WIRELESS TEMPERATURE MONITORING AND DIGITAL TASK MANAGEMENT

LAB PRO

Industry Challenges

Clinical laboratories are a highly regulated and complex environment that presents quality, compliance, supply chain, environmental and labour challenges on a daily basis.

Gaps in cold chain traceability can put patient safety at risk and lead to destruction of valuable samples and product.

Maintaining paper records means that management and technicians spend a lot of time on paperwork and manual temperature checks.

Manual records are slow, time consuming and leave a large margin for error or issues to arise.

Manual records are open to falsification, difficult to manage and access for auditing, and require costly storage for up to 30 years.

Missing records can lead to audit failure.

Temperature excursions on freezers and fridges can lead to spoiled samples.

Stock loss due to freezer/chill failures can lead to substantial financial loss.

Manual monitoring can lead to gaps in quality control.

Undetected fridge/freezers breaking down or doors left open can lead to substantial loss of valuable product and samples.

Any of these serious failures can lead to claims of poor corporate governance and concerns for patient safety.

The Solution: SLS Lab Pro Temperature Monitoring System

Ensures tamperproof, automated temperature monitoring and by using the best available technology that delivers good corporate governance and improved risk mitigation.

Ensures compliance with all regulatory requirements and eliminates the risk of non-compliance.

Closes any gaps in cold chain traceability.

The app eliminates all paper from your daily operations removing the cost of paper, printing, ink cartridges, paper record storage and the staff time spent on filling in paper records, distributing and filing paper records.

The automated sensors record the temperature in each location every 5 minutes eliminating the need for manual temperature recording.

This can save valuable time for your key personnel depending on the size of your operation.

24/7 automated SMS, email and telephone call alerts can be set up to warn key staff members of temperature excursions, power outages or doors left open to avoid any expensive stock loss and disruption to operations.

Real time reporting gives management team visibility of all task completion, records, non-conformances and corrective actions as they happen.

Live and historical data available on your SLS Lab Pro Web Portal with automated PDF reporting helps you and your team maintain quality, safety and operational efficiencies.

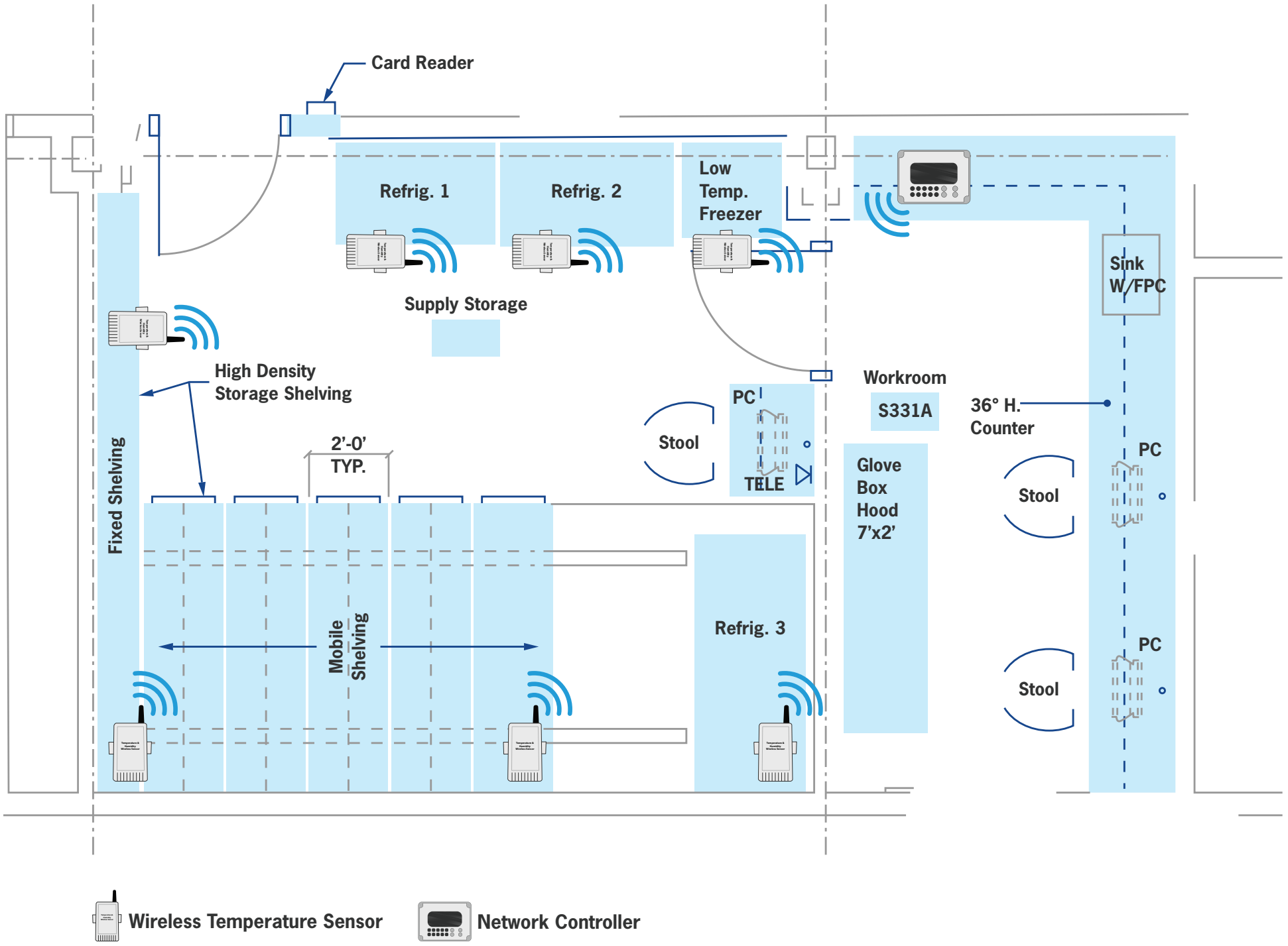
Management have much more control in the process and can ensure greater quality control.

