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Comparative between Multimedia Exchange Network over Satellite (MENOS) and VSAT

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Abstract: ***Multimedia exchange over wireless networks is a challenging proposition due to the characteristics of video data and wireless channels. In this paper, we compare tow technology, Multimedia Exchange Network Over Satellite (MENOS), and Very Small Aperture Terminal (VSAT).***

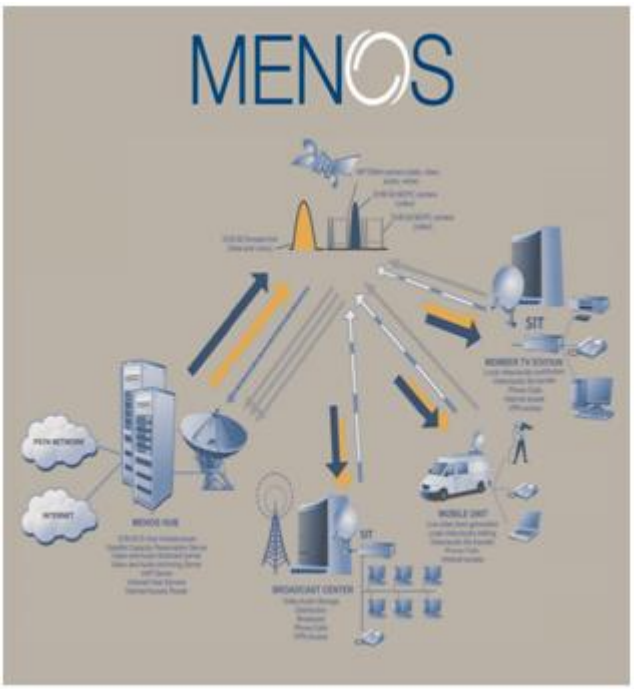
1. Introduction

MENOS is a revolutionary networking concept used to exchange multimedia content over satellite. A MENOS system consists of a 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 VIDEO carrier (Single Channel Per Carrier (SCPC)) or on a return channel shared dynamically in time and frequency with other terminals (Multiple Frequency Time Division Multiple Access (MFTDMA)) 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. 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 is a product developed and commercialized by Newtec and is deployed Over the Middle-East, North Africa and Europe in partnership with the Arab State

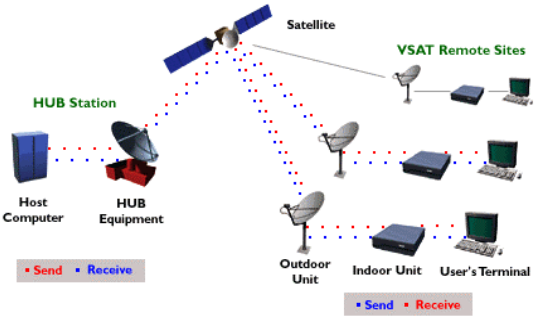
Broadcasting Union (ASBU)



A very small aperture terminal (VSAT) is a small telecommunication earth station that receives and transmits real-time data via satellite. It transmits narrow and broadband signals to orbital satellites. The data from the satellites is then transmitted to different hubs in other locations around the globe.

VSAT end users have a box that acts as an interface between the computer and the external antenna or satellite dish transceiver. The satellite transceiver sends data to and receives data from the geostationary satellite in orbit. The satellite sends and receives signals from an earth station, which acts as the hub for the system. Each end user is connected to this hub station through the satellite in a star topology. For one VSAT user to communicate with another, the data has to be sent to the satellite. Then the satellite sends the data to the hub station for further processing. The data is then retransmitted to the other user via a satellite.

The majority of VSAT antennas range from 30 inches to 48 inches. Data rates typically range from 56 Kbps up to 4 Mbps



2. Methodology

Always on, automated reservation, single interface. MENOS it is less cost technology, It has less power, smaller dishes, IP based equipment. More efficient bandwidth usage with sharing and mixing with different application, DVB S2.less expensive co- coordination, VCM. Dynamic bandwidth allocation, store and forward, IP based.

Additional service (VoIP, VPN, ISP).Also high reliability, automated reservation It has store and forward, availability of archive, if missing transmission.

3. Results and Discussion

	Radio exchange system(VSAT)	MENOS-ASBU
The cost of the station	100 000 Euros	Radio 8000-15000 TV 35000-4000 Euros
Installation of the stations	3days	Ranging from 3-9 hours
The introduction of the service	1 DAY	Automatic from the main station
TV exchange channels	Cannot be applied	-10 by the registry and the subsequent broadcast technology -Multiple channels as needed for direct broadcasting
Voice exchange channels	3 channels with high quality	Multiple audio channels as needed
data transmission channels (Internet	A specified number (11 ch) and low speed	Many channels as needed and at high speeds
Voice coordination channels	Available less than 10 ch	Unlimited number (hundreds)
VPN service	Can not be applied	Available and secure - the maximum number 250 network
Videoconferencing service	Can not be applied	Available with good technical quality
Audio conferencing service	Available (2system)	Available high-tech and quality (5 system)
Remote Training Service	Available from the stations send (Damascus and Tunisia) and the reception of all stations	Available - send and receive through the system- all the stations on a regional and national levels
Maintenance	Local engineers With enough training	simple Under the direction of the station Home
Future expansion	Limited	Available consistently with acceptable cost

The table above is contain more comparison which is discussed in term of cost, installation, introduction of service, TV and Voice exchange channels, VPN service, Video and Audio conferencing service, Remote Training service, Maintenance and Future expansion service.

4. Conclusions

Menos has fixed and mobile, low cost stations, with high effective networks is easy in construction, no need for special user very light equipment, so it is easy to move from one area to another, less cost and have more future service.

- Distance learning at the national and regional bands.
- Open Scaled system and thus can be developed by a number of companies.
- Flexible and interactive system can be developed in stages according to the needs of users. It is protected and secure as a system

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