

## PROJECT USA 2007

Conference Day 2 — Thursday 10<sup>TH</sup> May 2007

### Ten Minute Stake Out

InteliSea LLC  
Lantic Systems A/S  
Marine Technologies LLC  
Radio Zeeland DMP B.V.

### Martin Redmayne

If anyone can see Esther, tell her I need her. Dan are you going first? Come on up.

Essentially just before Dan starts, you can see on the power point slide there, make sure you're in the main entrance by 7.30, those of you who are joining us for dinner tonight. The Merrill Stevens party. It should be fun. Our thanks to Doug Sharp for allowing us to use his little yacht club here in San Diego; he helped us arrange everything there. And we'll kick off this final session, the technical stake outs, Dan Mickelsen from InteliSea is going to give you a 10 min sort of whizzbang discussion on InteliSea systems. Thank you very much Dan.

### Dan Mickelsen InteliSea LLC

Thank you. Good afternoon. Dan Mickelsen from InteliSea as Martin said. This form, it calls for a 10 minute interesting and incisive technical presentation on a brand new technology. Now maybe I've missed them but I've not typically found technical presentations to be all that interesting or incisive, and since I'm hoping to keep the few of you that are here awake, I'm going to avoid mostly the technical part. First let's get something out of the way. I paid for the privilege to speak to you today. That's full disclosure. So that means being another part of, or an extension of the 100second sell, I'm not necessarily here to give you a complete dissertation on the pros and cons of a brand new technology, rather I'm here to convince you, those of you that it's appropriate to, that our technology is right for you.

And it is right for you, and here's the shameless part. If you're the builder, owner or operator of a luxury yacht and you happen to want to run that yacht in the safest, easiest, most efficient way possible—hopefully that does apply to a few of you in here otherwise this really wasn't money well spent. Also in general I'm not sure how much brand new technology there truly is in the superyacht industry. I'd love to be able to tell you that we've figured how to deliver an alarm monitoring and control system using particle beams and bio kinetics and other really new stuff like that, but I think the reality is, most of the technology in the superyacht industry has been pretty well vetted someplace else, whether it's commercial shipping or the military, or aviation, or even RVs. It may be brand new to superyachts, but in terms of the technology itself it's probably not exactly bleeding edge. Now this is actually a positive point to make, this not exactly brand new reality, for a couple of reasons. First because the expectation of new technology is that it's only a few small steps away from development, in other words it may not be quite all the way finished. There's a great quote from a noted inventor and founder of Applied Minds and other ground breaking companies named Danny Hillis. Danny said what people mean by the word technology is the stuff that doesn't quite work yet. So this attitude, this belief

that anything brand new doesn't work, leads me to the second positive reason for making this distinction. There is a great deal of resistance to anything new in the superyacht industry. If it doesn't work, why would you want it? After all, the technology used for certain yacht essentials like floating has been around for a really long time and is essentially unchanged. And yacht builders are also craftsmen and craftsmen the world over tend to adhere to what's proven. And because today's yacht is increasingly bigger and more complex, builders also adhere to the adage if it ain't broke, don't fix it. Change is work, change is also the unknown. So as a new company I hear this all the time. Even if another product costs a builder time, money or reputation at least they know what that product is going to do. So brand new technology is not the devil you know, it's the rabbit hole of the unknown. So in the case of IntelliSea, I want to talk about not brand new technology, but I still want to label it in a snazzy way. So I'm going to talk about IntelliSea bringing a brand new modality. You see the definition up there. A modality is a way in which something is expressed, sensed or used, and that doesn't really sound threatening. In a world of alarm monitoring and control systems IntelliSea is brand new, but not in any of the ways that are scary or create a lot of work for you, or that break. Now when it comes to monitoring, it's not especially difficult to hook wires to sensors and to follow that up by momentarily displaying the data those sensors spit out. The hard part comes with what you do with that data. First do you collect data at all? Many systems treat data the way I do the things my wife tells me not to forget to bring home from the office. Not on purpose but most of the time I don't show up with what she asked for. So great. We collect the data. Since you can't do anything with it if you don't have it. Again, that's not the hard part. The hard part is how do you turn data into knowledge? This big stack of papers here is a printout of a log from the data collected on a 130 foot yacht. This is everything going on with every sensor all the time. And this stack of papers doesn't represent a cruise from Alaska to Costa Rica, or two weeks of travel, or even a couple of days. This stack right here is 3 hours of data. 3 hours. So I admit to being somewhat eco unfriendly in making a point. But the point is, you could have a stack this high or a stack a hundred times this high for a couple of weeks of data, but if it's given to you like this it doesn't do you any good. So how do we make that transition? From a stack like that, a stack of pure data, into a stack of knowledge. And what does that require. That requires a new way of expressing it, sensing it, and using it, and that's the new IntelliSea modality. Though most of us at IntelliSea are life long boaters we also came from other industries outside yachting. Aviation or information design, or software, or advanced automation. And in those industries we've studied these types of systems intensely, and how people use them. So intensely in fact that Martin and the good people at The Yacht Report asked me to write an article on crew resource management for the publication, and while that article wasn't at all about AMC systems, it was exactly about how we craft our AMC system and how we make data into usable knowledge. And that's not based on technology, that's just based on commonsense. Let's make a system in the way that a mariner wants to use it. Let's free the crew from the demands placed on them by the machinery and systems aboard a yacht and make a system instead which fits their modality of work. And it didn't take a lot of research to know that was a better way to do it. That it just took some commonsense. So we create knowledge in an easier to use, safer, more efficient system by applying the experience of our backgrounds, commonsense, research, and technology. IntelliSea is a brand new system, thought out from end to end, from the inventiveness and robustness of the industrial architecture to the intuitiveness of the user experience. The result is features and functions like nothing else. We've got alarm resolution tools and procedures. Anywhere access, from across the vessel or across the world. Instant trending and comparison of virtually any vessel data. Dynamic alarms and one touch control. Wirelessly delivered, multi screen video. Intuitive data visualisation. Automated safety and extensive awareness tools. In depth data

