

Port Security: potential profitability increase

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AIS technology from a different perspective

Ports around the world are starting to realise the large benefits using AIS technology. The benefits for port operations are much larger than previously realised and more and more ports choose to integrate AIS in their daily operations.

Almost all commercial vessels have AIS transponders on board today. The AIS transponder provides detailed vessel information which is captured by the port. This was not possible just a few years ago, and now ports are really starting to benefit from this possibility in proactive and creative ways.

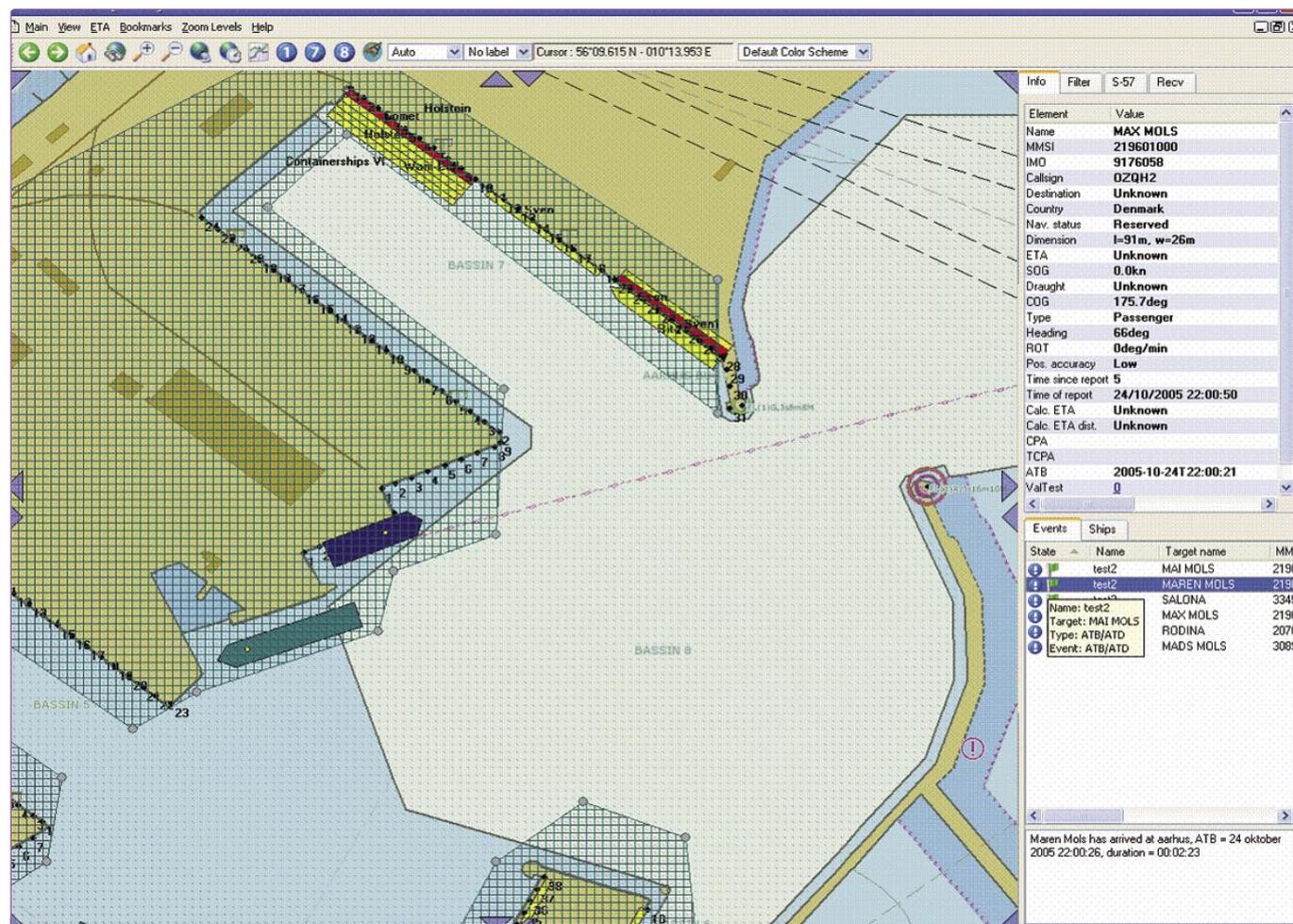
Port challenges

Port infrastructure is the main origin of supply for many countries and ports must be operational around the clock to maintain the necessary chain of supplies and keep up with the continuously increasing amount of goods being transported by sea.

