

MARKET BRIEFS

**Executive summaries of market trends and opportunities
in key market segments and regions worldwide**

Evolving VSAT Network Requirements

VSAT Highlights



- The VSAT market will continue to have solid growth in the next few years with almost 87% of the demand coming from the provision of satellite broadband access.
- The energy market is the fastest growing segment of the VSAT market which is projected to double in the next ten years.
- The vertical markets are demanding new applications that will require network flexibility and increased reliability and performance as well as competitive pricing.

by Virgil Labrador, Editor-in-Chief
Satellite Markets and Research

The global satellite VSAT market will continue to experience solid growth in the next few years. This growth may surpass cellular and landline network growth in some remote locations, according to a recent report by Research and Markets.

Additionally, VSAT is significantly outpacing some of the mobile satellite handset technologies and continues to see quick adoption and market penetration worldwide.

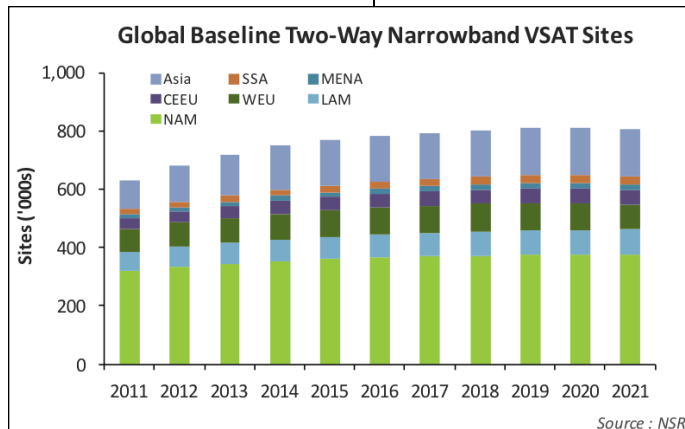
NSR's *Broadband Satellite Markets 12th Edition* report forecasts the entire broadband satellite market's installed base of VSAT sites, broadband access subscribers, trunking and backhaul sites will increase by just over 5 million by 2022 and generate US\$ 9.9 billion in revenues. Fully 87% of this growth will come from new subscribers to satellite broadband access services with the North American, Western European and Latin American markets leading the way.

Meanwhile, vertical markets such as Oil and Gas, Maritime, Mining, Utilities and Government applications are experiencing strong adoption of VSAT technology to offer communications that would otherwise be unavailable with competing wireless technologies, such as cellular and microwave technology.

VSAT growth for these vertical markets largely depends on the region, and thus some regions,

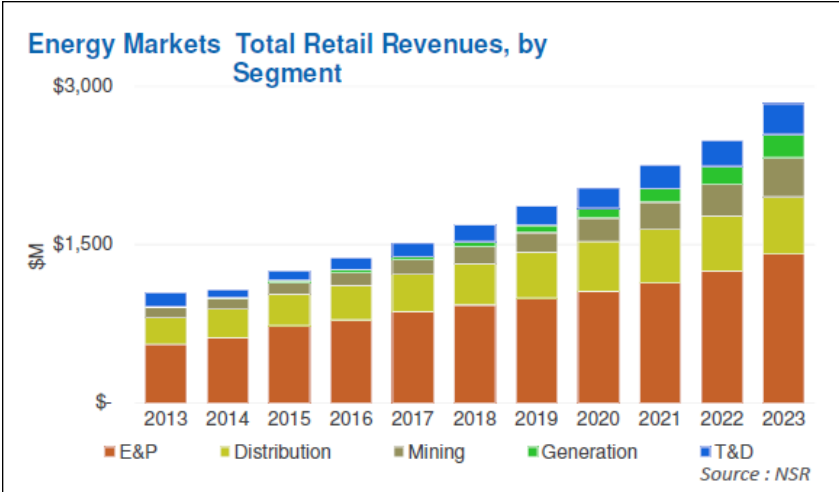
such as Latin America and Asia-Pacific (APAC), are seeing drastically stronger growth than more developed regions. Economic conditions also greatly impact VSAT spending, depending on region, noted the Research and Markets report.

A key driver is Ka-band technology which is impacting the satellite market in a major way, offering DSL-like speeds at significantly reduced satellite capacity cost. More and more, VSAT solutions are taking advantage of Ka-band technology, which will be a significant driving factor for VSAT throughout the forecast period of the report by Research and Markets.



