

GOVERNMENT FIXED COMMUNICATIONS



Satcom for Government & Defense Fixed Communications

Fixed Satellite Communications are used for multiple applications within government and defense operations. The fixed communication infrastructure is the permanent or semi-permanent backbone link between headquarters and remote operation sites. In many cases these sites are located in hotspots or remote areas around the world that have no access to terrestrial communication infrastructure.

The amount of data, voice and video exchanged between the headquarters and remote sites has grown substantially along the wide number of applications. Government and defense customers continuously seek solutions to increase satellite link efficiency, to find available satellite bandwidth and to drive down satellite bandwidth costs. Whilst in operation the satellite link needs to be available at all times to assure mission critical communications.

Push more data through the available satellite bandwidth at optimal link availability

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Government and Defense Applications

Fixed Satellite Communications infrastructures are deployed for a wide range of applications within government operations. The fixed communications establish a backbone link between headquarters and remote sites combining a number of services that are key to the success of the operation and the welfare of the deployed personnel.

Applications for fixed communications are:

- Emergency Response Support
- Morale, Welfare & Recreation
- Peacekeeping
- Medical (hospitals/field hospitals)
- Disaster Relief
- Tactics & Logistics
- Closing Digital Divide
- Environmental and Climate Monitoring (climate)
- Distance Learning
- Intelligence Gathering (Reverse Trunking)
- Government Offices and Embassies

Newtec has a track record of fixed communication installations over satellite, linking Antarctica, universities, humanitarian missions and remote bases.



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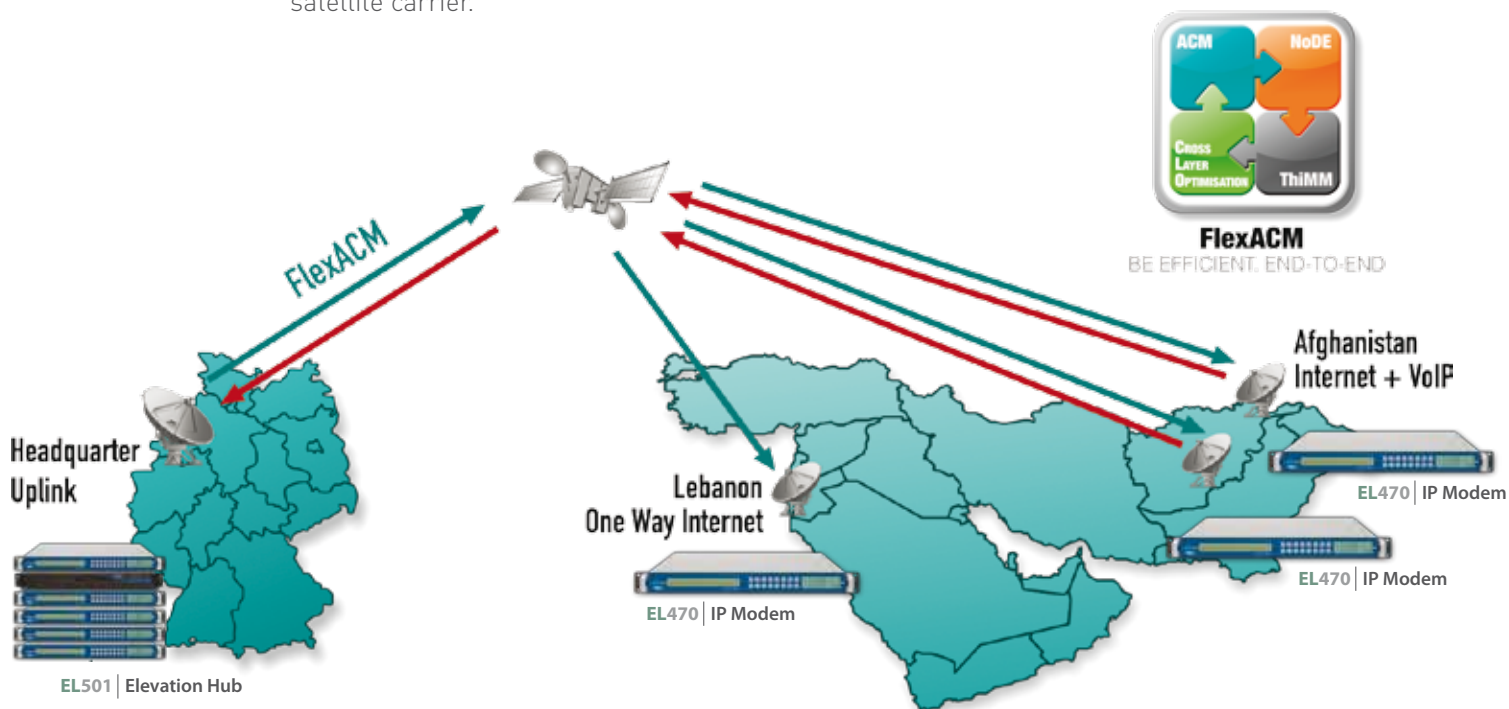
How it Works

Newtec introduces the FlexACM® technology for fixed communications over satellite at full efficiency. At the same time optimal availability can be achieved in any fading condition (inclined orbit, weather, dust, interference) to keep mission critical communications running at all times.

