

Industry Trends, News Analysis, Market Intelligence and Opportunities

Opportunities & Challenges the African Satellite Market

by Virgil Labrador, Editor-in-Chief

second fastest growth rates in the world of the world's average of 37.7 percent. (after the Asian market). The statistics on the Afri-

grow at an average growth rate of 6% per annum.

The growth in several vertical markets such as oil

and gas, mining, forestry and other industries are

driving economic growth in the region. This in turn

has led to a rising middle class estimated to number

Despite major gains in the last few years, Africa still

remains a largely underdeveloped market. Accord-

ing to the world Internet Usage Statistics, the African continent has approximately 15.3 percent of frica has made major strides in the last dec- the world's population and an Internet penetration ade, resulting in the region achieving the rate of 15.6 which lags significantly behind the rest

tal TV Research. The Digital TV Sub-Saharan Africa

be converted by 2020. Analog terrestrial switch-

over will account for much of this growth, with

more than two-thirds of TV homes receiving DTT

signals by 2020 - up from fewer than a fifth at end-

2013. Around 28% of TV households will have satel-

lite dishes (Pay and FTA combine) in 2020.

can economies are staggering: demand for broad- For African economies to continue to grow, broad-

band is growing at 50% per year, in some countries like Angola, the demand is increasing by 75% and in Tanzania, it's 67% annually.

The total population of the African continent is over one billion and is expected to grow by 2.5% per annum. In contrast, Asia and Latin America have a population growth rate of only one percent. Africa has the world's highest percentage of young population is under 35 years services. old.



The growing vertical markets in Africa such as oil and gas, mining and enterprise, among people-about 65% of the others, are driving demand for satellite

One-third of the African countries' economies will Forecasts report estimates nearly every home will

band connectivity is a crucial element to sustainable growth. Satellite technology is still the most cost-effective broadband solution for rural and remote areas in Africa where 80 of the population resides.

Opportunities in Pay TV Segment

Digital penetration will exceed half the TV households in Sub-Saharan Africa very soon, according to Digi**News Analysis** MH 370.....14 Viasat Lawsuit.....15 **Making Complexity** Pay Off By R. Bell.....16 M & As.....19 Executive Moves....21 Events Calendar.....22 Market Briefs.....25 Market Inteligence..29 Featured Event......33 Stock Index.....34 Vital Statistics......35 Advertisers' Index...35

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around 300 million.



capacity with access to Europe and the Middle East, enabling services throughout the entire African continent. With AMOS-2 and AMOS-3 co-located at 4*W serving Europe & the Middle East, AMOS-4 successfully launched to the 65°E serving Asia and Russia, and AMOS-6 with Pan European coverage, scheduled for launch in 2015, Spacecom will further enhance its position as a global satellite operator.

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From the Editor

Key Cases to Follow



S ome industries are more prone to litigation than others. I always though that the satellite industry is not as much inclined. In this industry the laws of physics and the market forces supercede most disputes. But in just the last few months we have seen a number of high profile lawsuits that will have a profound effect on our industry.

Perhaps the most important case affecting the broadcast industry is the suit brought about by the so-called traditional broadcasters in the US against a start-up service Aereo. The U.S. Supreme Court heard arguments last month and will be issuing a ruling by June. Broadcasters are claiming that Aereo is stealing their signals without paying retransmission fees. Aereo uses a network of tiny antennas at strategically located data centers and converts the Over-the-Air (OTA) broadcast signals to IP and streams it online. This would enable their subscribers to view OTA signals on any device, ie. Internet connected TV, tablet, iPhone or iPad, etc.

At issue in the Aereo case is whether their service is an innovative way to distribute signals in a new multiplatform media environment or just plain copyright infringement. We will be reporting on how the US Supreme Court will rule on this important case next month. Meanwhile in this issue, we report on page 15, the initial ruling in the Viasat vs. Space Systems Loral patent infringement suit. Another lawsuit we are following and will be reporting next month is the suite brought about by Spacex against the US Air Force regarding how it awards launch contracts.

Stay tuned.

Vigil Lahder

WEB EXCLUSIVES: Access video interviews from NAB 2014

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Cover Story

African Market ... From page 1

Sub-Saharan Africa will add 20 million TV households between 2013 and 2020 to reach 68 million. However, this means that there are – and will continue to be – more than 100 million homes without a TV set. In fact, TV penetration of total households will only reach 38.4% by 2020., according to Digital TV Research.

Simon Murray, Principal Analyst at Digital TV Research, said: "This reveals the longterm potential for the region, with plenty of growth expected beyond the forecast period. The construction of next generation broadband networks will ensure that satellite TV and DTT will not be the only growth areas."

Of the 11.01 million pay TV subscribers at end-2013, 8.50 million were pay satellite TV. The pay total will more than double to 25.65 million by 2020, with satellite TV contributing 14.34 million and pay DTT another 8.86 million. South Africa supplied 4.84 million of the 2013 total pay TV subs, and will grow by 2 million to 6.85 million in 2020. Nigeria will triple from 2.12 million in relatively mature market of South Africa,

double between 2013 and 2020 to 8.17 million.

Sub-Saharan pay TV revenues will reach US\$ 5.35 billion in US\$ 1.80 billion recorded in 2010. Satellite TV accounted for (contributing US\$ 742 million in 2020). Competition and order to get business in some African countries. take-up of the cheaper DTT packages will force ARPU down in most countries.

Challenges

The vast potential for growth in the African market has attracted almost all the major satellite companies in the world, including several Asia-based operators. While there is no overcapacity as of yet, operators are seeing a price war which has led to a substantial drop in transponder leasing prices.

Development in Africa and regulatory regimes are very uneven across the 55 countries that comprise the region. Others have described Africa as more like four regions. The diversity in conditions in each Africa country requires different strategies and allocation of resources. Basic infrastruc-



ABS-2, launched in February 2014, is a highly sophisticated multimission satellite, equipped with a communication payload of 32 C, 51 Ku and 6 Ka-band transponders (a total of 89 active transponders) across 10 different beams. ABS-2 covers Eastern and Central Europe, Africa, the Middle East, Asia Pacific, Russia and 2013 to 6.15 million in 2020. Excluding the the CIS countries and has an operational life for at least 15 years.

the number of pay satellite TV households will more than ture such as road and electricity is still lacking in most parts of Africa, and this has hampered the development of broadband infrastructure.

2020, up by 69% from \$3.17 billion in 2013 and triple the Access to financing is another problem facing start-ups in Africa and even medium to large enterprises. Operators nearly all of the 2013 total, but pay DTT will make inroads have to be flexible and provide innovative financing terms in

> Yet despite the challenges, satellite operators still see Africa as a viable market in the long-term, especially for Direct-to-Home and broadband applications, which will continue to grow in the next few years.



Virgil Labrador is the Editor-in-Chief of Satellite Market and Research based in Los Angeles, California. He is the author of two books on the satellite industry and has been covering the industry for various publications since 1998. Before that he worked in various capaci-

ties in the industry, including a stint as marketing director for the Asia Broadcast Center, a full-service teleport based in Singapore. He can be reached at virgil@satellitemarkets.com



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disappoint. The show featured 90,000 band Plan. A plan that would demonattendees from 159 countries and it strate that broadcast was the "highest between the NAB and the FCC.

NAB officially opened the show by pre- of the FCC had the floor. His riposte senting a somewhat altruistic view of was that "Broadcast licensees are no broadcasting, focusing on "free and more in the television business than a levels of service for Americans. local" and expounding on the role television plays in all major events – happy or tragic. "We are here to be the public's eyes and ears...to lead them out of darkness during times of crisis....to share profound moments....and to connect to our family, friends and neighbors. We are here to be the voices against oppression....and we are here to be the megaphones for freedom and democracy," said Gordon.

ast month's NAB 2014 promised a prelude to demanding to know why to highlight the new multimedia the FCC didn't have a National Broaddistribution platforms and did not cast Plan as well as the National Broadthe upcoming Incentive Auction.

Gordon Smith, President and CEO of The next day Tom Wheeler, Chairman canal company was in the barge business". He expounded on this state- On the show floor and in many of the ment pointing out that in his opinion Broadcast licensees have the potential to leverage their local news content by of the other shows that focused on just providing an Over The Top (OTT) service and urged them to use their unsold avails (advertising slots) to promote this and to move from the ntelsat teamed with BT, Ericsson, New-"television" business to "information" business.

