

The Changing Economics of Satellite Communications

The fundamental premises on return on investments needs to be examined

by Jan Grøndrup-Vivanco

The satellite communication industry for data services has been built on the basic and powerful premise that returns on investments for satellite communication is not a function of population densities. This is contrary to terrestrial communication technologies where return on investment (ROI) falls as the population densities falls.

This is one of the reasons why regulators often adds a provision when granting cellular licenses, that the mobile operators must roll-out their networks to cover certain percentages of the total population over time, to ensure that mobile operators don't just put in their networks in the economically most juicy parts of the country, which typically are the areas with the highest population densities.

ROI for satellite communication on the other hand is flat, because the cost of serving a customer in a high population density area from an economic point of view is the same as serving a customer in an area with a low population density.

As figure 1 illustrates this (see page 4), with the

green line showing falling returns for terrestrial communication means as the population density falls. The blue line on the contrary is horizontal because returns using satellite are not a function of population densities. The dotted red line illustrates the concept of what an acceptable return on investment is for a telecom operator.



One of the fundamental premises in the economics of satellite data services is that return on investment is not a function of population density.

When the green line crosses the blue line, then it will be better economically to switch to using satellite communication. As the blue line is parallel to the red line, in theory satellite communication should be the communication technology of choice irrespectively if the customer is in an urban or rural area.

The obvious example of this is WiMax in Africa, which is only available in

certain cities (high population densities) and when a user wants connectivity outside a population centre (low population density), satellite is often the only mean.

This fundamental economical premise in satellite communication has given birth to the notion among many satellite executives that fiber is not really a

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What to Expect at the IBC



At last year's IBC, all the major satellite operators provided live Ultra HD transmissions at their booth. This year, Ultra HD has been given a huge boost with the broadcast of the exciting FIFA World Football Championship finals in Ultra HD or what is also known as 4K TV, in four times the resolution of standard HD. Viewers in the football-crazy country of Brazil got to see the final three matches of the World Cup in Ultra HD courtesy of Globosat's SporTV channel which is available through many Brazilian pay TV providers including Telefonica and NET. The BBC retransmitted the Ultra HD feed in tests involving delivery on an IP network and through its digital terrestrial TV service. So I would expect more Ultra HD hype at this year's IBC.

The market prospects for Ultra HD is also looking a lot better than it was a year ago. More 4K Ultra-HD TV sets were shipped in just the second quarter of this year shipped all year in 2013. According to the NPD Display-Search *Quarterly Global TV Shipment and Forecast Report*, 2.1 million sets were shipped in Q2, compared to 1.6 million in 2013. Streaming media service Netflix in the US has already started to offer some Ultra HD content while Echostar said recently it will be offering Ultra HD programming on its Direct-to-Home service Dish Network before the end of this year. The research firm IHS Technology reported that Ultra HD TV shipments hit the 1.1 million mark in March this year and is projected to rise to 68 million units by 2018.

So consumers are starting to buy the Ultra HD sets in droves, now all we need is more Ultra HD programming.

Virgil Labrador

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The Changing Economics of Satellite Communications ...From page 1

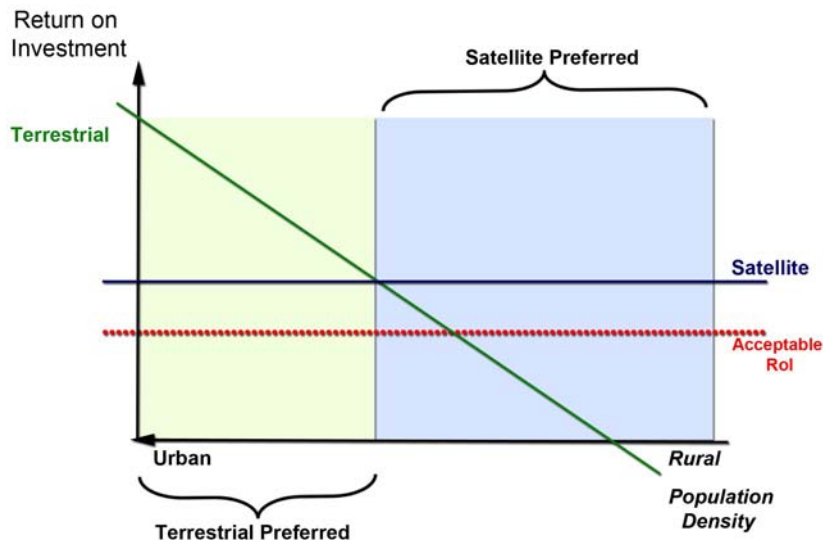


Figure 1.

threat to satellite communication, because as fiber and submarine cables get rolled out and activated “demand just moves inland,” which has led to the false belief, held by many in our industry, that satellites will play a great role for cellular backhaul from rural areas or providing broadband via satellite to rural areas. Satellite executives getting a hopeful look in their eyes when they dream about the large amounts of data backhaul 3G and 4G cellular networks will require, or the enormous potential of connecting all of rural Latin America, Africa and Asia.

However, it is important to keep in mind that return on investment is essentially a function of three things: Revenues; Cost and the timing of these revenues, and Cost streams.

What is often being overlooked, is that as population densities goes down, so does achievable Average Revenue Per User (ARPU) (and thereby revenues from each user) from those areas. Generally there is proportionality between higher disposable incomes and higher population densities. To put it another way; you will generally find wealthier people in cities compared to the countryside.

Disposable income is a key revenue driver for cellular network operators. In Africa and other developing regions, ARPUs have been falling for many years, as the cellular operators have achieved their subscriber growth from growing their number of subscribers with less affluent subscribers. The

problem is that due to the lower ARPUs, the ROI for certain types of services delivered via satellite is below the acceptable ROI, due to lower revenues that can be extracted from low population density areas as well as the cost of satellite communication.

This problem is less pronounced for 2G cellular networks, where the revenues for voice and SMS services, can easier justify rural telephony, as bandwidth usage is closely linked to revenue generating and profitable voice and SMS services. However, the problem becomes larger for 3G networks, where it is much harder for a cellular operator to extract value from providing bandwidth to smartphones, because there is not a direct link between band-

width usage and revenues.

It might not be profitable to provide access to YouTube or similar bandwidth hungry applications to a low ARPU smartphone subscriber where backhaul via satellite is needed, due to the cost of satellite bandwidth. To avoid this cost-revenue mismatch the cellular operator might simply opt not to provide 3/4G services in rural areas requiring backhaul via satellite. Figure 2 illustrates this.

This false logic of “demand moving inland,” is the same issue for broadband to consumer satellite services, like Eutelsat’s Ka broadband-to-consumer satellite, which has been targeting non-urban subscribers in developing economies. In addition to the problem of finding good distribution

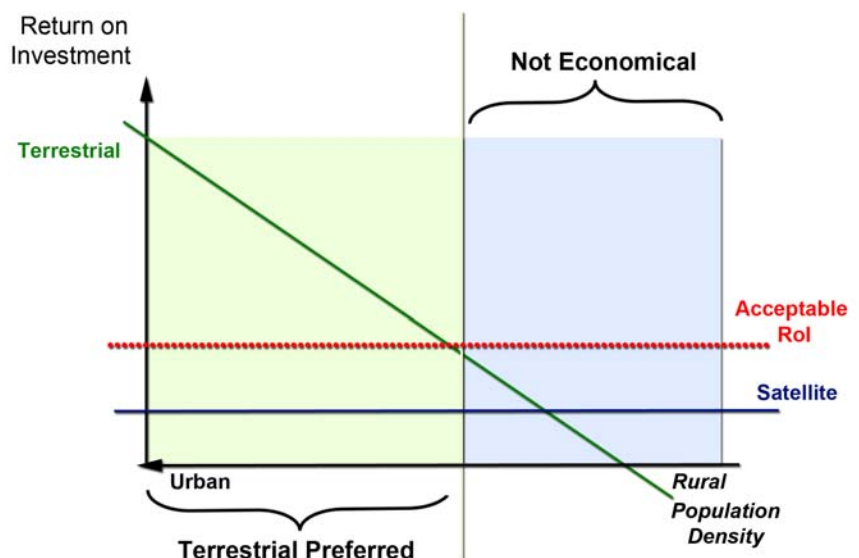


Figure 2.



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channels in those areas, there is also fundamental problem of affordability for a large part of the population in those areas. Our industry should be careful not to make “the sky is the limit” type of promises from providing such B2C services.

So for many satellite applications that are relying on consumers as the end-users of the satellite capacity, either directly or indirectly, the economics are such that the ROI from these users needs to be higher to cover the infrastructure and communication cost.

The cost for providing connectivity via satellite is falling in the industry, especially with HTS types of satellites, and this is a good thing. However, the issue is that those costs, especially for low population density areas are still too high, when compared to average disposable incomes in those areas.

Does this mean that the fundamental economics of satellite communication is broken? It depends.

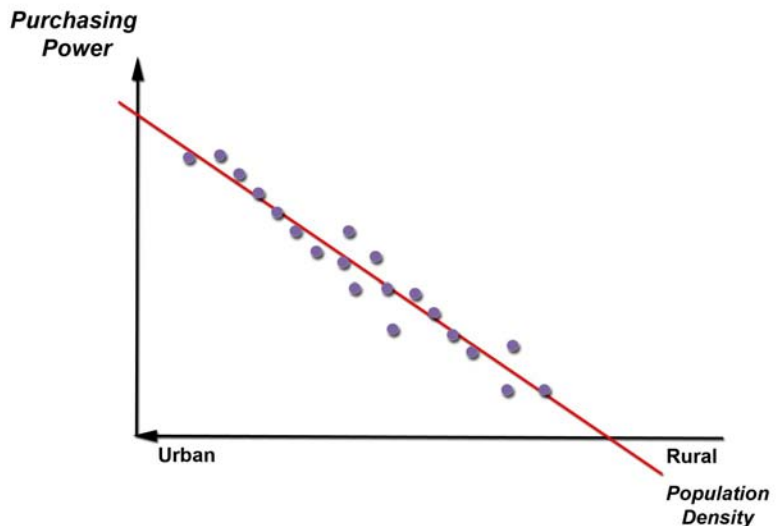
Typically purchasing power is scattered around the red line, as can be seen from the simple graph in Figure 3. So for consumer type services to rural areas, a realistic business plan will probably only close if the target customers is not only in areas with low population densities, as is often the case. This is probably also why we are seeing some B2C HTS projects are starting to address non-consumer segments, like connectivity to aircrafts or SNG operators.

An exception to above-mentioned graph is the USA and Canada, where the relationship between population density and purchasing power is less pronounced. This is probably the reason that the USA is leading the way with broadband consumer services via satellite, with two providers doing reasonably well.

And maybe the Australian National Broadband Network serving rural customers via satellite will also be exception when they launch.

Apart from North America, it means that as an industry, for a foreseeable future we will still be dependent on business-to-business market segments, especially if our industry is able to serve these vertical segments better with services that are targeted for their needs.

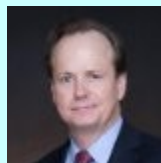
I recently met with a satellite service provider targeting small and medium sized businesses in rural Africa. However, instead of offering their services on a traditional VSAT system, they had adapted a consumer broadband system to serve



“...The cost for providing connectivity via satellite is falling in the industry, especially with HTS types of satellites, and this is a good thing...”

these customers, who are able to pay \$100-200 per month for connectivity. The traditional VSAT systems are too expensive for their target customers, which are smaller rural retailers. Of course, this meant that they are counting their customers in thousands, rather than hundreds of thousands, and still they had an interesting and growing business.

So to answer the initial question: No, the economic fundamentals for satellite communication still holds true for services provided to professional and business type of users, and yes we are still some distance away from providing rural broadband communication to the masses via satellite, for instance using satellite as 3/4G backhaul from rural areas.



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Silicon Valley Companies Investing in the Satellite Industry

by Elisabeth Tweedie, Associate Editor

When I tell people outside of the satellite industry what I do, frequently their first question is “but aren’t satellites becoming obsolete with all the fiber around?” And to be fair that is a question that some of us in the industry have also pondered from time to time. So it is to say the least, an interesting turn of events that two of the biggest names in California’s Silicon Valley are now investing in satellites.

Given that Silicon Valley is almost universally considered to be the birthplace of cutting-edge technologies, it is nice to have such a vote of confidence in our industry. But does this mean that we have been sleeping and failed to spot new opportunities?

Getting Top Talent from the Satellite Industry

Google, of course are no strangers to the satellite world, being one of the major investors in O3b. And it is Greg Wyler the visionary and founder of O3b, who is at the helm of one of Google’s latest ventures: WorldVu Sat-

ellites Ltd. WorldVu was incorporated in Jersey, UK, (the same place where O3b is registered) in November 2012. The team now includes Brian Holz former CTO of O3b and Dave Bettinger former CTO of iDirect. In June of this year, using the name L5, WorldVu acquired the Ku-Band spectrum previously allocated to SkyBridge, a late 1990s venture intended to provide global broadband service.

According to information available so far, WorldVu will be a constellation of 360 low-earth orbit (LEO) satellites in two circular orbits, also intending to provide global broadband service. Service has to commence by 2020 according to the ITU and the filings indicate that 2019 is the planned start of operations.

O3b is designed to provide broadband trunking between the latitudes of 45 degrees north and 45 degrees south. WorldVu is apparently targeting individuals, so while not directly competing with O3b, in some areas they will be going after the same customer. A person who has broadband from the local

telco – who happens to be using O3b for trunking – is unlikely to be a customer for WorldVu’s direct to home service.

Which brings us to Google’s motivation for this project, which can be summed up in one word: “eyeballs.”

Google’s primary revenue comes from online advertising. Right now approximately two-thirds of the world have no internet access, so anything Google can do to diminish that figure has to be in its interest. Its efforts are not confined to satellites alone.

In the middle of last year, Google launched 30 high altitude balloons over the South island of New Zealand. These are being used to provide internet connectivity to remote areas. Although still in the experimental stage, one of the goals is to launch enough balloons this year to provide a ring of uninterrupted connectivity around the 40th southern parallel, so that pilot testers at that latitude can receive continuous internet service via the balloons.



One of Google's recent acquisitions is UAV manufacturer Titan Aerospace of Moriarty, New Mexico, developer of the Solara solar-powered atmospheric satellite.

Covering all options to provide internet access to unserved areas, Google purchased Titan Aerospace earlier this year. Based in New Mexico, USA, Titan describes itself as a maker of "atmospheric satellites" otherwise known as high altitude platforms or drones.

In a statement Google issued in April when it acquired the company, it said, "It's still early days, but atmospheric satellites could help bring internet access to millions of people, and help solve other problems, including disaster relief and environmental damage like deforestation." Interestingly that is very similar to the statement it issued in June when it purchased Skybox, a satellite imaging company, that will give Google the potential to update its maps once or twice, a day as opposed to the weeks or months between updates at present. That statement also said: "Over time, we also hope that Skybox's team and technology will be able to help improve internet access and disaster relief – areas Google has long been interested in."

Enter Facebook

Google of course is not the only big name in Silicon Valley that has a vested interest in spreading internet access. Facebook is another; and while as yet, there have been no announcements about specific satellite projects, Facebook is making no secret of its ambitions in this area.

