

GSF 2007
12-15 November 2007 Amsterdam

COMMUNICATIONS AND BROADBAND

Oigen Blankert	Radio Holland
Mads Bjerre-Petersen	KVH Europe
Kartik Sinha	Inmarsat
Andrew Schofield	M/V White Rose of Drachs
Derik Wagner	MTN Satellite Services

Chairman— Martin Redmayne

OK. The next session is Broadband/Communications. The key thing here is that we have invited 5 people to come and talk about Broadband Communications—4 of whom represent the manufacturers; one in fact is the captain of a yacht where the owner has bought a manufacturer and loved the system so much—the system's been working on his yacht for some time now; Andrew Schofield, Oigen Blankert, Mads Bjerre-Petersen, Piers Cunningham—haven't seen you for a while Piers, how are you? Oh Piers isn't here? Oh thank you. OK, gentlemen, please. Take the stage.

The idea is that you're not overly sold on their systems but they want to give a three minute introduction—who they are, what they represent in terms of technology and then we'll open up as much debate as possible, giving 30 minutes of discussion. So if you all do a 3 minute introduction that way we don't overdo the pitch. Andrew, do you want to start off? Because yours is the interesting story.

Andrew Schofield M/V White Rose of Drachs

Hello everyone, my name's Andrew Schofield. I'm master of a 65 metre yacht called White Rose of Drachs. I've been asked by Martin to speak about VSAT from the point of view of an end user. And I've got several subject headings that I will not be expanding upon but I'll give you the headings. These are: before VSAT, after VSAT, the owner's experience, connectivity, crew welfare, operating the system, shadow sectors, overheads, remote log in, which was the subject of a previous session, the fact that VSAT is now critical equipment and where's it going, what's the future.

I should explain that as well as operating a large yacht I now represent a company called Global Marine Communications, which is a service provider set up by the Owner of the White Rose of Drachs and I liken it to the Victor Kyam approach to business—he liked the product so much he bought the company. GMC is a joint venture with Hughes Network Systems—Hughes provide the connection to the satellite. So who are Hughes? They invented VSAT technology; they build, own and operate satellites all over the planet. They currently have 66% of the terrestrial VSAT market worldwide. To give you some idea, Hughes bring live 12,000 VSAT sites every month. In September of this year they sold Camelot, the UK Lottery operator 27,500 VSAT sites. This means that each and every Lottery terminal in the UK will become independent of the terrestrial network. Hughes is in the process of rolling out a new mobile service and by 1 February 2008 there will be footprints available worldwide, including the Seychelles. And that's my intro.

Martin

Thank you Andrew. Oigen please?

Oigen Blankert Radio Holland

Thank you very much. I'm the Product Manager of Broadband for Radio Holland Connect. First of all I'd like to give you a brief introduction on Radio Holland as a company. It's part of Imtech and V, so that's our major mother company. Radio Holland is a service provider for the entire maritime industry, so not only the megayachting part but over 50 offices worldwide, founded over 9 years ago by a group of Dutch shipowners who wanted to improve safety and quality of life of the people at sea. And as of today we are still achieving that goal of improving the safety and quality of life at sea, on navigation and communication equipment. Within the Radio Holland Group there is a separate entity that has a full 100% focus on airtime, not only on VSAT Broadband but also on Inmarsat; we have a multi card policy in that so we do have our contacts in place with parties like the Inmarsat distributors. And we also have our entrances to several satellite operators. In the time that we have been working with VSAT we quite often hear that Inmarsat is a kind of VSAT system but made simple. I think that's true. VSAT is more difficult than Inmarsat—an Inmarsat terminal you normally switch on and then everything runs. But VSAT is more sophisticated and if you focus on maritime VSAT then it becomes even more sophisticated due to the fact that you don't have a fixed location where you run your services from, but you need stabilised platforms, you should be aware of the fact that as you are a moving object you'll have to deal with line of sight issues blocking.

So what are the expectations? What can a vessel captain or yacht owner expect from a VSAT—and that's something that I'd like to address during this discussion. What can you expect from your systems.