analysis, and even more. But the reason why I went through those is the same reason we discussed earlier, that we weren't going to make this presentation about brand new technology. IntelliSea is not brand new technology, it's a new modality using proven technology. But the biggest reason is that brand new technology—it won't sell you, if you're a builder, or an owner, or an operator of a yacht. We can talk about features and functions and cool screens and sensor packs and RFID tracking, all day long. That not going to sell you. The only thing a builder or an owner or a captain cares about this. Does it work. As I said, we've come from other industries. And in those industries we never had a customer express surprise when we showed up when we said we were going to, or surprise when they went to use our products and they did not break. They never expressed surprise because that was what was required, to be successful. Now I continue to be amazed in my couple of years in the superyacht industry that performance is surprising. IntelliSea is no longer just a new company with a great new idea. We're now the new company delivering real products to real yachts that are really working. It's not scary, or a lot of work, or unproven brand new technology, it works, it works, it works. That's the brand new modality of IntelliSea and that's the answer to the only question you care about. Thank you.

### **Martin**

Dan, thank you very much. Finn?

### **Finn Hjelm**      Lantic Systems A/S

Thank you very much. For those of you who have visited my so called exhibition booth next door, you might think that Lantic Entertainment Systems is just a small laptop computer placed on a table. That's not true. The fact is that all our equipment for the exhibition is stuck with the US Customs. I guess that they have fallen in love with the system and now they are giving it a thorough investigation which will last a couple of years. Anyway, the amount of electronic equipment and devices on board boats is growing. By collecting a number of systems you can almost control anything on board the boat. But new devices means new manuals to study and they may often be complicated. Lantic Systems supplies fully integrated entertainment solutions including all entertainment features and full cabin automation. It's a true multi user system and it's all at your hands. Now a system comprising that much functionality looks like a system which is very complicated to operate. Well Lantic is not. On the contrary. All you need to gain full control is this small elegant remote control. So let me show you how it works. With this remote control you can operate the screen menu here, simply jumping up and down, pressing these buttons, and pick up the entertainment you desire. So if you want to watch a movie, you press the movie button and you get the menu for the movies. You can pick up the movie you would like to see. If you press the same button but keep it pressed for more than a second you will jump to the internet, just like that. If you want to watch the TV you of course press the TV button and pressing more than one second will bring you to the CCTV cameras installed on board on the very same system. The same with music, and the radio, the lights, you can operate the lights or dim the light with this remote control, simply turn this ring to dim the light and keep the button pressed, call the steward. If you should need a more detailed explanation of how the system works, you simply press the guide button and you'll be guided through the system on the screen. And when you have chosen your entertainment you get detailed control by pressing the control button. That is, if you're watching a DVD and you want to jump to the next scene, you can provide it via this button here. So. With this system operating the remote control or perhaps the wall mounted LCD panel which we supply, you can get the entertainment you want on board, whether it's music, movies, TV, radio or

