

英汉电信图解词典

The **Focal** Illustrated Dictionary of **Telecommunications**

Xerxes Mazda Fraidoon Mazda 著

吴瑞云 方 刚 译

人民邮电出版社
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内 容 提 要

本词典是从国外引进的中小型英汉电信图解词典,共收录整个电信领域的新词约 6000 余条,对每个英文词条均给出中文译名并附有原版英文释文。

本词典选词新颖,内容集中,释文准确。书中使用了大量图形、数据,信息量大。本词典可作为电信领域科技开发人员、工程技术人员、管理人员和相关院校师生的常备工具书。

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前 言

在此前言中我们将介绍三方面内容：词典的范围及目标读者；词条的编排；作者对某些资料来源所做的感谢。

我们期望本词典的读者既可以是对电信比较生疏的初学者，他们希望手头有一本参考书来查阅学习和工作中遇到的术语，也可以是电信工程师，他们在某一领域是专家而希望获取较研究课题范围更广的信息。考虑到这两部分读者群，词典的内容选择覆盖了当今产业中遇到的所有与电信相关的主题。本词典广泛使用表格和图形来表达文字不能表达的信息，增加了信息量。对电气或电子材料仅提供很少的参考资料，因为不这样做会增加很多篇幅。我们还避免参考由某些组织提供的产品或服务，除非其产品和服务在业界已得到广泛接受或已被作为标准使用。

词典中的词条严格按字母顺序排列，词条内的空格或专用字符不参加排序。例如，“SDH frame”（SDH 帧）位于“S interface”（S 接口）之前。数字和希腊字母根据它们的英语拼法进行排序，因此，作为例子，“ μ -law”（ μ -律）就列于“multicast”（组播）之前。词典中的词条是粗体，若词条中提到的词在本辞典内另一处出现，则该词以斜体排出，为读者进一步研究提供线索。但是，如果几个依顺序排列的词以斜体出现，可能是由于它们在词典中是依顺序出现的不同的词

条。

最后,我们非常感谢 Focal Press 出版、Fraidoon Mazda 编辑的“Telecommunications Engineer's Reference Book”第二版的出版者允许使用这本书中的资料。该参考手册于 1998 年出版,其中包含了覆盖整个电信领域的非常新的资料。有了这本非常好的资料做参考我们的任务就容易得多了。我们还要感谢为这本参考手册做出贡献的诸位作者,感谢他们的杰出工作。

Xerxes C.Mazda

Fraidoon F.Mazda

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A

AAL *ATM Adaptation Layer*. ATM 适配层

AAN *All Area Networking*. 全域网

AAR *Automatic Alternative Routeing*. 自动迂回路由

abandoned call 中途放弃呼叫 A *call* which is terminated after a connection has been made but before the receiver goes *off-hook*, i.e. conversation occurs.

abbreviated address call 缩减地址呼叫 A *call* which requires a subset of the full *address* to initiate the call, the complete address being available from the *network switch*, such as a *packet assembler/disassembler*.

abbreviated answer 简短应答 The reply to a *call*, made after communications has been established, in which the call sign of the calling station is not included.

abbreviated dialling 缩位拨号 Feature of switches, such as a *PABX*, which allows users to use shortened numbers to place a *call*, the switch making the translation to the full number. See also *speed dialling*.

abort 异常终止 An action, initiated automatically or by an operator, which causes all activity to be immediately stopped, e.g. the ending of *transmission* due to an unacceptably noisy *line*.

ABR *Available Bit Rate*. 可用比特率

ABSBH *Average Busy Season Busy Hour*. 平均忙季忙时

absolute delay 绝对延时 It is the time between the generation and reception of a *signal waveform*, and is measured by reference to a particular point on the wave. Also referred to as *propagation delay*, it

occurs in all *transmission* systems due to the delay caused by the *transmission medium* (copper, fibre and radio waves) and by intermediate systems such as switches. Delay can impede *voice* communications by causing *echo* and conversational delay. Overall delay can be calculated for a system by summing the delay caused by the separate parts. Guides on typical delays for planning are given in *ITU-T Recommendation G.114*.

absolute error 绝对误差 Errors in numbers can be represented as absolute or *relative errors*. Therefore if the actual number is 36845 but it is read as 36800 then the absolute error is $36845 - 36800 = 45$. If the number was originally represented as 36800 ± 50 then the absolute error is 50.

absolute gain 绝对增益 Absolute gain of a system is measured as the ratio of the *signal* level at the output to the signal level at the input. For an *antenna* it is often specified as the ratio of the power provided to an ideal radiator to that provided to the antenna under test for the same far field radiation intensity.

