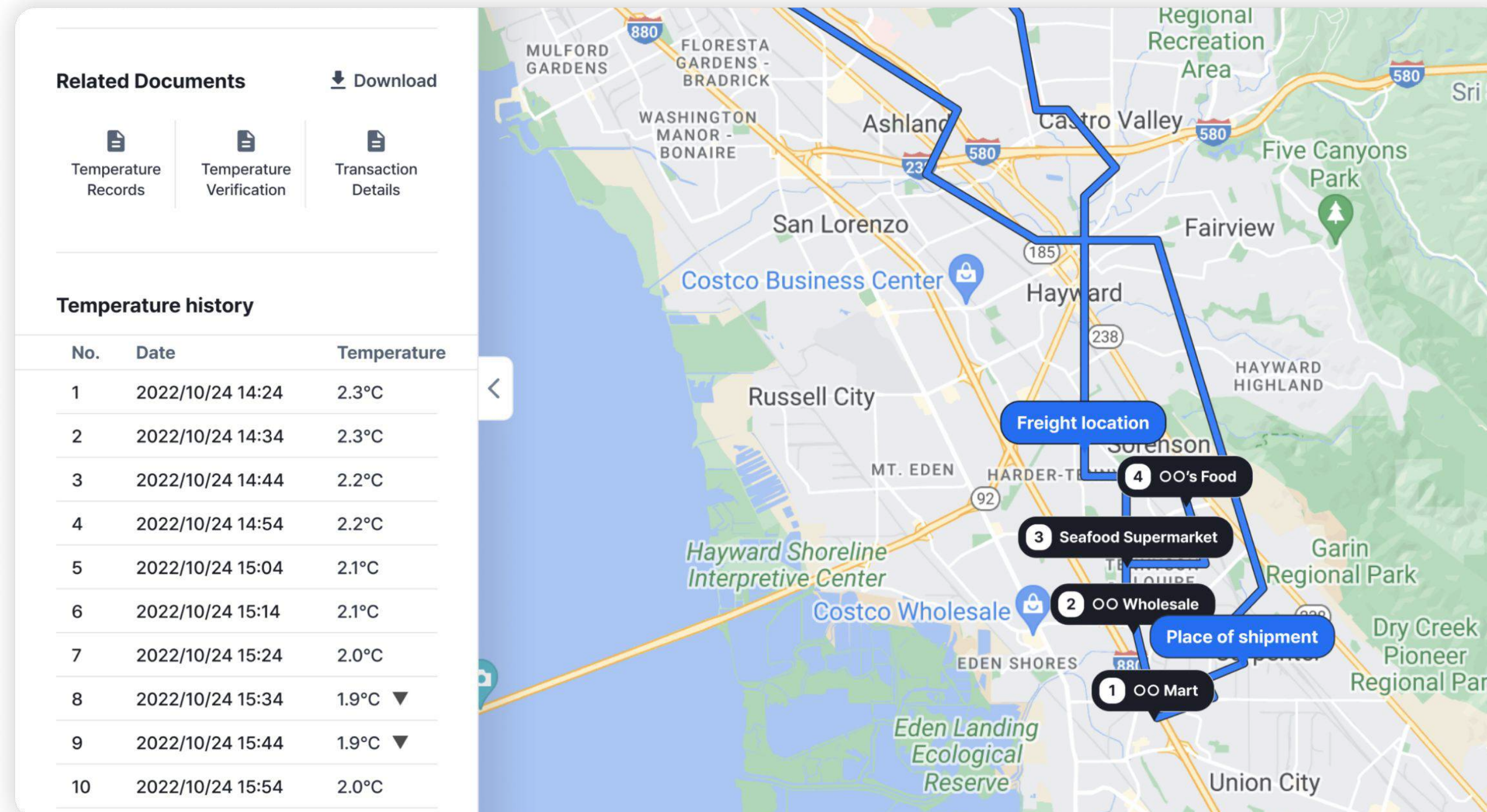Start the return process.**

Scan remaining OTQ
05046318

OK

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Transportation and dispatch management

- Upload and manage dispatch data for vehicles and drivers by region/course.
- Collect real-time location and temperature/humidity data during operation for effective management.

