SATELLITE CONTENT DISTRIBUTION
EFFICIENT. RELIABLE.
FLEXIBLE. CONTROLLABLE.

Satellite Content Distribution

In May 2002 George Lucas shot "Star Wars: Episode II, the Attack of the Clones," entirely on digital video. It was the first big budget live action movie shot digitally and a milestone in the digitalization of professional media content. Today's film industry uses file based digital content exchange in every step of the process in stead of celluloid film. The film industry is just one example of an industry switching over to handling content digitally. Other industries like broadcasting, newsgathering, home entertainment and the government industry have all made a similar switch.

Unfortunately terrestrial network infrastructure is not prepared to send back and forth large amount of files. Apart from problems with pure throughput capabilities, the underlying protocols are optimized for point-to-point (unicast) info exchange. This means that if you want to send a movie file of 500 GByte size to 1000 destinations, it will be sent 1000 times… Strangely enough network devices around the world do support point-to- multi-point (multicast) protocols. The network card in your home computer is prepared to receive multicast data but it is the largest network on earth – the Internet – that does not allow multicast traffic.
This terrestrial infrastructure is in the foreseeable future not likely to improve in that area and that's exactly where satellites can play a major role.

By its inherent broadcast capacity, satellite is the ideal medium to distribute large amounts of Digital Media Content around the world. In one single transmission, content can be sent to thousands of users in the satellite footprint. The combined technology stacks of physical layer equipment, network infrastructure and access control ensure that content arrives in an efficient, reliable, flexible and controlled way.

DIALOG

powered by
Newtec ◢ iDIRECT

Your Content Delivered

ST Engineering iDirect has a track record of reliable satcom IP networks successfully deployed around the globe. Leveraging on that experience. We can propose an end-to-end solution for satellite content distribution with following elements:

- The Newtec Dialog® multiservice platform, terminal modems and its associated NMS software suite (VSAT System)
- Content Distribution System based on our reliable File Exchange technology

So just give us your content, we will deliver.

> By its inherent broadcast capacity, satellite is the ideal medium to distribute large amounts of Digital Media Content around the world.

Efficient

Our systems strive for the highest spectral efficiency (a.k.a. Bits per Hertz) possible, dedicated technologies such as DVB-S2/ S2X, Mx-DMA, FlexACM®, Clean Channel Technology® and Network Optimization Software are used inside these satcom IP networks to achieve maximum throughput independent of the selected satellite (Ku-, Ka-,C-, X-band, HTS).

In addition to a high bits per Hertz number, the efficiency of satellite based content distribution is incomparable. There is no other medium that is by nature so suited for point-to-multipoint or multicast content distribution. Multicast enables the transfer of a variety of services in the most economical way and is therefore especially important for satellite network operators because fast and bandwidth efficient content distribution is one of the main factors for success in today's fast growing global markets.