Staff at Facebook Connectivity Lab include hires from Jet Propulsion Lab (JPL), NASA's Ames Research Center and the National Optical Astronomy Observatory. In March of this year Facebook acquired the five person team that made up Ascenta, a British company formerly known as High Altitude Engineering. Andrew Cox, the Chief Engineer and founder of the company, previously worked for Qinetiq and helped start its Zephyr drone program which was sold to Astrium in 2013. He also worked on Dragon for SpaceX.

Facebook is one of the founding members of Internet.org a consortium that

includes, Samsung, Nokia, Ericsson and Qualcomm. The goal of the organization is to make the "internet available to every person on earth." A white-paper from Mark Zuckerberg, the Founder and CEO of Facebook, on the internet.org website talks about the options that Facebook is considering; these include drones and high altitude long endurance systems, LEO and GEO satellites. The paper also mentions Free Space Optics (FSO) and says that Facebook is "hiring world experts... to explore the full potential of this technology over the coming years."

Taking internet access to the unconnected is a laudable idea and in the long term will probably pay off. According to the ITU a 10% increase in fast broadband penetration can result in between 0.25% and 1.38% growth in a country's gross domestic product (GDP), as well as a 3.6% increase in efficiency. But in the short term the fact that many of the unconnected billions have no disposable income is unlikely to help the bottom line. Something that O3b worked out, when it broadened its focus from connecting the other three billion to include oil and gas rigs and cruise ships as part of its target market. Fortunately both Google and Facebook have pretty deep pockets.

Lessons from Past Ventures

This is not the first time that big names have backed new constellations of satellite systems. Skybridge itself was backed by Alcatel, Boeing, Space Systems Loral and Thomson among others. Teledesic was backed by Microsoft and Craig McCaw; Iridium, in its first incarnation was backed by Motorola and ICO by Inmarsat. All of these filed for bankruptcy. So what is going to be different this time?

The most obvious financial differentiator is the advances that have been made in technology, both on the ground and in space. High throughput

satellites hadn't been invented then and consumer hardware was significantly more expensive. The world is also more connected. In 2000 there were 361 million people connected to the internet. Now there are 2.8 Billion and we are just at the beginning of the Internet of Things (IoT). The more people and devices that are connected, the more essential it becomes for others to be join in, which will help drive demand. However, on current schedules WorldVu isn't due to be launched until 2019 and not fully operational until 2020. If the current rate of growth in connections continues in 2020 there will be 7.6B people connected to the internet. Just a tad shy of the 7.7B projected world population for that year. Realistically that's unlikely to happen, there will always be people that is just uneconomical to reach by terrestrial means, but will there be enough to make a viable business for WorldVu,

"...If the new ideas are not being generated internally then we need to welcome these companies and work with them. As has been said many times before: 'innovate or die'..."

and if not will the IoT provide sufficient demand to make up the shortfall? The other factor that needs to be considered here is mobility. Laptops and tablets are increasingly used away from the home. By 2020 there may be a Ku antenna small enough to fit on those devices, but there may not be, and if there isn't, then WorldVu will be providing service to public areas and utilities making it a potential competitor to O3b.

Other Ventures

Silicon Valley's move into space is not just confined to Google and Facebook.

Space Systems Loral of course has always been based in Palo Alto, Calif.. And Skybox, whose satellites are being built by SS/L is also located in Silicon Valley. So is Planet Labs, another start-up imaging company.

If Planet Labs plans come to fruition, and so far the signs are that they will, the company will have 100 satellites in orbit by the end of the year, making it the largest constellation ever launched. The first 28 Doves, as they are known, were launched from the International Space Station (ISS) in February, since then they have been joined

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by a second constellation. Unlike the more traditional imaging companies Planet Labs focus is on frequency of updating the images rather than high resolution, although they can see items as small as an individual tree. These satellites may be large in number, but they are small in size, about the size of a shoe box to be precise. Unsurprisingly given the size, both the manufacturing and launch costs are a fraction of traditional satellites. Many of the components are commercial products used in smartphones and laptops.

Continuous innovation is the name of the game, version nine, according to Chester Gillmore, Director of Manufacturing was about 35% cheaper than the first constellation and was made four times faster. Pretty impressive for a company that only started two years ago!

Spire, formerly known as Nanosatifi, was also founded two years ago and is also in Silicon Valley. It's launched six cubesats to date. In July it raised US\$ 25 million in series A funding and announced plans to launch another 50 with the aim of increasing to 100 in total. The satellites have a operational design life of two years, so that the technology – a mixture of sensors, antennas and optical and infrared cameras can be constantly updated. Target applications include: freight monitoring, detection of illegal fishing, asset

tracking and search and rescue.

Conclusion

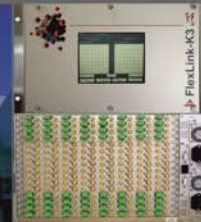
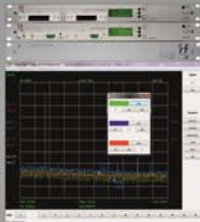
What does all this mean for the traditional players? I think it is a wake-up call. If the new ideas are not being generated internally then we need to welcome these companies and work with them.

As has been said many times before: "innovate or die".



Elisabeth Tweedie is the Associate Editor of the Satellite Executive Briefing. She has over 20 years experience at the cutting edge of new communication and entertainment technologies. During her 10 years at Hughes Electronics she worked on every acquisition and new business that the company considered during her time there. She can be reached at:

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Outsourcing Content Management

by Virgil Labrador, Editor-in-Chief

Outsourcing the storage and management of content enables a broadcaster to concentrate on their core competencies of producing and selling programming

For smaller broadcasters storing and managing content can be one of their toughest challenges. At a time when competition is fierce and viewers are spoiled for choice, it is necessary to concentrate on the core competency of selling channels. Yet when channels are sold, the competitive nature of the business means that content has to be packaged up in a localized bow and dispatched almost instantaneously. This is the challenge faced by most broadcasters.

"A broadcaster only has finite time to sell and distribute content, so outsourcing that management capability makes a great deal of business sense and convenience for broadcasters," said Doron Revivi, Chief Operating Officer of Satlink Communications, a global content distribution service provider.

"Outsourcing any part of your business can be risky. As well as the experience and capability, broadcasters should be thinking about factors, such as the stability of the partner, whether they share the same goals and culture and importantly if they have the agility to move and grow in tandem with the broadcaster?" Revivi added.

"When all these things come together working partnerships can be fruitful for all parties involved, the broadcaster can concentrate on selling and the content partner can look after the nuts and bolts of content management and delivery," said Revivi.

Distributing Bollywood to the World

A one size fits all approach rarely works when it comes to content management and distribution.

Broadcasters will have different needs and challenges dependent on their size and desired reach. A good example of

taking a local broadcaster global via effective content management is Satlink's partnership with ISG Media, the owner of 10 Bollywood channels including Bollywood HD and Bollywood Show.

One of the challenges faced by ISG Media was the sheer volume of content in different formats. The tapes and data files all had to be sorted, catalogued and digitalized. Metadata tags had to be added to aid management and location

of specific content. The result was that the distributor could launch a new channel in just a matter of days, a feat necessary when you compete with much larger distributors.

The Indian film industry of Mumbai, called "Bollywood" has global reach, distributed in 127 countries in 38 languages. Bollywood programming is broadcasted to half the world's population. Yet it is this very global appetite for content which posed an additional problem for ISG Media. Localization of content is key to adding value to broadcasters offering. Effective subtitling, dubbing, insertion and localization to

adjust content to meet local markets regulations and requirements are crucial when selling channels globally to countries as diverse as Russia, the US and Japan, among others.

The many differing factors which have to be considered from cataloguing to localization prescribe a 'one stop shop' approach to content management and distribution according to Revivi. "All the broadcaster has to do is provide a playlist and advise of any dubbing and subtitling which needs to be included and the distributor will do the rest," he said.

Using just one provider for all of these stages results in the ability to launch channels fast, within days, and expand the business by taking advantage of increased economies of



The Indian film industry makes around 1000 films a year, distributed to 127 countries and dubbed in 38 languages, and the global demand continues to grow. The rate of growth makes it difficult for a broadcaster to keep up.

scale and access to the latest and best technology. “Essentially a complete end-to-end solution gives broadcasters the peace of mind to sell a channel knowing they have the infrastructure in place to complete the deal every time,” said Revivi.

Successful Partnership

The success of a partnership relies on building a relationship where each company works seamlessly with one another. End-to-end broadcast solutions providers have to be willing to become a true partner if they are to be successful.

“Objectives should not be based solely on increasing revenue, just as important is helping the distributor to become more efficient, to streamline their activities and work in tandem with them to provide the services which will help them prosper,” said Revivi.



“...a complete end-to-end solution gives broadcasters the peace of mind to sell a channel knowing they have the infrastructure in place to complete the deal every time...”

**-Doron Revivi
COO, Satlink**

With traditional broadcasters under pressure from OTT players and subscribers demanding flexible viewing, broadcasters must provide great programming, tailored to the audience. With such pressure on the quality and availability of content, the storage, management and distribution of content should be dealt with by companies who have the expertise, technology and bandwidth to make sure the right content is delivered to the right place in the right format and at the right time.



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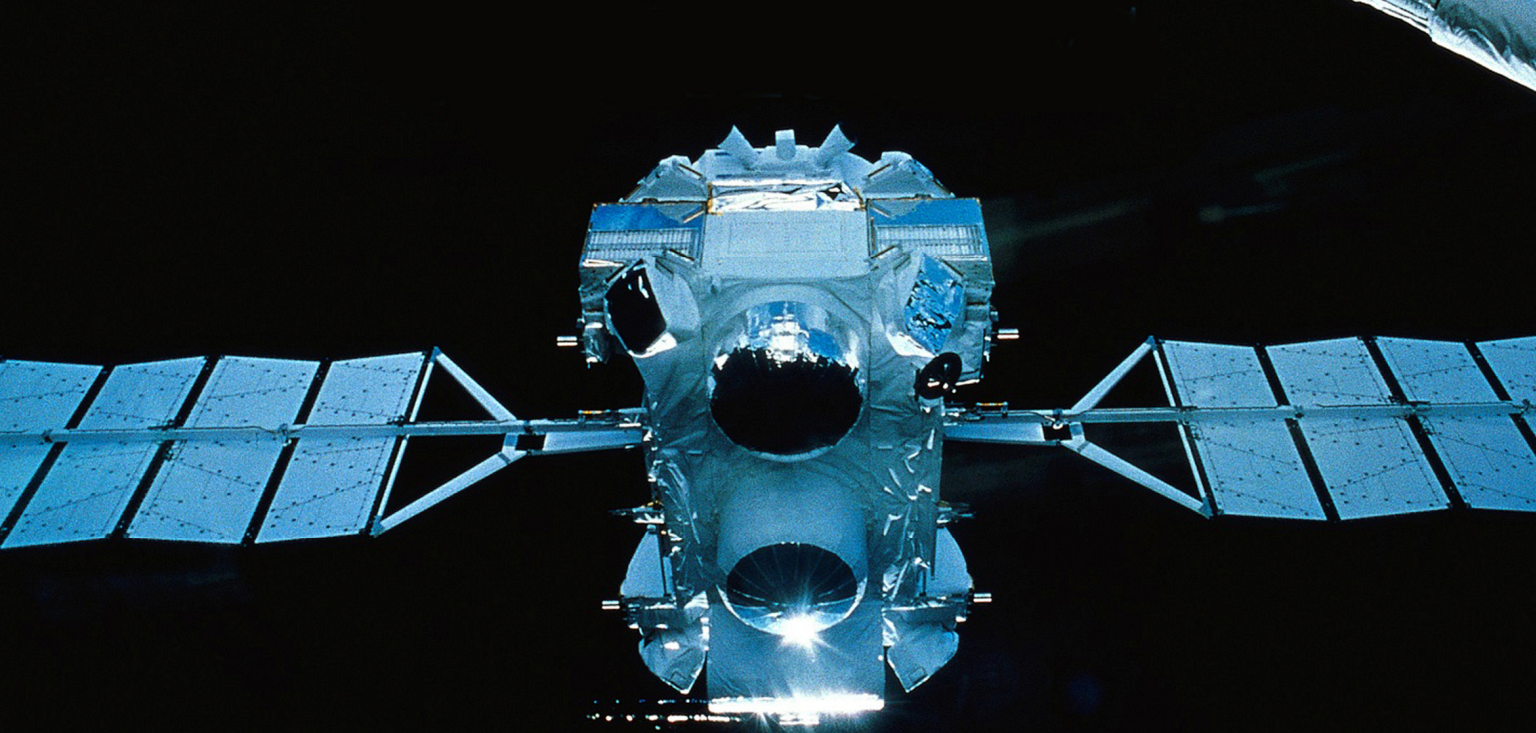
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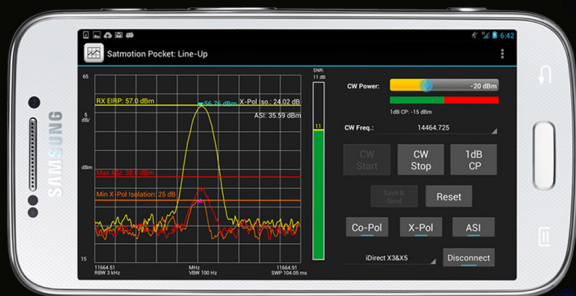
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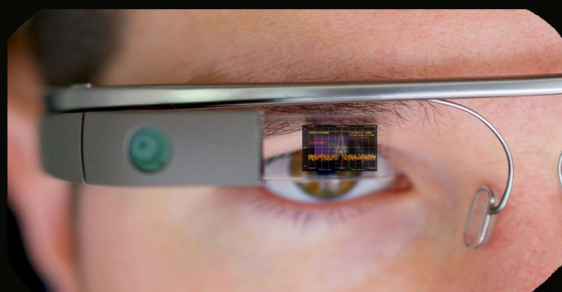


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Dmitry Sevastiyanov

Director-General, Gazprom Space Systems

Russia-based satellite operator Gazprom Space Systems (GSS) has achieved several key milestones since its inception over twenty years ago. The company started as a domestic satellite operator serving primarily the Russian market and has since made a major impact on the international satellite scene which it entered 10 years ago. To give us an update on their company and future plans, Satellite Markets and Research Editor-in-Chief Virgil Labrador spoke with GSS' Director General Dmitry Sevastiyanov. Excerpts of the interview:

Thank you for this interview, which has now become an annual tradition that Satellite Markets and Research is very pleased to be part of. To start, please give a short overview of your company's current position in the global satellite market?

I am happy that our interviews has become a good tradition, and traditions are the evidence of the stability in relationships and business, which is always good in our not so simple world.

This year marks the 10th year of our presence in the international market. We started going after the international when Yamal-202 satellite was launched. Yamal-202 at the 49°E orbital position has a wide coverage zone outside of Russia. Over the last few years, GSS has become widely recognizable in the international market, and has acquired a number of reliable partners and customers. The launch of GSS' most powerful Yamal-402 satellite at the end of 2012 at the 55°E position opened up the second breath for our international business.

You usually have a big presence at the IBC show this month in Amsterdam. What will you be showcasing at this year's IBC?

Our Yamal-402 satellite provides new opportunities that we will offer to the international market, which we would be highlighting at the IBC. Yamal-402 is a state-of-the-art, European-manufactured satellite with a wide coverage over Africa, the Middle East and Europe. Cross-beam connectivity allows to link Europe and Africa. The satellite also has several steerable beams, which can be pointed to Africa or South-East Asia, as well as connectivity with Europe.

How has GSS' position in the global satellite communica-



Dmitry Sevastiyanov
GSS Director-General

tions market changed based on your last year's results?

