



Proactive Business Monitoring

X-TRACK™

Ever wondered how your business could be run better, being able to track your processes closely..? To give you that extra edge in quality, productivity and removing costs that was previously needed to ensure service levels. The productivity of retail organisations is constrained by the lack of real time information on the operating environments. In the case of manufacturing organisations, this critically affects the quality of end products. But what if managers are able to closely follow deviations to limits set through easy to deploy systems? Such systems would come handy for achieving accreditation and regulatory compliance as well. X-TRACK is a real time, wireless, parameter monitoring system designed and developed by Experion for a host of businesses based on the above approach! A framework that can enable your business with the reflex needed.

X-TRACK offers a wide range of solutions for real time monitoring of critical parameters such as temperature, voltage, current, humidity, pressure, speed and flow. X-TRACK is perfectly suited for small and medium scale organisations that cannot afford a full-fledged automation system in view of its prohibitive cost and limited use. Even if your business units are distantly located, one of the variants of X-TRACK would help you solve the problem of distances, inexpensively..! For organisations with existing automation systems, X-TRACK maximises ROI by delivering maximum process visibility.

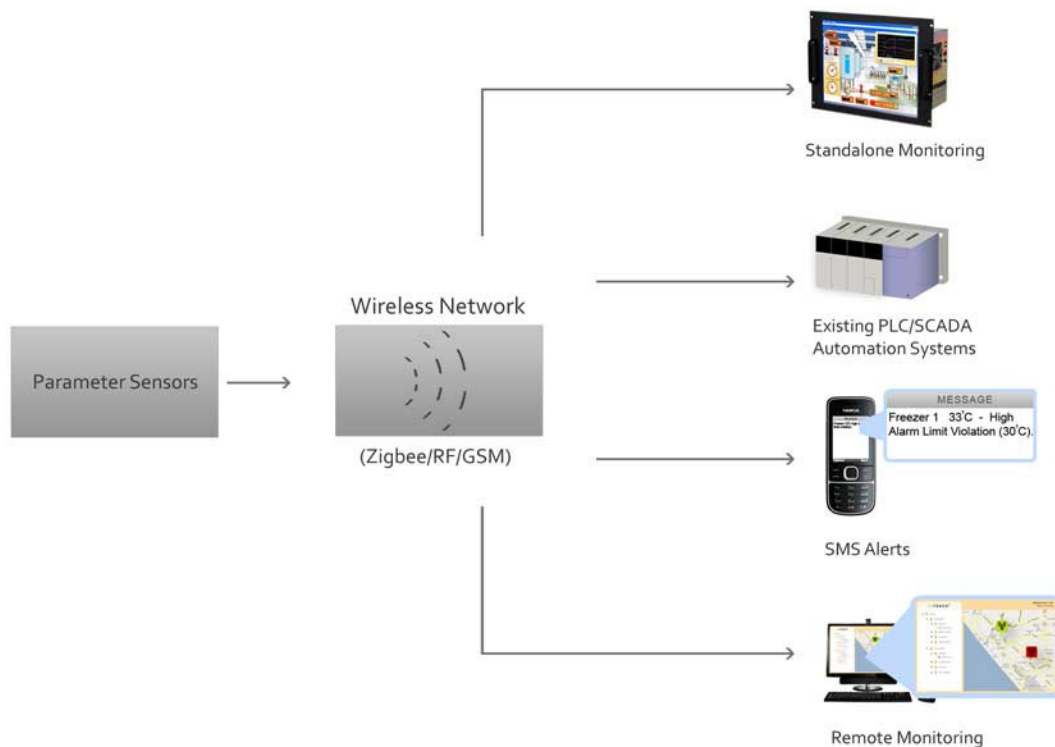


Fig 1: X-TRACK system overview

Features

- Reporting of alarm conditions through SMS and Email to the target groups /individuals
- Browser based user interface for monitoring
- Excellent process visualisation through Trends and Layout views
- Customised reports for complying with accreditation and regulatory requirements
- Integration with existing automation systems via industry standard protocols

Applications



- Medical / R & D Labs
- Blood Banks
- Biotech Labs
- Pharmaceutical Labs



- Process Industries
- Chemical Factories
- Power Plants
- Food & Beverage Plants



- Infrastructure Facilities
- Data Centers
- Mobile Tower Sites
- Warehouses



- Retail Facilities
- Supermarkets
- Cold Storages

Connectivity Options

X-TRACK is equipped with various connectivity options for catering to different application environments.

1. Zigbee – X-TRACK utilises state of the art Zigbee protocol (2.4 GHz) for all short range monitoring applications (< 300m).
2. RF – X-TRACK utilises universal 418 MHz RF band for all medium range monitoring applications up to 1 km.
3. GSM – X-TRACK utilises popular GSM technology for all monitoring applications which require unlimited data transmission range.

