Case Study:
AVL and Temperature Monitoring

Andlauer Transportation Services implements a fleet temperature monitoring and tracking solution to ensure pharmaceutical cargo remains at a consistent temperature.

The Client

Andlauer Transportation Services (ATS) provides a one-stop-shop for effective and efficient transportation and distribution. With a commitment to the highest quality standards, it is the mantra of ATS to find a better way to service each of its varied customers.

The Challenge

Man y ATS customers rely on the trucking company to transport temperature sensitive goods long distances. With the introduction of new legislation for the transportation of pharmaceuticals, ATS required a solution that would allow them to monitor temperature and location information in real-time on the refrigerated trucks carrying pharmaceuticals to ensure the timely delivery of undamaged goods. Quality control hinges on availability of temperature information for many ATS customers and is therefore vital to efficient operations. ATS turned to Visual Defence to provide a comprehensive fleet management and tracking solution that would ensure the legislative requirements of their pharmaceutical customers were met effectively and efficiently.

The Solution: Meeting Legislative Requirements

Visual Defence designed a solution that monitors the fleet of refrigerated vehicles in real-time with Automatic Vehicle Location technology (AVL) that employs a geo-positioning system (GPS). The solution also provides full temperature management, alarm notification, reporting and storage capabilities. Information from the on-board systems are sent to the main dispatch center over a wireless network to ensure specific temperature requirements are met for the effective delivery to end clientele.

The solution covers the entire delivery process of goods; from the warehouse to their various destinations. Before leaving the warehouse, data from twenty-two (22) installed sensors captures temperature information and timestamps the temperature sensitive goods.

Once on the trucks, temperature of the goods continue to be monitored using both wet and dry temperature sensors. The dry temperature sensors send real-time temperatures information of the vehicle environment while the wet temperature sensors send real-time temperature information of the actual goods. A self-contained generator and power supply installed on the trucks ensure that the vehicle is kept cold even while the engine is off.

The temperature of the actual goods depends on a number of criteria including weight, density and packaging. The wet sensor is encased in a tube filled with glycol which simulates the actual temperature of the goods by taking these factors into consideration.

Actionable Information

Having access to on-board information to monitoring and reporting purposes is key to meeting the legislative requirements of pharmaceutical transportation. Each of the refrigerated vehicles is then fitted with an on-board wireless communication system that includes a dual Cellular/GPS Antenna for communicating with

both TELUS' 1X network and the GPS constellation. The on-board communication system, capable of GPS tracking also integrates the wet and dry temperature sensors as well as a door sensor, engine sensor and generator compressor sensor.

Any time the truck's back door is opened, an alarm is sent to the monitoring centre at ATS headquarters to notify personnel of the event and warn them to closely monitor the temperature of goods. The temperature sensors are connected via 1-wire cabling to a HA7E Controller which will communicate with the integrated GPS tracking, wireless communication and microcontroller device for monitoring personnel to track.

All information from the sensors is recorded and stored in a database for seven years. Storing this data is of particular importance for ATS's pharmaceutical customers. Having access to the breadth of information collected by the sensors helps them to ensure that when their goods arrive at their destination they meet all quality requirements and are safe for use.

Return-on-Investment

The on-board temperature tracking system provides ATS with a significant return-on-investment in two distinct ways. First, because the system is integrated with GPS and engine information, ATS is able to use the information to monitor the efficiency and operations of the fleet and, as such, serves a dual purpose.

Second, being able to provide a service to pharmaceutical customers that assist them in ensuring their goods meet all legislative requirements and can be guaranteed to arrive at their destinations safe-to-use is a strategic differentiation point for the trucking company, giving them a strong competitive edge against the competition.