REAL-TIME SHIPMENT MANAGEMENT: Track – Trace – Improve

Welcome to SmartView, one of the world’s most advanced and validated control systems for freight transport.

✓ Supply chain optimization
✓ Pro-active intervention
✓ Management by exception

News

Ambient Systems introduces ConnectGate for vehicle and facility monitoring
18 November 2013 – Ambient Systems, the Wireless Sensor Network…

SmartView Release 2.2 implemented with enhanced Facility Monitoring capabilities
21 October 2013 – Antaris Solutions is pleased to announce…
SmartView is at the forefront of what’s possible in the world of supply chain technology.

The online platform puts users in the driving seat, enabling them to monitor, intervene and improve global supply chains and storage facilities at the touch of a button. It is the online gateway to Panalpina's world-class network of people and processes. The proactive and autonomous system takes cost and concern out of your supply chain.

The smartest way to build a better supply chain – let SmartView show you the way.

Benefits of SmartView include:

- Autonomous control
- Proactive intervention
- Continual improvement/optimization
- Near real-time data collection
- End-to-end visibility
- Enriched documentation and reporting
What do I get?

The SmartView package gives you everything you need to build a secure supply chain:

1. **Panalpina’s worldwide freight monitoring network**: an army of SmartSensors and a smart visualization and reporting platform tells you everything you need to know about your goods, from location and temperature to relative humidity, light exposure and even G-Force Acceleration.

2. **World-class technology**: Panalpina works with leading specialists to offer a selection of hardware products, including Wireless Sensor Network and GPS/GPRS devices – with more under development.

3. **Sophisticated online control center**: acts as a gateway to near real-time visibility of your entire operation.

4. **Security**: Panalpina’s SmartView systems are combined with the latest secure database technology to ensure the highest level of protection of data.
Why should I get it?

✓ **Globally specific.** SmartView seamlessly integrates all your operations to give you end-to-end visibility and control. If you have a question about any aspect of your supply chain, from a global perspective to a single box, SmartView can answer it.

✓ **Let the machine do the work.** SmartView is your eye in the sky that prevents problems before they even occur. Automatic alerts sent straight to the right people highlight any anomalies and the system facilitates the required action to immediately resolve issues. It then records the data to avoid the same problem happening again.

✓ **Flexible to you.** Thanks to state-of-the-art monitoring and control technology, this fully automated system can be implemented according to your exact needs.

✓ **Inform and improve.** SmartView collects data on every aspect of your supply chain, allowing you to mine information, share best practice, and explore new ways to improve your operations. Build a secure supply chain from your arm chair.

✓ **Broaden your horizons.** Improved routings and new trade lanes breed better efficiency. Use SmartView to conduct fact-based trade lane studies and qualify new trade lanes with ease.
How does it work?

The SmartView Cockpit provides a near-real-time picture of your physical supply chain by collecting data from innovative monitoring devices. These intelligent sensors are placed with your goods and keep you up-to-date about the location, temperature, shock, light exposure or relative humidity of your products.
What does it look like?

The SmartView web application provides an integrated view of your shipments and facilities, as indicated in the SmartView homepage screenshot:
What does it look like?

Each shipment in SmartView is monitored in near-real-time to provide a detailed picture about shipment excursions and milestones:

For a more detailed tour of the application, contact your local Panalpina office to get a demonstration.
SmartView is a globally integrated platform that helps to prevent problems and save valuable time for your staff. It monitors supply chain processes, targeted at the following applications:

**Facility Management:** Monitoring and documentation of temperature controlled storage facilities to comply with relevant regulations, such as (Good Distribution Practices) GDP.

**Shipment Management:** Monitoring and documentation of condition and location of your shipments during road, air and ocean transportation. Share shipment information in near real time and respond immediately to exceptions.
Companies involved in the storage of temperature-sensitive products must ensure that correct temperature conditions are maintained at all times. Regulations provide strict guidelines for continuous temperature monitoring, reliable alerting and documentation of temperature records. SmartView is the ideal solution. Extremely easy to deploy in existing storage facilities, it combines a web application with the installation of a Wireless Sensor Network in your facility.

**Key benefits**

- Compliance with GDP regulations
- Very easy to deploy and operate
- No temperature excursions
- No paper storage
- Integrated view of storage and distribution
How does it work?

