Surveillance technology in the maritime environment

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Eyes are needed everywhere, and in an age where security threats have become more prevalent, surveillance systems can offer a reduced strain on manning at a time when regulatory compliance and general security can place an increased burden on personnel.

CCTV is now being used increasingly in the maritime domain. Modern CCTV offers long-range detection and thermal imaging in both sub-sea and extreme conditions. Software Analytics is one of the newer applications to enhance CCTV capability, especially in active detection and quality of resolution through extreme weather conditions and light sources. The application is capable of processing massive amounts of digitized data captured by video cameras and interpreting that information for the user via a pre-determined set of rules.

More recently, R&D has focused on commercial systems integrating video intelligence with security cameras. The traditional CCTV centred on an independent network, but with the standardisation of IP technologies, these networks have merged into the IT framework as converged systems. High-end CCTV imagery can now be deciphered through an intelligent analytics application capable of event detection, and alarm reporting with the additional benefit of minimising the human oversight risk.

Evaluation

As an experienced maritime security provider, Securewest International is convinced that the decision to implement any particular surveillance solution must be based upon a detailed evaluation of the security needs of the operation in question. Only then can realistic parameters be established for threat identification and operational response allowing appropriate, cost effective solutions be designed.

Identification and evaluation of risk will dictate the appropriateness of any equipment. While security equipment may be able to provide automated target recognition at 15 kilometres through a blizzard, it is important to establish whether there is really the need for identification at such distances or in such conditions.

Analytics

Also key is how information will be utilised and by whom? Thermal imagery will pick up a heat source, while additional analytics can provide clear video streaming allowing for identification of vessel registration and what activities are taking place on deck. Such information might prove invaluable in determining the intent of an unidentified craft transiting at speed toward your facility but only if the user is well trained and drilled in interpretation of the imagery presented. Otherwise, what first appeared to be a hostile situation may later turn out to be a private fishing boat, the men on deck with fishing rods in hand.

So selection of appropriate technology for any given situation is a must. Motion detection is the most basic form of analytics. Geofencing/Virtual Tripwire is a refinement that triggers an alarm when an entity breaks a predetermined line that has been drawn in the image. This is useful in applications such as large areas with restricted zones, including oil and gas refineries, harbour vessel detection, and even man overboard alarms.

With an eye to health and safety requirements, surveillance imagery can be stored on Digital Video Recorders (DVR) for later retrieval and provision of valuable evidence for forensic and liability investigations.
The standardisation of most technologies to IP platforms allows remote monitoring of all security assets and facilities. So an operator could be sat many miles away monitoring numbers of assets in multiple locations. Remote security management negates the need for personnel to be in harms way during incidents and the security operator is able to contact the local authorities and guide them to any disturbance remotely. Such capabilities will be particularly appropriate for surveillance of remote or high-risk locations.

Cost
Cost is always a significant factor in any decision-making. However, improving the security of an organisation does not necessarily mean green field projects with a large dollar value attached to it. Securewest International, together with its strategic partners, can also re-visit existing security architecture, providing thorough risk assessment and design consultation services. By integrating existing equipment, in many cases, an effective surveillance solution, proportionate to the risks identified, can be engineered and installed.

It is clear that surveillance technology can provide valuable tools to address some of the security challenges faced by facility and port operators. However, thorough risk assessment, skilled system design and ongoing user training are also vital if such solutions are to be both appropriate and cost effective.

ABOUT THE AUTHOR
Stuart Flynn is Vice President Business Development at Securewest International. With 21 years experience in the national and international arena, specialising in security, IT and telecommunication applications within government and private sectors, Flynn is responsible for identifying new markets, as well as developing and introducing bespoke solutions and services to existing Securewest International clients.

ABOUT THE COMPANY
Securewest International has been specialising in maritime security for 20 years, incorporating areas of expertise connected with the provision of on-board or in-port Security Officers (armed or unarmed), worldwide, ISPS & related regulated compliance programmes, training for vessel, facility or company Security Officers, ISPS audits, SSAS monitoring through a 24/7/365 Maritime Assistance Center, and general consultancy provision.

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