To hear the CEO of the NAB speak, one Given that Verizon has already trialed don last September using Sony 4K could be forgiven for forgetting that broadcast television using LTE, albeit in UHDTV cameras and mixers. This was most broadcasters are commercial or- the limited area of a stadium, and streamed live at IBC in Amsterdam. ganizations as keen to make a profit as AT&T is rumored to be looking into This time the event was transmitted any other company. This however was this, this could be a timely warning to from Sony's storage systems. Ericsson

Photo courtesy of the NAB

the broadcasters. Wheeler's speech ended on a more conciliatory note: "We want to work with you to focus on the future...Your industry has led the opened with a virtual sparring match and best use of spectrum" i.e. a dig at way in serving America's viewers in the past, and we have confidence that you can do so in the future. We look forward to working with you as broadcast licensees who have meant so much to this Nation, reach for and define new

> other sessions 4K was very much the dominant topic. However, unlike some one aspect of 4K, at NAB the whole value chain was in evidence.

the tec and Sony to demonstrate end-toend video transmission via fiber and satellite. BT shot a rugby match in Lon-

Feature

Contribution Encoders were used to encode the four 3G-SDI (3 Gigabit -Serial Digital Interface – a standard used for transmission of uncompressed, unencrypted video signals) feeds in real time. These four feeds were transmitted as a 100Mbps stream over the BT fiber Network to New York where they were transferred to the Intelsat fiber network for onward transmission to Riverside California where they were uplinked to one 36MHz transponder on Galaxy 17 using Newtec's modulating equipment with DVB-S2X for improved bandwidth efficiency (as described in last month's "Trends in Broadcasting" article). Ericsson decoders were used in Las Vegas and the 4:2:2 10-bit 4K signal at 60 frames per second (fps) was shown in the Intelsat and Ericsson booths.

Ericsson was awarded the NAB Technology Innovation Award for its pioneering work in 4K television. As well 30fps. as the demonstration with Intelsat, Ericsson has undertaken more than 25 Sony also teamed with Cisco for anlive trials with other industry partners other demonstration of 4K showing live such as BT Sports, Measat, and Sky 4K 60P content from New York using Sports and will be working with FIFA High Efficiency Video Coding (HEVC or later this year. Demonstrations by H.265) on Cisco Videoscape AnyRes

Among the many products launched at the NAB include Inmarsat's IsatHub, a new service that enables reporters to connect their Android or iOS phones and tablets to the internet when outside the range of cellular or fixed networks The service, which is delivered over the Inmarsat-4 network, is accessed via an app that connects via Wi-Fi to a lightweight terminal smaller than an



iPad.Journalists can use their phone to talk, text and access the internet as they would do normally, up to a range of 100 meters from the IsatHub terminal, with up to 10 people able to share the same connection. (photo courtesy of Inmarsat)



Ignacio Sanchis, Business Director of Spanish operator Hispasat (center) at the launch of the first full-time 4K channel for North and Central America at the NAB. On the left is Eric Gallier, Director of Marketing of Thompson Video Networks and on the right is Ludovic Noblet, Principal Broadcast Technology Architect, Dolby Technologies. (image: Satellite Markets and Research).

Ericsson are always at 60fps which is equipment.

The video stream was defined as "true" 4K, whereas some of transported over fiber to Las Vegas the other demonstrations are at 24 or where it was decoded on a Cisco Set Top Box and displayed on Sony UHDTVs.

> A more widely seen demonstration will take place on April 27th when the canonization of Pope John Paul II and Pope John XXIII will be transmitted live in both 3D and 4K as well as High Definition (HD). Broadcasters around the world will carry the HD production and the 3D production will be shown in movie theaters in many countries as well as on the 3D channels of BSkyB, Sky Deutschland and Sky Italia. The 4K feed will be uplinked by Globecast for live replay on a large screen in front of the Vatican. The 4K stream will possibly also be shown on a large outdoor screen in Poland, birthplace of Pope John Paul II.

> Later this year some of the FIFA World Cup Matches will also be shot in 4K and potentially a few in 8K as well.

> Still on the 4K theme, Hispasat took the opportunity of being at NAB to launch Hispasat 4K, its Ultra High Definition (UHD) channel for North and Central

Feature

ponder 94 on Amazonas 3. It will transmit at 18Mbps and use HEVC compression. It has had a similar channel operational in Europe since last September. Like the one in Europe this will be a Free-to-Air (FTA) demonstration tion switchers that enabled 4K resolu- marsat-4 L-Band network. The phones channel. Working with Hispasat on this channel are Dolby, High TV, LG, Satcom Digital Networks and Thomson and Televisión Española (the Spanish National Public Service Broadcaster other- The technology for 4K may be getting wise known as TVE). Although the there, but in the panels, as at Satellite No NAB would be complete without an channel is now operational the set-top boxes won't be available until Q3 of the business case, with no one considthis year. A similar channel for South America is due to launch in a few months time.

the European Space Agency to jointly develop a 4K system. The objective of the program is to enable the costeffective delivery of live 4K content via satellite to home and cinema screens in On a somewhat different note SES an-Europe. HEVC will be used for compression.

thing; making 4K a commercial reality is another. The television sets themselves are still expensive but with the entry of many Chinese manufacturers into the market the price is starting to fall. At the other end of the value chain 4K studio cameras to date have been priced out of the reach of all but the that allows reporters to wirelessly con- this space to see how NHK's plans unmajor studios.

At NAB, Blackmagic Design and Axa were just two of the many companies launching 4K studio cameras at under \$10K, a significant saving compared to other high-end studio cameras, bringing 4K production within reach of the smaller studios and independent program makers. At four times the bandwidth of HD changing to 4K also means upgrading cabling, routing, switching and storage for broadcasters. Solutions for this are also coming and Ross Video for example introduced updated software for its Carbonite live produc-

America. This will be carried on Trans- At the NAB, FCC Chairman Tom Wheeler urged broadcasters to move from the "television" business to the "information" business.

users.

2014 there was much discussion about ering it to be there yet.

At least two of the panels discussed the stration included transmission over a change in structure of the value chain; IDC announced that it is working with moving from a linear one to a circular one with the consumer in the center and very much in charge of the "what, when and where."

nounced that on April 8 Delta's first speakers into the display. NHK claims transatlantic flights utilizing Gogo's inflight connectivity service went live. Showing the technical feasibility is one The agreement between SES and Gogo was announced at the end of last year. NHK is intending to have a fully opera-Gogo is using three SES satellites, SES-1 tional 8K service in 2020 for the Tokyo for US coverage, SES-6 for trans- Olympics following trials scheduled to Atlantic coverage and SES-4 for Europe. start in 2016, which will include broad-

> launch: IsatHub. This is a new product more IBC shows before then. Watch nect their Android or iOS phones and fold. tablets to the IsatHub (smaller than an iPadwhich in turn connects to the In-

> tion, higher frame rates and progres- can be up to 100 meters away from the sive image processing at no charge to hub and up to ten connections can be active at any one time. Speeds of up to 384Kbps are available.

> > NHK theater demonstrating 8K or Super Hi-Vision as the operator has named it. This offers four times the resolution of 4k. This year the demon-6MHz broadcast channel - the first time that this has been seen outside of Japan. The NHK booth also included a new small hand-held 8K camera weighing less than 5lbs, an 8K-capable realtime HEVC encoder, and an integrated 3D sound system that incorporates 12 this can be integrated into virtually any household TV.

casts from that year's Olympics. There Inmarsat also chose NAB for a product will be two more NAB shows and two ~



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YAMAL-402 SATELLITE







Where Will Satellite Stand in the **New TV Landscape?**

by MarWWelinski

coming from, we have to understand what is happening with the rise of so called "Connected TV." Nowadays, we see more and more televisions connected not only to TV channels, but also to the Internet. In fact, it's a bit like the continental drift theory, only in reverse. It's similar to a shock encounter between two continents: the world of traditional television vs. the Internet world. It is, in effect, the ment and delivery value chain..." fusion of two worlds living separate lives up to now, each with its own flora and fauna and climate, colliding with great force and creating great shock in the market.

o understand where the technological changes are "...If satellite operators want to benefit from this new TV landscape and create solid business opportunities, they will have to consider the big picture of the new content manage-

Why are these results shocking? These two continents have tional programming methods are forced to share the reign

end of time-based programming is near, however tradi-

virtually nothing to do with one another. The world of television dates back sixty years, together with its history, economic models and habits. It's a world full of professionals; an organised, structured and stable business. Or at least it used to be. The Internet, on the other hand, is something quite different. It's a world mostly made up of amateur videos, shared content and open exchanges. In fact, you probably couldn't imagine two more different worlds!



MARKET VALUE OF DISTRIBUTION VS. CDN

with more flexible program timing solutions provided by digital TV.

Another major phenomenon is the rapid growth of multi-screen consoles provided by computer TVs, smartphones, tablets and IFE consoles for example. With help from these devices, videos are so conveniently portable that locations, travelling methods or time zones are no longer restrictions.