Key members of staff are freed up and can concentrate on other activities - increasing staff productivity.

A full range of calibration services are provided as required.

The SLS Lab Pro Temperature Monitoring System

- Flexible and wireless sensor network that supports both large and small environments.
- Easy-to-use, non-disruptive deployment - no need for expensive hard-wired infrastructure.
- Cost-effective, automated record keeping eliminates manual checks and records.
- Secure, centralised, encrypted data keeps your records safe.
- Global access to information when and where you need it— by sensor, by room, by facility.
- Real-time alarming and alerting for temperature compliance and product quality assurance.
- Improved visibility and compliance through online data history and audit trail.


Card Reader
Refrig. 1
Refrig. 2
Low
Temp.
Freezer
Supply Storage
Sink
W/FPC
High Density
Storage Shelving
Fixed Shelving
2'-0'
TYP.
Stool
PC
TELE
Workroom
S331A
36° H.
Counter
Glove
Box
Hood
7'x2'
Stool
PC
Mobile
Shelving
Refrig. 3
Stool
PC
Wireless Temperature Sensor
Network Controller

SLS Lab Pro Temperature Monitoring System at Work

A fully integrated solution for facility temperature, humidity and condition monitoring which combines wireless sensors which are linked to their own network and web portal.

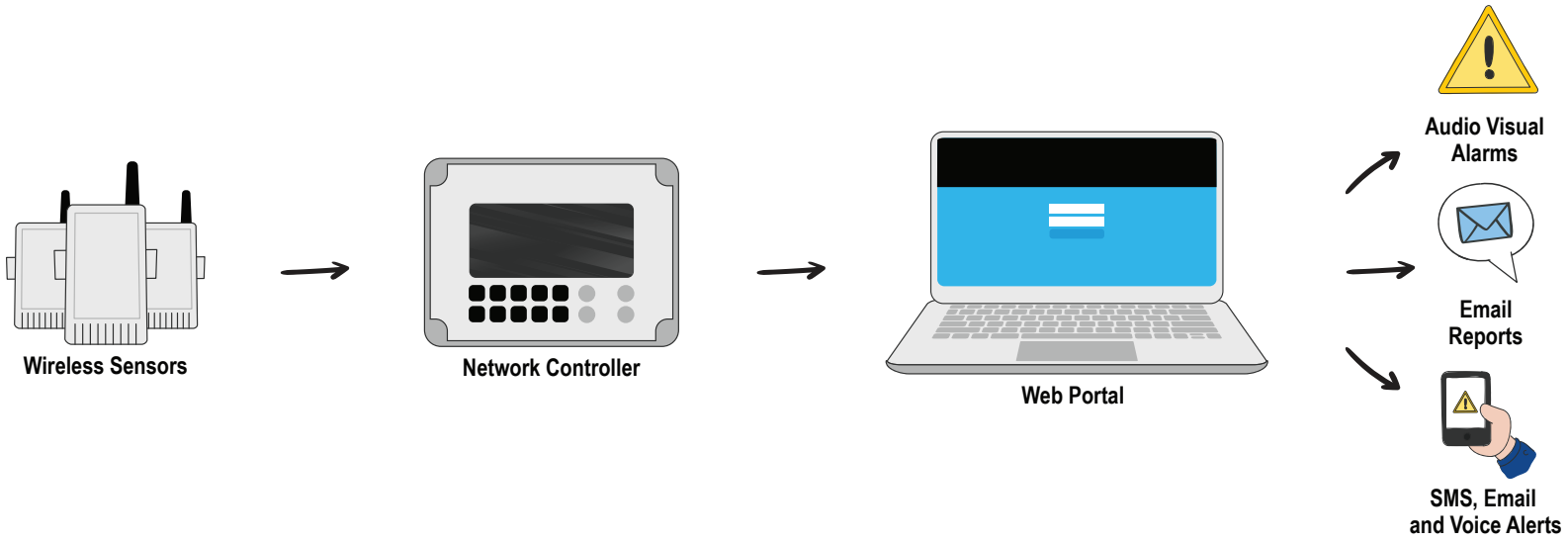
- Wireless sensors are configured with user-defined alarm thresholds and measurement intervals. They are strategically placed inside any number of storage areas to record environmental conditions.

- Wireless sensors record data and transmit the encrypted information wirelessly to a local Network Controller.

- The Network Controller relays the information to the Web Portal. All data is stored securely and is accessible to authorised users via a web browser; additional software is not required.

- The Web Portal provides immediate access to real-time and historical sensor data for all monitoring locations—and accessible from any web enabled device. Reports are available on demand or can be scheduled using a report wizard which will generate and distribute reports automatically via e-mail.

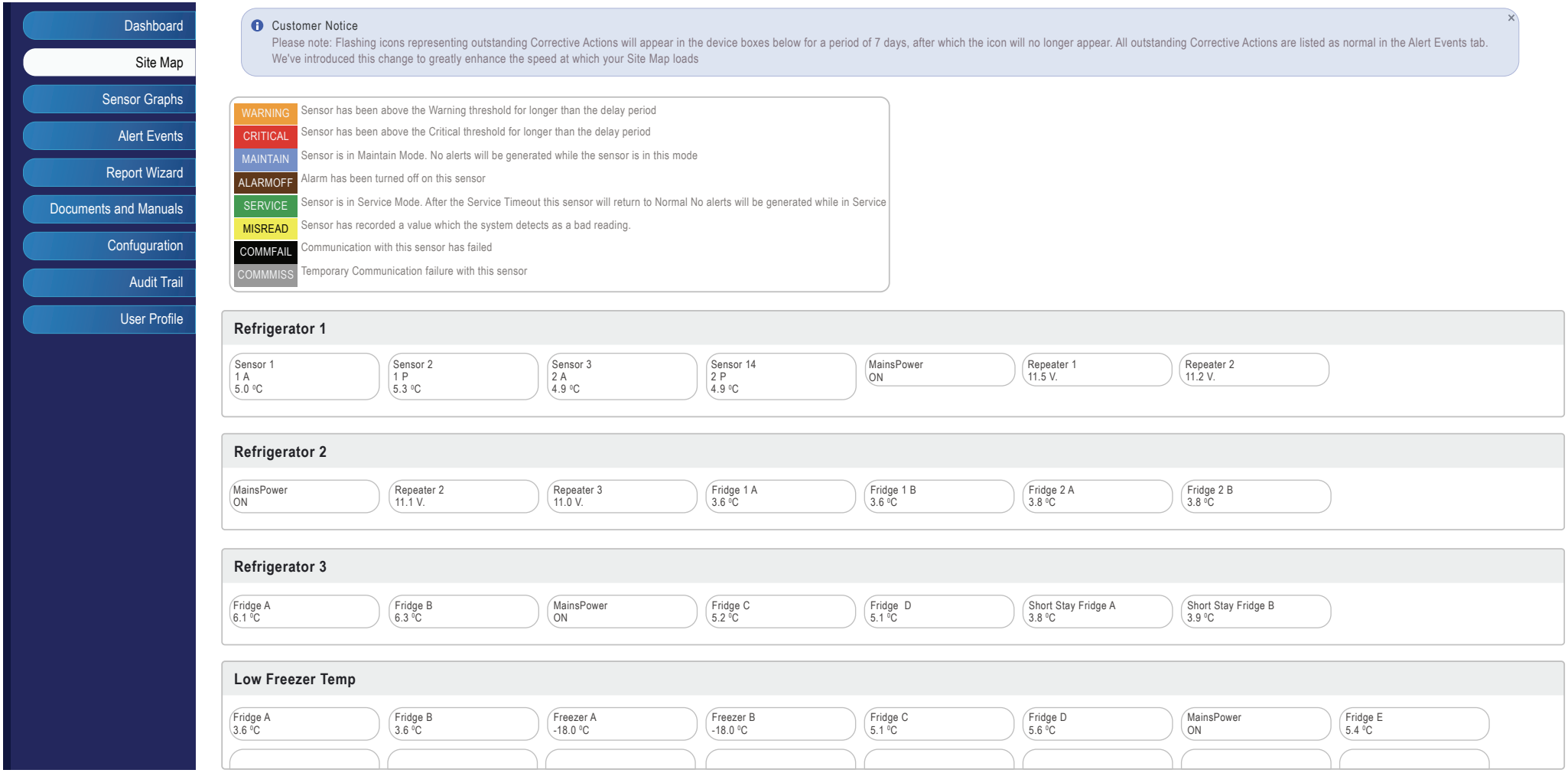
- When an excursion occurs, designated personnel can be alerted through audible/visual alarms, as well as through e-mail, text or automated phone call. Once a problem has been identified and corrective action has taken place, the incident can be recorded in the system's historical audit log.



