



Giovanni Verlini, Editor of *Satellite Evolution Asia (SEA)*, spoke with Patrick Slesinger, Chief Information Officer (CIO) of Wallem Group, about the special communications requirements of the maritime community.



Satellites

and the sea

▶▶ **Established 100 years** ago as a ship broking company, the Wallem Group is one of the world's leading diversified shipping companies. The activities of the Group encompass ship owning, ship and cargo broking, ship management, ship agency and software development. These activities are carried out from their head office in Hong Kong as well as offices throughout Asia, Australia, the Middle East, Europe and North and South America.

Patrick Slesinger: This is a bit of a strange question, as there are several aspects to vessel management. For example, there is technical management, which is basically ensuring that the vessel runs correctly from a technical standpoint and maintenance. There is crewing management, which is providing crew for the vessel. And there is commercial management which is finding work for the vessel, charters, freight, to name some.

An oil tanker.

Photo courtesy of Wallem Group

Q: What exactly are vessel management services? How would you describe them to the readers of *Satellite Evolution Asia (SEA)*?

But from the standpoint of explaining to a non-maritime person, the easiest way to describe it is by saying that vessels are very much akin to mobile offices. If you were to take a terrestrial mobile user, say a salesman, he would plug into a Public Switched Telephone Network (PSTN), or he would use WiFi or a browser in an Internet café. From here, he would do whatever work he needs to do, having access to unlimited and cheap bandwidth. With vessels, however, users are decoupled clients by majority: it is the same as dialing up a PSTN line over Inmarsat. You are paying anywhere between US\$3.65 and \$7 a minute for a 9600 Bits At Unit Density (BAUD) - if the readers would still remember those days. But it is better than it used to be, when it was perfectly acceptable to get a speed of 48kbit/s.

Another issue, of course, is mobility. Mobile salesmen eventually go home or back to their office, so that if you want to maintain their Personal Computers (PCs) or their systems, you just need to wait for them to show up at the head office or their branch office. Most vessels, on the other hand, spend long stretches of time at sea. A lot of people tend to think of the maritime industry in terms of OOCL, Maersk, APL. That is basically the liner business, or the containerised liner business, and people think of shipping as that. But the liner



Wallem deploys Fleet 77

Hong Kong-based ship management firm Wallem Group has announced the deployment of Inmarsat's maritime solution Fleet 77 following a successful six-week sea trial.

Installed on an oil tanker, the Genmar Princess, the Inmarsat system has paved the way for Wallem to seamlessly integrate shipboard systems with headquarters solutions that control procurement and provisioning of all vessels under management. The system has also improved the quality of life of the ship's officers and crew, putting them in immediate touch with the outside world and relatives via email and digital news services.

"Wallem was established in China in the nineteenth century, but we have established a track record of exploiting the technologies of the twentieth and twenty-first century to increase the efficiency of our operations. We have developed pioneering tools – such as the Total Procurement System (TPS) which tracks vessel needs and matches them to the nearest and most cost-effective supplier – that are helping us to lead the way in our industry," said Patrick Slesinger, the Chief Information Officer (CIO) of the Wallem Group.

"The big challenge has always been how to link solutions like TPS to vessels at sea. Inmarsat's new Fleet 77, providing the high quality and speed of a full 64kbit/s Mobile ISDN service and the flexibility of the Inmarsat Mobile Packet Data Service (MPDS) is an elegant solution to that problem. Its pricing model, where users are charged for the amount of information sent and received rather than the time for which they are connected also makes it very cost-effective compared to other solutions that we have looked at," said Slesinger.

Slesinger's comments were echoed by Piers Cunningham, Senior Business Development Manager – Maritime, Inmarsat, who said: "Now ships can become a connected node to their company's LAN or WAN network, offering flexibility and reliability of constant connection with the home office. The ship can conceivably now have access to the same company infrastructure and resources available to their land-based counterparts."