Indubitably, the world

We should note two phenomena in progress:

Traditional television has transformed. Traditional, so-called "linear", television is still present and growing, however it's During this time the satellite industry seems under attack, now accompanied by a digital ecosystem, including OTT, catch up and podcasts. Not long ago, we used to rush home to make it on time for the evening news or a TV sitcom. The answer lies in its apparent technological limitation. The Nowadays, audiences are given the option to see what they world of connected TV is a venue of interactivity and multiswant when they want. This is what we refer to in the indus- creen technology. Yet satellite is merely one method to try as "delinearisation". This does not mean that that the broadcast. Therefore, in the future, satellite will be embed-

is witnessing a particularly crucial time in the development of television. The repercussions on our way of life, and indeed our civilization, are huge, especially with the breakdown of telecom boundaries.

especially in mature markets, but why is that?

aging images. This is the very reason why in Euroconsult's new research report, the traditional term of "video transmission services" transitioned into a larger concept of "content management and distribution."

In the coming broadcasting era, satellite **bution world**..." will have to rely on its genuine technological strength. Four points must be considered within this framework:

ded in a new and innovative way of pack- "...the major issue for the coming years will be bandwidth. In a world that is becoming increasingly hungry for capacity, the saturation of the terrestrial networks and the cost of bandwidth is something that will become more and more important in the broadcasting and video distri-

unparalleled efficiency of its economic model.

Satellite distinguishes itself by its solid offering and the of highly-flexible satellites, which will offer local television or develop live broadcasts from any point on earth with the same ease as an ordinary telephone call.

-Satellite is the easiest and most economic means of broadcasting traditional channels across entire continents. It forms the basis of this industry which will remain solid.

Satellite is and always will be the ally of high-quality image. Highdefinition (HD) channels are



SATELLITE TV CHANNELS BY DISTRIBUTION FORMAT

Finally, the major issue for the coming years will be bandwidth. In a world that is becoming increasingly hungry for capacity, the saturation of the terrestrial networks and the cost of bandwidth is something that will become more and more important in the broadcasting and video distribution world. Satellite proposes autonomous, or hybrid solutions that help to optimise bandwidth and alleviate terrestrial networks for the most demanding flows

Video Content Management and Distribution © Euroconsult 2014

growing at a speed of 15% every year. The rise in television standards and increasing screen quality are pushing spectators' expectations even higher. Data requirements for new standards influence the increasing need for bandwidth. Only satellite can meet the double demand for increasing image quality for mass distribution, and affordable costs for the television or package operator. HD, 3D, and Ultra HD will have their ultimate anchorage point on satellite. The technological development of satellite also gives rise to many future uses, such as VOD or catch-up TV by satellite.

and applications.

If satellite operators want to benefit from this new TV landscape and create solid business opportunities, they will have to consider the big picture of the new content management and delivery value chain, quickly identifying at which level in this progressively hybrid world, they hold significant competitive advantage.

Satellite has broken new ground, mainly in the field of interactivity. High throughput satellites, not only permits high-speed Internet connections regardless of where you are, but also represents the arrival of a new series



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thousands of square miles. Or is it?

If they were conscious and the on-board equipment was working, I'm sure the pilots knew exactly where they were when they "disappeared". The Global Positioning System (GPS) which is used by navigation devices in cars and planes is a one way system, it lets the users know where they are, but in order to share that information a transmitter as well as a receiver would be required. Having done a lot of work on satellite navigation systems for Communications, Navigation and Surveillance (CNS) with the airline industry when I was at Hughes I am well aware of how much persuasion it takes to get the airlines to take a plane out of service and add a piece of equipment that will add to the weight and therefore ongoing fuel costs. However in this instance there was equipment on board Malaysian Airlines Flight MH370 that had it remained functional could have given However even though the ACARS system was switched off rescuers more accurate data on which to base the search.

tracks a plane without any action being required on the part of the plane and is primarily used by military systems. However data from commercial and general aviation will also be received as they transit airspace being monitored. The data for Inmarsat to work out the possible location of the plane received merely indicates the location of a plane, not its within a large arc. It was this analysis which sent the search identity. However by a process of elimination Military radar and rescue teams to the Southern Indian Ocean off the has identified the initial path taken by MH370. Secondary coast Australia. radar relies on a transponder on the plane responding to a signal sent to it, by transmitting a unique code that identi- Another satellite company also hit the news in the search fies the plane. Both rely on line of sight communication and for the missing plane. Digital Globe which captures earth

t seems somewhat bizarre that my small GPS system in since the ground stations are on land, once a plane is 240my car will start redirecting me less than 10 yards from a 300 kilometers from land it can't be seen by radar. MH370, missed turn and yet something as large as a 777 can just like all commercial aircraft was equipped with a transdisappear and we're left searching over an area of many ponder, but whether maliciously or due to a malfunction this was turned off about an hour after the plane took off, as it was transiting from Malaysian to Vietnamese airspace.

> MH370 was also equipped with another system that would have helped pinpoint its position once out of reach of radar. This was Aircraft Communications Addressing and Reporting System (ACARS) and this was also switched off around the same time as the transponder. ACARS is a commercial system and the type of information relayed depends on the subscription taken out by the airline. It can vary from diagnostic information about the state of the engine to precise position, speed and altitude data. The information is relayed via a global network of ground stations and Inmarsat and Iridium satellites. Currently around 90% of long-haul wide body jets are equipped with ACARS.

the Inmarsat satellites continued to "ping" the receiver on board MH370 and received a return ping for the next seven Primary radar is a passive system developed in the 1930s. It hours. This ping is passive – much like a local area network pinging ports to check their availability - it contains no data about the receiver other than the fact that it still exists. By analyzing the request and the response time it was possible

News Analysis

and the top tags were then analyzed by Digital Globe's experts. The company said that more than three million people participated which initially caused the website to crash.

MH370 was by no means the first aircraft to "disappear" in to a network of ground stations. But this will do nothing for 2009 an Air France jet went down in the Atlantic, and al- planes over the ocean. The European system known as though the black box was finally retrieved it took two years. According to the Aviation Safety Network 88 planes have equipment. disappeared since 1948, including nine since 2000. So will this latest disaster hasten in a change in regulations that Aireon which will become operational in 2017 is basing its would make it a requirement for airlines to have some business on solving that problem. A payload on the Iridium means of constantly reporting their position? The technology is there but to date many airlines have been reluctant ting and relay it to Air Navigation Service Providers. The to shoulder the costs of installing it and aviation authorities service will be available on a subscription basis to airlines have been reluctant to force them to do so. The rhetoric – but will not involve the installation of any additional equipat least for now – indicates that this may be about to ment and could according to Aireon save them money by change. Tony Tyler CEO of the International Air Transport allowing use of more optimal altitudes and efficient routes. Authority (IATA) has been quoted as saying that "in a world where our every move is tracked we cannot let another Last year SES-TechCom, a subsidiary of SES, signed an agreeaircraft simply disappear". IATA plans to convene a task ment with DLR and Thales Alenia Space for the joint develforce which will include representatives from the International Civil Aviation Organization (ICAO). It is scheduled to The payload, developed by DLR is currently operational on report back by December of this year. However previous the Proba V satellite. investigations have always reported that the costs associated with real-time streaming of aircraft data are just too Will any of this help prevent future plane losses? Yes – if it expensive.

images set up a crowd sourcing campaign for people to ana- In the US the FAA has mandated that by 2020 airlines flying lyze the images. Multiple users analyzed the same areas over areas equipped to receive Automatic Dependence Surveillance Broadcast (ADS-B) data - which essentially is the entire US – must be equipped with ADS-B out equipment. This is part of the NextGen system. ADS-B utilizes GPS and transmits data about a plane's location, altitude and speed SESAR also mandates that aircraft be equipped with ADS-B

Next satellites will receive the data that ADS-B is transmit-

opment of a European space based ADS-B constellation.

can't be disabled. The best technology in the world is only useful as long as it's functioning.

Court Rules in Favor of ViaSat in Patent Infringement Lawsuit against SS/L

handed down by a jury in the case brought by ViaSat against Loral Space and Communications and Space Systems/Loral (SS/L). ViaSat prevailed and SS/L – but not Loral Space and Communications - was found guilty of infringing three of ViaSat's patents and of ages to be tripled. breaching certain non-disclosure agreements. Loral and SS/L plan to appeal the jury decision.

ViaSat alleged that three of its patents were infringed by SS/L in technology used for Jupiter-1 and the NBN Co satellites and reportedly sought up to US\$800 million in damages for this indisclosure agreements.

lion, not \$800 million, and the jury did NBN. not find that SS/L willfully violated any of ViaSat's patents – something that The background to this case between would have been cause for the dam- two well known and respected names

SS/L counter claimed that ViaSat in turn infringed several of its patents, but this claim was dropped during the trial.

Jupiter-1 - or Echostar XVII as it later became known when Hughes was purchased by Echostar – is another High Throughput Satellite (HTS) also serving fringement and the breach of the non- the North American market place and ViaSat was therefore a direct competitor to Vi- SAT and ViaSat-1. requesting that the damages be tripled, aSat. The NBN Co satellites will serve

n Thursday April 24, a verdict was which would not be without precedent Australia when they are launched. Coin cases of this nature. However the incidently ViaSat subsequently won the damages awarded were US\$ 283 mil- contract to do the ground systems for

> in the satellite industry is unusual, in that a company who has not previously been involved in satellite design is suing a long-time designer and manufacturer of satellites over technology used in satellite design. SS/L has built over 240 satellites including IP-Star, the forerunner of today's HTS. IPStar was launched in 2005 and provides 45Gbps throughput, making it the largest operating satellite before the launch of KA-

ence. One has to wonder if the members of the jury really had the capability to fully understand the technical issues raised.