internet access. You can get the cabin control on the same remote, where you turn the light on, you can control the curtains and the blinds, and you can manoeuvre the air conditioning. And of course you can make the steward call. So further you can watch the CCTV cameras on board, and you can on the same system get your maps, you can get the radar display, wherever you are on board the ship. By using advanced streaming technology all you need to bring the information around is a simple Ethernet network. We stream the TV and radio signals through the servers and the servers contain also the DVDs and music and it's distributed to all locations on board where you desire. Here in the United States Palladium Technologies in Fort Lauderdale is our distributor and they install the system and they make service on it and in Europe we have a Dutch company covering the whole of Europe. In addition our own Lantic technicians can access the systems over the internet and provide the service. I should have loved to show the system next door, but perhaps I should call the Customs and ask if it's OK you come down there to see it. Thank you very much for your time.

### **Martin**

Thank you Finn. Ole ?

**Ole Morten Husoy**                      Marine Technologies LLC

Hullo, I'm Ole Morten from Marine Technologies and I'm going to try and get a 40 minute presentation done in 10mins. So I'd better get on with things. We started in 2002, put together a lot of dynamic positioning people and listened to a market demand. They wanted stand alone systems that you could also put together in to a totally integrated system. I'm talking of the offshore industry now. So the first goal was to get a certified dynamic positioning joy stick system and they managed that at the end of 2003 after only 16 months of development and since then we have sold approximately 250 joystick and dynamic positioning systems. Taking the advantage of the infrastructure in place between the IO boards, the computers and the screens, they went on to make thruster control, and then at the end, integrated navigation. Which is an IBS which far exceeds anything on the market today as far as I know, and I have been working the last 9 years in the industry, and we have established now two offices to meet the time changes around the world, one is in Norway with about 20 people and we have a Sales Office in Singapore, so we are basically covering the world 24hrs a day. This is our new facility in Mandeville outside of New Orleans, it's about 25,000 sq feet, we can at any given time have a three fold integrated bridge systems and five dynamic positioning systems under a factory acceptance test. And we've got all the laboratories, the warehouses built around it with offices and meeting rooms and so forth on the second floor. Now the overall goals for us. Starting in 2002 had its advantages, there was no luggage from any previous technology, we started looking at what was newest in the market and we put this together and found out that talking with the shipyards, installation costs is a big issue, everything is designed around Category 5 internet cables throughout. This means that we can have a much shorter commissioning time; our interface from a full bridge system down to the rest of the vessel is only three Cat 5 cables and 2 power cables, so we can come into a vessel, I'm talking a commercial vessel now, 6-8 weeks later than what's normal. When everything is finished on the bridge, we can carry all our modules through our 60cm door and set it up, 3-4 days commissioning time, and it's up and running. Service costs? One of the big issues; you see that engineers are travelling all over the world to set a depth switch or change a cord and they charge you \$12-\$15,000 dollars a pop. We have based everything on remote access. Remote diagnostics to every single part of our system, the dynamic positioning, the integrated bridge systems, thruster controls or even down to the