Martin

Thank you Oigen. Mads?

Mads Bjerre-Petersen KVH Europe

Hello everybody. I'm the Managing Director of KVH Europe, which is a fully owned subsidiary of KVH Industries listed company in the US. We have been focused for 25 years on doing primarily TV solutions for mobile customers. Focused on land and on marine and I think we are today probably one of the leaders of TV solutions. What we have also looked at a lot is that many people want, not TV, they want communications, they want something that is a complete solution. And the way we see the technology moving these days is that what was formerly known as TV only or on the other side Communications only, all that is today converging to an extent where it is one big combined effort which we call mobile broadband in a wide sense and we see the technology moving in such a way that in the future you may actually start receiving TV via Internet, you may see, or you already see, a lot of data cast being done over TV satellites. So it is converging to an extent where we cannot separate the two parts of the industry any longer. South Pacific this is why we are now moving into VSAT—everybody talks about VSAT—we also talk about VSAT a lot these days and we try to do it a little bit differently, looking into different technologies that allow us to do VSAT solutions which are smaller, lighter, less costly but still providing the same speed or even better than what's found in the market today. So we'd like to challenge the VSAT solutions in a way that we get the best solution together with what we do already inside TV.

Martin

OK. Thank you Mads. Now the Inmarsat—VSAT for dummies.

Kartik Sinha Inmarsat

Hi, good afternoon folks. My boss Piers Cunningham was supposed to come here today but on holiday he injured his back—we didn't ask him how. But that's why he's not here and I was coming anyway so now I'm sitting on the panel.

Inmarsat, just to give you a brief idea of what we do and who we are, for people who generally don't know what Inmarsat is, it does mobile satellite communications; we own satellites and act on a wholesale level. You've heard from my friends here that we have KVH as a manufacturer, Radio Holland again, we are there. And we are the only company in the world that does distress and safety, that's GMDSS, to provide that solution and approval by IMO. There are a lot of other providers there who do different things, but that's how Inmarsat started, as a safety standard for the industry, and from there on we've come through different products and currently going to launch what's called Fleet broadband which people say is like VSAT slightly different. I would say yes and no, no being that we have 30 years' maritime experience behind us, it's a product that was developed for the industry, yes it's more the words the merchant side, for the tankers and things, but then yes, it is—boats do stay at sea for that long period of time. But then it is a brilliant product, even for the yachting industry because today you can get high speeds, low cost, you have global VOIPs and it's global coverage. At the end of the day you could have the best thing—even when you're buying a car you want to know how safe it is. Will it actually protect you? And that's where Inmarsat comes in. You have global coverage. Now the part that I missed out, where I should have started, is a brief background about myself. Because obviously Piers has a very nice paragraph written about him, which I don't. So. I've been in the maritime industry for about 14 years, 8 as an officer, the rest as superintendent, after that, so I cleared my mates and masters, specialised in supertankers, some of them have polluted the world so we did get to see quite a bit of light on that. After that I've been with Inmarsat now for the past 7 months. So even though I'm new at the company I've had years of perspective, to see how things work.

Martin

Thank you. Let's have the MTN, one of the leaders in VSAT. Thank you.

Derik Wagner MTN Satellite Services

Hello everybody. I'm with MTN Satellite Services, which is now a new division under SeaMobile, which is our mother company. Some of you may not know us, but we've been around for a long time. Actually the company has been around for over 20 years and MTN is Maritime Telecommunications Network. Our co-founder, Richard Hadsell, really pioneered in maritime VSAT, bringing VSAT to the maritime cruise industry, back in the early mid 80s, first in the military and then he really brought on the first true broadband VSAT maritime systems into the cruise shipping industry in 1986. And from that point he launched live broadcast television from cruise shipping and so forth. Since that time, MTN has been truly really focussed on the cruise shipping industry and as of today I think we basically provide over 90% of the cruise shipping industry's communications with VSAT worldwide. From that strong base, in building a global network we've obviously seen the opportunity to branch out, and over the last few years we've had a number of yachts that have come knocking on our door actually looking for good VSAT broadband communications and we thought it would be a pretty good idea to look at doing that. So I actually came on board with MTN 6 months ago to launch into the yachting industry, focus specifically on the yachting industry. Some of you may know me from previously when I've worked with France Telecom over satellite communications representing the Americas for technologies such as Inmarsat and other mobile service satellite systems like Meridian and so forth. So you're going to be seeing more about us, hearing more

about us, we're looking at pushing forward to bring true broadband to the yachting community and really bringing in all these wonderful technologies that broadband VSAT makes possible in the maritime industry. Thank you.