1. **Tag**: the required sensor is placed with the shipment prior to departure and the related travel parameters are defined in SmartView.
2. **Travel**: the sensor transmits or collects data as the goods travel, and SmartView sends out automatic intervention alerts if required.
3. **Accept**: goods are received at their final destination where the SmartSensor is removed and the shipment is accepted by the consignee.

Who is this for?

- Companies that ship goods that are sensitive, valuable or private in nature will benefit significantly from SmartView’s near-real-time shipment management capabilities.
- If you operate in the pharmaceutical, high tech, automotive or fresh food industry, SmartView will help you protect your valuable product during transportation.

What does it look like?

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Facility Monitoring

Shipment Monitoring

What do I get?

- Why should I get it?
- How does it work?
- What does it look like?
- What can I use it for?
- Facility Monitoring
- Shipment Monitoring
Hardware components

With the SmartView solution we offer a range of hardware products to provide different visibility levels, depending on the type of technology to collect sensor measurements:

- USB data Loggers
- Wireless Sensor data Loggers
- GPS/GPRS data loggers
USB Data loggers: These devices log temperature measurements during transportation and provide this information after a shipment has arrived at its destination. At that moment the data log is retrieved by a user on a PC, with the use of a USB connection. From there the information can be easily uploaded in the SmartView application.

Wireless Sensors data loggers: Wireless Sensor Networks provide intelligent temperature loggers with wireless communication capabilities. These sensors transmit their logs at various points in the supply chain that have been equipped with sensor network components.

GPS/GPRS data loggers: These sensors use the cellular networks operated by mobile operators to send their measurements in near real-time to our SmartView application (e.g. with 15 minute intervals). These products come with a variety of features and pricing, targeted at specific applications in road, air and ocean transportation.
The Berlinger Q-tag® CLm doc is a powerful temperature monitor with significant benefits. Up to 5 different temperature and time alarms can be set between -25°C and +50 °C. The display shows any temperature limit violation at a glance, even if an alarm is not triggered yet. Once the device has been connected to a PC, it creates a PDF and a ASCII file with all measured temperatures and time data. The ASCII file can be uploaded into the SmartView application for central data storage and additional reporting.

**Applications**
- Temperature Monitoring with full data report after shipment arrival at destination.
- Single-use device.

**Key benefits**
- Easy upload in the SmartView application.
- Configuration of up to 5 different temperature alarms.
- Display that provides immediate feedback at destination on temperature excursions.
- Fully validated for pharmaceutical applications.
SmartView is fully integrated with the Ambient Systems Product Series 3000 Wireless Sensor Networks. The Product Series 3000 provides highly energy-efficient self-organizing wireless networks based on the IEEE 802.15.4 standard.

Within the Wireless Sensor Networks, SmartPoints provide the intelligent Wireless Data Loggers that act as the “ears and eyes” on a shipment or in a facility. These sensor devices are attached to objects they closely need to monitor or guard, but can also be used for static monitoring purposes.

When inside a Wireless Sensor Network, SmartPoints provide real-time measurements, and they automatically turn into a RF-data logger when out of range of network. Upon return in a Wireless Sensor Network, the SmartPoints automatically download their sensor log, without the need for any manual activity.
**SmartPoint Wireless data loggers**

**Applications**

- Facility Monitoring with automatic real-time alerting
- Shipment Monitoring with near real-time visibility for road, air and ocean transport

**Key benefits**

- Robust enclosure that protects against dust, moist and force.
- Very long battery-life of 3-5 years.
- Memory storage for thousands of measurements.
- Variety of sensors available, including temperature, humidity and open/close sensors.
Network Components

To collect data from the Wireless Data Loggers in the SmartView application, one or more Network Components need to be installed in a facility or vehicle. The Network Components create a reliable wireless monitoring network, from which data from the Wireless Data Loggers is automatically forwarded to the SmartView application.

Key benefits

- **Ease of installation.** The Wireless Sensor Network protocol ensures that networks are self-organizing and self-healing. Network installation only requires the available of power outlets for the Network Components.

- **Robust and Resilient.** If no wireless communication is available, your data will safely be stored and is transferred when SmartPoints are in communication range again.

- **Highly Secure.** Within the Wireless Sensor Networks can easily set security keys and limit devices that may connect with a Wireless Sensor Network.