The permanent or semi-permanent satellite link is established between remote locations (base, mission, school, hospital) and headquarters/uplink in a point-to-point or star (point-to-multipoint) configuration. Newtec satellite hubs or modems are installed on each side of the satellite link.

FlexACM combines the DVB-S2 standard with a set of technologies in order to double the throughput over satellite in the same bandwidth, with the capability to combine different services (video, voice, data) or applications (morale, welfare & recreation, medical, logistics, etc.) within the same satellite carrier.

Establish satellite network links in both point-to-point or star (point-to-multipoint) configurations.



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Best-of-Trade COTS Equipment

Newtec can reflect on a track record of fixed satellite installations worldwide for a wide range of civil, state and defense applications. These have included connecting Antarctica for climate research, to supporting different humanitarian mission communications, to linking remote bases with homeland headquarters.

The Newtec modulators, demodulators and modems are based on DVB-S2, the adopted standard for communication over satellite for data, video and voice allowing full interoperability. Over the years Newtec has built an outstanding reputation for its quality and reliable satcom equipment.

Newtec Satcom equipment is based on DVB-S2, the adopted standard for interoperable communications over satellite.



Global Connectivity

Humanitarian missions into man-made or natural disaster areas, scientific research and peacekeeping operations bring government and defense agencies into remote locations worldwide where often terrestrial communication infrastructure is unavailable, or has been destroyed.

Through Newtec technology a satellite link can be set-up quickly, independent of the location, anywhere in the world. First essential communication can be established to assess the situation at hand and take appropriate actions. A permanent link over satellite allows the agencies to run their operations exchanging video, voice and data without any interruption.



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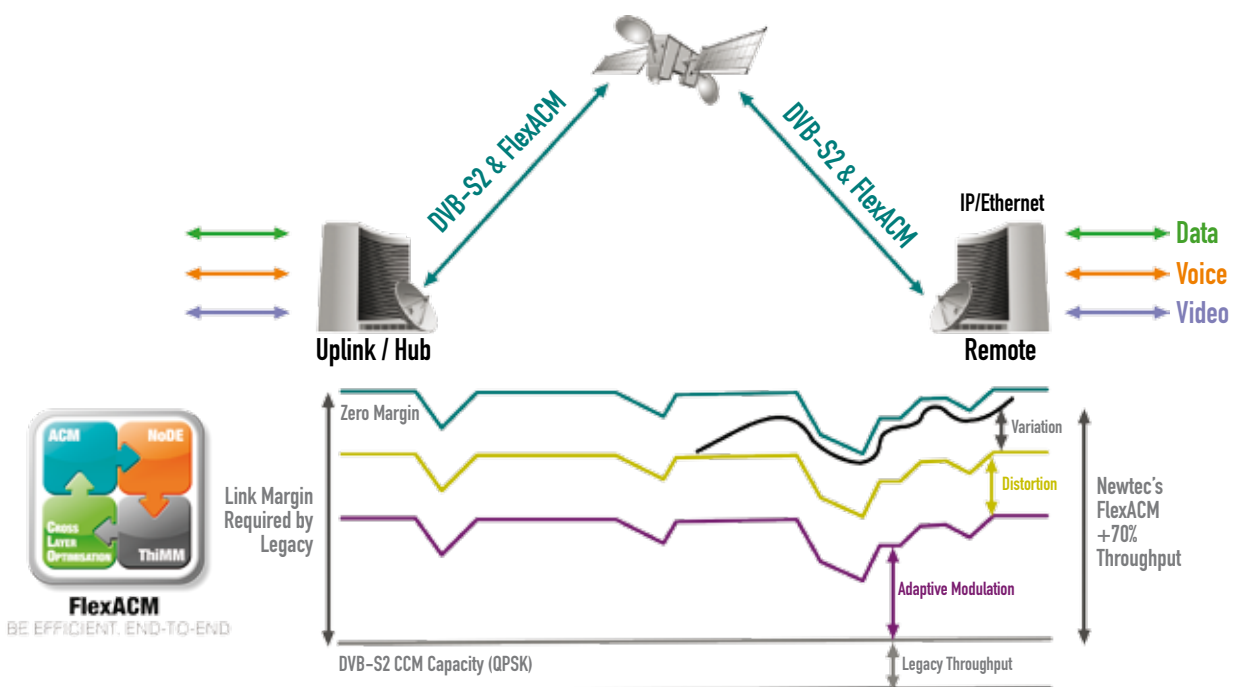
More Throughput in Same Bandwidth

Thanks to the increase in government and defense missions, the amount of data, video and voice shared over fixed satellites links have grown substantially. The boost in rates needs to be matched with increased satellite capacity over some areas of operation.

