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Lloyd's List 'Ship of the Year' 2018, MV 'Afros' of Blue Planet, chooses Navarino technology to lead the digital revolution



Lloyd's List deemed Blue Planet's ship, the Afros, 'Ship of the Year' in 2018 and their success has not stopped there. The company received their second award in the 2019 SAFETY4SEA Awards in the 'GREEN4SEA Dry Bulk Operator' category. With a focus on technological integration, software innovation and environmental protection, our customer, Blue Planet Shipping, continuously inspires Navarino. Established in 1996, the Piraeus-based company currently manages 14 bulk carrier vessels, including its award winning 'Afros' vessel.

Blue Planet Shipping is already ahead of their time; they're the first company worldwide to manage a vessel with wind-assisted ship propulsion systems, which generate lift to make the Afros vessel much more efficient in terms of speed, fuel, and costs. The 4 moveable turbines reduce the overall cost of the vessel by reducing fuel consumption. Additionally, the turbines significantly reduce emissions created by the vessel.

With Blue Planet Shipping being a founding member of the Thalassa Foundation – a charity aimed at preserving the marine environment and its endangered species – the turbines further support their strong environmental ethos.

Moreover, to further emphasize Blue Planet's drive towards digitalization, through their collaboration with Argo Systems they have deployed a fully integrated real-time BPM system that leverages the benefits of new technologies such as Navarino's Fleet Xpress. More specifically, this software greatly streamlines the wide range of cross-departmental day-to-day business needs and activities (e.g. operations, technical, crew, procurement, accounting, etc.)



Furthermore, Blue Planet aims to monitor the performance of machinery on board the ships through telemetry, by extensively using Navarino's FX. Following the conduct of various tests, it's been determined that the need for bandwidth capacity may reach 40GB per day. Such traffic could not be supported efficiently without Fleet Xpress. (Continue to read this story in the case study section of our site <https://navarino.gr/archives/8128>)

Editor's note

by Christian Vakarelis

Welcome to another Navarino newsletter! 2019 has started with a bang for us at Navarino and we have spent the first quarter of the year working on some really interesting new projects.

First of all, we are extremely proud that the Lloyd's List Ship of the Year 2018 is using Navarino technology to forge ahead. The MV 'Afros' is a truly pioneering ship which uses huge wind turbines to both cut emissions and to improve efficiency. To be working with such a forward-thinking company as Blue Planet is a privilege for us and we are very grateful that they have contributed to this Newsletter with their case study.

Other big news this quarter is the release of the Infinity update 2.4.1 which is a big one. It contains a lot of security related upgrades, alongside the features that many of its users have requested so we are really pleased that it has rolled out with such success.

Our team had a really entertaining night in London at the Hellenic Engineers Society annual dinner dance this quarter as well, its always a pleasure to mix with the Greek shipping community in London and we were happy to be able to support this important event.

And finally, it is so exciting to be able to support young talent in the form of the Zanneio High School CanSat team, the full story is on page four and we are eager to see how they do in the European Space Agency competition this year!

Events and News

Iridium Certus is live and you can come experience it with us in the Navarino Demo room

Iridium Certus has just launched and already interest in the new satellite network is high. We have installed Certus at our offices so that our customers can come to experience the latest high speed L band service from Iridium. To arrange a visit, please contact your Navarino account manager.

Five Facts To Know About Iridium Certus

- 1. What's in a name?** The Latin word 'certus' translates to 'certain, reliable, and sure', which are key attributes of the new service.
- 2. How does it work?** Iridium Certus is powered by Iridium NEXT, the next-generation, \$3 billion satellite constellation. It has been coined the largest 'tech refresh' in history, as Iridium replaced 66 low Earth orbit satellites with new ones, all in just about 18 months.
- 3. How is Iridium Certus different from the competition?** Iridium Certus will be highly reliable, due to the advantages of the network's unique architecture. Located in low Earth orbit (LEO), with crosslinks enabling cross-satellite communication and L-band end-user transmissions, the network is unaffected by weather conditions or the need for ground stations, unlike other satellite networks.
- 4. How is Iridium Certus more than satellite broadband?** The service is designed to be a multi-solution platform for all industry verticals. It will provide multiple high definition voice lines, alongside IP data speeds debuting at 352 Kbps and soon after upgraded to 704 Kbps. With eventual speeds reaching approximately 1.4 Mbps, Iridium Certus will also deliver multiple streaming classes and safety services.
- 5. Which terminals support the new service?** Iridium has partnered with Cobham and the Thales Group to develop cutting-edge terminals to support Iridium Certus. For the maritime market, Cobham's SAILOR 4300 and VesseLINK by Thales are easy to install, light-weight antennas. Existing Iridium devices such as Iridium Pilot will continue to function normally, but will not benefit from the new Iridium Certus speeds without one of the Iridium Certus terminals.