On top of this, port operators must comply with an increasing number of international regulations (environmental protection,



The GateHouse AIS Port Solution has contributed significantly to a better utilisation of the Port of Aarhus' resources, according to Harbour Master Knud Erik Moeller.



Screen shot of the AIS Port Solution showing actual and planned berths.

The screenshot shows the GH AIS Webdisplay interface in Mozilla Firefox. The browser address bar displays `http://aal.gatehouse.dk:8090/webgad/main.php`. The interface includes a navigation menu (File, Edit, View, Go, Bookmarks, Tools, Help), a search bar, and a 'Getting Started' button. The main area features a map of a harbor with various vessels and navigational aids. A detailed information panel for a Class-A AIS Ship is visible on the right side of the screen, showing the following data:

Class-A AIS Ship	
MMSI:	368499000
Name:	COURAGEOUS
IMO:	606117
Cargo:	Undefined
SOG:	0.0
COG:	268.2
ROT:	0
Length:	35
AIS unit:	CLASS_A
Callsign:	WBC5659
Type:	Reserved
Country:	United States of America
Draught:	4.0
Heading:	217
Width:	12
Destination:	DUTCH HARBOR
Nav.:	Not defined
ETA:	28 Nov

The interface also includes a 'Data Mode' section at the bottom with options for 'Replay' and 'Time: 00:00 2006-11-11 UTC'. A notification bar at the bottom of the screenshot states: "The notifications are listed in the lower right corner on WEB GAD (web based display system). The user clicks on the link to get detailed information on all the notifications and to evaluate if action is required."

protection of surrounding communities, handling of hazardous goods and protection from terrorism) which defocus the ports from their 'real business,' which is to run a profitable port operation and secure the chain of supply.

Improve port profitability and increase port security and safety

GateHouse has developed AIS Port Solution, increasing port security and safety as well as improving the profitability of port operations. It is simply a question of linking port procedures and systems with the activities at sea.

The GateHouse AIS Port Solution is developed in close co-operation with ports around the world, including ports like New York, Melbourne, Bremerhaven, Copenhagen, Aarhus and many others. The ports gain considerable operational cost reductions as well as efficiency improvements.

Cost reductions are obtained through reduced administrative costs and a straight forward way to pin-point vessels which have damaged buoys, berth areas etc. Improved efficiency is achieved through reliable and precise billing information and berth planning optimisation based on ETA calculations.

In addition, the ports have a unique possibility of combining their situational maritime awareness with already existing or planned security installations like cameras and radars.

In case of a security incident in a port, all implicated parties immediately can see the position of vessels in the port, the cargo of the vessels, approaching vessels and much more.

All in all, the AIS Port Solution creates the situational awareness needed to act appropriately and in a controlled, timely manner in a given situation.

Statement from Harbour Master Knud Erik Moeller, Port of Aarhus

Harbour Master Knud Erik Moeller says: "Port of Aarhus had the GateHouse AIS Port Solution put into operation about one year ago, and this has contributed significantly to a better utilisation of our resources. We receive alerts if vessels planned for berths are delayed, and we can communicate information of delays to all the terminal operators and shore men in the ports. Thus, we are also able to allocate our pilot and tugboat resources much better than before. In case a vessel enters a restricted zone, we will receive alerts and can react immediately.

On top of this, the system provides another advantage. In case of incidents caused by vessels, resulting in damaged buoys or wharfs, we will know exactly which vessel has caused the damage and consequently who is responsible. Previously it was not always easy to recover damages.

