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Technology Update

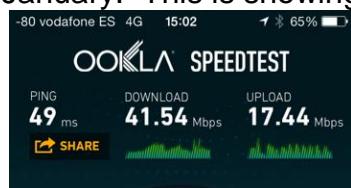
The old year has closed, and the new one has started at full speed with some exciting developments and launches in new technology. On 8th December, we saw the successful launch of the first Inmarsat-5 F1 satellite for the new Global Xpress VSAT service, paving the way for the GX service trials to start in March, with a possible regional launch after that in the Med and Indian Ocean. Then, in mid-December, Kymeta hit another milestone after successfully testing full transmit and receive over satellite using their radical flat panel satellite antenna. In early January, we have recorded some impressive bandwidth performance tests using 4G LTE in Palma and on the mainland. Finally, over early January, we have had the Consumer Electronics Show (CES) in Las Vegas where we saw the launch of curved TV screens and where BYOD is being replaced by WYOD! If you have no idea what I'm talking about, then please read on...

Where to start? Let's start close to home.

Performance test results on the new 4G LTE services

We have been testing the performance of the new 4G LTE on our **e3.3G+4G** Vodafone network in Palma and Barcelona over the last few weeks, and have achieved some pretty mind blowing results.

In the port in Palma we achieved the following results in mid-January. This is showing a 41.54Mbps download speed on an



iPhone 5! Note the upload speed is pretty impressive as well. In Barcelona airport, where there is a higher load, we achieved 25Mbps, which is still pretty amazing.

We then conducted tests using different 4G LTE routers, as would be installed on a yacht rather than an iPhone, at 3pm in the afternoon and achieved results ranging from 19.75Mbps to 31.56Mbps when compared to 33.36Mbps on an iPhone5 at the same time. However, please be aware that the 4G LTE network is not fully loaded yet, so these figures may not be maintained once this happens.

It seems a pretty obvious option doesn't it? Our tip is to upgrade to 4G LTE now to take advantage of the performance and to supplement the bandwidth on your VSAT with 4G LTE when in range with a super-fast and cheap add on. A 20Mbps dedicated VSAT service currently ranges from \$125,000 upwards per month!!

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The only hitch is that you will need new hardware. Making sure you choose the right equipment is not an elementary exercise. We know, as we have spent months researching the frequencies and band that 4G LTE works on in different parts of the world and now have defined the best solutions for different parts of the world, even down to the antenna and cable.

Inmarsat-5 F1 Global Xpress (GX) satellite launch

Inmarsat successfully launched the first satellite in what will be their new global VSAT data network **Global Xpress (GX)** for its mobile customers and more specifically maritime clients on 8th December 2013.



This first GX satellite will provide VSAT service across the Indian Ocean and the Mediterranean and link up to the other satellites once launched, providing a true global VSAT service.

The next phase is to commence testing at the start of February. We will be conducting trials with yachts starting in the second quarter of 2014. If you are interested in joining this test programme, please contact Tony Holland tony@e3s.com.

Kymeta reach major milestone in flat panel satellite antenna development

On 10th December, Kymeta Corporation, our colleagues who are developing the innovative metamaterials based flat-panel antenna for satellite communications, successfully demonstrated bi-directional high-speed Internet connectivity with a Ka broadband satellite.

The initial tests included simple bi-directional Internet connectivity and video streaming, and then they launched a bi-directional Skype video call from a laptop at the demonstration site to Kymeta's corporate headquarters in Redmond, Washington, USA. All tests were successful.

Check out www.kymetacorp.com/kiosk for more detail.

The Mother of all Gadgets Shows in Las Vegas

I have yet to attend the CES (the Consumer Electronics Show), the world-famous technology and electronics trade show held in Las Vegas. It's been around for nearly 50 years, and these days you can follow it remotely, almost by the minute, if you feel the need to.

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The Show covers everything, but the common theme is that every device needs to be connected, and needs access to a data connection. There were Smart Diet Scales that connect to an App on your smartphone telling you what food you can and can't eat, the Koliber connected toothbrush that connects to an App to provide tooth brushing instructions, and even an App that rings your phone when your doorbell at home is rung, so that you can see and talk to the person at your door from anywhere in the world.

If you have seen any reports on the CES such as the BBC Click coverage, you will have seen that new TVs hit most of the headlines, and the biggest headline feature in this sector was "curved" TV. Why? Very few of us have curved walls to mount a curved TV on, so I decided to investigate further.

Both Samsung and LG announced 105in (267cm) sized 4K Ultra HD screens in the extra-wide 21:9 aspect ratio and they also showed their prototypes, which allow viewers to adjust the curve on their OLED (organic light-emitting diode) flexible screens by using the remote control! Evidently the reason behind this new feature is so that the viewer can adjust the displays to be more curved and thus create a visual wrap around sensation for playing video games, then flatten the screen in order to watch sport or other content with others. Sounds interesting.

Tarsier launched special glasses called Move-Eye, which monitor the viewer's hand movements, allowing them to switch channels using gesture controls. This brings me neatly to the move we are all going to make in the near future from BYOD to WYOD.

BYOD stands for Bring Your Own Device, and WYOD is, of course, Wear Your Own Device. Following on from my recent column on wearable technology being the future "must have", CES was awash with WYOD.

Google Glass was present, but take up on will happen when they announce a more reasonable price. There were many other smaller companies launching similar products. GlassUp showed off a pair of glasses which superimpose smartphone alerts, directions and other app information over the user's right eye.

Much of the other wearable tech focused on fitness.

There was Instabeat, a waterproof heads-up monitor that attaches to swimming goggles to show the wearer's heart rate. Veristride promoted a shoe insole sensor that provides feedback about the owner's movements and Singapore's Smartmissimo showed the world's first wearable "smart electrical muscle stimulator" for athletes.

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WYOD is sure to have an impact on the data demands on yachts, as guests will arrive not only with their smartphones, tablets and laptops but also with all sorts of wearable devices attached to their bodies! So be aware, be very aware, and be prepared as there will be more demands on your precious on-board data connections - however there is a solution! More about this next month.

Roger Horner of e3 Systems

For further information on any of the above, please contact us.

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