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Glossary of technical terms and abbreviations

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2G, 2.5G: pre third-generation mobile systems e.g. GSM for 2G and GPRS and EDGE for 2.5G.

3G: third generation mobile system. 3G networks will provide users with access to a wide range of new services. Leading the way among these will be high-speed Internet access as a result of the gradual introduction of packet-switching technology on mobile networks.

3GPP (Third Generation Partnership Project): originally a collaboration between members of ETSI and US, Japanese and Korean standards bodies, 3GPP is a world-wide standards organisation. Its mandate is to reach an agreement on a common radio interface in order to determine a standard for third-generation mobile tele-communications systems (UMTS). ETSI transferred the work carried out within the SMG committee on UMTS to the 3GPP.
Some of the 3GPP partners are: the GSM Association, the UMTS Forum and the IPv6 Forum.

Access network: network to which customer premises equipment is directly connected, giving access to services. (see Core network).

Accounting rates: system which sets out the pricing principles to be used in inter-connection agreements between international operators, to enable the revenue for international calls to be shared between the operator in the country that originates traffic and the operator in the country that delivers the traffic.
For calls to a given international destination, the operator in the originating country sets the retail price, which is called the collection rate. At the same time, this operator and the operator in the destination country negotiate a per-minute settlement rate. The settlement rate is used to determine the sum paid by the operator originating traffic to the operator that delivers the traffic. The settlement rate is often half of the accounting rate.

ADSL (Asymmetrical Digital Subscriber Line): ADSL is part of the xDSL technology family. It is designed to enhance the performance of access networks and in particular the subscriber's copper pair in the conventional telephone network. Use of two modems, one at the subscriber's premises and the other on the subscriber line termination at the MDF, allows a significant improvement in the network bitrate, to reach transmission speeds up to 70 times faster than with the usual analogue modem. The principle of ADSL involves splitting bandwidth into separate signals, one for voice transport, one for transporting data to the core network (upstream data) and a third, larger path for data being conveyed to subscribers (downstream data).

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Filtering at both ends of the line ensures acceptable voice quality by removing the unnecessary parts of the signal. Throughput diminishes with distance with ADSL technology, making it particularly well suited to the local loop. It is relatively inexpensive and is therefore an attractive solution for broadband Internet access.

AFA (Association de fournisseurs d'accès et de services internet): French association of Internet service providers.

ANFr (Agence nationale des fréquences): National Frequencies Agency. Body responsible for managing the RF spectrum, sharing frequencies between the different bodies and administrations with allocations in France (ART, CSA, Defence Ministry etc), dealing with interference and participating in international negotiations on frequencies.

Asymmetric regulation: regulation which imposes specific obligations on the incumbent because of its dominant position in the market. e.g. special interconnection obligations, up-front retail tariff control, and universal service obligations.

ATM (Asynchronous Transfer Mode): a packet-switching technique using the cell relay transmission method, i.e. fixed-size cells, to provide high speed transport of digital data. ATM permits ultra-fast transmission and enhances line capacity, making it particularly well suited to broadband multi-service networks. By improving core network performance and optimising network resources, it supports high traffic flow, while maintaining high service quality.

Audiotel: service provided by France Telecom, which can generally be accessed by dialling a number beginning with 08 36. This enables users to access information, games, etc., via an audiotex-type voice server, which guides the caller with pre-recorded messages.

Backbone (a.k.a. core network): telecommunications operators' backbone networks are made up of very high-speed transmission links connecting the main network nodes to which lower-capacity links are connected. Backbone networks can be national (nationwide coverage), regional (covering several countries in the case of Europe) or global (worldwide coverage).

Bandwidth: designates the transmission capacity of a link. It determines the quantity of information (in bps) that can be transmitted simultaneously. In the IT world, it is often confused with the transfer rate or capacity expressed in bits per second.

