

Satellite Captures the Wave of Video Growth

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SES is trailblazing the path to the future video ecosystem

In the rapidly evolving landscape of video satellites strengthen the distribution ecosystem. Viewers are increasingly demanding to have an unrestricted experience (any place, any time, any device). Enabling such a video service demands a system with holistic capabilities where satellite enabled distribution retains an essential role. Increasing reach, enhancing quality of experience, and delivering unsurpassed economic efficiency are among the key benefits of putting satellite communication at the centre of present and future distribution ecosystems. As the world leading satellite operator SES has the technology, the global footprint, and the full capability based system to deliver an integrated and entirely complementary video experience. SES details this approach herein.

SES: FROM PLAYOUT TO MEDIA PLATFORM CREATION

SES has defined the role of satellite technology in the new video ecosystem by focusing on a set of future oriented technological innovations, built on providing powerful capacity and high quality services. To begin with, SES's ambitious satellite launch plan set out for the future will continue to feed the ever increasing bandwidth requirements of today's video ecosystem. But well beyond capacity, customers can access a full range of video distribution services within the SES group. From playout services, to media platform creation, the value chain of distributing content has become more and more complex. SES cuts through it all and delivers to exacting standards – for the complete video value chain.





END TO END SERVICE: SPS AND RR MEDIA

Delivering high quality solutions in this complex ecosystem is the focus of SES Platform Services (SPS). This Munichbased affiliate allows SES to go beyond its role as an infrastructure provider in the form of satellite capacity, and offer tailored distribution solutions for customers across the entire media industry. SPS products streamline the media delivery system for customers, and have a reputation for quality that makes SPS a world leader in video services. Looking to build on this foundation, SES examined ways to scale SPS business even more.

Another company in the digital media services industry, RR Media based in Tel Aviv, is well known for its ability to create value for customers by providing a complete range of digital media services efficiently and cost-effectively. Being deeply complementary with SPS, the two are now set to merge. The new company will create an organization with a common vision for serving the media industry, and be uniquely positioned at the centre of the international media ecosystem.

The merger will further strengthen SES's capability to go beyond selling satellite capacity and deliver different TV viewing experiences across the world. The new company will develop and deliver solutions along the complete media value chain as an independent media solutions provider, focused on customer needs only. The new company will support over 900 customers, 440 playout channels, 1,000 TV channels and over 100 VoD platforms including Netflix, Amazon, iTunes, and Hulu. By working with SES's service subsidiary, broadcasters, content owners, distributors, and rights holders will be able to benefit from a one stop shop solution. Technical infrastructure such as data centres, playouts, and teleports will be managed across the globe irrespective of the ownership behind.

The complete range of services the new company has will be delivered in both developed and emerging markets. SPS has built its success by working with premium brands in the industry to provide unrivalled service that ensures their content is broadcast reliably and in the best quality. Meanwhile RR media has found success by working with both premium and start-up content providers to deliver a service that is responsive and solution oriented. The strengths of the two when merged will create the essential package for content distributors in all markets.

Moving forward the new company will solidify SES's ability to ensure seamless coverage and scalable product designs together with its strategic partners. With the unique SES capabilities in the video market, and the deep operational expertise to match, diverse customers can benefit from simplified work flows for both linear and non-linear content distribution. With SES and the new iteration of SPS customers can simplify their work flows. Instead of customers having to manage each step in the distribution chain themselves, SES will take content straight from production and deliver it directly to screens anywhere, providing a one stop shop service and cutting through the increasing complexity of both today's and tomorrow's video value chain.

HD+ & CO: MANAGED MEDIA PLATFORMS

HD+, founded in 2009, took SES to the next level as a B2C video provider. This media platform provides broadcasters in Germany with a method to deliver their HD content to paying audiences via satellite. HD+ brings the power of satellite into viewer's homes directly with high quality content for the first time, as a managed media platform. The quality of the video service is possible because of the ecosystem that was built for this platform, encompassing satellite services, product management, sales and marketing, and customer care.

Customers of HD+ can complement their access to 30 primarily public HD channels with an additional 21 channels from the largest commercial broadcasters in HD quality. This platform currently counts over 1.9 million paying subscribers across Germany and will continue to grow as the demand for HD quality content in this market expands.

SES is now using this expertise as a white label tool box that makes it simple to create media platforms for specific markets across the globe.

While HD+ is a B2C model, SES uses the white label toolbox to create a unique media platform for its business customers to sell directly to their end customers. This goes beyond pure playout or distribution that customers may already contract through SES. The white label toolbox approach combines all the basic elements of HD+ and SPS solutions together to create an entirely new ecosystem from scratch. As such an ecosystem is built on standard components, it is relatively simple to implement specific ideas from customers and customize the solution accordingly. With this approach SES can include existing features like Sat-IP or develop new features together with customers and technology partners. The white label toolbox used to implement media platforms can be applied anywhere in the world. As an example, in West Africa SES is working with local broadcasters to assist the regional transition from analogue to digital. SES supplies an end to end solution to these customers, from capacity in the sky to ground infrastructure, and finally service support. SES encourages the business of its customers to build up technical reach through installer trainings (known as the 'ELEVATE' program), marketing activities, the measurement of technical reach (Satellite Monitor), and more. Additionally, SES offers an innovative business model to support customer efforts to monetise their content. By combining all these elements SES created a new media platform for West Africa in 2014. This new platform already has an existing technical reach of at least two million in Ghana, and more than two and a half million in the rest of West Africa (primarily Nigeria). This is just the beginning and SES intends to support digitalisation by starting with the Ghanaian and Nigerian markets and eventually enhancing the television experience for the millions of viewers in all of West Africa.

