Glossary

Analogue transmission system	A system in which the transmitted electrical signal has a continuously variable parameter (eg amplitude or frequency) which corresponds directly (and characterises) the sound (or other) source waveform.
ASIC	Application-Specific Integrated Circuit. An **integrated circuit** designed specifically for a certain purpose. Sometimes used in distinction to ASSPs and sometimes to include both ASSPs and USICs.
ASSP	Applications-Specific Standard Products. **Integrated circuits** designed for a specific application but sold to a number of customers.
AT & T	American Telephone and Telegraph Company. The dominant interstate (trunk) network operator in the United States of America.
Autoguide	A computerised traffic information system for car drivers, providing route guidance and advice on avoidance of congestion.
Avionics	Electronic and electrical devices for use in aeronautics and astronautics.
Bi-polar integrated circuits	Circuits which can work at higher speeds than those using **CMOS** technology, but which require more power to operate.
Broadband	Communication channel with a bandwidth greater than a voice-grade channel, and therefore capable of higher-speed data transmission.
Cellular telephone system	A system in which a mobile subscriber is connected by short-range radio link to the nearest of a number of terminals. As the caller moves the call is automatically transferred to the terminal in the next area, or cell.
Centrex	A system which allows the provision of **PABX** facilities from central exchanges.
CMOS	Complementary Metal Oxide on Semiconductor. A process for fabricating transistors with very low power requirements and high packing density. They are commonly used for **commodity chips.**
Commodity chips	General purpose **integrated circuits** produced in large quantities for standardised data processing equipment, particularly memories and **microprocessors** for computers, and for certain domestic consumer products. Sometimes called standard chips.
Cryptography	Cryptographic equipment codes and decodes information (usually using digital techniques) so that it cannot be interpreted without a `key'.
Data network	A communications system used for the transmission of data and which may use private or public networks, but having the potential to provide multiple access paths between users.
Digital	Digital signals consist of discrete pulses. Generally there are just two states, 0 or 1, on or off.

Digital transmission system — A system in which the source waveform is sampled in time, each sample being quantised and represented by a series of digits. The subsequent pulse train is transmitted over the network and characterises the source waveform. Digital systems are replacing older analogue systems.

DRAM — Dynamic Random Access Memory. An essential element in a digital computer for the storage and retrieval of large amounts of data.

DSP chips — **Integrated circuits** designed for Digital Signal Processing in which radio frequency signals are filtered, modulated or otherwise processed, by digital rather than analogue methods.

ECM — Electronic Counter Measures.

ECCM — Electronic Counter Counter Measures. Methods to reduce the effectiveness of **ECM.**

EFTPOS — Electronic Funds Transfer at Point of Sale. A system by which a purchaser's bank account can be automatically debited at the sales counter. This system requires high security in order to prevent abuse.

ESM — Electronic Support Measures. Means of obtaining information on hostile transmissions, eg by intercept receivers, in order to gain intelligence and/or deploy **ECM** against them.

ESPRIT — European Strategic Programme of Research and Development in Information Technology. A programme to encourage collaboration in pre-competitive research and development.

Gallium arsenide — A **semiconductor** material which, although difficult to process, has advantages for some applications over silicon. It can be switched at higher speeds and is particularly useful for **microwave** and electro-optic devices.

IBCN — Integrated Broad-band Communications Network. A subsequent stage to **ISDN**, allowing high-quality television pictures, etc to be transmitted and received via existing national **public switching** networks.

ICNIA — Integrated Communication, Navigation, Identification and Avionics. A system in which these hitherto separate functions are combined in a single airborne apparatus. A potential successor to **JTIDS**.

IEPG — Independent European Programme Group. A NATO forum of European national authorities for defence procurement, aiming at improved effectiveness, eg by international collaboration, and a more open market for military equipment in Europe.

IKBS — Intelligent Knowledge-Based Systems. Machines which can reach deductive conclusions based on logical `rules' incorporated in their software.

Integrated circuit (IC) — A complete circuit that is manufactured on a single **semiconductor** chip. It is much smaller than a circuit made from discrete packaged components and, once fabricated, an individual component cannot be altered without destroying the entire circuit.

