Inmarsat Fleet makes communication easier

The long heralded launch of Inmarsat's new Fleet service, F77, finally took place in March of this year. What is it and how does it benefit owners and operators?

Ship-to-shore communications, once solely the preserve of the dedicated radio officer, have developed at a rapid pace since the introduction of satellite communications to the onboard environment. The presence of satellite communications (satcoms) facilities onboard vessels has its origins in the Global Maritime Distress and Safety System (GMDSS), as mandated by the International Maritime Organisation (IMO) as an amendment to the Safety of Life at Sea (SOLAS) Convention in 1989.

Inmarsat, the corporate entity which owns and operates the satellites over which GMDSS messages and most other maritime communications are relayed, started life as a non-governmental organisation (NGO), founded with the express purposes of making GMDSS work. However, as the scope of satellite communications onboard vessels expanded to take in other, non-safety related functions and ships began to use them for other types of data applications, Inmarsat's role changed subtly to encompass other services. In 1999 the company gave up its NGO status to go private and is currently a limited company.

Most owners and operators will be familiar with the range of Inmarsat services - most notably Inmarsat-A (Inm-A), Inm-B, Inm-C, Inm-E (emergency position indicating radio beacon, or EPIRB) and the satellite phone mini-M. The newest Inmarsat service, Inmarsat Fleet, or F77, comprising global voice, fax, e-mail, two-way voice GMDSS and Mobile Packet Data Service (MPDS) capabilities, became available in March of this year. Fleet also complies with IMO's latest requirement for GMDSS terminals to allow for 'voice pre-emption', meaning that safety communications take precedence over all other forms of communications. For example, a rescue coordinating centre calling the vessel to alert the master of a nearby ship in distress can cause that ship to terminate all of its other calls and force the safety call through.

In spite of attempts by other satellite operators such as Iridium and ICO to take a share of the maritime market, Inmarsat has managed to maintain a near monopoly on maritime communications. The company continues to play its safety role within the industry, but is also in the process of expanding its range of commercial services and plans to launch a new generation of satellites, known as I-4, in 2004.

The launch of Fleet

F77 represents a departure from Inmarsat's pre-existing services in a number of ways. Firstly, it is the first new service from the satellite communications company in eight years to be designed specifically with the maritime market in mind. Secondly, it differs significantly from other well known Inmarsat services in that it enables the user to pay on the basis of data transmitted rather than the time spent on air. This is an important point, as it has the potential to completely revolutionise the way in which seafarers and crews use satellite communications from onboard vessels. The current practice is to 'batch' communications, i.e. to dial up once or twice a day and to send e-mails, faxes and telexes in one shot. The ability of the new Fleet service to enable users to pay for the amount of data transmitted rather than for the time spent on air means that shipside users can now stay connected all day long if they so wish.

Inmarsat makes the point that applications such as web browsing are not particularly data-heavy. Most of the time online is spent reading the material on the screen, not in transmitting data. This opens the door for a more cost-effective means of obtaining weather routing information, electronic chart updates, digital lights lists and notices to

mariners and connecting to computer networks in shoreside offices. The concept of the 'floating office' is no longer as remote as it once used to be.

Equipment and costs
The typical F77 terminal, available from hardware manufacturers such as the Danish company Thrane & Thrane, allows the user to choose between ISDN dial-up mode (paying for airtime) or MPDS mode (paying for data transmitted). The terminal costs in the region of $25,000, significantly less than an Inm-C or Inm-B-HSD.
Of the three land earth station operators (LESOs) offering the Fleet service - Xantic, Telenor and France Telecom - at least one has released information on tariffs. According to the Dutch LESO Xantic, it will charge the following:

- Fleet voice peak: US $3.29 per minute
- Fleet voice off-peak: $2.29 per minute
- 2.4 fax/data: $9.20 per minute
- MPDS: $4.60 per Megabit

The key to getting the most out of Fleet is knowing when to use it in dial-up mode (ISDN) and when to use it in MPDS mode. According to Inmarsat, this involves examining the ship's business practices, its operational requirements and the nature of the applications required to carry these out.
Typical maritime applications include business e-mail; downloading electronic charts, computer based training, access to purchasing and maintenance systems, weather routing, crew management and vessel tracking, among many others. Inmarsat recommends grouping these various applications into four separate categories: operational/core applications, applications for furthering good business practices (such as crew calling), social/leisure applications (such as obtaining local news from the internet) and innovative applications that are not necessarily 'required', but are attractive to early adopters of new technologies. Once this has been done, the nature of the services should be analysed. Do they require 'always-on' airtime, or airtime on demand, i.e. dialling up when needed? Are they data-heavy? The dial-up facility of Fleet best suits those applications which require large data transfers, 'batched' communications and secure voice communications, while MPDS is the choice for small file transfers, web browsing, interactive e-mail and intranet access.

New applications through Fleet
While F77 enables Inmarsat to continue to fulfil its care of duty to the safety of life at sea and its obligations under the SOLAS Convention and allows crew at sea to continue to use satellite communications in the ways they have been doing for the past decade, it also opens up a range of new possibilities for use onboard vessels. Applications which would have been prohibitively expensive under the old system of paying by the minute are now viable through Fleet. These include telemedicine, telemetry, videoconferencing, web browsing and instant messaging.
Another key aspect of Fleet that will widen the range of applications that can be used onboard ships is its standardised interface. This means that well known off-the-shelf software such as Microsoft Outlook and other programs used in shoreside offices can easily be used on vessels, thereby reducing the investment required in specialised, proprietary solutions and also the cost of training seafarers to use such specialised software.