



March/April 2012 Vol 57 No 2

PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

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Emission controls herald new era

IMO plots new course

New chief sets out his priorities

Double-port dilemma

Sydney's 21st-century traffic system

Protect paradise

African ports try to balance
growth and sustainability



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How does Africa reconcile its twin goals of promoting growth and trade while ensuring a sustainable environment?

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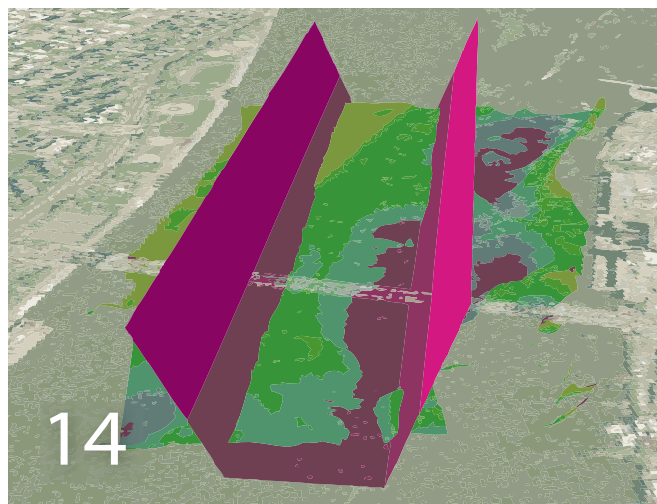
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PUBLISHER

Susumu Naruse
Secretary General, IAPH
info@iaphworldports.org

EDITOR

Penny Thomas
penny.thomas@ihs.com

ACTING EDITOR

Jem Newton
jem.newton@ihs.com

SUB-EDITOR

Stephen Spark

HEAD OF SALES

Adam Foster
adam.foster@ihs.com

DESIGN

**Roberto Filistad, Hannah Kidd,
Matt Ramsdale, Karen Frazer**

PRODUCTION

**Sarah Treacy, Elisa Hembry, Kriss
Holliday and Martyn Buchanan**

IMAGE SERVICES MANAGER

Jo Agius

EXECUTIVE EDITOR

G. Paul Gunton
paul.gunton@ihs.com

EDITOR-IN-CHIEF

Tony Slinn
tony.slinn@ihs.com

ASSOCIATE EDITOR

Aya Fujinami
IAPH
ph@iaphworldports.org

EDITORIAL & PRODUCTION

IHS Fairplay
Sentinel House, 163 Brighton Road,
Coulston, Surrey CR5 2YH, UK
Tel: +44 (0)20 8700 3700
Fax: +44 (0)20 8763 1007
Web: www.ihsfairplay.com

SUBSCRIPTIONS

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contact the IAPH,
7th Floor, South Tower,
New Pier Takeshiba
1-16-1 Kaigan, Minato-ku
Tokyo 105-0022, Japan
Tel: +81-3-5403-2770
Fax: +81-3-5403-7651
Email: ph@iaphworldports.org
Web: www.iaphworldports.org

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An uncertain year

Secretary General Naruse calls for closer ties
with other shipping organisations in 2012

Susumu Naruse

Secretary General – The International
Association of Ports and Harbors



This year has started with a lot of positive industry news along the lines of “Port achieved more than 10% growth in 2011 compared with the previous year.” Looking at the global economy, however, there seems to be great uncertainty ahead.

At the end of January, the IMF announced that “the euro area would fall into a mild recession in 2012” and said this downturn would affect other parts of the world. The IMF’s forecasts suggest 3.3% growth globally and 1.2% for advanced economies for 2012.

Ports as a whole may face more hard times this year, along with the shipping industry, which has to address tonnage overcapacity.

In response, we are determined to provide more timely and accurate information to our members by understanding their needs and working closely with related organisations. We are also keen to raise IAPH’s profile, so the Long-Range Planning and Review Committee is formulating IAPH’s mission statement and

future vision after the committee’s meeting in Antwerp in December.

We also need to strengthen ties with friendly organisations such as PIANC and regional ports associations. When the presidents of PIANC and IAPH met in Antwerp, the two organisations agreed to interact more closely with each other and plan to co-ordinate the themes of IAPH technical

committees and PIANC working groups. When I was invited to Shanghai for the 30th anniversary of the China Ports and Harbors Association, I was glad to hear China’s minister of transport encouraging CPHA members to forge closer ties with IAPH.

Two important meetings are coming up. The Asia/Oceania Regional Meeting will take place in Colombo later this month and many IAPH members are expected to attend the Mid-term Ports Conference in Jerusalem in May (see p42). Key decisions for the next year will be made at the board meeting in Jerusalem, including approval of the IAPH’s new mission statement and vision and the financial statements for 2011.

The Mid-term Conference programme will be fascinating, as excellent speakers have been selected by the host, the Israel Ports Company. I look forward to seeing you all in Jerusalem. PH

Ports as a whole
may face more hard
times this year

Port updates

US COAL PACT

US energy company Kinder Morgan is negotiating a \$140M long-term pact with Arch Coal to expand export capacity in the US Gulf of Mexico. Under the deal, still being finalised, Kinder Morgan will install a new shiploader and a railway loop line at its Houston Deepwater terminal, increasing capacity to 10M t of coal a year and equipping the terminal for Panamax and post-Panamax vessels.

KHALIFA PROGRESS

Abu Dhabi Ports Company (ADPC) has commissioned the new automated container yard for the emirate's Khalifa Port. The port is being built in five phases, starting with an initial capacity of 2M teu of containers and 8M tonnes of general cargo. Khalifa will take on the traffic of Mina Zayed when that port closes to commercial traffic in September this year. Cable manufacturer Tratos announced it has won a contract from Konecranes to supply cable for 36 cranes at the port.

MOZAMBIQUE STUDY

A new deepwater port north of the Zambezi river mouth has been identified as a preferred option to boost Mozambique's export infrastructure capacity. Ncondezi Coal, part of the Mozambique Coal Export Infrastructure Initiative with mining companies Rio Tinto and Minas De Revuboe, said the port would be capable of handling Capesize vessels. Initial capacity is envisaged as 25M tonnes a year.

CHINA BLOW FOR VALE

Decisions on whether to allow Vale's Very Large Oil Carriers into Chinese iron-ore ports will now be made at ministry level, and not by port operators, it was confirmed in early February. According to a statement by China's transport ministry: "The safety of very large ships appears uncertain, and there appears to be higher risks associated with such ships at anchorage. Because of this, individual port operators will no longer be allowed to decide on whether ultra-large bulkers and tankers may enter Chinese ports".



Photo: PA Photo

The stricken *Costa Concordia* off the Italian island of Giglio in January 2012

Concordia spurs cruise rethink

The *Costa Concordia* accident has already prompted the cruise industry to make changes to its procedures, with more changes likely to follow. When the ship capsized on 13 January, 696 of its 3,206 passengers had only recently boarded and had yet to conduct a lifeboat drill.

Mandatory muster drills are required within 24 hours of boarding, but are sometimes carried out on the day after if embarkation occurs late in the day.

The cruise industry announced a worldwide revision to muster drill timing in early February. All cruise passengers will now need to take part in mandatory muster drills before a vessel's departure from the embarkation port.

The new muster policy was identified as part of the Cruise Industry Operational Safety Review announced on 27 January. The new voluntary procedure has been agreed to by all members of the Cruise Lines International Association (CLIA), European

Cruise Council and Passenger Shipping Association.

The accident also highlighted difficulties in determining exactly how many passengers and crew were missing. Several days after the accident occurred, the casualty count was still in flux.

Michael Crye, an executive vice president of CLIA, believes that potential solutions already exist, such as using hand-held devices that centralise information. "We will look at that on an industry-wide basis," he affirmed.

The *Costa Concordia* accident has brought to the fore the difficulty of evacuating a ship once it has developed a severe list. Costa Cruise Lines CEO Pier Luigi Foschi said: "Whether we can train to evacuate more efficiently in these circumstances is something we need to think about. Simulating this condition is not easy, but we'll think about how we can improve the training programme."

CLIA is conducting an operational safety review on

behalf of the global cruise industry including "a comprehensive assessment of the critical human factors and operational aspects of maritime safety".

Other cruise policy changes are likely to emerge from several safety reviews that are under way. Costa Cruise Lines' owner, Carnival Corporation, has begun a comprehensive safety audit of all of its brands, while EU passenger-ship safety legislation will be reviewed from 2Q/2012.

"[The European Commission's] aim is to increase the effectiveness of the safety rules for passenger vessels in domestic voyages and the operational standards of all passenger ships coming to or leaving EU ports," said Siim Kallas, vice-president transport for the EC's transport directorate DG Move. "We will consider rules improving the stability of passenger ships after damage or collision. We will look at registration of passengers and evacuation procedures."

Partnership port deal concluded

Japan's Nagoya Port Authority and Shanghai International Port Group recently concluded a partnership port agreement. Port of Nagoya has been accepting port trainees from the Port of Shanghai since 2000. The two ports reviewed the training programme and tightened the programme's business focus so as to strengthen mutual benefits and ties.

The Japanese port and its Chinese counterpart agreed to a greater exchange of port-related information and to give more support for each other in international marketing activities. The agreement should lead to further development of exchange activities between the two port communities and a better co-operative structure for their port operations.

China's ports growing too fast

"The 'build it and they will come' attitude and over-exuberance of the financial sector before the recession have been replaced by a greater focus on competition and uncertainty of demand and efficiency," said Jonathan Beard, global head of port and logistics consultancy of GHK Economic and Management Consultants, at the Senior Maritime Forum in Shanghai in January.

According to Beard, one of the challenges of a high-growth economy is "how to achieve commercial competition in port services without generating substantial surplus capacity." With low barriers to entry in, for example, Vietnam, the Middle East and China, "the risk of supply-side

overshoot remains", he added.

"The financial crisis put a brake on the growth trend and most ports ended up with over-capacity because growth didn't materialise," said Jack Poon, investment director Asia Pacific, APM Terminals. "Not everyone has a crystal ball to the worldwide impact of the crisis, but some of the major ports have regained lost ground since then," he told *P&H*.

Beard thinks the excess capacity in the Pearl River Delta is unlikely to be soaked up by international transshipment. Farther north, the excess supply in Fujian province may be used up by further growth of direct mainland-Taiwan trade.

In the Yangtze River Delta, "capacity is tight over the medium

term, even without significant international transshipment". In Bohai Bay "geography creates a more segmented market, but overall there is a short-term supply surplus", he said, adding that this might turn into a shortage in the medium to long term. In Beard's view, China's major economic regions drive the growth of its box ports. "Coastal regions have dominated, but growth is spreading inland," he pointed out.

Development also depends on China's cash-starved banks. "We finance yards, owners, ports and logistics," Qi Chen, head of business development shipping finance at Shanghai Pudong Development Bank, told *P&H*.

She, too, pointed to the growing efficiency and use of China's inland waterways. "Rivers get deeper and wider; state-controlled owners will respond to this and buy suitable vessels from domestic yards," she said, noting that this will benefit China's shipbuilding industry. That in turn will force ports to update.

Despite promising developments of this kind, Beard echoed Poon in predicting that the supply-demand relationship in China's ports will see a "capacity overshoot in the more mature regional PRC markets".

Container throughput 2011*

	Total teu	2010 difference
Coast	133.5M	11.3%
Inland waterway	15.6M	18.4%
Total	149.1M	12.0%

1 Shanghai	29.1M	9.3%
2 Shenzhen	20.7M	-0.1%
3 Ningbo-Zhoushan	13.6M	11.6%
4 Guangzhou	12.9M	13.7%
5 Qingdao	12.0M	8.9%

*January - November 2011; Source: China Port Association

APM takes over Gothenburg

APM Terminals took over control of the container terminal at the Swedish port of Gothenburg in January. The facility is Scandinavia's largest box terminal and handles about 800,000 containers a year, accounting for 60% of Sweden's total container traffic; it also serves as a gateway for the Swedish and Norwegian domestic markets. The terminal operating company, Skandia Container Terminal, has been renamed APM Terminals Gothenburg.

The agreement awarding a 25-year concession to APM Terminals was signed in October 2011 and calls for substantial investment in terminal and equipment upgrades, including three new super-post-Panamax cranes to handle the largest vessels that are entering service. The Port of Gothenburg will continue to own the land, quays and buildings

Kim Fejfer, CEO of APM Terminals, said: "We are very

impressed with the Port of Gothenburg's privatisation efforts and look forward to working closely with them to help make Gothenburg one of Scandinavia and northern Europe's leading container hubs."

Meanwhile, Maersk Line, the container shipping arm of AP Møller-Mærsk group, has added Gothenburg to the list of ports where its ships use low-sulphur fuel, the line said in a statement.

The company's 11,000teu *Edith Mærsk* made the first such call at the port on 24 January and Maersk Line reported that the change to less-polluting fuel had reduced sulphur emissions from the ship in and near Gothenburg by 90%. "The fuel switch programme will be implemented on all Maersk Line ships calling at Gothenburg in line with the improved fuel quality programme introduced by port of Gothenburg," Maersk Line said in a statement.

Port updates

APM MEXICAN DEAL

APM Terminals has won a 32-year contract to design, finance and construct a new deepwater container terminal called TEC2 at the Lázaro Cárdenas port in Mexico. APM says it will invest \$900M in infrastructure at the terminal. The first phase, to be completed by 2015, is a \$300M development that will include a container yard, two berths, warehouse and on-dock rail facilities.

KENYA INVESTMENT

President Mwai Kibaki of Kenya has urged government officials to promote the \$16Bn Lamu port project. The new port will include an oil refinery and railway and road links to Ethiopia and South Sudan. The JS Neoplant Company of Shanghai said it is ready to finance the project and the Lamu Port Agency has also reported interest from investors in Germany, Canada, Japan and the UAE (see also p8).

CHINA OIL ON HOLD

The Ningbo-Zhoushan island oil terminal may be shelved for environmental reasons, according to China Port Association. The Ministry of Environmental Protection sought the suspension after concerns about the risk of a major oil spill and the lack of a planned regional emergency response.

HAMBANTOTA CONCERNS

Sri Lanka's main opposition party has criticised the design of Hambantota port, saying the 17m draught is not deep enough and accusing the government of misleading the public over problems at the port. The government says the \$1.4Bn facility is a high priority for redevelopment.

RADIATION DETECTION

China has set up its first radiation detection unit as part of the Megaports Initiative. State news agency Xinhua reported in December that Shanghai's deepwater port, Yangshan, was operating radiation detection equipment. The Megaports project, which is focused on preventing the illegal transport of radioactive materials, is being supervised by Chinese and US authorities.

Cash & cargo

APM SELLS XIAMEN STAKE

APM Terminals Xiamen earned a Rmb80M (\$12.5M) profit when it sold a 25% stake in Xiamen Songyu Container Terminal last year. Hong Kong-listed Xiamen International Port Company bought the interest for Rmb530M. The terminal has been a joint venture between APM and state-owned Xiamen Port Holding Group.

MARSEILLES CUTS FEES

The Med Europe terminal in Marseilles has slashed export container park charges to improve traffic flows and reduce delay costs for shippers and forwarders. Free standing has been prolonged by four days to a maximum of 14 days. The 15 to 20 days tariff for standard boxes has been halved, while the 21 to 30 days rate is down by 25%.

ANTI-TERROR MONEY

US ports have spent less than a quarter of the funds budgeted under a federal programme to protect against a terrorist attack, according to an oversight report in December 2011. Since 2006, only \$395M of the US Homeland Security Department's \$1.7Bn Port Security Grant Programme has been used. Cost-sharing requirements and funding restrictions have been blamed for the underspend.

LITHUANIAN PROFITS

Lithuania's government-owned oil terminal operator reported a 53% increase in its year-on-year profit for the first three quarters of 2011. Klaipėdos Nafta's net profit was 36.06M litas (\$14M) between January and September 2011. Revenues increased 22% to 108.06M litas against 88.5M litas during the same nine months of 2010.

ODFJELL CHINA

Odyssey SE has entered into a joint venture agreement with Tianjin Economic-Technology Development Area via their subsidiaries to develop a terminal for bulk liquid chemicals, petroleum products and gases in China's Nangang Industrial Zone in Tianjin. Odfjell will invest about \$160M for 49% ownership and the operational management.



Photo: Schramm Group

Elbehafen will become a major North Sea bunkering station for LNG

Ports and owners turn to LNG

Ports in Europe and Asia have responded to the call to cut ship emissions by announcing new bunkering facilities for liquefied natural gas (LNG). Few LNG bunkering facilities exist outside Scandinavia, but in October 2011 a contract was signed between Germany's Brunsbüttel Ports and Gasnor of Norway to bunker vessels with LNG at Brunsbüttel's Elbehafen on the Kiel Canal, one of two main cargo routes between the North Sea and the Baltic.

A tank truck is currently being used for the Elbehafen LNG bunkering, but there are plans to build a fuel depot.

IAPH has made promoting LNG-fuelled ships the latest project of its World Ports Climate Initiative, pointing out that in many cases using LNG in ship engines will eliminate sulphur emissions entirely, reduce nitrogen oxides by about 80–90% and carbon-dioxide

emissions by 26% compared with heavy marine fuels. With more stringent controls on sulphur emissions set to be introduced within the emissions control areas in the Baltic Sea and the North Sea after 2015, owners operating in those areas are under increasing pressure to find ways of reducing their ships' emissions.

In response to this deadline, the port authorities of Antwerp, Zeebrugge and Ghent, in Belgium, have commissioned a modelling of logistics and regulatory requirements to establish LNG bunkering at their ports.

