Satellite's role in con

While some operators are already exploring 4K Ultra HD, others in Asia-Pacific are more concerned with the transition from SD to HD. However, while content formats may differ, satellite remains one of the key content delivery platforms in the region. **Shawn Liew** reports …

Another breakthrough in 4K Ultra HD (UHD) to the home will come next month in Europe, with the launch of what has been described as the region's "first" free-to-air (FTA) 4K UHD channel.

Accessible via the Astra prime European orbital position at 19.2° East which is operated by satellite operator SES, shopping channel Pearl.TV was already available to viewers in both SD and HD resolution.

As 4K UHD continues to take its first toddling steps towards full commercial deployment, satellite operators such as SES have, in recent times, demonstrated their capabilities and readiness in supporting 4K UHD transmission. More precisely, the statellite industry is adamant that satellite remains the leading platform in allowing mass audiences to enjoy 4K UHD content in the home.

In relation to the launch of the Pearl.TV 4K UHD channel, Ferdinand Kayser, chief commercial officer of SES, says: "Satellites are the only infrastructure capable of distributing native 4K UHD in extremely high quality throughout Europe to millions of TV homes."

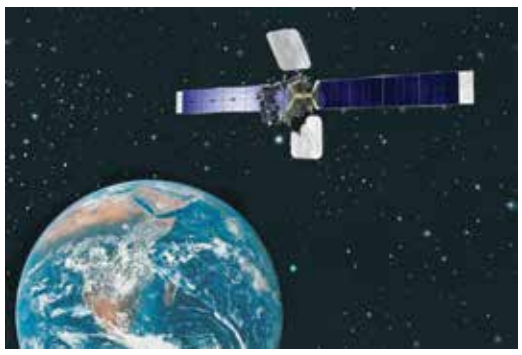
In a region as diverse as Asia-Pacific — in terms of physical terrain, income disparity and technological advancements, among other factors — for 4K UHD to be termed as "mainstream" is perhaps premature, although operators such as Japan's Sky PerfecTV have already launched their own proprietary 4K UHD channels.

For many other operators in the region though, the transition to HD remains the priority. Deepak Mathur, senior VP commercial, Asia-Pacific and the Middle East, SES, tells *APB*: "Direct-to-home (DTH) operators in Asia have been rapidly scaling their operations and expanding their reach in recent years. To differentiate themselves from the competition, they are offering premium and HD content, and more."

When content formats may differ, one factor remains constant. The potential for growth in DTH in Asia-Pacific remains high, Mathur believes, citing three key elements:

- A data and content-hungry young population.
- An emerging middle class with higher disposable incomes.
- The "tremendous economic diversity" in Asia, which results in more localised content in different languages and dialects.

Within Asia-Pacific, South Asia, specifically India, is already the largest DTH market in the world, in terms of the number of subscribers, Terry Bleakley, regional VP, Asia-Pacific, Intelsat, points out. Citing NSR's *Linear TV via Satellite: DTH, OTT and IPTV, 8th Edition* report, Bleakley predicts countries such as Indonesia, Bangladesh, Pakistan and Myanmar continuing to register growth as these countries' middle class continues to grow.



Left: Intelsat currently has 11 satellites serving Asia-Pacific, distributing content across major DTH platforms. And in a move to further enhance its existing DTH platforms, Intelsat is partnering with Azercosmos to place the *Intelsat 38/Azerspace 2* satellite at 45°East in 2017, which will deliver a range of services, including the hosting of DTH platforms for Asia-Pacific.

Right: Measat operates a constellation of three satellites at the 91.5°East orbital location, providing DTH services to more than 20 million DTH households across India, Indonesia and Malaysia.

He elaborates: "The size of the [Asia-Pacific] region and the difficult terrain across many countries make satellite the most economical distribution vehicle for content delivery. Satellite's ability to quickly scale and cost-effectively deliver services is a critical differentiator for DTH operators, particularly as viewer demand for more HD and even 4K UHD content grows.

"DTH operators require less costly infrastructure upgrades to support these new technology advancements in comparison to cable or IPTV, enabling them to bring higher bandwith content to market faster."

As a delivery technology, satellites have an inherent number of advantages compared to other technologies, agrees Jarod Lopez, VP, Broadcast Sales, Measat Satellite Systems.

According to Lopez, satellites are able to cover larger geographical areas with the launch of a single spacecraft; are able to provide a cost-effective delivery platform (with costs independent of geographic location and number of subscribers); and are able to provide a highly reliable delivery platform.

Lopez adds: "As a result of these advantages, and the patchy availability of other delivery platforms across the region, satellite DTH dominates pay-TV delivery across Asia."

And the evolution of pay-TV is likely to see the role of satellites remain core, albeit in a more complicated system. Lopez explains: "While satellites are not optimal for the provision of non-linear services, they provide a more efficient platform for the delivery of high-end 4K UHD or 8K services. As such, pay-TV services in Asia-Pacific are likely to be organised around a core satellite offering, with platforms utilising other technologies to provide additional services."