Martin

Derik, thank you very much. Right—we'll open this straight up for a ½hour discussion on VSAT. I have in front of me about 8 good questions. Any questions from the floor first? Yes, Andy Gifford, please girls. You're sleeping already, aren't you? You can't take the pace. Down the front here. The guy with the solar love panel.

Andy Gifford Telemar Yachting

What can I say? Before we get lost in the VSAT world, I'm sorry sir, I didn't get your name—the gentleman standing in for Piers. We suffer from dome pressure in this industry. You know, we can only have so many domes on top of the yacht before it starts looking unlike a yacht. And so one of the things is that obviously in the past we did a Fleet 77 and we would do satellite TV and the two domes matched and everyone was happy. Now of course we're getting pressure to throw the Fleet 77 out and put the VSAT in its place and use a smaller system such as FB250 as a backup or FB500. My question is, will the 250 or 500 have in the future any emergency and distress function that would be recognised by GMDSS?

Kartik

To start off, my name is Kartik—I know it's a unique name, quite difficult to pronounce. But coming down to the question where you mentioned 250 and 500 Fleet broadband—GMDSS's functionality as of now is not there because obviously we do not have the Pacific Ocean region covered. But the third satellite is now going up, we have a scheduled date for that next year in March or April. Now once that comes on, then possibly we could start looking at the GMDSS side of things, on the Fleet broadband. So to say as of now if it is there or not? No, but in the future yes, because IMO requires that you have redundancy before you can be GMDSS approved. There should be redundancy on the system. So we're looking at that and with the new satellites coming up obviously it will take some time to put the things up which I'm told are as big as double decker buses. So it will be there, but just not yet on the Fleet broadband side.

Martin

Are you happy with that, Andy? Any other hands out there?

Tork

How far are we away from non-moving phased-array antennae?

Andrew

They're available today in the news on trains; they're a lot of money, but they're coming. The price will change and they'll become available.

Mads

Yes, we also do manufacture phase-array antennas for the industry, much smaller but I would say that technology—we've looked carefully into it and I do not see that as it is today becoming what we should see in the future for maritime usage. Also because the size constraints that we have for other industries like Blad mobile I do not see we have that same problem or issue with maritime usage so I think we would prefer to see efficiency and reliability having higher priority than size.

Tork

But there are aesthetic considerations and quite a lot of owners don't like the domes at all.

Mads

Yes but that means that if that should go smaller well, then everything should go smaller. But the funny thing is that we actually try to supply small VSAT solutions today and one of the first questions we had was, can we have this in a bigger dome?

Martin

Any more hands out there? I'm going to do a bit of a live buyers' guide. Going from left to right. Can you give me the price differentials, so—price of hardware, monthly usage price, ball park, one after the other.

Derik

MTN is really more of—we're the network provider behind the hardware. So you can use multiple hardware solutions with our product, obviously SeaTel being one of the most dominant products out there and we typically would use—our most common product is the Sea Tel 4006 which is a one metre VSAT antenna and is roughly retail \$55,000 for the hardware to start, and then with the service, with the airtime we started a package of \$2,850 per month which includes guaranteed bandwidth, starting at 64kbps up, 64 kbps down, and then we have an MIR, which is a maximum information rate of 128kbps up, 512 kbps down. And the whole idea is you get 4 standard VOIP lines and the below deck equipment, that's leased in with the product, which is an additional feature that we have in there for not only the voice quality but also for support reasons, we have a remote spectrum analyser and a full Cisco router system that's integrated into that pricing.

