On the radar

Steve Guest, Kongsberg Norcontrol IT Ltd, looks at the ways in which port authorities have used and adapted existing surveillance and information systems to meet Code requirements...

Prior to 9/11, many commercial port authorities came to the conclusion that the threat to ships and port facilities during peacetime was a minor one and not worth major financial investment. However, post 9/11 it is a different world, where commercial and civilian targets are more and more the province of the terrorist.

As a result of the 9/11 attack, the International Maritime Organisation's (IMO) Maritime Safety Committee and its intercessional Working Group started considering the security implications upon ports and ships. In December 2002, amendments regarding security and a new security chapter to SOLAS were introduced, and the introduction of the new International Ship and Port Facility Security (ISPS) Code in July 2004 laid out detailed, mandatory security requirements for governments, port authorities and shipping companies.

The ISPS Code refers to a whole raft of security measures, both on land and water, but here we look at how port authorities have used existing Vessel Traffic Management and Information Service (VTMIS) systems to meet ISPS requirements.

Recognised surface picture

A port that uses a VTMIS for the control of the movement of vessels approaching a port and within its navigable waters is already complying with one of the requirements of the ISPS Code. Indeed, a VTMIS system can be used not only for the normal control of movement of vessels but also adapted to operate as a security tool. The system will provide a 'recognised surface picture' covering the approaches to a port and the water within its boundaries.

A VTMIS system will automatically create tracks for surface contacts, whether they are small inflatable boats or large merchant ships, if the correct radar has been specified. An operator can then 'investigate' and attempt to identify these tracks using a variety of means such as AIS, VHF Direction Finders, visual identification or requesting identification through communication. Any contacts that remain unidentified would then be tracked (most likely displayed in a colour different from identified tracks) and, if deemed to pose a possible security risk/threat, a security patrol such as a police/security boat could be vectored into a position where it could investigate and identify the vessel concerned, and then take the appropriate action.

Another recommendation in the Code is the provision of an automatic detection device with an alarm system. VTMIS systems already automatically create tracks for any radar contact and these can be linked to a visual and/or audible alarm that is activated should a track in the system approach and enter restricted areas. Any restricted areas can be preset into the VTMIS and programmed to change as the security level in the system is amended. These restricted areas could be permanently registered in the system, such as areas around fixed port facilities, or temporary ones, amended according to the security level, and entered into the system by the operator, such as for the visit of a particular ship that is a security risk.

A properly used maritime surveillance system will also improve the effectiveness of waterborne patrols by extending their search horizon. Indeed, this can enable the reduction in the number of such patrols.

Providing information

Today, in addition to active surveillance via a VTMIS, many commercial ports already have in place port management systems that can be utilised to cover the mandatory requirements and recommendations of the ISPS Code. Furthermore, that security information that the port wishes to promulgate can be displayed on a local net for interested parties (who have password access) within the port's infrastructure, and those outside the port by placing it on the internet or intranet. This would be ideal for alerting the changes in security level to key personnel within the port organisation, or indeed, any other pertinent security information.

The combination of VTMIS surveillance and dissemination of information through Port Management systems has enabled commercial port authorities to meet the Code and provide a detailed 'recognised surface picture' and information network to meet the ISPS Code regulation, with tools that at least medium to major ports already had in use.

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