We had substantial revenue growth of 29% in 2013. This was ensured by the increased utilization of the Yamal-300K



Pictured above is GSS' telecommunication center in Schelkovo near Moscow. On the right is the Yamal satellite mission control center.
(images courtesy of Gazprom Space Systems)

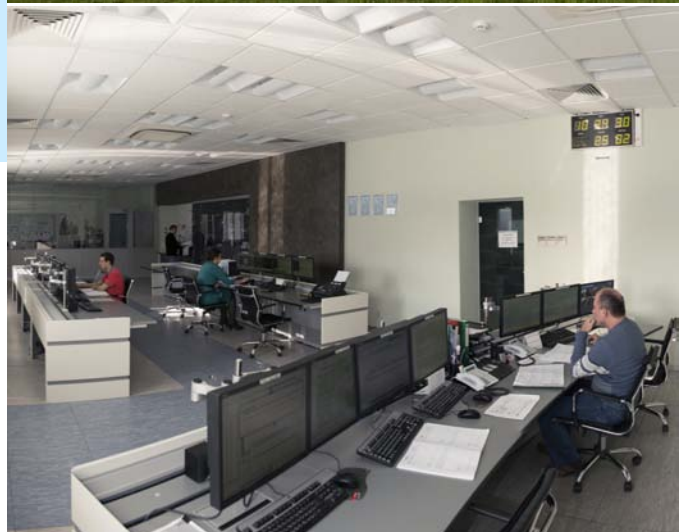
and Yamal-402 satellites which were launched in 2012. This pushed our company revenues to surpass the key milestone of over US\$ 100 million and advanced us three positions in the Top Fixed Satellite Service Operators annual ranking published by *Space News*.

Despite the tough competition in the international market, we successfully doubled our customer base outside Russia.

Now the international market comprise about 20% of GSS' total revenues. Thousands of the end users in more than 70 countries receive essential services provided by GSS' satellite capacity.

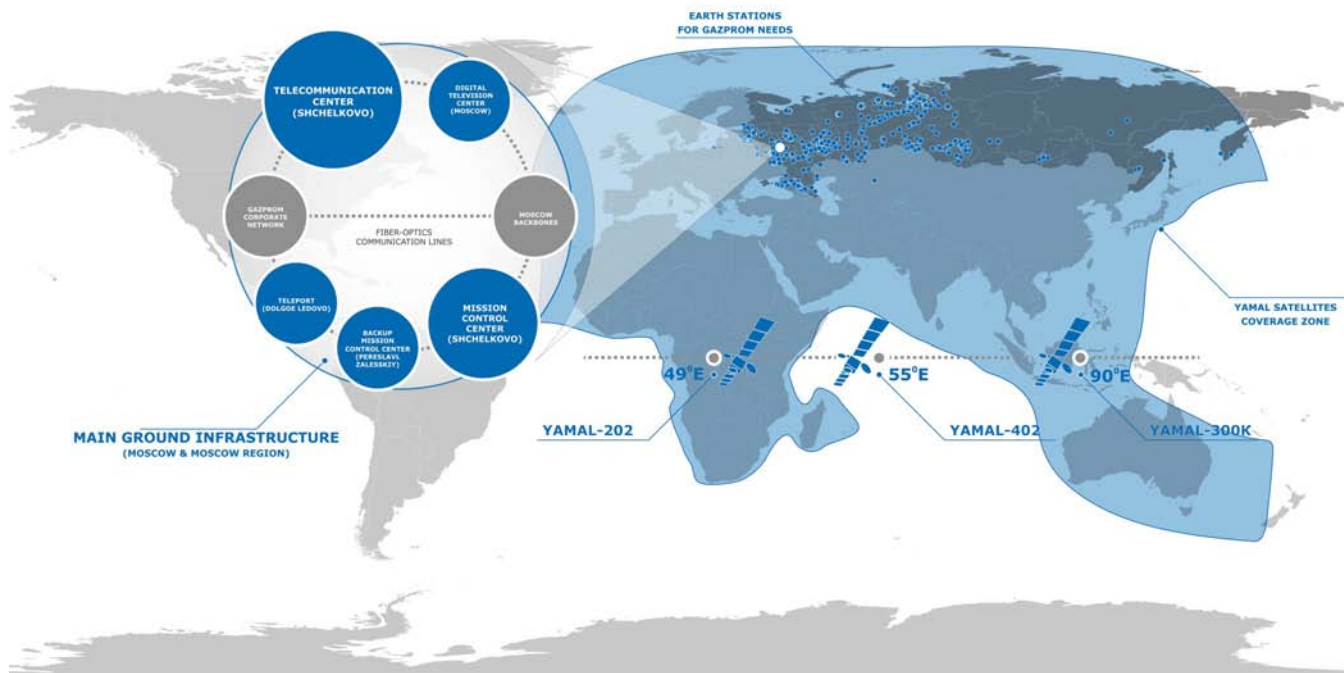
What markets are you focusing now? And which of these markets provide the most potential in the near future?

First of all, the Middle East and Africa are regions that continue to show a high growth potential. Operators of Free-to-Air and Pay TV channels, corporate (primarily oil and gas) sector, mobile operators, and government entities are



driving demand for satellite services in these region. There is also high demand for Internet broadband access.

But these are markets where many global and regional operators are also present. Thus the competition is very high. We enter these regions offering not pure satellite capacity but cost-effective complex turnkey solutions. GSS does this business in partnership with the professional service providers and system integrators, which have extensive experience in these markets.



GSS satellites provides coverage in three continents (Europe, Asia and Africa) backed up with an extensive ground infrastructure.

Can you cite some examples of the successful partnerships you have made?

Providers which offer services to the large oil and gas companies in the Middle East, continue to increase the amount of capacity they are leasing from us in the European Beam of Yamal-402 satellite. Among these providers include well-known companies such as Globecomm Europe, ICCES (Saudi Arabia), Cobbett Hill (UK) and others. Recently CETel (Germany) became our new customer, it will use the European Beam capacity directly in Germany.

The traffic from Europe to Africa has been growing fast. The European teleports are using this capacity to provide Internet access for the remote regions of Africa. Among the most active customers include IABG (Germany), Global T&T (Belgium) and Castor (Netherlands).

The Southern Beam, which covers Africa to the South of Sahara, is in high demand as well. Telemedia (South Africa) uplinks on Yamal-402 two packages of African TV channels from Johannesburg. Moreover, the capacity of this satellite is used for Satellite News Gathering (SNG).

Yamal satellites' capacity is widely used for oil and gas projects in the Persian Gulf, near the Myanmar coast and in the Caspian Sea. GSS together with our partners participated in the implementation of a very complex project in the Arctic

“...the international market comprise about 20% of GSS' total revenues. Thousands of the end users in more than 70 countries receive essential services provided by GSS' satellite capacity...”

Ocean, for which the capacity of two GSS' satellites are used: Yamal-202 and Yamal-402.

What can we expect from Gazprom Space Systems in the coming months?

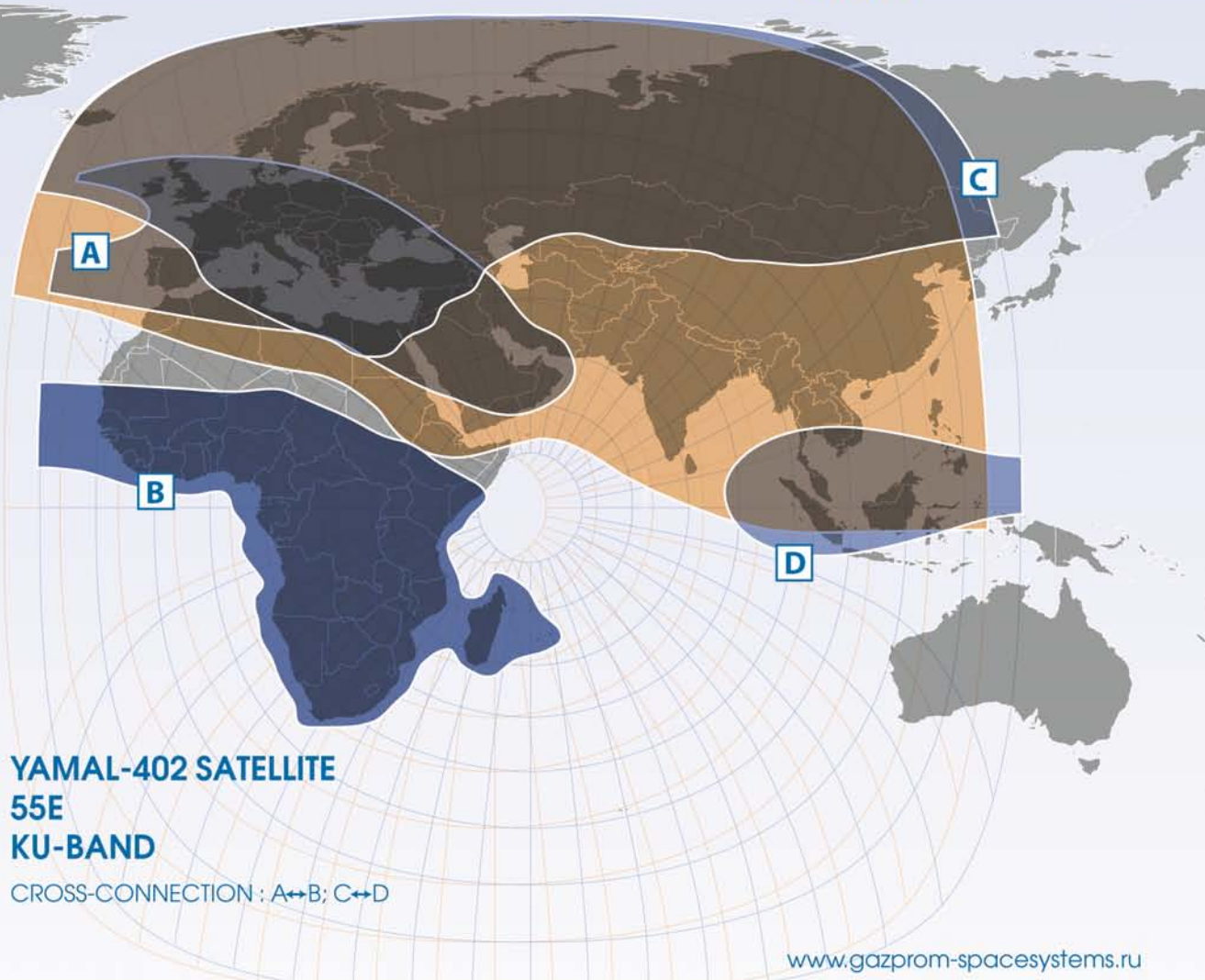
The utilization of capacity of the Yamal-300K and Yamal-402 satellites continues to grow. So we expect revenues to increase further.

The upcoming Yamal-401 satellite launch to the 90°E orbital position will provide us with even more capacity. It will enable us to relocate the Yamal-300K satellite to the new more Eastern orbital position. Thus GSS will expand the geography of its international business by including the Russian Far East, the Northern part of China, Korea, Japan and the Northern part of the Pacific Ocean to its area of interest. The Steerable Beam of Yamal-300K satellite will also find its new place in South-East Asia. GSS has already started to pre-sell Yamal-300K satellite capacity at the new orbital position.

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ND SATCOM

A Modem with an Integrated Router that Provides Network Flexibility

by Virgil Labrador, Editor-in-Chief

VSAT network customers are requiring higher standards of availability, excellent coverage, higher data rates and competitive pricing. The new requirements involve a more flexible network that is not limited to the traditional star or point-to-point network topology.

Customers are now demanding networks that do not only provide a broadband forward channel, as the typical internet-access platforms do. New applications require also high data rate upstream capacity transmission of volume data out of remote sites. They typically now are demanding data rates of several MBit/s.

A Flexible and Affordable Solution

One company that has come up with a flexible and affordable solution to the changing demands of the market is ND SatCom, a modem manufacturer and system integrator based in Friedrichshafen, Germany. ND SatCom's SKYWAN 5G is an integrated VSAT terminal, comprising both the satellite access technology (MF-TDMA; Multi Frequency TDMA) and an integrated IP router. Furthermore, each modem comprises an integrated DVB-S2 receiver. Thus the system can be seen as a "router-in-the-sky", combining the flexibility and adaptability of MF-TDMA with DVB-S2 overlay forwarding for broadband internet access.

"SKYWAN 5G is transforming the way communication networks are created and operate by converging VSAT technology and comprehensive IT capabilities in a single device," said Volker Jarsch, Product Manager at ND SatCom.

"Our approach is to provide a single hardware unit for all purposes, so each SKYWAN 5G has full functionality. It is just a matter of configuration which determines what functions SKYWAN 5G is implementing in the network. This means that there is no distinguishing each unit as a "hub" or a remote—it's just matter of a license key. Adding new sites, spare parts handling, design of VSAT networks, order-

ing SKYWAN 5G—all is straightforward thanks to the one-unit approach," said Jarsch.

SKYWAN 5G incorporates a comprehensive router supporting interior and exterior routing protocols providing a seamless integration into customer networks. The data is transferred over satellite with an excellent end-to-end efficiency, which translates into substantial cost savings, whilst ensuring the QoS (Quality of Service) as required by the users' traffic types.

SKYWAN 5G's high switching rate makes it one of the most powerful modems in the market today.

"SKYWAN 5G introduces a game-changing innovation of stackable units increasing performance and scale, such that the whole thing is more than just the sum of its parts," said

Jarsch. So the network can be scalable as customer requirements grow.

"The SKYWAN 5G can easily be configured as required for individual customer applications. Whether you require a

star, multi-star, hybrid or full mesh networks, the unique hardware design of SKYWAN 5G reliably fits all existing VSAT topologies. SKYWAN 5G does not limit customers' growth and future extensions and upgrades. So they can start with the most basic requirements and add on later as their requirements grow accordingly," said Jarsch.

Conclusion

The seemingly insatiable demand for broadband access from both consumers and the emerging vertical markets such as the booming energy sector will be requiring innovative solutions from their VSAT networks.

ND SatCom's SKYWAN 5G is a solution that can meet those stringent requirements of a changing market with great growth potential. Besides broadband forwarding with highly efficient modulation and encoding, it supports also high data rate return channels for volume data originating at remote sites, and even single-hop connectivity between multiple sites and hubs in one network.



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Harbinger's US\$ 1.5 Billion Suit Against Dish

by Elisabeth Tweedie, Associate Editor

The ongoing saga in the courtroom activities of Harbinger, LightSquared, Dish et al makes many soap operas appear positively insipid in comparison.

The battle commenced in 2013 when Light Squared was forced into bankruptcy after the Federal Communications Commission (FCC) ruled that its service might interfere with navigation equipment used for GPS. Shortly afterwards Charlie Ergen, Chairman of Dish, started to buy the majority of Light-Squared's debt using a hedge fund he personally controlled. Separately, Dish Network offered US\$ 2.2 Billion to buy Light Squared frequencies, but subsequently withdrew the offer in January of this year, citing certain technical issues it had discovered that could impair use of portions of the spectrum.

LightSquared's major shareholder is the Harbinger Group controlled by Phil Falcone, and whatever else he wants, Phil does not want Charlie getting LightSquared's assets. He was so determined that this shouldn't happen that he specifically forbade Light-Squared's debt being sold to Dish or its subsidiaries. Charlie wasn't going to let a little thing like this deter him, so he bought US\$ 1 Billion of the debt personally via Start Point. Start Point is an investment vehicle that Charlie controls, but he's claiming that this purchase didn't violate Phil's legal restrictions.