There are also moves to develop LNG bunkering in Singapore and South Korea. The Singapore LNG Corporation has awarded a contract for a berth project at its terminal on Jurong Island including a dedicated jetty for small LNG ships.

Meanwhile, South Korea's STX

Offshore & Shipbuilding and Korea Gas Corporation have signed a memorandum of understanding to conduct joint research into an LNG bunkering system and LNG-fuelled ship design.

Norway continues to lead the way in both bunkering facilities and LNG-fuelled newbuildings. Norwegian class society DNV reported that 22 LNG-fuelled ships are in operation. "In addition DNV has 18 signed newbuilding contracts and [there are] three ships scheduled to be converted for LNG fuel," DNV stated.

The latest announcement on the subject comes from elsewhere in the Nordic region: next year Finland's Viking Line will introduce an LNG-powered ferry on its service from Turku to the Swedish capital Stockholm.

LNG-powered newbuildings are not restricted to Scandinavia, however. In December 2011, Deen Shipping, based in Rotterdam, took delivery of the world's first LNG-powered chemical tanker, *Argonon*. The tanker will be employed on inland routes in the Netherlands and will have a dual-fuel system split 80/20 between natural gas and diesel.

Plans for the first LNG-powered 14,000teu container ship have been approved by classification society Bureau Veritas.

The vessel – a joint project of Korea's Daewoo Shipbuilding & Marine Engineering and French liner operator CMA-CGM – will be powered by LNG and heavy fuel oil. In its optimum setting, the engine will use only 10% oil, reducing overall carbon-dioxide emissions by 23% and cutting emissions of SOx by around 92%.

Eukor top ESI performer in Rotterdam

Eukor was the most sustainable shipping company calling in Rotterdam in 2011. The South Korean shipping company, which specialises in vehicle transport, is represented with six car carriers in the 'Sustainable Top 25' of seagoing ships that arrived at the port of Rotterdam last year. Eukor's *Morning Star* is ranked number one.

Tiedo Vellinga, manager Port of Rotterdam and a specialist in sustainable shipping, congratulated a EUKOR delegation on 9 February. "The Port of

Rotterdam Authority grants the top 25 a 5% discount on the Rotterdam port dues they paid in 2011. I expect that Rotterdam will invest much more in sustainable shipping, not only because shipping is becoming more sustainable but also because the Environmental Ship Index is much simplified and the sulphur limit in the index is internationalized."

EUKOR Car Carriers director Martin Malmfors said: "EUKOR are thrilled and proud to learn that six of our vessels have been placed among the top 25."



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Dredging

BELIZE FACELIFT

The Belize government has approved a project to give Port Loyola and Southside Belize City "a much needed facelift". The Ministry of Works has signed agreements with construction company Cisco to dredge and line Collet and North Creek canals.

MANZANILLO EXPANDS

Manzanillo International Terminal (MIT), at the entrance to the Panama Canal, will spend \$250M to double its capacity. MIT, a joint venture with Seattle-based Carrix Group and Panamanian investors, plans to dredge the terminal's access channel by a further 2.5m, build 930m of new berths and purchase nine more cranes.

ZAMBOANGA TENDERS

The Philippine Ports Authority plans to spend \$1.92M on widening the berth at the port of Zamboanga and to clear the harbor's shipping channels. Zamboanga is a major gateway for freight and passenger traffic to Malaysia. The PPA has called for tenders from Philippine-owned companies for a 200-day contract.

US ECONOMY FEARS

An economic report for lobby group The Big River Coalition estimates \$7.2Bn in imports and exports could be lost to the US economy this year if maintenance dredging on the lower Mississippi continues to slacken. The study by economist Timothy Ryan found that 19% of all US waterborne foreign trade moves through the New Orleans Customs District.

GLADSTONE PROTEST

Dredging at Gladstone has become an election issue in Queensland after fishermen demanded compensation. The dredging was carried out as part of the construction of the Curtis Island LNG facility, one of Australia's largest capital infrastructure projects. Some 60 local fishermen are taking legal action against the state government, arguing that government-owned Gladstone Ports Corporation has failed to compensate them properly for alleged environmental damage. They are claiming a total A\$20M (\$21.3M).



Photo: Port of Laem Chabang

Thailand wants Laem Chabang to be the transport hub of the Asian Economic Community

Laem Chabang has hub ambitions

Thailand's gateway port of Laem Chabang, is considering a fourth phase of its development plan – even though the third phase has yet to receive approval from the Thai government.

Expansion of Laem Chabang is one of several measures Thailand is working on as it seeks to become the trade and transport hub of the Asian Economic Community, which from 2015 will be made up of 10 countries in southeast Asia.

"We are thinking about phase four," Lieutenant Sutthinan Hatthawong, deputy MD of Laem Chabang Port, told the 6th Thai Ports and Shipping Conference in Bangkok. "We will be in the sea; we need to reclaim land."

This project will go far towards remedying the port's logistics and

connectivity weaknesses. A key component of the scheme is construction of a railway transfer terminal and a new coastal terminal in phase three.

Some 88% of freight leaving Laem Chabang goes by road, a percentage that Thailand wants to reduce. Greener and more environment-friendly railway movements lag far behind at 9%, while barge transport has a paltry 2% share. Between phases one and two the terminal will cover an area of 96ha.

"We hope to develop both terminals in the near future," said Hatthawong, adding that he wanted to secure cabinet approval for phase three as soon as possible this year.

The coastal terminal will be a 7ha site with 150m of quays and a

water depth of 10m. It will be limited to a vessel size of 3,000dwt, but even this will ease congestion by adding 300,000teu of capacity a year. "Currently, the capacity is not much, but in the second phase we are looking for more," said Hatthawong.

For phase three, the basic plan is to complete a study early next year and construct "if possible" in 2013, said Hatthawong, with operations starting in 2019. Early thinking for phase four is to build a quay extension on reclaimed land adjoining phase three.

As Thailand industrialises and becomes a major exporter in certain sectors, the government is clear about what needs to be done and Hatthawong claims the port has the backing to do it.

"The government is 100% supportive," he told *P&H*. "The problem we have [is that] under the law we need to get agreement from people around the port area." However, he was confident that the port would obtain that approval this year.

Electric rail will cut off the Horn of Africa

Kenya's prime minister, Raila Odinga, said the country will build its first electrified railway system when the government launches the Lamu Port–South Sudan–Ethiopia corridor (Lapsset) project this year.

According to Kenya's *The Standard* newspaper, the Lapsset venture will involve numerous projects including the construction of a megaport close to the northern island of Lamu, roads and railway lines, an oil pipeline and an airport.

"Since the completion of Mombasa–Kisumu railway line and the extension to Kampala, Kenya has never build an extra railway line. We will be launching the Lapsset project that will include an electric train," Odinga said.

Odinga was speaking at Strathmore University in Nairobi, where he was flanked by Jeffrey Immelt, chief executive of General Electric, which will be a partner in the railway project. The prime minister said the Lapsset project, which has a price tag of \$24.6Bn, will be the biggest single investment in Africa and is essential for transforming the economies of Kenya, Ethiopia and South Sudan.

The new railway corridor will effectively offer a shortcut avoiding pirate-infested waters off Somalia and reduces the need for ships to take the long route around the Horn of Africa. The development of Lamu will also relieve cargo congestion at Kenya's main container port, Mombasa.

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DIFFERENCES OF OPINION

Intermodal boss Sebastian Jürgens left Hamburger Hafen und Logistik (HHLA) in December. HHLA said Jürgens and the company had "jointly agreed to terminate collaboration", because of "differences of opinion regarding strategic direction, in particular, of the intermodal segment." HHLA chairman Klaus-Dieter Peters has taken on Jürgens' responsibilities.

CHANGES AT MAERSK

Søren Skou became CEO at Maersk Line on 16 January, having previously been CEO of Maersk Tankers. He replaces Eivind Kolding, who has left Maersk to become chairman of Danske Bank. Hanne Sorensen has been appointed CEO of Maersk Tankers, also part of the AP Møller-Mærsk group, effective from 13 February, APM announced.

Libya in search of port investment

Libya may seek an international private partner for its ports before it considers full privatisation.

Interim minister of transport Yousef El-Uheshi said in January that the interim government was open to discussing partnerships with international companies to manage its ports, but would not strike any deals before national assembly elections in June.

El-Uheshi said that Libya needs to access "the experience of others in the form of strategic partners, especially in managing seaports". It was too early to talk about full privatisation, he added. "We will start with the strategic partner now, which I think will serve us in the coming 10 or 15 years."

Libya needs port investment, because trade and oil exports are returning to pre-conflict levels faster than expected. In November, it was estimated Libya would generate more than 600,000 barrels a day by the end of 2012, but OPEC secretary-general Abdallah Sale El-Badri said in December he expected Libya to return to full production by June.

Oil production has accelerated since January, when Libya's largest oil port, Es-Sider, exported its first major shipment of oil after last year's civil war. Owned by Libya's National Oil Corporation along with Amerada Hess, ConocoPhillips and Marathon of the USA, the port was severely damaged in the uprising.

Speakers at December's 'Rebuilding Libya' conference in London said the country's other ports, run by Libya's Transportation Projects Board, offer substantial opportunities. Andrew Smith, CEO of Benghazi-based consultancy Maghreb Associates, said Benghazi would make an ideal terminal for the country's large secondhand car market. "The infrastructure in Libya's ports is far from primitive," Smith said. He explained that Benghazi has a 10–12m draught; "what's missing are good cranes".

Smith added that the port of Tripoli urgently needed new warehousing. He described the port as more "polished" than Benghazi, although it still offers scope for expansion.

"Everything works," Smith explained. "Containers and bulk are handled, cargo is unloaded quickly, but storage facilities have far to go – many goods just end up on the floor."

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New port on the block – 'HAROPA'

France's three ports on the River Seine – Le Havre, Rouen and Paris – have joined forces to create a new joint structure in an effort to compete more effectively with their larger north European rivals.

The three say they believe they can boost traffic growth and market share by pooling their capacities and marketing themselves as a single entity under the name HAROPA – HA(vre), RO(uen), PA(ris).

Le Havre is already France's leading container port and leading port overall on the French west coast. Rouen is Europe's leading cereals export port and has the advantage of being able to bring ships closer to the French capital than Le Havre. Paris claims to be northern Europe's leading inland waterway port by tonnage.

Last year, the three ports collectively handled 94M tonnes of maritime traffic and 126M tonnes of maritime and inland waterway traffic combined.

The trio point out that, on the basis of sea traffic alone, the new ensemble would comprise the fourth-largest port in northern Europe, exceeded by Rotterdam, Antwerp and Hamburg.

The Port of Le Havre's outgoing director-general Laurent Castaing, who, along with fellow directors from Rouen and Paris, co-hosted the presentation of the new organisation, argued that, in a normal year, the three could lay claim to handling close to 100M tonnes of traffic. Castaing asserted: "Ports of 100M tonnes are those that count in the world."

"In creating this joint economic

HAROPA leads

- Leading port for French foreign trade
- Leading European cereals export port
- Leading French port and fifth-ranking EU port for containers
- Leading port in world for wine and spirit exports
- Leading EU inland waterways port

grouping, we think we will increase our chances of taking back the market share that others have taken from us in the Paris region," he added.

The new structure is not simply a marketing tool. The three ports say that they intend to work particularly hard to develop more joint logistics services.

Port of Paris director-general

Hervé Martel reported that the customers they had asked were relatively satisfied with the three ports' infrastructure. "What they want," he said, "are services and services that are door to door. This is what they asked us to work on."

Creation of the new structure forms part of the Greater Paris project launched in 2009 by President Nicholas Sarkozy, who said he wanted to create a Greater Paris that would be a "veritable maritime metropolis" with Le Havre linked to the French capital by a new high-speed railway line.

At the time, the French president quoted Napoléon Bonaparte, then first consul, who is reported to have declared on a visit to Le Havre in 1802, "Paris-Rouen-Le Havre – a single city with the Seine as its highway."

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Shipping needs global standards

The new IMO secretary-general, Koji Sekimizu, sets out for *P&H* his vision for sustainable maritime transport within the global supply chain

In an age of uncertainty, one of the few things of which we can be sure is that the world has entered an era of global interdependence from which there can be no turning back. National boundaries and regional groupings mean very little to the multinational corporate giants of the 21st century. From automobiles to fashion, from electronics to pharmaceuticals and beyond, brands no longer have national connotations in today's world of mass, homogenised consumerism.

Many factors have come together to create this situation. The gradual removal of barriers to trade and restrictions on the movement of capital may have lit the fire, but technological advances in fields such as communication, computing and transport have added fuel. And they have done so by becoming both better and cheaper. There is a momentum behind globalisation that appears unstoppable.

Today, international trade has evolved to the point where almost no country can claim to be wholly self-sufficient. Every country is involved, at one level or another, in the process of selling what it produces and acquiring what it lacks: none can be dependent only on its domestic resources.

Underlying all of this is the global supply

chain, within which the shipping and ports industries are vital links. Shipping has always provided the only really cost-effective method of bulk transport over any great distance and the development of shipping and the establishment of a global system of trade have moved forward together hand in hand. Those with access to natural resources, those with the ability to convert those resources into useful products for the good of mankind and those with a requirement and the wherewithal to utilise and consume those end-products are all joined by the common thread of shipping. Producers, manufacturers and markets are brought together through shipping. This has always been the case and will remain so for the foreseeable future.

Not only is shipping cost-effective, it is also relatively safe, secure and environmentally sound. Global and liberal, it provides reliable mass transportation for energy, materials, foods and industrial products all over the

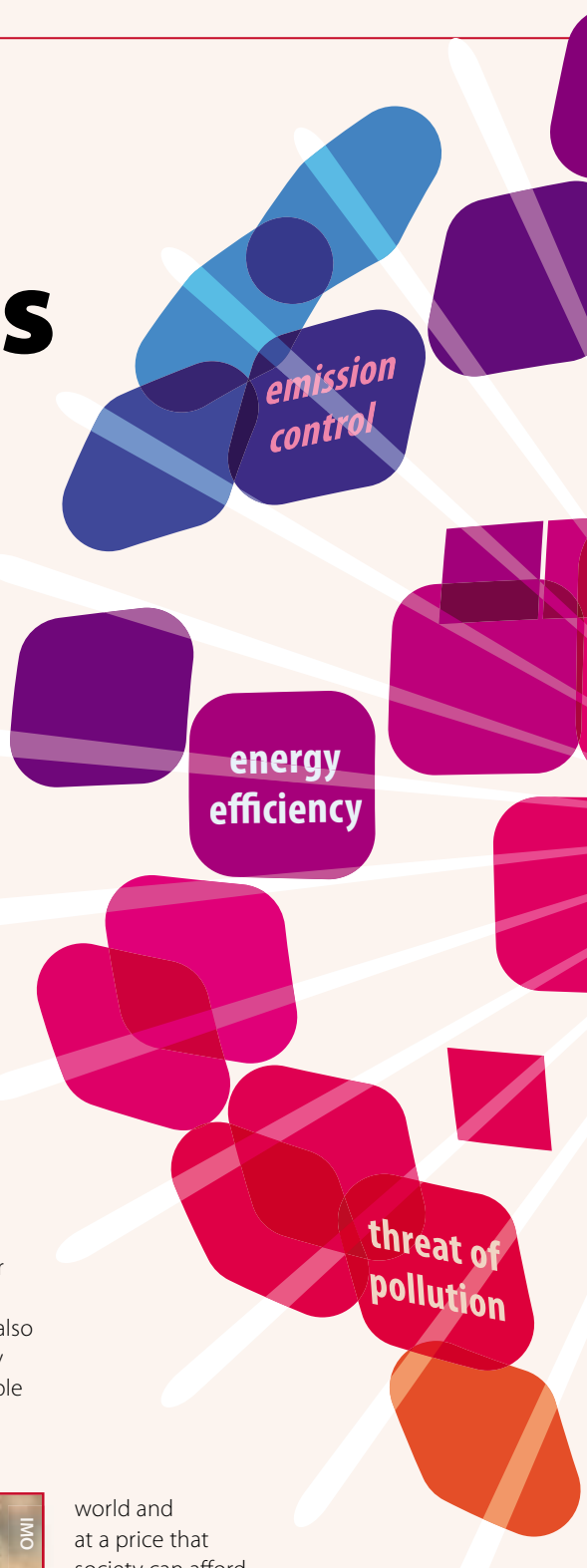
world and at a price that society can afford and is willing to pay.

