



Footage and large files may easily be shared in the cloud from remote filming locations. Photo courtesy Mark Cruz ●●●

Satellite: Enabling the future of remote production

The cloud has really taken hold of the world over the last decade, forever changing the way we work, live and study. Nowhere is this truer than in the film and photography world, where cloud technology has enabled remote production like never before.

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

The pace of innovation in satellite connectivity is facilitating disruption across many industries and the film and photography world is no different. Remote production – or Remote Integration Model (REMI) – allows live content to be captured from a remote location and managed from a master control room. Today, when remote production takes place, cloud computing is an incredibly powerful tool in any producer's arsenal.

For example, it can allow sound or video editors that are working from home to pick the files from the cloud and process these at their location, wherever that is. A production crew can be anywhere and work and collaborate effectively with the rest of their team, as long as they have access to the cloud.

From film productions to news crews, cloud access is such a powerful enabler of productivity that the demand for satellite

connectivity as part of a blended all-IP solution is well justified, especially in remote areas.

COVID-19 has also played a part in changing the production landscape, acting as a catalyst of sorts, as people had to innovate to remain productive. On the one hand this has boosted demand, subscriptions and the number of people using streaming services in general. However, it's not uncommon for this new influx of activity to cause congestion and overload terrestrial networks. Equally, the pandemic influenced outside broadcasting (OB) when the number of sports events, and other large, broadcasted gatherings were reduced.

Three REMI options for production crews

While the world is still recovering and events are taking place once more, satellite has an important role in solving the remote production problem due to its inherent advantages. Delivering content to vast geological areas and to the four corners of the world, including the most remote places, means it can extend far beyond the reaches of any existing terrestrial network. High throughput satellites (HTS) simply compound these advantages, offering greater throughput at low latency while being more financially efficient.

The contribution of content from remote regions presents its own set of challenges. Connectivity is integral to run any remote broadcasting application and the necessary bandwidth must be made available at all times. Today, production crews operate in areas that are often located in

hard-to-reach areas and therefore equipment must be highly portable, compact, and lightweight in order to make it easy to transport and then operate once it is on location.

Ultimately, to meet all of the above requirements, the ability to blend different technologies, including cellular, terrestrial and satellite - frequently presents the most attractive and versatile solution.

When the situation calls for remote production either by a news crew or film company there are currently three options that have become available over time:

The traditional approach

This involves the use of vehicles, usually vans decked out with advanced pieces of kit for the purposes of two-way audio and video, such as transmitters and receivers with dish antennas directed toward satellites. However, this solution is both costly and requires a very high skill threshold for the personnel running the equipment. Not to mention, the sort of vehicle required may simply be unsuitable for certain terrain in the first place, rendering it ineffective for truly remote productions.

Cellular bonding

Later, cellular bonding became ubiquitous, using 3G and 4G cellular networks to fetch video back from remote locations. But it's not just video that is exchanged. It also allows large file transfer, Internet and intranet access, archive browsing and social media.

This has greatly reduced the skill threshold involved and uses dedicated equipment via all-IP transmission, but the big drawback is that there is often no 4G connection available and 5G, even when it arrives, will not solve this situation. If a