Martin

I got more than a price, but anyway. Inmarsat's price please.

Kartik

Inmarsat being a wholesaler we don't generally have partners being very happy when we start talking about price cycles.

I'll try to give you the price structure, which is going to be in place for Fleet broadband. The way it's being put forward is as you would on a GSM phone, so you've got standard plan, pre-paid plan for one SIM, and one which is a multi-SIM plan. That could be addressed across a whole fleet. Now obviously the first plan is a pay as you go, so you pay for what you use, and with the service being advanced it is slightly cheaper than what we've had before. I'd be hard pressed for numbers.

Martin

Get the camera off me please.

Kartik

Now on the second plan you give a certain amount and you get loads more back, that's sufficient.

Martin

You should be in politics! Please Mads?

Mads

I'll try to be more precise. We actually both offer free broadband and VSAT solutions. If we start with VSAT we have a track phone V7, the hardware cost is €28,000 so you

can do the transformation into dollars. And we have fixed rate plans and flexible rate plans, the lowest cost fixed plan is \$1,270 per month, which gives you 128 up and 128 down. If you want to go all the way to the most expensive, you pay about \$5,000 a month—for that you get 512 up and 2 MB down.

Martin

Thank you Mads. The Radio Holland position?

Oigen

Well, since we are a kind of multi card company I should be able to give a bit more Inmarsat information. Because there is something available on the market at this moment; the list prices are approximately let's say \$1.50 a minute for your voice line, it's about \$13.50 per MB if you start using your IGN services. And streaming media like \$50 per minute list prices, just to give you an idea of what to think about hardware pricing, I don't know. Nothing is really released yet but I would expect it would be less than a VSAT terminal. On VSAT I think that the \$55,000 for the SeaTel terminal is good average, not only for the SeaTel—there are other terminal providers like Orbit. They provide terminals at approximately the same price level. Service pricing on VSAT—that's something different. Starts at let's say \$1,000 per month and ends up on \$20,000 plus per month, all depending on your requirements. In the end it's satellite capacity and no matter what you do with it, satellite capacity has a price. And if you insist on having a certain chunk of bandwidth just for your use only, then you'll be the only one who has to pay for it. If you are willing to adapt to kind of shared services with guaranteed bandwidth applied to it with a minimum or maximum number of users on a particular carrier, then you'd be able to share this raw material, this satellite capacity cost, so that's something that normally I would say if you want to have a real cheap service you'll get less bandwidth. And if you insist on having a dedicated line to make sure that you can do your streaming media from several locations on board your vessel then normally you would have to adopt a dedicated service.

Martin

Oigen, thank you. Andrew— Go on, you can tell me some numbers, can't you?

Andrew

From GMC Orbit antenna controller modems \$60,000, base level service of 512 down, 128 up is \$758 per month fixed rate,

Tork

Sorry, you need to point yourself more at the microphone—

Andrew

Sorry. \$758 per month fixed rate, going up to 2MB down, 1MB up, \$3,000 per month. There's VOIP line on there, as standard, and you can add additional VOIP lines as required. Bandwidth is governed by a fair access policy, which is in effect a computer driven contention manager which will always give you typical speeds of two thirds of the headline rate. Just to add a little bit about the phased array question—I see a fixed-panel phased-array as being the way forward. I think we're going to see that happen sooner rather than later and I think we're going to get, once we get TV over IP by VSAT coming in then there will be no need for any domes at all, with the exception of GMDSS cover. And yachts are going to look very different in the near future.

Martin

Thank you Andrew. OK—any further questions out there before I throw another one at them? OK. Let's talk about—Andrew mentioned —oh Mads, please, jump in when you have something to say.

Mads

I will actually make a little bit of a comment about what was said on bandwidth, because it's true and it is not true, in that bandwidth can be utilised in many ways using different technologies. I think when you want to look at what's out there you also have to take an interest in the technologies offered to you. Typically most VSAT systems today are using what's called TDMA which is a technology that requires the total bandwidth to be very precisely timed and you do not utilise the bandwidth in an optimal way. There are other technologies typically called CDMA which is what is used for cell mobile phones and that technology uses the available bandwidth a lot more efficiently. We use CDMA—we actually use something called CRMA which is a code reuse multiple access and what it happens to do it uses the same frequency for up and down load. So that again uses the available bandwidth more efficiently so yes, it is true you have certain limitations in a bandwidth but it's also important to consider how you use that. Thank you.