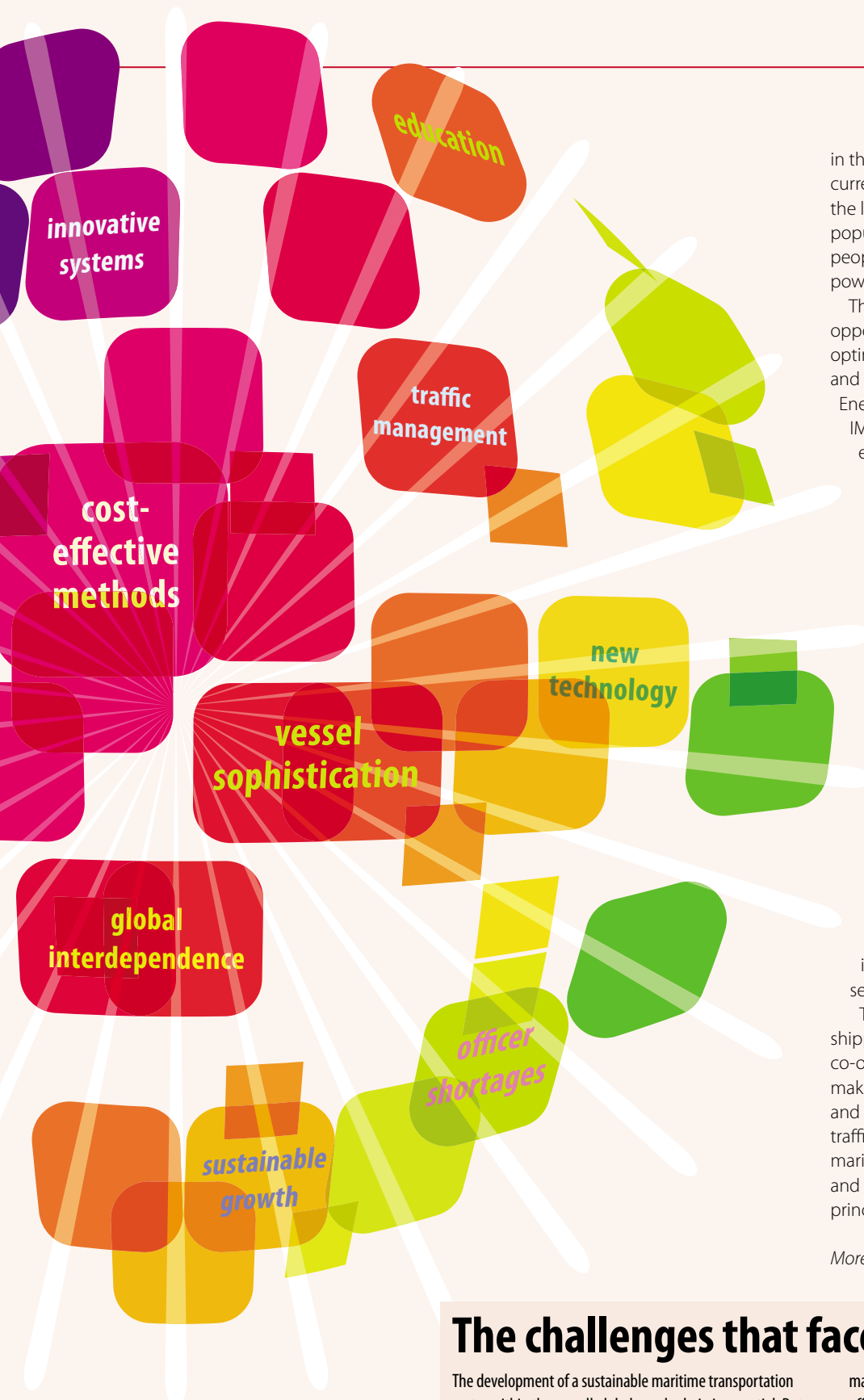
When I speak of shipping, I include within this blanket term all the ancillary activities that are vital to support the actual management and operation of ships and the movement of cargo. Activities such as the operation of maritime traffic management systems and global communication systems, ports and multimodal connections are all components of this multi-faceted sector. Looking to a slightly broader horizon, shipbuilding and classification, ship registry and administration, ship repair, ship recycling, maritime education and training,

“Global and liberal, shipping provides reliable and affordable mass transportation”

Koji Sekimizu

IMO secretary-general





could all be included under the same umbrella, as indeed could search-and-rescue services, maritime security agencies, coastguards, maritime law enforcement agencies and many others, too.

What becomes clear is that the sustainable development and growth of the world's economy will not be possible without similar sustainable growth in shipping and, therefore,

in the entire maritime sector. And, despite the current global economic problems, growth in the longer term seems inevitable. A global population that has passed seven billion people and is still rising with increased buying power should ensure that is the case.

There are, of course, equally important opportunities that offer tremendous scope for optimism and enthusiasm. Energy-efficiency and emission-control measures – such as the Energy Efficiency Design Index established by IMO to monitor and reduce greenhouse gas emissions – offer opportunities for innovation and the emergence of new technologies; they also give ship operators the chance to make considerable reductions in their operational costs. The development of new and innovative transportation systems is another example.

Governments, whether in developed or developing countries, in established or emerging economies, along with the shipping and maritime industries and the world community, should work together to make necessary investments and take actions that will bolster the future of the maritime transport system. By doing so, they will ensure that shipping continues to be environment-friendly, properly supported and protected from security risks – including that of piracy, currently the most serious threat facing the industry.

To achieve sustainable development in shipping, it is important to establish a co-ordinated approach to maritime policy-making. Energy-efficiency, new technology and innovation, maritime security, maritime traffic management and the development of maritime infrastructure are the key objectives, and these must be underpinned by the principle of global standards. **PH**

More info: www.imo.org

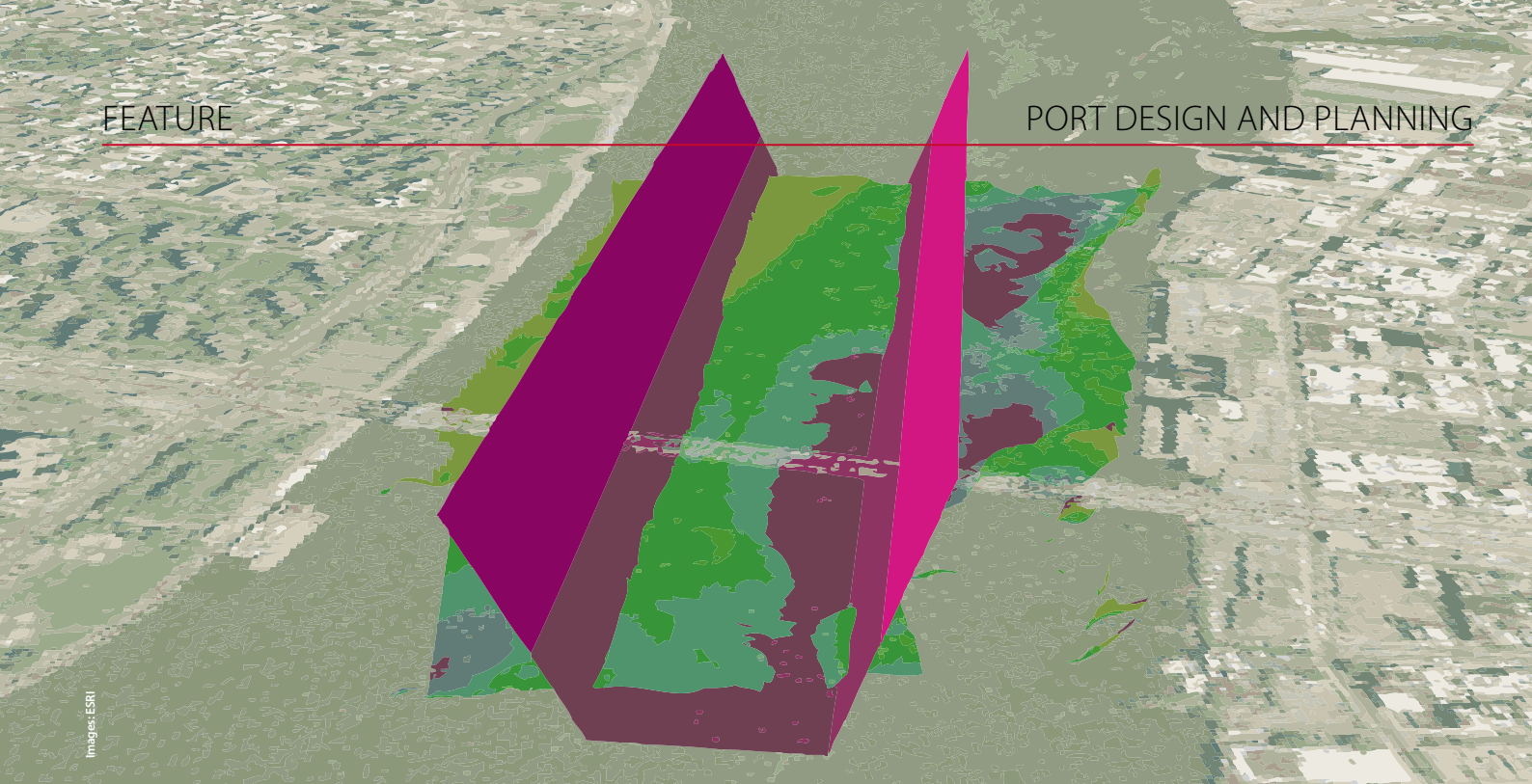
The challenges that face us

The development of a sustainable maritime transportation sector within the overall global supply chain is essential. But achieving it is by no means straightforward and there are several challenges that need to be overcome. Among these I would include:

- over-regulation and, in particular, the prospect of regional or unilateral regulatory measures for ships
- threats to maritime security
- piracy and armed robbery
- a shortage of competent seafarers, particularly officers, to operate the increasingly sophisticated vessels that

make up the global fleet; high-quality engineering officers will be in especially high demand as tighter emission regulations require ships to burn lighter fuels in sophisticated new engine designs

- insufficient maritime infrastructure such as ports and terminals, intermodal connections, vessel traffic management systems, maritime zone monitoring and control mechanisms
- the continuing threat of pollution
- an absence of cohesive and connected maritime transportation policies.



Visualising port planning

Ports have turned to digital mapping technologies to design, plan and improve operational performance and reliability. **Terry Bills** of geospatial software specialist ESRI talks about geographical information systems

Planned dredging: a three-dimensional model of the channel (below) shows in brown the area of dredged material to be excavated to ensure uniform depth

Port managers worldwide are discovering the operational advantages of integrating their information resources through geographical information system (GIS) technology. The initial drivers were often environmental- and security-related, but many ports have found that GIS can help them integrate disparate information sources into comprehensive operational views of their entire facilities. Such systems can support business systems including port design and planning, leasing and facilities management, maintenance and security management, port operations, vessel tracking and intermodal management. By helping to integrate information from across all business divisions (and all

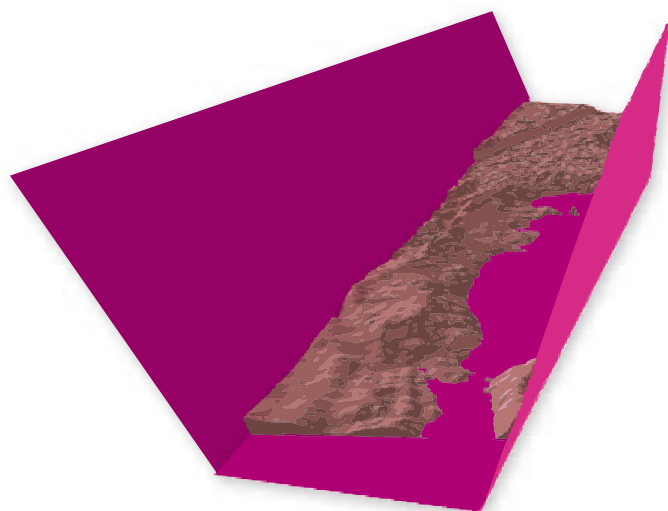
stages of the infrastructure lifecycle), GIS can enable port managers and planners to do their jobs better, faster and more cheaply.

For a port, the infrastructure lifecycle generally begins in planning, whether for a new port masterplan, expansion of existing terminals or planning for new facilities at existing sites. The planning and design process relies on large amounts of data and information from various sources. A key strength of GIS is the ability to organise a wide array of data for modelling and analytical purposes.

A comprehensive GIS database can include trend data of channel depths, coastal erosion and visualisation of above- and below-water terrain, boring and geophysical data, all of which are required for pre-design studies. Seabed classification, tidal current and wave pattern analysis can also be modelled for port design and configuration purposes. A GIS can be used to create a three-dimensional model of the subsurface for dredging, for channel design and for keel clearance analysis, all of which are critical to port site planning.

GIS is used widely to determine channel and berth project depths, for calculating dredging and excavation quantities and for determining locations for disposal and deposit of dredged materials.

The design of structures, berths and other port facilities is typically conducted in computer-aided design (CAD) packages. Design engineers have now started bringing GIS data into the process, as the interoperability of CAD and GIS allows them to incorporate GIS data such as the location of existing





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Left: Port of Sines portal with the locations of terminals and ships at berth

Right: Port of Houston portal indicating terminals and property boundaries

utilities, aerial photographs and other base map and topographical information into their designs.

The Port of San Diego uses GIS integrated with its design tools to support a wide range of design tasks. Ari Isaak, a GIS analyst for the San Diego District Port, explained: "AutoCAD users are drawn to this tool [ArcGIS for AutoCAD] because it gives them a window into GIS information while still allowing them to work in their familiar AutoCAD environment."

Draft designs can be brought back into the GIS environment to model the technical feasibility of alternative project designs and for compliance with environmental and social safeguards.

But GIS is used for many other planning and operational purposes. Port environment departments were early proponents of GIS, to ensure that they met water quality and coastal environmental regulations, but also to ensure the port could operate as a good corporate citizen in the community.

A prime example was the co-ordinated set of initiatives that were employed in helping to restore the coastal habitat and water quality of the Port of Tampa. Under the multi-agency planning initiative, various environmental actions were begun, all with the goal of improving the health and overall water quality of the Tampa Bay area. GIS was used to manage and display a wide range of data and information collected for the project – water quality data, surrounding land use, vegetation samples – that were required to run the hydrodynamic, watershed and water quality models.

Other common uses for GIS include storm drain mapping and stormwater control, spill containment and spill effect modelling and inventories of hazardous materials found in the port.

For many ports, tracking and managing properties and leases are essential to protect a major source of revenue, so is critical from both the business and the planning perspectives. It is not uncommon for there to be major differences between the land leased to a shipper and legal property boundaries, making the property manager's job all the more complex. GIS is often used to integrate information from different systems and databases, eg legal and jurisdictional boundaries and the location of each facility along with

building footprints and digital images, plus a lease management system.

This approach was taken by the Port of San Diego for the various properties and facilities spread over its 2,430ha site. GIS was used to integrate all of its engineering and CAD drawings, its document management and SAP financial information systems, making this information available to all port personnel through their browsers. The port's GIS manager, Malcom Meikle, said: "Using GIS, the time it takes to access critical information went from seven or eight hours to mere minutes because the data is now in one location and is up to date. This change is driving faster and more informed decision-making."

For both shippers and port managers, it is throughput and efficiency that count. GIS is being used in a number of ways to help in planning and managing port traffic and vessel loading and unloading. The Port of Sines in Portugal uses GIS for vessel traffic management and tracking, together with dynamic berth assignment, as does Port of Vancouver, in Canada. Berth and support scheduling are integrated with real-time vessel tracking, which can help to optimise berth allocation and generate timely billing, as is the case in Vancouver.

Sines uses GIS technology to help integrate information from seven legacy information systems, including its SAP financial system and a pre-existing data warehouse, to build a comprehensive spatial information framework that facilitates access to information and improves existing business processes.

The same advantages of GIS are seen in planning maintenance and security needs. The latter have expanded exponentially over the past 10 years, and ports have discovered how GIS can help them integrate disparate technologies into a single framework.

In San Diego, Malcom Meikle explained: "By using geographic data and systems, the port is able to use geography as the common factor to bring together data that otherwise is difficult to integrate." And that, more than any other function, is what establishes GIS as a core integrative technology to help ports manage their facilities and operations better. **PH**

More info: www.esri.com

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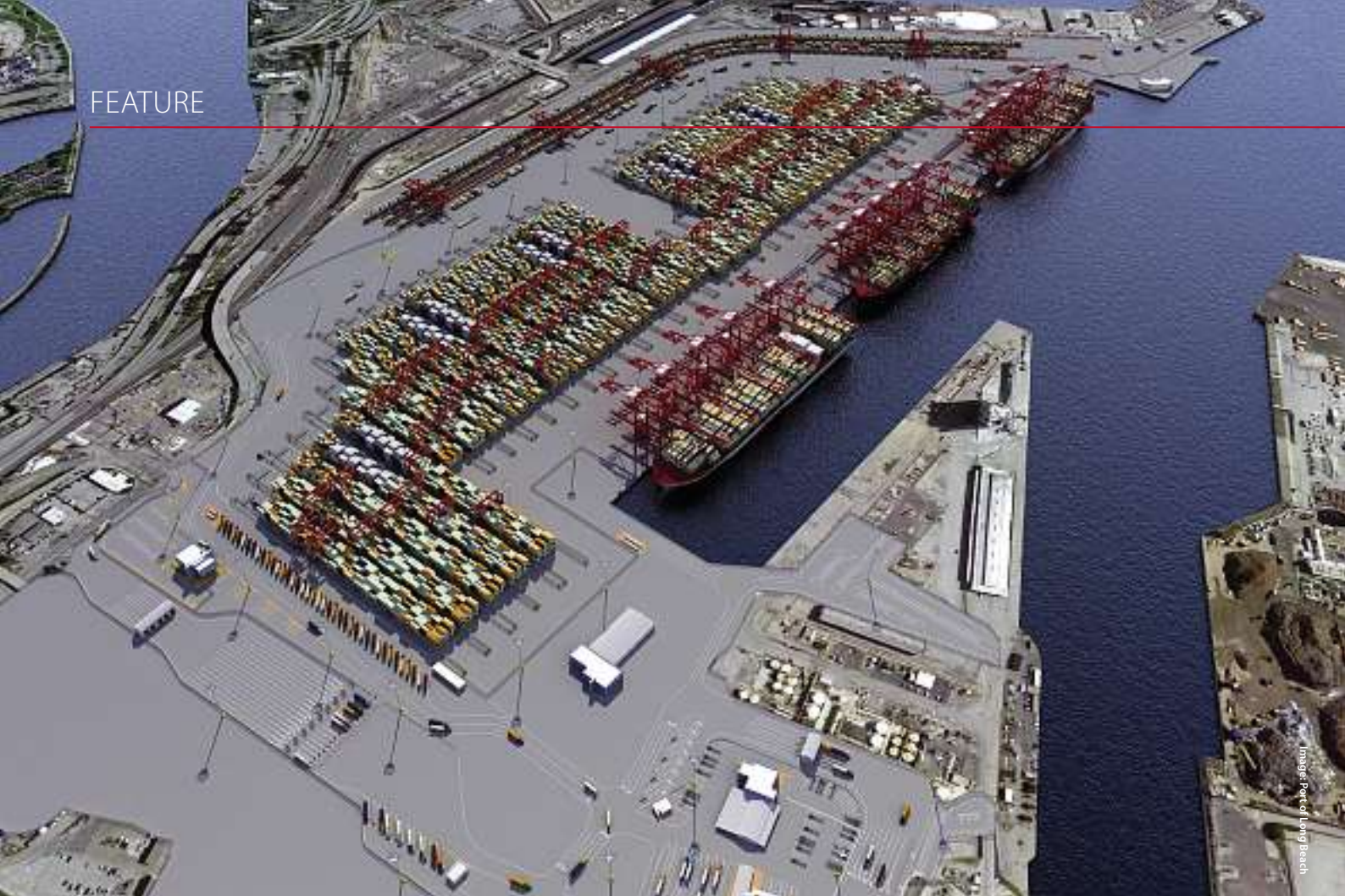


Image: Port of Long Beach

Starting from scratch

Building a megaport next to a disputed border and locating a fully automated container terminal on unstable ground were the challenges facing teams designing two projects in Kuwait and California. **Stephen Cousins** reports

Middle Harbor Terminal at Port of Long Beach will be fully automated

Set against a backdrop of political upheaval and an ongoing border dispute between Iraq and Kuwait, the project to create a mighty 60-berth seaport at Kuwait's Boubyan Island has posed challenges for master planner consultant HR Wallingford. The most significant is a lack of survey data, because the port is being built on virgin land.

