



**Islander June 2013**

## **Technology Update**

### **Glass, Radical new Inmarsat Service and Cruise Ships**

### **Future Technology for Yachts Seminar**

In mid April we ran our first Future Technology for Yachts seminar at the fabulous Automobile Club of Monaco, which will be hosting the Grand prix in the coming weeks. I was pleased to introduce Dr Waguih Ishak from Corning Glass as our keynote speaker. He wowed the audience with Corning's vision of how our lives will shortly be transformed and governed by interactive glass. If anyone has seen the fascinating videos "A Day Made of Glass" and "A Day Made of Glass 2" then you will be able to understand the vision, and how this is set to make a sea change to our lives.

Dr Ishak told us that they made "A Day Made of Glass" with just ideas and no substance or development plans, but were so surprised by the millions of YouTube hits they had that they immediately convened an internal meeting to look into the possibilities of developing such technology. They brought in companies such as Samsung and LG to develop on the ideas. They chose a few of the ideas and have now some working prototypes. With these ideas they made "A Day Made of Glass 2". Dr Ishak was at pains to make clear that Corning only makes the glass, and the electronics companies make the intelligence that goes into the glass.

### **Flexible and Gorilla Glass**

The glass technology alone is fascinating. They can produce glass that is flexible and can be rolled up like a drawing such that it can be taken, as you would a drawing, into an engine room where you need to refer to a drawing. We asked Dr Ishak whether it could shatter into fine fragments, which led him onto describing their extra tough glass that they refer to as Gorilla Glass. He proceeded to show us demonstrations of attempts to shatter it using everything from sledgehammers to rifle bullets, all with no success.

### **Transparent Transistors**

All glass sheets are constructed of multiple layers of glass. If the glass is intelligent, such as your smart phone screen, it has layers of intelligence in the form of transparent transistors laid between the layers of glass. Transparent transistors!!! I studied microelectronics at Edinburgh University in the late seventies. This technology has come a long, long way since then.



## Blind Messaging

We had a fascinating opportunity to talk with Dr Ishak over dinner the night before and he regaled us with some fascinating stories. One of these was that at Corning they were investigating the idea of improving the touch screen keyboard by making the key more prominent by raising the keys within the glass so that they were more tactile and, supposedly, more useable. How they planned or could do this still remains a mystery to me.

This was something they felt the market would want and it could be done and, as they always do, they conduct market research. They conducted the market research in Japan and asked teenagers if they thought this would be a good idea and were really surprised that the feedback they received was the question "Why? Why would you want to do that as we can type on our touchscreens with no problems?" A young lad then proceeded to demonstrate by typing a text message on his phone, while it was still in his pocket, i.e. completely blind! The researchers then discovered a remarkable number of kids could do this at terrific speeds and set up a competition to see how fast they could type on a touch screen blind. I cannot remember the numbers but they were so shocked at how out of touch they were with today's kids that they abandoned the project!

Dr Ishak gave us all a fascinating insight into how research and development is conducted in Silicon Valley, home to Corning and many other high tech companies such as LG, Amazon, Google and Apple to name but a few. The region acts as an incubator both for much of the technology we now live with and for that of the future.

The principle behind our seminar was to inspire, educate and entertain the delegates about future technology. I believe we achieved that from the animated discussions over lunch and the subsequent feedback we received. We also managed to arrange a tour of a super yacht for Dr Ishak at the end of the day to inspire him with ideas as to what Corning could develop for yachts to take home to California and to bring back to us.

### An Inmarsat service that will work for yachts – a radical new concept from Inmarsat

Can you imagine a broadband service that is unlimited, is global, and has a lower monthly fee than VSAT with a maximum term of 3 months and minimum of 1 month with no equipment cost?

Such a service now exists. We have worked with Inmarsat to help them define what a yacht needs. This new service has just been launched a couple of weeks ago.

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To be frank, it is not a new service; it is an existing and reliable service that was too expensive and too inflexible for yachts to use.

Almost every yacht less than three years old already has a Fleet Broadband 500 (or 250) terminal installed and these can be used with this new contract on a seasonal basis or on a month-by-month basis anywhere in the world (the only exception being the poles).

Thus a yacht that already has a Fleet Broadband 500 (or 250) system installed does not need to buy any new equipment or have it installed. It doesn't even need a visit to the yacht. All that is required is a change in the service contract and this can be handled remotely.

The antenna is also smaller than a VSAT at less than 60cm diameter and only weighs in at less than 20kg so it is much more suitable for unobtrusive, weight sensitive mounting.

So what are the limitations when compared to VSAT? The only limitation is the maximum data transmission speed of 432kbps this year. However if 432kbps is deemed fast enough for your yacht's needs then it is a simple and clear option as it beats VSAT hands down in every other feature.

Next year we hope to be able to offer an upgrade of the data speed to at least 10Mbps on a 60cm dish. At that point today's VSAT will have no better features!

### **And finally...**

I am writing this on-board one of the world's newest and most high tech cruise liners – the 126,600 ton Celebrity Reflection. This vessel is 266m long, is diesel electric and generates 52 Mega Watts (enough to power 4,000 households). Each Azipod drive generates 88,000 horsepower. As one of the latest top of the range cruise lines, together with Royal Caribbean, they use Harris Caprock for their VSAT services and to provide a wi-fi service. The crew have to pay for their wi-fi and the guests pay \$0.75 per minute or purchase a package. When fully loaded there are 4,200 people demanding data services on numerous devices. I have to say this makes data loading on super yachts a walk in the park, but cruise lines manage their data by imposing charges, and this works for them. Is this something that we should also learn from the cruise ship industry?

### **And really finally...**

The Celebrity Reflection cost \$865 million to build. It was built in 13 months, in Germany, and is of the highest standard I have ever seen on any super yacht. It begs the question as to why super yachts cost so much and take so long to build?

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