absorption 吸收 All *signals* travelling through a medium lose some of their energy, which is usually converted into heat. This phenomenon is known as absorption. It occurs, for example, when light travels through an *optical fibre* and when radio waves travel through the *ionosphere*. All mediums show absorption, some absorbing all *wavelengths* equally whilst others absorb a greater amount of energy at certain wavelengths.

absorption coefficient 吸收系数 It is a measure of the amount of *absorption* of the transmitted energy, such as light or sound, within the *transmission medium*. For light of intensity P travelling in an *optical fibre*, if the intensity is reduced by dP over a distance of x then Lambert's law states that $dP/P = -Cx$ where C is the absorption coefficient. If P_0 is the intensity of the light at the starting point and P_x is

the intensity after a propagation distance of x in the optical medium, then $P_x = P_0 e^{-Cx}$ where C is again the absorption coefficient.

absorption index 吸收指数 It is a measure of the loss caused by *absorption* when an *electromagnetic wave* propagates within a medium. It is given by $A_i = C\lambda/4\pi r$, where A_i is the absorption index, C is the *absorption coefficient*, λ is the wavelength in vacuum, and r is the refractive index of the medium.

absorption spectra 吸收范围, 吸收光谱 Impurities can be added to *transmission medium*, such as *optical fibre*, to vary its characteristics in relation to the *wavelengths* which it absorbs, i.e. its absorption spectra.

Abstract Syntax Notation 1 (ASN.1) 抽象句法表示1 (ASN.1) It is an *Open System Interconnect (OSI)* sponsored notation system for coding and transmitting *data*, and is independent of the architecture of the machine on which it runs. When used for designing *managed objects* an ASN.1 compiler would take the ASN.1 object definitions and provide the data structures and the source code routines needed to encode and decode management information relating to the *managed objects*.

ABT *ATM Block Transfer*. ATM成组传送

AC *Alternating Current*. 交(变电)流

ACA *Australian Communications Authority*. 澳大利亚通信管理局

ACC *Australian CCITT (ITU-T) Committee*. 澳大利亚CCITT (ITU-T) 委员会

ACCC *Australian Competition and Consumer Commission*. 澳大利亚竞争与消费委员会

accentuated contrast 加重对比度 An image representation technique, used in systems such as *facsimile*, in which images above a certain threshold value are transmitted as white and those below this threshold are transmitted as black.

acceptance cone 接受光锥区 It is the cone within which light falling on an optical *transmission medium*, such as *optical fibre*, will be communicated along its core due to *total internal reflection*. (Figure A.1) For incident rays of light having angles greater than that of the acceptance cone the light energy will be dissipated by *absorption* or *scattering* within the fibre cladding.

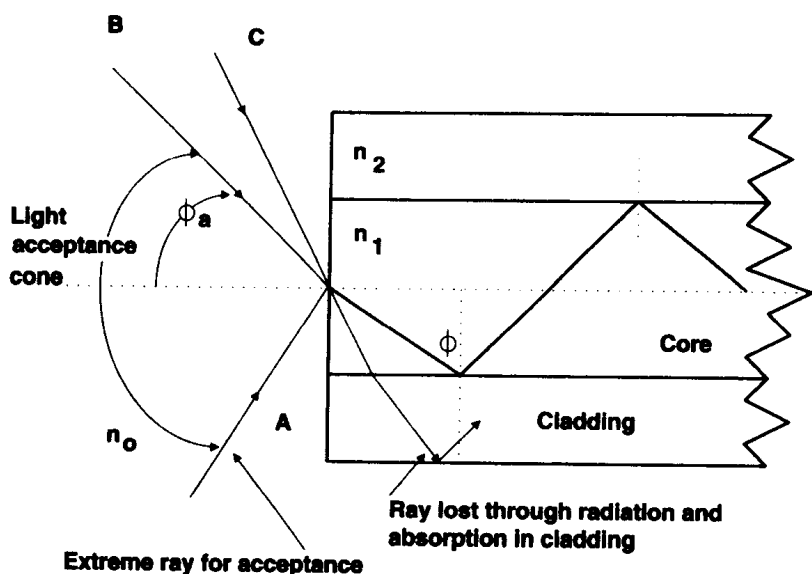


Figure A.1 Illustration of acceptance cone

accepted interference 可接受干扰 Radio interference which is above the value defined by the standard bodies as *permissible interference* but which has been agreed as being acceptable by the parties affected.

access 接入 Usually refers to *local access*. See also *access line*, *access loop* and *access network*.

access barred 禁止接入 Denial of access to a facility. For example access may be barred to a *closed user group* on failure of identity check. This is also referred to as *access denial*.