Unsurprisingly, when Phil finds out who exactly Start Point is, he's pretty upset! So upset that Harbinger sued both Charlie and Dish for (among other things) violation of the federal Racketeering Influence and Corrupt Organization Act (otherwise known as RICO) and the Colorado Organized Crime Control Act (otherwise known as COCCA). As the names imply these acts are usually

reserved for organized crime and gangsters rather than boardroom battles. The claim, is that Charlie's purchase of the debt caused Harbinger to lose money and control of the LightSquared board. "Ergen and his fellow RICO Enterprise members pursued their abusive scheme through wire, mail and bankruptcy fraud, abuse of process, tortious interference with contract, and obstruction of justice". Strong words; as I said, Phil is pretty upset by Charlie's actions. In the same lawsuit Charlie is also accused of lying under oath, during an earlier federal court hearing relating



to LightSquared's bankruptcy.

This wasn't the first time that Dish has been sued by Harbinger. In August 2013 Dish was accused of being "engaged in a fraudulent scheme" to get control of Light Squared. On that occasion Harbinger was seeking US\$ 4 Billion in damages. That case was dismissed. This time the language was stronger but the damages sought smaller, a mere US\$ 1.5 Billion.

That was on July 9. On July 14 Light-Squared and Dish apparently reached a settlement on a previous case. In that case LightSquared had sued Dish accusing it of surreptitiously trying to gain control of the company. Details of the settlement have not been made public, but it appears that Ergen and other creditors have yet to vote to accept it.

July was a busy month for the litigious Harbinger, not content with suing Char-

lie and Dish, it also sued the US government; alleging that the FCC reneged on an agreement allowing LightSquared to deploy its network after complaints from GPS companies. Previously Harbinger had also brought a suit against Deere and Company, Garmin, Trimble Navigation and two GPS lobbying groups (the Coalition to Save our GPS and the United States GPS Industry Council). That suit alleges that that Deere, Garmin and Trimble Navigation did not disclose problems with their own GPS equipment and instead blamed LightSquared for interfering with their GPS systems during a crucial testing period.

While all this litigation has been going on the "prize" that everyone is fighting over, Light-Squared, has quietly and consistently been losing money. The current figure stands at US\$ 1.51 Billion of which US\$ 943.2 million are attributed to interest on debt. Quite a tax loss for whoever wins this battle.

Right now there is another restructuring plan on the table. This would have to be approved by all the parties including Dish and Harbinger. Since this plan would effectively end Harbinger's and therefore Phil's control of Light-Squared it is not surprising that he is not in favor. In fact Harbinger have presented an alternative plan for a smaller piece of the company as has another creditor, Mast Capital Management.

So what will happen in the next episode? Will Phil find someone else to sue? Will LightSquared succeed in pushing Harbinger out of the picture or will Charlie and Phil make up and take over Light Squared together? As I said soap operas are dull in comparison this. One thing is clear, the real winners in this battle are the lawyers!

Disruption of the “Good Enough”

by Lou Zacharilla

When I learned that a handful of middle school students in the Bronx chose as their class project getting a Skype session with Pope Francis, and that they moved a step closer to making that happen last week, I began to think about the power, charm and explosive human and economic potential of the flat world. As the Society of Satellite Professionals International rolls out its global “[How Satellites Make the World Better](#)” campaign, we will chronicle and tell hundreds of stories that will inspire the world and allow us to continue to broaden our mandate and our markets.

Three years ago the world got a lot more inspired – and a lot flatter - thanks to the work of two disruptive guys. In October two major anniversaries of their masterworks occur, one familiar to the satellite community and the other widely known in very elevated circles, but not as familiar to the satellite industry.

The third anniversary of the launch of ViaSat-1, which brought forward an advance that we are still adjusting for, is occurring at the same time as the launch of the Aakash tablet, the world’s cheapest. Aakash is the invention of Datawind Corporation and its visionary founder, Suneet Singh Tuli. The anniversary dates are no coincidence and you only need to connect the dots to see that the broad, global vision of two companies, one public and the other to be shortly, is where the finger of the future is pointed.

Visionary of the Year Suneet Singh Tuli calls his use of technology “a disruption of the good enough.” Singh, who made *Forbes Magazine’s* list of the world’s 15 leading “classroom revolutionaries,” was also named Visionary of the Year by the Intelligent Community Forum in New York in June. Datawind launched their tablet in the presence of UN Secretary-General Moon in October 2011. A native of India and resident of Canada, he has one goal: to see a societal evil and to use technology to defeat it and to make money in the process. Since the Aakash launch, the Indian government has made a huge procurement and laid out a vision to equip all 220 million of its students. The vision is straightforward and unadorned. Computing and internet access, used in a blended learning environment, will empower both students and teachers. The simple fact in India, as in many places, is that the further one travels from an urban school, the worse the quality of education and educators becomes.

As we come upon the third anniversary of the ViaSat-1 and Aakash tablet launches, I asked Suneet Singh and Mark Dankberg to go back and forth with me. I spoke with Suneet first.

Lou Zacharilla (LZ): *You have said it simply many times to me and publicly: “There are 300 million people who cannot read or write. Not because they are not interested in it. They cannot afford it.” Is that the core of most problems?*

Singh: That is a simple fact. If you Google “India teacher funny,” you get a sad example of what happens when an educational system is captured by poverty and made irrelevant by distance. Teachers receive less pay in rural areas and the lack of technology to connect them to the Internet. Without it the riches of education and knowledge that is available to you and me create the kind of world we say we want to disrupt and end.

LZ: *So you launched Aakash to deal with it?*

Singh: Yes. Datawind launched Aakash I on October 5th, 2011. Our first version was designed, developed and manufactured based on specifications set by IIT Rajasthan.

LZ: *And it’s cheap. The media reports that it has a ‘jaw dropping’ price of under US\$ 40.*

Singh: Yes. The price helped us get attention from the media and people who think as one, as you and I do. But our ability to price it so affordably has helped spur the low cost tablet computer industry. For students in India, the government not only waives duties and taxes, but also further subsidizes the cost by 50% We are planning to make it even cheaper and our IPO will give us a war chest to expand.

LZ: *You use the great phrase “the disruption of the good enough.” We have talked about this several times and I*

Back and Forth

interpret that to mean that for the digitally excluded, or for anyone without access, a device that brings them close to where they can succeed does not have to be revolutionary. It needs to work. The revolution is in access for four billion people who will stay home, eliminate the middle of nowhere by themselves and find a path to prosperity.

Singh: That's it. The creation of Aakash validated our belief that technology need not be expensive to achieve one's aspirations. Its acceptance by millions, first in India and now by others, has proven that the forgotten billions did not let go of this opportunity. They were simply waiting for it. I see this as a new chapter in the Internet revolution – a beginning of mass adoption through low cost web access devices.

LZ: *I agree. This is like the early days of electricity. As we rise up the evolutionary chain, the discussion will evolve to "what do we do now that the lights are on?" Not, "how do we get electricity into the room?" This is similar to what the ViaSat-1 and O3b ventures in the satellite industry are designed to accomplish. Do you envision working with the satellite industry at some point?*

Singh: We'd be truly delighted to have a partner such as ViaSat, whose ability to provide satellite based connectivity to the internet holds huge potential for the emerging world, where infrastructure is still the issue. If we are able to find a common thread that brings low cost web access devices and low cost internet access together, we'd be well on our way



Suneet Singh Tuli with world's cheapest tablet.

to a more connected world. As you say, Lou, there is a Rural Imperative. Nearly fifty-percent of the world population lives in rural areas. That is where the potential for growth and empowerment lies. And it is how satellites can make a better world.

(The Back and Forth with ViaSat's Mark Dankberg will appear in my next column in the November issue)



Lou Zacharilla is the Director of Development of the Society of Satellite Professionals International (SSPI). He can be reached at: LZacharilla@sspi.org

The advertisement features three pieces of satellite equipment against a background of a satellite network map. At the top is a long, thin, orange-rack-mounted unit with a digital display and buttons. Below it is a white, rectangular outdoor unit with various ports. At the bottom is a black, modular unit with multiple ports. The Peak Communications logo is prominently displayed in the center.

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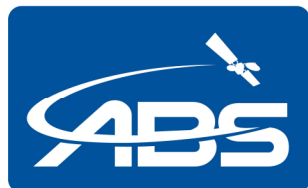
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■ A guide to key products and services to be showcased at IBC 2014, Amsterdam, the Netherlands from September 12-16, 2014.

ABS

Hall 2 booth 2.A30 and Hall 13 MS23

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ABS operates a fleet of six satellites; ABS-1A, ABS 3, ABS-4/Mobisat-1, ABS-6, ABS-7 and the recently launched ABS-2. The satellite fleet covers 80% of the world's population across Africa, Asia Pacific, Europe, the Middle East, CIS and Russia. ABS has also procured two Boeing 702SP satellites (ABS-3A & ABS-2A) planned for launch in late 2014 and 2015 with the options to add more satellites over the next 2-3 years to its growing satellite fleet.

Headquartered in Bermuda, ABS has offices in the United States, Dubai, South Africa, Germany, Philippines, Indonesia, Malaysia, Singapore and Hong Kong. ABS is majority owned by funds managed by the European Private Equity firm Permira. The Permira funds acquired ABS in 2010. For more information, visit www.absatellite.com

Advantech Wireless

Hall 1 booth 1.A74

www.advantechwireless.com

At IBC 2014, **Advantech Wireless** will present details of its powerful and award winning Broadcast Solution - GaN based SSPAs and a live demo of the Next Generation Discovery Adaptive Satellite Access Technology (A-SAT™) platform. At Advantech Wireless booth no. 1.A74, visitors will find Advantech Wireless' leading technologies, delivering best performance to achieve best ROI in the market.

Awarded Teleport Technology of the year 2014 by the World Teleport Association and Vision Award as Most Innovative Product of the year 2013, Advantech Wireless' Sapphire-Blu™ Series of UltraLinear™ GaN based SSPAs offers the highest linear power available in the market.

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monitors channel utilization and switches the satellite access method and MODCOD seamlessly for the return channel to dynamically maximize the space segment utilization efficiency. Additionally, by having TDMA and true SCPC technologies in a single platform, the switch between traffic patterns is efficiently supported and all risks of equipment obsolescence are mitigated.

To set up a meeting with one of Advantech Wireless' experts please visit: <http://www.advantechwireless.com/meeting-request>

Amos Spacecom

Hall 1 booth 1.C65

www.amos-spacecom.com



Spacecom, operator of the AMOS satellite constellation, consisting of **AMOS-2** and **AMOS-3** co-located at 4°W, **AMOS-5** at 17°E, and

AMOS-4 at 65°E. The AMOS satellites provide high-quality broadcast and communications services in Europe, Africa, Russia, Asia, the Middle East, & North America. With the launch of AMOS-6 to 4°W in 2015, enhancing coverage over Europe and the Middle East with its new Pan-European beam, Spacecom will further strengthen its position as a global satellite operator.

Spacecom's AMOS-4 satellite provides a full range of services to Southeast Asia, Russia and China. AMOS-6, planned for launch in 2015, will provide steerable Ku-band across Europe and the ME and high-throughput Ka-band coverage in Africa and Europe. Ku-band and Ka-band on AMOS-4 is now available.

ARABSAT

Hall 1 booth 1.B38

www.arabsat.com



Founded in 1976, **ARABSAT** has been serving the growing needs of the Arab world for over 30 years. Now one of the world's top satellite operators and by far the leading satellite services provider in the Arab world, it carries over 450 TV channels, 160 radio stations, 4 Pay-TV networks and wide variety of HD channels reaching tens of millions of homes in more than 80 countries

across the Middle East, Africa and Europe—including an

audience of over 170 million viewers in the Middle East and North Africa (MENA) region alone tuned into Arabsat's video "hotspot" at 26° East.

Operating a growing fleet of owned satellites at the 20° East, 26° East, 30.5° East and 39° East positions of the geostationary orbit, ARABSAT is the only satellite operator in the MENA region offering the full spectrum of Broadcast, Telecommunications and Broadband services. This capacity will continue to expand with the launching of new satellites, making the ARABSAT satellites' fleet the youngest in the region.

ATCi
Hall 4 booth 4.C65
www.atci.com

ATCi is a custom communications solutions provider specializing in commercial satellite communications systems and services including: the Simulcast multibeam, parabolic antennas, complete uplink systems/services, teleports, cable television headend and plant components, test equipment and input matrix switches, as well as fiber optics components for corporate, broadcast, cable television, government and education.



AVL Technologies
Hall 5 booth 5.A49
www.avltech.com

AVL Technologies' booth at IBC 2014 will showcase our newest 2.0m Vehicle-Mount antenna for Military and SNG applications. This robust antenna features an AVL-unique three-piece carbon fiber reflector with motorized folding hinged "wings" for automatic, compact stow width on mid-sized trucks, a high-stiffness azimuth bearing, our proprietary zero-backlash AVL Cable Drive, and a wide boom to allow for larger HPA envelopes. The antenna stows to a remarkable 50cm and is operated with AVL's new AAQ controller.

Also on display will be AVL's new 85cm Ka-band broadband antenna with a cowl. AVL's Ka-band broadband antenna family is noted for its versatile configurations, high reliability and cost-effective "go-to" solutions for mobile accessibility with High Throughput Satellites.

AVL will also show our newest 60cm, 85cm, 1.2m and 2.4m Manual FlyAway antennas. These antennas are lightweight, compact, portable and robust with carbon fiber reflectors.



AVL's new 2.4m antenna

AVL antennas are the industry benchmark of excellence for mobile broadband Internet access, SNG, Disaster Relief, Oil & Gas Data Backhaul, and Defense & Homeland Security solutions.

C-COM Satellite Systems Inc.
Hall 4 booth 4.C55
www.c-comsat.com

C-COM Satellite Systems Inc. is a leader in the development and deployment of commercial grade mobile satellite-based technology for the delivery of two-way high-speed Internet, VoIP and Video services into vehicles.

C-COM has developed a unique proprietary Mobile auto-deploying (iNetVu[®]) antenna that allows the delivery of high-speed satellite based Internet services into vehicles while stationary virtually anywhere where one can drive. The iNetVu[®] Mobile antennas have also been adapted to be airline checkable and easily transportable.



C-COM Satellite Systems will be displaying the Next Generation, one-button auto-acquire antennas at IBC 2014. The iNetVu[®] FLY-98G Flyaway Antenna is a 98 cm satellite antenna system which is a highly portable, self-pointing, auto-acquire unit that is configurable with the iNetVu[®] 7710 Controller providing fast satellite acquisition within minutes, anytime anywhere. It can be assembled in 10 minutes by one person. The antenna is convertible from Ka- to Ku-band, and vice versa.

Cobham SATCOM Land
Hall 1 booth 1.F41
www.cobham.com/satcom

Cobham SATCOM is an official launch partner for Inmarsat Global Xpress[®] (GX), and several EXPLORER products are being developed specifically for operation on the GX network. Products include the EXPLORER 3075GX, which is a 0.75m Electronic Assisted Manual Point Fly-Away terminal; the EXPLORER 5075GX 0.75m Auto-Acquire Fly-Away terminal; and the EXPLORER 7100GX 1.0m Auto-Acquire Drive-Away terminal.



