

What is GSM?

If you are in Europe or Asia and using a mobile phone, then most probably you are using GSM technology in your mobile phone.

- GSM stands for **G**lobal **S**ystem for **M**obile Communication. It is a digital cellular technology used for transmitting mobile voice and data services.
- The concept of GSM emerged from a cell-based mobile radio system at Bell Laboratories in the early 1970s.
- GSM is the name of a standardization group established in 1982 to create a common European mobile telephone standard.
- GSM is the most widely accepted standard in telecommunications and it is implemented globally.
- GSM is a circuit-switched system that divides each 200 kHz channel into eight 25 kHz time-slots. GSM operates on the mobile communication bands 900 MHz and 1800 MHz in most parts of the world. In the US, GSM operates in the bands 850 MHz and 1900 MHz.
- GSM owns a market share of more than 70 percent of the world's digital cellular subscribers.
- GSM makes use of narrowband Time Division Multiple Access *TDMA* technique for transmitting signals.
- GSM was developed using digital technology. It has an ability to carry 64 kbps to 120 Mbps of data rates.
- Presently GSM supports more than one billion mobile subscribers in more than 210 countries throughout the world.
- GSM provides basic to advanced voice and data services including roaming service. Roaming is the ability to use your GSM phone number in another GSM network.

GSM digitizes and compresses data, then sends it down through a channel with two other streams of user data, each in its own timeslot.

Why GSM?

Listed below are the features of GSM that account for its popularity and wide acceptance.

- Improved spectrum efficiency
- International roaming
- Low-cost mobile sets and base stations *BSs*
- High-quality speech
- Compatibility with Integrated Services Digital Network *ISDN* and other telephone company services
- Support for new services

GSM History

The following table shows some of the important events in the rollout of the GSM system.

Years	Events
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- 1982 Conference of European Posts and Telegraph *CEPT* establishes a GSM group to widen the standards for a pan-European cellular mobile system.
- 1985 A list of recommendations to be generated by the group is accepted.
- 1986 Executed field tests to check the different radio techniques recommended for the air interface.
- 1987 Time Division Multiple Access *TDMA* is chosen as the access method with *Frequency Division Multiple Access* [*FDMA*]. The initial Memorandum of Understanding *MoU* is signed by telecommunication operators representing 12 countries.
- 1988 GSM system is validated.
- 1989 The European Telecommunications Standards Institute *ETSI* was given the responsibility of the GSM specifications.
- 1990 Phase 1 of the GSM specifications is delivered.
- 1991 Commercial launch of the GSM service occurs. The DCS1800 specifications are finalized.
- 1992 The addition of the countries that signed the GSM MoU takes place. Coverage spreads to larger cities and airports.
- 1993 Coverage of main roads GSM services starts outside Europe.
- 1994 Data transmission capabilities launched. The number of networks rises to 69 in 43 countries by the end of 1994.
- 1995 Phase 2 of the GSM specifications occurs. Coverage is extended to rural areas.
- 1996 June: 133 network in 81 countries operational.
- 1997 July: 200 network in 109 countries operational, around 44 million subscribers worldwide.
- 1999 Wireless Application Protocol *WAP* came into existence and became operational in 130 countries with 260 million subscribers.
- 2000 General Packet Radio Service *GPRS* came into existence.
- 2001 As of May 2001, over 550 million people were subscribers to mobile telecommunications.