Evolution Product Line

iDirect's Evolution product line is built on the DVB-S2 standard with Adaptive Coding and Modulation (ACM). The product suite comprises of iDirect's Evolution routers, line cards and iDX software. Service providers can build next-generation satellite networks that significantly improve bandwidth efficiency and lower operating costs.

Applications

Evolution is engineered for broadband applications as diverse as enterprise network extensions, point of sale, distance learning and Internet cafes. It also supports real-time applications such as VoIP and video conferencing. Because it has been built from the ground up around IP, it can integrate seamlessly with almost any data network.

Key Advantages

With iDirect's Evolution line, service providers gain advantage:

- Advances in Performance: The Evolution routers support DVB-S2 with Adaptive Coding and Modulation (ACM), a bandwidth-efficient technology for networks with larger outbound capacity requirements. iDirect's DVB-S2 was designed and developed around IP and uses extremely efficient encapsulation techniques that deliver speeds up to 140 Mbps.
- Advances in Efficiency: With Evolution, iDirect becomes the first satellite technology provider to integrate the next-generation 2D 16-State FEC coding technology. As the most powerful inbound coding option available, 2D 16-State delivers improved efficiencies over the Turbo Product Coding (TPC) and provides customers a 10-20% increase in their inbound IP throughput.
- Advances in Flexibility: Evolution tightly integrates iDirect's award-winning Group Quality of Service (QoS) technology with Adaptive Coding and Modulation (ACM). Service providers can create more flexible service offerings and improve customer satisfaction in geographies commonly impacted by adverse weather conditions.

iDIRECT

Evolution Product Line

Evolution X3 Remotes

With DVB-S2 and ACM on the outbound and deterministic TDMA on the return, the Evolution X3 maximizes the efficiency of satellite capacity to enable new opportunities for star topology networking. The Evolution X3 is supporting a wide range of carrier IP data rates, FEC codes and modulation types.

- Star topology
- Optional 256-bit AES encryption

Evolution X5 Remotes

The Evolution X5 features dual-mode operation of DVB-S2/ACM or iNFINITI TDM on the outbound, supporting speeds up to 140 Mbps. Designed specifically to support business-critical applications, the Evolution X5 is a next-generation satellite router ideally suited for broadband applications such as enterprise connectivity, cellular backhaul, maritime, and other mobile applications.

- Star and future support for SCPC- return upstream channels
- Deterministic MF-TDMA return channel with 2D 16-State FEC on the inbound
- Optional 256-bit AES encryption and Spread Spectrum waveform technology supports very small antennas

Evolution 8000 Series Remotes

The Evolution 8000 Series provides a new level of IP broadband capability, supporting both the DVB-S2/ACM and the iNFINITI® outbound technologies. Service providers can implement the most efficient technology dependent on their network architecture, resulting in a more cost-efficient use of extremely small antennas on aircraft, maritime and land-based vehicles for government and military applications.

- Star, mesh, and SCPC topologies
- Integrated Spread Spectrum waveform technology
- Unique FIPS 140-2 certified, TRANSEC security with 256-bit AES encryption
- Supports WGS IF ranges: 950-2000 MHz

The new Evolution product line fully integrates with the advanced features of the iDirect Intelligent Platform to help operators amplify the gains of DVB-S2/ACM

iDX Software

Provides greater bandwidth efficiency, maximum flexibility and greater performance

- DVB-S2 ACM outbound
- Uses existing TDMA inbound
- Software tools to monitor and adjust ACM performance
- Carries across features from proven iDS software such as GQoS, encryption, etc.

Evolution Line Cards

Line cards that enable DVB-S2/ACM or iNFINITI modes from a hub chassis

Satellite Routers

First next-generation satellite router maximizes efficiencies of satellite capacity to enable new opportunities

Integrates with

Series 15100 Universal Hub (5-IF/20 slot with Gig-E)

Series 12000 Universal Hub (4-slot)

iVantage and SatManage NMS

M0D1/ M1D1 iNFINITI Line cards

Evolution Product Line

Evolution Line Cards

Evolution line cards feature DVB-S2/ACM on the outbound and D-TDMA on the inbound. The line cards are available in demodulator only, modulator/demodulator with dual-mode operation, modulator only, and an industrialized version for military and goverment applications.