ViaSat filed the first lawsuit on February 1, 2012 against SS/L (at the time a subsidiary of Loral Space and Communications). The three patents awarded to ViaSat relate to technologies used in the ViaSat-1 satellite (one of the first HTS) and the associated ground networks. On April 9SS/L filed a counter suit arguing that ViaSat had infringed its patents in technology used by ViaSat in its ground terminals. It also argued that the ViaSat patents themselves are invalid because they use many of the same transmission strategies that Lockheed Martin intended to use in the now defunct Astrolink system.

In May of 2012 ViaSat amended the lawsuit to include Loral Space and Communications, claiming that it would not have signed the contract with SS/L if it had not been for the direct intervention of Michael Targoff, Vice Chairman of Loral Space and Communications who at the time was on the board of ViaSat. The signed contract for ViaSat-1, included an agreement that Loral would purchase 15% of ViaSat-1's quently sold to Telesat. Loral has a majority economic interest in Telesat.

underlying claims relate to things that however provide the terminals for KAwere known in the satellite industry or SAT. were laws-of-physics stuff."

At the end of 2012 SS/L was sold to MDA, but the agreement between Loral Space and Communications and MDA included a clause that Loral was obligated to assume responsibility for the lawsuit and associated costs up to an undisclosed ceiling.

In September 2013 ViaSat filed another tion to control its competitors.

should be covered by the same indem- ask U.S. District Judge Marilyn Huff to nity clause. Loral disagrees but the two throw out the verdict, and if necessary, companies have agreed to defer judg- would appeal the case. ment about this until October 2016, or goff, following a court ruling or settlement stated: of the original lawsuit. In October last pointed with the verdict. We continue year SS/L asked for this case to be dis- to believe that SSL's conduct was conwaste of time and money.

of this trial it is interesting to ponder some of the implications.

Apart from the economic impact to Loral of the damages awarded and the potential mess that could ensue for SS/ L and owners of other HTS currently being built by SS/L; this judgment could also stifle SS/L's ability to compete for any HTS in the future. Given that this by the evidence presented." segment has become a significant part of the satellite manufacturing business, For the other side Rick Baldridge, extending to Ku as well as Ka-Band sys- ViaSat President and CEO said: "We will tems, this would be a major blow not continue our commitment to protect only to SS/L but also to satellite opera- our intellectual property and innovators world wide, as one of the pre- tion." ViaSat has requested that the eminent manufacturers of HTS is re- court enter a permanent injunction moved from what already is a short prohibiting SS/L from manufacturing or list. Notably, this list includes Airbus – selling infringing satellites or satellite formerly Eads-Astrium, manufacturer components, including the continued capacity. This capacity was subse- of KA-SAT another HTS owned by Eutel- manufacturing of infringing satellites sat and launched just before ViaSat- currently under construction. 1. One wonders why ViaSat accepts granted this would presumably include that a European company has the skill Echostar XIX – the more powerful fol-In previous media interviews Targoff to develop a HTS without its aid, but an low-on to Echostar XVII and the two has said that "Most, if not all of their American one does not. ViaSat did NBN Co satellites.

> The alternative scenario would be that before a final outcome is known. The ViaSat decides to license the technol- case between ICO and Boeing for exogy to SS/L. ViaSat already has an ample, took seven years to reach setagreement with Boeing, manufacturer tlement. Initially ICO was awarded of ViaSat-2 to jointly market satellites \$603M, that decision was subsequently that use the same technology as ViaSat reversed and the case was finally set--2, an even larger satellite than ViaSat- tled by ICO withdrawing its appeal and 1. So if ViaSat licensed the technology Boeing agreeing to pay ICO US\$ 10 milto SS/L it would be in a powerful posi- lion.

Building satellites truly is rocket sci- claim similar to the previous one but Obviously this is not the end of this only against SS/L. MDA believes that as case. John Celli, president of Space this case is so similar to the other one it Systems Loral, said the company would Michael Tar-Vice Chairman of Loral "We are extremely disapmissed arguing that it was it was a sistent with, and in due regard for, all applicable and valid intellectual property rights of ViaSat and that SSL did Now that we know the initial outcome not breach any contracts. We believe that SSL has strong grounds for a reversal of the jury verdict, which we believe will ultimately result in vindication of our position. Justice in this case hinged on the complicated history of satellite technology, which was understandably difficult for the jury to completely comprehend. In particular, the damages awarded were not in any way justified

lf

It is not unusual for initial decisions to be overturned, but it could take years

How Satellite Service Providers Make **Complexity Pay Off**

by Robert Bell

ife is a complicated business and most of us probably bandwidth wish that it were less so.

But for satellite service providers, complexity is a friend. As ing one of them succinctly put it in WTA's latest report, The tion, Risks and Rewards of Delivering Complex Network Services, "Complexity is the name of the game. If it wasn't complex, customers could have it done it themselves."

Traditional services for fixed circuits have been described as regardless "fire up and forget." You bring up a carrier, set the levels the weather. and do not touch until alarms go off. With a complex network, however, customers look for much more. "It is clients Succeeding in who demand ever-more complex networks," says one ex- the ecutive in the report. "Their internal customers want to do network more. Add to that the user's experience and expectations game, that are conditioned by what they can do at home with ever, requires broadband and smart phones, and you have more complex many changes applications requirements needing more bandwidth and to the organi-QOS, which are latency-sensitive. And the customers' ex- zation. Those pectations are higher than ever."

Technology advances have enabled most of the challenges "To manage this kind of business, from the top manageand opportunities in the world of complex nets - the move ment point of view, we had to reposition ourselves in the to Internet Protocol being the biggest game-changer. With industry from being a pure play satellite provider, into a the IP convergence comes the ability to acquire signals and wider arena of end-to-end broadcast and media services,"

add signals quickly, withstructure. "In the past, for each customer," an-"I had to deal with mak- the top..." ing sure they'd deliver their signal in a certain

out adding new infra- "... Succeeding in the complex network game, requires many changes to the other executive explains, organization. Those changes begin at

savings and adaptive codmodulagiving customers more throughput and more reliable links of

complex howchanges begin at the top.

The Risks and Rewards of Delivering Complex Network Services



April 15, 2014



says one operator. Another respondent confessed that "We are in a transitional period from being satellite 'bigots,' to really opening our eyes to other capabilities and technologies for our customers."

standard or format over a certain infrastructure. Today it's just asking the customer where they want me to pick up the Managing complex networks requires staff expertise in netstream. I don't care which kind of stream it is. Customers work engineering, IT and software, yet service providers send us OTT services, satellite distribution, and pure playout have to work to retain their RF engineering capabilities as and fiber feeds. So the IP network has expanded dramati- well. Training requirements change: not just RF but also cally the kinds of offering we can accept."

band VSAT platforms. "These highly integrated platforms, enterprise networks. "You have to know the performance which allow you to become part of the network while ex- of the traffic over each leg of the transmission process, now tracting the unique benefits of a satellite networking com- that you're working at the applications layer, versus the pany, have been key," one respondent reports. Another transport layer." factor has been big improvement in modems, which offer

Cisco certifications and the ability to program smart modems. And then there is security: "The biggest change is IP Another big boon has been the birth of integrated broad- - network engineering and security," says a specialist in With training comes bigger requirements for network man- Another executive agrees: "Our customers buy from us beagement systems, back office and support systems, and cybersecurity software. The investment can be substantial and the state of the art changes rapidly as well.

On the flip side, complexity creates opportunity As traditional fixed-bandwidth services via satellite or fiber carriers our customer base." have become more commoditized, service providers have a chance to provide significant new value-added as specialists The Risks and Rewards of Delivering Complex Network Serin global connectivity. "Our customers know the commercial market and pricing for IP services, carriers, and terrestrial bandwidth services," explains a technology executive. "As a result, bandwidth management and provisioning over different networks is key to our value."

In the end, there is simply no advantage today in being a satellite-only provider. Traditional satellite services offer lower margins and fairly flat or shrinking market segments. Traditional customers may be locked in with competing suppliers. "If we did not have our current set of complex offerings," says one executive, "we would be a niche player in a WTA's reports are available free to members and for smaller niche."

cause we provide end-to-end fully managed networks with global consistency. That's how we remain relevant to them. It's not a choice. You have to do it, which means going through all the pain and investment to make it work. If you don't do complex network today, you are not relevant to

vices is available from the World Teleport Association at www.worldteleport.org.