Cobham's EXPLORER 5075GX

Regardless of the application, Cobham's suite of GX EXPLORER terminals provide the

reliability and functionality required to effectively connect users to the GX network for mobile and vehicular use across diverse sectors including Government, Emergency Response, Law Enforcement, Media Broadcasting, Transportation, Enterprise, Energy and Mining.

Comtech EF Data
Hall 1 booth 1.F80
www.comtechefdata.com



Comtech Telecommunications Corporation, is the recognized global leader in satellite bandwidth efficiency and link optimization. The integrated SatCom infrastructure solutions encompass Advanced VSAT Solutions, Satellite Modems, RAN & WAN Optimization, Network & Bandwidth Management and RF products. The offerings enable commercial and government users to reduce OPEX/CAPEX and to increase throughput for fixed and mobile/transportable satellite-based applications. With the addition of our premium service, ESS Prime, we also provide 24x7 engineering support and other technical services to support your integrated network infrastructure. For more information, visit www.comtechefdata.com.

Comtech Xicom Technology
Hall 1 booth 1.F80
www.xicomtech.com

Comtech Xicom Technology, Inc. provides a broad product line of KPAs, TWTAs, SSPAs and BUCs for worldwide satellite uplink covering C, X, Ku, DBS, Ka, Q-Band, Tri- and Multi- Band with power levels from 8 to 3,550 watts and available in rack-mount and antenna-mount ODU packages.

Xicom is showcasing a number of products during IBC2014, including the new LCD Touch Screen Controller that provides an easy-to-use interface for monitoring and controlling all your SATCOM HPAs: Control Any HPA Including ODUs; Single Amplifier or 1:N Redundancy; Intuitive Set-Up, Control and Monitoring; Eliminates the Need for Separate External Controllers.

Representatives will be available for SATCOM providers and developers to discuss and obtain technical information on many of the company's amplifier products at their booth 1.F80, Hall 1.



Comtech EF Data Corporation, a subsidiary of

Gazprom Space Systems
Hall 4 booth 4.B71
www.gazprom-spacesystems.ru



Gazprom Space Systems (formerly Gascom) is a private commercial, non-governmental satellite operator based in Russia. The main shareholder is Gazprom, one

of the largest energy companies in the world. Gazprom Space Systems' orbital fleet consists of four satellites under the Yamal brand. Gazprom Space Systems' ground infrastructure consists of four teleports in the city of Moscow and in the surrounding Moscow region, which are connected to the main telecom backbones by means of fiber-optic lines. The company also has a wide network of earth stations across Russia.

In Russia Gazprom Space Systems is not only a satellite operator but also a service provider and system integrator. Within Russia, along with satellite capacity, it provides satellite services including satellite links, video distribution, Internet access and network development and management.

GlobeCast
Hall 1 booth 1.A29
www.globecast.com



At IBC2014 **Globecast** is introducing a single unique workflow to deliver all content preparation services, including playout, VoD preparation, content formatting and creative services. The workflow will allow Globecast to more efficiently support broadcasters, enabling them to manage and localise content for individual territories.

In addition to its worldwide presence in 15 countries, the Globecast's Media Factories - in Paris, London, Singapore and Los Angeles - will leverage the company's proven expertise in handling both linear broadcast and on-demand services. The Media Factory approach delivers dedicated operations management in close cooperation with clients and goes beyond traditional media management, logistics and playout services.

Hispasat/ Hispamar Satélites
Hall 1 booth 1.A46
www.hispasat.es



The **HISPASAT Group** is composed of companies with a foothold in Spain as well

as in Latin America, where its Brazilian affiliate HISPAMAR, sells its services. The Group is a leading Spanish- and Portu-

guese-language content broadcaster and distributor, including over important direct-to-home television (DTH) and high-definition television (HDTV) digital platforms. HISPASAT is one of the world's largest companies in terms of revenue in its sector, and the main communications bridge between Europe and the Americas.

Narda Test Solutions

Hall 8 booth 8.E35

www.agfranz.com/narda-satellite/

Narda Test Solutions designs and manufactures highly sensitive signal analyzers for RF interference detection and monitoring (rack-mountable and portable).

At the IBC Show **Narda Test Solutions** will be showcasing the **Narda Remote Spectrum Analyzer NRA 6000**. The NRA is a 1RU rack mountable, high speed (12 GHz/sec), low-power fan-less test-equipment that can be and has been integrated and



Narda NRA 6000

remotely controlled in various monitoring systems. The wide bandwidth (9kHz-6GHz) of the NRA-6000 enables the operator to simultaneously monitor a variety of signals with up to 600,000 samples per sweep. The NRA-3000 model (9kHz-3GHz) is optimized for satellite signal interference monitoring and troubleshooting. The optional high-speed I/Q data streaming capability is ideally suited for signal identification and characterization.

ND SatCom

Hall 5 booth 5.C31

www.ndsatcom.com

With three decades of experience, **ND SatCom** has become the premier supplier of innovative satcom systems to support customers with critical operations anywhere in the world.

At IBC, **ND SatCom** will be highlighting its new **SKYWAN 5G** product. The **SKYWAN** modem family is a reliable, flexible and versatile satellite communication platform for customer centric networks. It is a bi-directional MF-TDMA plus DVB



system that supports voice, video and data applications in the most bandwidth efficient manner.

The new **SKYWAN 5G** unlocks new business opportunities for service providers. Total cost of ownership is signifi-

cantly reduced thanks to the fact that only one type of device is needed for all roles in the network. This saves costs in terms of logistics, certifications, network configuration and maintenance. **SKYWAN 5G** enables star, mesh, multi-star or hybrid topologies with Communications-on-the-move (COTM) support. Each unit can act either as a hub or master station, therefore adding agility in terms of its network role.

Newtec

Hall 1 booth 1.A49

www.newtec.eu

Newtec will be showcasing at IBC its new **Dialog®** platform. **Dialog®** is a new scalable, flexible and bandwidth efficient multiservice platform allowing operators to build and adapt their infrastructure easily as their business and the satellite market grows and changes. **Newtec Dialog** gives operators the power to offer a variety of service on a single platform while assuring the most optimal modulation and bandwidth allocation. In addition to supporting SCPC or MF-TDMA, it now includes a third revolutionary patented return link technology called **Mx-DMA™**. Together with the new **HighResCoding™**, it combines the best of both worlds and enables services to run more efficiently than ever before over satellite.



The **Newtec Dialog®** platform consists of hub(s) and terminals. The **Newtec Dialog Hubs** are modular and scalable and can be configured in different sizes to fit the needs of customers. This picture shows the **HUB6501 11F** and the **HUB6504 41F Hub Modules**.

Peak Communications Ltd.

Hall 1 booth 1.C33

www.peakcom.co.uk

Peak Communications design and manufacture professional high-quality commercial and military satellite low-power RF equipment for Satellite earth stations: Block, fixed and agile (synthesized) frequency converters, test-loop translators, beacon receivers, automatic uplink power control units, line amplifiers, modular gain control units, splitters & combiners, DC & 10MHz drivers for BUC/BDC/LNB units, 10MHz reference generation & distribution, distribution switching and noise sources.

Many of the products are available in multi-channel configurations, allowing the simultaneous conversion or signal



Peak UPC 7000 series

conditioning of the same frequency range.

The equipment is provided in three physical configurations: remote, weatherproof units for a compact outdoor solution; ½ rack, modular, hot-swappable units to offer the ultimate in maintainability; fixed dual, triple or quad-bands/ranges in 1RU chassis for a compact indoor solution.

At the IBC Peak will be showcasing the **UPC7000 series**, the next generation **Automatic Up-Link Power Control units** (AUPC's) that measure the 'link loss' from a Satellite Beacon signal and subsequently automatically control the UpLink power via a number of adjustable IF or L-Band Attenuator channels.

RF-Design

Hall 1 booth 1.F49

www.rf-design-online.de

RF-Design with headquarters in Lorsch, Germany is successfully developing, manufacturing and marketing professional and high-quality RF-distribution solutions for the international Satellite, Broadcast and Broadband communications industry. Our product portfolio includes **LNB-supply/control solution, Splitters/Combiners, Switches, Redundancy Switches, L-Band Switch/Routing Matrix systems, RF Line Amplifiers, RF-over-Fiber solutions and Broadband Remote Spectrum-Analyzers.** Furthermore our company and team is well recognized for developing and providing custom made products and solutions tailored to your individual needs and applications.

All our products are manufactured, tested & approved in our own facilities in Lorsch, Germany and characterized by superior quality, reliability and excellent performance while they are in operation with major Teleports, Satellite Earth-Stations as well as Broadcasting and Broadband facilities around the globe.

At IBC 2014 we will showcase our new products such as the **"FlexLink K4 L-Band Switch Matrix", "RLA270L 1:1 redundant Line-Amplifier", "SA3B multi-input Broadband Remote Spectrum-Analyzer" and "FiberLink RFOver- Fiber Solutions."**

SatLink Communications

Hall 5 booth 5.A17

www.satlink.tv

SatLink Communications, a global teleport, internet delivery, HD playout and content management services



RF-Design's new "FlexLink K4 Switch-Matrix" and "RLA270L 1:1 redundant Line-Amplifier"

provider, will be debuting its latest innovative End-to-End (E2E) OTT cloud solution, which will enable broadcasters to offer subscribers the very best of TV with immediate access to personalised content anytime, anywhere and on any device.

During IBC SatLink will also offer special promotions on its new Hotbird DVB-S2 platform, in co-operation with Sky Italia, and AsiaSat 5 DVB-S2 satellite platform to aid international broadcasters looking to expand their reach into new TV markets in Europe and Asia.

SatLink will also be exhibiting its capabilities to provide end-to-end broadcasting solutions and support for all global live, linear and non-linear digital media requirements including Satellite uplink, downlink, turnaround and multi feeds aggregation for Pay TV operators; Sports and News Occasional Use delivery; playout; content management, Digital Archival and TV channels localisation; productions, real time news monitoring and satellite engineering solutions.

SatService GmbH

Hall 1 booth 1.F47

www.satservicegmbh.de

SatService Gesellschaft für Kommunikationssysteme is pleased to present at IBC the mobile Internet Access via Viprinet Router 510 by aggregating multiple bandwidths of different Wide Area Network Connections in order to increase transmission capacity as well as reliability.

At IBC 2014 we will not only present our own product family **sat-nms**, but also the reliable mobile Multichannel 510 produced by Viprinet Europe GmbH. Satservice is an authorized business partner of Viprinet.

SatService will also be showcasing its **sat-nms** SMU Signal Management Unit for Broadcast and Satellite Ground Station Applications.

The **sat-nms** SMU is the unit you were always looking for in your satellite ground station and/or satellite head-end environment. It enables you to perform all kind of signal management in a simple to use and very flexible unit. Due to the choice of different card modules you are able to build your own **sat-nms** SMU best matching the requirements of your application. Each card module is designed to fulfil a specific function and the combination of different card modules gives you the possibility to solve your signal handling problems.



Viprinet Router

ScheduALL
Hall 1 booth 1.D30
www.scheduall.com



ScheduALL, the leading global provider of Enterprise Resource Management (ERM) software for media and transmission, will

highlight three smart technology solutions at IBC2014, including two methods for customers of transmission providers to self-provision their own Occasional Use bookings, as well as a sneak peek at intelligent management of media projects.

The **ScheduALL Connector™** platform unites ScheduALL systems across enterprises and supply chains, giving customers real-time access to their providers' resource inventories for self-provisioned bookings. By unifying companies in a global business network, Connector eliminates manual booking, duplicate efforts, miscommunications and reservation conflicts from the booking procedure.

The **ScheduALL Portal™** platform is a web-based, real-time portal that simplifies the complicated process of booking bandwidth by allowing customers to book transmission feeds through their provider's ScheduALL system.

The **ScheduALL Media™** platform provides intelligent management of deadline-based projects and workflow deliverables for media and broadcast organizations.

Work Microwave
Hall 4 booth 4.C60
www.work-microwave.de

At IBC2014, WORK Microwave will showcase a wide range of advanced satellite communications technologies that support the new DVB-S2X standard.

WORK Microwave's DVB-S2X equipment provides satellite operators with increased flexibility, bandwidth, and margins while reducing their amplifier power, operating costs, and antenna sizes. The company will also demonstrate improvements to its Fifth-Generation Frequency Converter Series, including Q-band support.

WORK Microwave will demonstrate DVB-S2X support for its IP-Modem SK-IP, Broadcast Modulator, and wide-band devices. The DVB-S2X extension offers a variety of advanced features and benefits, including smaller roll-offs, advanced filtering, higher modulation schemes, and wide-band support beyond 72 Mbaud, enabling operators to achieve sizeable efficiency gains exceeding the results offered by proprietary systems on the market today.

WORK Microwave will also demonstrate its Fifth-Generation Frequency Converter Series, designed to support applications that require low phase noise, ranging from S-band to Q-band. Utilizing a sophisticated synthesizer, the frequency converters can deliver phase noise at a level that significantly exceeds the respected industry standard according to Intelsat's Phase Noise Specification, IESS-

308/309. The converter series also includes a new Ethernet port that simplifies remote configuration and monitoring of the device. **WORK**

Microwave's Fifth-Generation Frequency Converter Series is based on a compact, multichannel module design that allows operators to support up to four channels within 19-inch housing, lowering operational expenses and saving valuable space.



Work Microwave 5th Generation Frequency Converter

Walton De-Ice
Hall 1 booth 1.A62
www.de-ice.com



Walton De-Ice, the world's leading designer and manufacturer of satellite earth station antenna (ESA) weather protection solutions — will showcase its latest Ka-Band satellite

ESA weather protection solutions, **Ice**

Quake, Rain Quake, and Snow Shield during IBC2014.

"New Ka-Band satellite networks in Europe and elsewhere offer huge capacity for 4K and future media services, but the potential signal degradation due to rain, snow, and ice pose new challenges at Ka-Band," says Walton De-Ice's David Walton. "Antenna de-icing and weather protection systems from Walton De-Ice can reduce signal loss through Ka-Band dishes, and improve the reliability and quality of content delivery services."

Snow Shield consists of architectural fabric, which is virtually invisible to RF. Snow Shield covers (0.6 - 6.3 meter) can be passive, or actively heated using electric or gas heaters. The Ice Quake enhances the performance of the Snow Shield antenna cover by vibrating the fabric cover, preventing snow and ice accumulation that degrade signals.



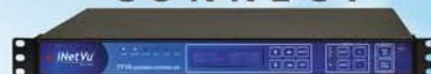
For rainy climates, the Rain Quake prevents water from sheeting on an antenna surface — which causes Ka or Ku-band rain fade. The Rain Quake helps to minimize bit error rates and antenna noise temperature increases, thereby improving Ka and Ku-Band signal quality during rainstorms.

Now available worldwide with CE (European Union) certification, our newest CE-certified gas heaters combine with the Walton De-Ice Plenum system to offer unparalleled performance and reliability, providing the most rapid, and cost-effective solution for preventing snow and ice buildup at the lowest operational cost for an ESA.





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Booth 4.C55



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C-COM Satellite Systems Inc. is a leader in the development and manufacture of commercial-grade auto-acquisition VSAT antennas, designed for delivery of two-way satellite based data, VoIP, and video services for mobile applications. C-COM is a publicly traded company (trading symbol TSX-V: CMI).

