

How a technology partner can increase port effectiveness

Joeri Boeckx, Business Development Manager, Tein Technology, Brussels, Belgium and Robert De Maere, Telecommunications Manager, Port of Antwerp, Belgium

The Port of Antwerp is Europe's second largest harbour, handling some 190 million tonnes of cargo and 15,000 ships annually. When the port authority looked to optimise security and vessel monitoring, Tein Technology provided the technical skills to provide a solution that will support traffic control for years to come.

Technology investment

Offering safe berthing to today's capesize ships, as well as maritime and logistics services and cost-efficient hinterland connectivity, the Port of Antwerp has been a thriving sea harbour at the heart of Europe and a centre of competence for centuries.

In the current globalised world economy, the Antwerp Port Authority will invest €1.6 billion by 2025 by further expanding port facilities, equipment and buildings.

The integrated use of IT and multi-band telecommunications, including industry-specific technologies such as VHF radio, transponder data communications and radar, lies at the core of effective harbour traffic control.

Partners of choice

The maritime environment is highly competitive. Telematics play a major role in many critical aspects including safe and efficient nautical traffic, speed of handling, strict monitoring of ships and goods, and efficient resource management.

The main challenge for the Port of Antwerp is to monitor 15,000 incoming and outgoing vessels per year in one of the busiest and largest harbours by surface area in the world. To allow for safe and secure ship movements, they appointed partners of choice with a proven track record in deploying similar

unified surveillance solutions in the maritime sector.

Tein Technology delivered the high-tech CCTV cameras and network as well as developing interfaces for the entire monitoring platform operating from one control centre. Tein technology is working closely with the telecommunications department to understand the organisation, the development plans and the requirements of flexibility, continuity and sustainability.

State-of-the-art telematics

The Port of Antwerp Authority monitors all visiting ships. Its radar systems are complemented by state-of-the-art CCTV cameras and automatic identification system equipment delivered by Tein Technology.

The hardware infrastructure consists of nine self-supporting radar towers designed to accommodate additional features such as top platforms, fail-safe communication links, AIS base stations and CCTV cameras.

The 17 security cameras, selected by Tein Technology, offer high-resolution colour video with a super wide-angle lens and extreme zooming capability. Data communications between the radar towers, the live cameras and the onshore control centre use an ultra-fast IP-based network running over a redundant fibre backbone.

In addition, top-notch speed dialing consoles provide instant contact between monitoring staff and colleagues or other harbour authorities.

SightVision™

With SightVision™, Tein Technology has developed the right application to manage critical video surveillance infrastructures,



in effect managing and leveraging surveillance video streams, stills and data. The management platform seamlessly integrates legacy and multi-vendor systems and interfaces with multi-band communications, often delivering where other systems fail.

According to Robert de Maere, Telecommunications manager at the Port of Antwerp, investments in ICT fall into two categories: off-the-shelf equipment which must be provided at the right market price, and high-end technology, on the condition that it is accompanied by expertise and a commitment of continuity. Tein Technology understood this from the beginning and assisted his



Top: The Port of Antwerp, Belgium.
Right: A dispatch centre in the Port of Antwerp.

team to identify the best solution for their needs.

Tein Technology's customised SightVision™ to the needs of the customer. The system incorporates built-in alarms triggered by radar information to make cameras automatically zoom in and keep on following the relevant vessels. A simple selection of the ship on the radar screen will enable the cameras that have a view on this ship to keep tracking



Figure 3: High-tech CCTV cameras used in the harbour.



the ship during its journey. The operator doesn't need to work on the VMS platform itself, due to the coupling Tein Technology created, the operator can focus on the radar screen only.

Leadership role

Leadership in any industry leaves no room for complacency. It attracts and delivers the best results in all circumstances. Why follow when one can lead? Maritime traffic control is a very exacting environment. Port of Antwerp aims to excel and offer value-added communications and services. They expect no less from their partners, and Tein Technology leads the way in delivering to expectations.

The Port of Antwerp Authority's vessel traffic service (VTS) is a carrier-grade infrastructure. It now combines radar, CCTV, VHF radiotelephony, automatic identification systems, radio over IP (ROIP) and voice over IP (VOIP) to keep track of vessel movements by absolute coordinates and to provide navigational safety in the harbour region.

"With this comprehensive radar/CCTV-monitoring platform in place we can make full use of unified communications to improve efficiency and productivity," adds Robert De Maere. "Port of Antwerp has gained tremendously in prestige. Our customers from all over the world enjoy better safety and faster access to our port services."

About the authors



Joeri Boeckx graduated as an electronic engineer at GroupT, Leuven, in 2003.

Following a Masters in management in 2004 at the Kuleuven University, he started his carrier at Option Wireless as a certification engineer of UMTS/HSDPA data cards. In 2009 he joined Tein Technology, where he won his first AIS contract in 2010 for the enrolment of inland AIS base stations along the coast of the Scheldt and the canals in Flanders. As the AIS expert at Tein Technology, he joined the Dutch AIS tender team, where Tein Technology together with Saab answered the multi-million

tender of DIAMONIS (Dutch Inland AIS Monitoring Infrastructure). This was successfully concluded in 2012. Joeri's current role as business development manager sees him responsible for aligning Tein Technology's strategy in the maritime sector.



Robert De Maere, born in 1962, graduated in 1985 cum laude as a civil engineer in electronics at university of Ghent, Belgium. After (mandatory) serving in the military as a topographer he joined the Port of Antwerp as an engineer in 1986 and was responsible for a wide range of electronic systems and techniques such as radar, radio, CCTV, PABX, mobile telephony, hydrographic equipment, in- and outdoor WiFi, optical networks and their switching equipment. Today Robert manages a team of 20 involved in the design, build and maintenance of these 24/7/365 systems that support the VTS department of the Port of Antwerp in their daily coordination of the 15,000 sea-going vessels calling the port each year.

About the organisation

Tein Technology listens carefully to customers, identifying and responding to their needs. Its team of 100 highly qualified specialists develops and delivers reliable and innovative tailor-made solutions. A century of proven success has given us the expertise and know-how to develop and realise integrated systems. Tein Technology is a leading-edge provider in the integration of voice and video platforms for mission critical environments such as financial trading rooms, traffic control for road, rail and waterways, port monitoring, city surveillance and public transport. Tein Technology is based in Brussels and Amsterdam.

Enquiries

Tel: Belgium
+32 (0) 2 240 64 64
Tel: the Netherlands
+31 (0) 20 301 2755

Email: Maritime@teintechnology.com
Website: www.teintechnology.com