You can experience the speeds of Iridium Certus for yourself in the Navarino Demo room.

Navarino proudly attends the Hellenic Engineers Society annual Dinner Dance at the Grosvenor House Hotel, London

We were delighted to be invited to support the Hellenic Engineers Society (HES) of London and to attend their excellent annual event this year.

The Greek shipping community in London is widespread and well-known as one of the most innovative and active diasporas in the maritime industry. Navarino is extremely proud to be a part of this warm, vibrant community and to work with many of the Greek shipping companies based in the UK.

The evening was made even sweeter for us by the fact that our own Linda Niklasson won the top prize in the raffle, a cruise for two! Congratulations to her and a huge thank you to the HES for organizing such a welcoming and friendly event every year, we shall look forward to attending again in 2020!



Infinity Mail has been refreshed and enhanced with new functionalities and 7 year archiving

Infinity Mail, our email solution, is back in refreshed form. The Infinity Mail service uses the Infinity Relay technique which converts emails into files that are compressed and transmitted between vessel and shore using Infinity's File Synchronization module. This module has full Point Of Interruption (POI) capabilities so that no data is lost in case of a break in connectivity and only unsent packets are sent once the connection resumes. Once the data arrives at the Infinity unit or HUB it is unpacked and converted back into email format.

We have also moved Infinity Mail's cloud based services to a world class, clustered multi-node environment and increased archiving to 7 years. Now on more than 7,000 vessels, Infinity is continuously developed and new functionalities are released regularly. Navarino welcomes any suggestions from users for new features.



Market News

Infinity Update 2.4.1 goes live, bringing freshly enhanced functionality and a number of new features

Infinity Version 2.4.1 has arrived and it includes a number of new features, enhancements and updates. This version focuses on improving performance and reliability, enhancing functionality and keeping the platform up to date, while including a number of new features that greatly increase the utility of Infinity.



As always, security is at the top of our list. We have expanded the use of encryption, hardened a number of Infinity services and applied security updates where needed. We believe that good ergonomics reduce security-related mistakes, so we added intuitive configurable options, informative messages and graphs, and new, easy-to-use tools to help administrators get better all-around visibility and improve the security of their Infinity installation. We also strive to respond quickly to the changing business and technology landscape. For example, when GDPR was introduced, we promptly added extensive support for it. As experience from practical implementation of this regulation accumulates, we keep up by tweaking Infinity accordingly.

To see the full Infinity Changelog, please visit the 'Infinity Updates' section of the Navarino website, which is always updated with notes from the latest Infinity releases and updates and which can be found here <https://navarino.gr/archives/category/infinity-updates>

Navarino's Angel Partner, Neurosoft, reverse engineers real-life malware to uncover the harm it can do to vessels

Have you ever wondered what's in those spam emails we all receive? Angel's Security Operation Centre partners, Neurosoft, opened up some spam pretending to be from DHL and reverse engineered the malicious code inside.

The Neurosoft Security Operations Centre, as part of the malware/abuse service that it provides, recently captured two samples which relate to a spam campaign (a DHL General Price Increase e-mail and a DHL Express Shipment Notification email) that delivers the cross-platform (RAT) Adwind, along with another well-known RAT Duhini which has worm capabilities. A similar campaign was first spotted in April 2018 by TrendMicro1.

Subsequently, another campaign (Repayment Confirmation Copy e-mail) was spotted that contained a third sample which utilizes Adwind RAT along with vjw0rm RAT. NeuroSOC malware analysts analyzed the mails which delivered the samples, and reverse engineered them to uncover their functionality and discover relevant Indicators Of Compromise (IOCs), which will help to successfully protect Clients under the Continuous Monitoring Service provided by Neurosoft. The full report present the results of this analysis and shares relevant IOCs with the Internet Security community. It can be found on the Navarino website here <https://navarino.gr/archives/8027>



Inmarsat's fourth Global Xpress antenna is now operational over Indian Ocean Region West

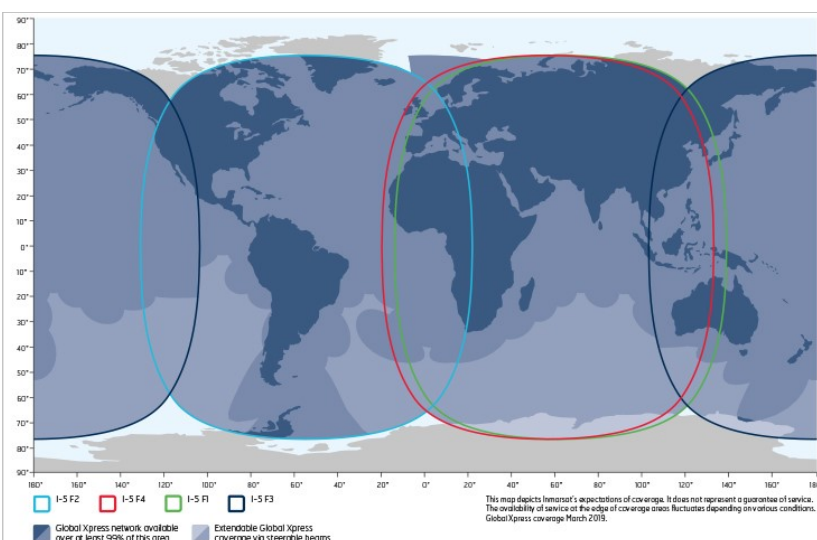
At the end of March this year, Inmarsat's newest addition to the Global Xpress fleet of satellites became operational, in the IOR West region.