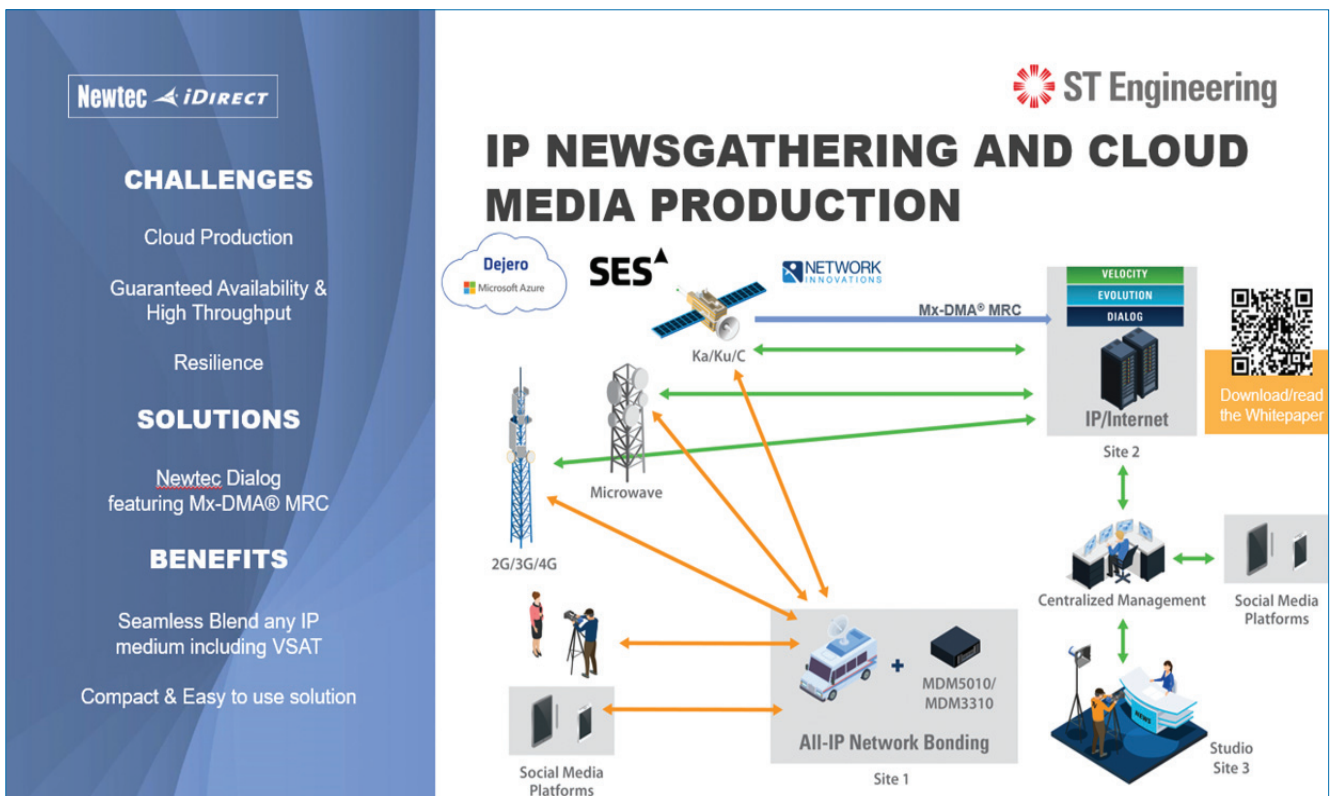


Hans Massart, Head of Media and Broadcast, ST Engineering iDirect ●●●

given network is contended it will badly affect transmission quality.

Blended all-IP networks

This leads us to the modern solution. By blending all available IP networks, we can mitigate the risk of damaging the quality



Newtec *iDIRECT*

CHALLENGES

- Cloud Production
- Guaranteed Availability & High Throughput
- Resilience

SOLUTIONS

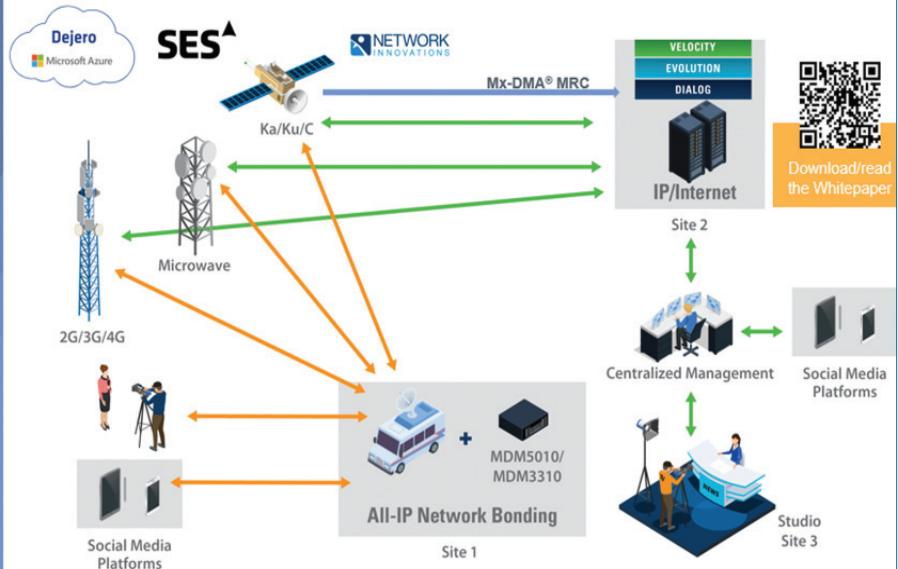
Newtec Dialog featuring Mx-DMA® MRC

BENEFITS

- Seamless Blend any IP medium including VSAT
- Compact & Easy to use solution

ST Engineering

IP NEWSGATHERING AND CLOUD MEDIA PRODUCTION



of the transmission associated with cellular bonding by allowing satellites to be used instead when IP terrestrial networks are not up to scratch. The ability to easily blend with satellite for a reliable connection is facilitated by recent developments in satellite technology that support high quality video such as the prevalence of higher throughput satellites with a lower power draw than the Ku-band satellites often found on traditional SNG vehicles.

Truly remote production

This blending of all-IP networks has been used to great effect in areas that are truly hard to reach such as in the case of commercial productions on wild mountain ranges. The remote mountainside often has little to no cellular reception and when the clients themselves are not able to be present on the mountain, a production company requires an online collaborative solution. To guarantee the kind of connection they need, a blended all-IP solution can use a portable satellite and dynamically amalgamate the available cellular networks with satellite signal to deliver high quality connectivity in an incredibly isolated location. The crew can then stream the video from set to the platform for real time collaboration. Media production, whether that be commercial television or film, are switching to these cloud-based workflows and this blended solution is the key piece of tech that makes it all possible.

ST Engineering iDirect’s partner, Dejero, recently used Newtec Dialog® technology to great effect to support one such commercial production company in the Canadian Rocky

Mountains. The end result meant that they were able to flawlessly stream to offsite clients without worrying about latency or shaky connection. This means that the real time feedback facilitated the same kind of conversation that would occur if all parties were in fact on set.

The flexibility and reliability of the blended all-IP approach also manages to reduce the costs previously associated with satellite solutions and HTS have made waves by improving the price and user experience. More satellite constellations are launched frequently, and this is particularly true in the case of LEO and MEO satellites resulting in a projected 14x increase in capacity before the end of the decade. This will further reduce the costs involved and pave the way for more deployments.

Performance and agility for any environment

Satellite has become a vital component of any producer’s toolkit and is making waves for the versatility it offers. ST Engineering iDirect is now able to provide a portfolio of products and technologies that can meet the needs of any remote production scenario or application. ST Engineering iDirect’s Mx-DMA technology can offer a single return link suitable for most use cases while reducing operational complexity and offering the highest bandwidth efficiencies. Where other solutions like terrestrial or cellular connectivity struggle satellite is here to guarantee the quality connectivity required is available not only with the performance but agility to suit any environment better than other existing connectivity platforms. ■



An example of a remote film set. Photo courtesy Jakob Owens ●●●