Martin

Yes, comment please?

Kartik

Just to build on what has been said now about the pricing on the Inmarsat site. Yes, streaming does sound to be quite expensive but the price that was quoted for the streaming part of things is what we call broadcast quality streaming, which is used by the likes of CNN and BBC. And you have seen this product whenever you've seen them reporting live from Afghanistan or Iraq. The reason behind it is when you state the 256 streaming you have a guaranteed connection, regardless of weather, whatever happens, there could be a storm, you will get that connection and that's going to be—I mean all throughout you've seen live images on that same technology from the land version of the product being beamed to you; you just didn't know it was Inmarsat. CNN just won an award for innovation in reporting on the service. So this is the higher end of the side that costs that much. And that's the reason why it costs that much. Because that much resource is being used on an L band spectrum. Nine Inmarsat satellites operate on an L band spectrum, which is slightly different from the other versions available in the market such as Ku band or C band—this is when frequency is being divided into certain parts, the higher you go the more attenuation you get. You've probably heard of X band and S band radars—now Ku and C band generally tend to edge towards the X band side. So that causes interference and you won't have global, or if the weather went bad, you won't have that coverage—if you don't use an expensive piece of equipment or resource the prices are accordingly.

Martin

Thank you very much. Can we talk about contention ratios? From a buyers' guide point of view.

Derik

It's very important for people to understand that what you see on paper and what someone says what's being offered is—you need to look at the details more closely. For instance, I think one of the misconceptions in the industry is that there's lot of bandwidth plans that are being promoted and numbers thrown around, and it's misleading. In other words, if you said, if someone tells you there's a bandwidth plan that's 128kbps up, 512kbps down, you have to ask more questions on that. Because

you've got to ask is that a guaranteed rate, is that a maximum rate, really what am I going to get with that sort of plan? The contention ratio comes into play there. Basically in most scenarios, I won't use any names but if you have a 128/512 package and that's a maximum information rate, what that means to you is that that is the maximum speed that you'll receive, that will be your peak. So the real question is, what speeds are you going to get on average, and what might you get whittled down to at worst case scenario.

Martin

What does MTN give us on average?

Derik

On average it depends on what plan you buy for what's guaranteed. For instance as our base plan, we say CIR, that's committed information rate, that's guaranteed. So if our base plan starts at 64 up, 64 down, with an MIR of 128/512, so you're guaranteed at least your 64/64, but you're bursting regularly between that and your MIR, your maximum information rate. So you're always going to get your guaranteed, no matter what. No matter how many vessels there are, there's no contention on that guaranteed bandwidth. Then your average of bursting is between there, so on average you get at least 40% over your CIR and then you're constantly bursting up to your peak. So actually we give a lot more even than your guarantee, so you're constantly having a better experience. Now if you get business critical mission applications that require more, you're going to need to step up to the next level, 128/128 to 256/256, to make sure that that will always be guaranteed to you. And when you're in an area where there's a large amount of vessels, when you do come into what's called contention, on some networks, it depends on how it's managed, you will make sure that you're not going to get less than what you're paying for, as you would on a contended scheme, where people will say 8:1, let's say you have a service that's contended 8:1. What that basically means is that you have a fixed amount of bandwidth that's in the bucket, more or less, and if you have 8 subscribers on that same channel at the same time, you're divvying up that bandwidth. So if you had a 128/512 plan, on an 8:1 contention ratio, you're going to get 1/8th of that 128/512. So I think that's important to know. Now many providers are mixing it up so that's what you need to find out. Because they may be contended, or they may not. And you need to find out how that bandwidth is managed. And that's the number one thing.

Martin

Mads, please jump in?