"Wallem has recognised something fundamental that is relevant to any distributed organisation, not just ship management. Reliable, digital connections enable greater management integration, enhanced reporting function and total connectivity with offices around the world. Coupled with Inmarsat's reputation for reliability and innovation, the result is true global connectivity," said Cunningham.

During the trial, which took place over six weeks of an actual commercial voyage, the Gemstar Princes used a newly installed Fleet 77 system and a host of applications to test the Inmarsat network in real-world conditions. The vessel tested three types of applications covering the areas of communications, operations and management.

In the communications arena, Inmarsat and the Fleet 77 system supported a range of features and functionalities including regular voice, email, an SMS solution as well as NewsLink which provides officers and crew with personalised news headlines and brief stories in a range of local languages. It also provided connectivity to Wallem's own web portal as well as other web sites.

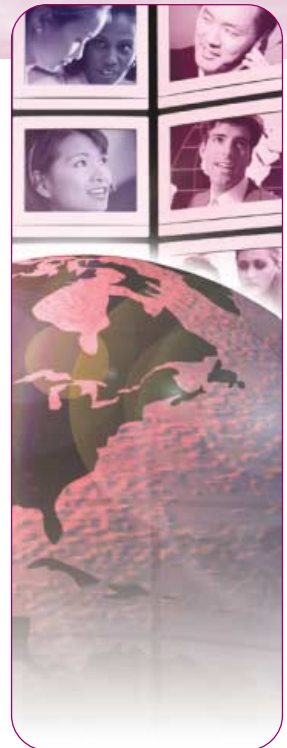
On the operations side, the trial evaluated the performance of key safety and insurance activities such as more detailed, full-colour weather reports and the transmission of updates to procedures manuals. The operations side also covered what Wallem calls Abstracts – engine performance data, fuel states, and cargo updates.

Of course, while making Inmarsat available to the entire crew is desirable from a morale standpoint, ensuring that the bandwidth was adequately managed and, where possible, charged back to individual users was an important concern. Wallem drew on the services of its own solution development operation in the Philippines, DevCo, to create a brand new Management application called Packet Counter.

Packet Counter tracks data usage and provides ship-owners with an itemised report similar to a mobile phone bill. The report can even be used to segment charges by usage groups such as master, crew and Wallem itself.

"Packet Counter may seem like a small thing. However, its larger role was in proving that developing more applications – specifically apps that can integrate digital systems on vessels with IT solutions at our headquarters or around the world – is not only feasible, but can deliver real efficiency increases and competitive advantage," said Slesinger.

Following the successful trial, the owner of the Genmar Princess has decided to purchase the Fleet 77 equipment the vessel's sister ship, the Genmar Progress. ■



business is actually a small fragment of the shipping industry as a whole. The rest is called tramp business or non-liner business, where vessels go wherever the work is: they tramp around to find work.

I always use the analogy of the liner business being similar to a bus line. There is little point of you standing in the middle of the road and expecting a No. 5 bus to come along: you go to a bus stop that the No. 5

calls. Similarly, there is very little point of you turning to the driver to say: "Take me home", unless you happen to live right next to the bus stop, because he is only going to drop you off at the bus stop. Buses also run on a scheduled time scale, so that you know that every 'x' minutes there should be a bus.

Now, the tramp business, on the other hand, is more like a taxi. You have got to find a taxi in the first



Iridium announces crew calling programmes for 2005

Iridium Satellite has announced that it is extending and expanding its popular Crew Calling programmes to 2005 to make it easier and less costly for crew members to place satellite calls at sea.

Iridium is waiving its monthly fee for crew-calling service for qualified new Subscriber Identity Module (SIM) activations through 30 June 2005.

"The \$0 monthly fee promotion, which we launched in 2004, has proven to be very popular," said Don Thoma, executive Vice President (VP) of Iridium Satellite. "We are extending it through the first six months of 2005 to make it easier for crew members to stay in touch with their families and friends while they are at sea."