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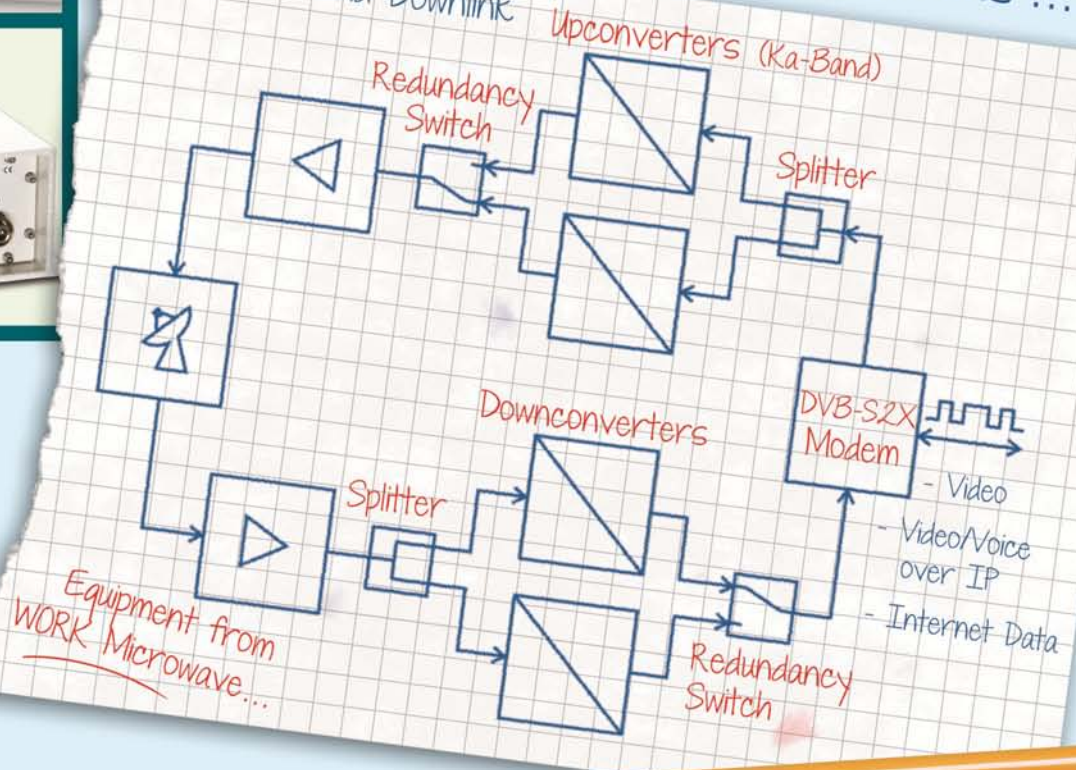
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Satellite Up- and Downlink



- ✓ IP-Network over Satellite
- ✓ Video Contribution and Distribution
- ✓ DaVid Technology
(combined data and video distribution)

www.work-microwave.de

Sierra Nevada Completes Acquisition of Orbitec

Louisville, Colo., July 11, 2014--Sierra Nevada Corporation (SNC) announces it completed the acquisition of Orbital Technologies Corporation (Orbitec), headquartered in Madison, Wisconsin.

The company will continue its operations in Madison, while supporting SNC's Space Systems in Louisville, Colorado.

The acquisition comes as the result of the previous successful working relationship between the two firms. The combined capabilities and products of SNC's Space Systems and Orbitec provide SNC's customers with a comprehensive set of green space propulsion technology options with both hybrid solid/liquid and bipropellant liquid rocket motors, according to a company statement.

As previously announced by SNC, the Orbitec acquisition extends SNC's subsystems portfolio to include Environmental Control Life Support Subsystems (ECLSS) and advanced thermal management for human spaceflight vehicles and orbiting habitats. The excellent performance characteristics and value of Orbitec's ECLSS and Reaction Control Subsystem (RCS) technology

made these the clear choice for SNC's Dream Chaser winged Commercial Crew Transport for the International Space Station. SNC is committed to continuing Orbitec's excellent relationships with its government and commercial customers, said the company.



Orbitec has been developing life-support and thermal management systems for Sierra Nevada's Dream Chaser spacecraft. (image courtesy of SNC)

"Orbitec's decades of experience in strong liquid rocket propulsion systems, human spaceflight life support and thermal systems, automated life science systems, and fire suppression systems portfolio will provide substantial enhancements to SNC's Space Systems' broad product line," said Mark N. Sirangelo, corporate vice president of

SNC Space Systems.

Orbitec started in Wisconsin as a three-person company. Over the past 26 years Orbitec has leveraged the great intellectual and resource capacity in Wisconsin. The company recently added over 30 high tech jobs to the state. "Orbitec will continue to expand its capabilities to deliver the next generation of products with improved viability and efficiency, meeting and ensuring customer satisfaction in challenging and cost-sensitive markets," said Tom Crabb, chief operations officer of Orbitec. "We know that the State of Wisconsin has a significant heritage in aerospace. Orbitec is committed to expanding Wisconsin's valuable high tech economy that could potentially include becoming a launch or landing state for the Dream Chaser," said Crabb. Crabb will continue to lead and manage Orbitec, as an SNC subsidiary.

SNC Space Systems provides components and subsystems to space contractors, including gimbal mechanisms, power subsystems, solar array drives, release mechanisms, integrated solar panel assemblies and flight control actuators.

Comtech Exploring Strategic Alternatives

Melville, NY, August 25, 2014--Comtech Telecommunications Corp. confirmed that it is exploring strategic alternatives to enhance shareholder value, including a possible merger or sale of the company.

The company regularly considers a broad range of strategic alternatives with the goal of maximizing shareholder value. The company has not set a definitive timetable for completion of its evaluation and it does not intend to discuss or disclose further information regarding the status of its evaluation unless required by law, according to a



statement.

Comtech has retained Citi as its financial advisor and Proskauer Rose LLP as its legal advisor.

Comtech conducts business through three complementary segments: telecommunications transmission, RF microwave amplifiers and mobile data communications. The company sells products to a diverse customer base in the global commercial and government communications markets.

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Cobham SATCOM offers the most comprehensive range of land-mobile satellite communication terminals in the market covering both BGAN and VSAT.

The EXPLORER range of terminals fulfills critical communications needs and reduce system configuration requirements for end users through highly reliable and easy-to-use solutions.

The EXPLORER 5075GX will provide Inmarsat's upcoming Global Xpress® superfast Ka-band service, delivering download speeds of up to 50 Mbps and 5 Mbps over the uplink. The EXPLORER 710 is the first BGAN terminal to deliver Inmarsat's High Data Rate (HDR) on-demand streaming IP service.

Visit the Cobham stand in Hall 1 at IBC 2014 (1.F41).



EXPLORER 5075GX

Ultra High-Speed VSAT Terminal

- Lightweight 0.75m Auto-Deploy Fly-Away VSAT with a four-piece carbon fiber reflector
- Configured for seamless global operation on the new Inmarsat Global Xpress® (GX) Ka-band network
- User-friendly design allows operators with little satellite experience to access GX Ka-band services within minutes

EXPLORER 710

Ultra-Portable BGAN Terminal

- Fastest ever BGAN. Inmarsat HDR provides a guaranteed bandwidth from 600kbps up to 800kbps
- Built-in plug and play bonding. Simply connect two terminals to get an uplink higher than 1.1Mbps
- EXPLORER Connect App. Make calls or connect to the internet over BGAN using your own smart device



For more information on Cobham SATCOM:

Call SATCOM Land VSAT (Orlando, USA) office: +1 (407) 650 9054

Call SATCOM Land BGAN (Lyngby, Denmark) office: +45 39 55 88 00

ULA Names Tory Bruno President and CEO

Centennial, Colo., August 12, 2014 - **United Launch Alliance (ULA)** named veteran aerospace industry executive **Tory Bruno** as its next president and chief executive officer, succeeding Michael Gass, who has served as president and CEO since ULA's founding in 2006.

Bruno's appointment is effective immediately. He and Gass will work collaboratively to ensure a smooth leadership transition and continued commitment to mission success.

Bruno joins ULA from Lockheed Martin, where he was most recently vice president and general manager of Strategic and Missile Defense Systems. Over the course of his 30-year career, Bruno has held executive leadership positions in a number of space and missile programs, including the U.S. Navy's Fleet Ballistic Missile program and the Terminal High Altitude Area Defense Missile.

ITC Global Appoints David Kagan as President

Houston, Tex., August 12, 2014 - **ITC Global** has appointed **David Kagan**, a long-time satellite industry veteran, to the position of President.

Prior to joining ITC Global, Kagan built a reputation as an operationally savvy executive, enabling fast growing companies to provide exceptional customer service. Most recently, Kagan served as President and CEO of Globe Wireless. Over a three year period Kagan drove substantial growth, efficiencies and profitability improve-



Tory Bruno



David Kagan

ments through an operational infrastructure that supported over 6,000 ships and vessels worldwide. The company was sold to industry leader Inmarsat in January 2014.

Signalhorn Strengthens Executive Team

Backnang, Germany August 18, 2014 - **Signalhorn** has strengthened its executive team with the appointments of **Andy Frost** as Chief Commercial Officer and **Tom Wright** as Vice President of Sales for North America.

Frost has been with Signalhorn since 2003, initially as Account Director and subsequently Vice President, Marketing and Business Development. He was promoted to Vice President Strategic Business Development in 2012, applying a wide range of skills to a number of complex business and government negotiations and customer issues. Before joining Signalhorn, Frost served in a number of executive marketing and product management positions at leading telecommunications firms Tiscali SpA in Italy and BT in the UK.



Andy Frost

Wright's previous executive positions include Vice President for NewSat of Australia; Vice President of United Networks in Kuwait; and Sales Director for Comstream of San Diego, CA. He has spent 38 years in the satellite communications industry, experience that includes designing and selling satellite systems in 69 countries. At NewSat, Wright closed over US\$ 200 million in new business and was named Sales Person of the Year. He will be based in Dallas, Texas.

Globalstar Promotes Rebecca Clary to VP and CFO

Covington, LA, August 28, 2014 - **Globalstar** has promoted **Rebecca**

Clary to Vice President and Chief Financial Officer effective immediately. Clary joined Globalstar in September 2010 and has most recently held the positions of Chief Accounting Officer since January 2013 and Corporate Controller since August 2012. Prior to joining Globalstar, she was a manager with PricewaterhouseCoopers LLP in its U.S. Audit & Assurance Services practice, where she worked from 2002 to 2010. Clary is a licensed Certified Public Accountant.

Thuraya Hires Two Sales Managers for Maritime Market

Dubai, UAE, September 1, 2014 - **Leticia Diaz Del Rio** joins mobile service provider **Thuraya Telecommunications** as Market Development Manager, Maritime, based in Dubai, while **Phoebe Wang** joins the company as Sales Manager, Maritime, based in Singapore.

As a member of the Market Development team, Del Rio will be responsible for directly generating customer demand, identifying and cultivating new



P. Wang and L. Diaz Del Rio

opportunities to sell Thuraya's maritime products and services through direct engagement with end-users and service partners around the globe.

Del Rio brings a wealth of experience across all maritime segments gained at the satellite operator and service provider level derived from her previous positions in Inmarsat, as part of the Maritime Market Development team,

and in Satlink where she served the fishing industry addressing both end-user and governmental markets.

Wang has worked for leading maritime service providers including Navarino and Globecom where she served as Business Development Manager focusing on the Asia Pacific region for direct sales business.

Intelsat Appoints Cooper as VP-Government Affairs and Policy

Washington, D.C., July 30, 2014--Intelsat S.A. announced that **Patricia Cooper** has been named as the company's Vice President, Government Affairs and Policy, effective August 25.

In this newly created role, Cooper will be responsible for leading the company's U.S., European and other international. She will also manage



Patricia Cooper

Intelsat's political programs in the United States, including overseeing the company's political action committee. Ms. Cooper will work closely with other companies, associations and coalitions on issues of mutual interest. She will be based in Washington, D.C. and report directly to Michelle Bryan, Executive Vice President, General Counsel and Chief Administrative Officer.

Cooper joins Intelsat from the Satellite Industry Association (SIA), where she served as SIA's President since 2007. From 2002 through 2007, she held senior positions at the United States Federal Communications Commission (FCC), including Senior Satellite Competition Advisor and Chief, Regional and Bilateral Affairs Branch. Prior to the FCC, Ms. Cooper served as a Director of International Market Development at Core Express Corporation from 2000-2001 and as the

Senior Director/Director of Regulatory Affairs for PanAmSat Corporation from 1994-2000.

Cooper began her career at the United States Department of Commerce, where she was International Trade Specialist focused on the satellite industry from 1991 through 1994 and an Import Compliance Specialist from 1989-1990.

RRsat Expands North and Latin American Sales Team

Englewood Cliffs, New Jersey – August 7, 2014 –RRsat Global Communications Network Ltd., a provider of digital content management and global content distribution services to the broadcasting industry, announced the expansion of its U.S. sales team with industry veterans, **Rick Phelps** and **Dante Neyra**.

Bringing over 20 years of experience in sales and marketing, Phelps joins RRsat as the U.S. Director of Sales and is responsible for developing and maintaining client relationships, promoting the company's services and overseeing the overall new business process.

In his role as head of RRsat's Commercial Services and Development for Latin America and Hispanic Markets, Neyra is responsible for managing all sales activities within the Hispanic markets in North America and Latin America. He will also oversee the business development and relationships in those regions. Neyra brings more than 15 years of international business development experience in the TV, media and entertainment industries, as well as multicultural markets across the globe.

Gary Shmith Appointed new Global Director of Sales and Marketing at EM Solutions

Brisbane, Australia, July 17, 2014--EM Solutions, a Brisbane-based designer and manufacturer of broadband satellite communications equipment, has appointed Gary Shmith as its new

Global Director of Sales and Marketing.

Shmith brings over 25 years experience in the satellite communications industry and has spent



Gary Shmith

most of his career with the Codan group in pivotal sales, marketing and general management roles in the company's satellite communications division before it was divested in 2012. He served as Codan's Executive General Manager for Satellite Systems from 2006 – 2011 where he was successfully involved in both commercial and government markets for RF and microwave products globally.

Shmith will be based in Adelaide, South Australia and will work closely with the EM Solutions team in Brisbane and the company's global sales resources to plan and implement the next phase of the company's business growth. In addition to his duties with EM Solutions, Shmith will continue as a Director of his own business Silent-H Pty Ltd.

Yohann Leroy Appointed CTO of Eutelsat

Paris, France, July 11, 2014--Eutelsat Communications announced the appointment of Yohann Leroy as Chief Technical Officer (CTO), succeeding Raphaël Mussalian who will continue to contribute his experience to Eutelsat as Special Advisor on Technology Strategy reporting to Michel de Rosen, Chairman and CEO.

As CTO, Leroy's responsibilities include Eutelsat's in-orbit expansion program including satellite procurement, launch as well as in-orbit and network operations from its teleports around the globe, and driving Eutelsat's long-term satellite technology roadmap.

Hello Africa!



Africom 1
Satellite for
Africa



The Africom 1 satellite was successfully launched to the 78.5° E orbital position in early 2014. We are now open for business, ready to provide African broadcasters, telecom operators and local governments with a range of end-to-end broadcast and data services, including Digital TV & Video Distribution, Mobile Backhaul & IP Trunking, as well as Digital Content Delivery for education and entertainment in rural communities—all made possible by the Africom 1 satellite's high-power Pan-African C-band beams. Contact africom@thaicom.net to find out more.