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With a white label toolbox ready to build media platforms SES is responding to the changing demands of video markets across the world. Each market has specific needs, and regardless of geography SES is creating customised solutions that are implemented rapidly.



VIDEO VALUE CHAIN

SATELLITE DELIVERS HIGH QUALITY VIDEO

The past twenty years has seen the growth of High Definition (HD) and more recently the dawn of Ultra HD. This high technical quality puts existing video delivery networks under enormous stress that is only increasing. HD took 20 years to get established, and Ultra HD has been adopted at lightening pace in comparison. In 2016, 54 million UHD screens will be sold, up from 31 million in 2015.¹ Additionally, Ultra HD screens are an ideal medium to display High Dynamic Range (HDR), which is a technique that increases the luminosity of video, making it possible to view images that are more realistic. As demand increases infrastructure must rise to the challenge.

SES has been at the forefront of these exciting developments in video, being the first satellite operator to broadcast a commercial UHD channel. Today SES broadcasts 2,352 HD channels and 23 Ultra HD channels. Advances in compression technology are one reason why UHD quality is now possible. The latest compression codec, High Efficiency Video Coding (HEVC), is even more powerful than its predecessor H.264. HEVC reduces bandwidth by half and therefore allows UHD quality, which is four times the size of HD, to be broadcast affordably for customers. In 2016 it is predicted that sales of HEVC set-top boxes will increase to 5 million, further spreading the access to this new and better video experience.²

Despite better compression, technologies such as HD and Ultra HD both require increased bandwidth to deliver such high quality to viewers, and in the new video ecosystem this will put increased stress on terrestrial networks. The global average connection speed is 5.6 Mbit/s³ and in the EU only 68% of homes exceed 30 Mbit/s.⁴ In order to deliver a live HD quality broadcast via terrestrial broadband a sustained speed of 10 Mbit/s is required, and therefore higher than the reach and average speed of terrestrial broadband. Additionally, delivering one HD movie via terrestrial broadband to 2,500,000 viewers could cost thousands of euros. This compares to around EUR 10 to deliver one HD movie over satellite to a countless number of viewers, limited only by the boundaries of the satellite footprint. This demand for quality and the delivery methods it requires is a key factor that makes satellite vital to the success of the future video landscape.





AT HEAD-ENDS AND IN HOMES: SATELLITE CROSSES WITH IP

With the surge of connectivity, TV and video are increasingly delivered in Internet Protocol (IP) format, not only in the established Digital Video Broadcasting (DVB) standards. IP is the technical prerequisite that allows content to be distributed over multiple interfaces, formats and screens.

This is why SES boosts the frequency of crossing satellite with IP systems – at network head-ends as well as in consumers' homes.

At head-ends, SES plays out its strengths as a primary infrastructure provider, where satellite efficiently feeds into other infrastructure, like cable, and has done so for decades. More recently this has transitioned to digital terrestrial systems where satellite supports the digital switch over and covers remote areas otherwise too costly to be covered by towers and antennas. For IPTV delivery, SES has built itself a similar position. Recent studies have shown that an overwhelming 91.1% of all IPTV homes in Europe are served indirectly by SES satellites, by delivering content to IPTV and cable head-ends.⁵ This is extremely powerful when it is considered that IPTV subscriptions in Western Europe will climb by nearly 7 million (up by 27%) between 2015 and 2021.⁶ By 2021 IPTV revenues are expected to reach over EUR 10 billion.⁷

The second important hybrid cross is found in the home. SAT>IP, a technology developed through SES leadership, converts satellite signals into IP and broadcasts the converted content wirelessly throughout the home. This allows the entire choice of the satellite offer to be received, in uncompromised quality, on any screen in any room on any device, with several channels transmitting in parallel to multiple devices. Sky Q, developed by the entertainment company Sky, is another example from the industry of a powerful satellite-IP cross breed in the home. Sky Q is a whole package that uses the entire range of Sky technology to create a video ecosystem within the home. It delivers satellite broadcasts in IP to multiple devices in rooms across the home. It acts as a wifi hotspot, allowing viewers to pause content on one device to pick it up on another, and to record content onto their device to watch later.

All of the new technology combining satellite with IP reinforces the key role that satellite plays in delivering to video distribution networks, promising a unique range of offers for customers.

7 Ampere Analytics, Ampere Analysis 2016

⁵ SES Satellite Monitor done in 37 European countries

⁶ Morgan Stanley, Satellites – IPTV overtakes pay satellite TV in Western Europe

CONNECTED BUT NO CORDS TO CUT

The new ecosystem of video OTT is seen as a main disruptor of classical broadcasting. "Cord cutting" – a term alluding to the fact that viewers cut classical TV connections in order to watch video and TV online only – is painted as the way of the future, replacing linear broadcasting entirely.