Your Data: Secure and at Your Fingertips

Humidity					
Sensor Name	Min.(%)	Max.(%)	Average(%)	Standard Deviation	Total Records
Sensor 1 (Basement)	41.5	53.3	45.4	3.3	293
Sensor 2 (Basement)	42.0	53.8	45.9	3.1	293
Sensor 3 (Lab 1)	41.3	53.1	45.3	3.0	293
Sensor 4 (Lab 2)	41.0	53.3	45.2	3.4	292
Sensor 5 (Lab 3)	42.0	53.7	46.0	3.1	293
Sensor 6 (Lab 4)	42	53.1	46	3.1	293

Your Data: Secure and at Your Fingertips



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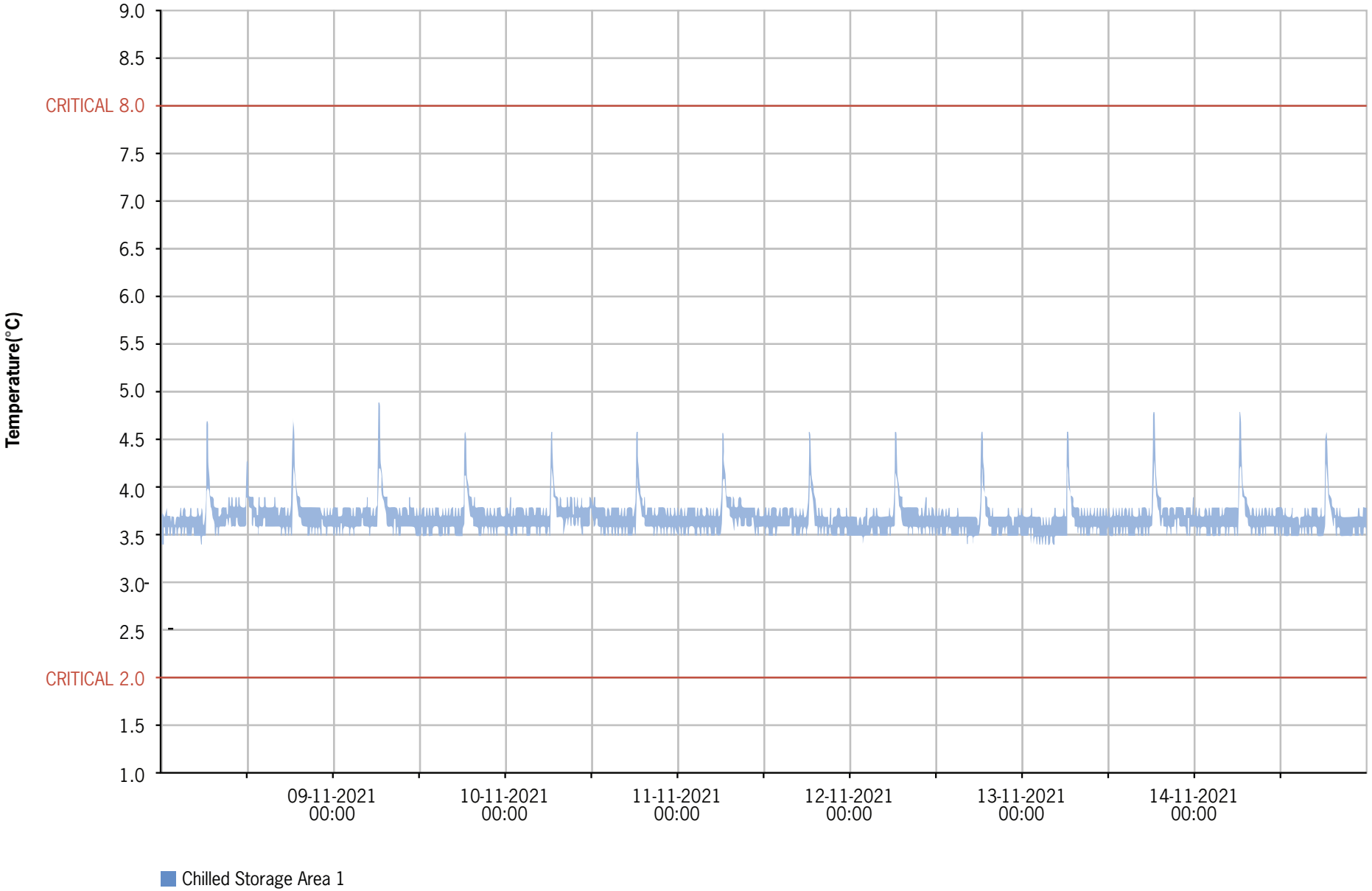