Located on the northeast coast of Boubyan island, Boubyan Sea Port, also known as Mubarak al-Kabir, is intended to become the largest port in the northern Gulf. It will be built in four phases to reach an eventual total of 60 berths. The facility forms part of a master plan for the entire island and the first phase will entail the construction of two container berths and a bulk-handling berth, covering a total 1,600m of quay and 176ha of reclaimed land. This is under construction by the main contractor Hyundai.

Political sensitivities in the region are such that the new port has become a focus of tension, partly because of its proximity to the border between Iraq and Kuwait and partly because it may divert trade from Iraq's only deepwater port, nearby Umm Qasr. John Baugh, principal scientist at HR Wallingford, told

P&H that while surveying work was being carried out, relations between the Kuwaiti and Iraqi coastguards had been strained.

The border dispute has caused some uncertainty over the position of the port's access channel: "The channel is very close to the current defined border, which is being disputed by various parties, so we might have to revisit the plan for channel alignment to avoid it going into Iraqi waters," Baugh explained.

Where most port designs rely on an established set of baseline data for tides, currents, chart data etc, HR Wallingford effectively had to start from scratch at Boubyan because the area was uninhabited. Baugh explained: "There's hardly anything there, so we had to establish all the baseline data; Hyundai has had to work up surveys from nothing. It's difficult to gather survey data because the area is so huge. It made it tough for us doing the design, because we had to rework our initial plans as we received new survey data," he said. Unexploded ordnance from the first Iraq War littered the site and was revealed by magnetometry.

Boubyan Island is very low-lying and subject to inundation in the case of high-water events, so large

Image: HR Wallingford



Above: Phase one of the Boubyan sea port looks like this in HR Wallingford's real-time Navigation Simulator

Above right: The Long Beach facility will be created by combining two terminals and filling in the waterway between them



Photo: Port of Long Beach

amounts of dredged material will be required to reclaim and elevate the terminal areas and create new land extending from the coast. Ground conditions at the site are also very poor and comprise mostly loose mud, so HR Wallingford has had to consider carefully how to build it up to allow for any settlement.

When completed, the port will experience high levels of siltation, so will require frequent maintenance dredging. "There's a lot of uncertainty about larger-scale morphological response to building a huge port on this land. We don't know very much about what is under the surface: if dredging tens of millions of cubic metres of mud every year degrades the amount of mud in the area and the land starts to erode, will we find hard clays deeper down that won't erode, or softer materials? We've had to flag up the various situations that could arise; the site is simply too large to gather all the geographical survey data we need," Baugh said.

When marine design specialist Moffatt & Nichol was asked to work up a detailed masterplan for a \$1.2Bn container terminal at California's Port of Long Beach, the task of fully automating the facility raised many technical and administrative challenges. The port is located in a seismically active area.

Designed to try to improve cargo movement and environmental efficiency, the Middle Harbor project will see two existing terminals and the waterway between them combined into one 132ha terminal capable of handling over 3M teu a year. The project will be completed over nine years, in phases, up to 2019. M&N is providing operational master planning and facilities planning, dredging design, plus design for land reclamation, structures and more.

Remarkably, it is the first fully automated terminal in the USA where the infrastructure will be financed by the port authority and the operational equipment financed separately by the terminal operator.

Not having a single owner/operator has complicated the design process, explained Dan Allen, director of port engineering at M&N. "The Port of Long Beach is providing initial capital for the infrastructure, so their perspective is to keep long-term costs down, whereas the operator wants greater initial investment in infrastructure to keep down its ongoing maintenance costs," he said. "For example, the operator doesn't want to have to frequently maintain paving in the

automated container yard areas, which would force them to temporarily shut down operations."

Full automation has also required a high level of technical co-ordination between the infrastructure and operational design. To operate effectively, sophisticated container handling machinery depends on ultra-precise civil structural work with much lower tolerances than traditional stacking areas. This proved problematic when designing the paving and rails for container-stacking machinery in the stacking yard areas, where a totally flat surface is required.

For example, the container yard is being reclaimed using dredged material taken from various sources, which could settle, resulting in an uneven surface. Add to that the potential damage to the stacking areas from seismic activity and millions of dollars worth of damage to equipment could be the result. Infrastructure at California's ports is always constructed with seismic events in mind; there was a 3.8 magnitude tremor in the Long Beach area as recently as November 2010.

"It's a far cry from the old days of rubber-tyred gantry cranes where the ground elevation, whether it was smooth or rolling, was not so important," said Allen. "Our container yard will cover six or more different land areas, filled over different timeframes, with different kinds of materials, so the pavement and crane rail system must be designed to anticipate differential settlement and ensure the rails never change in elevation." Although the team has yet to reach a conclusion on how this stability will be achieved, it is considering a system of concrete beam foundations with rails installed on top.

The project's lengthy timescale – M&N started its planning work in 2004 – has also meant revising the design in response to increasing ship sizes. The consultant had initially planned berths and an approach channel able to accommodate future Panamax-class ships of about 10,000–12,000teu. Since then, the emergence of Maersk E-class ships of up to 14,770teu and now triple E-class ships has forced a rethink. "It meant further widening and deepening of the narrow slipway alongside the terminal wharfs and removing some existing land," concluded Allen. **PH**

More info: www.hrwallingford.com,
www.moffatnichol.com



The Belgian port's unique characteristics demand a traffic system that is tailor-made and able to kick in right from day one, **Scott Berman** discovers

Antwerp's bug-free VTS

Every port has its own complexities, a fact with which vessel traffic management systems have to contend. Yet, what Antwerp Port Authority faced in developing an updated VTM system (VTS) was particularly complex – and daunting.

In the next couple of months, the port will be launching that VTS, known as the Antwerp Port Information and Control System, or APICS2. No official date has been announced yet, but it will become fully operational after final tests are conducted in March. The system, in development for years, is fortified with new software and, like the previous APICS, is linked to the River Scheldt radar chain—the Flemish-Dutch Common Nautical Authority's safety and guidance system for North Sea–Antwerp maritime traffic. APICS2's goal is greater safety and more efficiency.

Consider the challenges of customising an advanced VTS for this major inland port: a complex approach; a tide-dependent stretch of the Scheldt that crosses the Dutch and Belgian borders; a variety of service providers; seven locks on two banks – with another lock under construction – and 40,000 lock movements every year. In addition there are wind and visibility challenges, four separate entry points to the port, a total of 1,037 berths and 1,055km of railway track.

As Willem Serré, a senior traffic controller and functional manager of the APICS2 project, pointed out to *P&H*: “80–90% of the ships entering our port pass through Dutch territory, and we have no authority on their fairways.” That's a cross-border dynamic that affects few other VTSs.

According to Serré, APICS2 will “broaden the data horizon, making it more transparent and enabling quicker pre-planning”. In this way, it will benefit local stakeholder users and partners and also the Dutch navigation authorities *en route*. Since the vast majority of traffic passes through zones where Antwerp has no authority, exchanging data and co-ordinating traffic as early and efficiently as possible with other authorities is critically important.

There is, added senior traffic controller Marnix Delée, no existing VTS that is an exact model for what Antwerp needs. “We are far inland, so the planning of locks is really important. Because we have a tidal window, we can't have a situation where there is a big vessel arriving at a lock that is not ready to let the vessel pass.”

APICS2 builds upon APICS, which has been evolving since 1989. With its 855 users, 6,500 programs and more than a dozen interfaces, the system has developed into a tool so essential that without it, in the words of the port's website, “daily activities... in the port would be virtually inconceivable”.

Yet integrating those 6,500 programs became increasingly difficult and, as the port noted, there remained “immense potential” for efficiency. Thus, a thorough upgrade was needed that would have to be accessible, high-performance and bug-free.

There was another impetus for the change: the system in use depended on outdated AS400 mainframe applications that the port was phasing out,

A better VTS

Among other things, APICS2 will help optimise the entire logistics chain by:

- Enabling swift, sweeping co-ordination of data between bridge and lock operators, as well as “pilots, towage firms, boatmen, goods handlers” and other users
- Capturing and monitoring all vessel movements, including an automated Automatic Identification System
- Integrating AIS with radar to boost efficiency and safety
- Detecting and locating cargo and service bottlenecks
- Collecting cargo information for all vessels
- Centralising and activating data on hazardous materials.

because software support for them will end next year.

APICS2 interface modules already in operation provide information on the state of bridges and lock gates plus links to customs, shipping, tide and wind data. Stakeholding partners, employing their own systems, will access APICS2 via a central broker system on a publish-and-subscribe principle, based on what they need, Serré explained. And the system will be easier on the eye, he added: “We are making it as visual as possible, with new screens that help users have a quick overview of the situation.”

Many of those stakeholders will eventually use the system at the Antwerp Co-ordination Centre (ACC) near the busy Zandvliet lock, 25km from Antwerp. There are plans to build a new centre, too. The system uses a range of computer technologies and products. How they were marshalled in a demanding real-world port environment is another story.

The port carved up the implementation of APICS2 into time periods during which ICT developers were tasked with accomplishing their allocated tasks within budget – although the budget figures themselves were not revealed by Serré. Development is taking place in-house because of the need to create a system custom-made precisely for Antwerp. To do that, the port established Antwerp Maritime Information Systems, or Amaris, a port authority subsidiary. Its 44 employees include the APICS2 team of 26 developers.

There have been incremental releases of grouped APICS2 applications. Key sponsors and users provided input along the way and were included in testing, providing feedback and working with developers

to tweak features: APICS2 now consists of 140 such features, with many of them incrementally introduced and already in use.

Developers adroitly put human faces on those otherwise abstract releases, naming them after historic explorers and navigators. For example, the final release, Vespucci, named after Italian explorer and financier Amerigo Vespucci, is scheduled to roll out business process-related features later this year.

Amaris developers started instructing users of the new system in February and sessions are conducted at a new Infopoint training centre in the ACC building.

Developers had some tough choices to make, given that they had only three years to get APICS2 operational. The introduction of mandatory AIS for barges is streamlining the process anyway, but with an annual total of about 100,000 barge voyages, totalling 300,000 movements, the port needs a system to “enable inland ports and fairway authorities to transfer all the barge information in early stages and as completely as possible, so we have a full picture of the load of traffic that’s coming to us,” Serré said. Corresponding changes will integrate the ACC’s co-ordination of barge and seagoing vessels, but that is not expected to be fully implemented until after 2014.

Also on the drawing-board is a complete list of key performance indicators for use in efforts to reduce the number, and average length, of delays to all vessels and to reduce the number of tug movements, thereby increasing the tugs’ fuel efficiency. Delée added that another potential feature could help in planning lock maintenance work and could simulate alternative traffic scenarios if there are long-duration projects for lock or bridge maintenance.

It’s been a big job. Yet, Serré, for one, seems to be keeping it all in perspective. He said that, whatever the benefits of a state-of-the-art vessel traffic management system, “various situations, particularly weather conditions, will still be factors that can’t be controlled. The skills of the operators and people on the floor will always be necessary to manage the amount of shipping traffic we have to deal with on a daily basis.”

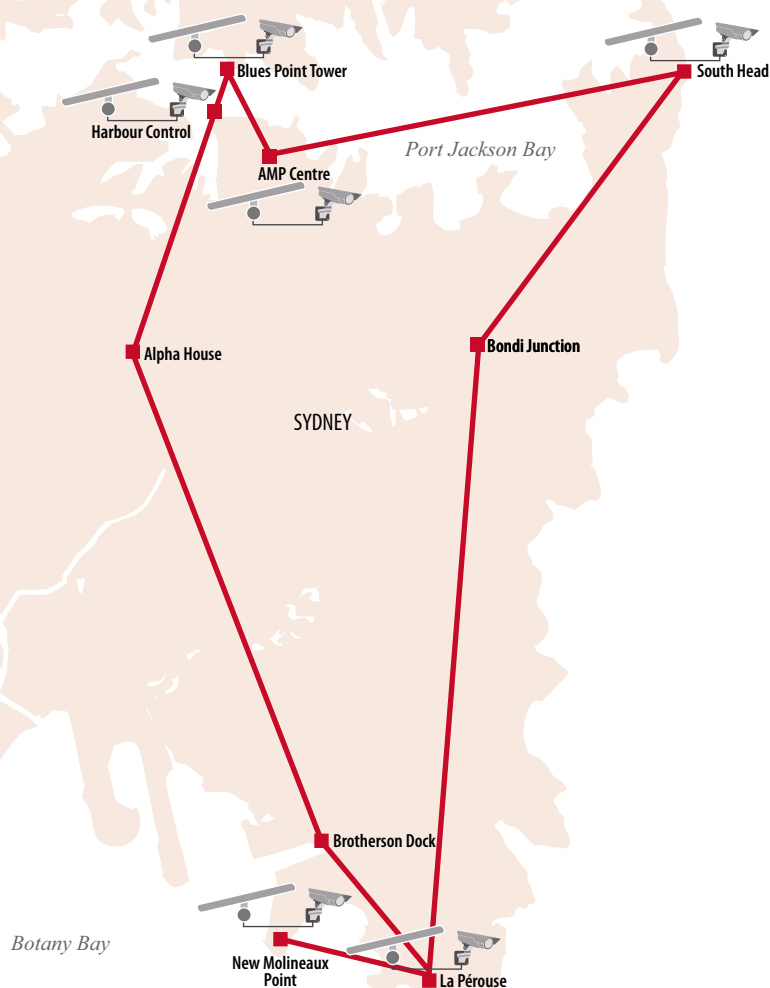
APICS2 is designed to give those professionals the support they need. **PH**

More info: www.portofantwerp.com/apics2

Below: The APICS2 test screen shows whether locks and bridges are open

Below centre and right: ship locations in the approaches to the Scheldt estuary by day and night





Traffic system for a citywide port

Sydney Ports needed a bespoke traffic management system to deal with two widely separated harbor areas serving high-density shipping. **Joël Branchut** of Signalis explains how the VTS provider came up with the solution

In 2007, Sydney Ports Corporation (SPC) undertook a formal marine risk assessment of its vessel traffic service (VTS) requirements, which resulted in the decision to modernise the system. Through this formal approach, SPC ensured that all aspects of the Sydney port areas and environment, spread over two separate bays – Port Jackson Bay to the north and Botany Bay to the south – were detailed and assessed. Two important aspects of this assessment were the complex shoreline of Port Jackson Bay with its multiple coves and the

high-density maritime traffic – particularly leisure vessels – in the port areas.

Based on the assessment, SPC produced a very detailed specification that included an extensive three-week, real-time test phase to ensure that the optimum sensors and systems were selected for the VTS, to ensure the protection of one of the world's most beautiful harbors.

"This was an investment of over A\$12M [\$12.8M] in the latest technology to improve surveillance and tracking of all vessels, including over 4,500 international ship movements a year," said SPC chief executive Grant Gilfillan. He added that French-based company Signalis had been selected from a tender shortlist after a trial of candidate systems in September 2008.

"We have used world-best technology to enhance our surveillance, tracking and management of vessels to help improve the safety and efficiency of commercial vessel traffic movements and to better protect the marine environment by reducing risks of accidents," he said.

The Port of Sydney's new vessel traffic management information system integrates radar, AIS and CCTV, including fixed and pan, tilt and zoom (PTZ) cameras, and VHF subsystems on multiple sites using a loop microwave network.