Robert Bell is Executive Director of the World Teleport Association, which represents the world's most innovative teleport operators, carriers and technology providers in 46 nations. He can be reached at rbell@worldteleport.org

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Orbital and ATK's Aerospace and Defense Groups To Combine in US\$ 5 Billion Merger

ences Corporation announced that it and propulsion, precision weapons and quartered at Orbital's existing Dulles, has entered into a definitive agreement military armament, and commercial Virginia campus, with major employee with Alliant Techsystems (ATK), which and military aircraft programs by lever- sites in Utah, Missouri, Virginia, Ariwill combine Orbital and ATK's Aerospace and Defense (A&D) Groups to create a US\$ 4.5 billion (combined calendar year 2013 annual revenue), 13,000-person space, defense and aviation systems developer and manufacturer.

Dules, Va., April 29, 2014- Orbital Sci- strategic and tactical missile systems The combined company will be headneering and integration capabilities to nia and Minnesota. provide greater value-added to current

statement issued by both companies.

Zal ATK

aging Orbital's systems design, engi- zona, Maryland, West Virginia, Califor-

and future customers, according to a Based on 2013 financial results, the

The new company, to be called Orbital ATK, Inc.,



As part of the transaction, ATK will spin off its Sporting Group, which focuses on commercial sporting equipment, to its shareholders.

The tax-free stock-for-stock merger-ofequals transaction, valued at approximately US\$ 5.0 billion based on Orbital's closing stock price on April 23, will combine Orbital's small- and medium-class satellite and launch vehicle product lines with ATK A&D's rocket propulsion, composite structures and space power systems to produce even more capable and affordable space and missile defense products.

The merger will enhance ATK A&D's

David W. Thompson, Orbital's President and Chief Executive Officer, will be President and Chief Executive Officer of the new company; Blake E. Larson, President of ATK's Aerospace Group, will serve as its Chief Operating Officer; and Garrett E. Pierce, Orbital's Chief Financial Officer, will hold the same position in the new company.

Other key management positions will be determined prior to the transaction's closing, with an equitable and balanced selection of senior executives from each company expected in the The merger, which has been unaninew organization.

Orbital ATK will employ about 13,000 people, including over 4,300 engineers and scientists and 7,400 production and operations specialists, at engineering centers, research laboratories, manufacturing facilities, and test and The transaction is expected to close by launch sites in 17 states.

new company have comwould bined annual revenues of about US\$ 4.5 billion, EBITDA over US\$ 575 million and total contract backlog more than US\$11 billion.

Net debt of Orbital ATK at closing is expected to be

about US\$1.4 billion, after taking into account combined cash balances of approximately \$300 million. Annual revenue and cost synergies of \$220-300 million are expected by 2016, consisting of US\$ 150-200 million of incremental annual revenue and \$70-100 million of annual cost reductions.

In the merger, ATK shareholders will own approximately 53.8% of the equity of the combined company and Orbital shareholders will own approximately 46.2%.

mously approved by the Boards of both companies, is to be effected in a taxfree "Morris Trust" transaction structure, with a spin-off of ATK's Sporting Group to its shareholders immediately prior to the merger.

the end of 2014.

Imagine Communications Acquires Digital Rapids

announced at the NAB in Las Vegas, the acquisition of Digi- ization," said Brick Eksten, President and CEO of Digital Raptal Rapids, an IP and file-based media processing solutions ids. company.

The acquisition will also create the world's most compre- software-defined workflows are essential for media compahensive portfolio of processing and compression solutions nies to efficiently scale to new opportunities and quickly

for TV Everywhere according to the company.



transcoding and encoding solutions will integrate with Imag- also fueling a next-generation approach to software that ine Communications' existing mezzanine quality origination puts the customer in control of advances in technology," encoding, adaptive bit rate (ABR) transcoding technology Eksten added. and content delivery network software to create an end-toend, TV Everywhere solution for optimized file-based and Imagine Communciations was spun off from Harris Broadlive video stream distribution across a variety of platforms.

"Imagine Communications is strategically positioned to Angeles, Tel Aviv and Beijing. transform the media and entertainment industry through

Las Vegas, Nevada, April 8, 2014--Imagine Communications, innovations in IP, software-defined workflows and virtual-

"Their senior management team understands that flexible,

launch new, differentiated services. We are thrilled to join the Imagine Communications team in empowering customers by not only smoothing their transi-

cast in March. Imagine Communications is headquartered in Dallas, with Centers of Excellence in Denver, Toronto, Los

AMV to Acquire AEG Digital Media

Los Angeles, Calif., April 7, 2014 -- All cording to AMV in a statement. These within its wheelhouse, this time we Mobile Video (AMV) announced that it additional POP locations will provide went outside the box and are acquiring has entered into an agreement with content providers more acquisition a group that would make our company

AEG to purchase AEG Digital Media (AEGDM), an end to

based in Los Angeles, CA. The new combined company will be called AMV Digital Media.

Combining the experience and assets of All Mobile Video with L.A.-based AEGDM's holdings including its Online Broadcast Center and recent facility expansion in Madrid, Spain with AMV's mers, broadcasters and OVP's in addi- segment. facilities in New York City and Dallas, TX, this agreement will expand the new organization's technical capacities, allowing full redundancy in acquisition,

end digital broadcast services business options while maintaining the highest who has served as AEGDM's Vice Presi-

industry.

inception Since its in 2009, AEGDM has taken the lead in Media acquisition capacity to 70 antention to continuing to build their ad-hoc event streaming, software and product The transaction is expected to close in portfolio.

encoding and transport services, ac- "AMV has always purchased companies



more diverse," said Lenny Laxer, Vice President of All Mobile Video.

The company also announced that Joe Einstein,

broadcast standards for quality and dent, Operations for the past 5 years reliability AEGDM is known for in the would continue in that role for the new venture.

October, This expansion will bring AMV Digital providing full time, live linear, TV Every- nas, over 100 fiber circuits, production where streaming services to program- and uplink trucks, and in-house space

the next thirty days.

Swain to Lead DISH Network's **Programming Group**

Englewood, Colo., April 29, 2014--DISH Network announced that it has appointed Steven Swain to lead its Pro-

gramming Group. Swain, formerly a vice president of DISH's Corporate Finance Group, is being promoted to senior vice president. In his new role, Swain will be responsible for the ac-



Steven Swain

quisition and renewal of programming content, including national network and cable channels, Latino content, local broadcast stations and premium services such as HBO, Showtime and Starz.

Prior to joining DISH in 2011 as vice president of Corporate Financial Planning and Analysis, Swain spent 10 years at CenturyLink (formerly Qwest Communications) where he served in multiple leadership roles in that organization's Finance and Network Engineering organizations.

Swain earned his bachelor's degree in chemical engineering from the University of Wisconsin and his MBA from the University of Chicago.

DirecTV Appoints Cho as SVP and Treasurer

El Segundo, Calif, April 30, 2014--**DIRECTV** announced that Jennifer Cho has joined DIRECTV as senior vice president and treasurer, reporting to Pat Doyle, executive vice president and Chief Financial Officer.

In her new role, Cho will lead all aspects of the Treasury and Business Development functions to drive value creation across the company. She will be responsible for capital structure

planning, business development, cor- joint-company porate financings, banking relation- project ships, rating agency relationships, cash Gripen, managmanagement and other aspects of risk ing projects and management.

"Jennifer's more than 25 years of fi- DoD. Bellwaldius nance experience in areas ranging from holds a Master credit and risk management to mergers of Science in and acquisitions makes her an excellent Engineering, addition to DIRECTV and the treasury Computer team," said Doyle.

In her previous position, Cho served as from Linköping University. vice president and CFO at Gap North America Specialty Division of Gap, Inc., where she was heading up Finance for Gap Specialty business which operates about 750 stores in North America. Prior to that, she spent over 15 years in corporate and investment banking.

stration from the University of Notre the technical department. Dame.

Telenor Connexion Appoints VP of Operations

Robert Bellwaldius has joined the company as VP of Operations. Bellwaldius was most recently Chief Operating Offi- roles of CEO of O3b and CFO at SES. cer at Wireless Maingate.

In this new position, Bellwaldius will oversee all aspects of business operations and service delivery, as well as key suppliers. This recruitment, along with recent acquisitions and an added services offering, signals an organizational shift and an ambitious plan for substantial growth in the coming years.

Bellwaldius spent the last eighteen vears within the telecommunication industry in a variety of leadership roles at companies like Europolitan, Vodafone and Telenor. Robert Bellwaldius also has a background from the Swedish Defense Industry where he was one entrepreneurial skills by advising promof the project managers in the Swedish ising start-ups, helping to bring their

JAS39 deliverables to the Swedish Science and Engineering



Robert Belwaldius

Robert Bellwaldius assumed his position on April 1. He will report to the CEO and be a member of the Telenor Connexion Management Team.

