



HSPA Study

High Speed Packet Access (HSPA) is a collection of mobile telephony protocols that extend and improve the performance of existing UMTS protocols.

The two existing standards (HSDPA and HSUPA) in the family provide increased performance by using improved modulation schemes and by refining the protocols by which handsets and base stations communicate. These improvements lead to a better utilization of the existing radio bandwidth provided by UMTS.

The number of commercial 3.5G networks, also known as High-Speed Downlink Packet Access, or HSDPA, networks launched worldwide grew by 69 percent in 2007. There are now 174 commercial HSDPA networks in 76 countries. An additional 38 networks are committed to rollouts, which will bump the total to 211 HSDPA networks in 90 countries. Commercial HSDPA networks are widely available in Western Europe (61 networks), Southeast Asia (35), Eastern Europe (34), the Middle East and Africa (20), and the Americas and the Caribbean (16). Almost two-thirds (62 percent) of existing commercial HSDPA networks support downlink speeds of 3.6 Mbps or more, while more than a fifth (21 percent) support the peak downlink speed of 7.2 Mbps

HSDPA provides improved theoretical down-link performance of up to 14.4 Mbps. Existing deployments provide up to 14.4 Mbps in down-link. Up-link performance is a maximum of 384 kbps. The Round-trip delay time is around 150 ms.

HSUPA provides improved up-link performance of up to 5.76 Mbps theoretically.

HSPA+ is defined in 3GPP release 7. It introduces a simpler IP-centric architecture for the mobile network bypassing most of the legacy equipment. HSPA+ boosts peak data rates to 42 Mbps on the downlink and 22 Mbps on the uplink.

References:

[1] HSPA study at Wikipedia. URL: http://en.wikipedia.org/wiki/High-Speed_Packet_Access