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Leroy joined Eutelsat in 2010 as Director of Strategy before assuming the role of Director of Engineering in 2013. From 2007 to 2010 he was technical advisor, in charge notably of the digital economy and industrial policy, in the office of the French Prime Minister. He is an engineer of the Ecole des Mines and graduate of the Ecole Polytechnique.

GatesAir Appoints Phil Argyris CEO

Cincinnati, Ohio, August 7, 2014—GatesAir, a provider next generation over-the-air broadcast solutions for radio and television, today announced the appointment of **Phil Argyris** as CEO, effective August 20. Argyris will leverage his thirty years of management and leadership experience as well as his valuable tenure leading the former transmission division of Harris Broadcast to drive innovation and excellence in wireless over-the-air solutions.



Phil Argyris

Prior to joining GatesAir, Argyris served in senior management roles at Harris Corporation and Harris Broadcast, including Human Resources, General Manager of the then former GatesAir over-the-air Business Unit and Executive Vice President of R&D, Product Line Management and Marketing at Harris Broadcast.

Argyris holds an MBA in Industrial Relations and Organization Behavior from Temple University's Fox School of Business Management and a BBA in Finance from Temple University.

GatesAir, together with Imagine Communications were spun off last March from Harris Broadcast. GatesAir is headquartered in Cincinnati, Ohio, with operations in Quincy, Illinois.

Calendar of Events

Conference: 11 - 15 September 2014, Exhibition: 12 - 16 September 2014, **IBC 2014** - RAI Amsterdam, the Netherlands, Phone +44 (0) 20 7832 4100
E-mail: info@ibc.org Web: www.ibc.org

September 13, 2014 **Conference on High Throughput Satellite Broadcasting** organized by EUsatcom, Amsterdam RAI Elicium room D203, Contact: Hub Urlings Phone +31 20 4945097 E-mail: eusatcom@gmail.com; Web: <http://EUsatcom.net>

September 17-19, 2014, **VSAT 2014**, Millennium Gloucester Hotel, London, UK, phone Tel: +44 (0)20 7017 5506, E-mail: itmevents@informa.com
Web: www.vsatevent.com

October 6-8, 2014, **MILCOM 2014**, Baltimore Convention Center, Baltimore, MD, Contact: AFCEA Events, Phone +1-703-631-6130, E-mail: events@afcea.org
Web: www.milcom.org

October 27-30, 2014, **CASBAA Convention 2014**, Hong Kong, Contact: Cherry Wong, Phone +852 3929 1714, E-mail: cherry@casbaa.com
Web: www.casbaa.com

28-29 October 28-29, 2014, **VSAT Mobility 2014**, The Mira Hotel, Hong Kong phone Phone: +44 (0)20 7017 5506 E-mail: itmevents@informa.com
Web: www.mobility.vsatevent.com

October 28-30 2014, **China Satellite 2014**, Beijing, China, Contact: Tel: +86-10-58494900 Email: patjzhang@outlook.com Web: www.china-satellite.org

November 4-6, 2014, **Global Milsatcom 2014**, London, UK, Phone: +44 (0) 20 7827 6000 E-mail: events@smi-online.co.uk
Web: www.smi-online.co.uk/defence/uk/conference/global-milsatcom

November 12-13, 2014, **SATCON 2014**, Javits Convention Center, New York City, contact: E-mail ccw@nab.org Web: www.satconexpo.com

12-14 November 12-14, 2014, **VSAT Africa**, CTICC, Cape Town, South Africa, Contact: Tel: +44 20 7017 5506 Email: itmevents@informa.com
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Asia Pacific
Astrium



Indranil Majumdar
General Manager – Fleet
Jaya Holdings Limited



Todd Hill, Director
Product Management
& GCS Capacity
Panasonic Avionics



Gregg Daffner
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New NSR Study Projects over 820 Ultra HD Channels via Satellite by 2025

Wilmington, DE- August 18, 2014 - NSR's newly released report *UltraHD via Satellite, 2nd Edition*, forecasts over 820 channels of UltraHD content via Satellite by 2025. With Direct to Home (DTH) leading the charge, this next generation technology will not only lead to higher Average Revenue Per User (ARPU), but also greater customer retention.

NSR forecasts that by 2025, all regions will see some UltraHD content broadcast, not only via DTH, but also via satellite to Cable TV headends and IPTV providers. By 2025, DTH platforms will still lead the way, with over 560 4K and 8K UltraHD channels being broadcast; however, Cable and IPTV will also see healthy demand growth via satellite, with 260+ channels distributed to Cable and IPTV headends.



Source: LG

"In years past, and with previous technological advancements relating to TV content, we have seen a number of hurdles, not least of which has been the prohibitively high cost for end-users to attain TVs suitable for new content. With HD about 15 years ago, this was a major sticking point. Conversely, with UltraHD, this hurdle is eroding quickly, with UHD compatible TV sets reducing in price to as low as US\$1,000 today", notes Alan Crisp, NSR Analyst and report author. "Further, NSR notes that as compared to HDTV, a number of satellite operators and DTH platforms, from regions as diverse as North America to South Asia, are investing heavily in UHD content and UHD compatible set-top boxes", adds Crisp.

NSR's *UltraHD via Satellite, 2nd Edition*, also forecasts sig-

nificant revenue growth for UltraHD, with over US\$370m from capacity leasing for this new content type. In addition to being the "next big thing" in TV broadcasting, UltraHD is also expected to be an important differentiator among DTH platforms. This will be the case not only in developed regions, but also in developing ones, where a few UHD channels could be the difference in attracting subscribers to the tune of tens or even hundreds of thousands, albeit at relatively lower ARPUs.

Overall, UltraHD will be a solid niche market in the medium term, and will likely soon develop into mainstream adoption in most developed regions. With intense competition in developing regions, the picture is clear that UltraHD will be utilized as a

differentiator, even in spite of ARPUs that, in the short-term, may not justify such expenditures into this new content type.

This updated NSR study provides a comprehensive market analysis of the three major methods of UltraHD consumption via satellite – DTH, IPTV and Cable Distribution, in terms of market viability, cost considerations, ecosystem development and end user adoption issues. Segmented regionally and including case studies of key markets, the report offers not only an overview of this new technology from a high-level technological standpoint, but also a thorough look forward at the future development of UltraHD.

For additional information on this report, including a full table of contents and list of exhibits go to: www.nsr.com or call NSR at +1-302-295-4981.





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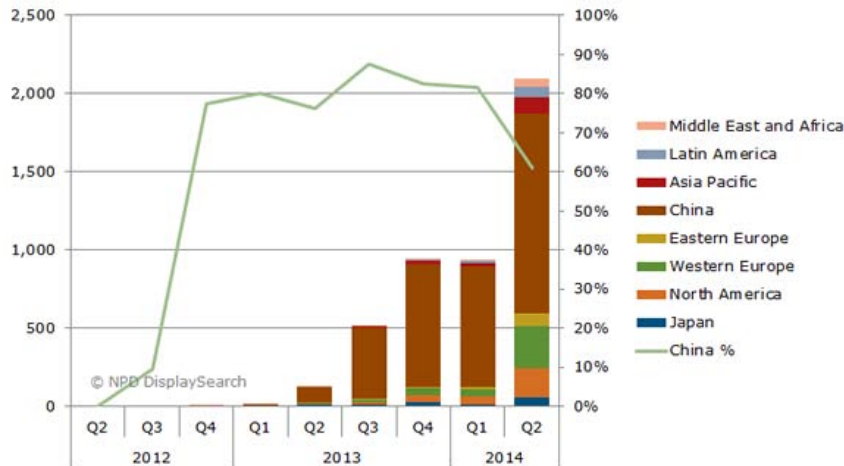
Ultra HD TV Shipments Continues to Rise

Santa Clara, Calif., September 1, 2014— More 4K ultra-HD (UHD) TV sets were shipped in Q2'14 than shipped all year in 2013. According to the NPD DisplaySearch *Quarterly Global TV Shipment and Forecast Report*, 2.1 million sets were shipped in Q2, compared to 1.6 million in 2013. Brands introduced their 2014 model ranges in Q2, with a clear focus on 4K as the “must-have” consumer feature for high-end television viewing.

With the introduction of the 2014 models, the shipment balance by region has shifted. In 2013 China accounted for approximately 80% of shipments in each quarter, as Chinese brands introduced low-priced 4K TVs. However, in China there were few sources of 4K UHD content, and TV brands were largely

marketing the higher pixel count to consumers. New 4K TV models from global brands have been introduced in every region this year, and there has lately been an increase in 4K

UHD content available from streaming providers.



Source: NPD DisplaySearch

model introductions have broadened the 4K TV business, which has become a lot like the high-end TV market, in general,” said Paul Gray, director of European research for NPD DisplaySearch. “Even so, there needs to be greater implementation of broadcast offerings that deepen the value of 4K sets, beyond pixel counts,” he added.



20% of European TV Homes to Subscribe to Online Packages

London, UK, August 27, 2014--The number of European homes paying a monthly subscription to receive SVOD [subscription video on demand] packages will climb from 1.78 million in 2010 (0.6% of TV households) to 17.99 million by end-2014 (6.4%) and onto 59.41 million in 2020 (20.7%), according to a new report from Digital TV Research.

The European Online TV & Video report forecasts that 6.8% of Eastern European TV households (11 countries) will subscribe to an SVOD package by 2020, compared with 29.7% in Western Europe (15 countries). Online television and video subscription revenues (SVOD) will soar from \$116 million in 2010 to US\$ 1,633 million in 2014 and onto \$5,502 million in 2020. The

UK will remain the SVOD revenue market leader, although Germany will be close behind by 2020.

European online TV and video revenues (over fixed broadband networks) will reach US\$ 12,872 million in 2020; up from only US\$ 923 million in 2010 and the US\$ 4,804 million expected in 2014.

The UK will remain the dominant territory for online TV and video revenues. However, its share of regional revenues will drop from 30% in 2010 to 20% in 2020. Italy will climb from only \$66 million in 2010 to \$1,237 million by 2020. Russia will grow from US\$ 20 million in 2010 to US\$ 874 million by 2020.

Online TV and video advertising reve-

nues are expected to be \$2,305 million in 2014, up from US\$ 663 million



in 2010. Rapid advertising expenditure growth will continue, to reach a European total of \$5,117 million in 2020. The UK will remain the market leader, with US\$ 1,175 million in 2020.

Online TV and video rental/pay-per-view revenues will still expand rapidly, climbing from US\$ 55 million in 2010 to \$858 million in 2020. Download-to-own revenues are forecast to be US\$ 1,395 million in 2020, up from US\$ 89 million in 2010.





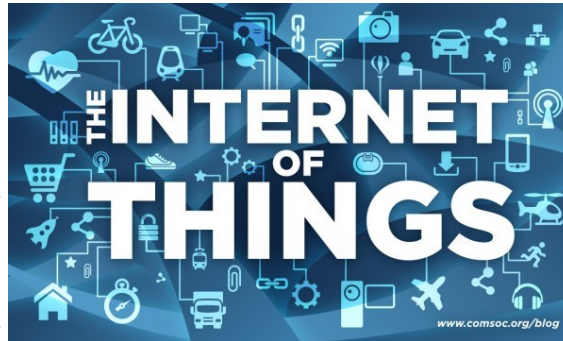
'IoT' to Drive Wireless Connected Devices Growth

London, UK, August 20, 2014--According to an updated market forecast from ABI Research, the installed base of active wireless connected devices will exceed 16 billion in 2014, about 20% more than in 2013. The number of devices will more than double from the current level, with 40.9 billion forecasted for 2020.

Principal analyst Aapo Markkanen comments, "The driving force behind the surge in connections is that usual buzzword suspect, the Internet of Things (IoT). If we look at this year's installed base, smart-phones, PCs, and other 'hub' devices represent still 44% of the active total, but by end-2020 their share is set to drop to 32%. In other words, 75% of the growth between today and the end of the decade will come from non-hub devices: sensor nodes and accessories."

From every technology supplier's strategic point of view, the critical question is how this plethora of IoT devices will ultimately be connected. Until recently, the choices that product OEMs have faced have been fairly straightforward,

with cellular, Wi-Fi, Bluetooth, and others all generally addressing their relative comfort zones. Going forward, they will be in an increasing competition with each other, so for the suppliers the strategic stakes are getting much higher.



ups like Electric Imp and Spark could do the same for Wi-Fi. And finally, we also shouldn't ignore what's going on with passive, proximity-based connectivity offered by RFID and NFC. For example, Thinfilm's plans with printed electronics warrant attention."

These findings are from ABI Research's "Internet of Everything Market Tracker" product, and part of the Internet of Everything Market Research.



Modest Revenue Growth for FSS Operators

Paris, France, August 13, 2014--According to Euroconsult's newly released report, "Company Profiles - FSS Operators: The Complete Analysis", the Fixed Satellite Services (FSS) industry generated US\$ 12.2 billion in revenues in 2013, corresponding to 2% growth over revenues in 2012. 60% of revenue-generating FSS operators experienced a revenue growth slowdown in 2013 after years of robust growth; ten operators reported a revenue decrease in 2013, compared to only six operators in 2012.

"In order to re-energize revenue growth, satellite operators are increasingly exploring new revenue streams; in recent years the focus has primarily been on launching new satellites over emerging markets and investments in HTS systems or payloads," said Nathan

de Ruiter, Senior Consultant at Euroconsult and Editor of the report.

"Eleven FSS operators offered HTS capacity to the market in 2013, while nine operators will launch their first HTS satellite or payload within the next four years. Further, we have seen a growing number of regional operators such as ABS, APT Satellite, Arabsat, RSCC and Gazprom Satellite Systems with international expansion plans by launching new satellites outside of their region of origin," he added.

While M&A activity picked up in 2013 and more industry consolidation could occur in the near term, inorganic growth opportunities are understood to be limited and often complex for the majority of operators. As a result, they must increasingly pursue strategic part-

nerships in order to grow organically while mitigating financial and market risks. The nature of these partnerships varies widely; they include the joint use of satellites (e.g. ABS/SingTel and Measat/Azercosmos), the joint use of orbital positions (e.g. Arabsat/Es'hailSat), bulk capacity lease deals (e.g. Eutelsat/Nilesat, Measat/Thaicom), as well as joint satellite procurement (ABS/Satmex).

While the market structure of the FSS industry remains concentrated at the top, it has become increasingly fragmented at the bottom. The majority of these emerging satellite operators are backed by national governments that either want to boost the national telecom market or decrease dependence on foreign satellite operators.



