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The Leader in Cable Modem Recommendations

ITU-T Study Group 9 is responsible for ITU-T Recommendations on integrated broadband cable networks and television and sound transmission, including cable modems and delivery of video, voice, and high-speed data.

Main Recommendations

J.112 Transmission systems for interactive cable television services: Radio Frequency Interface Specification. Features including Payload Header Suppression and Quality of Service Control Functions to enable real-time services such as Voice over IP, interactive gaming, and tier-based services. There are differences in the cable spectrum planning practices adopted for different networks in the world – namely, Europe, USA and Japan. Accordingly, three options for physical layer technologies are specified by J.112 Annex A, Annex B and Annex C respectively.

J.122 Second-generation transmission systems for interactive cable television services – IP cable modems: Second-generation Radio Frequency Interface Specification. Provides dramatically increased upstream throughput, enabling symmetric services such as videoconferencing.

J.125 Link privacy for cable modem implementations: Provides data privacy, device authentication to prevent theft of service, secure device upgrades, and encryption of high-value multicast traffic.

J.126 Embedded Cable Modem device specification: Additional features for a cable modem when it is embedded with another application, such as an IPCablecom Media Terminal Adapter.

Related Recommendations

J.191 IP feature package to enhance cable modems: A set of features that, when added to a cable modem device, enable residential gateway functionality, including network address translation and firewall.

J.192 A residential gateway to support the delivery of cable data services: An expanded set of residential gateway features, including support for: parental controls, establishment of Quality of Service for the home network, and VPNs.

Cable Modems Provide

Support for a wide range of services

- High-speed data service
 - Up to 40 Mbit/s per downstream channel
 - Up to 30 Mbit/s per upstream channel
- Voice over Internet Protocol
- Video on Demand and Video over Internet Protocol
- Interactive Gaming

Delivery of service over existing infrastructure

- Transport of high-speed video voice and data over existing cable system infrastructure resulting in affordable service.

Sophisticated technology

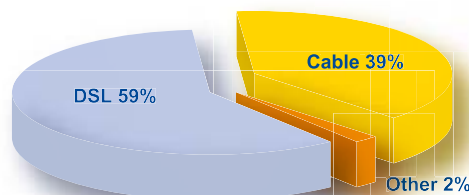
- QoS (Quality of Service)
- Data privacy
- Device authentication
- Statistical multiplexing
- TDMA (Time Division Multiple Access) and S-CDMA (Synchronous – Code Division Multiple Access) burst type formats

Cable Modem Subscribers

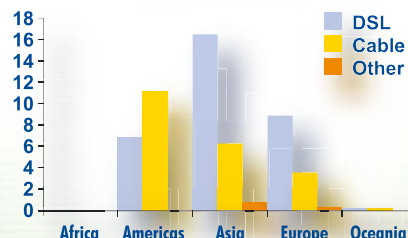
Distribution of broadband connections, by technology, 2002

DSL leads with cable technologies not far behind. Other technologies have yet to make a large footprint.

Broadband technology breakdown, by technology, world 2002



Broadband technology breakdown, by region, millions, 2002



Source: ITU World Telecommunication Indicators Database.