Stephen Bryant, who previously had the role as both CTO and VP of Opera-Cho holds a degree in business admini- tions, continues to be responsible for

GapSat Appoints Mark Rigolle as CFO

Hong Kong, April 14, 2014--GapSat Stockholm, Sweden, April 16, 2014-- announced the appointment of Mark Telenor Connexion announced that Rigolle, as Chief Financial Officer. Rigolle is a seasoned industry veteran, having previously held the senior

> Mark Rigolle has over 20 years of experience in the telecom and satellite sector. He was CEO of O3b Networks, successfully raising USD 1.2 Billion to launch this innovative new satellite operator with their plans to own and operate a constellation of satellites that will provide affordable trunking and mobile backhaul capacity in developing countries.

> Between 2004 and 2009. Rigolle was Chief Financial Officer and member of the Executive Committee of SES, one of the leading satellite operators in the world. Most recently he has honed his

Executive Moves

to allow them to raise capital. He has the Board from January 1, 2015. also brought together various satellite all the participating companies.

GapSat CEO Gregg Daffner commented "We're an entrepreneurial team of satellite professionals so Mark is the perfect fit. He brings skills and depth of

financial experience as we move forward with successive capital raisings for our satellite acquisition pro-

grams. His



Mark Rigolle

arrival signals to the market our intention to be a major player."

Bausch Steps Down as SES CEO, Get Elected to Board

Luxembourg, April 4, 2014--Romain the company's April 3rd Board Meeting. During the same meeting, Bausch was appointed as Chairman-elect of over when current chairman Rene Steichen steps down at the end of this 7832 4100, Web: www.ibc.org year.

The Board of Directors of SES appointed René Steichen as Chairman of the Board and François Tesch and Jeanhis election, René Steichen announced that, in accordance with the age requirements for the office set out in the internal regulations of the company, he will step down from the position of Chairman of the Board of SES at the end of the year.

Following René Steichen's declaration, and upon his proposal, the Board of Directors of SES has elected Romain

projects to a sufficient level of maturity Bausch to succeed him as Chairman of ignate in September 2013.

board, joined the company as CEO Des- Vubiquity.

Also during the same board meetoperators to facilitate the sharing of Karim Michel Sabbagh has succeeded ing Ramu Potarazu was elected as a spectrum resources in win-win transac- Bausch as SES CEO. Sabbagh served on new member of the board of directors. tions that create growth potential for the board of directors of SES since April Potarazu is the CEO of Binary Fountain. 2011 and, after resigning from the He is the founder and former CEO of ~

Calendar of Events

June 2-4 2014, Global Space Applications Conference (GLAC) 2014, UNESCO HQ, Phone: +33 (0)1 45 67 68 46 Paris, France. E-mail: Glac2014@iafastro.org Web: www.glac2014.org

June 4-5, 2014, LATSAT 2014, Mexico City, contact: Lorraine Whitfield, Tél : + 33 1 49 23 75 13 E-mail: whitfiled@euroconsult-ec.com Web: www.latsat-congreso.com/en/

June 16, 2014, CASBAA Satellite Industry Forum 2014, Shangri-La Hotel, Singapore, Contact: Cherry Wong, phone +852 3929 1714, E-mail: cherry@casbaa.com, web: www.casbaa.com

June 17-20, 2014, CommunicAsia 2014, Marina Bay Sands, Singapore. E-mail: CommunicAsia@sesallworld.com, Tel: +65 6233 6638, Web: www.CommunicAsia.com

June 17-20, 2014, BroadcastAsia 2014 Marina Bay Sands, Singapore E-mail: BroadcastAsia@sesallworld.com, Tel: +65 6233 6638, Web: www.broadcast-asia.com

Bausch stepped down as CEO of SES at August 24-27, 2014, SET EXPO 2014, Sao Paulo, Brazil, E-mail: paulo.galante@set.org.br , Phone: +55 11 99595-7791 Web: www.setexpo.com.br

the Board of Directors. He will take Conference: 11 - 15 September 2014, Exhibition: 12 - 16 September 2014, IBC 2014 - RAI Amsterdam, the Netherlands, E-mail: info@ibc.org, Phone +44 (0) 20

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

Paul Zens as Vice-Chairmen. Following 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

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

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



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Market*Briefs*

Key industry trends and opportunities

Global Pay TV Subscribers Reaches 900 million

increased over 5% in 2013, raising the total to 901.1 million. accounting for 41% of total pay-TV subscriber base in 2013. However the average revenue per user (ARPU) dropped ABI Research forecasts that the subscriber base of HD-TV slightly to US\$ 23.80 in 2013 from \$24.10 in 2012.

"In general, the pay-TV market grew both in terms of subscribers and service revenue across all pay-TV platforms. Overall pay-TV service revenue reached almost US\$ 250 billion in 2013," said Jake Saunders, VP and practice director of core forecasting, ABI Research.

Pay-TV ARPU in North America increased around 4% to

US\$ 76.00 in 2013. According to major pay-TV operators in growth. North America, the growth in ARPU is due to a growth in the proportion of customers with advanced pay-TV set-top "The IPTV market is likely to grow at a faster pace than boxes and upgraded High Definition programming packages. other platforms, with a CAGR of 9% over the next five years Unfavorable currency exchange rates in Latin American to reach 160 million subscribers in 2019. The global pay-TV countries have contributed to a US Dollar equivalent decline market is expected to generate \$317.5 billion in 2019," in the pay-TV ARPU for the region at the end of 2013 to US\$ added Khin Sandi Lynn, industry analyst, ABI Research. 34.6 (5% reduction from 2012).

Singapore, May 2, 2014--The global pay-TV subscriber base Subscription of HD-TV services continue to grow in 2013 services will continue to increase to 57% of total pay-TV subscribers in 2019.

> As competition in the pay-TV market has increased, operators continue to offer more HD programming services, advanced set-top boxes and innovative services to boost pay-TV ARPU.

> ABI Research anticipates that the worldwide pay-TV subscriber base will reach 1.1 billion subscribers in 2019. Increasing broadband connectivity will help IPTV market

Opportunities in Wireless Backhaul, Trunking & Video Offload

newly released Wireless Backhaul, highly promising segment will lead to compete with or complement terres-Trunking and Video Offload via Satel- intense competition as virtually every trial video offload solutions soon lite, 8th Edition finds a diverse set of market player in the wireless ecosys- enough to maximize on the "wildcard" opportunities for satellite companies tem will eventually target this opportu- of the market? worldwide. These varied market seg- nity. ments are expected to grow at mixed levels, characterized by serious opportunities, threats and risks over the long term, with NSR projecting growth from US\$ 1.4 billion in 2013 to US\$ 3.7 billion by 2023.

The different market cycles of each target segment pose unique opportunities and challenges:

Wireless Backhaul via Satellite is moving to 3G and 4G for both Fixed Land Towers and Mobility Platforms.

The Satellite Trunking market is highly mature, but the revenue base is so large that loss or erosion of revenue will adversely affect a company's bottom line. Market players require new innovative offerings to maintain or uphold a large revenue base that requires lower cost structures yet feature higher capacity that is competitive with fiber.

Finally, Video Offload via Satellite, which is in its infancy, can be considered a "wildcard." Will the satellite

Wilmington, DE, April 28, 2014 - NSR's Currently in the growth stage, this industry develop a solution that can

"Navigating through risks and opportunities will require innovation, strategic positioning and the ability to partner with the right players to develop the right solution mix," according to the study's author Jose Del Rosario, Research Director for NSR. "The wrong move could be costly." Mature markets, growth segments and Greenfield opportunities will require "out-of-thebox" strategies and solutions in order to protect current market position as well as become dominant in a new competitive landscape.

May 2014





The full range of next-gen technology for satellite-enabled communications and content delivery is brought into sharp focus at the premier satellite communications event on the East Coast. CCW+SATCON draws a top-level community of the best minds in the business - commercial satcom users, government, broadcasters, telcos and more - who come to this event to connect, collaborate and keep pace.

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Market*Briefs*

Key industry trends and opportunities

Euroconsult's Roadmap to the Global Milsat Market

Paris, France, May 6, 2014 - A new research report by Euro- grow. consult provides a comprehensive analysis of the how and • why of the military's usage of satellite communications, UAVs which saw tremendous growth over the past 15 years. Satellite capacity usage by the U.S. DoD has increased fivefold over 2000-2012 to over 10GHz, primarily driven by the two large conflicts in Iraq and Afghanistan.

The report, Military Satellite Communications, covers one of the commercial satellite operators' key markets. Commercial satellites supply approximately 70% of the capacity now used for military satellite communications worldwide.

Beyond operators, the increasing use of satellite communications has nurtured an entire ecosystem of players along the Milsatcom value chain including satellite service providers, terminal and antenna manufacturers, satellite manufacturers, and system integrators, transforming military satellite communications into a multi-billion dollar industry.

