



Enabling the connected ship – secure and efficient

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Connectivity path to digitisation...



MSS

- Resilient frequency
- Global coverage
- Low throughputs
- Cost per minute or megabyte
- Moving from primary service to back up service



VSAT

- More sensitive frequencies
- Near global coverage
- Higher throughputs
- Fixed cost per month
- Becoming primary as digitisation enters shipping

The DIGITAL AGE is here!

- Fast acceleration in the requirement and expectation to be connected
- Growing availability of satellite capacity and connectivity
- Predominance of applications over traditional software connectivity
- Digitalization, automation and wide adoption of smart technologies
- Onboard management of Big Data, resulting in more complex data processing and management
- Move from a technology centric focus to a customer centric focus to deliver and succeed

TRENDS

- Ongoing consolidation: Largest ship owners become even larger
- Future is about size and volume
- Budgets: Reducing operational costs by operating smarter
- Environmental friendly shipping
- Return On Investment (ROI) becomes more measurable and defined

SMART SHIPPING

- Sensors and monitoring equipment – in real time
- Reduced fuel consumptions and emissions
- Optimising ship hull and propeller performance
- Pro active maintenance
- System and components alerts
- Pro active interventions on abnormalities and performance deviations
- Safety and regulations
- Sophisticated crew with welfare offerings for their well being and retention
- Telemedicine

Smart Shipping



Enabling the connected ship



Stolt Tankers



- One of the world's largest, sophisticated fleet of chemicals and bulk liquids tankers
- Worldwide transportation, storage and distribution of bulk liquid chemicals, edible oils, acids and other specialty liquids
- Highest demands on safety and environmental protection
- Monitored hi-tech vessels (e.g. heating/cooling systems, specialized cleaning etc.)



“Real-time link between ship- and shore-side systems”



- More applications onboard drive demand of bandwidth and increase need for QoS
- Reliable system needed to terminate data communication to and from vessels
- Scalable solution needed to combine satcom with terrestrial solutions (3G/4G, WiFi)

“Now that we have the VSAT solution in place, we have 24/7 coverage on a global scale on our ships and this really provides a sort of transparent communication towards our ships - like it is a remote office. It provides additional opportunities for remote monitoring and remote management of our equipment which gives us a better use of our assets.”

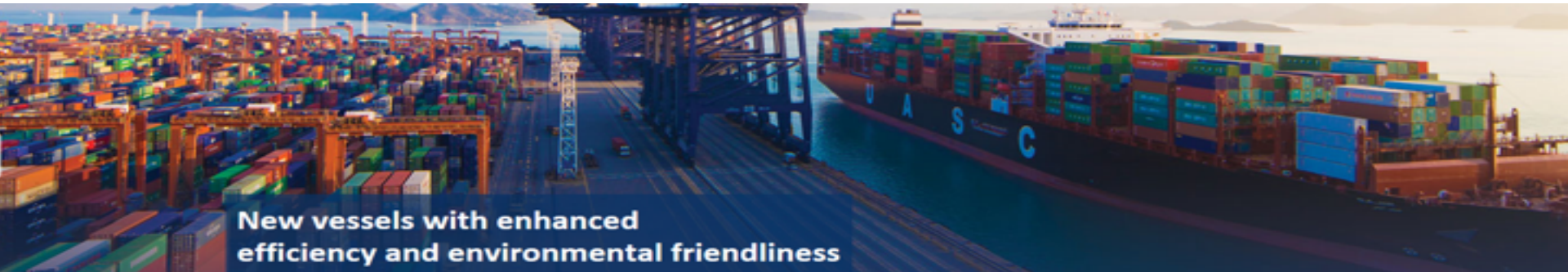
*“With Marlink’s Global Ku-band VSAT service, we get the ability to operate using bandwidth-hungry applications, which helps to improve our efficiency, logistics and administration, whilst providing Internet and voice calling for crew,” says **Mark Martecchini, Managing Director Shipowning for Stolt Tankers.** “We also have flexibility for the future as the services are prepared for possible future migration to new High Throughput Satellite services based on Ka-, and Ku-band.”*