BAS (Broadband Access Server): server used to manage data transport in ATM mode for ADSL-based Internet access offers. Each BAS in the France Telecom

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network consolidates the ATM traffic from some ten DSLAMs. A BAS is used to manage the traffic from the ADSL lines located in the area served by the DSLAM. France Telecom calls the area covered in this way an operating area or plaque. Two ATM circuits, one "downstream" and the other "upstream», are set up between the BAS and the
customer.

Beauty contest: method used in France for the selection of candidates for the use of a limited resource It consists of defining a certain number of criteria and rating the candidates accordingly in order to select the most suitable. It is not the same as an auction, where the price of the resource is the only criterion taken into account.

Bitrate: amount of data carried by a network within a given time frame.

BSC (Base Station Controller): GSM base station controller. This equipment controls one or several BTS and manages the radio resources.

BTS (Base Transceiver Station equipment): GSM equipment comprising transmitters and receivers and providing the interface between the BSC and the mobile terminals.

CAA (Commutateur à autonomie d'acheminement)/Local exchange: local telephone exchange to which France Telecom customers are connected. In France Telecom's tier system, this is the lowest ranking exchange in the network.
There are two types of exchange:

- subscriber or local exchanges (CAA) are at the bottom of the hierarchy. Subscribers are linked to the exchange via a unité de raccordement d'abonné or subscriber connection unit (URA).
- transit exchanges (CT) are at the top of the hierarchy.

Cable networks: refers to audiovisual distribution networks which now offer electronic communications services.

Call back: the user dials a number in the country which operates call back. There is no call set-up so no charge at this stage. An automatic device calls the number back and sets up the call on an international line. The user then dials the number of the called party and the call is billed at the tariff
charged by the chosen foreign operator. This system thus enables users to enjoy the tariffs charged in the country being called.

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Carrier (or long distance operator): Telecommunications company which carries national long distance and /or international calls.

Carrier selection: possibility for customers to choose between several carriers. Carrier selection concerns all local, long distance and international calls, and can be on a call-by-call or subscription basis.

CCR (Commission consultative des radiocommunications) and CCRSCE (Commission consultative des réseaux et services de communications électroniques): advisory committees, for radiocommunications and electronic communications networks and services, respectively, operating under the aegis of the Minister responsible for telecommunications and the Authority's Chairman.

CEN: European Committee for standardisation.

CENELEC: European Committee for Electrotechnical Standardisation.

CEPT (The European Conference of Postal and Telecommunications Administrations): regional regulatory telecommunications organisation of which most European countries are members. It is involved in regulatory and technical co-operation (particularly on frequencies).

"Chambre zéro" (Zero chamber): operator access point to France Telecom building and distribution frame cables for remote co-location.

Circuit: bi-directional link between two terminal units over which a connection mode service can be provided.

Co-location: in France Telecom's standard interconnection offer, three different techniques can be used to provide physical interconnection:

- the actual co-location: the operator installs its equipment on France Telecom's premises
- interconnection link: France Telecom installs its equipment on the operator's premises.
- in-span interconnection: a solution midway between these two systems where the point of interconnection is located for example, in the public domain.

In the case of local loop unbundling (LLU), co-location corresponds to the supply of space and the necessary technical resources required for housing and connecting equipment belonging to the alternative operator.

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Consumer basket (a.k.a. spending or price basket): statistical market information tool, enabling the average change in user bills to be measured at constant consumption. ART has established two consumer baskets to observe the average yearly change in telephone tariffs.

Convergence: refers to two different trends:

- convergence between the broadcasting and telecommunications sectors. Advances in technology make it possible to use different media (cable networks, terrestrial and satellite radio relay systems, computer terminals and television sets) to carry and process all types of information and services, including sound, images and data. This type of convergence is due to a revolution in technology (digitisation). It has economic and regulatory implications.
- fixed/mobile convergence. Fixed telephone and mobile telephone systems provide increasingly similar technologies and services. For operators, this type of convergence opens up the possibility of proposing the same services to all users, regardless of the technology or networks used.

