

ITU-T The leader on DSL Recommendations

HDSL

G.991.1, High bit rate digital subscriber line transceivers

Two-wire bidirectional transceiver: Three systems:

1. Two or three pairs, each 784 kbit/s
2. Two pairs, each 1 168 kbit/s
3. One pair, 2 320 kbit/s

Code: 2B1Q or CAP (Carrierless Amplitude and Phase modulation)

SHDSL

G.991.2, Single pair high-speed digital subscriber line transceivers

Duplex (bidirectional) operation on one copper pair:

Payload 192 kbit/s up to 2.312 Mbit/s.

Optional 2 pairs: Payload 384 kbit/s up to 4.624 Mbit/s

Code: TC-PAM (Trellis Coded Pulse Amplitude Modulation)

ADSL

G.992.1, Asymmetric digital subscriber line transceivers

One twisted pair, payload downstream up to 6.144 Mbit/s, upstream up to 640 kbit/s.

Simultaneous Voiceband and N-ISDN possible.

Code: DMT (Discrete MultiTone)

ADSL lite

G.992.2, Splitterless asymmetric digital subscriber line transceivers

One twisted pair, payload downstream up to 1.536 Mbit/s, upstream up to 512 kbit/s.

Code: DMT (Discrete MultiTone)

VDSL

G.993.1, Very high bit rate digital subscriber line transceivers

One twisted pair, symmetrical operation 6 Mbit/s or 13 Mbit/s up and down, asymmetrical operation down 22 Mbit/s, up 3 Mbit/s.

Code: not yet decided

Related Recommendations

G.994.1 - Handshake procedures for DSL Recs.

G.995.1 - Overview of DSL Recs.

G.996.1 - Test procedures for DSL transceivers

G.997.1 - Physical layer management for DSL transceiv.

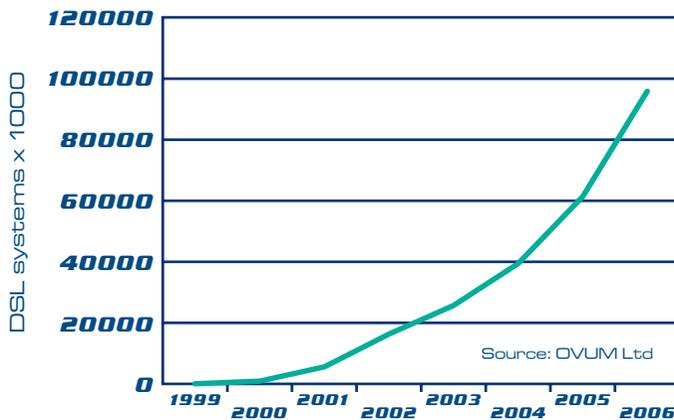
DSL means

- **Support for wide range of services**
 - IP-based services
 - Audio/Video services
 - ATM services
 - Frame Relay services
 - N-ISDN and B-ISDN
 - 64 kbit/s based voice and data services
- **Exploiting existing infrastructure**

Transport of high speed digital signals over existing copper wire infrastructure provides affordable high speed access
- **Sophisticated Technology**

Modulation technologies like DMT (Discrete Multitone) or CAP (Carrierless Amplitude and Phase Modulation), handshake procedures

DSL subscriber access Forecast worldwide



For more information on ongoing DSL Recommendation activities please check the ITU-T Study Group 15 website at: <http://www.itu.int/ITU-T/com15>

International Telecommunication Union



DSL

Digital Subscriber Line

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fast access
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future services

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