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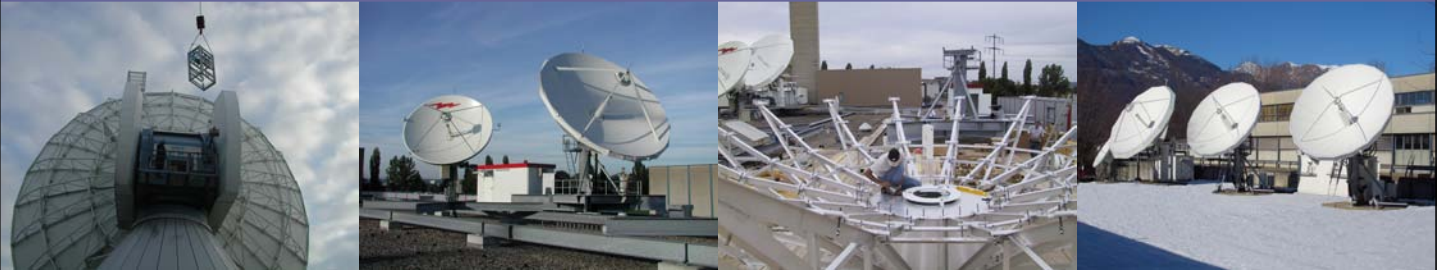
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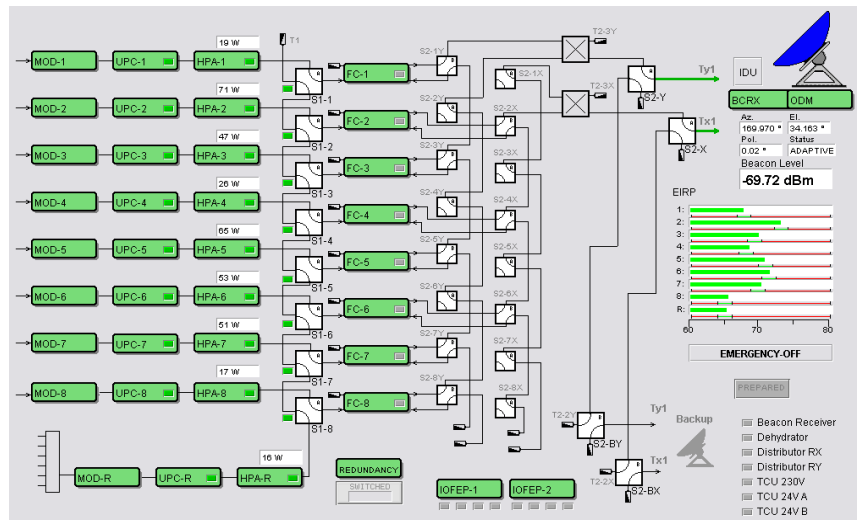
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Safeguarding Satellite Operations

by Martin Jarrold

Partnership between the **Global VSAT Forum (GVF)** and the **Satellite Interference Reduction Group (IRG)** brings to this year's IBC a series of Workshops which will offer to the satellite transmission community a range of key solutions to uplinking problems increasingly faced across various satellite industry segments, particularly broadcasting.

The objective of the Workshops is to enable attendees to learn how industry associations are collaborating on a suite of initiatives to support the broadcast community, including for spectrum reliability, uplink operator skills and productivity, equipment certifications, quality accreditations and certifications, and access predictability.

Using meeting facilities kindly provided by SES, the GVF-IRG Workshop sessions will be focused on the theme ***Safeguarding Your Transmission Operations***, and will offer practical advice to broadcasters, operators, and manufacturers alike. The sessions are aimed at educating participants – those involved

with Satellite Transmissions, RF Systems, Uplinking and Satellite News Gathering – as well as at answering a number of important questions, such as: “What are we trying to fix?”; “How do I, as a Broadcaster, Safeguard my Operations?”; “Why and what does any Uplinker need to do?” as well as other questions put by the audience.

Interviewed for this article, David Hartshorn, Secretary General of GVF, commented that “We are finding, both from within our membership and elsewhere across the industry, that companies are striving to instill best practices across their operations, ensuring they can reduce errors and enjoy uninterrupted service. In order to achieve that, many need practical advice such as these sessions are offering.” And Martin Coleman, Executive Director of IRG added “Having made a great deal of progress with the various initiatives over recent months, we now need to work with satellite users to ensure they have the proper tools to help them roll-out those initiatives and the technologies across their operations. We hope

these sessions will go some way to starting that education program and give attendees the knowledge and understanding they need to safeguard their operations, whichever part of the industry they are from.”

The IBC Workshop sessions will take place in the **SES Balcony Suite, Hall1, BM10/11** on **Sunday 14th September from 12pm to 12:45pm** and on **Monday 15th September from 3pm to 5.15pm**. Readers may register for a session and obtain further information by visiting www.gvf.org or <http://satirg.org/sessionsatibc/>.

Obviously, all broadcasters wish to safeguard their satellite operations, and they are invited to contribute to the Workshops, joining information-sharing about, and detailed discussion of, already deployed Global Initiatives, Resolutions and Action Plans, and to help develop answers to some difficult questions - answers that will aid planning our way forward in resolving common problems faced across the industry.

Carrier ID Tours at IBC 2014

Carrier ID (CID) is a signal embedded into a video or data transmission path, and it is an important part of the solution to mitigate carrier interference, as it helps to pinpoint the source of interference quickly, enabling faster resolution.

In 2013 major milestones were reached – achieving both a DVB Specification and an ETSI Standard for the new CID technology. This technology is a fantastic step in the right direction, but now we need to get users to require it and put in place the processes for satellite operators to handle the monitoring and operation of CID.

During IBC 2014 IRG will continue its established CID Tour, featuring the following elements:

Transmit – This part of the tour focuses on what happens at transmission: (1) An Identifier is injected into the carrier by the modulator (2) The Carrier ID is transported over satellite below the noise.

Detect – Here, the focus is on how the CID is detected, where the ID is read from the carrier by special measurement receivers.

Resolve – This part is handled by the satellite operators, with the help of a new Carrier ID database. Many operators are in the process of implementing CID decoding in their carrier monitoring systems, to meet the World Broadcasting Unions-International Satellite Operators Group (WBU-ISOG) resolutions, which state that all satellite operators need to begin the process of CID implementation by January 2015.

The tour will take place on the following schedule – Friday 12th September at 3pm and then Saturday 13th September through to Monday 15th September, with two tours per day at 11am & 3pm. Intending participants should meet outside Hall 1 (between Halls 2 and 14), 15 minutes ahead of each tour.



GVF Training

In satellite news gathering (SNG) vans/trucks and in teleports, you're likely to find equipment with manual controls for antenna pointing, carrier setup, and monitoring. To reliably and quickly establish an uplink feed, and to avoid causing interference, equipment operators must be properly trained. Now, highly-effective training is available from GVF in a series of online, interactive, simulator-driven training courses. Operators, technicians, and engineers of all levels can work through the training at their own pace, practicing on realistic equipment simulators. GVF's 530-series courses are designed to prepare students for the industry-standard EUI certification examinations, which are also given online.

In the GVF 532 course, which follows on from GVF 530 and 531, students learn how to use manually-operated equipment and a spectrum analyzer to establish interference-free uplinks. They begin by identifying the correct satellite from its beacons and spectral signature as they command the antenna to move. They then learn how to carry out the full Universal Access Procedure, including carrier power lineup and cross-pol, with their counterparts at the satellite operator's Access Center.

Candidates may use their GVF learning accounts to register for exams, pay the exam fee, take the exam, and display their certificates. If desired, certificate holders will appear in the public database at www.rfi-eui.org, as well as on www.gvf.org/training, where all of their GVF certifications are shown.



Martin Jarrold is Director of International Programs of the GVF. He can be reached at martin.jarrold@gvf.org

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Beyond the Box: CASBAA Convention 2014

CASBAA's highly anticipated annual multichannel TV industry convention will take place from October 27-30, 2014 at the Grand Hyatt Hong Kong. A popular stop on the Asia Pacific broadcasting calendar, this year's event will explore the theme "Beyond the Box."

Reflecting the evolution of the television industry, this year's CASBAA Convention theme looks at what the future holds for broadcasting – while never losing sight of the core business of linear TV.

"At its most basic level, "the box" refers to the traditional television set that sits in the living room – or, more likely today, is mounted on a wall," said Christopher Slaughter, CEO, CASBAA.

"Linear TV is still a major industry driver in the Asia Pacific, but we are seeing the proliferation of new technologies and new platforms that are providing consumers with innovative viewing options "beyond the box," said Slaughter.

"In order to take advantage of these new opportunities, it is imperative to explore different business models and strategies that will encompass these alternate revenue streams," added Slaughter. "In short, it is time to start thinking outside of the box!"

Key topics to be covered at the major sessions during the convention will include developments in over-the-top (OTT) TV services, opportunities for members in the mobile broadcasting space, as well as ultra-high-definition "4K" television, and innovation in transmission and broadcast technology and its implications for the industry. Sports issues – including rights, exclusivity and licensing – and broadcast



news will also be major subjects explored at this year's event.

On hand to tackle these issues will be a world class roster of respected industry thought leaders including Jon Feltheimer, CEO, Lionsgate; Victor Koo, Chairman & CEO, Youku Tudou; Andrew Rashbass, Chief Executive of Reuters, Thomson Reuters; Tom Mockridge, CEO, Virgin Media; Peter Limbourg, Director General, Duetsche Welle; Barry Cupples, Global CEO, Investment, OMG; David Haslingden, CEO, NHNZ; Jim Samples, President, International, Scripps; Sam Blackman, CEO, Elemental Technologies; Dr. Justin Chuang, VP & Group Director, Communications Technologies Group, ASTRI; and, many others.



Key topics to be covered at the major sessions during the convention will include developments in over-the-top (OTT) TV services, opportunities for members in the mobile broadcasting space, as well as ultra-high-definition "4K" television, and innovation in transmission and broadcast technology.

Outside the Main Ballroom of the Grand Hyatt, where plenary sessions take place, there will be plenty of opportunities for members and delegates to get together at the newly revamped exhibition space which will feature display booths

and networking lounges.

Sponsors for the CASBAA Convention 2014 include ABS, APT Satellite, ARRIS, AsiaSat, Australia News Channel, Bloomberg, Conax, Deutsche Welle, Elemental Technologies, FRANCE 24, InvestHK, Irdeto, ITV, MEASAT, now TV, Playboy Plus Entertainment, PwC, SES, Time Warner, TrueVisions and TV5MONDE.

For further information about the CASBAA Convention 2014, please visit www.casbaaconvention.com.

The Satellite Markets 25 Index™

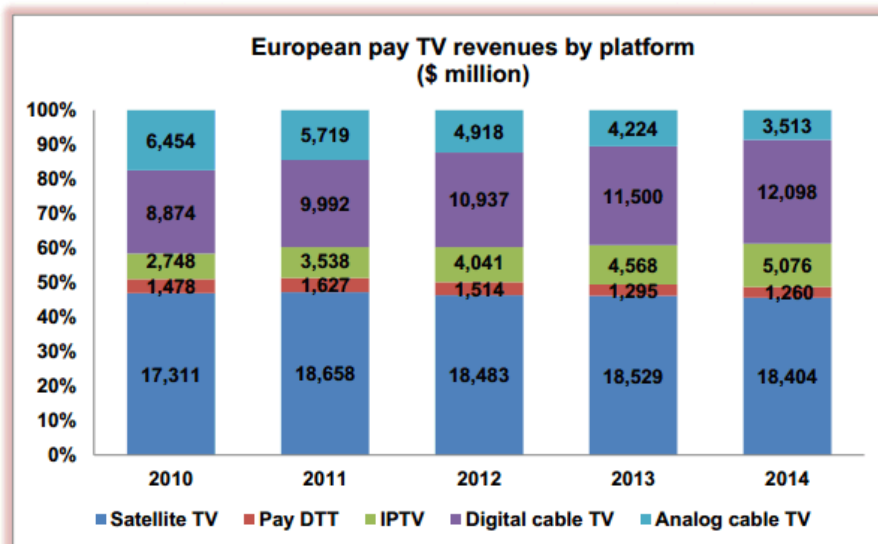
Company Name	Symbol	Price (Sep 02)	% Change from Last Month	52-wk Range		% change from 52-wk High
Satellite Operators						
Asia Satellite Telecommunications	1135.HK	27.55	-10.99%	26.40	35.00	↓ 21.29%
Eutelsat Communications S.A.	ETL.PA	25.825	3.42%	21.065	26.06	↓ 0.90%
APT Satellite Holdings Ltd.	1045.HK	11.56	-7.37%	7.23	12.78	↓ 9.55%
Inmarsat Plc	ISAT.L	700.00	-6.10%	80.01	784.00	↓ 10.71%
SES GLOBAL FDR	SES.F	28.25	2.96%	20.837	28.663	↓ 1.44%
Satellite and Component Manufacturers						
The Boeing Company	BA	125.48	-2.80%	104.62	144.57	↓ 13.20%
COM DEV International Ltd.	CDV.TO	4.08	-1.92%	3.42	4.40	↓ 7.27%
Lockheed Martin Corporation	LMT	173.80	6.87%	121.52	177.19	↓ 1.91%
Loral Space & Communications, Inc.	LORL	75.70	4.60%	64.53	82.13	↓ 7.83%
Orbital Sciences Corp.	ORB	26.82	-9.24%	17.26	34.16	↓ 21.49%
Ground Equipment Manufacturers						
C-Com Satellite Systems Inc.	CMLV	1.42	-2.07%	1.36	2.37	↓ 40.08%
Comtech Telecommunications Corp.	CMTL	38.01	7.98%	23.86	40.48	↓ 6.10%
Harris Corporation	HRS	71.00	-2.95%	56.50	79.32	↓ 10.49%
Honeywell International Inc.	HON	95.50	-0.48%	80.23	98.09	↓ 2.64%
ViaSat Inc.	VSAT	57.48	0.77%	51.50	74.78	↓ 23.13%
Satellite Service Providers						
Gilat Satellite Networks Ltd.	GILT	4.79	0.21%	4.09	5.71	↓ 16.11%
Globecom Systems Inc.	GCOM	14.10	0.00%	10.49	14.91	↓ 5.43%
International Datacasting Corporation	IDC.TO	0.0850	-26.09%	0.07	0.21	↓ 59.52%
ORBCOMM, Inc.	ORBC	6.28	-6.82%	4.69	8.21	↓ 23.51%
RRSat Global Communications Network Ltd	RRST	7.46	-16.65%	6.97	9.60	↓ 22.29%
Consumer Satellite Services						
British Sky Broadcasting Group plc	BSYBY	59.13	-3.97%	51.38	63.79	↓ 7.31%
DIRECTV	DTV	86.71	0.25%	57.40	89.46	↓ 3.07%
Dish Network Corp.	DISH	66.00	1.03%	43.75	67.50	↓ 2.22%
Globalstar Inc.	GSAT	3.92	-5.54%	2.33	4.53	↓ 13.47%
Sirius XM Holdings Inc.	SIRI	3.64	7.69%	2.98	4.18	↓ 12.92%

INDEX	Index Value (Sep 02)	% Change from Last Month	% Change Jan. 03, 2014
Satellite Markets 25 Index™	1,714.59	-2.44%	0.22%
S & P 500	2,002.28	1.47%	9.34%

The Satellite Markets 25 Index™ is a composite of 25 publicly-traded satellite companies worldwide with five companies representing each major market segment of the industry: satellite operators; satellite and component manufacturers; ground equipment manufacturers; satellite service providers and consumer satellite services. The base data for the Satellite Markets Index™ is January 2, 2008--the first day of operation for Satellite Market and Research. The Index equals 1,000. The Satellite Markets Index™ provides a benchmark to gauge the overall health of the satellite industry.

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Source: Digital TV Research Ltd

European pay TV revenues will reach US\$ 40.35 billion in 2014, up from US \$36.87 billion in 2010, according to a new report from Digital TV Research. The [European Digital TV Databook](#) (covering 39 countries) reveals that the 2014 total will only increase by 0.6% on 2013 as ARPUs are hit by competition and the transition of subscribers to double-play and triple-play bundles (which result in higher overall ARPUs for operators but lower TV ARPUs).

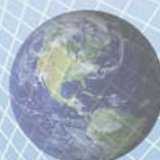


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