United Arab Shipping Company



- Industries largest and most technologically advanced new builds
- First ultra large containerships in the industry to be delivered 'LNG ready'
- Will significantly reduce environmental impact and reduce fuel costs





New vessels with enhanced efficiency and environmental friendliness

- All new container ships are ‘smart ships’ to reduce fuel and environmental impact
- Web-based fleet management system and electronic document handling systems
- Thousands of measuring points on board to collect data

“Communication is an essential part of the ship’s infrastructure as it links people and systems on board to the shore office. With such a key part to play in our daily operations, choosing the right VSAT provider was important, but based on existing positive experiences with Marlink, we know that all of our ships get the reliable connectivity they need.”

Waleed Al-Dawood, Chief Operating Officer, UASC

“It’s important that we have reliable VSAT services for all vessels in our fleet to help us to operate efficiently. We’re also focused on providing crews with low-cost Internet, email and voice calling. Marlink’s services fulfil these requirements and based on our previous experience of using Sealink VSAT across our fleet, we are happy to extend our partnership with them,”

Jamal Alani, Fleet Marine Technology Supervisor, UASC

“Our new vessels are some of the most fuel efficient in the industry, helping us to provide even more competitive services. In order to achieve this level of efficiency, we have to harness the power of the latest technology, and the foundation of many of these solutions is IP connectivity. Marlink’s Sealink Plus provides the bandwidth, reliability and control that we need to make the most of the technology on board, which helps us to reduce our fuel costs and position UASC as one of the most environmentally friendly ship owners in the world.”

Mohammed Zaitoun, Assistant Vice President New Building Technical Projects, UASC

Who do we fear most?



Maritime vulnerable to Cyber Attacks



Many shipping companies are lacking the advanced IT capabilities seen at large corporations

- 1 Heterogenic IT network across the fleet
- 2 Running outdated software & hardware on board
- 3 Running 3rd party & unmanaged computers
- 4 Low education on cyber risks & procedures among vessel crew

The very nature of the Maritime business with remote assets operating around the globe

- 5 Significant need for exchanging information across multiple stakeholders
- 6 Most stakeholders scattered across multiple time zones and countries
- 7 Difficult to access the assets in case of emergency

Maritime Industry Attractive for Cyber Attackers



1

Illegal Cargo

Drugs, arms, counterfeit articles can be transported worldwide and hidden among legitimate cargo

2

Financial Fraud

Shipping companies are constantly executing large monetary transfers (bunker fuel, freight, port dues, payments to ship yards, vessel owners)

3

Ransom

Due to difficulty of physical access to vessels and low crew IT competency, ship'cos might accept paying a ransom for infected PCs to keep the vessel sailing

4

Political Hacktivism

High-profile targets for Hacktivists: Oil & Gas industry, Super Yacht VIPs

5

Piracy

A cyber attack can support physical piracy (GPS Spoofing, ECDIS manipulation)

6

Terrorism

Collisions, blocking major canals or ports can cause huge economic loss

No « Unique » Solution



Multi-Layer Security Approach





Joining forces to create the world's leading maritime communications, digital solutions and servicing company.

Marlink & Telemar joining forces ...

- Both companies being acquired by Apax Partners
 - Closing Marlink 30 Jun'16 and Telemar 21 Nov'16
- Natural next step
 - 2 leading maritime companies with 70+ years of maritime expertise
 - 20+ years of close and successful partnership
 - Bringing together unrivalled maritime service offering combining:
Broadband communications, Bridge technology, Digital solutions and global Service and Support
 - Creating great benefits and real value for maritime customers and partners
- Better value creation for ship owners
 - Larger and more diverse product portfolio
 - A unique global servicing group with increased size, presence & strength
 - More locations for better customer proximity
 - Enhanced service levels and more experience under one roof
- **Partner of choice to enable digital transformation of all maritime clients**





The world's leading maritime communications, digital solutions and servicing group