The radar subsystem comprises five TERMA Scanter 2001i radar sites (see box for details) covering the area. The South Head radar site, at the entry of Port Jackson, and that at La Pérouse at the entrance to Port Botany, mainly cover the ports approaches.

Two other radar sites – Blues Point Tower for the inner part of Port Jackson Bay and New Molineaux Point for the inner part of Port Botany Bay – cover the traffic inside the bays, while the final radar is placed on top of the AMP Centre tower in Sydney's central business district, providing area overlap.

The complex shoreline with numerous coves and busy leisure boating activity presented the challenge of ensuring that the VTS operators were able to monitor the vessel traffic continuously at any point along the shoreline. A specific CCTV solution was designed using electron-magnified CCD cameras to give a day and night capability together with a mix of fixed cameras to monitor large angle zones and directional PTZ cameras either directed automatically by the system or manually by the operators to cover specific targets or areas of interest.

"The new VTS system gives us far greater ability to organise and manage traffic safely. It will also complement and support the future projected growth of trade at the expanded Port Botany," said Steven Young, Sydney Ports harbor master at the time the system was commissioned.

Observation of the area was further enhanced by the use of programmed surveillance patterns for the PTZ cameras when specifically tasked.

To provide the best coverage with minimal interference, a bi-static VHF radio subsystem was installed with independent transmitting and receiving sites and providing 10 VHF working channels. The system has two main coverage areas: Port Jackson Bay

SYDNEY PORTS

GROWING AND
WORKING TOGETHER

TOTAL CONTAINER
TRADE 2000/01 TO
2010/11 (TEUs)



IN AUSTRALIA,
SYDNEY'S PORTS
FACILITATE OVER
\$A61 BILLION OF
TRADE EACH YEAR.

To meet the future demands of international trade, Sydney Ports is increasing capacity at Port Botany with the construction of a third container terminal. The \$A1 billion Port Botany Expansion is due to be operational in early 2013.

For the latest trade information and port developments, visit
www.sydneyports.com.au



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Above: The VTS operations centre in the Sydney port management building

Above right: Radar antenna being placed on Blues Point Tower



Photos: Signalis

and Botany Bay. To provide long-range coverage and communication continuity, however, the system is also integrated with the radio equipment at the Port of Newcastle to the north and Port Kembla to the south.

It was essential that the system possessed a fully redundant network platform to deliver data across the nine VTS sites. All sites were linked together to form a reliable integrated system via a loop medium-wave network. The network design will ensure that any disruption to one link between any two sites would have no impact on performance of the system, as the network would automatically re-route the data via the other side of the loop.

SPC's specification for the system power supply required on-site backup power systems at all the key sites. High-end, uninterruptible power source equipment was used to meet the specification and ensure continuity of operation of all VTS and related communications equipment (excluding radar antenna) for a minimum of eight hours in the event of mains power loss.

As part of the modernisation programme, operations were moved to a new VTS centre at SPC's new port management building inside the industrial port at Botany Bay. The Brotherson Dock centre was furnished with three operator workstations – two stations for VTS operators and one for the VTS supervisor. To provide overall visibility of the traffic image for the whole area to all operators, an eight-cube wall screen display was installed. Additionally, 10 dedicated CCTV display

screens mounted either side of the wall screen provide an overview of all-camera surveillance.

From the start, Signalis pursued a policy of offering Sydney Ports a system with a high level of Australian industry involvement. This was achieved with three core subsystems delivered by Australian companies: the VHF radio subsystem from C4i and the microwave network subsystem from Wave1. Moreover, throughout the project, Signalis was supported by Melbourne-based Daronmont, which, in addition to supplying the energy subsystem, provided local representation and co-ordination on behalf of Signalis.

There were challenges to be overcome in all the installations, but the placing of radars at Blues Point Tower and the AMP tower – the latter more than 200m high – were especially demanding.

The successful delivery of this challenging project on time and meeting the high initial performance specifications was achieved thanks to the excellent co-operation and support from the SPC project team.

SPC's new VTS Centre powered by a Signalis VTS system provides its operators with a fully integrated maritime traffic surveillance and management system that allows Sydney to fulfill its obligations as one of the most modern ports in the world.

"Sydney Ports is a leader in delivering world-best port technology and our new VTS system ranks with the world's best," Gilfillan said. **PH**

More info: www.signalis.com; www.sydneyports.com.au

The VTS specification for Sydney

The whole VTS system encompasses nine sites:

- one main operations centre (Brotherson Dock) and one emergency centre (Moore's)
- five radar sites that also, depending on the site, integrate cameras, AIS and radio equipment: Blues Point Tower, AMP tower, South Head, La Pérouse and New Molineaux Point
- one VHF radio site at Bondi Junction
- one MW relay site at Alpha House.

To achieve optimum tracking and coverage from each radar site, the TERMA Scanner 2001i radars were tailored as follows:

- three radars (South Head, Port Jackson and La Pérouse) have dual-frequency diversity and standard 25kW transceivers
- two radars (Blues Point Tower and New Molineaux Point) have dual-redundant single-frequency radars and 4kW transceivers to monitor large vessels that are sailing very close to the radars
- two radars (Blues Point Tower and AMP tower) have inverse square cosecant antennas to provide short-range coverage, which would not have been possible with the standard antennas because of the height at which they were located.

If Safety matters - choose SIGNALIS technology

It is our goal to provide maritime surveillance personnel with the best monitoring systems they need to perform their job at the highest level. SIGNALIS' unique software technology, developed specifically for maritime applications, can be tailored to satisfy applications for Vessel Traffic Services – Coastal Surveillance – Port Management – Harbour Security – Critical Infrastructure/Site Surveillance.

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A new spirit in Africa

African ports are forging new links as they face the twin challenges of economic expansion and environmental sustainability, says **Harry Barnes-Dabban** of the Ports Environmental Network-Africa, which is a catalyst for this networking initiative

Ports are crucial to the economies of African countries because they provide access to international markets. More than 85% of African foreign trade involves sea transport, with exports and imports each representing about a quarter of gross domestic product.

To achieve growth in African economies, trade needs to expand. As it does so, it creates more demand for ports and shipping, but it also introduces environmental challenges for ports and the marine environment. Ports are, above all, commercially oriented, focused mostly on modifying and renovating infrastructure to enhance competition and grow their cargo traffic. Their main stimulus is for economic growth and social progress, without integrating environmental commitments.

But for the ports to continue supporting their economies, environmental investments are required to make them sustainable. The environmental issues that African ports face are no different from those affecting other ports across the globe and include disposal of ships' waste and ballast water management, oil spills, engine emissions, dust emissions from dry bulk, water quality, dredging and disposal of dredged material,

traffic congestion, effluent discharge, hazardous cargo, noise and habitat loss or degradation.

Until now, the measures African countries have taken to deal with these issues have been insufficient. African ports generally lag behind those in other global regions in effectively pursuing an environmental agenda and tend to give a low priority to developing sustainable policies.

Most of the environmental issues listed above are trans-boundary in nature. These can be tackled through co-ordinated and integrated co-operative action, yet hitherto African ports have mostly operated as individual entities within the confines of their own nation-state and so have had little recourse to transnational environmental linkages.

Now that the environment is playing a leading role in the global development agenda, African ports have had no choice but to face some new realities. They are obliged to assume a greater responsibility for environmental stewardship to meet international standards of sustainability.

The common environmental issues challenging African countries can be addressed through co-operation to develop a clear vision and build alliances and synergies to improve environmental performance, protect ports and the marine environment and, by extension, their economies. It is for this reason that the Ports Environmental Network-Africa (PENAF), a non-profit environmental organisation established in 2009, has developed the African Ports Environment Initiative (APEI) as a co-operative environmental mechanism to help ports deal with their common environmental challenges.

PENAF seeks to work together with Africa's regional

‘African ports lag behind in pursuing an environmental agenda’

Harry Barnes-Dabban

Executive co-ordinator, PENAF



port associations and regional economic communities to pursue an effective environmental agenda and make Africa's ports proactive in environmental management and performance. It aims to stimulate environmental discussions and the sharing of environmental knowledge and best-practice experiences among Africa's ports.

It also promotes co-operation at regional and continental level on environmental projects. PENAF's role is to nurture and co-ordinate environmental actions in Africa's ports, creating a new form of environmental steering that will achieve both direct and indirect socio-economic and ecological benefits.

December 2010 saw the launch and adoption of the APEI programme at the Eighth Pan-African Ports Conference in Arusha, Tanzania. The initiative was undertaken in collaboration with two of Africa's port associations: the Port Management Association of Eastern and Southern Africa (PMAESA) and the Port Management Association of West and Central Africa (PMAWCA).

The aim of the programme is to build a co-ordinated environmental network among African ports to serve as a platform for environmental information and best-practice exchange to improve and harmonise environmental performance in the ports.

The target group for the initiative covers players in the maritime sector including port authorities, customs, private port and terminal operators, clearing and forwarding agents, ship owners and agents, maritime safety administrations, shippers' councils and associations, among others.

Under the auspices of the APEI, PENAF organised the first port environmental managers working conference for west and central Africa in Tema, Ghana, in June 2010, and followed up with a similar meeting of port environmental managers from east and southern Africa in Mombasa, Kenya, in September 2010. These hugely successful meetings helped participants to identify and prioritise the

environmental challenges facing their ports and begin the development of appropriate solutions.

In collaboration with the Dutch ministry of the environment, PENAF organised an e-waste study visit to the Netherlands for the Ghana Ports and Harbours Authority in September 2011. This fact-finding visit was part of measures aimed at addressing the growing concern over illegal dumping in Ghana of electronic waste such as computers and televisions. The experience gained has helped Ghanaian port officials to tackle the growing problem of illegal e-waste shipments and thereby protect public health.

PENAF also collaborated with the Senate of Bremen, Germany, and Bremen police in organising a Marpol study visit for African port officials in October 2011. The trip exposed participants to Marpol best practice in pollution prevention.

The APEI is also working in partnership with other international institutions, such as the Abidjan Convention secretariat. The convention is an umbrella regional body set up by the UN Environment Programme to develop a co-operative approach to protect the marine and coastal environment of west, central and southern Africa from pollution.

The aim of the partnership is to influence west and central African ports to assume greater responsibility to protect their environments from shipping pollution. Since shipping is one of the major marine pollution sources that can be effectively controlled in ports, PENAF is pursuing partnership arrangements with the convention secretariat to promote active involvement of the region's ports in its activities. APEI is also involved in other partnerships (see box, below).

In conclusion, the environment knows no boundaries and the global maritime community recognises that trans-boundary environmental issues require ports to work together. Ports in other regions have begun collaboration, but Africa has been missing from this dialogue. The time has now come for African players to join this moving train, working together and supporting each other through consultation, dialogue and co-operation to generate new knowledge and initiatives for sustainable African ports. **PH**

More info: www.penaf.org

APEI'S working partnerships

■ Collaboration with the International Oceanographic Institute of South Africa (IOI-SA) on ballast water management training is intended to avail African ports of much-needed knowledge on threats to oceans by building their technical and operational competencies. With the export of bulk commodities and oil, potentially harmful invasive organisms are being introduced into the ecosystems of African ports. The partnership arrangement seeks to harness the importance of a regional governance framework with an emphasis on developing and harmonising ballast water management guidelines and

promote a shared, integrated and common approach.

■ Collaboration with the Council for Scientific and Industrial Research of South Africa (CSIR-SA) on water quality management for African ports should help African port authorities manage their ports in a manner that allows local populations to benefit from the goods and services of the coastal ecosystem. The intention is to design a regionally accepted framework in order to set up water quality management programmes for African ports.

■ Collaboration with Eco-Sustainable Logistics Chain – a body affiliated to the European Sea Ports Organisation that

manages 'ecoport' networks outside Europe – is aimed at introducing tools to Africa's ports that will help them reduce the environmental impact of port activities and hinterland logistics and also improve efficiency in the implementation of environmental legislation. An essential element of this collaboration is the creation of a network of African port environmental managers and experts who can then exchange good-practice solutions for their environmental problems. That collaborative approach should, in turn, lead to environmental policies that can be implemented more cost effectively.



Protecting paradise

Port expansion and booming seaborne trade are transforming the Indian Ocean, but, asks **Stephen Spark**, has the region got the means to protect the maritime environment?

Port Mathurin, on the Mauritian island of Rodrigues, is typical of the Indian Ocean's smaller ports

Travel brochures call them "paradise islands" and it's a marketing slogan that has worked well for the small island states of the Indian Ocean. In the absence of significant natural resources apart from the turquoise sea and enticing beaches, the countries' economies are largely dependent on tourism. In turn, tourism is dependent on maintaining the appearance, at least, of a pristine environment.

But the Indian Ocean is no longer the tranquil place it once was. The rise of India and China, and the scramble for Africa's mineral wealth, has turned the ocean into a major maritime highway. Today, around half of the world's container cargo, one-third of its bulk cargo and two-thirds of its oil shipments pass through its waters. The island states, particularly their ports, are eager to seize the economic advantages expected to flow from their strategic position within the new 'golden triangle' of India, Africa and the Middle East.

Port Louis, capital and chief port of Mauritius, has been energetically developing itself into a container transshipment hub and aims to become a regional hub for processed seafood, cement, LNG and cruise. Port Victoria, in Seychelles, and Port Réunion, in the French overseas department of Réunion, are chasing cruise tourism and fisheries-related trade. And as the islands' economies develop, so too does intra-regional trade.

So, despite the recession, the long-term outlook for the region's ports is bright. Against this, the rapid increase in maritime activity has brought with it not just the unwelcome attention of Somali pirates, but also a greater risk of maritime disaster – particularly oil spills. Many ports are in sensitive locations: Port Louis, for example, is next to the Terre Rouge estuary Ramsar site, an important bird-breeding and feeding area.

The islands' vulnerability to pollution was brought into focus by two incidents last year. On 5 August,

Panama-flagged bulk carrier *Angel 1*, heading from China to Ivory Coast with 32,000 tonnes of bagged rice, suffered engine failure and drifted on to a coral reef just 2.6nm from the northwest coast of Mauritius. After 16 weeks of work to remove cargo, bunkers and other potential pollutants that could otherwise have devastated the adjacent lagoon, *Angel 1* floated free on 25 November, only to sink in deep water the next day. And on 19 November in the Maldives, Thai-owned cargo ship *Emerald Reefer* grounded on a reef by the narrow entrance to Addu Atoll. The location, near a luxury tourist resort, added to fears for the environment.

Mauritius and the Maldives both take marine environmental issues seriously. When the grounding of *Angel 1* was confirmed, the government set up a 'crisis cell' bringing together representatives of the Shipping Department, the Ministry of the Environment (MoE), police, coastguard and the Mauritius Ports Authority (MPA), among others. The cell met every two days to co-ordinate anti-pollution and salvage efforts. Larger equipment, tugs and salvage vessels mostly had to be sourced from overseas – South Africa, Mozambique, Réunion and Sri Lanka – which added to delays.

Delay proved costly for *Emerald Reefer's* owner, Dech Reefers. The Environmental Protection Agency allows the owner of a stranded ship a 25-day grace period in which to remove it. After that, EPA levies a daily fine of Rf700,000 (\$46,000) until the vessel is refloated, which in *Emerald Reefer's* case resulted in a bill for around \$1M. EPA director Mohamed Naeem told local media that 70m of reef had suffered "substantial" damage.

No country can prevent maritime accidents from taking place in its waters, but it does need systems, resources and personnel to minimise risks to the environment and to shipping when an incident occurs.

In Mauritius, maritime pollution response is set out

in the National Oil Spill Contingency Plan (NOSCP), which was tested in May 2011 when the MoE held an 'oil spill tabletop exercise'. However, Alain Donat, head of the Shipping Department in the Ministry of Public Infrastructure, told *P&H* that the *Angel 1* grounding had revealed weaknesses in the country's preparedness for a major maritime incident, particularly in the need for more oil spill equipment and the logistics to deploy them. "An operation of this length was not envisaged in the NOSCP," he said. "The lesson learned is the remoteness of the island from all salvage and anti-pollution centres – we can only count on ourselves."

It is doubtful that any of the small island states could cope adequately with a major spill, given their own limited resources and their distance from outside help.

That much was recognised at a meeting of the Indian Ocean Rim Association for Regional Cooperation in Bangalore in November. The association's 19 members agreed to improve co-operation on responses to oil spills and maritime pollution, and to natural catastrophes, such as tsunamis, cyclones and rising sea levels. The latter is a serious threat to the Maldives, most of which is only 1m above high water; worst-case forecasts suggest the country could be largely uninhabitable by the end of this century. Prompted by similar concerns, the MPA recently raised the height of the container terminal quay wall in Port Louis.