In good atmospheric conditions FlexACM technology will make more bandwidth available. The Content Distribution System hooks into that technology and makes use of the extra bandwidth.
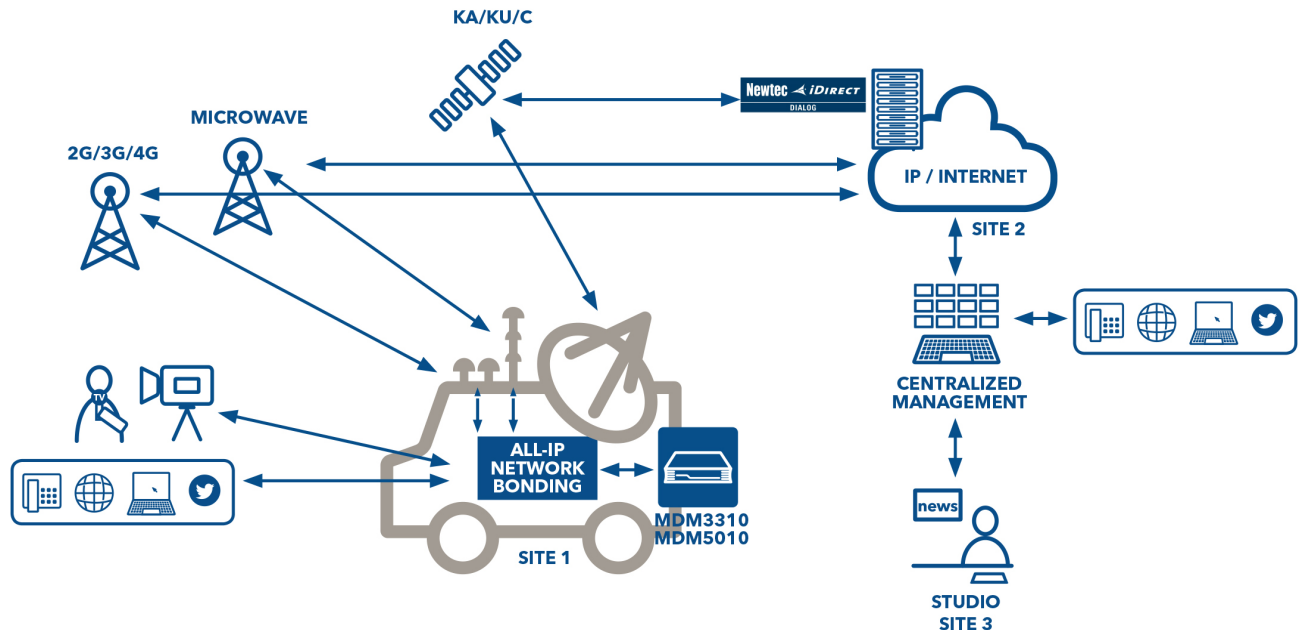
Reliable

Even in harsh and hostile conditions (rain fading, interference, etc.) reliable transmission over satellite is available at all times (without service interrupts or loss of data) thanks to the auto-adaptive modulation technology FlexACM® inside the modems.

On top of reliable physical layer technology an extra set of correction techniques is applied at content level. The media files are fragmented transparently and on each fragment an extra Forward Error Correction is applied, protecting the content from accidental "bit-flips".

At the remote site the content fragments are received one by one. During a long transmission, the receiving conditions at the individual remotes can vary a lot over time. The location of the remotes can have an influence on their condition, caused by sunny weather, rain or a thunderstorm. In case of mobile terminals, e.g. on ships, some remotes can even be located outside the satellite footprint e.g. at the beginning of the transmission. In those cases the remotes will keep track of the fragments that they have missed and will request re-transmission of those missed packets only. No need to send the complete file over again. At the HUB those re-transmission requests are evaluated and decision on actual re-transmission will be taken on different criteria going from statistics to requests coming from VIP Terminals. After re-transmission and successful reception of missed fragments, the remote will reconstruct the original content and check for confirmation via checksum on whether the complete file has been successfully received.

All elements of the system can be deployed on full redundancy to ensure overall maximal availability.

Controllable

Digital Media Content is often of high value and must be protected accordingly. In ST Engineering iDirect's Content Distribution Solution, this is assured by encryption algorithms, built-in conditional access and the support of hardware keys to ensure strict privacy. Before the actual transmission starts a specific set of encryption keys is announced to the selected remotes, giving them access to the content to follow. A continuous re-keying is applied so that remotes can be revoked live during an on-going transmission.

Flexible

By its efficient channel and priority based bandwidth management mechanism, Our Content Distribution System allows for quick and easy change even during transmission. Each time content is presented for transmission, the system will recalculate bandwidth occupancy based on priorities of both on-going transmissions and the newly presented content. That way the high value content can always get the bandwidth it needs.

Although optimized for satellite networks, Our content distribution technologies can easily be deployed in hybrid or pure terrestrial networks.

> Satellite Content Distribution with ST Engineering iDirect's technologies: efficient, reliable, controllable and flexible.

Newtec ◢ iDirect