In order to overcome these pains Newtec deploys the FlexACM technology in their equipment. FlexACM uses the full capability of DVB-S2 and combines it with different technologies to get as much data through the same satellite bandwidth as possible. FlexACM will auto-adaptively set modulation parameters to the optimal point and overcomes distortion, noise and variation in the satellite link. Newtec gets as close to the zero margin limit as possible allowing the full use of the satellite link.

Through FlexACM the data rates between uplink and remote sites can be doubled in the same bandwidth without the need to acquire extra satellite capacity.

Newtec's FlexACM doubles the data throughput without the need to acquire extra satellite bandwidth.



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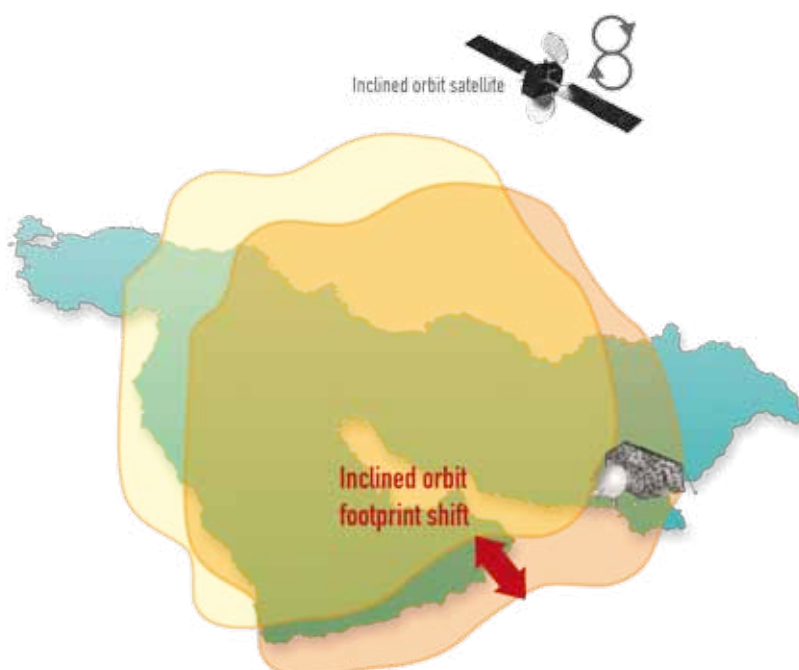
Optimal Availability

Even in the most harsh and hostile conditions it is important to have communication lines over satellite available at all times to exchange mission critical and live-saving information. However, fading conditions could seriously disturb the satellite transmission and lead to temporary link losses. Fading conditions could be due to different circumstances: the choice of satellite (inclined orbit, Ku-, Ka- and X-band), environmental (rain, dust) or interference (between two adjacent satellites) conditions.

Thanks to the auto-adaptive technology incorporated inside Newtec's FlexACM these fading conditions will no longer interrupt the transmission between the hub and remote sites nor result in the loss of data. In fading conditions FlexACM will switch to a more robust modulation and provide optimal availability. As soon as fading conditions are over FlexACM technology automatically switches back to maximum efficiency. During the entire operation it is possible to sustain Committed Information Rates (CIR).



FlexACM® optimizes the throughput for fading sensitive satellites (X-, Ku-, Ka-band) but also for Inclined Orbit Satellites.



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Flexibility

Flexibility is a key asset for government satellite communication equipment in order to anticipate the continuous changing missions, services and areas of operation.

Through Newtec technology new remote sites can easily be added to the network. Data, voice or video services for different government application are aggregated in a single carrier to get maximum efficiency out of the satellite link. At any time these services can be removed, added or replaced. Moreover, the different services and applications will get a prioritization scheme in order to ensure critical mission information to pass first.

Newtec's FlexACM® allows government agencies to keep their cost under control at all time.

Keep OPEX under Control

Government and defense agencies need to keep their costs under control at all times. The solution can be found in leasing commercial bandwidth, making use of inclined orbit satellites, or by turning to COTS equipment. But most important is implementing technology to share information as efficient as possible over satellite .

Newtec's FlexACM doubles the throughput of video, voice and data over satellite, which results in the fact that more data can be transported in the same bandwidth or that space segment requirements can be cut by half if the same rates will be used in future. Moreover, no extra or new ground infrastructure (antenna or amplifier) needs to be acquired to enable the higher data rates.

For further in depth information

FlexACM White Paper
Elevation Modem, Modulator & Demodulator Leaflets.
Newtec Modem, Modulator & Demodulator Boards Leaflets
Visit our website: www.newtec.eu



Europe

Tel: +32 3 780 65 00
Fax: +32 3 780 65 49

North-America

Tel: +1 203 323-0042
Fax: +1 203 323-8406

South-America

Tel: +55 11 2092 6220
Fax: +55 11 2093 3756

Asia-Pacific

Tel: +65 6777 22 08
Fax: +65 6777 08 87

China

Tel: +86 10-823 18 730
Fax: +86 10-823 18 731

MENA

Tel: +971 4 390 18 78
Fax: +971 4 368 67 68