The Indian Ocean Commission, too, has adopted a co-ordinated regional approach to preventing maritime pollution and responding to spills. IOC's Maritime Highway project, launched in 2007, encompasses eight countries in the Indian Ocean and eastern and southern Africa and is focused on oil tankers using the Mozambique Channel. Under the scheme, all vessels using the channel would be electronically tracked; it would also enhance regional spill response capabilities, vessel traffic management

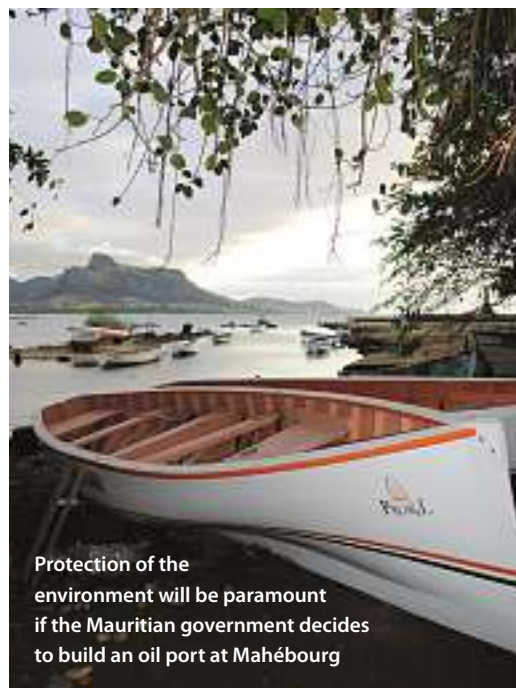
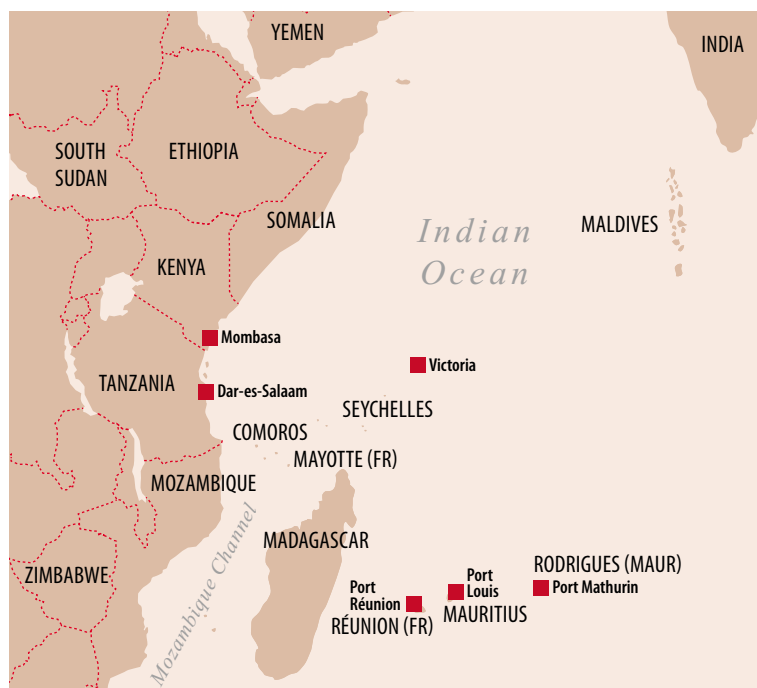
and pollution control in ports. Seven countries have signed up, but much remains to be done.

Slow progress is not a sustainable option, however, for the challenges are mounting relentlessly. Traffic across the Indian Ocean will continue to grow, as will the risks to the maritime environment. In the EEZs of Seychelles, Tanzania, Madagascar and Kenya, areas are being allocated for undersea oil, gas and minerals exploration – perhaps another threat in the making. And in east Africa, the pressure on ports to expand is irresistible, as new rail links start to bring the hinterland's mineral wealth to new terminals for shipment to China and Europe. Booming trade can prove costly for the environment, however, as was shown on 28 January, when beaches were damaged and wildlife killed by a 10,000-litre oil spill near the port of Mombasa.

The tension between maritime development and environmental protection is apparent in the plan to reopen the long-abandoned port at Mahébourg, in southeast Mauritius. The government envisages this being primarily for petroleum products and aviation fuel. It would also provide security in case of the closure of Port Louis harbor, through which the country receives 98% of its imports. Mahébourg, however, is situated on a mangrove-fringed lagoon of great beauty, historical interest and ecological value that also provides a livelihood for the town's fishermen. Clearly, any port development here would need to be handled with exceptional care.

Encouragingly, a new spirit of co-operation is evident among Indian Ocean countries, prompted initially by a need for unity in the face of the threat posed by Somali piracy. The debate in regional forums has now broadened and there is today a recognition that co-ordination and capacity-building are as essential for dealing with threats to the maritime environment as they are for bolstering maritime security. **PH**

Piracy, oil exploration, port expansion and rapidly growing trade are transforming the western Indian Ocean



Protection of the environment will be paramount if the Mauritian government decides to build an oil port at Mahébourg

Stephen Spark



A box problem to dwell on

Excessive dwell times for cargo are a problem at many African ports. **Terry Hutson** analyses a new World Bank report discussing solutions that have cut waiting times at Durban

The South African port of Durban may have successfully shed its reputation as a congested and inefficient port, despite persistent deficiencies in labour productivity and port access.

That is the conclusion of a report published recently by the World Bank. It based its conclusion on Durban's success in reducing cargo dwell time from the six to seven days the port averaged in the late 1990s to the current three days or less. It is an improvement that has unlocked additional capacity at its container terminals at minimal cost.

Since 2000, the main Durban Container Terminal has undergone a 45% increase in capacity from 2M teu to 2.9M teu with no additional berths and only limited additional stacking area. When taken together with the adjacent Pier 1 Terminal that was added in 2006, the port now possesses a total capacity of 3.6M teu.

The World Bank report shows that productivity has improved from fewer than 17 crane moves an hour to 28 at present, although it acknowledges that Durban still falls below the performance standards of the world's best ports.

Much of the credit for the improvement in cargo dwell time and labour productivity derives from the pressure that privately owned port and cargo owners and operators have applied to the state-owned companies Transnet National Ports Authority (TNPA), Transnet Port Terminals (TPT) and the South African Revenue Services (SARS).

"Any form of delay at the port is a major irritation for the [South African] manufacturing industry... It is no surprise that import and export traders have very little tolerance for poor performance by a state-run freight company, neither does the Department of Trade and Industry, which has the responsibility of attracting investments into the country," the report said.

The World Bank report's authors added that the main lessons for sub-Saharan African ports are that "cargo dwell time is mainly a function of the private sector, but the onus is on public-sector players such as customs, the port authority etc to apply pressure to change the behaviour of the private-sector port users



to better comply and reduce cargo dwell time".

The report suggested that the critical tools in achieving a reduction in cargo dwell time are prohibitive charges for storage, strict enforcement and the ability to pre-clear goods with customs, plus the introduction of service level agreements that are binding on both parties. In Durban, the TNPA and sister port operator TPT agreed on a target of three days' dwell time, which has been consistently achieved for several years in a row. Shippers representing the automotive industry still regard three days as excessive, however, and are seeking further improvement.

In comparison with other sub-Saharan African ports, Durban rates well, according to the report. In Cape Town and Port Elizabeth, the average dwell time is six days, in Walvis Bay it is between three and eight days, Luanda 12, Beira 20 and Maputo 22. Dwell time in Douala, Cameroon, examined in a similar World Bank report published in February 2011, is 20 days.

Tanzania Port Authority said in October 2011 its cargo dwell time at Dar-es-Salaam has been reduced to an average of 12 days. However that number seems not to tally with the experience of local importers, who claim that it takes between three and four weeks to clear goods from the port. One importer said he has taken to clearing his cargo at nearby Zanzibar, where the dwell time is as little as two days. President Jakaya Kikwete meanwhile has instructed the port authority and other stakeholders to bring dwell time down to under a week.

In Mombasa, the Kenya Ports Authority (KPA) told journalists that the average dwell time had been reduced to below six days in 2010, but independent reports suggest the reality is an average of nine days. The KPA recently opened several container depots outside the port where boxes are moved to reduce port congestion. These measures are helping to cut dwell time within Mombasa Container Terminal, but the problem persists of importers from neighbouring landlocked countries using the port as a bond store.

The Durban study contains some lessons for other sub-Saharan African ports, such as the need for customs modernisation and the enforcement of punitive costs on those who use the port as a storage facility. TPT's charges in Durban for container overstay

(beyond a free 72-hour window) are six times higher than those levied by other South African ports. Uncleared boxes or cargo detained by customs for inspection are moved to licensed container depots where cheaper storage is available.

As a result of these measures, 90% of cargo in Durban is cleared and moved within three days and less than 10% has to be taken to bonded warehouses. Transshipment cargo is given seven days' free storage, although the percentage of transshipment cargo through Durban is low.

Other issues addressed by TPT included agreeing with certain cargo handling companies and large consignees, such as Durban's Toyota manufacturing plant, to collect cargo from the port after hours, when both city commuter and port-related traffic are less congested.

The objective of the measures was to create a mindset that the port is not a storage facility and that other options are available if necessary. This required a buy-in from SARS, which set a target of clearing within three hours any declarations processed through electronic data interchange (EDI). By the first quarter of 2011, SARS was clearing EDI-processed cargo within three hours and 10 hours when EDI was not used.

In addition, SARS provided accreditation to its top 20 clients, offering benefits such as the 'green line', which allows cargo to be removed as soon as it is handled at the port. Advantages include fewer inspections and post-clearance audit. These 20 companies account for 70–80% of total cargo throughput.

As a result of these steps, and unlike the situation in most sub-Saharan countries, pre-clearance in Durban is now the rule. "This explains why the target for customs clearance time is in hours and not in days like in other countries," the World Bank stated.

Importantly, the report suggested that reducing dwell time releases capacity in a container terminal at limited cost. It concluded that while cargo dwell time is a function of the private sector, the onus is on the public sector to put pressure on private-sector port users to make them more efficient. It pointed out that "in South Africa, due to the increasing importance of manufacturing/assembly industry, which competes worldwide, Transnet is under severe pressure to perform and improve, not only from the private sector but also from a government anxious to meet trade policy objectives. Therefore a virtuous circle is in place." **PH**

More info: www.worldbank.org



Photo: Port of Rotterdam

A study commissioned by northern European ports has confirmed that prevailing deepsea routes are the most efficient means of moving containers in and out of the continent. **Jacqui Street** reports

Every day in 2009 the equivalent of three 10,000teu vessels passed through the Suez Canal from eastern Asia loaded with boxes for Europe. Instead of calling at Mediterranean ports, 70% of ships continued into the Atlantic Ocean, with most delivering their loads in northern Europe.

This detour adds 4,000km to the sea journey for goods destined for European markets. One might conclude that there must be a quicker or more efficient route, particularly as ports compete for shrinking Asia–Europe container volumes. The North Adriatic Ports Association (NAPA) has marketed its member ports in Italy, Slovenia and Croatia as offering scheduling, environmental and cost advantages over northern European destinations. Giuseppe Parrello, president of Ravenna Port Authority, told a Munich conference last year that using Adriatic ports to import Asian cargoes could reduce overall carbon emissions.

But Dutch transport analyst NEA has challenged this

assumption in a new study which shows that current deepsea freight networks serving north European ports are close to being the most efficient models. *The balance of container traffic among European ports*, commissioned by the Rotterdam, Antwerp and Hamburg port authorities, found that, thanks to a “persistent combination of inland and maritime factors”, longer journeys were more efficient in terms of cost and CO₂ emissions.

“We teamed up with our competitors Antwerp and Hamburg Port Authorities because we had the same feeling that we wanted to clarify claims being made in Brussels about freight handling,” Port of Rotterdam spokesman Minco van Heezen explained to *Ports & Harbors*. “The effect of industry demand and geography has perhaps been underestimated by those who want to spread cargo evenly over Europe. The Alps and Pyrenees are there; it’s quite simple.”

The NEA report studied container flows in 2005



Northern Europe's dominance was underscored by the Port of Rotterdam's box record in 2011

and found that while northern Europe had 56% of the total population of the two regions, it attracted 63% of containerised import trade. When NEA narrowed its focus to central Europe, the north claimed 69% of the population and 72% of containerised imports. The report said the pattern was repeated for export container flows, although volumes were smaller.

NEA used previous research to measure ship and rail use against shipping providers' costs, emissions, infrastructure costs and full optimisation (including all internal and external costs). The models showed that ideally, when all costs and emissions were considered, northern ports should handle 65% of container traffic and southern ports 35%. NEA estimated that northern ports actually handle 68% of total import and export container trade and southern ports handle 32%.

"If all continental maritime containers were transported via the optimal port of loading or unloading, the distribution of cargo amongst the northern and southern ports would remain broadly similar to the existing pattern," the report concluded.

NEA portrayed the split as a natural one, because cargo generation and attraction rates are higher in the northern part of the continent and the geography of the Alps and the Rhine waterways act as physical barriers and channels, strengthening the position of the northern ports.

One of the report authors, Sean Newton, told *P&H* he was surprised to discover that the longer sea routes were more efficient in terms of CO₂ emissions. "The simultaneous modelling of internal, external, inland and maritime costs was new for us, and we had no preconceived ideas about those results. Therefore it was an interesting conclusion that scale, ship-speed, load factor and inland modal split all contribute to compensate for longer sea distances. Clearly further efficiencies can be realised, but factors such as the persistent east-west imbalance of trade cannot be solved by ports and shipping lines."

Bernhard Zampolin, of Hamburg Port Authority, told *P&H* that the disadvantages of alpine railway links made Hamburg attractive for European importers and exporters. "You can go from Hamburg to Prague with 90 wagons," he said, "But if you go over the Alps, for example from Koper or Venice, the mere steepness requires two locomotives, fewer wagons and the whole advantage of being closer to the market is consumed by the terrain and the need for more fuel."

NEA analysts also examined east-west transport shifts and other factors such as intermodal expansion and transport bottlenecks. NEA observed shipping companies deploying larger container vessels to reduce costs from east Asian routes. "Clustering of activity, scale economies and deep water at the north European main ports permit the use of ships with the lowest unit costs available," the report explained. "The ability of the northern main ports to combine transshipment and hinterland functions contributes further to the scale effect."

Zampolin said northern ports benefited from the increasing size of container ships. "For example, Maersk may have a very big container ship with an extremely

efficient engine and lots of teus. Then automatically, even with [the added distance through] the Strait of Gibraltar and the English Channel, you have such an advantage as to carbon dioxide costs that the whole balance will not tip by going to Venice and sending container traffic over the Alps."

The report has come out at a time when all European ports are competing for Asia-Europe container business. Yet the ports of Rotterdam, Antwerp and Hamburg have experienced record throughputs.

In 2011 the Port of Rotterdam increased its cargo throughput 0.8% to 433M tonnes, 3M tonnes more than the previous record year (2010). The Port of Antwerp handled 187M tonnes of freight last year, which it said was an increase of 5% on 2010, and a record year for containers at 8.6M teu. Meanwhile, Hamburg reported above-average throughputs for the first nine months of 2011, with 6.8M teu moved.

Zampolin said the study demonstrated that the system of 70% of freight heading north was properly balanced. Rotterdam's van Heezen said the study was useful to northern ports as it proved there was no need to shift traffic artificially towards the south. "At the moment it's not viable to use public money to create competition. If other ports improve their facilities and commercial drive to gain market share, that's real competition. We like the latter, we oppose the former."

The southern ports were not completely convinced by the NEA study. Luca Antonellini, head of planning at Ravenna Port, told *P&H* that he had some doubts about the flat rate of growth assumed by NEA "without attention to routes, countries' traffic balance etc". He said the NAPA ports have commissioned their own report on the European container market and anticipates it will provide a riposte to the NEA study.

NEA researcher Newton stressed that Mediterranean ports remain important and are likely to benefit from growth in eastern European economies. "We think it's not right to think only in terms of a fixed-sum struggle between the north and south coastlines – competition comes from all directions. There are great opportunities for port development in the south, but these mainly arise from developments in the immediate hinterland and are not really at the expense of the north." **PH**

More info: <http://english.nea.nl/index.cfm>



Port of Antwerp's freight throughput rose by 5% between 2010 and 2011

Photo: Helene Miseur



Photos: PLIPDECO

Pivotal to Trinidad's growth

For 45 years, Port Point Lisas has been playing an increasingly important role in Trinidad & Tobago's economic development. **Ashley Taylor**, president of owner/operator PLIPDECO, toasts its successes and talks about expansion plans

Multi-purpose Point Lisas, handling general, bulk and containerised cargo

The Point Lisas Industrial Port Development Corporation (PLIPDECO) celebrated 45 years of existence in September 2011, having been incorporated in 1966. From its base on the west coast of Trinidad, PLIPDECO has two major lines of business: port and industrial estate operations.

Through the company's operations on the industrial estate, Trinidad & Tobago has become recognised as a global player in the production and export of ammonia, methanol and urea. The iron and steel plants located in the zone also make the country a significant net exporter of direct reduced iron.

The Port of Point Lisas, owned and operated by

PLIPDECO, is one of the twin-island republic's two major ports. Both Point Lisas and Port of Spain are important transshipment points for containerised cargo between the Americas and the Caribbean. The ports also facilitate the domestic trade that drives the local economy.

PLIPDECO has played an increasingly pivotal role in the country's growth and economic development thanks to the many petrochemical and service companies based on the 860ha industrial estate.

The estate hosts most of the downstream energy sector of Trinidad and Tobago and contributes around \$5Bn to GDP annually. The zone houses 103 tenants, ranging from natural gas processing, methanol, ammonia, urea and steel production to smaller service-based companies. The development of the estate has led to the creation of more than 12,000 jobs.

Today, PLIPDECO is widely recognised as one of the best examples globally of a successful, mature, gas-based industrial estate.

Point Lisas handles more than 45% of T&T's domestic import and export container trade and 90% of the breakbulk trade. Over the decade to 2010, the growth in containerised cargo has been unprecedented, with volumes almost tripling over the period. A total volume of 184,000teu was handled in 2010.