automation system. And my amount of functions go more on the DP system, the joystick or position keeping, I think you call it in the yachting industry, where you can have a very easy load on the thrusters, keep a heading in position, if you're tendering, if you want comfortable dining, set it towards the wave, I'll come back to that a little later. Now the term integrated—I would say in 2001 since the first time in Holland they had a paper on integrated bridge systems not much has happened. They've put more gadgets together and it apparently you can see what most of them do, it appears like a very good system and you have all the graphic user interfaces and all the applications available at your fingertips, but that is if everything's worked. Most of this is done by multi broadcasting. This is a very common way of doing it, and you either have KVM switching or you basically have an electronic switching of it that you're utilising the monitors more or less as a television where you're changing channels on it. The vulnerability of it is that you will have one CPU running at the S band, one for the X Band, and the automation system. If something happens to your CPU running the automation system, for example, you will lose it on the whole bridge. It doesn't matter if you've 5, or if you have 20 monitors, you only have one source of that information. But we have chosen to use UDP and not base it on multi broadcast. One of the reasons is on that graph, as you see there, 8-10% of broadcast of multi cast it will cause the network to fail. And more importantly, if you're going to have remote diagnostics going over nodes and routers, if you're using multi cast you can't go past them. And the UDP only sends point to point, which of course eliminates a lot of the access traffic, it's not just going out there like going into rush hour in a big city, it's just going exactly where the receiver is waiting for the information, it's a two way communication. This is an overview of how we set up our systems. It's all duplicated, you will see that all of the sensors are wired dually to two totally independent networks. This goes for the log echo sounder, gyros, and so forth. Network A, network B. Two sensor concentrators, this is where the serial lines are from all the sensors that you want to put up into your integrated bridge, go into. Galvanic insulation and there you go switching on net A and net B. I'll show you on the next slide how this is done when it comes into the bridge. This also gives us the possibility to take the automation system and the thruster controls on the same duplicated network. If we put the software for the supplier of the third party automation system on all our computers on the bridge, we'll have access to it. The automation supply just sees it as two extra operating stations on the bridge and of course the system administrator, which normally is the chief engineer, will give you limited access for the navigators, I don't trust them and I don't blame them, even though I'm one myself, but they'll give you access to the ballast on a need to know, and you can just monitor the rest of the system. But it's very important when it comes to alarm handling. Because you can see what's going on in the engine room and give you a little notice if you start getting a slow down or you see that alarms are going off downstairs, you can prepare yourself for a situation coming up. And of course through the PABX we offer remote diagnostics, we can do a full access on a mobile phone line, 56 kbs will do, and we can log in and see the same as you do on board the vessel. This is the bridge system cut down. Anything that goes on a serial line, like search lights, navigation lights, deck lights, window wipers, washers, air blowing through afterwards, fire alarm system, they're duplicated into the sensor concentrators and sub system like safety systems, CCTV and alarm and monitoring system will go in on two switches. But this means all of this in addition to the sensors will be available at any of our multi function workstations. These are set up like this and contrary to the multi broadcasting each and every one of these multi function workstations can run the whole vessel, because the software for the radar, the Actis, the conning, the CCTV, you name it, whatever you have as a sub system or sensor if you want to control, we will load it into all the computers and you just multiply with how many workstations you want to have on the bridge. And they're all duplicated information through the network, so all the processing is done locally in the computer.

You can have all five of your monitors showing radar from one transceiver, one antenna, but you can individually put the gain and the distance etc so apparently you have 5 radars, but no, they are from the same antenna. And the same goes for choosing which network we're reading. We don't use managed switches because experience has shown that if you have one network that's going on and off and the managed switches reading sometimes from A and sometimes from B, you will have glitches where sometimes it's reading neither of the networks. So what we've chosen to do is the process of which network you're reading is in the process stations themselves. So these will just have identical information flowing around the system. We've chosen to remove the hard disks, as statistically that is one of the things that go wrong after 3-4 years, you have to start changing hard disks and then you have to reconfigure them and most of the time you will have to get people from the supplier to do this. Service engineers. So we have based our computers on an 80 gigabyte flash disk, that's where we put all the applications, and the operating system is on a different type of flash, up to 2 gigabytes, we have removed the battery for the BIOS, we burned it on an e-prom and there's no fan, so there's absolutely no moving parts on it and it's only about this big by this; if you go and see our set up here, you'll see that we have one in each arm rest, and we can stack 6 of them in a frame like that and have it in a cabinet but virtually anywhere under the normal consoles on the bridge. This is our mode selector system. If you have a problem on board, you call us up, whatever means of communication you have we'll call the vessel back, double click on this one, and you will go through the PABX and straight into the whole network. We can go down to sensor level, we can fault find in the same way as a service engineer from Sperry etc using the same tools as they do for their equipment, we can identify what's wrong and we can tell you what spare part it is, have it ordered for you, next port of call, and when you get the part you call us back up and we log on again, we'll tell you on another line how to do it, change the part, and we can help you set it up because we're reading the same things as you are from our service offices. So after we've commissioned the vessel and sent you off into the blue I hope you never have to see our ugly faces again because that will be the cheapest for you; there's no service engineers coming aboard; we will administer this from Norway or from the United States. Now I don't want to step on anybody's toes here, I've taken this off the internet and I've tried to use European yachts because there's less chance that any of them are here. What I want to indicate is look, you have these beautiful large windows on the bridge, and between the navigator and that you have a lot of consoles that is more like looking out of a tank in the middle. That's what you have left to look out of. And there's a mixture—this if obviously office monitors, they can be dimmed to zero, here is beautiful wood, there is green, there's grey, there's another shade of grey and black and these are all stand alone control panels. Now they might be a beautiful system working one by one but for one operator to be there and having to move this wide space to get the information he wants, is not ideal, because he has to move. He can't be in one location and get the information in. This with a slanted window and flat radars, maximum reflection at eye height. Not ideal at all. Again, they've got the radar about as far away as you can get from the operator. Question mark—why? This is how we've chosen to deal with it. Everything we have of sensors is a graphic user interface, all of these are multi function workstations and we have put in, for practicality, two keyboards and a roller ball. But these are all 23" touch controls. The one we have on display here is 19"; for a 25metre yacht and up, it would be suitable. This keyboard is in case you want to write something on the Actis, in the automation system, you have to make some notes, way points and so forth. This is the last bridge we sold to a seismic vessel, 6 x 23inchers, from the chair you can actually remote control any of these monitors or whatever's hanging up under the ceiling. This is a suggestion we put on a retrofit of a yacht; this is with 19", they insisted on having roller balls and keyboards in addition to the touch controls and they have a DP1 for electronic anchor or for keeping track, heading control when