The reality is more complex – and supports the need for hybrid networks that combine satellite and terrestrial systems for seamless video experiences across the globe.

First OTT, as a main avenue for VOD delivery, does not substitute linear broadcasting, and instead replaces physical video sales and rentals. The UK acts as a good exemplary market for this trend, where consumer spending on physical video declined by 14.9% between 2014 and 2015.⁸ Viewers now subscribe to services such as Netflix to watch their favourite movies instead of buying the latest DVD. (*Chart 1*)

Second, OTT is increasing the total consumption of video as it makes viewing more accessible during the day outside of primetime. According to a global Ericsson study, people now estimate that they watch 6 hours a week of streamed video, a number that has doubled since 2011.⁹ This happens while linear TV viewing continues to dominate in the evening, where in the US TV viewing accounts for at least half of all media use between 6pm and 6am.¹⁰ (*Chart 2*)

Third, the complementary effect of OTT and traditional broadcasting is further demonstrated by considering smart phone usage. Viewing is now done in parallel, with 50% of global smartphone users reporting that they watch linear TV while consuming other video on their phones simultaneously. Younger generations across the world, however, clearly go mobile: consumers between 16-34 years watch 53% of all their video on a smartphone, laptop, or tablet.¹²

Fourth, linear TV is retaining 90% of the video revenue globally, with linear DTH Pay TV actually catching up to cable revenues. OTT still lags significantly behind, because the average revenue per user is clearly lower than in a linear pay TV distribution model. Furthermore, revenues cannot be considered without looking at advertising. There is not much data yet on how OTT platforms will monetise their services more fully, but for linear TV advertising is still a main revenue stream. The cost for 30 second slots in Primetime in the US continues to command huge value. This is because linear TV is still able to gather large audiences and therefore remains an attractive choice for advertisers. Linear TV – especially as the ideal platform for the transmission of large live events – is a main vehicle for advertisers who can rely on high quality distribution, without interruption, to large audiences.

1 - GLOBAL REVENUES - LINEAR PAY TV & VIDEO - MUSD



Source: IHS Technology



Source: Nielsen – Total Audience Report O2 & O3 2015 USA (2/3)

Fifth, focusing in on content, both linear and Over-the-Top distribution have value to add when considering two new factors at play: the expansive choice of content and the amazing rise in technical picture quality. The content selection is getting more diverse because productions continue to rise in quality and cost, while audiences also embrace user generated content. Finding the perfect content in this endless sea is up to data analytics, the main strength of OTT. However, the technical picture quality of video will also continue to be a key success factor. HD is now the de-facto standard in Europe, North America, and Asia and continues to explode across the world, as does Ultra HD and HDR, making the need to satisfy this demand a key concern in the industry, and a challenge for terrestrial networks alone, as explained earlier.^{15,16} (*Chart 3*)

- 9 Ericsson, Consumer Lab in 2015 Global
- 10 Nielsen, Total audience report Q2 & Q3 2015 USA

- 12 Ericsson, Consumer Lab in 2015 Global
- 13 Ampere Analytics, Ampere Analysis 2016
- 14 Variety, TV Ad Prices: Football, 'Empire,' 'Walking Dead,' 'Big Bang Theory' Top The List, September 2015

⁸ IHS Technology, UK physical retail finalized for 2015, forecasts updated to 2020, 25 April, 2016

¹¹ eMarketer, Smartphone Video Creeps into TV Time, 22 June 2015

3 - REVENUE GROWTH-USD 000s



Source: Ampere Analysis

DELIVERING CONTENT BEYOND FRONTIERS

In the future video landscape the key to success will be to cut through complexity to deliver end to end solutions to all customers within the video value chain. To do this cutting edge technology is necessary, and SES is at the forefront of innovation ready to take on new challenges and embrace opportunities. One example of this deep commitment to supporting technical excellence in the video domain is demonstrated by SES Industry Days, a two day conference held annually for the past 9 years. The event gathers experts across subject areas and from around the world for two days to discuss and imagine the future of video.

SES does not discriminate between distribution methods, whether the customer works with IPTV, DTH, or OTT, because it delivers high quality services for the entire video chain. SES does not distinguish between remote and urban areas either, or viewing markets, as satellite reaches everywhere. By using the power of satellite SES is supporting the video landscape and trailblazing the path to the future video ecosystem.



SES Industry Days showcases the latest video technology and gathers experts from around the world

15 Dataxis

16 According to SES analytics from Q4 2015 SES is already moving beyond HD and working towards Ultra High Definition (UHD): SES broadcasts 2,352 channels in HD worldwide and nearly two dozen channels in Ultra HD. And this will grow as content in Ultra HD proliferates; currently more than 1200 movies and series are available in Ultra HD, and this in increasing.

SES cuts through complexity to deliver your video content everywhere

SES headquarters

Château de Betzdorf L-6815 Betzdorf Luxembourg

Regional offices

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