Iridium is targeting the \$0 monthly fee programme to high-usage customers and offers it through authorised Iridium Satellite Service Providers.

Iridium Satellite has also announced that it will continue its Family First programme through 2005. Family First provides discounts of 35 per cent for satellite phone calls on the first day of each month, weekends and major holidays.

For 2005, the holidays covered under the Family First plan will include New Year's Day (January 1), Eid al Adha (January 21), Lunar New Year (February 9), Valentine's Day (February 14), Easter Sunday (March 27), All Saint's Day (November 1), Dipawali (November 1), Eid al Fitr (November 4), Christmas (December 25) and New Year's Eve (December 31).

"The Christmas and New Year holidays are very popular for Family First calling, and we expect to see high usage during the 2004 holiday season," said Thoma.

Iridium applies Family First discounts automatically to calls made with Iridium Crew Calling prepaid scratch cards, which are available from any of Iridium's service partners. The discounts apply for 24 hours, based on GMT, and are independent of the location of call origination or call termination. ■



"Iridium is targeting the \$0 monthly fee programme to high-usage customers"

place, because you are never too sure where they are going to turn up. You know where the taxi queues are but sometimes there are no taxis there. But with a taxi, you can go wherever you want.

If the charterer, ie, the person who has hired a cab, decides halfway home that he is not that tired after all and that he would prefer to go to the bars, all he needs to do is to tell the driver to head off to Lan Kwai Foong, or Boat Quay. Therefore, if you are waiting at his house to be able to service the taxi, you are going to be sorely disappointed, because he has gone off somewhere else.

In Wallem's case 40 per cent of our fleet is made up of oil tankers. As you are well aware, oil prices are quite high at the moment. We can pick up an oil cargo in the Middle East, be heading for Louisiana in the US, and halfway across the cargo gets sold and the new cargo owner says: "I want it in Venezuela". Then, halfway to Venezuela they say: "Well, we have actually sold it to someone in Japan". So it is finally delivered to Japan. As such, cargos can get sold, vessels

end up not going where you had expected them to and this creates system support issues that make satellite communications a requirement.

What I am saying is that communications with the vessels are important, though at the moment they are quite expensive and outmoded.

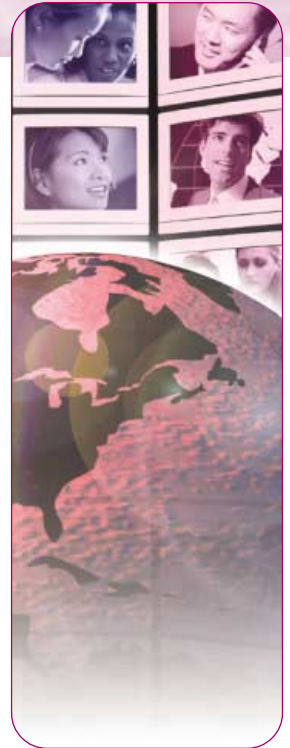
Q: What are the challenges of delivering communications to vessels at sea?

PS: It comes down to getting the right information, at the right place, at the right time. Since 1994-95, it has no longer been a case of 'can we get the data there' because the Inmarsat-B service came online. It has become more a question of how to get value out of the communications network, what information needs to be delivered to or from the vessel and when.

If you have got non-time-sensitive information, the cheapest way of getting the information to or from the vessel is for you to burn it to CD-ROM or Zip drive and put this into the vessel's mail pouch on a regular basis. You can imagine that if you had a graphics-inten-



“As I said earlier, the guiding principle for maritime communications is: the right information, at the right place, at the right time. This situation is unlike the terrestrial business, where especially in the developed areas of the Asia-Pacific region, everyone figures that you have at least 3Mbit/s over an Asynchronous Digital Subscriber Line (ADSL) connection.”



sive catalogue, for example, the best way to send it would be through CD-ROM which they can load on a PC on board the vessel. However, it may be that a user actually wants it to order from that catalogue. In that case, what would make sense is to send textual information across in a compressed form, like an .xml, .doc, or .zip file. Emailed across as an attachment to the vessel, the catalogue would reach the receiver who could start using it, browsing it or actually placing the orders. And then, when the CD-ROM eventually turns up, he would be able to browse through the catalogue and see the pictures as well.

