

A Look at SES' New Maritime + Service

With a large portion of the world's shipping industry still unserved by VSAT, major satellite Operators, Intelsat and SES, are racing to capture and hold their shares of the market. Statistics show that around 18,000 of the a potential market of 40,000 vessels have VSAT installed, leaving an estimated 22,000 still in play.

Within the maritime market, the Cruise segment, around 300 + vessels, leads the demand for capacity. New contracts specifying bandwidths of 50 Mbps and upwards per/ship are commonplace, and Industry experts see the demand soaring to over 100 Mbps within three years as an increasing number of passengers want high speed connectivity to service their Facebook accounts, upload videos of their cruise adventures to their friends back home and enjoy the ever increasing amount of video available on the Internet. Other segments of the market, too, are opting for higher speed connectivity.

Tankers, Container Vessels and Cargo Vessels are also prime markets for VSAT. Demand is now driven by IoT, Big Data, and the use of Cloud based applications in addition to simple Crew Welfare. While the demand

per/ship is relatively low compared to Cruise, there are thousands of vessels in play. To find out how one of the largest satellite operators is coping with the rapidly

expanding demand, we were able to visit with SES' Sr. V.P. of Maritime, Elias Zaccack who graciously offered his time for an interview:

Satellite Mobility World: It seems SES has quite a number of maritime offerings. Could you describe your new Maritime + service i.e. what does it offer?

Elias: We place all of SES' GEO-based maritime offerings under the 'Maritime+' portfolio, and these indeed serve both large commercial ships as well as smaller-vessels. O3b's solution is currently marketed under its own brand and primarily targets the Cruise sector.

Satellite Mobility World: Regarding your just announced strategic collaboration with Gilat to deliver a new, regional service to small ships and yachts (principally in the Caribbean and

Asia) - a market that has been unserved by traditional VSAT services. Can you elaborate on that service?

Elias: You correctly state this market has been under served by traditional VSAT services. SES recognized that, and with



Gilat's support we are now offering competitive packages with tailored regional coverage targeting this sector. This is a regional service, not unlike SES existing offer in Europe, and underlines our ability to provide multi-regional or global solutions for customers that need it.

Satellite Mobility World: A key feature of this new service is "Plug and Play." This suggests that you are selling a service that, unlike traditional VSAT, requires no significant amount of integration expertise and can be resold by numerous distributors - much like KVH. Is the "Plug and Play" feature aimed at expanding the distributor base or will you sell this service directly to end users?

Elias: The "plug and play" aspect refers to a single unit combining the antenna, BUC, ACU and modem all enclosed in a in a radome. This is a bundle that we offer our distributors, and we don't intend to sell this product directly to end-users.

Satellite Mobility World: "Maritime +" is a fully managed service in which the maritime integrator buys megabits and SES provides seamless roaming across wide beam Ku-Band, HTS Ku-Band, Ka Band O3b and C-Band. Yet, SES is yet to launch its first Ku-Band HTS satellite. When do you envision completion of this multi-band seamless network, and what services(s) are currently available?

Elias: This is an important year in completing that multi-band, multi-orbit network you describe: SES-10, SES-12, SES-14 and SES-15 will launch in this year.

We will also expand the O3b constellation by 4 satellites in early 2018 and further 4 in 2019. That will complete the in-orbit component of the network for the medium term.

In the meantime, our joint network and product teams are finalizing network interoperability between the two systems to extract the best of both. This unified network will allow us to offer a range of differentiated services to unique customer segments within the maritime sector: from Super Yachts to maritime shipping and from O&G FPSO platforms to cruise ships.

"Maritime+" services currently available include global connectivity in both C and Ku band, enabling Service Providers and integrators the luxury of a single managed network operated by SES, composed of significant ground and space infrastructure.

Satellite Mobility World: How does SES differentiate the Maritime + product from Intelsat OneFlex? In particular, minimal capital outlay for the integrator/reseller is noted as a key feature of the service. Exactly how is that achieved?

Elias: Maritime+'s primary differentiator is a clear road map of both GEO and MEO services which can be offered to maritime customers. SES's strategic investment in 3Ku-band HTS satellites - all of which will launch in 2017 - also require additional investment in ground systems to support seamless maritime services. By combining multiple customer requirements and leveraging economies of scale, SES can offer commercially competitive services. This can eliminate large customer CAPEX investment in hub ground equipment.

Our recent customers have benefited from SES' flexible package and contract options which allow customers to meet their end-users' occasional and seasonal demands.

An example I'd share with you was provisioning a short term bandwidth increase so that our customer could cover the recent US Presidential Inauguration on their ship. A key selling point for "Maritime+" is a single, global satellite connectivity solution to vessels. This, combined with modern ground infrastructure and dedicated capacity, offers Service Providers a unified, managed, and flexible maritime solution.

Satellite Mobility World: SES notes that it can offer a "turnkey" solution as well as go through integrators. So, will SES sell its "Maritime +" service directly to end users?

Elias: SES has made a massive investment in O3b Networks and is committed to growing that business as an intrinsic part of SES. Therefore, the support to existing customers, be they direct or indirect (via integrators and service providers), will continue.