Reflecting on the robustness of DTH in Asia-Pacific, satellite operators are continuing to invest heavily in this realm. Measat, for example, operates a constellation of three satellites at the 91.5° East orbital location, providing DTH services to more than 20 million DTH households across India, Indonesia and Malaysia. The Measat satellites, stresses Lopez, provide some of the most powerful DTH capacity across each market through focused high-

tent delivery undiminished

SES' Deepak Mathur: "Any decision made at WRC-15 that implies sharing spectrum with terrestrial mobile providers can potentially impact and undermine the efficacy of the broadcast industry, translating eventually into higher costs for the consumer."

powered beams. He continues: "In addition to providing powerful capacity, Measat is also able to provide in-orbit redundancy. With our satellites supporting millions of households with their TV services, the ability of our customers to spread services across multiple satellites is a significant advantage."

Intelsat, on the other hand, currently has 11 satellites serving Asia-Pacific, distributing content across major DTH platforms. This, Bleakley reveals, "strongly positions" Intelsat to meet the region's fast-growing and changing viewership needs. And in a move to further enhance its existing DTH platforms, Intelsat is partnering with Azercosmos to place the *Intelsat 38/Azerspace 2* satellite at 45° East in 2017, which will deliver a range of services, including the hosting of DTH platforms for Asia-Pacific.

For SES, a new satellite launch is imminent, as the company readies for the Q3 2015 launch of *SES-9*, the biggest SES satellite to serve Asia-Pacific. Come 2017, *SES-12*, a new hybrid communications satellite, will join the fray, fully dedicated to serve the DTH, data and mobility markets in Asia-Pacific. Mathur says: "*SES-9* and *SES-12* will bring additional capacity to our prime orbital neighbourhoods of 108.2°E and 95°E. From these two orbital slots, we are reaching out to over 44 million homes and 160 million people today, and we believe these numbers will only grow in the next few years."

It would seem that the emergence and rapid development of a new satellite broadcasting standard is only adding to the optimism surrounding the DTH market.

Intelsat's Bleakley describes: "DVB-S2X will improve throughput by 20% or more, depending on the type of carrier and use of other efficiencies such as higher modulation. As a result, this will enable delivery of more channels so DTH operators can increasingly deliver more value-added content to their subscribers, as well as meet growing demand for HD content."

DVB-S2X is an extension of the DVB-S2 satellite digital broadcasting standard. As the industry adopts DVB-S2X, together with other emerging standards such as HEVC/H.265, broadcasters will be more empowered than ever before to optimise the usage of capacity and add more high-quality TV channels, suggests SES' Mathur. He adds: "We believe that emerging and more efficient standards such as DVB-S2X are much needed to accommodate end-users' demands for video and data, and the growing consumption of HD broadcast content in Asia-Pacific.

"These standards allow satellite operators in the region to supply broadcast customers with more cost-effective and efficient use of satellite capacity, enabling broadcasters to support the region's transition from SD to HD."

DVB-S2X will be a positive factor in the growth of DTH, Measat's Lopez endorses. Specifically, he believes that the standard offers 50% improved transmission efficiency, leading to more channels per transponder, with reduced costs for transmission. "This would benefit both cost of distribution of content to the headend and the distribution to the end-user," he notes.

It is important to build on C-band in the region, even as the demand for satellite capacity continues to increase.

The only current obstacle preventing major DTH providers from utilising DVB-S2X to provide video to the home is, the need to upgrade set-top boxes (STBs) to support the standard, concludes Lopez.

All things considered, the future does appear to be bright, as satellite continues to stake a legitimate claim as the most efficient content delivery platform, particularly in Asia-Pacific. However, a potentially disruptive development threatens to throw a considerable spanner in the works.

This November, the satellite industry will be casting anxious glances towards Geneva, Switzerland, where the next World RadioCommunication Conference (WRC-15) will be held. There, terrestrial wireless companies are expected to lobby heavily for additional spectrum in the C-band (receive/uplink) frequency band of 3.4G-4.2GHz.

The satellite industry appears to be adopting a united front in unanimously rejecting the reallocation of C-band spectrum.

An unfavourable ruling at WRC-15 could potentially suspend TV services for hundreds of millions of viewers in Asia-Pacific, warns Intelsat's Bleakley. "C-band spectrum cannot be 'replaced' with other bands and sharing with terrestrial wireless services may cause unintentional interference. If the terrestrial wireless industry prevails, the effects on satellite services and, more importantly, the viewer will not be immediate but rather be felt over time as each country that wants to introduce these new services will need to take action domestically to make the spectrum available to mobile operators."

Satellite remains the most ideal infrastructure to reach millions of TV households due to the low marginal cost of adding another subscriber. Hence, it is important to build on C-band in the region, even as the demand for satellite capacity continues to increase, says SES' Mathur. He continues: "Any decision made at WRC-15 that implies sharing spectrum with terrestrial mobile providers can potentially impact and undermine the efficacy of the broadcast industry, translating eventually into higher costs for the consumer."

Concurring with the view that allocation of C-band spectrum to the IMT (International Mobile Telecommunications) sector will have a major impact in reducing the amount of useable spectrum and driving up costs, Measat's Lopez urges for *status quo* to be maintained. "It is critical that the ITU (International Telecommunication Union) understands the importance of satellite C-band spectrum for both business and government sectors, and ensures a successful outcome at the upcoming WRC-15, that is, ensuring no change to the current allocation of C-band spectrum." APB