Solution Overview:

**Environmental Monitoring**

**Improves Patient Safety, Facilitates Regulatory Compliance and Increases Staff Efficiency**

**Challenges**
Healthcare organizations need to monitor and strictly control the temperature of sensitive items as well as accurately manage regulatory compliance with the Joint Commission, CAP, AABB, or state and local agencies standards.

Pharmaceuticals, blood, vaccines, tissues, food and other items require stringent temperature ranges for quality patient care and safety. To ensure that temperature levels remain within proper limits and comply with regulations, nursing, lab, pharmacy, IT and food service staff perform manual temperature monitoring and logging multiple times each day on hundreds of refrigeration units. Relying on manual data collection is time consuming, subject to human errors and only a “snapshot” of the temperature level. The lack of accurate, real-time environmental visibility increases the risk of noncompliance and fines, patient safety issues and expensive product replacement costs due to spoilage.

Additional environmental parameters to be monitored include the humidity and temperature in Operating Rooms, IT closets, Pharmacies and some patient rooms that must be maintained at controlled conditions for safety and comfort. Other environmental safety concerns can include cryogenic freezer doors left ajar, a locked medicine cabinet opened without authorization, or a pipe burst in the middle of the night, leaving a lab at risk of flooding.

Due to the sensitivity and labor-intensive management of environmental monitoring, hospitals and clinics are moving to automated, continuously monitored and reliable solutions to help address these challenges.

**Solution**
As part of the STANLEY Healthcare industry-leading visibility and analytics platform, the Environmental Monitoring solution is a cost-effective way to continuously monitor temperature, humidity conditions and dry contact sensor applications across the enterprise. Combined with powerful analytics that transforms real-time information into visual dashboards, healthcare organizations have entirely new levels of operational insight for immediate action, historical views and trend analysis. The automated, wireless solution enables hospitals and clinics to improve patient safety, facilitate regulatory compliance, increase staff efficiency and productivity—all while avoiding unnecessary costs.

**Benefits**

- **Improves operational efficiency** with intuitive analytics dashboards to easily see the “health” of all monitored devices and identify historical trends
- **Increases staff productivity and satisfaction** by eliminating manual processes
- **Improves patient safety** through constant assurance of safe temperature and humidity ranges
- **Facilitates regulatory compliance** through automated collection and logging of environmental data, including reporting tools
- **Reduces spoilage cost and safety risks** by facilitating faster responses to compromised environmental conditions
- **Enhance environmental safety by monitoring other conditions**—dry contact door/window open or closed, smoke detectors, water detectors and motion sensors
STANLEY Healthcare offers a variety of automated solutions to help healthcare organizations meet environmental safety and compliance goals with greater speed, accuracy and efficiency.

**TEMPERATURE:** The solution is used for monitoring refrigerators, freezers and room-temperature storage, including a Vaccines For Children (VFC) component that is 100% compliant with the new recommendations for the CDC VFC program. It can be used in data centers and network closets, where sensitive electronic equipment is monitored or in blanket warmers and food delivery carts.

**HUMIDITY:** It enables humidity monitoring of patient, storage and operating rooms.

**CONTACT SENSOR:** It continuously monitors the status of open/closed doors and windows, refrigerator and freezer doors, medicine cabinets and crash cart doors, smoke detectors, flood detection, motion sensors and more.

The Environmental Monitoring solution leverages the hospital’s existing Wi-Fi infrastructure, which enables rapid deployment with the lowest total cost of ownership and does not require a dedicated sensor network. The solution components include:

- STANLEY Healthcare MobileView® Visibility and Analytics Platform
- STANLEY Healthcare AeroScout® T5 Sensor Tags, available with NIST-traceable calibration certificates
- STANLEY Healthcare VFC Wi-Fi data logging sensor kit with NIST-traceable calibration certificates
- Hospital’s Wi-Fi Infrastructure

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**Environmental Monitoring Tag Calibration & Certification Program**

STANLEY Healthcare recommends annual recalibration of our NIST-traceable tags. Our ISO 17025 Accredited Environmental Monitoring Tag Calibration and Certification Program provides a simple and easy way to manage the process. For maximum flexibility, we offer an Advanced Service or Basic Service to streamline annual tag recalibration.