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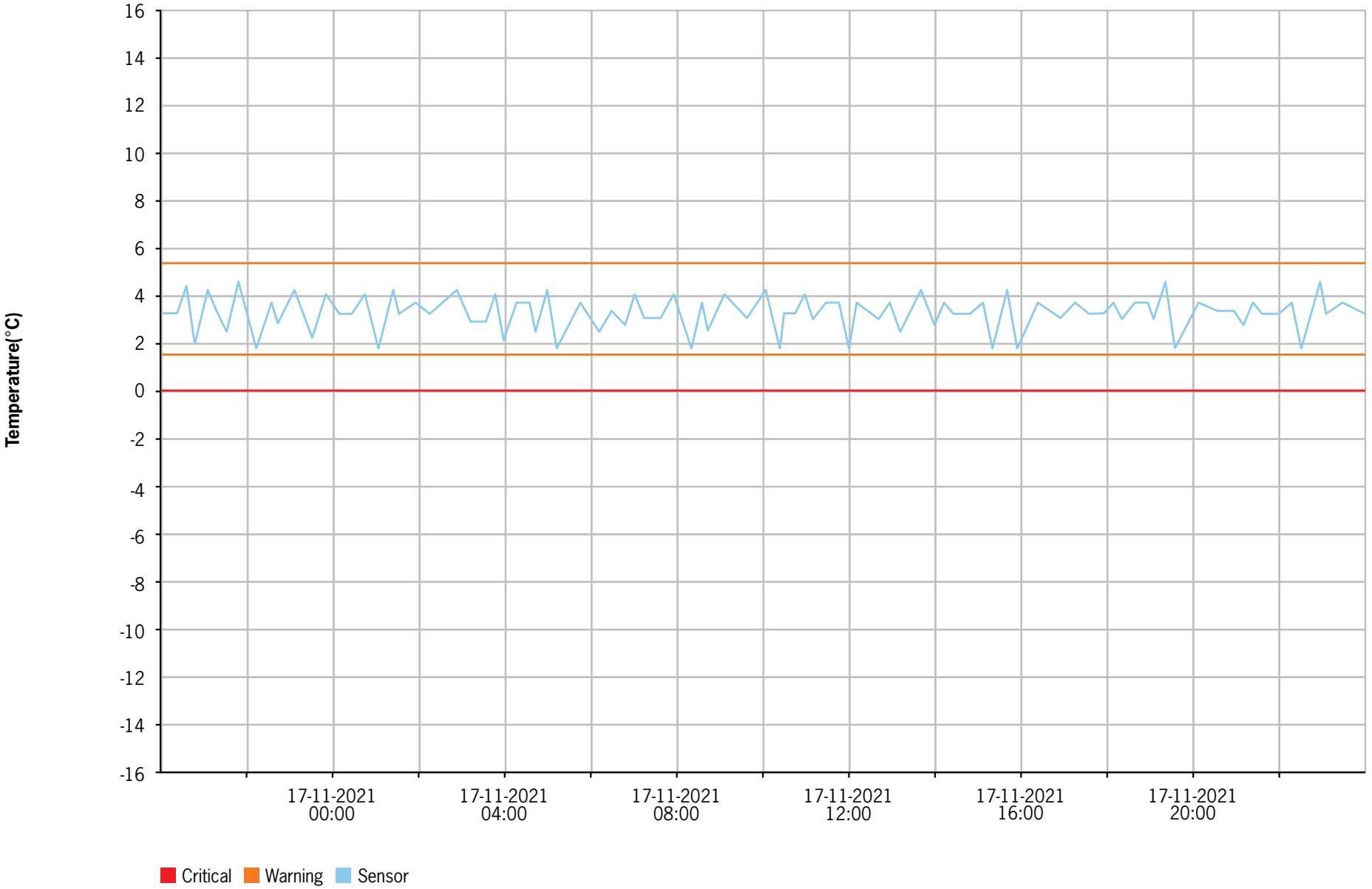

The Web Portal makes data access and reporting easy. The portal's dashboard and site map provide immediate access to key information regarding the current state of all monitored locations. The dashboard highlights current sensor alerts, while the site map provides a quick overview of all sensors, their current readings, and their current status (e.g. normal, warning, or critical).

Information is delivered in the format your organisation prefers; data can be viewed on demand or downloaded in multiple formats (e.g. .pdf, .xls, .csv formats) for a given day, week, or specific time period. Reports can also be scheduled for automated daily/weekly electronic delivery through the Report Wizard.

Alarming and alerting capabilities are key features of the system. The system can alarm on sensor-level readings (i.e. temperature excursions) or system-level issues such as damage to or removal of sensors, power failure, device malfunction, and network connectivity loss.

Each alert can be configured to notify designated personnel through a variety of methods: local audible/visual alarm beacons, email message, text message, or automated phone call. Full access to add corrective actions and sign-off data. In addition, all data transmissions are encrypted for security assurance.

- Audible/visual alarm beacons can be installed at various high-visibility points within the facility to alert on-site staff that an excursion or system-level issue needs attention. Beacons can be configured to alarm for an individual sensor or group of sensors.
- E-mails and text message alerts can be configured to reach designated personnel with information that includes the exact location and details of the alarm. Escalating, automated phone calls can also be made to designated personnel until someone logs in, investigates the alarm, and takes action.

Corrective actions can be used to document your process controls. Once an excursion has occurred, corrective actions can be entered by authorised users. A user can select from a pre-defined list or can manually enter a corrective action as needed. Every corrective action entered is date and time stamped and includes electronic signatures.

Electronic record keeping helps to assure that you have a robust audit trail when needed. The system maintains a rigorous 21 CFR Part 11 compliant audit log, tracking user and system activities including configuration changes, user logins, alerts, and corrective actions.

Your data is secure using a variety of methods. Access is protected by username and password authentication. Depending on their responsibilities, personnel can be granted different levels of access including read-only, read/write or full access to add corrective actions and sign-off data. In addition, all data transmissions are encrypted for security assurance.