O3b provides a fully managed service direct to its cruise customers today, which is key to the differentiated experience O3b offers. Our other "Maritime +" services are sold exclusively through third party integrators. Our ambition is to continuously deliver additional value to our customers in the segment beyond pure connectivity,



so the end-user's experience is maximized. This is exactly what our customers are asking for.

Satellite Mobility World: Intelsat and Telesat both have plans to integrate LEO offerings with their GEO offerings. Considering that O3b services offer coverage only within + - 40 degrees of the equator, integration of a

LEO network into Maritime + could make sense. Is this an option under consideration by SES and do you see it as a significant value added?

Elias: At SES, we like to always use a "future-proof lens" to determine our space, network and product architecture. We're always looking to incorporate the latest capabilities that will differentiate us and convey maximum

benefits to our customers.

So we are never wedded to any band, nor any orbit. It's this open, future-oriented thinking that enabled our investment in O3b Networks in 2009 and our most recent investment in Ka-band GEO HTS announced with Thales Avionics. We will continue to look at all options and execute those that make sense.

As this relates to maritime, we are committed to a uniquely differentiated GEO/MEO offering in the coming years. O3b has leveraged its one-of-a-kind MEO constellation, product innovation, and managed service capability to provide world-class connectivity to RCCL's Harmony of the Seas as far north as Southampton in the UK (50 degrees N). They currently serve 5/6 ship categories for RCCL. With the addition of new O3b satellites, and the introduction of new GEO HTS capacity, that coverage now will expand, and we will enable higher growth and deliver further customer value for the maritime sector.

Satellite Mobility World: O3b is now installed on several of the largest new Royal Caribbean Vessels. Yet, due to the cost and space requirement of the antenna farm required on these vessels, the service appears to be limited to only the largest cruise vessels.

With demand for bandwidth soaring in the cruise market HTS GEOs may soon be limited in their ability to serve this market. In that case a phased array antenna capable of accessing two satellites simultaneously could lower both space requirements and costs open O3b's market to the very large mid-range cruise vessel market. In addition, Phased Arrays would likely be popular in markets served by Maritime+. Is SES actively pursuing this technology?

Elias: O3b's success with RCCL ushered in a sea-change for the industry and redefined expectations for what connectivity onboard a cruise ship should be. Today, good WiFi ranks among the 5 most important considerations for a passenger onboard a cruise ship. O3b currently

serves 5/6 of RCCL ship categories, and by offering scalable bandwidth choices we are generating great interest well beyond those categories. Clearly, to do so, we are putting in a lot of effort and making exciting progress on applying flat panel technology to our solutions. SES and O3b are big



catalysts for this. Antenna systems form a critical part of our future unified and inter-operable network – and you'll see them included in our Maritime+ portfolio in the future.

Satellite Mobility World: Can cruise vessel customers currently roam between O3b and Ku-Band as they cross out of O3b coverage areas?

Elias: Yes, we definitely have the technology to enable this today using multiple antennas. Yet our stated goal – as I just

explained - is to make this a lot easier and simpler via a single antenna solution. We are working on it, so stay tuned.

Satellite Mobility World: Given the increasing demand for video streaming services from cruise passengers, multicasting both web pages and video and caching content onboard vessels can vastly limit the amount of bandwidth required on a cruise vessels as well as improve performance of the onboard services. Third party integrator KVH is now multicasting movies and training video and Global Eagle is multicasting and caching web pages. Is SES considering integrating multi-casting capability with its Maritime + service?

Elias: We know there is big demand for both broadcast and streaming video solutions at sea. As you know, video delivery across multiple formats is one of SES' biggest strengths, and what we are famous for. We are leveraging that heritage and expertise to deliver competitive solutions to our maritime customers.

Satellite Mobility World: How do you envision SES maritime services in five years? What will the ultimate service portfolio look like?

Elias: We have really big plans for maritime. It's a key growth sector for us going forward. Our goal is two-fold: To provide unique service differentiation that enables the best broadband experience for crew, passengers,

indistinguishable for what they experience at home. Second, to offer a robust, global, and high-performance network capable of supporting enterprise-grade cloud applications for ERP, processing, diagnostics, asset-tracking, logistics, maintenance, safety and emergency communications for fleet operators.

The digital ship is no longer a concept, it will soon be a reality. We are going to help make that a reality by combining the reach and performance of O3b's and SES' next-generation HTS networks, making investments in innovative antenna technologies, and offering fully managed solutions that may incorporate additional applications for optimization and network efficiency, and 24x7 dedicated, high-responsiveness customer service that ensures the highest QoS for the full range of our customers. Our job is to make their businesses more profitable and their lives easier.

Satellite Mobility World: Thank you, Elias. We look forward to hearing more as the Maritime + service evolves.



About Elias:

Elias Zaccack is the Senior Vice-President, Commercial, Americas at SES, based in Washington, DC, USA. He has been with SES for fifteen years, and is responsible for leading a team of senior professionals supporting sales and other commercial initiatives across the Americas.

Prior to that, he held various executive positions within the SES group of companies, including:

