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Utilizing satellite for the new era of broadcast

There's no arguing that the broadcast industry is changing rapidly, as new technologies allow all those in the production and distribution chain to operate more efficiently than ever before. Satellite news gathering (SNG), in particular, has seen huge advancements in recent years, thanks in part to new IP-enabled technology.

Hans Massart, Head of Media and Broadcast, ST Engineering iDirect

In an increasingly connected world, Occasional Use (OU) broadcasters need the capability to share breaking news and live sports events at record-breaking speeds across multiple platforms. Evolving technology has created an expectation of instant access to information, no matter what time of day it is or where in the world an event is happening. The highest quality video format is also required to provide a viewing experience that is as close to the real thing as physically possible.

This presents challenges as the broadcast industry moves towards providing a combined media experience, encompassing not only live video, but also social media and online content. As such, existing OU solutions are under increasing pressure to provide the much-needed flexibility to handle multiple video formats and address modern expectations. Although live events have currently been suspended due to the pandemic, sports and events will come back – better than ever – and broadcasters need to be prepared.

The quest for efficiency and the IP evolution of newsgathering

In line with this, the Outside Broadcast (OB) or Satellite News Gathering (SNG) truck has become increasingly sophisticated as time has moved on, enabling broadcasters and news agencies to get to the scene rapidly to set up and start broadcasting within minutes.

Long gone are the days when a journalist would have to physically transport a tape back to HQ after covering a story so that it could make its slot on the evening news. Technology and digitalization have transformed OB and exponentially expanded a broadcaster's capabilities in the field. There are currently three methods of newsgathering used by broadcasters.

Traditional SNG

SNG is the use of mobile communications equipment for the purpose of worldwide newscasting. Mobile units are usually vans equipped with advanced, two-way audio and video transmitters and receivers, using dish antennas that can be aimed at geostationary satellites.

Traditionally, newsgathering and sports coverage was



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expensive to build and maintain and well as too large to get close to an unfolding scene.

Cellular bonding

The industry then made a move to cellular bonding technology, which has become an increasingly popular choice for broadcasters. Utilizing 3G and 4G cellular networks to bring video back from the field, cellular bonding involves dedicated equipment and All-IP transmission. It is easy to use and enables broadcasters to get close to an event. However, cellular bonding relies upon bandwidth availability and if networks are contended, the overall quality of the transmission is negatively impacted.

Blending all-IP networks

The next shift in newsgathering technology is occurring with the blending of all available IP networks. This eradicates the concern of degradation of transmission when relying on cellular bonding by ensuring that satellite is used when IP terrestrial networks are unavailable, do not provide enough bandwidth, suffer from jitter and are not cost-effective. In these cases, the system simply switches to satellite in order to create a highly reliable connection no matter where the news or event is breaking.

Over recent years, there have been significant advances in satellite technology that offer broadcasters new means of delivering high-quality video. For example, Ka-band satellites offer higher throughput and can be used with smaller terminals that require less power than traditional Ku-band satellites that are primarily used on SNG trucks.

Today, a mix of technologies is employed to cover live

handled by dispatching large trucks manned by various technically skilled people for each and every event. Each service had its own communication requirements. Bi-directional communication was often limited to voice using solutions such as ISDN. While these trucks had great coverage and could provide high bandwidth and availability, for many newsgathering operations they were simply too

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events over a multiservice communications link. The power of IP makes this possible. For broadcasters, the ability to use multiple networks, such as 3G and 4G or Ka- and Ku-band satellite, is essential. When terrestrial transmission becomes contended, the satellite link must also be able to adapt and scale dynamically to higher bandwidths.

Innate and unique ability

The key to all-IP newsgathering is successful transmission – which is why satellite is perfectly placed for use in broadcasting. During the Copa America football event last year, Casablanca Online, a leading Brazilian SNG and service provider, needed a reliable and cost-effective solution. SES' OU Flex solution – powered by Newtec Dialog – provided IP connectivity to broadcasters' outdoor production teams at the Morumbi Stadium São Paulo where a Copa America game was held between Chile and Peru. Combining live video transmission and IP connectivity via satellite, the Newtec Dialog-based solution enabled both data and video applications for OU services.

The solution was integrated into Casablanca Online's existing SNG Trucks via our MDM3310 broadband modem, which requires significantly less investment compared to other technologies. This enabled a two-way connection between the stadium and the studio, providing greater flexibility to facilitate remote production and distribute video content to online platforms. As a result, Casablanca Online was able to provide guaranteed and glitch-free IP connectivity over a 40Mbps link, allowing the field teams to operate optimally.

Increasing availability – anywhere, anytime

To facilitate optimal IP newsgathering and ensure efficient and effective use of the space segment, operators need a solution which provides high-quality IP connectivity to manage entire video and data content contributions, with guaranteed quality of service in any condition. Any technology solution selected should also enable video content distribution, live video sharing on social media, file sharing and Internet connectivity. This will enable broadcasters and SNG operators to enrich the viewer's experience throughout



Copa America. Photo courtesy of SES ●●●

the live broadcast.

One final factor to consider is the availability of a network connection once broadcasters arrive on location. At a busy event such as a live sports game or an emergency situation, the network easily becomes congested due to a high level of other reporters and users in the area. Therefore, a solution is needed where broadcasters can book connectivity easily and in turn, receive a dedicated, secure service with guaranteed throughput, no matter how many other broadcasters are operating at the same time.

One example of such solution which addresses these requirements is Newtec Dialog. This is a scalable and flexible multiservice satellite communications platform, which creates an adaptable solution for OU broadcasters. With the support of its return technology, Mx-DMA®, it enables bandwidth to be allocated dynamically as it is needed, while also ensuring the highest quality. This is particularly beneficial for video transmissions and further enables post-production tasks and other supportive efforts to be completed more quickly, efficiently, and effectively.

A new era

By adopting a flexible solution, this opens a world of possibilities for broadcasters by providing the ultimate viewer experience, allowing them to be in the moment, even when they are not physically there, while also enabling operators to be at the cutting edge of technology.



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