How It Works

- X-TRACK transmitter modules (XT-TX) are wired to the various field level analog and digital parameter sensors for inputs. In case the requirement is for single channel temperature/humidity measurement, X-TRACK in-built sensor inputs can be utilized. XT-TX modules transmit the parameters sampled, to X-TRACK receiver module (XT-RX) via Zigbee/RF/GSM links.
- XT-RX module provides various monitoring options based on the application environment. In case standalone monitoring is preferred, XT-RX module shall be connected to a PC which hosts the browser based monitoring software. XT-RX module can be integrated with existing PLC/SCADA automation systems via industry standard protocols such as Modbus RS-485. XT-RX module shall be connected to a server for facilitating remote monitoring. The server hosts the browser based monitoring software which can be accessed anywhere, anytime via internet.
- The monitoring software allows the users to track each sensor input in real time. The history tracker option allows the user to track each sensor input over it's entire life cycle.
- Custom alarm limits can be defined on each sensor input based on the criticality. In case an alarm is generated, alerts shall be sent to the user's mobile phone via SMS messages and e-mail alerts.

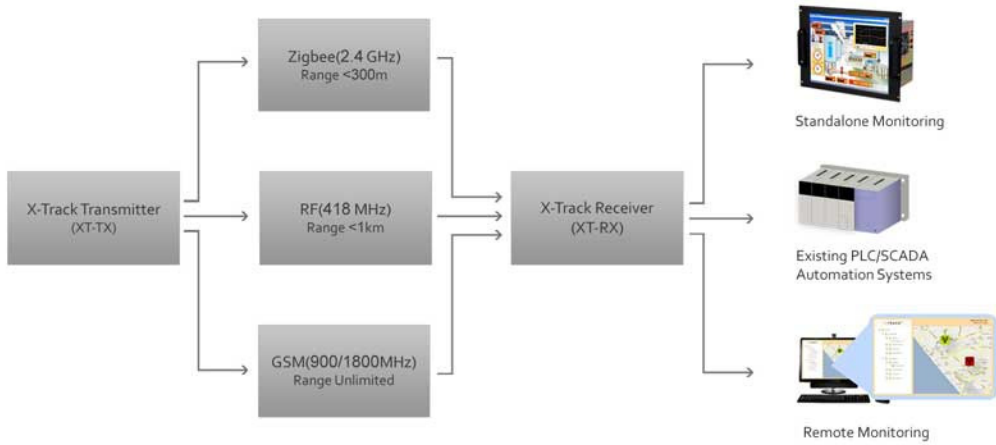


Fig 2: X-Track system architecture

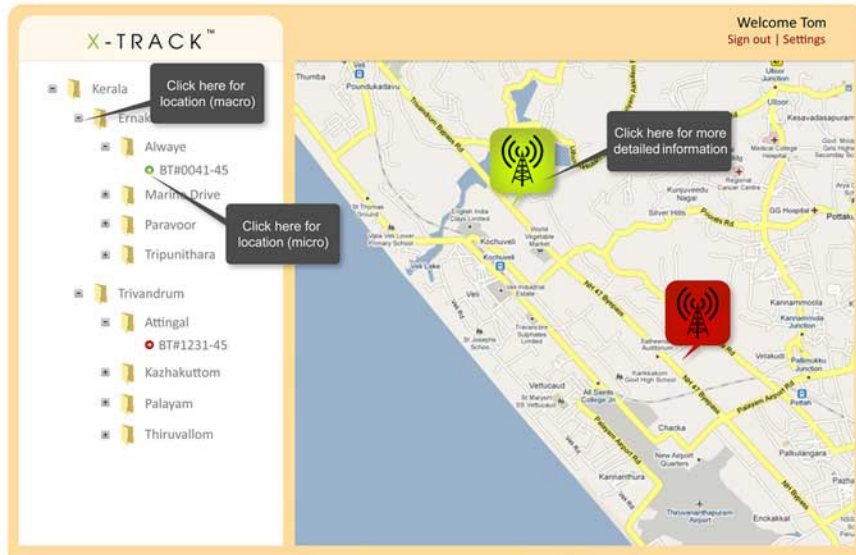


Fig 3: Monitoring software snapshot – Layout screen

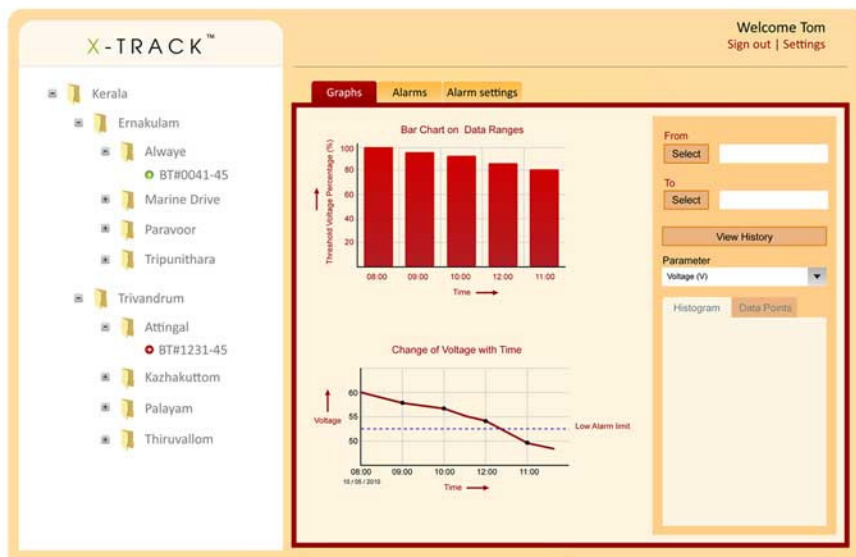


Fig 4: Monitoring software snapshot – Trends & Alarms

Benefits

- Major cost reduction and thus quick RoI
- Mitigates business risk
- Better value proposition & business positioning to the end customers
- Easy scalability and integration with existing systems
- Reduced deployment and maintenance costs

X - T R A C K Implementations

X - T R A C K Lab Monitor

Experion has proven expertise in deploying X-TRACK Lab Monitor in a leading biotechnological research lab in India. The lab equipment includes high end deep freezers which store biological samples and chemicals at temperatures as low as -80°C . Any failure in freezer equipment can result in spoilage of biological samples and chemicals. The opportunity costs of the spoiled biological samples are very high, increasing the lead time to procure the chemicals should they be destroyed due to equipment malfunction. Other than the opportunity costs, monetary losses and time delays are also unaffordable. Manual monitoring of these freezers which are in hundreds is impossible.

Experion successfully designed, developed and implemented X-TRACK Lab Monitor for the above customer. Custom sensor boards for measuring such low temperatures were designed and developed in-house. X-TRACK Lab Monitor continuously monitors the temperatures of the freezers. Abnormal events are reported through SMS and e-mail directly to the responsible scientist in charge of the lab operations. Thus, any freezer mal operation is tackled early on, before it causes any losses.

X - T R A C K Temperature Monitor