you're tendering and so forth. And they had a brand new radar on board so we interfaced that one and you can command that one through the system together with a new radar. Now this will be the start menu, when you start up any of our multi functional work stations. Go there, you've got the automation system, you close it like that. CCTV, click that, it's from one of our factory acceptance tests, it's one of the security cameras in the older location. Open the radar, click like that, it's fully operable. Auto pilot, these are indicators, instead of having analogue indicators, it shows you the rudder and the pitch and set points. This is remote control. This is from a supply vessel and from any of these I can choose whatever one I want to remote control. This is another notion—you click up this, you can have four different navigators have their own personal set up. For docking, transit, in port and safety. So the first time you're sailing in transit with this vessel, you configure it like your car radio and next time you come in transit you log in, push the button and you're up and rolling. The chair—you've got rudder and pitch controls on both sides, both tunnel thrusters and the joy stick. This is what it looks like. And full control of multi function workstations. Autopilot, soft control, you can just touch it and you can control everything like you can on the hardware model but it's done on a graphic user interface. Not that vulnerable, if it goes down, your current hardware, you're screwed. You have to get a new unit. With us, you can just go on the next monitor and you can pick it up there. So that's the flexibility and redundancy part of it. I've just been notified I have less than one minute left so I'm just going to go quickly through this. These are the applications that come standard with our units. Conning display is naturally customised to the yacht, whatever propeller configuration you have and docking mode will show the thrusters, in transit mode you will show what heading you had and point to the next waypoint. This will be a typical example of having three overhead monitors showing pitch, rudders, wind, sidethrusters and so forth. Joystick DP, just different pictures; this is what you can do with an electronic anchor, if you want to keep it up towards the waves you have it at a set position, it will give you minimum movement of the vessel. If you want make a lee for your tenders you put it so you're using your broadside to the tenders and you can adjust it, you control it back and forth with a joystick. This is, you can read it yourself, I'm out of time, these are the key advantages of our system, we think we have the most flexible system on the market today, not least a redundancy of having multi functional workstations and we think that the compactness and light weight of it for those who are concerned about that, we're unequalled. Thank you.

## **Martin**

Ole thank you.

**Juuls van der Meer**      Radio Zeeland DMP B.V.

Good afternoon. I'm Juuls van der Meer from Radio Zeeland and I will keep this one quick because I know you want to go to the bar and to the bus for the dining. So I want to tell you a little about what we do, and wheelhouses and wing stations and stuff like that.

So we're supposed to go for new technologies and in the field what we do is custom built electronics. This was planned to be here in the next room but just like the guys from Lantic, we ran into a little bit of trouble with Customs. Ours is stuck in Dubai for 56 days now. Thank you. So I do it a little bit with a powerpoint presentation; I was supposed to tell you anything about the custom integration, the design, our Actis, our conning, our panels, the controls, the monitoring. So to speed things up as we don't have it here, probably you've seen it at Fort Lauderdale or at Monaco, a changed version will be on the next boat show so any boat show, you visit us and play with the