Q: How does all this affect the nature of maritime communications?

PS: As I said earlier, the guiding principle for maritime communications is: the right information, at the right place, at the right time. This situation is unlike the terrestrial business, where especially in the developed areas of the Asia-Pacific region, everyone figures that you have at least 3Mbit/s over an Asynchronous Digital Subscriber Line (ADSL) connection. I could have 12Mbit/s at home if I wanted, and that is a commonplace situation in the region.

When you are dealing with a 9600 BAUD or even 64kbit/s lines, you do not want to be starting to move around files of 5-10Mbytes. But equally, you have to get information there, so it is a question of classifying data into what is needed to be transferred and when. The only way you are going to do it is through satellite, perhaps in a consolidated weekly file - ie, a file that is synchronised once a week.

When you have monthly or quarterly information, even if it takes you a week or two weeks to get ashore, it really does not matter, and the best method to get the information might be what I call a '747 net' otherwise known as a DHL pouch. As you can see, the key is classification of data, knowing what data needs to be moved where and when.

Q: What are the communications requirements of a crew at sea? And what are, on the other hand, the types of applications that a shipping company needs?

PS: Typically, what we do for our crews is to have the Inmarsat equipment on the bridge onboard the vessels. However, being a communal place a ship's bridge

is not a nice, private environment where a seafarer can openly talk to his wife or girlfriend. In the past, people used to have the master or the captain standing behind them with a stopwatch, looking at the rate table and billing them for the time spent on the system - not a very private practice! Eventually, what we did as a company was to invest in Iridium handsets placed in crew-friendly positions, thus allowing the crew to make calls as they please. But again, even this system has its limitations. Incoming calls, for example, are difficult to handle: the crew is not always available, and a wife ashore cannot call her husband onboard because he may be down in the engine room or he may be off shift. Besides, often the wife does not know where the vessel is, ie, what longitude and latitude and in which time zone.

Applications run onboard vessels by a shipping company, on the other hand, are totally different. These include planned maintenance, maintenance logs, running hours, engine performance, position reports that shows where they are, what speed they are doing, what is the weather like where they are. Then, there are a number of applications related to Human Resources (HR) requirements, including crew information, crew signed on/signed off, performance appraisals, payroll and hours worked.

Q: In one of your most recent press releases, the “seamless integration of shipboard and land-based systems to boost efficiency of vessel management” is mentioned. What does it mean? How is this seamless integration changing vessel management and the lives of those at sea?

PS: The greatest efficiency to be gained in maritime communications is in 'data inheritance', eg, not having to retype information. If the information from onboard the vessel, be it a requisition issue or otherwise, is sent to the shore as a fax for example, then the operator would have to retype it to an Error Recovery Procedure (ERP) system. Pre-satellite, or pre-data over satellite, as in email attachments, comes in an unstructured form and it could not be inherited into systems.

However, the concept of efficiency also opens a series of questions of a more general nature. For example, connectivity means that information can be exchanged: but does it mean that one should exchange



information? One of the qualifications of 'should' is 'what is the financial return on doing this?' If it is going to cost me a dollar to send it, am I going to get a dollar and a half or two dollars in return? If not, perhaps it would be better not to send it.

Q: The telecom world at large is moving towards Internet Protocol-based (IP) networks. Is this true of mobile satellite services as well?

PS: Yes, very much so, albeit with some exceptions. Vessels, in fact, rarely talk over satellite. If they are talking vessel-to-vessel, it will probably by VHF/HF. If the communication is ship-to-ship, then it will take place in the realm of the Inmarsat system. But in the case of vessel-to-shore communications, I could not comment with any certainty if a phone call is at some point being IP-routed or not.

