



Islander March Technology Update

Technology through the 15 years of e3!

e3 opened for business at the end of February 1996 in a small office opposite the royal palace in Marivent. We built a big round table in a showroom with four PCs on it with dial up data connections: This became the first Internet cafe in Palma. It was an experiment that we closed after six months, but e3 has continued with the same pioneering spirit ever since. Since those early days we have investigated and explored new technologies, and have even developed some new ideas ourselves.

In 1998 we decided to develop a single source weather system called Meteoview. We identified the need, as requested from almost every yacht captain, who asked us the same question, "Is there a way we can get ALL our weather information from a single source?" As a result we developed Meteoview with colleagues from Dartcom in the UK whose Meteosat system we had installed on a very large local yacht. We had a server in the UK and another here in Mallorca. We developed software to run on a PC onboard that dialled up one of the servers on a regular basis to download compressed raw data. The data was then processed locally to display synoptic charts, cloud images, wind speed, wave height, local station reports and yacht reports.

We had a unique idea that as part of the download the server would upload the GPS position and wind speed from the yacht and re distribute this to other subscribers. This was a very advanced service in 1998. It worked very well for the first year but we had a problem with the "new digital sat com data channels" and the price of the weather data was increased to make it too expensive. Compare this with today's services like passageweather.com, accessible for free using any Internet browser for weather anywhere from anywhere in the world! However, none of today's services upload data back from the yacht.

Since those early days, we have developed the Seetrac tender tracking system, and together with MTN we specified and launched their yacht VSAT service, currently one of the most successful services. We have also designed and created eVSAT, e3G, eCell@Sea and the eDSC Data Service Controller.

One of the problems we had with Meteoview was the new technology involved in satellite communications. Fifteen years ago yachts were using Inmarsat A, B and standard M systems. Inmarsat A was the original Inmarsat system and used a huge dome and had FM analogue voice and telex with a dial-up data service. Standard B had a large 1.2m dome, slightly smaller than the A, was digital and had a data service of 9.6kbps with a "high speed data" option of 64kbps and that by using 2 could achieve 128kbps at a cost. Standard M was smaller but still large in

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comparison to today's Fleet Broadband antennas with a data speed of 2.4kbps. This paved the way for the mini M in 1998. It was launched with a 50cm antenna and a year or so later an even smaller 25cm antenna. The KVH TP50 and the TP25 launched KVH into the Inmarsat systems market. It also opened up satellite communications to a whole new smaller yacht market place. The mini M had voice, fax and data at 2.4kbps.

Then, as per my Islander column titled "Smaller, Lighter, Faster", in May 2003 we had just returned from the launch of the new Fleet 33 and 55 at Inmarsat's head office in London. Inmarsat had launched their Fleet 77 in 2002 to replace the standard B. The Fleet 77 is 77cm in diameter with a data speed of 128kbps and the Fleet 55, at 55cm, with 64kbps.

In 2003 the VSAT was launched. We installed the first yacht VSAT, serial number 0001, on the refit of M/Y Passion in Astilleros de Mallorca. At that time the VSAT was advertised as true broadband at 128k/512k for a fixed monthly price. We achieved 9.6kbps when we activated it! Strangely enough the owner was not impressed. Today, VSAT technology, is the "must have" for every yacht. We have clients who are live streaming video at 2-4Mbps anywhere in the world.

The existing Inmarsat satellite constellation was up to capacity and Inmarsat had, some years before, put in motion the design, development and launch of their new I4 satellites. These are now up and in place and over the last few years we have been installing Fleet Broadband 500, 250 and 150 terminals on yachts that use these new satellites. These all have voice with varying data speeds, but now up to 384kbps.

Last year Inmarsat announced their \$50 billion investment to design, develop and launch their own VSAT satellites and to start a broadband service in 2014 of 20Mbps on 60cm antennas worldwide!

In the last 15 years we have gone from a dial-up satellite data connection on a 1.3m antenna to a 60cm VSAT antenna with a few Mbps of data speed and by our 20th anniversary we will be seeing 20Mbps as standard.

Satellite TV technology has seen the change from analogue technology to digital. In the late 90s we had yellow cards in our English language sat decoders. There was always a black market in cracking the analogue cards. Then digital came in and the Digibox had blue cards. To this day with HD and now 3D no-one has successfully managed to crack the cards as they did in the old days. Digital has brought with it a whole new user interface and services. There have been a few improvements in dish technology. The satellite dish of a yacht stabilised antenna is well honed. The shape of which has been designed using some truly powerful processing power. Likewise LNB technology has taken small but important steps forward. However as each antenna gets more efficient the gains made are easily lost by poor installation, bad weather or the broadcaster lowering the power of the service.

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It wasn't long ago that we all had big fat cathode ray tube (CRT) TV screens. In the late 90s we were still using CRT screens on our desktop PCs and as our TVs. We got our first PC flat screens in the office in 1998. Flat screen TV development started with plasma at huge expense. We have TFT and LCD technology now. Screen resolution has increased to High Definition and now we have 3D. The current batch of 3D screens will shortly be surpassed by a new patented 3D screen technology that does not require glasses to watch it. There is never the right time to buy that new TV is there?!

Over the last 15 years we have had a couple of technology scares starting in 1999 with the GPS rollover issue. Do you remember that? Just as every yacht had forgotten where they had stored their sextants and become totally dependent on their GPS for position fixing we were told that a significant amount of GPSs were going to fail at midnight (UTC) on 22nd August 1999! It was all to do with older version of software in older GPSs not being able to handle the "rollover" from 1023 to 0 and switching off.

Shortly after the GPS issue we had the "millennium bug". When was that? This was the biggest technology scare that never happened. What a lot of hype!

In the technology business we have had our share of new legislation that involves the use of technology. It's a "chicken and egg syndrome" with legislation and technology. Which came first? When the GMDSS legislation came out in 1998 was the kit developed for the legislation or was the legislation made around the technology available?

Since then we have had the International Ship and Port Security (ISPS) that introduced the Automatic Identification Systems (AIS) and Ship Security Alert Systems (SSAS) as a compulsory carriage requirement for some groups of vessels and more recently Long Range Identification and Tracking (LRIT) that required older sat C terminals to be updated and tested. In the next few years we will see legislation and training relating to ECDIS systems.

That is a small sample of the steady march of technology over the last fifteen years. Never before in the field of technology has so much progress been made in such a short period. Onwards and upwards!

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