Experion is in the process of deploying X-TRACK Temperature Monitor in a leading chemical factory in South India. The company uses a set of rotating drums to manufacture chemicals. The duration of the manufacturing process is determined based on the product temperature in the rotating drums. Accurate product temperature measurement on a continuous basis is thus highly critical for ensuring consistent product quality. The system requirement consists of process temperature measurement, wireless transmission and integration with PLC at customer site over Modbus RS-485 protocol.

Experion created a variant of X-TRACK for the above customer. Custom boards for temperature measurement and PLC integration were designed and developed in-house. The entire product design and development cycle was carried out with due consideration of the harsh industrial environment at customer site. X-TRACK PLC integration was tested and verified successfully at site. The site installation phase of the project is under progress.

X - T R A C K Battery monitor

Experion is in the process of deploying X-TRACK Battery Monitor for a leading battery supplier in India. The batteries supplied to BTS (Base Transceiver Station) sites need to be monitored on an hourly basis. In case of battery failures, BTS telecom equipment fails completely. This results in reduced revenue for the mobile operator and a dissatisfied set of subscribers.

Experion has successfully designed and developed X-TRACK Battery Monitor for the above customer. A custom sensor board for measuring battery voltage was developed in-house. The measured battery voltages are transmitted as SMS messages to a GSM Modem in the customer's central office. The customers are able to accurately monitor the battery voltages on a continuous basis through easy to use software interfaces. X-TRACK thus ensures customer loyalty as it guarantees higher system availability without the need for the regular site monitoring, which is the current practice! The system also guarantees BTS operators an increased RoI by ensuring reduced network downtime.

Specifications	X - TRACK
XT-TX	
Parameter Sensors	On board temperature and humidity sensors Add on board with RTD temperature sensor input
Power supply	9 V battery / Mains operated
Operating conditions	Temp: -40°C to +85°C
I/O Interface	RS-232 serial interface
Display	LCD display panel
Physical dimensions	120mm X 80mm X 80mm
Weight	200g
XT-RX	
Parameter sensors	On board temperature and humidity sensors
Power supply	Mains operated
Operating conditions	Temp: -40°C to +85°C
I/O Interface	RS-232 serial interface
Physical Dimensions	120mm X 80mm X 80mm
Weight	200g

About Experion

A software services and solutions company, Experion Technologies, is into Engineering solutions, Mobile applications and Technology services. Experion has expertise in the latest generation technology platforms helping its clients to take advantage of technology advancements. We have some of the finest global organizations, both Fortune 500 companies and SMEs from around the world in our client list. The management team comprises of senior professionals with credibility and experience in international business, working in engineering & enterprise software domains. The company caters primarily to its clients in India, Europe, US and Asia Pacific.



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