* When using vehicle gateway or real-time sensor device

Efficient workflow and document management

- Return and retrieval are streamlined with no cumbersome verification.
- Automatic generation and digital storage of electronic documents based on product temperature and shipping data eliminate the need for separate receipts or certificates, avoiding loss or damage.
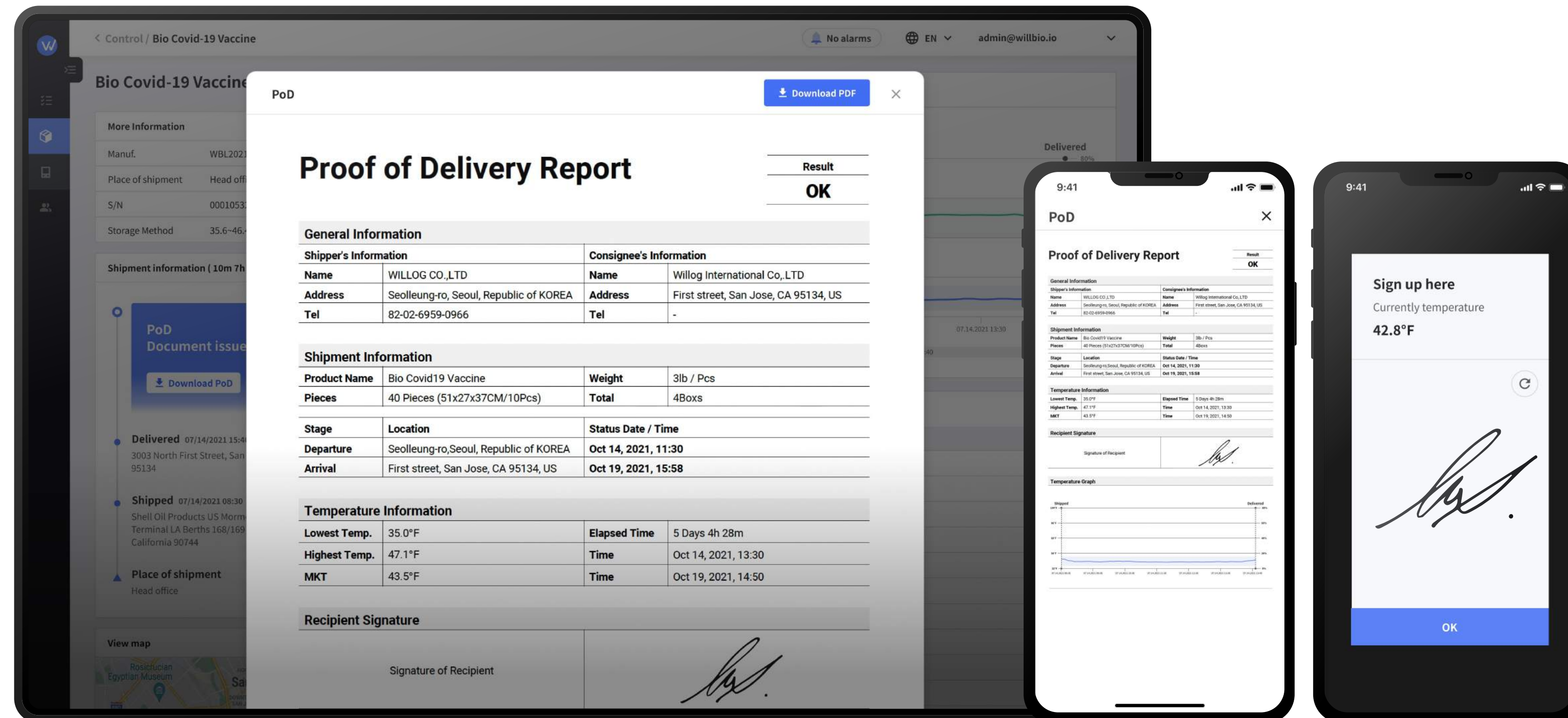
Condition Monitoring for In-transit Quality Management

Start with Willog

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