



Multimedia Exchange Network over Satellite



SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS

MENOS Key Features

MENOS is a revolutionary networking concept used to exchange multimedia content over satellite. It is intended primarily for professional broadcasters, allowing them to share video and audio material among several sites scattered across a large geographical area. It has been designed to provide these broadcasters not only with the fastest and most cost-effective technologies to perform the media exchange, but also with a complete range of tools to facilitate the related coordination tasks and improve people collaboration across the network.

In traditional satellite contribution systems, television and radio material is exchanged as real-time transmissions from one ground station to another. This requires the reservation of a satellite segment for a fixed time duration, a manual line-up procedure, and expensive uplink equipment. At the receive site, the transferred material needs to be used on the fly or recorded. The coordination between the two stations, or between the stations and the Network Operating Center, must typically be done via terrestrial or mobile telephony.

MENOS is fundamentally different: with IP as the core-protocol, all exchanged material transmits through a central hub station, which also provides permanent two-way satellite IP connectivity among all remote stations. The multimedia content can be transmitted in real-time or be transferred as data files. It can also be retained in the central hub station for archiving and later access by other stations. The reservation of the bandwidth and the line-up procedure are automatic and the uplink stations are smaller and much less expensive than traditional systems. The two-way IP connectivity is ideal for VoIP coordination channels, e-mail exchange, Intranet and Internet access and other collaboration tools.

MENOS is also unique in the way it uses the satellite capacity. Advanced DVB-S2 modulation technology, combined with the statistical multiplexing of the data, voice, television and radio signals, ensures the optimum efficiency of the bandwidth usage and thus reduces operational costs.

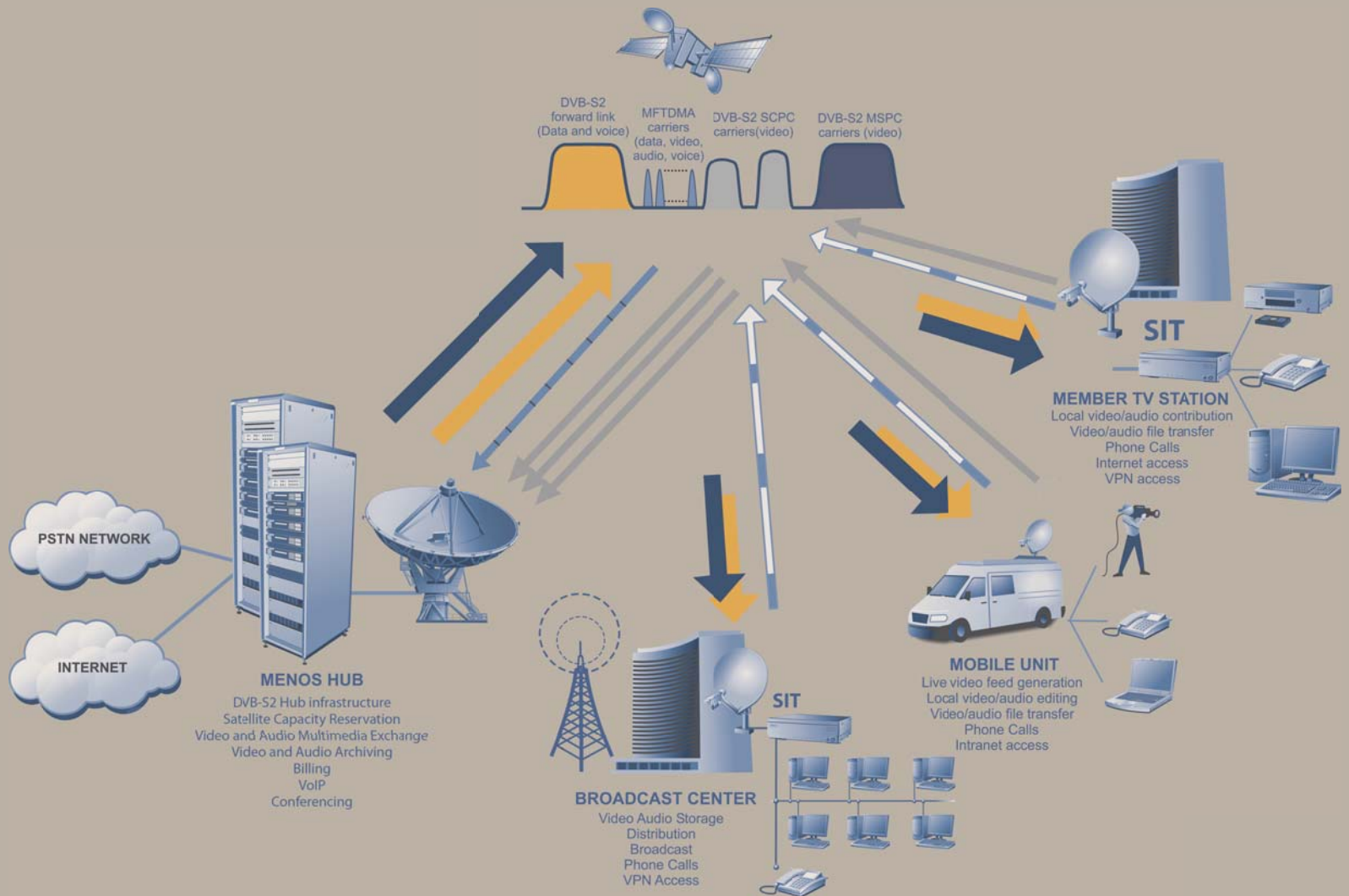
- **Small, cost effective and easy to use terminals**
- **Automated satellite capacity reservation with integrated billing system**
- **Real time television and radio content exchange**
- **Store and Forward content exchange**
- **On Demand or Pushed content**
- **File transfer or streamed exchange**
- **Best effort or real-time exchange**
- **Central archiving**
- **VoIP coordination channels**
- **Intranet and Internet applications**
- **Dynamic & optimum use of the satellite capacity**