Yet the open research available on the subject still remained limited. This has incited Euroconsult to launch a long-term, global and bottom-up assessment of this complex market.

really drives or limits demand for satellite capacity - the we believe is the first of its kind to be publicly available. This kilobytes, the UAV flight-hours, the days of sailing - and to will enable our customers to access game conflict scenarios, inventory user equipment as precisely as open sources measuring the impacts on future satellite capacity requirewould allow," said Stéphane Chenard, Senior Associate Con- ment," said Richard Roithner, Director of Satcom at Eurosultant at Euroconsult and principal author of the study. "We felt that the Milsatcom sector was at a turning point as more than a decade of war winds down, it was time to take stock and map out what the future could really be like," he added.

Key findings of the report include:

Close to 20,000 VSAT terminals are in global military • inventories. This comes on top of over 300,000 UHF and Lband radios used for tactical communications that make use of satellite links.

About half of the approximately 10,000 military vessels • longer than 11 meters, which more or less continuously sail the world's seas, have yet to be outfitted with satellite communications.

Bandwidth usage per deployed U.S. soldier has increased by more than 150% over the past decade, and bandwidth requirement per terminal are continuing to

Over 450 relay surveillance data over satellite links; this number could almost double in the next decade, but a devigorous



bate has broken out on their future role. Hundreds of manned reconnaissance aircraft, however, are proliferating all around the world, fostering a far less visible but potentially major market for satellite equipment and services. Unlike the drivers of other markets, war doesn't lend itself to long-range forecasts. Also, peace does not mean no satellite usage. The study reviews past efforts to model future military communications demand, providing data and an innovative tool to help clear this uncertainty.

"It seemed to make little sense to produce a static demand forecast in a market where end users themselves may not know which plane they'll jump from next week. We are ex-"I wanted to look under the hood of this market to see what cited to release a flexible, interactive Forecasting Tool which consult.

> Taking into account all key trends, drivers and limitations of military satellite communications, Euroconsult's Forecast Tool allows users to see the impacts of hundreds of scenarios by selecting the number, nature and possible time of conflicts for land, air and sea, simulating capacity (GHz) and throughput (Gbps) requirements by frequency band, military segment, and commercial vs. proprietary systems.

> Military Satellite Communications is the essential planning and forecast tool for future military satellite requirements. The report provides a comprehensive bottom-up assessment of all relevant military satcom user markets, including land forces, naval forces, UAVs and manned aircraft. The report also includes a forecasting tool that allows users to instantaneously measure possible demand requirements and impacts of any future conflict scenario over the next ten years, while taking into account all key trends, drivers and limitations of military satellite communications.



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Future Success of Oil and Gas Industry to Turn Satellite Communications Solutions

by Martin Jarrold

aximizing the successful operation of the oil & gas rigs of the future will depend on bandwidth usage level of 100 times that of today. This was

USA, based company which provides 13th to Wednesday 14th May, at the engineering and high-level logistics, Marriott Hotel, Dyce, Aberdeen, Scotservices, equipment and worldwide land. telecom solutions for the oil & gas market. Multi-path communications, appli- **O&GCommsEurope 2014** already has a vice IP-connectivity – all be required to haps the best-ever, ready to examine improve rig on-board situational the full range of satellite-based comawareness, enable faster decision- munications, and integrated satellitecontrol, increase automation, lower tions, to which the oil & gas industry operating costs, and create a safer turns to play a vital role in providing working environment.

This analysis was presented during the GVF Oil & Gas Communications Brazil 2014: Big Oil, Big Data: The Deepwater Ocean Expanse conference

(O&GCommsBrazil 2014, www.uk-emp.co.uk/currentevents/o-g-comms-brazil-**2014/)** – the 20th event in

the series, and the 4th to address the communications

region of the global 'oil & gas patch' – vital applications. The Aberdeen line-up which took place in Rio de Janeiro on is scheduled to include, among others: 15th & 16th April 2014.

Yet, already, the oil and gas industry, and the satellite solutions community, are turning their collective attention to the next event in the global series, the • $\mathbf{21}^{st}\text{,}$ and the $\mathbf{7}^{th}$ to be held in Aberdeen. As at the above date, a very strong line-up of organizations, speakers, and panelists have stepped- . forward to contribute to GVF Oil & Gas Communications Europe 2014: Big Oil, Big Data - North Sea, Atlantic Margin,



the analysis of Brastrading, the Florida, Arctic Ocean, taking place on Tuesday •

cations-aware networks, universal de- fantastic speaker/panelist line-up, per- • making, facilitate real-time remote terrestrial hybrid communications solu-

Oil & Gas Communications Europe Big Oil — Big Data Aberdeen, May 13 & 14, 2014

- Richard Swinford, Partner, Telecoms & Media Strategy.
- Avanti Communications: David Bestwick, Technical Director
- Baker Hughes: Sion Judah, Remote Connectivity Coordinator, Field **Communications Services**
- C-COM Satellite Systems: Drew Klein, Director, International Business Development
 - The speakers and panelists from EMC, Harris CapRock, SpeedCast, and Telesat, and are soon to be announced, and additional organizations are joining the above listing on a daily basis.

This year, we will be using extra meeting room space in order to accommodate a classroom set-up and facilitate a

'less-condensed' environment for our delegates. We will also be including inter-active panel sessions in order to utilise the considerable expertise in the audience and create a generally inclusive situation – giving everyone in the room the opportunity to drive the program. The audience at this conference is among the most knowledgeable and pro-active of any that we work with anywhere in the world –that is an asset from which we intend to leverage maximum value.

GVF Oil & Gas Communications Europe 2014: Big Oil, Big Data – North Sea, Atlantic Margin, Arctic Ocean is



networking imperatives of the Brazilian the essential connectivity and access to

- Access Partnership: Brendan O'Mahony, Director, Market Access.
- Advantech Wireless: Mark Lambert, VP Sales & Marketing, Managing Director, EMEA Region.
- Arthur D Little: Russell Pell, Principal, Strategy & Operations Management, Energy;

sponsored by Intelsat, Telenor Satellite Broadcasting, Kymeta, SES, ITC Global, Truphone, Netscout, Emerging Markets Communications (EMC) and SpeedCast. Further information on the developing conference program may be viewed at <u>www.uk-emp.co.uk/</u> <u>current-events/o-g-comms-europe-</u> 2014/. Alternatively, you can email me at GVF – <u>martin.jarrold@gvf.org</u> – or Paul Stahl at EMP – <u>paul.stahl@uk-</u> vi <u>emp.co.uk</u>.

Due to a severe South Atlantic storm, and related flight cancellations and delays between Sao Paulo and Rio de Janeiro on 15th-16th April, the previous conference program in the series -**GVF Oil & Gas Communications Brazil** 2014: Big Oil, Big Data: The Deepwater Ocean Expanse - was subject to lastminute changes of featured speakers and to the speaker schedule. Despite adversity, the conference was a tremendous success with a total of 75 attending delegates hearing from 18 speakers on a range of themes comprising the interface of oil and gas industry usage of the communications solutions provided by the satellite community. The conference presentations are now available for download in PDF format from the following web page www.uk-emp.co.uk/current-events/ogcomms-brazil-pro/.

On Day One the combined subjects of 'High-Capacity, High-Throughput: New Satellite Systems Meet Big Oil's Big Data', and 'The View from Earth Orbit: Satellite Operator Capacity Supply & Oil & Gas Patch Capacity Demand in a Big Data Ecosystem' was analysed by Márcio Brasil, Sales Director, Intelsat; Antonio Iannelli, Engineering Manager, StarOne; and, Jesús V. Alegría, LATAM Sales Director, Land and Marine Systems, Cobham SATCOM.

• From Schlumberger, Leonardo Toco, Well Site Connectivity Manager, Latin America, defined 'The Real-Time Mission Critical Communication Requirement for Deepwater E&P'.

sponsored by Intelsat, Telenor Satellite Broadcasting, Kymeta, SES, ITC Global, Truphone, Netscout, Emerging Markets Communications (EMC) and Usage level of 100 times that of today..."

• Embratel's Renato Campos, IT & Data Centre Solution Architect, provided invaluable insights into 'Value Added Services, the Cloud & Datacentre Operations for Oil & Gas'. This was followed by an analysis of the evolution of the satellite industry and of the O3b satellite constellation as a solution for oil and gas communications requirements between the northern and southern 45 degree parallels of latitude, provided by Jurandir Pitsch, Vice President, Market Development, Latin America, of SES.

 Mario Santos, Sales Director, Ad-w vantech Wireless, profiled the latest ti 'Cutting-Edge SatComs Solutions in the P
South American Oil & Gas Patch', leading into a focus on 'Leveraging Antenna Technology Advantages: Stabilised, Ruggedized & Auto-Deploy Technology in the Oil & Gas E&P Environment', presented by Rory Eddings, Director International Sales, Enterprise, Winegard Company, and Márcio Esteves, Director, Mareste Equipamentos e Serviços de Telecomunicação Ltda.