Core network: the core network , also known as the backbone, consists of all the transmission and switching elements from the local exchange onwards.

CPCE (Code des postes et des communications électroniques): The French Post and Electronic Communications Code.

CST (Conseil supérieur de la télématique): French authority for telematics services.

CT (Commutateur de transit)/Trunk exchange: see CAA.

CTA (Conseil de la télématique anonyme): French advisory committee on telematics services.

CTR (Common Technical Regulations): joint technical regulations governing network access for terminal equipment. They are drafted in accordance with EU directive 98/13/EC by the TRAC committee and ETSI at the request of the ACTE committee, chaired by the European Commission.
CTRs apply to all Member States.

CUG (Closed User Group): an independent network that is shared or used for a private purpose. It is for private use, if use is reserved for the physical or legal person that set it up, and it is for shared use if use is reserved for several physical or legal persons which have set up one or several closed user groups, in order to

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exchange communications within that same group. ART clarified this definition by stating that a CUG is "based on a community of interest that is stable enough to be identifiable and that predates the provision of telecommunications services". The term 'closed user group' is also used to define a virtual private network on a public network.

DECT (Digital Enhanced Cordless Telecommunications): European digital radio transmission standard for mobile or fixed telephony (wireless local loop).

Digital block: a digital block corresponds to the consolidation of several calls on the same physical transmission medium using a technique called multiplexing. With PDH (Plesiochronous Digital Hierarchy), a transmission standard used on telecommunications networks, calls can be grouped first into primary digital blocks (PDBs) of 30 calls, secondary digital blocks (SDBs) of 120 calls, tertiary digital blocks of 480 calls and then into quaternary digital blocks of 1920 calls. Each digital block corresponds to a bitrate or capacity expressed in bits per second; a bit being a basic binary digital number which can take the value 1 or 0. Consequently, a PDB corresponds to a bitrate of 2 mbps. Interconnection tariffs can be set as a function of the transmission capacity expressed in PDBs.

Digital link: link over which information is carried in a digital format. Digital means that all the information (sound, text, image) has been encoded and transformed into a series of binary digits, as opposed to analogue technology.

Direct interconnection: call termination service, allowing an operator to terminate a call to one of France Telecom's subscribers. The call is routed by the operator to the interconnection point and then carried by France Telecom over its network from the point of interconnection to the subscriber's customer premises equipment.

Domain name: name designating an entity to which an Internet site belongs e.g. .fr or .com.

DSLAM (Digital Subscriber Line Multiplexer): one of the devices used to convert conventional telephone lines into ADSL lines for high-speed data transmission, particularly for Internet access. The DSLAM is installed on the main distribution frame of the local operator's network. It combines several ADSL lines onto a single medium, which routes data to and from these lines.

DTT: Digital Terrestrial Television.

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Dual tandem exchange interconnection: service listed in France Telecom's interconnection offer. It enables an operator interconnected at a trunk exchange (CT) to reach the subscribers in another trunk-exchange area, anywhere in France. This gives access to all lines in France.

ECC (Electronic Communications Committee): electronic communications committee grouping together the activities formerly handled by ECTRA and ERC in CEPT.

Economic regulation: the regulatory authority has to ensure that competition is effective, fair and sustainable. It does this by using precise knowledge of market developments and the legal instruments at its disposal (e.g. dispute settlement, approval of technical and financial interconnection conditions, penalties), in addition to an in-depth assessment of operators' costs.

ECTRA (European Committee of Telecommunications Regulatory Affairs): CEPT committee responsible for regulatory affairs. Its permanent office is the European Telecommunications Office (ETO).

EDGE (Enhanced Data rates for Global Evolution): EDGE is a 3rd-generation mobile standard allowing data to be transferred at 384 kbps. It evolved from the GSM and American TDMA standards.