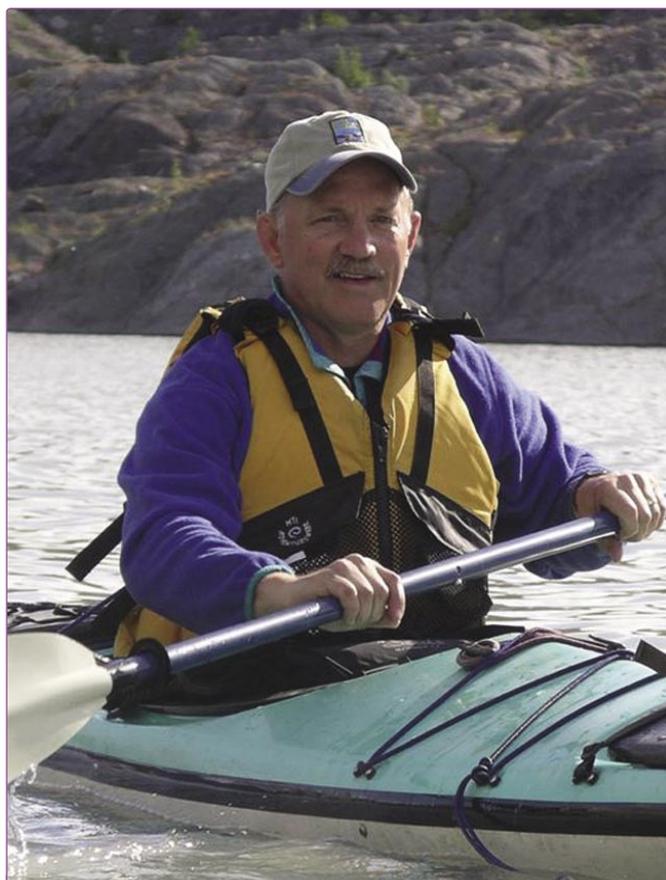
The benefits of integrating the AIS port solution with the port management system are surprisingly large.

We are planning to integrate our radar systems as well."

Actual and planned berth allocation

Harbour Master Knud Erik Moeller continues: "The screenshot from Port of Aarhus shows the actual and planned vessels at particular berths. The information is automatically exchanged with the port management system, to which ship agents/owners have access.

The port receives alerts if a planned vessel is delayed. Thus, it is possible to allow other vessels to call at the port. If a vessel is delayed, the system will calculate a new ETA (based on the actual position of the vessel).



Executive Director Captain Ed Page states that the AIS system plays a very important role in the work of the Marine Exchange of Alaska.

At the same time, the shore men's and other personnel's tasks are immediately rescheduled. This means a significant reduction of waiting time and expenses."

CCTV integration and control

A considerable part of port security is obtained by using cameras (CCTV) and other sensors. In most ports, these sensors are only used for security purposes. The Port Solution from GateHouse will utilise already existing CCTV systems (or new ones) to record events as they happen and integrate the systems to work together for better control of the port.

If for example a vessel is approaching the berth too fast, the AIS Port Solution registers this as an event and sends the information to the CCTV system and the situation is recorded.

Consequently, the port can verify who was responsible in case of damage to the berth area. At the same time the operator's attention is automatically directed to events that have the interest of the port.

Notifications and alarms – Marine Exchange of Alaska

Alarms can of course be made available to port police, customs, terminal operators etc. via internet, email, SMS, PDA or on a local network.

The Marine Exchange of Alaska uses the solution from GateHouse to provide notifications when vessels enter particularly dangerous areas and other areas of interest.

The GateHouse AIS Solution allows the Marine Exchange of Alaska to set up alert areas and lines (WatchDog). The notifications are distributed to users either via the web based display system (WEB GAD), via e-mail or SMS. This way the users in Alaska do not need to invest in a system themselves, they can seek situational awareness by logging into the Web GAD or receive warnings even though they are not online.

Executive Director Captain Ed Page, Marine Exchange of Alaska

Executive Director of The Marine Exchange of Alaska, Captain Ed Page, is a retired US Coast Guard officer who served in the Coast Guard for 30 years and was Captain of the Port of Los Angeles-Long Beach previously.

Captain Ed Page says: "Our AIS system has to date and will in the future play an important role in saving lives and property and protecting Alaska's fragile marine environment. With the stakes so high, it is important we have a reliable, versatile AIS management and display system."

New York logging traffic

The New York/New Jersey Port Authorities use the GateHouse Port Solution to secure that all invoicing of Actual Time at Berth is accurate.

Previously, the invoicing was primarily ensured via self-reporting from terminal operators, combined with inspections in the port itself. Now this information is verified automatically. This has eliminated the risk of forwarding incorrect invoices or worse, not sending an invoice at all. New York/New Jersey Port Authorities do not operate the terminals, only the berth areas and the main source of income for the port authority is the berth time.

Moreover, the system ensures great situational awareness, which eventually will be used to control the CCTV system in the port.

ABOUT THE ORGANISATION

GateHouse provides solutions to increase port efficiency and security world wide.

Ports and distributors can contact GateHouse for more information. It is also possible to request a trial installation for the GateHouse AIS Port Solution.

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