Models include XLC-10, XLC-11, XLC-M, and eM1D1.

iDX Software

iDX Software is fully integrated into all of the hardware from hubs and line cards to remotes, and into the network management system, iVantage®. It provides the most advanced IP routing capability and application prioritization with unmatched platform flexibility.

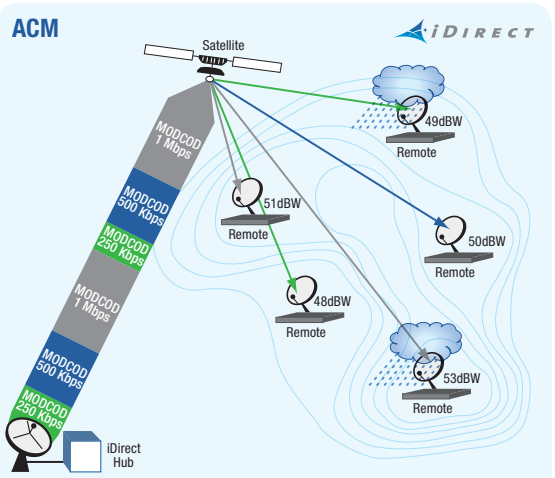
- Advanced IP Routing and real-time traffic management
- Flexibility with Quality of Service and Filtering including system QoS, application QoS, Group QoS
- Spread spectrum for mobile applications utilizing small antennas
- Automatic Beam Switching and Global NMS for mobility
- Security and encryption such as AES Encryption, 140-2 FIPS Certified and hub authentication
- For iNFINITI® TDM and Evolution® DVB-S2 hardware

Bringing the very latest technology features to the network core while maintaining backwards compatibility through software upgrades, the iDX Software enables network operators to take advantage of the latest technology innovations while preserving their initial hardware investment.

iDX 2.1 Highlights

iDX 2.1 includes all of the features and improvements of iDX 2.0 plus:

- Group QoS enhancements
- Security and platform enhancements including Red Hat Enterprise Linux 5.4 operating system support
- Higher performance and network scalability



ACM enables each remote to achieve maximum data throughput by utilizing the most efficient coding and modulation scheme dependant upon the location within the satellite contour, antenna size, and clear sky conditions versus rain fade.

The iDirect Advantage

The Evolution product line fully integrates with the advanced features of the iDirect Intelligent Platform™ to help operators amplify the benefits of DVB-S2.

An important feature of the Intelligent Platform™ is iDirect's award-winning Group QoS technology. Group QoS (GQoS) allows multiple, smaller networks to converge into a single, larger carrier while maintaining distinct QoS settings by remotes, bandwidth groups and applications; these are critical in a mixed-media environment that includes different voice, video and data applications. Furthermore, service providers can define user profiles according to new levels of criteria. These include application priority, remotes, bandwidth cost and CIR and MIR at both outbound and inbound resulting in limitless possibilities for QoS levels and traffic prioritization.

Combined with DVB-S2 and ACM, Group QoS provides even greater bandwidth savings and allows service providers to support even the most sophisticated user profile on a large network scale.

These advantages are amplified through the additional benefits of the iDirect Intelligent Platform™:

- A Universal satellite hub that enables service providers to meet any customer requirement and run their business more efficiently and profitably while supporting multiple networks on up to five satellites, multiple bands and in star, mesh and SCPC topologies.
- Advanced IP routing capabilities that enable service providers to support critical business applications and seamlessly integrate terrestrial and satellite networks.
- Advanced mobility features such as global NMS and automatic beam switching enables a true global network for roaming remotes coupled with spread spectrum technology enabling the use of ultra-small antennas for communications on the move.
- Virtual Network Operator functionality helps hub owners expand business through hosting capabilities at the same time as allowing lower cost of ownership or service providers entering new markets.

Service providers can translate these gains into broad business advantages. They can lower operating costs, access new markets and forge competitive advantages to win new customers. They can improve SLA's through better bandwidth availability, throughput rates and reliability. And with iDirect, they can accomplish all this while protecting their current investment in an iDirect hub.

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iDIRECT

Advancing a Connected World