Professional equipment

Broadband systems

IP software

MENOS



MENOS System Architecture

A MENOS system consists of a redundant central platform (hub) connected to a number of remote sites, each equipped with a satellite interactive terminal (SIT). The terminal is able to transmit or receive data to and from the hub. The data can be exchanged between the hub and the terminal or between two terminals via the hub. From the terminal to the hub, the data is transmitted either on a dedicated DVB-S2 carrier (Single Channel Per Carrier or SCPC), or on a return channel shared dynamically in time and frequency with other terminals (Multiple Frequency Time Division Multiple Access).

Low rate data, such as Internet and Intranet exchanges, VoIP, radio exchange and low bit rate file transfers, are typically sent using the MFTDMA channels, while real time television transmission and fast file transfers are operated in SCPC.

All transmissions are first received by the central hub. If necessary, the transferred material can be automatically archived in the central hub for later use by the remote stations. Data is transferred from the hub to the stations on one of two DVB-S2 multiplex carriers (Multiple Channel per Carrier or MCPC). The first one regroups all the video transfers and the second one regroups the Internet data, the file transfers and the VoIP calls.

Different types of MENOS remote stations are available, depending on the type of applications performed at the remote site.

- Data SITs only provide data and VoIP connectivity and can be used for Internet, Intranet, VPNs, and interactive collaboration tools
- Radio SITs provide all the service of a Data SIT in addition to radio exchange services
- Television SITs provide all the service of a Data SIT in addition to television exchange services

MENOS terminals can also be integrated into mobile units, in the form of DSNG trucks or flyaway kits.

MENOS Key Advantages

Easy-to-use terminals

Once installed, MENOS terminals are connected to the network in an always-on mode. All network services and terminal features are available on a single graphical user interface. Starting a video or audio transmission requires no line-up procedure as the bandwidth reservation is done automatically.

Lower terminal cost

Because all communications are established via a central hub, MENOS terminals require much less power and smaller dishes than point-to-point media exchange systems. The transmission equipment in the terminal is IP-based, resulting in an overall terminal cost that is only a fraction of the cost of other types of satellite TV or radio uplinks.

Higher flexibility

In a MENOS system, the bandwidth is negotiated dynamically or reserved automatically depending on the requested speed of delivery and the nature of the exchanged material. The multimedia material can be stored anywhere in the network, including in a central archiving system where it can be previewed and accessed by any other remote station via another satellite transmission.

Lower operational costs

By using the most advanced satellite transmission technologies such as DVB-S2 and by sharing dynamically the available bandwidth among various applications, MENOS reduces the costs linked to the space segment. On the ground, operational costs are also kept to a minimum thanks to the ease of use of the terminals and the automation of the network management. The integrated billing & reporting system automatically collects and formats billing and accounting data according to specific business rules.

Additional source of revenues

MENOS is much more than a system to exchange video and audio: it allows the development of many other IP-based services such as Voice over IP (VoIP), corporate VPNs and Internet broadband access services.

High Quality of service

In a professional broadcast exchange network, the quality of service is paramount. As a fully automated system where all remote operators always have access to a voice or data communication channel, MENOS reduces the risk of human error. The equipment is very reliable and all transmissions can be backed up in the central archiving system.

Shaping the future of satellite communications

Newtec is world renowned as a market leader in Satellite Communications, delivering an extensive range of highly innovative products and solutions.

Since our foundation in 1985, TV broadcasters, Telecom Service Providers, Integrators and Satellite Operators from all over the world have been relying on the exceptional performance and reliability of our unrivalled products.

At Newtec, we are committed to further innovating and in turn revolutionizing the satellite communications industry. We are able to achieve this through our passion for continually developing and perfecting new technologies. We design applications that use these technologies to best serve the specific needs of our customers. As part of our philosophy of openness, Newtec is also an active participant and a trendsetter in many industry standards.



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