

# Global container tracking, tracing and monitoring

Unmonitored and unchecked containers not only hamper supply chain security, they could pose a security risk. **Zenatek's** container-tracking software provides peace of mind in an affordable way, explains owner Ennio Zanotti.

**Z**enatek has a strong connection with the UN missions through its owner, Ennio Zanotti. He was one of the founders, former managing director and former president of logistics firm ES-KO, which boasted the UN among its clients. In fact, it was under his leadership, in 1988, that the UN Department of Peacekeeping Operations awarded ES-KO a contract for the first rations supply for Namibia.

This led to contracts for major UN missions around the world, including those in Angola, Mozambique, Democratic Republic of the Congo (then known as Zaire), Sierra Leone, East Timor, Haiti and Sudan. In the Balkans, ES-KO's contract required it to supply the whole mission, a contingent of nearly 36,000 troops. Other clients included construction companies, oil and gas firms, and Nato, for which the company provided logistical support, food supplies, camp infrastructure and facilities, and maintenance.

“ The Zenatek Tracking System is intended to monitor containers while they are in transit. It sends real-time information about possible tampering, temperature variances and location. ”

This direct experience gave Zanotti (who is no longer with ES-KO) a wealth of expertise on the logistical problems of sending containers around the world to hard-to-access areas, whether they have been war-torn or devastated by a natural disaster. Common problems included losing containers, missing trans-shipments and unscrupulous custom officials taking 'large samples' of goods from containers.

## The solution revealed

The cargo being shipped is typically worth more than its intrinsic value, due to the supply chain disruption that results from goods not arriving when they are scheduled to. The stakeholder that suffers the most when this happens is the end user. Zanotti was determined to find a technical solution to overtake the problems related to the forwarding of containers, and fulfil a lifetime dream of developing a tracking system of such affordability and cost impact that it could be used by any client, regardless of the type of cargo that needs to be transported.



The Zenatek Tracking System provides clients with access to a range of information via their PC, regardless of where the container is in the world.

Three years ago, the prototype of the Zenatek Tracking System and the associated container-tracking device were introduced to military organisations in Europe and the US. The task of developing the hardware was given to CRF, one of the biggest research companies in Europe. Production was assigned – under strict specifications – to Magneti Marelli, a manufacturer of electronic equipment for cars, which already had something similar under investigation for its business. The software that manages the system was designed by a valuable group of IT engineers hired for the task and integrated into the Zenatek companies.

Since then, the unit has been field tested and redesigned, new features have been incorporated and intensive probes have been conducted in almost all weather conditions to IP65 and IP67 standards. Zenatek has presented its technology at leading trade shows including SITL, SIL and Fruitlogistica, TOC Middle and Intermodal Europe.

## Real-time monitoring

The Zenatek Tracking System is designed to monitor containers while they are in transit. It sends real-time information about possible tampering, temperature variances and location to a PC through GPS, GSM or the internet. Information is sent by the container-tracking device, which should be fitted in the centre of a container's doors. The device, which is easily installed, is configured on a web portal that clients can connect to using an encrypted code unique to them; this allows clients to access information about the transportation of their containers whenever they need it. >>



The container-tracking device is designed to be low cost: the device doesn't need to be recovered, and all messages it sends are inclusive of the purchase price. Pictured with a €1 coin to denote scale.

The container-tracking device features an identification code that must be associated with the container's code number when it is installed. Other information can also be included, such as a number plate, ship name, trans-shipment point (if any), packing list and even the bill of lading. This data will be easily accessible through a web-based portal, which is secured with an access code.

The cost of the service is inclusive of any information that the container-tracking device sends during its lifespan, which is typically between three and six months. Messages can be sent from any container that the device is attached to, wherever it is in the world, through an effective global partnership with Vodafone. This means that users can pinpoint the location of their containers to within a few metres.

**“ The Zenatek Tracking System has the capability to send an alert message when the container doors are opened, providing geo-coded proof-of-delivery information. ”**

The Zenatek Tracking System has the capability to send an alert message when the container doors are opened, providing geo-coded proof-of-delivery information to the consignee, along with the peace of mind that the shipment has reached its destination and that there have been no unauthorised openings. These alerts are sent by the web-based system via email and SMS to any computer or mobile device assigned by the client.

Zenatek's container-tracking device does not need to be recovered and returned to the client. This eliminates all costs associated with these tasks, such as employing recovery personnel, forwarding, reconfiguration and restocking. There is no data loss: all information about the trip being traced is automatically uploaded to the system, at the client's fingertips.

All this capability translates into increased supply chain performance and efficiency. Load rejection due to temperature deviations beyond a pre-established range are avoided, as

are empty loads. This means less capital investment is needed, there are fewer opportunities for container misuse and customer requirements are better fulfilled.

On the other hand, size matters. If the monitoring device is inside the container, antennas and a more complex installation are required. If mounted on the outside, bulky devices may protrude from an ISO container dimensions in a way that shipping companies or port authorities may not approve of. Also, bigger units are more difficult to conceal, making them a more tempting target for vandalism.

It is recommended that the tracking units are hidden to prevent them from being disabled or drawing unwanted attention. A container with a tracking system installed should look no different from the container that holds a low-value cargo. Bulky devices fitted to a container's doors or walls make it easy for criminals to identify high-value targets.