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**T5 Sensor Tag Overview**

<table>
<thead>
<tr>
<th>Tag</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>T5a</td>
<td>On-board temperature sensor: -30°C to +75°C (-22°F to +167°F)</td>
</tr>
<tr>
<td>T5b</td>
<td>External temperature sensor: -60°C to +140°C (-76°F to +284°F)</td>
</tr>
<tr>
<td>T5c</td>
<td>External temperature sensor: -200°C to +140°C (-328°F to +284°F)</td>
</tr>
<tr>
<td>T5h</td>
<td>Humidity &amp; Temperature sensor: 0%-100% RH, -30°C to +75°C</td>
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<tr>
<td>T5cs</td>
<td>Supports any normally open or closed contacts, connecting to a variety of contacts, sensors and detectors</td>
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</tbody>
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**REAL RESULTS**

- **$120K** WORTH OF MEDICATIONS saved when a refrigerator was accidentally unplugged
- **$40K** LOSS AVERTED when a refrigerator was moved and stopped working
- **$400K** WORTH OF VACCINES and medications saved in the first 6 months alone
- **1 DAY** LABOR SAVED PER WEEK for every 15 devices that are automatically monitored
How It Works
A Wi-Fi tag with an integrated sensor(s) periodically sends the measured condition or status over the Wi-Fi network. The tags can be placed directly in refrigerators, freezers, blanket warmers, rooms and closets or on doors, windows, and other applications for contact sensors—requiring no hard wires for easy implementation. The tags are powered by long-lasting batteries, and alert when the remaining battery life is low. They also feature onboard memory so data is not lost in the event of a network or server outage.

VISUAL CONTROLS
MobileView® is a web browser-based application that enables hospital staff to monitor and manage the location, status, interaction and condition of assets and people. MobileView provides at-a-glance views and advanced alerting capabilities to improve staff efficiency and ensure proper environmental conditions management.

The Environmental Monitoring solution continuously monitors temperature or humidity levels and if conditions deviate from the set range, an alert is automatically sent to responsible personnel. The same is true for when a dry contact is broken or connected. A variety of notification methods are available, including instant alerts on workstations and Apple iPhone®, iPod Touch® or iPad® mobile devices, e-mails, pagers, VoIP phone or badge alerts, text messages, or integration with third-party systems (e.g., facilities management).

The solution features alert customization and smart-alert escalation to reduce alarm fatigue. For example, alerts can be set to trigger after being out of range for a specified amount of time. If events are not addressed immediately, alerts may be escalated after a configurable amount of time, or if the condition worsens.

Additionally, the solution has an alert management view that displays all alerts that have been triggered and can be filtered for only those alerts relevant to a specific user or department. Through this view, responsible staff can easily log and update the corrective action taken to address each alert—an essential requirement for regulatory bodies.

ANALYTICS
The Environmental Monitoring solution provides powerful visual analytics to drive better operational decision making, identify areas for process improvement and apply predictive analytics to identify potential device malfunctions before they happen.

MobileView Analytics transforms complex temperature and humidity data into easy-to-understand visual information to quickly know the current condition of all monitored devices and rooms and analyze historical performance metrics, including device reliability and compliance. MobileView Analytics—available on-premise or through a cloud-based subscription—comes with standard and customizable environmental monitoring dashboards to visualize, analyze and transform operational processes to ensure efficiency and safety.
STANLEY Healthcare Solution Overview: Environmental Monitoring

Solution Highlights

- **Cost-effective, complete solution**
  - Easy to deploy with no fixed wiring
  - Variety of environmental sensors
  - Easy-to-use application and administrative functions
- **Customized events** provide proactive operational alerts/notifications
- **Automated monitoring** ensures accurate and reliable data (current and historical)
- **MobileView Analytics provides visual dashboards** to make better operational decisions, identify process improvement opportunities, and apply predictive analytics to optimize performance
- **Advanced reporting tools** provide required logging and corrective action data for regulatory compliance
- **Leverage existing Wi-Fi network** for enterprise-wide visibility of all temperature and humidity controlled devices and rooms
- **Open architecture and flexible API** allows for integration to existing systems such as communication devices, Building Automation, CMMS and EHRs
- **MobileView, a unified enterprise platform, provides a broad range of advantages**, such as visual analytics, interoperability, scalability, lowest cost of ownership and more
- **Additional MobileView solutions** for Asset Management, Patient Flow, Infant and Staff Protection and Hand Hygiene Compliance Monitoring

INTEGRATIONS

MobileView software easily integrates with a variety of other hospital systems to provide enterprise visibility and workflow coordination, including building automation for centralized management, CMMS and EMRs. To further utilize temperature, humidity and location data, additional standard integrations to communication devices and alert management solutions can streamline processes, improve response time and enhance the Environmental Monitoring solution.

MobileView Analytics dashboards allow quick drill down to understand measurement history, specific events and corrective actions to ensure compliance and safety.