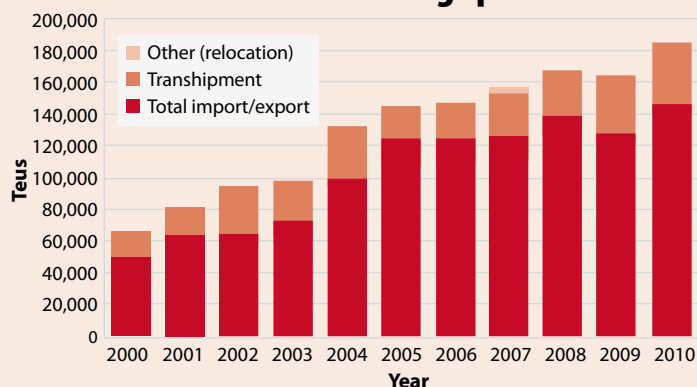
This growth pattern is expected to continue in the short to medium term, although at a slower rate

Facilities and equipment

The Port of Point Lisas was initially constructed to support the development needs of the rapidly growing industrial estate and has now become a full multipurpose facility that handles bulk, general and containerised cargo. Its facilities and systems include:

- Six berths, one of which is dedicated to containerised operations and has a maximum draught of 11.5m
- Two post-Panamax ship-to-shore gantry cranes
- Six rubber-tyred gantry cranes
- Twenty-three tractor trucks and other backup equipment
- Navis terminal operating system for managing vessel and yard operations

Container throughput



Source: PLIPDECO

because of the sluggish recovery from the global economic downturn.

The strong focus on customer service and business excellence led to the port securing the Caribbean Shipping Association's Port of the Year Award for three consecutive years, 2000–2002. It was presented with the CSA's Growth and Development Award in 2009.

PLIPDECO works closely with customers to meet their operational needs. In the past year, individual customers have benefited from various technological changes, including customisation of the Navis terminal operating system for some shipping lines.

As part of its commitment to providing a good

service, the corporation is certified to ISO 9001:2008 and has incorporated its quality management system into all aspects of its operations.

The next decade will see expansion plans for both the port and the industrial estate coming to fruition. These include building six container berths that will be able to handle the largest classes of vessels being deployed by the major shipping lines. Throughput capacity per berth is estimated at 300,000teu.

This proposed development will be undertaken in phases to keep pace with growth in throughput demand, requirements for larger vessels and to take advantage of the expanded Panama Canal. On completion, overall capacity will exceed 1.5M teu.

The industrial estate is expected to be expanded by an additional 3,000ha, not only to keep pace with the larger port and downstream energy sector, but to also diversify into logistics services. The logistics services being contemplated will facilitate the consolidation of cargo bound for regional markets of the Caribbean and Latin America.

To realise these ambitious goals, the corporation will be investing heavily in infrastructure, technology, training and human resources. Ultimately, this will ensure that PLIPDECO is well positioned to provide world-class service in both the short and the long term, thereby fostering an environment of sustainability, profitability and high-value service to customers.

To support this process, the corporation will continue to forge strategic alliances with its key stakeholders in an environment of mutual co-operation. **PH**

An aerial view of part of the Point Lisas industrial estate



Le Havre offers ESI incentives



Le Havre will reward greener ships

Photo: Grand Port Maritime du Havre

Leading French container port Le Havre has become the latest major European port to offer incentives to shipping companies operating vessels with low emission levels. On 1 January, the port began offering reductions in ports dues of up to 10% for ro-ro and box ships with the requisite score on the World Port Climate Initiative's Environmental Ship Index (ESI).

The reductions, which have been introduced on an experimental basis, are available to the 10 shipping companies that

have the best record of cutting harmful emissions from their ships.

Le Havre was not in the first wave of European ports to introduce such incentive schemes, and commercial and marketing director Hervé Cornède told *P&H* that the port had wanted to take the time necessary to ensure it had a scheme that would really work. The port therefore sounded out owners, in particular, with a view to developing a scheme that would be attractive to them.

"It was important for us to have

maximum impact on port dues," he said. "We wanted to offer a real incentive, something which was not negligible."

The number of qualifying shipping companies was restricted to 10, because this allows the port to "optimise" the bonus it can offer them for operating greener ships, said Cornède.

Le Havre has opted for a lower ESI qualifying score than some of its European competitors. They introduced schemes at an early stage of the rollout, but then

found that too few ships were reaching the scores they had set. The Le Havre scheme will be based on an ESI score of "around 25", according to Cornède, compared with some other ports' 30+ scores.

A particular feature of the Le Havre scheme is that participating shipping companies have also been asked to sign a charter drawn up by the port for the purpose.

With the launch of this scheme, the French port has joined nine other European ports that are already operating ESI incentive schemes. They are Amsterdam, Rotterdam, Oslo, Hamburg, Bremerhaven, Antwerp, Kiel, Civitavecchia and Zeebrugge.

The number of ships figuring on the index is 515. The index evaluates the amount of nitrogen oxide and sulphur oxide emitted by ships and rewards ships that can demonstrate good energy efficiency scores.

Survey probes HIV/AIDS in ports

A survey examining the potential impact of HIV/AIDS within port communities, and their attitudes to it, has made apparent the need for action and support, according to the International Transport Workers' Federation (ITF). The survey is being released as part of a wider study of HIV/AIDS in docks and ports.

The ITF report summarises the findings of a survey conducted among the members of ITF affiliates in five ports within four countries: Antwerp in Belgium, Porto Santo Tomas in Guatemala, Mombasa in Kenya, and Chennai and

Mumbai in India. The report concluded with a set of recommendations for future action that should be taken by the ITF and its affiliates.

"Some transport sectors have been much more badly hit than others by HIV/AIDS, but none is immune, and anyone who ignores that fact risks letting down all those who are affected. That's why we began this research and why we will dedicate ourselves to doing our best to put in place the practices that it identifies as being needed by those working in the world's ports," said dockers' section secretary Frank Leys.

"The findings of a civil aviation survey, published in 2010, and the present survey of port workers, reveal a range of risks and needs in relation to the AIDS epidemic. Almost without exception, the unions concerned wished to start or strengthen their AIDS activities, while the individuals questioned expressed a range of fears about the disease and a desire for workplace activities for prevention and care," commented the ITF's HIV/AIDS co-ordinator Dr Asif Altaf.

The federation's report can be seen in full at www.itfglobal.org/HIV-Aids/port-study.cfm.

Notable numbers

88%

percentage of cargo currently leaving the Thai port of Laem Chabang by road

5

number of radar sites for Sydney's port traffic system

Europe tackles smuggling

The European Commission has proposed a European border surveillance system, Eurosur, to combat the smuggling of drugs and people into ports, according to IHS Global Insight.

EU home affairs commissioner Cecilia Malmström explained: "Eurosur will help detect and fight criminal networks' activities and

will be a crucial tool for saving migrants who put their lives at risk trying to reach EU shores."

"The system would provide a platform and protocol for national border surveillance authorities to share information and resources," explained IHS Global Insight. An important element will be the sharing of surveillance tools and

satellite imagery to help identify smuggling vessels that are likely to be hard to detect at sea.

The scheme will be discussed in the European Parliament and Council of Ministers. The aim is to launch it in countries with eastern land and southern sea borders in October 2013 and elsewhere in the EU in October 2014.

The cost of the scheme is estimated at €338M (\$447M), to be met entirely by EU funds.

Port fights illegal waste

The port of Antwerp started keeping a sharper watch on shipments of secondhand cars from 1 January 2012. Closer checks will be conducted not only on the vehicles themselves but also on accompanying freight. "We are getting more and more reports of car dealers using secondhand vehicles as 'packaging' for materials that are borderline or even downright illegal," said Antwerp Port Authority CEO Eddy Bruyninckx.

Antwerp has long been a leader in ro-ro freight, with 3.9M tonnes being shipped in 2010. However, the trade in secondhand cars is increasingly being associated with transport of illegal waste.

The new regulations lay down strict criteria for items that accompany the vehicles. Such "accompanying freight" is defined as materials that do not belong to the vehicle itself but are shipped in or alongside it.

The list of prohibited accompanying freight includes old car parts, refrigerators and freezers containing CFCs, domestic appliances, televisions, computers, mobile telephones, old car batteries, expired medicines and waste oil. Vehicles with outlawed accompanying freight can be blocked at any time; the owner or shipper then has 10 working days in which to make them compliant.

Antwerp Port Authority has appointed eight more inspectors to carry out extra checks at terminals where the percentage of rejected vehicles is suspiciously low. "We want to make absolutely clear that the new regulations mean what they say: they are a tool that we will use to banish illicit practices from our port," said port alderman Marc Van Peel. "There is no place for organised crime."

Van Peel said the port authority would give full support to customs, police and inspection services in their efforts to combat all forms of illegal trade.

Emissions plan endorsed

The IMO has welcomed the recent climate change talks in South Africa, despite the conference's failure to produce clear guidelines for transport sectors.

The 17th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) started on 28 November 2011 in Durban. When it broke up early on 11 December, UNFCCC executive secretary Christiana Figueres hailed the result as a "breakthrough".

After the talks, the IMO revealed COP17 had come to no specific decision on shipping: "As anticipated, the conference... focused more on rallying political will for action to reduce greenhouse gas emissions... rather than on pushing ahead with the preparation and adoption of a legally binding instrument to that effect."

The IMO said its own efforts to reduce emissions were well received by the conference and the current emissions reduction plan would continue through 2012. Broadly, the Durban conference effectively agreed to extend the Kyoto Protocol beyond 2012 while parties work on a new



agreement by 2015 that will require both developed and developing countries to reduce emissions from 2020.

The UNFCCC admitted that targets were slipping, and stated: "The current sum of pledges to cut emissions both from developed and developing countries is not high enough to keep the global average temperature rise below 2°C."

The leaders of smaller island nations gathered in Durban stressed the urgency of the problem. "By 2025, rising sea levels could lead to the displacement of at least 10% of the population," vice-president Fouad Mohadjji of the low-lying

Union of Comoros told delegates.

In a blow to the entire process, Canada withdrew from the Kyoto Protocol only a day after the talks finished. Canada's greenhouse gas emissions are estimated to have increased by a third since 1990.

Fears had been expressed that the shipping industry would be asked to pay into a Green Climate Fund (GCF) to assist poorer countries. Ahead of the talks, International Chamber of Shipping secretary general Peter Hinchliffe said the industry could "probably support this in principle"; ultimately this was not required, because governments agreed to provide the funds. A new GCF board is due to convene in April.

\$4Bn+

current investment in port-related projects in Sri Lanka

22

number of LNG powered ships currently in operation, according to class society DNV



groups before they could become a threat to commercial fleets. The last quarter of 2010 saw 90 incidents and 19 vessels hijacked; in 2011, those numbers fell to 31 and four respectively.

More suspected pirates could face prosecution if a UK parliamentary committee's recommendations are adopted by the UK government. The House of Commons' Foreign Affairs Committee (FAC) said it "beggared belief" that Somali pirates are not being prosecuted and noted that up to 90% of suspected pirates are released without charge.

The FAC's report, *Piracy off the coast of Somalia*, revealed that while NATO and EU efforts have reduced the number of hijackings, pirates are resorting to ever more violent measures. The committee pointed out that there was no legal reason to prevent pirates from being tried in UK courts.

With the aim of reducing the trauma to seafarers of a hijack, the Maritime Piracy Humanitarian Response Initiative has published a *Good practice guide* for shipping companies. It gives guidance to companies on preparing their employees for possible attacks and supporting seafarers and their families affected by piracy. It is available at www.marisec.org/MPHRP-Good-Practice-Guide.pdf.

Meanwhile, the UN's Contact Group on Piracy off the Coast of Somalia has established a new working group to investigate those who benefit from ransom payments and to clamp down on the financial transactions associated with these activities. The group confirmed that facilitating criminal investigation and prosecution of apprehended pirates is a priority and stressed the urgent need for member states to increase the number of pirate prosecutions.

It welcomed progress made by Interpol, Europol and related organisations to collect and organise information about piracy cases and to make these details accessible to national judicial and law enforcement authorities.

Compilers of another report released by the international affairs institute Chatham House attempted to track pirate ransom payments by using satellite images of Somali towns. Anja Shortland of the UK's Brunel University said piracy has benefited the Somali economy. Pirates seem to be distributing money inland, rather than keeping the profits themselves, her report stated. "We don't see palaces or swimming pools. Consumption seems to be constrained by local norms on sharing," she concluded.

Piracy dips in 2011

Pirate attacks against vessels off the east and west coasts of Africa accounted for the majority of attacks worldwide in 2011, the International Maritime Bureau's global piracy report revealed in January 2012. Of the 439 attacks reported to the IMB in 2011, 275 attacks took place either off Somalia or in the Gulf of Guinea.

But the report showed a slight drop in the total number of recorded incidents of piracy and armed robbery at sea – from 445 in 2010 to 439 in 2011, reversing the trend of rising piracy and

armed robbery from 2007 to 2010.

Somali pirates continue to account for the majority of attacks – roughly 54%. But while the overall number of Somali incidents increased from 219 in 2010 to 237 in 2011, successful hijackings decreased from 49 to 28.

The overall figures for Somali piracy could have been much higher were it not for the continued efforts of international naval forces, IMB reported. In the last quarter of 2011 alone, pre-emptive strikes by international navies disrupted at least 20 pirate

Simpler TWIC renewal process in prospect

Seafarers enrolling in the US Transportation Worker Identification Credential (TWIC) programme will be able to go through a much easier process if a proposed rule change is agreed. The revision, which was put to the US Senate recently, would require the seafarer to make only a single personal visit to a TWIC enrolment centre.

Under existing rules, seafarers and port employees have to make repeated visits to enrolment centres to apply for and renew their

TWIC cards. Centres for some applicants can be hundreds of kilometres away from their home or workplace.

"Current TWIC requirements place a financial burden and time constraints on workers who rely on these cards for employment. As millions of TWICs approach renewal beginning in 2012, it is critical that we resolve this problem," said US Senator Kelly Ayotte.

A US government oversight report issued in May 2011 revealed that investigators were able

to obtain TWIC cards fraudulently using false identity and could then use those cards to access secure areas of numerous ports.

In November 2011, the US supervisory body Transportation Security Administration (TSA) alerted users that the imbedded computer chips on approximately 26,000 previously issued TWIC cards were improperly encoded and might not work with card readers. The TSA promised that it would replace the cards at no extra cost to the card-holders.

Notable numbers

54%

percentage of attacks by Somali pirates out of total global pirate activity, according to the International Maritime Bureau

10

number of European ports offering incentives to ships with good energy efficiency

New secretary-general plots IMO course

The new IMO secretary-general Koji Sekimizu has announced his vision of a "sustainable maritime transportation sector within the overall global supply chain".

In his Open Forum article for *Ports & Harbors* (p12), Sekimizu outlined the challenges he sees for the sector, namely piracy and other maritime security threats, labour shortages, regulation, pollution risks and a lack of port and intermodal infrastructure.

Sekimizu has also ordered structural changes to the IMO secretariat to create a more "revitalised and forward-looking organisation". He appointed new directors to the IMO's maritime safety, marine environment and administrative divisions.

Describing piracy as "currently the most serious threat facing the industry", Sekimizu appointed Hartmut Hesse as special representative of the secretary-general for maritime security and anti-piracy programmes.

Piracy was at the head of the agenda at the 27th IMO Assembly in November 2011 in London. Delegates passed resolutions calling on governments to clarify the legality of carrying armed



Photo: DNV Petroleum Services

Testing for sulphur: owners want the emissions cap to be delayed

guards on ships. The IMO also urged governments to improve the assistance they give to seafarers suffering post-traumatic stress after pirate hijackings.

The assembly set the IMO's budget for the next two years at \$95M and established 25 June as the Day of the Seafarer in 2012. This year, the day will be used to highlight the risks faced by seafarers. Safety will also feature strongly in this year's International Maritime Day, which has as its

theme '100 years after *Titanic*'.

In December, the IMO adopted an eight-point action plan on east Asian domestic ferry safety at a forum in Bali, Indonesia. Governments will be asked to help operators upgrade vessels in line with national regulations and then monitor compliance.

Meanwhile, the IMO's cap on sulphur emissions has once again come under the spotlight, with the European Community Shipowners' Association pushing



Photo: Joachim Affeldt

Safety is a key IMO theme this year

for the guideline date to be delayed. ECSA president Juan Riva said in December that the IMO "had not made an appropriate impact assessment" on the problems created by its 0.1% limit on sulphur content in emission control areas from 2015. The International Bunker Industry Association predicted that shipping fuel costs could nearly double by 2020, when a limit of 0.5% sulphur content will apply to fuel oil globally.

PSC will strictly enforce 'more sleep, less drink' rules

New sleep and alcohol consumption rules are to be "stringently" enforced by port state controls worldwide from 1 January, the International Chamber of Shipping has said.

The ICS emphasised to owners and ship managers that minimum rest hour requirements "are likely to be vigorously enforced by port state control officers, who will have the authority to check that ships maintain accurate records for required minimum rest".

The regulations are part of the Manila amendments to the

Convention on Standards of Training, Certification and Watchkeeping. Under the rules, seafarers must have at least 10 hours' rest in any 24-hour period, said the ICS, adding that the regulations aim to reduce the abuse of drugs and alcohol as well as dangerous fatigue.

Mariners on duty would need to maintain a blood alcohol level of no more than 0.05%, or 0.25mg/litre, of alcohol in the breath – "though individual flag states may choose to apply stricter limits", the chamber said. "It is particularly

important that companies comply with the new IMO rest hour requirements and record and monitor seafarers' rest periods. Seafarers must also confirm that their hours are accurately recorded."

Fatigue is the second-biggest concern of seafarers after piracy, according to the latest survey by maritime union Nautilus International. Its spokesman, Andrew Linington, commented: "The human factor is critical, yet seafarers are still treated in many ways as second-class citizens."