There is also a growing concern surrounding the use of containers by terrorists to deploy weapons of mass destruction. Therefore, the intelligent container concept is always growing; now systems are capable of detecting holes of only a few millimetres in diameter, physical breaches and the presence of nuclear or toxic material. Motion sensors can also be fitted to the device. In any case, the client has to consider what types of sensors are really needed. The more sensors, the costlier the unit.

### Tampering with terrorism

The threat of a terrorist attack can never be eliminated, but it can certainly be reduced. Unchecked and unmonitored containers, trailers or rail cars, combined with current business procedures in many ports and points of origin, represent a hidden danger that we are all aware of. How this danger is mitigated has a direct impact on the bottom line of shippers, companies and economies at large. Doing so in a fashion that is convenient and affordable for the vast, intermodal supply chain of international commerce is the real challenge.

New regulations will require even greater information to be provided about ships, crews and cargo before a vessel is loaded or leaves its port of origin. As an example, the European authorities discovered that containers loaded in Spain and bound for Belgium are assumed to be safe on arrival; they are considered to be a controlled cargo as they have come from another EU country. However, officials did not know if the container stopped in Morocco en route – if it had, its cargo could have been altered.

The speed, accuracy and availability of the data delivered by the container-tracking device – data delivered on-the-go – will benefit all stakeholders, the security of the ports and terminals that the container passes through and, by extension, the community as a whole. ■

#### Further information

Zenatek  
www.zenatek.eu



# Zenatek Tracking System

Always real-time access to your container status for location and tracking, unscheduled stops, door opening/closing and temperature variances

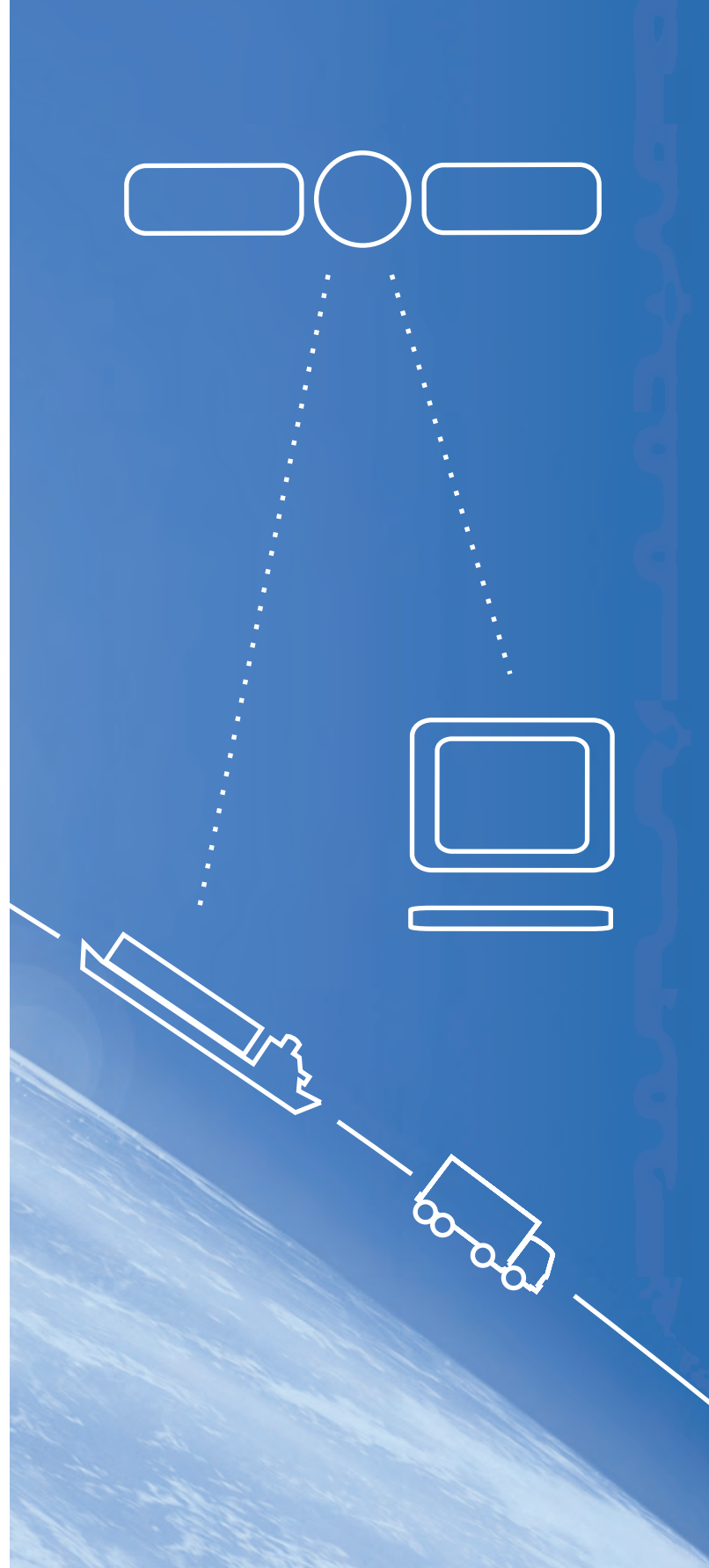
A system using a disposable transmitting device with information at your fingertips

An all comprehensive 24/7 affordable service, providing data from the container directly to your PC and/or mobile phone at the lowest possible cost impact



Point your phone camera and start experiencing ZTS! (\*)

(\*) You need a SmartPhone and a QR Code Reader Application.



Going beyond the known limits



[www.zenatek.eu](http://www.zenatek.eu)

[info@zenatek.eu](mailto:info@zenatek.eu)