New Market Requirements

The new markets for VSAT services has given rise



to new demands and requirements for VSAT networks. It would require the average performance for a VSAT solution to quickly increase.

With most of the demand forecasted to be from broadband satellite requirements, the market is also becoming more price-sensitive.

One market that will experience high

down across five verticals: (1) Oil & gas exploration and production, (2) oil and gas distribution, (3) mining, (4) utilities such as power generation and transmission, and (5) utility transportation & distribution.

The market for communications services to the energy sector will more than double in the next ten years to almost US\$ 3 Billion by 2023, according to NSR.

growth in the next few years is the US\$ 1.3 billion satellite energy market according to NSR. The energy market is broken

Driving demand in the energy sector is the need for crews to have reliable broadband connections in remote sites. Workers in offshore oil rigs and mining camps are demanding the same level of broadband access that they are used to in highly-served urban areas. These require new applications that need more bandwidth.

Customers are requiring higher standards of availability, excellent coverage, higher data rates and competitive pricing, according to NSR.

More and more, the new requirements involve a more flexible network that is not limited to the traditional star or point-to-point topology.

Customers are now demanding networks that do not only provide a broadband forward channel, as the typical internet-access platforms do. New applications require also high data rate upstream capacity transmission of volume data out of remote sites. They typically now are demanding data rates of several MBit/s.

A Modem with an Integrated Router that Provides Network Flexibility

The SKYWAN 5G is an MF-TDMA modem with integrated DVB-S2 receiver and IP router. Whether you require a star, multi star, hybrid or full mesh network, the unique hardware design of SKYWAN 5G reliably fits all existing VSAT topologies.

Each unit can act either as a terminal or a s hub, therefore adding agility in terms of its network role

Geographical redundancy of the master station is already built-in. The device is so flexible that you can change your topology at a later point, use the unit for other networks or even split or pool networks together. If additional TDMA receive carriers are needed in one place you can easily cascade units to one stack, all controlled by the prime unit – independent of the number of locations. Since the optional available DVB outbound channel is not used for signalization,

multiple independent DVB carriers can be used in one network. In addition to the ACM support in DVB, an automatic registration at the DVB gateway is supported to simplify operation.



The modem is ideal for most applications including:

- Energy Sector, Oil & Gas
- Access for rural Wireless/ Cellular Networks

- Disaster Recovery & Emergency Response
- Closed Enterprise Networks
- Governmental & Administration Networks, among others.

A Flexible and Affordable Solution

One company that has come up with a flexible and affordable solution to the changing demands of the market is ND SatCom, a modem manufacturer and system integrator based in Friedrichshafen, Germany. ND SatCom's SKYWAN 5G is an integrated VSAT terminal, comprising both the satellite access technology (MF-TDMA, Multi Frequency TDMA) and an integrated IP router. Furthermore, each modem comprises an integrated DVB-S2 receiver. Thus the system can be seen as a "router-in-the-sky", combining the flexibility and adaptability of MF-TDMA with DVB-S2 overlay forwarding for broadband internet access.

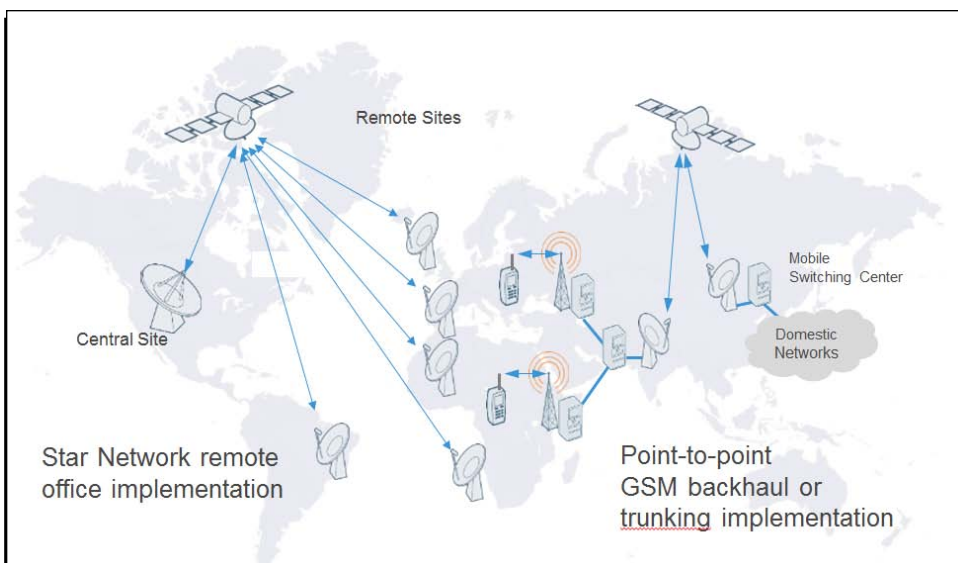
"SKYWAN 5G is transforming the way communication networks are created and operate by converging VSAT technology and comprehensive IT capabilities in a single device," said Volker Jarsch, Product Manager at ND SatCom.

