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## **Sea trials for Isotrack security device**

**Isotrack, a prototype ‘plug and play’ device created through an EU-funded consortium project, could be the answer to many a security question being asked within the complexities of a million supply chains. And now, backed by a second tranche of EU funding, it’s about to go to sea.**

Isotrack – it’s a unique tracking and monitoring device designed to fit in a shipping container and come up with the answers security experts really want. It detects low-level radiation, as well as motion, heat and hazardous chemicals. It is incredibly adaptable – sensors can be ‘plugged in’ to detect specific threats or disturbances, as required. Isotrack will have the capacity to report on any tampering or removal/alteration of container contents, immediately, via GPS, GPRS or Iridium satellites, and it will also detect human trafficking.

And besides being a potential star in tackling the threat of a ‘dirty bomb’ or similar being smuggled inside a container, Isotrack is offering commercial benefits, too. As it is RF and X-ray permeable, it could be developed to enable instant manifesting as tagged goods are inserted or removed, adding an important level of protection against a wide range of cargo crime, from theft to smuggling.

This nifty gadget is the product of an EU Framework Seven (FP7) programme, which received a grant of €2.2 million in its first phase. That sum helped the Isotrack I consortium partners, from the UK, Slovenia, France, Finland and Norway, to develop a prototype of the device, and the development phase was completed at the end of October 2011.

Now the EU has awarded a further €750,000 to the Isotrack II consortium, to take the device from prototype to market reality.

“This latest grant is from a new ‘Demonstration’ fund within FP7 that the EU set up specifically for cases like ours,” says Dougie Bryce, director of consortium partner

TTS (Shipping), a specialist timber shipping line. “The funding will enable us to produce the product in sufficient numbers for meaningful tests in the real world, develop the software, and market it at trade shows and exhibitions worldwide, where we can demonstrate to potential clients exactly what this product can do.

“A fantastic concept, which began with the idea of just being able to track containers, is being developed into a fantastic product, and we could not possibly have done that without this further help from the EU.”

R&D companies PERA ISRI, from the UK, and TI of Norway, were important players in Isotrack I – but once the development phase was complete, their work was done. Similarly, Lloyd’s Register was a partner only in the first phase.

However, all of the original SME partners have remained in the new consortium – a fact which reflects their belief in the product, says Dougie Bryce.

TTS (Shipping), based in Melton Mowbray, is acting as project coordinator and dissemination and exploitation manager for Isotrack II. A standalone company, Stellarview – also based in Melton Mowbray – has been set up as the eventual sales vehicle for Isotrack.

EMA BlueTraker, based in Slovenia, is responsible for the technical and software development, as well as supplying the onboard satellite communications system that ensures containers are ‘visible’ at all times, even when at sea. The EMA Group is a tracking and traceability specialist, producing a range of intelligent, remotely operable machine-to-machine equipment and systems.

Astrata, from the UK, is providing the GSM/GPS/GPRS module, and SAIRP of France is producing the composite housing for the product.

Finnish shortsea shipping specialist Containerships is now stepping up to take a central role in the next phase of Isotrack; it will be Containerships’ equipment that provides the real-world testing ground for the new device.

“We are partners in the project and our role is providing the containers for testing purposes. There are also plans to put some equipment on a number of our vessels for testing,” says Antanas Bernikas, container control manager.

Containerships is unusual among shipping lines in having its own in-house fleet of containers – 14,000 of them – and its ‘closed loop’ network of services in the Baltic and North Sea thus provides the perfect testing ground. The tests will not extend to the line’s Mediterranean network of services at this stage.

“We tested the device on one 40-ft high-cube, pallet-wide container and will soon be fitting one on a second container. Eventually the device will be fitted to many more containers being transported all over our Baltic and North Sea networks, visiting many ports”, says Antanas Bernikas. “We have 13 vessels operating on the North Sea and eight in the Baltic, with a ninth vessel due soon.”

By using Isotrack, Containerships will be able to pinpoint exactly where each individual container is at any given time.

As the first container company to be able to make use of this technology, Containerships will offer the option to selected customers who are interested in testing additional security features. “We got involved in this project from the beginning, and it is very interesting,” says Antanas Bernikas. “Basically, we are the ones out there who will be testing the concept for real!”

There will also be testing opportunities via the UK-based Tube-Tech, a new partner in Isotrack II. The company sends equipment to oil drilling sites in some of the world’s most inhospitable places, offering Isotrack a testing ground that is further afield and has extreme changes in temperature, humidity and other conditions.

Another UK-based company, ADS, was the coordinator for Isotrack I. Although not an SME, the company has stayed on as part of the new project. “ADS will be a fantastic asset in getting the message about Isotrack out there, thanks to their excellent contacts and market knowledge,” says Dougie Bryce.

### **Isotrack: what makes it different**

The Isotrack device is designed to detect low-level radiation and VOCs just as soon as any such material is put inside the container and to send out an alert immediately. That’s a very different solution to scanning containers when they have already

reached their destination – by which time, if there's some sort of dangerous substance or threat inside, it's already too late.

The Isotrack device is integrated into the container and, once installed, it stays there. It can be retrofitted and it has a long battery life. The Isotrack device is able to get a radio frequency (RF) signal out of a steel container without the need for an external antenna. That enables communication from container to outside world, between containers, and between container and portside operator.

Because the Isotrack device is inside, and part of, the container, there are no external parts that can be broken or tampered with.

Dougie Bryce believes that Isotrack has the potential to be a big step forward in countering terrorism. But its benefits for business are clear too.

“Shippers will have instant stock control and inventory information – e-docs can be sent to port authorities and customs as soon as the container is loaded.”

### **Isotrack timeline**

November 2008: With EU funding of €2.2 million in place, the Isotrack project goes live and prototype development begins

October 2011: Isotrack I development phase complete

January 2013: Isotrack II project begins

Early 2014: Sea trials begin on Containerships fleet

End 2014: Target date for Isotrack device to be ready for market