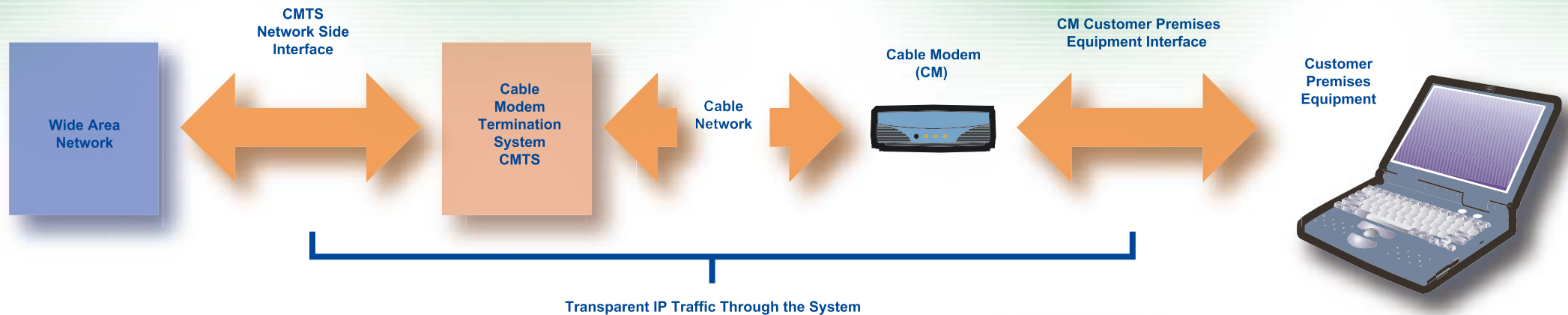
Cable Modems

Triple play
high-speed
access to
video, voice
and data

03.2005 tsb.promo@itu.int

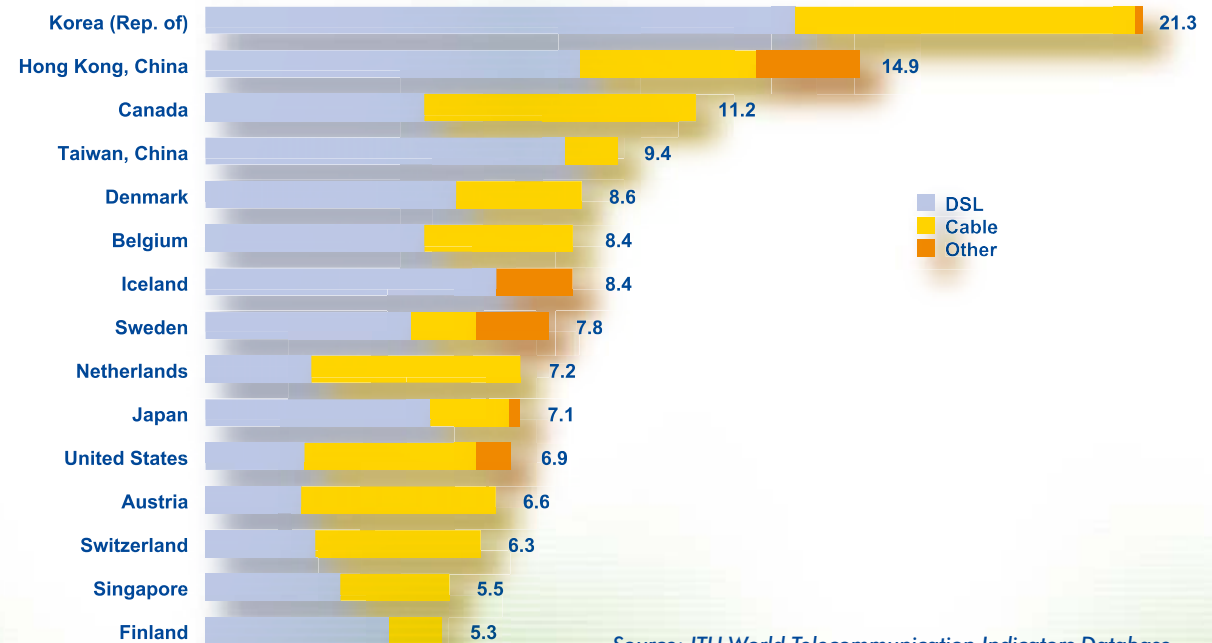
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Cable modem connections: how cable technology connects to the Internet



Source: ITU-T Recommendation J.122, ITU-T Study Group 9.

Broadband penetration, subscribers per 100 inhabitants, by technology, 2002



Source: ITU World Telecommunication Indicators Database.

The figure on the right shows the top 15 countries in the world in terms of broadband penetration.

Note that in the figure:

DSL refers to the range of technologies using digital subscriber line technology;

Cable refers to the use of cable modems on Cable TV networks;

Other refers to broadband technologies like fibre to the home (FTTH), satellite, wireless, LAN, etc.

For more information, see the ITU-T Study Group 9 website at: www.itu.int/ITU-T/studygroups/com09