"Our approach is to provide a single hardware unit for all purposes, so each SKYWAN 5G has full functionality. It is just a matter of configuration which determines what functions SKYWAN 5G is implementing in the network. This means that there is no distinguishing each unit as a "hub" or a remote—it's just matter of a license key. Adding new sites, spare parts handling, design of VSAT networks, ordering SKYWAN 5G—all is straightforward thanks to the one-unit approach," said Jarsch.

SKYWAN 5G incorporates a comprehensive router supporting interior and exterior routing protocols providing a seamless integration into customer networks. The data is transferred over satellite with an excellent end-to-end efficiency, which translates into substantial cost savings, whilst ensuring the QoS (Quality of Service) as required by the users' traffic types.

SKYWAN 5G's high switching rate make it one of the most powerful modems in the market today.

"SKYWAN 5G introduces a game-changing innovation of stackable units increasing



Typical VSAT networks are designed for large star networks for point-to-point connections such as the diagram above, but new applications for vertical markets now require the flexibility of hybrid networks that can provide single-hop connectivity between company sites as shown in the diagram on the right.

performance and scale, such that the whole thing is more than just the sum of its parts," said Jarsch. So the network can be scalable as customer requirements grow.

"The SKYWAN 5G can easily be configured as required for individual customer applications. Whether you require a star, multi-star, hybrid or full mesh networks, the unique hardware design of SKYWAN 5G reliably fits all existing VSAT topologies. SKYWAN 5G does not limit customers' growth and future extensions and upgrades. So they can start with the most basic requirements and add on later as their requirements grow accordingly," said Jarsch.

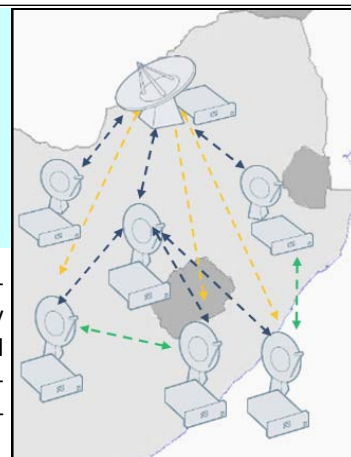
Conclusion

The seemingly insatiable demand for broadband access from both consumers and the emerging vertical markets such as

the booming energy sector will be requiring innovative solutions from their VSAT networks.

Customers need flexibility in network topologies, higher performance and simplified operation and scalability at an attractive price.

ND SatCom's SKYWAN 5G is a solution that can meet those stringent requirements of a changing market with great growth potential. Besides broadband forwarding with highly efficient modulation and encoding, it supports also high data rate return channels for volume data originating at remote sites, and even single-hop connectivity between multiple sites and hubs in one network.



Virgil Labrador is the Editor-in-Chief of *Satellite Markets and Research* based in Los Angeles, California. He is the author of two books on the satellite industry and has been covering the industry for various publications since 1998. Before that he worked in various capacities in the industry, including a stint as marketing director for the Asia Broadcast Center, a full-service teleport based in Singapore. He can be reached at virgil@satellitemarkets.com

SKYWAN 5G

ONE Solution for Every Business



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Star



Full Mesh



Multi-Star



Hybrid

DVB S2

Offer your clients satellite communication with highest reliability, maximum throughput and excellent quality of service.

SKYWAN 5G – the ONE stands for:

- Flexibility in topology
- Reliable for any application
- Attractive in pricing
- Powerful in performance
- Simplicity in hardware

SKYWAN 5G – Enabling Agile Networks



For detailed informations use the QR code or visit our website: www.skywan5g.com

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