29M

teu throughput for Shanghai,
January to November 2011

3

average dwell time in days of
cargo at the South African port
of Durban

Sustainability the goal for all

Green issues are moving up the agenda in Africa and December's regional meeting gave African ports a chance to exchange expertise and experiences with their European and US counterparts

The theme unifying December's Africa-Europe Regional Meeting in Antwerp was the ambition of ports on both continents to create sustainable ports for the future.

In her opening remarks, IAPH president Geraldine Knatz reminded the delegates that northwest Europe is one of most progressive regions of the world in terms of sustainable development, making Antwerp an appropriate location for an enlightening and compelling debate on the issue.

The president's own Port of Los Angeles has pioneered sustainable clean air policies and its latest initiative is an Environmental Ship Index (ESI) incentive scheme that the port aims to launch early this year. As well as giving further details of the ESI scheme in his presentation, the port's air quality supervisor Kevin Maggay gave delegates an overview of the San Pedro Bay Clean Air Action Plan, including the latest version of the Carbon Calculator tool that Los Angeles has offered to other ports

to help measure their carbon footprint and develop emission reduction strategies. The port's next project is to expand its work on zero emission technologies.

The host of the regional meeting, Antwerp Port Authority CEO Eddy Bruyninckx, said the Belgian port had taken advantage of the recent downturn to reflect on ways to reposition the port in Belgian society. "We decided to work on sustainability," he told delegates. In an impressive presentation, Bruyninckx's colleague, Kris De Craene, the authority's environment manager, showed how the yardstick of sustainability was being applied to all aspects of business in the port of Antwerp.

Secretary general Susumu Naruse announced the appointment of new executive committee members and reported on the activities of the technical committees. The IAPH legal database is being updated and the Port Planning &

Development Committee has started two projects to investigate the likely implications for ports of the northern sea route and offshore windfarms.

The Port Community Systems Benchmark Survey will be widened to include ports in Africa, southern Asia and the Americas, and the Port Safety and Security Committee is preparing a survey questionnaire about overweight containers, Naruse said.

Promoting cleaner ships in port was also the theme chosen by the three other speakers in the opening work session on the World Ports Climate Initiative. Bruce Anderson, principal air quality director of Starcrest Consulting Group, presented the Energy Efficiency Operational Indicator (EEOI), which measures the energy performance of ships in operation.

The International Council on



Delegates visited Antwerp's ancient and atmospheric city hall

Clean Transportation (ICCT) recently published an overview of another benchmark for newbuildings – the Energy Efficiency Design Index (EEDI) – on its website, www.theicct.org.



Delegates at the Africa-Europe regional meeting in Antwerp in December 2011



The IMO approved the index in mid-2011 and it will be phased into newbuilding design up to 2025, leading to an estimated 30% reduction in fuel use. ICCT's marine programme lead, Galen Hon, explained that some add-on methods for improving EEDI scores could create the need for new port facilities.

Alisdair Pettigrew, senior adviser shipping operation of Carbon War Room, called for all newbuildings to be launched with a commonly agreed environmental rating display showing their energy efficiency index. He would like to see the EEDI applied to existing ships as soon as possible: "Transparency is increasingly important to all sectors of the cargo-carrying industry," he said.

In the final presentation of the WPCI work session, Stefan Johansson, chairman of the Port Equipment Manufacturers Association environmental committee, gave an overview of the association's activities and explained how its work on developing reduced emissions technology can be co-ordinated with the climate initiative.

In the afternoon work session, entitled 'Sustainable ports in the global supply chain', the president of International Transport and Maritime Management Antwerp, Theo Notteboom, warned the delegates of the growing risks and uncertainties facing ports, including an increased cost burden and demands from shippers for better services at lower tariffs. "It's a vulnerable business to be in," he commented.

Chris Coeck, Antwerp's manager of policy and strategy projects, detailed the steps that the estuary port had taken to accommodate the new generation of 10,000teu-plus container ships, including the completion of a large-scale

dredging programme on the River Scheldt that had expanded the sailing window.

He said Antwerp was working on a co-ordinated road, barge and rail freight master plan due to be completed by 2016 to meet the industry's demand for more effective hinterland connections and products.

Henri van der Weide, policy adviser for safety, security and environment at the Port of Amsterdam, gave an overview of its liquid and dry bulk cargo activities. He said a port's intermodal accessibility was of strategic importance, with Amsterdam's modal split increasingly weighted towards rail and barge transport.

In the first work session on 8 December, Frank Knoors, MD of Logit Systems, presented Antwerp's Port Community System, which was launched in mid-2011. He stressed the importance of creating a common framework for data exchange so ports and supply chain users can communicate with each other.

Session chairman Jan Blomme, who is also Antwerp Port's head of strategy and development, talked about making ports the optimal link in the global supply chain, creating the best storage and distribution solutions for each

Next project will expand the work on zero emission technologies

Kevin Maggay

Air quality supervisor, Port of Los Angeles



Photo: Jan Newton

product handled by the port. He said hinterland hubs had become a major factor determining the success of a port.

The final session of the regional meeting was devoted to port reception facilities (PRFs) for ship-generated waste. Technical environmental manager Peter Van Den Dries presented Antwerp's PRFs including an overview of the international and European regulatory framework. He discussed the business opportunities offered by providing PRFs and raised the prospect of a ports network to develop common practices and IT systems to facilitate monitoring and avoid unnecessary paperwork.

These comments were echoed by representatives from west Africa who gave an overview of

PRFs at Nigerian and other west coast ports. Harry Barnes-Dabban of the Ports Environmental Network-Africa (PENAF) told delegates that PRFs present a major challenge because African trade, and therefore demand for port services, is expected to grow throughout the rest of this decade.

PENAF is leading efforts to build a co-ordinated environmental network among African ports (see p26) to serve as a platform for information and best practice exchange, he said, but there was a need for technical help from more experienced ports.

Olumide Omotoso, assistant general manager of the Nigerian Ports Authority, spoke of ship waste management facilities at Nigerian ports and the authority's efforts to match European Union environmental standards.

Finally, Patrick Verhaert, manager, port dues at Port of Antwerp, talked about his port's pre-notification policy to ensure the effective management of ships' waste and the principles of its fee-charging structure that encouraged responsible waste disposal, with fee reductions offered for 'greener' ships.

The regional meeting ended with lunch on a boat that took delegates on a tour of the port. More info: www.iaphworldports.org

Antwerp is the right place for a debate on sustainability

Geraldine Knatz

IAPH President



Photo: Port of Antwerp



We value your opinions

Do you have strong views about any of the articles in *Ports & Harbors*?

Are there other industry issues you feel strongly about?

Email your views to ph@iaphworldports.org and we'll be happy to include them



The Dome of the Rock in the heart of the old city, sacred to both Jews and Muslims

Programme for the Mid-term Conference in Jerusalem

Israel Ports is promising a Mid-term Conference that will offer both technological innovation and fascinating experiences from 21 to 24 May in Jerusalem.

Shlomo Breiman, Israel Ports chief executive officer, said those wishing to attend can register online at www.iaph-jerusalem2012.com. The website contains full details of the conference programme and a film about Jerusalem. "There is also a 112-page electronic guide to Jerusalem on the website to help you plan your vacation in advance," he told *P&H*. The full programme aims to combine Israel's newest port technology and the historic city's oldest artefacts.

Israel's minister of transport will open the conference, which will also feature a keynote address by Professor Stanley Fisher, governor of the Bank of Israel, who was named the world's best central banker in 2011.

The general programme will be spread over four days, starting with a pre-conference welcome cocktail during the evening of 20 May. The first full day, Monday 21 May, is devoted to the work of 10 IAPH technical committees. "We will publish the committee agendas in advance on the website so anyone who is

interested can move from committee to committee to participate in discussions of interest to the delegate even if they are not a formal member of the committee. If you have specific issues you think should be addressed during a particular committee, you can raise this with the committee chairman to see if it can be fitted in," Dov Frohlinger, Israel Ports chief operating officer explained to *P&H*.

On Monday evening there will be a guided tour of the Israel Museum featuring a scaled model of what Jerusalem looked like more than 2,000 years ago, followed by dinner. "The museum combines history, art, architecture and religion and features the Shrine of the Book – an exhibit of

biblical artefacts going back to 100BC, including hand-written fragments of the Bible rediscovered in a cave near the Dead Sea in the second half of the last century," he said.

Tuesday's sessions start with a board meeting followed by the two-day conference itself. Subjects will include global trade trends, their impact on shipping and port infrastructure requirements, funding of development projects and environment and climate change. "The conference itself will be held at the five-star Inbal Hotel located close to the old city. A list of alternative hotels is available on the website," Frohlinger added.

At the end of Tuesday's work sessions there will be the first of two visits to the old city to see the historic sites and have dinner. Delegates will visit the Christian quarter of Jerusalem and see the Church of the Holy Sepulchre, the site where Jesus Christ was crucified and resurrected. There will also be a visit to the site of the Last Supper.

Other highlights include a trip to the Western Wall of the Jewish temple – also called the Wailing Wall – a holy site for Jews. "Right behind it is the Dome of the Rock,

a holy site for Muslims where, according to Islamic tradition, Muhammad ascended to Heaven. Jews commemorate the same site as the place where Isaac was offered for sacrifice by his father Abraham," Frohlinger explained. "On the final day [24 May] delegates will be able visit the port of Ashdod and see the latest gate and security technology showcased in the previous issue [January-February 2012, p36]," he said. "After Ashdod, we will have lunch in Tel Aviv and then visit the ancient port of Jaffa – no longer an operating port but still an interesting tourist site and artists' colony. We will be having dinner in that area before returning to Jerusalem," he said.

There is also an extensive programme for accompanying persons, with trips to other sites around Jerusalem. "Accompanying persons will of course be joining conference participants for all the evening events as well as the visit to Jaffa," Frohlinger said.

"We've tried to keep registration fees reasonable to encourage participation. In order to encourage membership, there has been a decision by IAPH that non-members attending the conference will receive an introductory complimentary one-year's membership," he said.

Israel has a great deal to offer in terms of religious, historical and archaeological sites, and for those who would like to extend their stay in Israel there are many opportunities to take part in a range of activities. Recommended are the Dead Sea, Tel Aviv, Haifa, Nazareth, Tiberias, Safed, the Galilee and the Golan, Caesaria and the Red Sea resort of Eilat.

"The port of Caesaria was built by Herod 100 years before Christ. The breakwater still can be seen and there is a virtual port demonstration showing how the port operated 2,000 years ago, how vessels with 2,000–3,000 tons of cargo were handled and how they developed the forerunners of the mechanical crane to unload vessels," Frohlinger explained.

More info:
www.iaph-jerusalem2012.com

Sign up now!

Register online for the IAPH May Mid-term Conference at www.iaph-jerusalem2012.com where you can see the professional programme as well as social events and visits.





James H McJunkin

IAPH honorary member James H McJunkin died in Long Beach, California, USA, on 2 January at the age of 82. He became involved with IAPH in the late 1970s when he was general manager of the Port of Long Beach. He was elected to the association's Executive Committee in 1978.

During his presidency of IAPH (April 1989–May 1991), McJunkin helped IAPH both to expand its membership and to lay the foundation for the present technical committee group structure, focusing on such critical issues as port planning, safety, environment and logistics.

Korean ports visit IAPH



Secretary general Naruse with Yeosu Gwangyang port officials

Two Korean member ports visited IAPH head office late last year. A delegation from Yeosu Gwangyang Port Authority (www.ygpa.or.kr), headed by its president Sangjo Lee, met with secretary general Naruse on 29 November. The authority was created on 19 August and has taken over the operations of the former Korea Container Terminal Authority.

Another Korean member, Ulsan Port Authority (www.upa.or.kr), headed by vice-president Yeung-Heun Kong, visited the Tokyo office on 5 December. Secretary general Naruse exchanged views on regional maritime topics with the two delegations.



Ulsan Port officials meet secretary general Naruse

SG Naruse in Shanghai

At the invitation of the China Ports and Harbours Association (CPHA), secretary general Susumu Naruse visited Shanghai and addressed the audience gathered for the 30th anniversary celebration of the CPHA on 23 December 2011. The event was attended by some 70 Chinese port delegates and

government officials, who included Li Shenglin, the Chinese minister of transport.

SG Naruse was the sole speaker invited from overseas. In his welcome speech, Minister Li praised highly the work done by IAPH and encouraged more Chinese ports to join IAPH.

Dates for your diary

A selection of forthcoming maritime courses and conferences



March

- 8–9** IAPH Asia/Oceania Regional Meeting – Colombo, Sri Lanka
www.slpa.lk/IAPH2012/index.html
- 13–15** TOC Asia – Hong Kong, China
www.tocevents-asia.com
- 19–23** The 38th International Seminar on Dredging and Reclamation – Recife, Brazil
www.iadc-dredging.com
- 27–28** Seaport Security Asia 2012 – Singapore
www.seaportsecurityasia.com
- 29–30** 6th Indian Ocean Ports and Logistics 2012 – Mauritius
www.transportevents.com

April

- 2–4** World Port & Trade Summit – Abu Dhabi, UAE
www.worldportsandtrade.com
- 9–12** XXI Latin America Congress of Ports – Antigua, Guatemala
www.aapacongresola2012.com
- 18–20** International Congress Panama Canal 2012 Engineering and Infrastructure – Panama City, Panama
www.pancanal.com/canalcongress/english/index.html
- 22–27** Singapore Maritime Week – Singapore
www.smw.sg
- 25–26** Port & Terminal Technology USA 2012 – Miami, USA
www.millenniumconferences.com
- 26–27** The 7th Southern Asia Ports, Logistics and Shipping – Colombo, Sri Lanka
www.transportevents.com

May

- 2–4** International Transport Forum 2012 Annual Summit – Leipzig, Germany
www.internationaltransportforum.org
- 8–11** ICHCA International Biennial Conference – Melbourne, Australia
www.ichcainternational.co.uk
- 10–11** ESPO 2012 Conference – Sopot, Poland
www.espo.be
- 14–18** IMO Asia-Pacific Regional Workshop on the London Protocol – Jeju, Korea
www.imo.org
- 14–18** The 8th IHMA Congress – Cork, Ireland
www.globalportoperations.com
- 14–25** IT and EDI in Port Business – Antwerp, Belgium
www.portofantwerp.com/apec/
- 21–22** PIANC Annual General Assembly – Valencia, Spain
www.pianc-aga2012.org
- 21–24** IAPH Mid-term Ports Conference – Jerusalem, Israel
www.iaph-jerusalem2012.com



Photo: SLPA

All set for logistics integration

Sri Lanka Ports Authority chairman **Dr Priyath Wickrama** looks forward to showcasing SLPA's port development projects at the forthcoming Asia/Oceania Regional Meeting and Port Forum on 8 and 9 March in Colombo

Located geo-strategically, Sri Lanka connects Europe, the Middle East, China and the rest of Asia. Just as the port of Rotterdam serves as a logistics hub for the EU, Singapore as a logistics hub for southeast Asia and Dubai as a logistics hub for the upper Gulf region, the port of Colombo, located equidistant between southeast Asia and Europe, is the logistics hub in the making for south Asia.

Port infrastructure and services take priority in the Sri Lankan government's development agenda. The chapter 'Harnessing the Blue Skies and Seas' of its main policy document delineates, among other things, an action plan to transform Sri Lanka into a navigation, aviation, trading and commercial hub linking East and West.

Today, major shipping lines call at the port of Colombo primarily to tranship volumes of containers to the southern ports of India. Almost 60% of Sri Lanka's transshipment is bound for India. But unless Sri Lanka increases substantially its base cargo in the form of export products to the USA, Europe and Asia, we may not be in a position to lure mainline vessels to Sri Lanka.

Attracting foreign direct investment for export-oriented industries is one model for generating base cargo and also for economic take-off in developing countries. Apart from foreign exchange earnings, these industries also utilise local labour, create jobs and transfer technology.

Base cargo could also be increased by adding value. This could be offered by developing our logistics capabilities to provide the most modern warehousing infrastructure for temporary storage and deliver through just-in-time supply-chain management systems to large manufacturing companies in neighbouring countries.

For example, a major area of concentration can be found in the automotive sector, where original equipment manufacturers have shifted their production units to

India to increase cost effectiveness.

SLPA's aim is to transform our ports from a mere interface between maritime and land transport into a hub of a seamless logistics chain and logistics value-creator or value-adder. The authority has drawn up and refined its infrastructure development plans, which include among many other highly capital-intensive initiatives several epoch-making port related projects with which we have made tremendous progress up to now. The current investment on port-related projects with the joint participation of the private sector and SLPA is over \$ 4Bn.

During the Asia/Oceania Regional Meeting, SLPA has arranged technical tours to Colombo South Port and the greenfield Port of Hambantota development project, where we have set apart over 2,000ha of land for logistics and free-zone activities around the port, which will connect with the Southern Highway, railway lines and Mattala Airport, all of which are under construction.

IAPH's Regional Meeting and the Port Forum will be hosted by SLPA and we expect the attendance of the President of Sri Lanka. In tandem with this meeting, an International Exhibition on Air Freight, Shipping and Logistics will be held at the same venue on 8-10 March, providing participants with the ideal networking opportunity.

March, when the climate is at its best, is a wonderful time to visit Sri Lanka. I look forward to meeting many IAPH colleagues at the event so we can share our experiences and learn from one another. **I&H**

“ I look forward to meeting many IAPH colleagues ”



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