Mads

Well, I agree with what you're saying, Derik. And then again, I'm a little bit disagreeing because I'll just give you a very simple way of illustrating what I'm talking about with this CDMA and TDMA and so on. Imagine that you are a piece of data, that you are standing on a station and you want to get on the next train. Now with TDMA the situation is that your ticket in your hand says if you have to go into wagon no. 3, seat no. 37. And if that train arrives at the station and seat no. 37 is taken, because there are 7 other users in that bandwidth at the moment, sorry guys, you have to wait for the next train. With CDMA you can just take any seat in any wagon so obviously you'll jump on the next train for a very good reason, because all seats very very rarely are taken. So that means it's much more efficient, so even though you have what we call contention ratio divisions and problems with these 8 or whatever number of users, the efficiency of using what's available makes a difference when you experience your actual data speed.

Tork

From a consumer's point of view, from a buyer's point of view, the problem with all this is it's not apples and apples, it's apples, oranges, pears and bananas. And it's incredibly difficult for somebody to actually establish which is the best performing supplier, and to be honest too, if they're getting what they're paying for, because it's not like—you know, you buy a car, it's meant to do 110 mph, you see 110 mph on the speedometer, well, it's more or less doing 110 miles an hour. The majority of installations don't have that data on your varying services. Wouldn't it be terribly useful to actually provide independent verified average figures for an average installation over one week? If each of you did that, then how you get to that point is kind of irrelevant. It's the fact that you're getting this much data in a week.

Martin

And published by *The Yacht Report!*

Andrew

I'll get the information to you. Talking about contention, look at it from a different point of view. With Hughes, for instance, they have 43MB of transponders over North America. That is shared with thousands of users. The mobile network rides on the back of that. But it still uses the same, as I mentioned earlier, computer driven contention manager. And Hughes publish speeds, you know exactly what you're getting for your money and you can log on to your site online, Hughes.com, and see what the traffic has been and what speeds you've been getting. So it's very open, very visible, as to what grade of service you're actually getting as opposed to what you think you're getting. And at the moment I couldn't agree more, I think it's very difficult to establish, make true comparisons. It's impossible.

Derik

I agree 100%. And to add to what Tork was saying, absolutely you should get what you pay for, that's the most important aspect of it. Satellite segment is expensive, there's no doubt about it, and I don't think you should be fooled about it, and you get what you pay for. And to add to that, I mean, Tork saying let's publish what you're getting—well, in MTN what we do is we have a ship portal, a ship tracker portal that has a number of different functions that you can utilise and log in to our website as well, seamobile.com, and not only do you get the ship tracker feature and some weather and things like that but you have a bunch of different bandwidth utilisation tools that you can see exactly what your usage is, above and beyond that we will gladly provide you with statistics over the whole course of —whether it's a month, a week, or a year, to show you exactly what you're getting.

Martin

Does the end buyer understand all that data? The end user, does he understand all the data provided?

Derik

The graphs are very simple, but if they don't understand it we will happily explain it to them. And we have a—

Martin

In MTN jargon?

Tork

But perhaps more critically, you can provide that data to your client to see that he's getting what he paid for, but pre-purchase are you able to supply typical data so that they can make the purchasing choice?

Kartik

This is more on the Inmarsat side of things now. With the Fleet broadband there are two levels—you have the standard IP where we say you get 432—this is the contended side. Now we don't, unlike some of our other parties, we do not have anything as confirmed but on satellite side, on the network side, we do have what's called dynamic resource allocation. The system operates on spot beam so if you're in one spot beam and there's say 10 users there and none in the other spot beam, what the computer basically takes is resources from that spot beam and allocates it to this one, so you always get an optimum efficient service tending to that much. All that you've been told is that this is the maximum that you can get. I've used that service just recently at our office and I could say it's much faster and much better than the 8MB connection I get from BT at home.

Martin

Thank you.

Oigen

That's probably due to the contention ratio that you get to your service at home. I think. That's also what our experience is in the last let's say few years, what you're asking—what do I get for the money I'm paying. One thing that should ring alarm bells when you see a contract is if there is something mention like *best effort*—because—

Tork

I think that applies to any contract!

