Inmarsat Network Operations Centre

Unrivalled maritime heritage

Inmarsat was established in 1979 by the International Maritime Organisation (IMO) to allow ships at sea to stay in constant contact with shore or call for help in an emergency, no matter their location. In 1999, it became the first intergovernmental organisation to transform into a private company. With its fleet of 11 satellites, Inmarsat delivers connectivity services to the broadcast, oil and gas, mining, government, maritime and aviation sectors, among others. Amy Saunders spoke with Ronald Spithout, President of Inmarsat Maritime, to discuss the latest developments in Inmarsat's capabilities, and market trends in Asia.

Question: What can you tell us about Inmarsat Maritime's development in recent years?
Ronald Spithout: As a group, Inmarsat's investment in global mobile satellite communications is continuous; its latest confirmed commitment has been the order for the first two Inmarsat-6 F1, sixth generation satellites, with the first due for delivery in 2020. The I-6 F1 satellites will feature a dual-payload supporting both L-band and Ka-band services.

The I-6 generation will build on the Ka-band capacity brought to market through the Global Xpress service, accessed via Inmarsat's I-5 generation. For Inmarsat Maritime, Global Xpress enabled the launch of Fleet Xpress in March 2016. Preparation for, implementation of and subsequent management of the Fleet Xpress service opened a new chapter in our maritime offering.

Inmarsat has been delivering voice and data communications in the maritime space for over 37 years; today, these include but are not limited to Fleet Xpress and FleetBroadband (predominantly for merchant shipping), and Fleet One - aimed at vessels with lower data needs. However, Fleet Xpress combines the high data speeds of Ka-band with ultra-reliable FleetBroadband L-band, switching automatically between the two to ensure 'always on' connectivity. Ship owners and operators can now truly exploit big data analytics and application-based decision-making software to enhance vessel performance and meet the connectivity needs of the modern seafarer.

To date, Fleet Xpress has attracted commitments to connect more than 10,000 ships at sea, through contracts with individual ship owners, commitments from strategic partners, and transitioning agreements with existing Inmarsat customers.

Inmarsat's unrivalled maritime heritage also includes a public service dimension covering the safety of shipping. Today, Inmarsat Maritime is the only service provider meeting International Maritime Organization (IMO) performance standards for the Global Maritime Distress and Safety

Ronald Spithout, President of Inmarsat Maritime

System. Therefore, as IMO currently overhauls the regulations covering GMDSS, Inmarsat Maritime has, in parallel, been upgrading the Maritime Safety Information (MSI) service – SafetyNET, which transmits up to 360,000 messages each year. In 2017, Inmarsat is rolling out SafetyNET II to its Maritime Rescue Coordination Centre partners worldwide, delivering a new web-based version of the SafetyNET platform.

Question: The satellite sector is in a major state of flux right now, both in terms of space technology and downstream services. Which trends have had the most impact on Inmarsat Maritime's business, and how is the company evolving to meet them?

Ronald Spithout: The maritime industry is the last big industry embracing the Internet of Things (IoT), but this is changing fast. At a time when population growth and stricter 'green' regulation demand greater ship efficiency and more data management than ever before, shipping must adapt to the 'smart era' or risk losing competitiveness.

Inmarsat has therefore been stressing the enabling connectivity of Fleet Xpress through the Ka-band/L-band combination. However, the development of easy-to-install below-deck equipment and Inmarsat's Certified Application Provider Programme is critical, because delivering innovative, content-rich applications for shipping requires the separation of professional usage from crew welfare.

Inmarsat Maritime therefore has a three-sided development strategy for Fleet Xpress, covering: ship efficiency; safety and security; and crew welfare. For example, it recently announced the commercial availability of Fleet Secure, the first Unified Threat Management cyber security solution specifically for shipping, as an option for Fleet Xpress users. It has developed Fleet Media, offering movies, sports, news and entertainment, and training content. The Certified Application Provider Programme is also offered, to encourage third parties to develop solutions for vessel efficiency.

Question: Connectivity is becoming increasingly in-demand throughout much of Asia, as the rise of Smartphones and satellite broadband resulted in higher service expectations. Given the dominant position Asia occupies as the source of the seafaring workforce, what consequences does Inmarsat Maritime see in that region right now, and how are they expected to develop in the future?

Ronald Spithout: The modern seafarer spends an average 7.4 months at sea a year, while recent research by Futurenautics also suggests that, on average, individuals bring three mobile devices aboard.

Today, around 1.5 million seafarers work on merchant ships worldwide, with 40 percent of them emanating from the Philippines in 2016, according to that nation's Department of Transport. This is a demographic reflected in recent research commissioned by Inmarsat Maritime to examine on-board entertainment consumption, and to better understand changing expectations for ship connectivity.