- access barred ratio** 禁止接入比率 The ratio of the number of times access to a facility has been denied or barred to the number of attempts made to access that facility. This is also referred to as *access denial ratio*.
- access charge** 接入费用 Charges levied by operators for use of their *local network*. It may be a charge on the *users* themselves or on other operators, such as long distance (interexchange) carriers, for access to local users. See also *interconnect charge*.
- access code** 接入码 Additional numbers which need to be entered in order to access a special service or line, e.g. to access a long distance line belonging to another carrier, or to access a specified service on a *PABX*. The code may be a single digit, such as a 9 used to access an outside (*PSTN*) line from a *PABX*.
- access control** 接入控制 The process for limiting access to certain features or parts of the network. This may be done manually or automatically by system software.
- access denial** 拒绝接入 See *access barred*.
- access denial ratio** 拒接比率 See *access barred ratio*.
- access group** 接入组 A group of users who have equal access rights to a facility.
- access line** 接入线 The wire connecting the customer's terminal facility into the public network, e.g. to the first public switch. This is also referred to as the *access loop*, the *local exchange loop*, the *local loop* or the *access network*.
- access loop** 接入环 See *access line*. The original *local loop* was one wire and used the earth for the return path. This was too noisy and so two copper wires were introduced, to allow *speech circuits* to flow around; hence the use of the term 'loop'. A variety of mediums can be used for the local loop, such as copper, *optical fibre* (*Fibre To The Home*) and radio waves (*Wireless Local Loop*).

- access network** 接入网 See *access line* and *local loop*.
- access point** 接入点 The physical point at which the user connects into the *access line*.
- access request** 接入请求 The signal sent by a user *terminal* to indicate a wish to start a communications session. An example is the *off-hook* access request sent when a *telephone handset* is lifted.
- access time** 接入时间 The time from an *access request* being made to when it occurs.
- ACCH** *Associated Control Channel*. 随路控制信道
- accommodation** (人眼)适应调节 Refers to the ability of the *human eye* to ensure that an object remains focused on the retina as it moves closer and farther away.
- accommodation limit** 调节限度 The closest and farthest distance from the *eye* that an object can move and still remain focused.
- account coding** 计费编码 Facility, mainly used with a *PABX*, where codes can be entered for *calls* in order to be able to bill a client for the call (incoming and outgoing). The amount can be 'forced', i.e. entered by the user, or can be 'at will', i.e. the user enters a client code only.
- accounting management** 计费管理 It is one of five functions which *ISO* have defined as being required from a *network management system*. Accounting management aids in the preparation of bills for network users and for tracking their payment. It also helps in the sale of network resources. It is a set of facilities which enable charges to be determined for the use of the network resources and for costs to be identified and allocated to each resource. This management function depends on statistics provided by the objects on the network. Accounting management is frequently considered to include *inventory management*.
- accounting rate** 费率 The cost of interconnecting traffic between

operators, usually in different countries, is known as the accounting rate. It is based on measuring *traffic* which is generated in both directions between the two operators. If this traffic is approximately equal then the system works well. Simple accounting arrangements can now be used, such as 'bill and keep' in which each carrier bills and collects charges for all the calls which originate on their network, irrespective of where the calls terminate. However, if one operator generates much more traffic than it receives then it pays 50% of the accounting rate, known as the *settlement rate*, on the difference in traffic to the other operator.

Accredited Standards Committee (ASC) 认可的标准委员会 A group which has been accredited by the *American National Standards Institute* for standards production. Examples are the *IEEE*, the *EIA*, the *T1 committee* of the *Exchange Carriers Standards Association (ECSA)*, and the *X3 committee* of the *Computer Business Equipment Manufacturers Association (CBEMS)*.

Accunet AT&T为高速数据和高容量语音传输提供的一种数字业务的名称 It is the name of a digital service provided by AT&T for high speed *data* and high volume *voice transmission*. The Accunet T1.5 facility operates at 1.544Mbit/s.

ACD *Automatic Call Distribution*. 自动呼叫分配

AC-DC ringing 交直流振铃 A telephony ringing system in which the alternating current is used to operate the ringer within the *telephone* and the direct current operates a relay which disconnects ringing once the telephone goes *off-hook*.