Whether the maritime industry is becoming IP-based or, more to the point, Voice over IP-based (VoIP) or not is a moot point. We are a shipping company and yes we have vessels at sea but we also have offices on the ground. When we communicate to our customers or to the vessels it could go via VoIP to the satellite and from there to a landline.

Q: In other sectors of the mobile communications industry we are seeing satellite communications coming together with terrestrial systems such as Wireless Fidelity (WiFi) for the creation of so-called hybrid systems. Is this happening in the maritime world as well? If so, how is this manifesting itself? If not, is this a development we can expect to see sometimes in the foreseeable future?

PS: The answer to this question has to be 'yes and no'. 'Yes' in the sense that there are vessels equipped with Local Area Networks (LANs) that are linked to satellite terminals. 'No' in the sense that it is not always feasible to build wireless networks onboard ships. In fact, it needs to be noted that ships are not particularly WiFi-friendly because they are made of steel. They have steel fire doors that need to be kept closed, while walls and bulkheads are also made of steel. Vessels are not like homes where you have dry walls or plasterboard, or open plan offices where there are no obstructions at all so that WiFi signals can penetrate easily.

On cruise liners, on the other hand, WiFi solutions are possible because of the different physical structure of the ship. On these vessels, they have large open spaces where passengers get together. Besides, it is not unheard of to have multiple cells throughout the ship. In fact, many cruise liners already have Global System for Mobile Communications (GSM) repeaters, so that the ship *de facto* becomes a mini cell that links to satellite backhauling to the GSM provider on shore.

But the physical characteristic of the ship is not the only limitation to the take up of WiFi solutions onboard vessels. There are important financial considerations also to be made.

Q: Would you be so kind to expound on this latest concept? What are these financial considerations

that you have just mentioned?

PS: In a nutshell, it could be said that it is just a matter of sheer numbers. Onboard a commercial vessel you might have an average of 20 people. Now, the cost of having a single WiFi hotspot would not be high, but does it make financial sense to have such a service for 20 people? Most likely, it does not. In addition, should you intend to provide good signal coverage throughout the vessel, these costs would spiral even further, as you would need to put up a WiFi hub in every single corridor as well as every single cabin.

On a cruise liner, on the other hand, the numbers are different. On a ship carrying 1500 people who are used to having terrestrial telecommunications and are willing to pay for the service, WiFi is justified. In the 1980s, for example, people on cruise liners in the mid-Atlantic would expect to place a telephone call from their cabins, like a hotel, for direct dial, and they were willing to pay US\$10 a minute. On a cruise liner you can have multiple channels, always-on connection backhauling to the switch via C-band satellites. Users would be willing to pay for it and I believe it is worth it.

Q: For decades Inmarsat has enjoyed a virtual monopoly, being the sole provider of communications services to the maritime world. A few years ago, however, this has ceased to be true. Iridium has been targeting the maritime community for quite some time, while more recently Connexion by Boeing announced it would also join the fray. As Wallem Group, have you been looking at these alternatives?

PS: Yes we have. Currently, we use Iridium for Crew Calling, and we have also had discussions with Connexion by Boeing. However, at the moment we see no compelling argument for onboard Very Small Aperture Terminals (VSAT) because of its fixed costs. However, we would review our decision if the situation changes.

Q: What could make you change your mind?

PS: I believe VSATs would make a lot of sense if we had an application that requires an always-on connection. All the industry needs is a killer application that requires real-time communications in order to convince vessel owners.

Q: How are mobile communications for the maritime community going to change over the next five years?

PS: From a user's standpoint, one hopes the cost is going to come down, and that greater choice becomes available. My greatest concern, however, is that we have new players coming in who are not maritime people and who might fail to understand the peculiar needs of a maritime users. Investment in a VSAT terminal or an Iridium system has costs that are not that high, but VSAT usage is quite expensive. But are users going to get the returns that they are expecting? Sure the system allows a significant increase in traffic, but is such increase needed? So far, this remains an open question. ■

