



# Outline of telecommunication

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The following outline is provided as an overview of and topical guide to telecommunication:

**Telecommunication** – the transmission of signals over a distance for the purpose of communication. In modern times, this process almost always involves the use of electromagnetic waves by transmitters and receivers, but in earlier years it also involved the use of drums and visual signals such as smoke, fire, beacons, semaphore lines and other optical communications.

## Modes of telecommunication

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- E-mail
- Fax
- Instant messaging
- Radio
- Satellite
- SMS
- Telegraphy
- Telephony
- Television
- Television broadcasting
- mobile telephony
- Videoconferencing
- VoIP
- Voicemail

## Types of telecommunication networks

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### Telecommunications network

- Computer networks
  - ARPANET
  - Ethernet
  - Internet
  - Wireless networks
- Public switched telephone networks (PSTN)
- Packet switched networks
- Radio network
- Broadband
- Wireless Broadband

# Aspects of telecommunication transmission

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## Telecommunication

- Analog
- Digital
- Functional profile
- Optics

## Telecommunication technology

- Modulation
  - Amplitude modulation
  - Frequency modulation
  - Quadrature amplitude modulation
- Nyquist rate
- Nyquist ISI criterion
- Pulse shaping
- Intersymbol interference

## Communications media types

- Physical media for Telecommunication
  - Twisted pair
  - Coaxial cable
  - Optical fiber
- Telecommunication through Free Space
  - Broadcast radio frequency including television and radio
  - Line-of-sight
    - Communications satellite
    - Terrestrial Microwave
    - Wireless LAN

## Relationship between media and transmitters

- Physical access to media
  - Simplex
  - Duplex (telecommunications)
- Logical relationships
  - Return channel
  - Two-way alternating
  - Two-way simultaneous

## Multiple access to media

- Multiplexing
  - Analog
    - Frequency division multiplexing
    - Space division multiplexing
  - Digital
    - Time-division multiplexing
    - Statistical multiplexing and Packet switching
- Media Access Control
  - Contention
  - Token-based
    - Centralized token control
    - Distributed token control

## History of telecommunication

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### History of telecommunication

- History of telegraphy
- History of the telephone
  - Invention of the telephone
  - Timeline of the telephone
- History of radio
- History of television
- History of videophones
- History of mobile phones
- History of computing hardware
- History of the Internet

## Major telecommunications equipment manufacturers

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- Alcatel-Lucent
- Aricent
- AT&T
- Avaya
- Ciena
- Cisco Systems
- Ericsson
- Fujitsu
- HCL Technologies
- Huawei

- [NEC](#)
- [Nokia](#)
- [ShoreTel](#)
- [Verizon](#)
- [ZTE](#)

## Major telecommunications service providers

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- [List of mobile network operators](#)
- [List of telephone operating companies](#)

## Telecommunication organizations

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- [Alliance for Telecommunications Industry Solutions](#)
- [Telecommunications Industry Association](#)

## Telecommunication publications

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### Magazines<sup>[1]</sup>

- Billing and OSS World
- Cabling Installation & Maintenance
- Call Center
- Communications News
- Communications System Design
- Lightwave
- Mobile Radio Technology (MRT)
- New Telephony
- Phone+
- RCR Wireless News
- Telecom Asia
- Telecommunications Magazine
- Telephony
- WhatSatphone Magazine
- Wireless Systems Design
- Wireless Week
- Xchange

## Persons influential in telecommunication

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- [Edwin Howard Armstrong](#)
- [John Logie Baird](#)
- [Paul Baran](#)
- [Alexander Graham Bell](#)
- [Tim Berners-Lee](#)

- [Jagadish Chandra Bose](#)
- [Vint Cerf](#)
- [Claude Chappe](#)
- [Donald Davies](#)
- [Louis Pouzin](#)
- [Lee de Forest](#)
- [Philo Farnsworth](#)
- [Reginald Fessenden](#)
- [Elisha Gray](#)
- [Innocenzo Manzetti](#)
- [Guglielmo Marconi](#)
- [Antonio Meucci](#)
- [Alexander Stepanovich Popov](#)
- [Johann Philipp Reis](#)
- [Almon Brown Strowger](#)
- [Nikola Tesla](#)
- [Camille Tissot](#)
- [Alfred Vail](#)
- [Charles Wheatstone](#)
- [Vladimir K. Zworykin](#)

## See also

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- [List of telecommunications encryption terms](#)
- [List of telecommunications terminology](#)
- [List of telephony terminology](#)

## References

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1. "Telecommunications Magazines" (<http://www.world-newspapers.com/tele.html>). *World-Newspapers.com*. Retrieved August 15, 2018.

## External links

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- [International Telecommunication Union \(ITU\)](#) (<http://www.itu.int>)
- [ATIS Telecom Glossary](#) (<http://www.atis.org/tg2k/>) Archived (<https://web.archive.org/web/20080302071329/http://www.atis.org/tg2k/>) 2008-03-02 at the [Wayback Machine](#)
- [Communications Engineering Tutorials](#) (<http://www.complextoreal.com/tutorial/>)
- [Federal Communications Commission](#) (<https://www.fcc.gov/>)
- [IEEE Communications Society](#) (<http://www.comsoc.org/>)
- [International Telecommunication Union](#) (<http://www.itu.int/home/>)

- Ericsson's Understanding Telecommunications (<https://web.archive.org/web/20040413074912/http://www.ericsson.com/support/telecom/index.shtml>) at the Wayback Machine (archived April 13, 2004) (Ericsson removed the book from their site in September 2005)
  - VoIP, Voice over Internet Protocol and Internet telephone calls ([http://www.telecomsadvice.org.uk/infosheets/voip\\_voice\\_over\\_internet\\_protocol\\_and\\_internet\\_telephony.htm](http://www.telecomsadvice.org.uk/infosheets/voip_voice_over_internet_protocol_and_internet_telephony.htm)) Archived ([https://web.archive.org/web/20180124045522/http://www.telecomsadvice.org.uk/infosheets/voip\\_voice\\_over\\_internet\\_protocol\\_and\\_internet\\_telephony.htm](https://web.archive.org/web/20180124045522/http://www.telecomsadvice.org.uk/infosheets/voip_voice_over_internet_protocol_and_internet_telephony.htm)) 2018-01-24 at the Wayback Machine
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