Intelligent payphone	A telephone call box which can read and process information from various magnetic cards inserted by customers.
ISDN	Integrated Systems Digital Network. Upgrading of national telecommunications networks to combine hitherto separate services, eg voice and data transfer, into a single system with additional facilities such as rapid facsimile, high-speed data transfer and limited video information.
JESSI	Joint European Sub-micron Silicon Initiative. A collaborative programme of pre-competitive research to enable the spacing between individual features of an **integrated circuit** to be reduced to less that 1 micron.
JTIDS	Joint Tactical Information Distribution System. A system for the transmission of voice and data between military aircraft and ground or shipborne terminals. Resistant to **ECM.**
Key system	A device which enables a number of telephone extensions to use the same exchange line(s). Primarily designed for the small business user as an alternative to a **PABX.**
LED	Light-emitting diode. A device which emits light when an electrical current is passed through it.
LSI	Large Scale Integration. High-density **integrated circuits.**
MESAR	Multifunction Electronically-Scanned Array Radar. A particular form of **MFR.**
MFR	Multifunction Radar. A radar which can simultaneously perform two or more functions such as surveillance and target tracking.
Micro-electronics	The branch of electronics concerned with or applied to the realisation of electronics circuits or systems from **integrated circuits** and other extremely small electronics components.
Microprocessor	The central processing unit of a computer contained on either a single chip, or a small number of chips, of **semiconductor.**
Microwave components	**Solid-state** components, usually in the form of special-purpose **integrated circuits,** which can generate, receive, or otherwise process signals at microwave frequencies.
Microwave materials	Materials designed to have special effects on **microwaves**, eg the absorption of energy for screening purposes or for **radar** camouflage.
Microwave radio	The use of **microwaves** for the transmission and reception of telecommunications traffic over `line of sight' links, eg from point to point on the ground, or between the earth's surface and a satellite.
Microwaves	Radio waves having a very short wavelength. They are used to transmit signals over point-to-point directional links and for **radar**.
MIDS	Multifunction Information Distribution System. A subsequent stage of **JTIDS**, in which several more NATO nations plan to participate.

Mobile communications networks	Telecommunications networks in which subscriber terminals at one or both ends of a link may be mobile and are connected into the main network by radio links.
Network management system	The software controlling how individual messages or packets of data are routed through a telecommunications network to reach their intended destination.
Optical fibre	Narrow filaments of composite glass material which transmit light over long distances with very low loss.
Opto-electronics	Electronic devices employed in the transmission of data via light waves, eg for generating, detecting, switching or modulating optical signals.
PABX	Private Automatic Branch Exchange. An automatic exchange at a user's premises enabling the connection of telephones within the premises to each other or to other subscribers through the public network.
Packet-switching network	Networks used for the transmission of data by means of shared paths to provide a much greater utilisation of network resources.
Public switching	The process by which a route is established through the public network to link one subscriber to another.
RACE	The Programme of Research and Development on Advanced Communications for Europe.
Radar	RAdio Detection And Range. Equipment to determine the position of a target by reflecting radio waves from it.
Satellite earth stations	Terminals for the transmission and reception of radio waves via satellites.
SAWs	Surface acoustic wave devices. Passive devices which use piezoelectric materials to perform analogue signal processing functions. They are used as filters in television and satellite broadcast receivers, also for signal processing in **radar.**
SCOOT	Split Cycle Offset Optimisation Technique. An interactive urban traffic control system in which the timing of road traffic signals is controlled by reference to current traffic conditions.
Semiconductor	A material with a resistivity in the range between conductors and insulators. The conductivity increases with temperature and is also affected very considerably by the presence of impurities and an electrical gradient. Semiconductors such as silicon and **gallium arsenide** are used in a wide variety of **solid-state** devices including transistors, **integrated circuits** and **opto-electronic** and **microwave components**.
Solid-state	Solid-state devices or components are composed chiefly or exclusively of solid materials, usually semiconducting, and depend for their operation on the movement of charge carriers within them. Solid-state devices or components have no moving parts.
Sonar	Equipment to determine the position of an underwater target by either reflecting sound waves from it (active sonar) or by listening to the noise generated by the target (passive sonar).

Sonobuoy	A sonar system dropped into the sea, transmitting the received sonar signals back to its parent aircraft or helicopter by radio.
Switch (in telephony)	A general term for a main network exchange, a **PABX** or a **key system.**
Towed array sonar	A sonar using a line array of receivers towed at some distance behind a ship.
Transmission equipment	Equipment used to transmit signals over the network, eg via cables, **optical fibres** or by radio links.
USIC	User-Specific Integrated Circuit. Designed for a specific customer to meet a certain purpose.
VHPIC	Very High Performance Integrated Circuits.
VLSI	Very Large Scale Integration.