• The first day concluded with Iñigo López, Diretor de Vendas e Marketing, Arycom, investigating 'M2M in O&G E&P: Where Only Satellite Makes THE Difference in Production & Transportation'.

• Day Two began with Waldo Araujo Russo, Peregrino Telecom Advisor, StatOil, and Leandro Campos Tavares, Telecom Division Director, Brastrading, assessing in depth the 'New Ka band HTS Solutions for Offshore Communications'.

An innovative addition to the se-

ries programs was provided by Flávio Pinto, Sales Manager Brazil, Gilat Satellite Networks, who presented his perspectives on 'Intelligence, Security & Reconnaissance (ISR) in the O&G E&P Remote Space'.

• Field Communication Services Coordinator with Baker Hughes, **Celina Morais**, offered a detailed analysis of latest developments in the fields of 'Data Monitoring, Data Management & Remote Collaboration'.

• 'Out-of-band Control & Monitoring Solutions for the Oil & Gas Patch' was evaluated from the two perspectives, that of Raffael Malta, Special Projects Manager, Hughes Telecomunicações do Brasil, and Iñigo López, Diretor de Vendas e Marketing, Arycom.

• A profile of 'Radio Frequency Interference in the Oil & Gas Space: Industry Prevention & Mitigation Strategies' comprised the concluding session of the conference programme with J.R. Cristóvam Nascimento, Chief Executive Officer, Unisat Engenharia de Telecomunicações & Correspondent/Chief Trainer for Brazil, GVF, Martin Jarrold, Chief, International Programme Development, GVF, and Rory Eddings, Director International Sales, Enterprise, Winegard Company.

The conference program was jointly chaired and moderated by J.R. Cristóvam Nascimento, and me.



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

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- IA and Security in a Tactical Environment
- · Identity Management
- Intrusion Detection
- Joint Tactical Network Security
- Malware Analysis
- Mobile Network Security
- Risk Management

31 May 2014

- · Threat Monitoring and Analysis
- Trusted Networking Security and Privacy

Track 2. Waveforms and Signal Processing

- Advanced Antenna and RF Technology
- Anti-jamming Techniques
- Cognitive Radios
- Compressive Sensing
- Dynamic Spectrum Management
- Modified Commercial Wireless
- · Modulation and Coding
- Radar System, Detection and Localization
- Satellite Signals
- Signal Processing Algorithms
- Underwater Communications

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- · Ad Hoc, Mesh, Sensor Networks
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- Cognitive Network Applications
- · Content-Based Networking
- · Cooperative Diversity and Physical Layer Network Coding
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- · Hybrid Optical/RF network
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- Network Discovery
- Next-Generation Wireless Networks
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- · Personal Area and Body Area Networks
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- Scalability of RF networks
- Service-Oriented Architectures
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- Autonomous Operations
- · Cellular Extensions of Tactical Networks
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- COTS Integration
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Abstracts due: April 14, 2014

Draft papers due: April 28, 2014

Final papers due: July 18, 2014

Proposals due: April 28, 2014

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Staying Relevant in a Time of Transition

CASBAA Satellite Industry Forum 2014 June 16, 2014, Singapore

ASBAA returns to Singapore for its annual gathering • to explore the latest developments and issues affecting the satellite industry in the Asia Pacific. Taking place on June 16 at the Shangri-La Singapore, the CASBAA . Satellite Industry Forum 2014 will provide a platform for leaders from the Satellite sector to come together and share • their knowledge and experiences.



- New Technologies and New Operators. New Kids on the Block?
- "The customer is always right" or are they?
- How can satellite cope with the challenges of non-linear services?

"With an active Satellite Industry Committee and a number of satellite related companies as CASBAA members, the CASBAA Satellite Industry Forum is an extremely important event in our yearly calendar," said Christopher Slaughter, CEO, CASBAA. "An integral component of the multichannel TV business in the Asia



The roster of speakers encompasses the whole value chain of the satellite industry including Cristiano Benzi (Director of the Business Unit Video and Broadcasting, Eutelsat), Thomas Choi (Founder & CEO, ABS), Anthony Colucci (VP, Marketing & Sales and Government Relations, SS/Loral), Ali Ebadi (SVP, Space Sys-Development, tems MEASAT), Yvon Henri (Chief, Space Services Department, ITU).

Pacific, satellite services account for a large portion of how television signals are delivered to consumers in the region."

Acknowledging the ever-evolving industry landscape, this year's theme addresses "Remaining Relevant in a Time of Transition". The agenda for this year's forum will touch upon the challenges the industry is facing as the very definition of television changes to embrace new technologies, delivery methods and consumer habits, including:

- being counterbalanced by increased demand in the mobility sector?
- What is the state of the international debate over Cband?And what are Asian governments thinking?

Huang BaoZhong (EVP, APT Satellite), Osamu Inoue (Director of the Board, Senior EVP & Group President, Space & Satellite Business Group, SkyPerfect JSAT), Ethan Lavan (Director of Orbital Resources, Eutelsat; Chairman, Satellite Informal Group (SIG)), Deepakjit Singh (MD, Asia, Encompass Digital Media), Bill Wade (President & CEO, AsiaSat) and many others.

The CASBAA Satellite Industry Forum 2014 recognizes the generous contributions of Supporting Sponsor SKY Perfect Is the decrease in military and government business JSAT Corporation and Sponsors Arianespace, AsiaSat, Eutelsat, Marsh, MEASAT, SES and SSL.

> For more information about the event, please visit: www.casbaa.com/events/events-calendar/details/435casbaa-satellite-industry-forum-2014.

The Satellite Markets 25 Index[™]

Company Name	Symbol	Price (May 06)	% Change from Last Month	52-wk Range		% change from 52-wk High
Satellite Operators Asia Satellite Telecommunications Eutelsat Communications S.A. APT Satellite Holdings Ltd. Inmarsat Pic SES GLOBAL FDR	1135.HK ETL.PA 1045.HK ISAT.L SES.F	30.65 24.67 10.30 731.50 27.29	-4.22% 0.69% 12.45% 0.55% -0.11%	26.85 35.00 20.41 27.04 4.80 12.00 80.01 784.00 20.81 27.50	****	12.43% 8.77% 14.17% 6.70% 0.76%
Satellite and Component Manufacturers The Boeing Company COM DEV International Ltd. Lockheed Martin Corporation Loral Space & Communications, Inc. Orbital Sciences Corp.	BA CDV.TO LMT LORL ORB	130.83 3.95 163.49 72.68 27.85	4.12% 5.90% 0.45% 2.50% 0.87%	93.77 144.57 3.35 4.40 101.06 168.41 59.11 82.13 17.03 34.16	***	9.50% 10.23% 2.92% 11.51% 18.47%
Ground Equipment Manufacturers C-Com Satellite Systems Inc. Comtech Telecommunications Corp. Harris Corporation Honeywell International Inc. ViaSat Inc.	CMI.V CMTL HRS HON VSAT	1.43 30.99 73.71 91.58 62.03	-11.18% -2.33% 0.11% -0.41% -9.87%	1.02 2.37 23.84 33.80 47.01 75.33 76.15 95.91 49.79 74.78	***	39.66% 8.31% 2.15% 4.51% 17.05%
Satellite Service Providers Gilat Satellite Networks Ltd. Globecomm Systems Inc. International Datacasting Corporation ORBCOMM, Inc. RRSat Global Communications Network Ltd	GILT GCOM IDC.TO ORBC RRST	4.70 14.10 0.09 6.07 9.22	-5.81% 0.00% -10.00% -5.89% 5.86%	4.09 6.11 10.49 14.91 0.07 0.23 3.40 8.21 6.97 9.39	****	23.08% 5.43% 60.87% 26.07% 1.81%
Consumer Satellite Services British Sky Broadcasting Group plc DIRECTV Dish Network Corp. Globalstar Inc. Sirius XM Holdings Inc.	BSYBY DTV DISH GSAT SIRI	60.06 81.74 62.45 2.94 3.19	-1.97% 6.58% 0.63% 12.21% 0.95%	46.45 63.79 57.05 82.88 37.30 64.52 2.33 2.99 2.98 4.18	****	5.85% 1.38% 3.21% 1.67% 23.68%

INDEX	Index Value (May 06)	% Change from Last Month	% Change Jan. 03, 2014
Satellite Markets 25 Index [™]	1,727.51	0.49%	0.97%
S & P 500	1,867.72	-0.27%	1.99%

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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Sub-Saharan Africa TV Households



Digital penetration will exceed half the TV households in Sub-Saharan Africa very soon, according to a new report from Digital TV Research. The Digital TV Sub-Saharan Africa Forecasts report estimates nearly every home will be converted by 2020.

Analog terrestrial switchover will account for much of this growth, with more than two-thirds of TV homes receiving DTT signals by 2020 - up from fewer than a fifth at end-2013. Around 28% of TV house-holds will have satellite dishes (pay and FTA combined) in 2020.

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