Martin

We'll build this yacht to best effort!

Oigen

Well, to almost any contract, that's correct. But best effort is really something that's missing quite often in services. What you also will experience and what we experience is that in the beginning when the service is rather new you have a very, very nice connection. You get high download speeds, high upload speeds. But as soon as the number of terminals is piling up then you have to share, so that's why after taking a good look at the market we decided to build our own service and yes, we do guarantee a contention ratio and we do guarantee voice lines on that service that we provide. That is sometimes, no, that's always a crucial factor. Are you in control of your network. Or is the company who's providing you with a service in control of their network. And that's very important. That was the reason for us to start building our own service.

Martin

Thank you very much. Tork, one last comment?

Tork

It should be a fairly simple yes or no. While a number of the providers provide VOIP services, do you allow independent VOIP systems such as Skype or anything similar to that free access through your system? Yes or no.

Andrew

Yes. Skype's no problem to use because the bandwidth is always there. I understand Skype is very bandwidth aggressive, and will grab all it can.

Tork

There was some talk going round the industry that some systems actually block systems like Skype in order to gain revenue for their own VOIP service.

Andrew

I've been using Skype for the last 18 months on this and it works. The VOIP service is a separate pipe, next to the internet connection, shall we say. So that is never affected.

Martin

A final little question, which is part of the buyer's guide programme. Is it possible to give a clear number of users on the bandwidth from companies—how many users can you get on the bandwidth—the number of users?

Derik

Martin, is the question how many users can you put on to any one service and share?

Martin

The clear number of users on the bandwidth from a company. So from MTN how many users can you have on your bandwidth. Is it a fair question to ask?

Derik

It's not really, because the thing is you can put as many users as is physically possible—to the IP scheme. In other words per cent net per land net, there's 253 users roughly per land subnet. But besides that, it's really what the usage is going to be. The usage varies per user and that's what has to be determined. How much bandwidth is any one user going to be using? What applications are they going to be using? If they're just going to be doing email, through a base package, you could easily have 20 users or more. If they're going to be doing things like Skype you're going to want to have maybe only one, on a limited base package you may want only one person connected. But that's what it really comes down to. Just how much bandwidth each user is going to use. So it's not an exact answer.

Martin

Derik do you agree there's confusion in the market about VSAT?

Derik

There's very large confusion in the market about VSAT. As I was pointing out earlier it's the bandwidth plans, it's when you see a certain amount of kbps up or down you have to know more about that service. You need to know if that's a peak level, if it's a contended service, you need to find out really what you're going to get. That's what it comes down to. It's getting what you pay for. How that service is going to be affected when you have multiple vessels under one satellite, you also need to determine you know how is that service being offered? Who are all the folks involved in that channel between the distributor that you're buying air time from and the network operator. How many levels are in between? How much technical support are you going to get? When you call in support, who's going to support that network? Are those the folks that are really in control of the bandwidth that's going to the boat? Are you going to reach somebody at the other end when you need your support in the middle of the

night? Those are the questions you have to ask. It's really not that simple. VSAT's a more complicated world that deals with a lot of different satellites that are owned by different people. So it's really important that the companies that are distributing the service harness it well and can control that environment.

Martin

OK. Two quick comments. Inmarsat, then Mads.

Kartik

I'll just come to the question that was asked some time back about the number of users. Now I have no idea how many can be there but I can tell you how many are there. Just on the maritime side, Inmarsat has about 180,000 terminals. This is just maritime. We deal with aeronautical and land as well and these equally would have similar numbers on the service, so you can say we have a lot of spare capacity even now. Can the whole world log on at the same time? I don't think so. I don't think we have that capacity available. But yes, a significant amount can, and do. And have been doing.

Martin

That's a lot of air time. Mads, and then we'll have someone putting their hand up.

Mads

Well I think you're right that there is a lot of confusion at the moment with VSAT. I like your idea actually about somebody could at The Yacht Report take the initiative to maybe present some kind of data reference protocol of measurement, protocol—something that we could all use for our testing and send it in, or you take the initiative to do some testing. I don't know. It could be interesting. That's one comment.