ACEC *Advisory Committee on Electromagnetic Compatibility*. 电磁兼容咨询委员会

ACET *Advisory Committee on Electronics and Telecommunications*. 电子与通信咨询委员会

ACOS *Advisory Committee On Safety*. 安全咨询委员会

ACK Acknowledgement. 证实

Acknowledgement (ACK) 证实 An internationally recognised control character which is sent by the receiving station to the transmitting station to indicate that the previous block of *data* has been correctly received and the next block can be sent. See also *negative acknowledgement*.

acoustic coupler 声耦合器 A device for converting electrical signals to sound and sound to electrical signals. It is commonly used to transmit electrical data from a transmitting *DTE* by converting it into sound at a *telephone* handset and then sending the *telephony signals* over the *PSTN* before converting the signals from the receiving handset back into electrical signals at the receiving *DTE*.

acoustic noise 噪声 Unwanted *signals* which are in the *audio frequency* range.

acoustic resonance 声共振 Sound wave resonance which can occur between two parallel surfaces having a spacing equal to an odd number of half-wavelengths. If d is the spacing between the two surfaces and c is the velocity of light, then the frequency of resonance f is given by $f = nc/2d$ where n is equal to an integer, i.e. 1, 2, 3, etc. See also *standing wave*.

acoustic shock 声震 A transient or power surge in a *telephone* system causing a surge of sound pressure in the listener's *ear*. Acoustic shock is more critical when an *headset* is being worn.

acoustooptics 声光学 The effect of sound waves on light, e.g. the deflection of light by using acoustic waves to vary the refractive index of the material in which the light is travelling.

acquisition radar 捕获雷达 Radar which provides a scanning and surveillance function and passes information on objects detected on to a *tracking radar*.

acquisition time 捕获时间 In telecommunications *transmission* sys-

tems usually refers to the time needed for the system to lock on to a synchronising signal.

ACSE *Association Control Service Element.* 联合控制业务元素

AC signal 交流信号 A signal with the characteristics of an *Alternating Current*.

AC signalling 交流信号方式 A signalling system which uses in-band tones (2280Hz or 2600Hz) to convey the signalling information, sent during *call setup* or *call clear down* times.

ACTE *Approvals Committee for Terminal Equipment.* 终端设备鉴定委员会

active filter 有源滤波器 A filter which normally contains semiconductor devices and needs to be powered in order to operate effectively.

active line 实线,工作线 In a television scanning system it is the *electron beam* trace on the screen which contains luminance information. For a telecommunications system an active line is a *transmission line* which is in use.

Active Optical Network (AON) 有源光网络 An optical *access network* which uses active splitters and optical amplifiers to achieve higher split ratios, *bandwidth* and *range*. See also *Passive Optical Network (PON)*.

ACTS *Advanced Communications Technologies and Services.* 先进的通信技术和业务

ACU *Automatic Calling Unit.* 自动呼叫单元

ada 一种高级程序语言 A high level programming language, used by the US *Department of Defence* and specified in MIL-STD-1815.

adapter 适配器 A device for connecting cables of different size or having *connectors* with different number or arrangement of pins. Adapters are also used to connect two systems using different *data rates* or *transmission codes*.

- adaptive antenna** 自适应天线 An *antenna* which provides a focused beam directed towards the object, such as a mobile telephone. The beam can track the mobile as it moves. This provides a greater range than that available from conventional antennas and also minimises *interference* effects at the mobile. Also known as *smart antenna*.
- adaptive channel allocation** 自适应信道分配 *Transmission* technique in which the *capacity* of the *channels* are assigned to users on a demand basis, rather than each user being assigned a fixed amount.
- Adaptive Delta Modulation (ADM)** 自适应增量调制 Digital *modulation* technique which overcomes the disadvantages associated with *delta modulation*, such as the reduction of the *SQNR* with decreasing *signal* level, by adjusting the step size as the signal level changes.
- Adaptive Differential Pulse Code Modulation (ADPCM)** 自适应差分脉冲编码调制 An *encoding* technique which reduces the number of *bits* used in an analogue sample from eight to three or four, so resulting in compression of the transmitted *signal*. *ITU-T Recommendation G.721* specifies an algorithm for a 32kbit/s ADPCM (8000 samples per second, each sample represented by 4 bits) which provides double the *capacity* compared to *PCM* transmission (8000 samples per second, each sample represented by 8 bits).
- adaptive equaliser** 自适应均衡器 An *equaliser* which automatically adapts to changing *line* conditions so as to maintain the integrity of the *transmission*. See also *Transversal Equaliser (TVE)*.
- adaptive high frequency radio** 自适应高频无线系统 Radio system, operating in the *High Frequency (HF)* band, which automatically adjusts its characteristics (such as power level, frequency, etc.) to compensate for changing *transmission* conditions.
- adaptive routing** 自适应路由选择 *Data* routing method in which the routing conditions are automatically changed to take into account