real thing. Custom integration—this is an example of what we do with it, making integration truly custom. This is a radar keyboard, especially for the series of black box radars. Brilliant radar only the keyboard is a little bit clunky and this is a waterproof version which we developed especially for a project we're doing for a beautiful catamaran. Besides specific electronic designs we also assist designers and shipyards and projects with the overall design. This is an overall design of what we do on an OceAnco, some Giorgio Armani design, based on his sketches, some rough Autocad drawings from the shipyard we assist them in what will actually, can be, built based on those ideas and concepts. We also have Actis, as we have Actis from our commercial side of the company and we are fully certified to do whatever we want to do with it. We can also customise these, of course, until a certain level, because there are a lot of rules in Actis. Conning, also, with our background and knowledge from the commercial market we adapted, or not adapted, we programme it from scratch for your project. So it's always a one-off. Panels, that's what we do. This is a smaller yacht, recently launched, it's an 80footer so not that huge but still you can do beautiful things with integration, matching the interior design and still have all the functionality there. Custom controls, and custom monitoring, not just custom by hooking up to all the systems which are there, but also adapting the design of the software towards the design of the project. See the bottom part, that's a more conventional design, the middle part, the black one, you see a logo of a project straight through there, that was the wish of the owner and it's a little bit more aggressive. It's not just all functionality, it's all custom built. So new technologies. About the last project of last year, new technologies what we have done the last 12 months, we've changed some technologies in our panels, we changed some technologies as the backbone in our panels and we went for glass. The custom panel design—that's mainly the look and feel. What you saw yesterday with the guys from Digital Veneer, I think it was, that's exactly what we do also with our foils. Before it was all screen printed, screen printed has limitations on design. We also do now spot printed, that's why the custom built panels can also mimic, like here, a carbon look or whatever look. So that's a change. Furthermore, the base plate, the top plate, where it's all mounted on, where all the electronics are built on is based on an aluminium structure or it's based on a stainless structure but we now have the possibility to not only powder coat it in any colour but also put a metal finish in any shape or form you can think of. This is the actual real thing of the prior presentation of a prior page—this is an all chrome element for a real astonishing sport fishing—sport fish we are doing now with Voith Systems and it will be quite something special. From the same yacht you see also what we do with the integration and giving things a little bit more shape, more design, and working with all the electronics and with the interior designers. You see that these elements up front—those are real custom elements, especially for the owner, which drives a beautiful sports car, has also these elements in his sports car, in the middle you see the guys from MT, the joystick of the DP system and that's how the possibility of integrating all kinds of third party elements into the design. Other new technologies were the panel backbone. This is what we normally do. It's a foil assembly based on a top plate with a high performance bonding in between but mainly it's a tactile switch in between, which communicates with other PCBs and those PCBs actually have intelligence themselves, but all the information they feel and do up on an Ethernet connection. Our Ethernet is based on a UTP broadcast system just because we believe that anything on board should be hearing anything, should feel anything, should know anything, so that means what goes wrong, the rest of the system knows. Sounds really complicated, and that's why you can have other systems, on some special projects where they don't want to go all the way in fancy electronics, to also take a step back, make it more simple, and these PCBs give out directly signals, direct contacts, or whatever. So with a little bit less intelligence in them. Another

change is that we have also have the infoil structure where all the actual switches are inside the foil structure, the back lining is inside the foil structure. It's real thin, real slick, but it gives you a lot of restrictions on what you can do with it. So depending on the application we go for one of the three technologies. The last new technology. Glass panel. This is what we don't previously have, on glass. Simple, just a gyro repeater, it was a true deck mount gyro repeater, on sailing yachts so in the cockpit, right between their feet, they had the gyro repeater. Just an idea, but there's a lot of talk about glass bridge, making it a real glass bridge, that was our adventure for the last few months. And currently in our production facility, and they hope to make the Monaco boat show, it's a true glass bridge. This is a rendering, because the production wasn't finished and we don't want to show you any half products, it's a rendering of the actual glass panel. We switch it on, all the buttons light up in red. So it's actually glass that you are switching. In fact it is based on a capacitive switching technology and it senses, if it's touched by finger or just a raindrop or complete hands. If it's a raindrop or a complete hand it will just ignore it. Or it's just your cup of tea you put on the glass plate it will ignore it. An actual finger at the right spot, that will switch. So it actually switches glass. So there you have it again, and it gives, it opens up a real strange design feature, making true glass bridges. So those were the three technologies. What we did the last 6 months. Those 6 months we spent at Directis, Hackfords, Heliyards, Mulder, OceAnco, the whole bunch you see over there and on average we have a project a month that we supply and we're doing that now for around 15 years in yachting and it's a family owned business and we're now for 38 years in business, and we hope to be in business with new technologies for years and years to come. So that was my quick presentation on custom built panels and products from us. Thank you.

## **Martin**

Juuls, thank you.

OK, there you have it. Thank you very much guys. The four people you heard in the last hour are all next door with their products and you'll have more time with them to chat about specifics if you need to.

I'm going to close the session for the day, we'll reconvene for breakfast again at 8 o'clock next door, the legal session starts at 9 o'clock and don't forget, the buses will leave at 7.30 in front of the foyer. Thank you very much for today.

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