New providers to make GMDSS case

With the GMDSS now open for revision by IMO, new satellite providers have the opportunity to make their case for inclusion in the provision of the next generation of safety services, *writes Brian Mullan, BAMCOM International*

Thuraya has reaffirmed its intention to apply formally to the IMO, during MSC 88 in November this year, for recognition as a competent, regional distress and safety provider within the soon-to-be revised GMDSS.

Presentations have already been made by Thuraya to the IMO during COMSAR 14 in March and during MSC 87 in May of this year. Both attracted significant interest and questions from the IMO Member States and others present.

We can expect that the formal application by Thuraya for recognition within the GMDSS will attract an even wider and keener audience.

The IMO has now opened the GMDSS for the widest possible consideration, leading potentially to the greatest changes in maritime safety communications and technology ever since the original GMDSS was developed – changes that will add measurably and significantly to safety of life at sea.

The existing GMDSS was designed and agreed in an era when satellite communication was in its infancy and the technology was very new. Indeed, the early generation of satellites used within the GMDSS had quite limited functionality when compared to the latest satellites available today.

Satellite technology has become the bedrock of maritime safety alerting and communications – and this will continue into the future.

However, the time has undoubtedly come for the IMO to enhance its standards and regulations by taking into account new developments and advances in satellite technology, and recognising the opportunities offered by such new technologies. Maritime safety today relies upon a broad mix of technology, both satellite and terrestrial and this mix will remain the basis of a future, revised GMDSS.

The GMDSS was designed originally as a jigsaw of essential pieces that formed the overall safety picture – with no one element being a single point of failure in the distress alerting chain. In a revised GMDSS, new satellite operators, including Thuraya, can undoubtedly be a key, new part of an improved safety picture.

The original GMDSS was well designed for the available and emerging technology that was available at the time. However, the 'fathers' of the GMDSS, many of whom are still active today, could not have foreseen the rapid and exponential growth in communications technology.

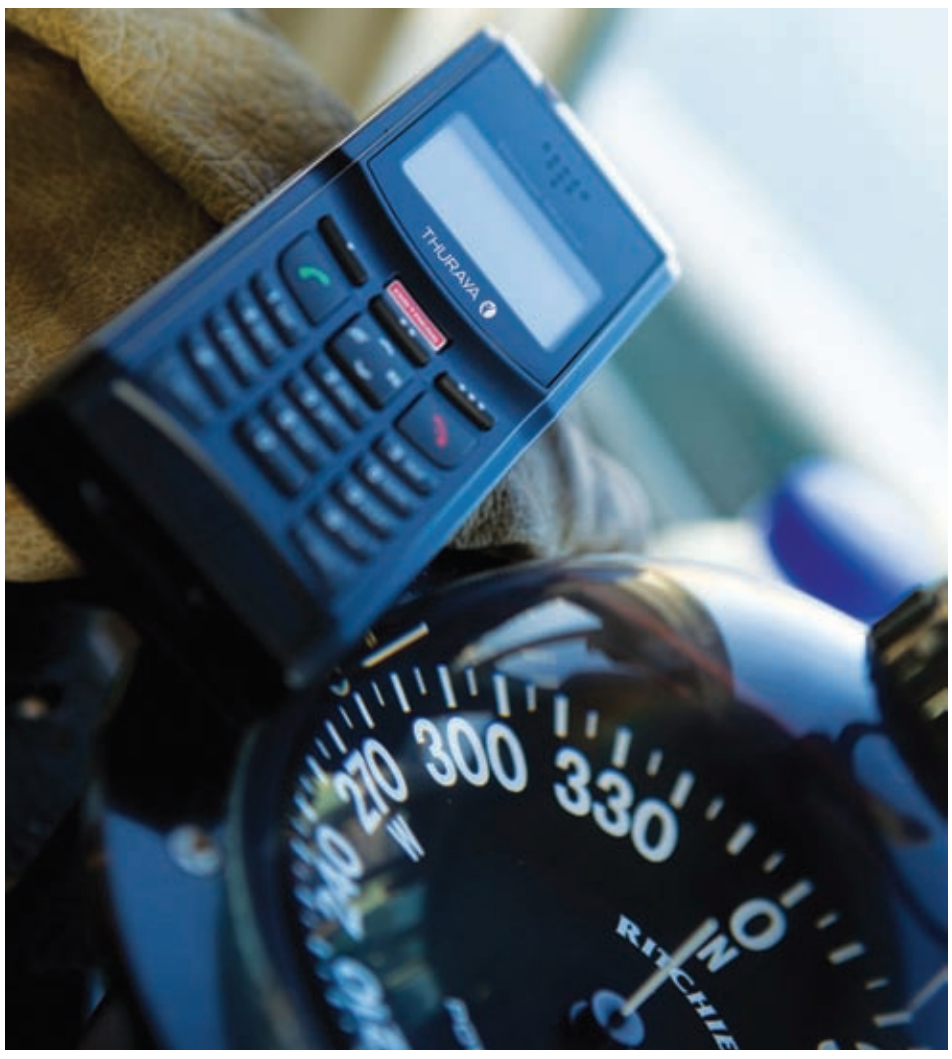
Today, with the ability to control complex, world-wide systems from a single site, it is time for the IMO to re-examine the criteria for maritime safety and to allow for consideration of all available, competent technology.

New GMDSS applicant Thuraya has already advised the IMO informally of its capabilities in providing a reliable, non-GMDSS safety network that is claimed to be more than 99.9 per cent reliable. Thuraya already covers about two thirds of the globe and is already used by seafarers within that footprint.