At a time when ship operating costs are under intense pressure but quality seafarers remain critical to efficiency, a key finding of the Crew Entertainment Study (also conducted by Futurenautics) is that merchant seafarers see the availability of entertainment as important when choosing an employer. Another important takeaway appears to be that 77 percent of seafarers are willing to pay for it. The finding appears to bring clarity to a market where some owners put entertainment in the 'basic need' basket, while others offer crews pre-payment for online access as a 'perk' and charge in three-minute slices. Still others enforce online curfews that they argue result in 'peace of mind.'

Question: Inmarsat Maritime has traditionally been associated with commercial maritime operations, but we are now seeing a renewed attempt by the company to push into low data usage areas such as fishing. Does the fishing industry really need to look beyond cell phone networks for its connectivity needs?

Ronald Spithout: Regulatory action that demands the documentation of sustainable fishing and crew welfare issues both provide drivers for better connectivity in the fishing industry, but commercial imperatives also require improved data use and more reliable communications.

Last month, the United States Agency for International Development's Oceans and Fisheries Partnership (USAID Oceans) announced that it was working in partnership with Inmarsat to

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improve traceability and promote sustainable fishing. The partnership seeks to advance catch documentation and traceability (CDT) in Southeast Asian fisheries in pursuit of legal, reported, regulated fisheries.

Inmarsat's expertise in satellite communications will see the integration of Vessel Monitoring Systems (VMS tracking), CDT data capture and other value-added services for medium to large commercial vessels and will be based on Inmarsat's Fleet One service and IsatData Pro. Implementation will be focused initially in Indonesia and Thailand, where USAID Oceans has established learning and expansion sites for CDT system development and testing. In Thailand, in partnership with Thai Union, Inmarsat is providing a satellite communication solution for fishing vessels which allows at-sea connectivity for e-logbook submission, crew communication, and fleet management, deploying its Fleet One service. Launched last year, Fleet One is a satellite voice-and-data service meeting low data usage demands of users out of VHF or GSM coverage areas.

Question: With the IoT and general connectivity expanding at an unprecedented rate, cybersecurity is becoming an increasingly pressing issue. What steps can companies in the maritime industry and end users take to ensure security, and what are the dangers if they do not?
Ronald Spithout: Today an estimated 30,000 vessels globally have some sort of access to always-on Internet via satellite. Modern ships are more vulnerable to cyberattack than ever before, via the systems used to manage bridge operations, cargo handling management, propulsion and power control or passenger management, through to administrative and crew welfare systems, or public-facing networks. Unlawful access to a ship's intelligence can delay operations and port entry, but shipping's vulnerabilities to hacking can result in reputational damage or compromise insurance cover. The theft of business-sensitive information can lead to blackmail, or result in fines if secure employee information is lost.

As already noted, Inmarsat is launching Fleet Secure - the maritime industry's only fully-managed service to protect ships from cyberattack, which will be offered as an option via Fleet Xpress. Fleet Secure is a Unified Threat Management (UTM) service which detects external attacks via high-speed satellite broadband connectivity, also protecting vessel networks from intrusion via infected USB sticks and crew devices connected to the onboard WAN/LAN.

Fleet Secure consists of maritime-specific UTM software developed with support from Singtel subsidiary Trustwave, a choice of three managed service levels and seamless integration with Fleet Xpress with no additional outlay on hardware required. Fleet Secure is continuously updated to recognize viruses, also filtering to prevent access to unsafe websites. If an individual shipboard terminal is compromised, Fleet Secure isolates that terminal from the rest of the systems onboard.

Question: What are your expectations for the rest of 2017 and beyond?
Ronald Spithout: Commercially, the maritime sector remains in a challenging phase but Inmarsat expects the market for high-bandwidth maritime VSAT services to double to 40,000 vessels by 2020-2021.

For the moment, operational focus remains on Fleet Xpress. Recently, for example, we increased the number of ports where a complete service installation is available with a flat fee is available from six to 33 to meet strong levels of demand for the service.

We are also seeing a growing number of software suppliers and equipment manufacturers using the increased bandwidth and applying to join Inmarsat's Certified Application Provider Programme to access onboard systems, both to provide updates and to carry out system monitoring.

We envisage engine manufacturers and others buying the bandwidth to support monitoring their onboard equipment over the product´s lifetime, and more imaginative app-based bandwidth-on-demand services, such as telemedicine.

Elsewhere, Inmarsat's role in GMDSS is moving on, after IMO recently gave the greenlight to consideration of both FleetBroadband and Fleet One for formal approval.

Our continuing commitment to investment in L-Band includes the development of a new Maritime Safety Terminal (MST) to enable easier functionality, standar- dised interface and information rich safety data. ∎

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