- **Highly Scalable from small to large facilities.** To extend the radio coverage, MicroRouter devices can be easily added to the MicroRouters act as data repeaters that take care of establishing radio coverage via wireless mesh networking.
Network Components

For facilities with fixed Internet connection: Gateway & ConnectBox-LAN

Each wireless network contains at least one Gateway, which ensures that data is communicated between the wireless network and the SmartView application. The GateWay collects all data from the Wireless Data Loggers, and forwards this data to the ConnectBox-LAN. The ConnectBox-LAN forwards the data to the SmartView application using a secure Ethernet connection.

For vehicles and facilities without fixed Internet connection: ConnectGate

The ConnectGate is a highly innovative device that provides the functionality of the GateWay and automatically forwards this to the SmartView application using a GPRS connection. In case of power failure, to ConnectGate automatically switches to its back-up battery. For use in vehicles, the ConnectGate also provides GPS localization.
The ILC2000 is an autonomous battery-powered device for real-time monitoring of valuable shipments and transportation vehicles via the GSM network. The ILC2000 contains a range of sensors, including temperature, shock, humidity, air pressure and light.

The device also enables localization of shipments with GPS and cellular localization.

The ILC2000 is FAA-compliant so it automatically shuts off prior to aircraft take-off, and automatically turns back on when the aircraft lands. While in-flight, the device continues to collect sensor data.
ILC2000 GPS/GPRS data logger

Applications

✓ Shipment Monitoring with near real-time visibility for road, air and ocean transport.
✓ Supply Chain Security applications, which require real-time location and condition monitoring.

Key benefits

✓ Completely autonomous device for GPS/GPRS tracking of shipments and vehicles.
✓ Range of sensors enables both cold chain and security applications.
✓ Battery-life can vary from 2 days to 6 weeks, depending on user configuration.
✓ Aircraft mode available to automatically switch off wireless communication onboard aircraft.
Can the Wireless Data Loggers be used onboard aircraft for airfreight shipments?

Yes. The Ambient Systems SmartPoints never transmit a radio-message when they are outside of their reader network. This is in contrast with traditional active RFID tags that always transmit messages at fixed intervals with an identification number. The SmartPoints have been designed to first listen to receive a beacon-call from a reader prior to transmitting any messages such as temperature recordings. When in range of a reader they will exchange a security key and transmit the message. When not in range (for example aboard an aircraft) these tags will simply log the temperature-recording, and transmit its logs at a later stage.

If you want to use our Wireless Data Loggers on your shipments aboard an aircraft, please consult with your Panalpina representative who in turn will check upon the carriers in question. A number of air carriers have already approved the use of these sensors after careful evaluation. We are happy to support any inquiries.
Can the Ambient Systems Wireless Sensor Networks interfere with existing WiFi (IEEE 802.11) networks?

No. The Ambient Systems Wireless Sensor networks form an independent network that operates on an IEEE standard 802.15.4 communication protocol for ultra-low power radio. The radio frequency does not overlap with WiFi. To be approved as an IEEE 802 standard, a coexistence document and plan ensures all 802 wireless standards can operate and coexist in the same space.

Can the Ambient Systems Wireless Data Loggers impact biological products?

No. Other wireless protocols that are widely used in the logistics environment, such as WiFi networks in warehouses, provide significantly more exposure to radio communication than the Ambient Systems SmartPoints. That is because the Ambient Systems Product Series 3000 is based on an extremely energy-efficient wireless protocol, with very low radio output power and a very short communication time (which is referred to as ‘duty-cycle’). The radio output power of SmartPoints is only a fraction of WiFi-enabled devices. Furthermore, SmartPoints listen to beacon messages before they transmit, and normally they transmit only a very small message in a few milliseconds at 15 minute intervals. So almost all the time, the SmartPoints are ‘sleeping’. Overall, it can be concluded that SmartPoints can have absolutely no impact on biological products.
Frequently Asked Questions

Are there security risks?

No. The Ambient wireless network operates on its own patented mesh network and is a standalone system, there are no security concerns relating to HIPAA regulations and standards. SmartPoints are the only wireless clients allowed on the network and they have limited communication capabilities.

The data collected from the Ambient’s wireless networks is encrypted and is securely stored in the SmartView databases. These are hosted in a hardened secure data center, in accordance with Good Distribution Practices and FDA 21 CFR Part 11 regulations.