Product Specification

Device Type	Temperature and Humidity Sensor		Temperature Sensor (Standard and Door Ajar version)	Bloodbank Sensor	Temperature Sensor with Probe	Network Controller
Product Code	SLS4152		SLS1334 & SLS4154	SLS4158	SLS4156	SLS4150
Unit	Temperature °C	%RH	Temperature °C	Temperature °C	Temperature °C	na
Max	+40°C	100%RH	+40°C	+40°C	80°C	na
Min	-35°C	0%RH	0°C	-35°C	0°C	na
Accuracy	0.5°C	5%RH	0.5°C	0.5°C	0.5°C	na
Resolution	0.1°C	0.1%RH	0.1°C	0.1°C	0.1°C	na
Power	2 x 3.6V Lithium		2 x 3.6V Lithium	2 x 3.6V Lithium	2 x 3.6V Lithium	12VDC PSU with 6 x 1.2V NiCd Battery Bkup
Battery Life	up to 5 years		up to 5 years	up to 5 years	up to 5 years	na
Line of sight Range	100m		100m	100m	100m	600m

Product Specification

Device Type	Amplified Repeater	RF Alarm	Alarm Flasher (plug-in)	Cryogenic Sensor (battery-op'd) - Unit only, add T'couple TC1	Cryogenic Sensor (Amplified) - Unit only, add T'couple TC1
Product Code	SLS1332	SLS4166	SLS4164	SLS4168	SLS4188
Unit	na	na	na	Temperature °C	Temperature °C
Max	na	na	na	+200°C	0°C
Min	na	na	na	-200°C	-200°C
Accuracy	na	na	na	0.5°C(>-100°C) / 1°C(<-100°C)	0.4°C(>-100°C) / 0.7°C(<-100°C)
Resolution	na	na	na	0.1°C	0.1°C
Power	12VDC PSU with 4 x 1.2V NiCd Battery Bkup	12VDC PSU with 4 x 1.2V NiCd Battery Bkup	9 to 12VDC (supplied by Net Controller)	2 x 1.5V C-Cell	12VDC PSU with 4 x 1.2V NiMH Battery Bkup
Battery Life	na	na	na	up to 6 months	na
Line of sight Range	600m	600m	na	100m	600m

Product Specification

Device Type	CO_2 Sensor		O_2 Sensor		4-20mA Sensor
Product Code	SLS4172		SLS4174		SLS4176
Unit	$\%CO_2$	Temperature °C	$\%O_2$	Temperature °C	mAmps
Max	10%	40°C	25%	40°C	20mA
Min	0%	5°C	0%	5°C	0mA
Accuracy	0.20%	0.5°C	0.20%	0.5°C	1% of reading
Resolution	0.10%	0.1°C	0.10%	0.1°C	0.1
Power	12VDC PSU with 4 x 1.2V NiCd Battery Bkup		12VDC PSU with 4 x 1.2V NiCd Battery Bkup		12VDC PSU with 4 x 1.2V NiCd Battery Bkup
Battery Life	na		na		na
Line of sight Range	100m		100m		600m

Security

Security and Compliance with SLS Lab Pro.

Your data and privacy are protected and secured.

SLS Lab Pro develop secure software design practices that include defining security requirements, threat modelling, code reviews, vulnerability management, incident resolution management and security testing. There are controls in place to validate/reject access to the customer portals including multi-factor authentication, roles and permissions.

- GDPR Compliant
- Data processed and stored in the EU
- Data encrypted at rest (data storage) and in transit (data transfer)

Information is readily available.

Daily and incremental backups allow data to be restored to any 5-minute period between backups. Data archived for more than 13 months can be restored from the portal at any time for audits of historical data and there is data retention for 30+ years. There's also an automated disaster recovery plan in place to ensure maximum uptime across 3 geographically dispersed data centre locations.

- 24/7/365
- Alerts via email/SMS/voice calls
- Self-healing data storage
- Automated crash recovery over multiple data centres

You are compliant

SLS Lab Pro complies with FDA 21 CFR Part 11 regulations – ISO 27001 compliance (AWS). A complete audit trail is available including user activity and change management audit records. There are multiple user roles to customise and control access to data and system configurations, and strong data governance where data is only accessible by the customer and a controlled small number of SLS Lab Pro employees.

Strong password policy is enforced and multifactor authentication is used to access the customer portal.

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