The new I5-F4 satellite joins the three other Global Xpress satellites in geosynchronous orbit around the world -

- I5-F1 Indian Ocean Region
- I5-F2 Atlantic Ocean Region
- I5-F3 Pacific Ocean Region
- I5-F4 Indian Ocean West

Like the other fifth generation Inmarsat satellites, I5-F4 was built by Boeing in California as part of Inmarsat's \$1.6 billion investment in the Global Xpress network.

This addition is good news for the maritime sector as the new satellite is expected to help boost the amount of bandwidth available over the very busy Singapore and Mediterranean spot beams. Navarino is the worlds largest Fleet Xpress Value Added Reseller and we welcome this new capacity.



The newly operational I5-F4 satellite (footprint in red above) over IOR-W brings even more capacity to some of the Global Xpress networks busiest beams such as Singapore and the Mediterranean

GTMailPlus to add 'Continuity' to its email platform, allowing access to emails even when offline

To ensure that you always have access to your emails, even if your systems are offline, GTMaritime have added 'Continuity' to their GTMailPlus platform. As part of commitment to continuous development, 'Continuity' will be provided as standard with GTMailPlus, as GTMaritime wanted to ensure they provide their users extra value at no extra cost.

Accessible from anywhere, 'Continuity' will enable users to send and retrieve their emails even during any interruption in the shipboard email capability, allowing your business to continue uninterrupted. 'Continuity' is a webmail-based service hosted within GTMaritime's cloud infrastructure, with the length of storage based on your archiving settings.

In today's digital world access to email is critical to keeping your business running. With 'Continuity' by GTMailPlus, you can access your emails even if your system is unexpectedly offline, allowing you to operate your ship's business on or off the vessel to recover emails and continue business as usual. We would be happy to arrange a demonstration of the new functionalities for any customer who is interested.



Out of the office

Navarino supports the S.P.A.C.E. (Satellite Pirates and Cosmic Explorers) team as they build their first satellite



Navarino is very excited to be sponsoring the Zanneio High School's S.P.A.C.E team, as they bid to go for glory in the European Space Agency's CanSat competition. A CanSat is a type of sounding rocket payload used to teach space technology, similar to the technology used in miniaturized satellites.

In CanSat competitions, the payload is required to fit inside the volume of a typical soda can (66mm diameter and 115mm height) and have a mass below 350g. Antennas can be mounted externally, but the diameter can't increase until the CanSat has left the launch vehicle.

The CanSats are deployed from a small rocket at a height which varies depending on the competition. CanSats are equipped with a recovery system, usually a parachute, to limit damage upon recovery and to allow the CanSat to be reused. CanSats are used to teach space technology, because of their inexpensive price and small volume.

The European CanSat Competition is run by the European Space Agency and is focused on high school students. It is a competition in which each CanSat must meet the fixed volume requirements and not exceed 350 grams of mass along with other criteria related to flight time and to budget, in addition to measuring pressure and temperature and transmitting data in real time. Besides this, the CanSat must have a secondary objective, chosen by the team.

The low cost of implementation, short preparation time and simplicity of design compared to other space projects make this concept an excellent practical opportunity for students to take their first steps in space. Students are responsible for choosing the way the mission is fulfilled, the CanSat design, components integration, correct operation verification, launch preparation, data analysis and team organisation by distributing the workload. It is basically a scale replica of the design, creation and launch of a real satellite.

The process required to develop a CanSat employs a learning process known as problem-based learning, a new teaching method in which the student is the main character and the one who must solve the problems. The main characteristic of this type of project is one of teams facing open problems, driven by successive challenges.

The support given by teachers is reduced as the project evolves, in keeping with the fact that the group is working on recognizing that systems engineering has to deal with the complexity of development and researching their own abilities. Space engineering discipline is one of the most typical methods used in education because it provides a wide range of innovative and creative themes.

Navarino Commercial Director, Kostas Katsoulis said 'To see these youngsters aiming so high fills me with pride. As a technology company, Navarino is very pleased to be able to offer our support to this innovative young team and I am really looking forwards to seeing their CanSat achieving lift-off. Maybe one day they will join us in the satellite world. All of us wish them the very best of luck!'