Consideration of the capabilities of new satellite providers should become a key element in the IMO revision of the GMDSS and needs serious consideration by the IMO working groups that are charged with the responsibility for delivering a quantum improvement in maritime safety – what may become known as 'GMDSS Mark 2'.

Other than satellite technology, there is really only one other communications medium that will remain part of a revised GMDSS – terrestrial radio. VHF, MF and HF digital radio will also be key elements in the future.

HF radio is the accepted back-up for long-range satellite communications and, for diversity robustness, must always remain an essential element of the GMDSS.



New satellite providers should start with the assumption that handheld devices are likely to be a future GMDSS requirement

New realities

One major reality for the IMO to accept is that the very high cost of building, launching and operating satellites must mean that the concept of a spare satellite for every satellite used in the GMDSS will no longer be an option.

The satellite operators providing communication services in the GMDSS, all of whom are commercial, are unlikely to have 100 per cent spare satellites in the future. This must mean that HF digital radio will have to become the de facto alternative in the very unlikely event of a satellite outage.

Aeronautical safety uses HF radio as a key element of its strategy; for the good reason that it does not want to rely on satellite technology alone for safety.

Past arguments that have prevented successful application to the IMO by new satellite providers no longer hold water. The former requirement for a spare satellite in orbit for every satellite used in the GMDSS is no longer reasonable or indeed feasible.

Indeed, Inmarsat announced on August 6 that they will move to a more gradual replacement of their L-band network, which will result in a deferment of previously-planned investment expenditure over the next 11 years.

This could be seen as Inmarsat moving away from its former position of always having 100 per cent satellite redundancy

New services need to be complementary to the Inmarsat and Cospas-Sarsat systems already used for search and rescue

for the GMDSS.

The GMDSS is open for a comprehensive review and needs to consider how best the new structure will ensure safety of life at sea; for the next quarter century at least. Safety services for land and maritime already accept alerts from any source, and the revised GMDSS should be no different.

If you ask any maritime rescue coordinator about alerting methodology, they will tell you that they will accept an alert from any technology; satellite, VHF, MF, HF, terrestrial telephone, cellular telephone – and even from the newest and innovative, non-GMDSS alerting and tracking services.

The revised GMDSS needs to be based upon a holistic mix of the latest technologies, satellite and terrestrial, with HF radio as the back-up and, in addition to Cospas-Sarsat EPIRBs, an independent means of alerting.

This means that there is now room for new GMDSS providers to offer their capabilities to IMO. These need to be complementary to Inmarsat and Cospas-Sarsat, as an essential part of future IMO maritime safety services.

Future technology

Distress alerting is the single, most important element of the GMDSS. Seafarers in distress need technology that will put them in immediate touch with a rescue centre.

New satellite providers, including Thuraya, should offer distress alerting that is at least as good as the existing proven methods.

All satellite systems for the GMDSS, including new providers, use GNSS technology to pinpoint the position of the distress. The well-quoted phrase "any delay in receiving a distress alert can mean the difference between rescuing survivors and rescuing bodies" is particularly relevant to all distress alerting systems, and new GMDSS providers must comply with this requirement and ensure that distress alerts and calls are received immediately.

Broadcasting of specific information to seafarers forms another key element of the GMDSS and new providers must demon-

strate that they already have a robust broadcast capability. A solid broadcast capability, for immediate communications between search and rescue (SAR) professionals and specific areas and/or ships, will always remain a core requirement.

New applicants to IMO must be able to demonstrate that their GMDSS products and network architecture, together with satellite network coverage, are suitable for inclusion in the revised GMDSS. Some of the new satellite providers will undoubtedly seek to offer unique solutions that provide the security and interoperability crucial to remote area, mission-critical SAR assignments.

Crew calling is now, more than ever, a key part of safety at sea. A demotivated crew is not a safe crew and therefore accessible and affordable crew communications can be a key factor in ensuring both ship safety and crew retention.

New satellite providers should be able to offer a service whereby crew calls are charged at reduced rates, allowing seafarers to speak for longer with family and friends and which can offer special, significantly reduced call charges during holidays and festivals.

Existing providers of crew calling solutions offer simple scratch cards that are available in most countries. Post-pay plans could also be available.

Vessel tracking has become a key part of maritime safety and is an extremely useful tool for SAR authorities. New applicants for the GMDSS need to offer location based services that will enhance SAR operations. More than one satellite provider already offers LRIT capabilities.

In the April edition of *Digital Ship*, this author called for the inclusion of at least one hand-held satellite radio to be part of a mandatory fitting for all ships, such that it could be used day-to-day for ship's business and then carried into the survival craft in the event of abandoning ship. New satellite providers should start with the assumption that this solution is likely to become a future requirement.

Hand held solutions for survival craft must be capable of withstanding the harshest of environments and the most extreme conditions, to ensure distressed seafarers can stay in touch, however remote the location.

In summary – Thuraya, like other new providers, needs to demonstrate to MSC 88 that it can be a key element in the revised GMDSS, and must offer significant reliability and proven solutions for distress and safety.

Thuraya has stated that it is serious about its intentions to become a valued provider of maritime safety communications and has already taken a number of forward steps in this path. DS

About the author

Brian Mullan runs maritime safety and security consultancy, BAMCOM International Limited, having previously been head of maritime safety services at Inmarsat for twelve years.

Prior to that, he was assistant secretary-general with Comité International Radio-Maritime (CIRM) and, for ten years before that, was electronics superintendent with P&O Containers (now Maersk Line). He was also a Governor of the World Maritime University in Malmö, Sweden, 2000-2009. For more information visit www.bamcom.co.uk