The other thing is on Skype—I would like to mention that I'm not sure if people really recognise that if you have Skype on, it uses 165MB per month, just being there, not being used at all, just being on. So if we say, and all these other providers say, OK, use Skype, no problem, then suddenly there's a lot of bandwidth being utilised for absolutely nothing. So I'm just challenging that this could be a ticking bomb that suddenly people say sorry guys, you can't use Skype any more because it's just blocking the whole bandwidth.

Finally a comment on satellite usage and service and so on. I totally agree with what was said, and this is why we've taken the initiative to say that we do not want to rely on third party satellite service availability, which means that yes we do, but we actually go in and make agreements with independent satellite providers, transponder providers, to the extent where the VSAT service we offer is a bundle package which we offer the hardware, we offer the service, we take full control of everything and we guarantee what we sell, we want to control it from one end to the other.

Martin

Alan please, take this stage.

Alan

I've got a question for Andrew. Reference your 512/128 plan. What contention and CIR is associated with that, what do you get for your money?

Andrew

Contention on which one, sorry?

Alan

The 512/128. It works out at about 1:4.

Alan

Right. And what guaranteed CIR do you get with that service?

Andrew

You get typical speeds of 300kbps down, 60 something up.. it's two thirds.

Alan

Yes but that's not a CIR. That's typical speeds. What do you guaranteeing to user? What's a basic worst case?

Andrew

Typical speeds. You can see these. You can look at it. We regularly do speed tests to monitor what we think you're being given and what we're actually getting.

Alan

So you're saying your typical speeds are your CIR?

Andrew

No, it's a different—

Alan

I know it is, so I'm asking you to clarify it.

Andrew

I'm going to repeat myself. It's a typical speed.

Alan

So you can't answer the question then?

Andrew

No.

Alan

OK. I've got a question for Mads. Reference here your new V7 product—there's a lot of rumours floating around the industry at the moment with regards to pointing accuracy issues and FCC issues in the States, regarding allowing you guys to transmit with this thing and bring it to the market.

Mads

Could you please repeat your question? I couldn't really understand you?

Alan

OK. Your V7 product. There's a lot of rumours that I'd like to clarify, people are saying you've got issues with FCC in the US with regards to the pointing accuracy of your platform.

Mads

This is totally irrelevant. We do not have any issues, the product is approved by FCC and it is selling at the moment, it is being installed every day as we talk, so I don't know where you heard those rumours from but they are of no value.

Alan

And with regard to contention, etc, with your package, people are throwing around worst case scenarios of 80:1. Is that right, or—

Mads

Where do you get that figure from?

Alan

A lot of people in the satellite industry are talking about different contention ratios associated with your product.

Mads

I think I've just earlier explained the technology we use and why our technology is actually better than TDMA technology so in any comparison I think why other people on this panel have a lot of difficulties answering what is your actual worst case, because you know if suddenly 50 people decide to sit side by side and do a test where they say one two three call, then of course you'll have a lot worse conditions that if you are in reality, so therefore the actual speed really depends on what's going on out there? How many are on right now at this moment? It can vary from now and 5 minutes later it is a lot better or a lot worse, depending on how many are on at this point. So the real thing is, and if you want to compare apples with apples, who utilises the bandwidth most optimally? Because as was said earlier, the pipe is so big, you can't change that. So the only challenge is, how can you use that pipe as good as possible. That's it.

Alan

Do you have restrictions on the new service that you're offering with regard to Skype and streaming video and slingbox applications?

Mads

We do have fair access policy, yes. So in that it is defined for each package that you buy, you buy different speed packages at different rates and as part of that in the fair access policy we have certain maximum limitations where we say if you start exceeding that then the system will go in and start putting limitations to your speed.

Alan

Thanks.

Martin

OK, on that note I think we'll break for lunch and have a food fight. Thank you everyone. Thank you panel. We'll report back via *The Yacht Report* with a VSAT report and we'll see you after lunch to talk about engine rooms.