ENUM: protocol defined by the Internet Engineering Task Force (IETF) to create Internet domain names from telephone numbers and link them to communication services (telephone, email, fax, unified messaging etc.).
ENUM is the first truly convergent Internet/telecoms project combining numbering aspects with Internet naming and addressing features.

ERC (European Radiocommunications Committee): organisation answerable to the European Conference of Postal and Telecommunications Administrations (CEPT), responsible for regulatory cooperation on radiocommunications issues. Its permanent office is the European Radiocommunications Office (ERO).

ERG (European Regulators Group): created in July 2002, the ERG is one of the European Commission's advisory committees. Its members are NRA chairmen and directors general.

ERMES (European Radio Messaging System): European radio-paging standard.

ETNO (European Public Telecommunications Network Operators Association): Brussels-based association set up to foster cooperation among public telecommunications network operators.

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ETSI (European Telecommunications Standards Institute): body set up by the European Commission to handle telecommunications standardisation for the CEPT.

Extranet: a private external network that uses Internet protocols (IP) to enable businesses or organisations to exchange digital data with key correspondents (subsidiaries, customers, suppliers, etc.) using the IP standard. Hypertext Markup Language (HTML) makes the presentation of data user-friendly, using hyperlinks allowing the user to browse through screen pages (as on a website).

FIP: Flat-rate Interconnection Point.

Flat-rate interconnection: an interconnection offer between third-party networks and the France Telecom network whereby the fees payable by the third-party operator for collecting traffic on the local loop are on a per-circuit basis and not on a per-minute basis.

Freephone numbers: generally called a "numéro vert" (green number) by France Telecom. The caller is not charged; instead, the cost is paid by the person, company or organisation that has requested the number so that they can be called free of charge. Freephone numbers begin with 0800.

GPRS (General Packet Radio Services): packet switching system enabling enhanced data rates over GSM networks (see Switching).

GSM (Global System for Mobile communications): digital radio transmission standard for mobile telephony, named after its founders the Groupe Spécial Mobile (GSM).

GTR (Groupe de Travail sur les Radiocommunications Professionnelles): working group on business communications set up within the Radiocommunications Consultative Committee (CCR).

HDSL (High Speed DSL): bi-directional symmetrical transmission technique primarily for professional applications. Bitrates up to 2 mbps can be achieved over distances up to 2500m.

HLR (Home Location Register): Database containing profiles and general mobile network subscriber details.

HSCSD (High Speed Circuit Switched Data): circuit-switched data system allowing

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improved bitrates on GSM networks (see Switching).

IAB: Internet Architecture Board.

ICANN: Internet Corporation for Assignment of Names and Numbers.

IEC: International Electrotechnical Commission

IETF: Internet Engineering Task Force.

IMEI (International Mobile Equipment Identity): ID number for mobile devices, and particularly cellular handsets. Each mobile phone is assigned a number that enables its identification. All of these numbers are stored in the EIR database (Equipment Identity Register), which makes it possible to check whether a mobile is being used, particularly in cases of theft.

IMT 2000 (International Mobile Telecommunications 2000): third generation mobile systems which enable mobility services to be improved, thanks to new features. The ITU selected five terrestrial radio interfaces, including UMTS, for third-generation mobile systems under the IMT 2000 label.

Independent network: see CUG.

Indirect interconnection: call-collection service, in which an operator collects a call from one of France Telecom's subscribers. The subscriber dials a prefix to select the operator and the call is then carried by France Telecom from the subscriber's customer premises equipment to the point of interconnection, where the call is then carried by the alternative operator.

In-span interconnection: see Co-location.

Interconnection: the linking of telecommunications networks in order to allow one operator's subscribers to communicate with any of another operator's subscribers.

Interconnection agreement: private contract negotiated and signed by two operators, on a case-by-case basis, to determine interconnection terms and conditions. Generally, when an agreement is concluded with an operator with significant market power, it is based on this operator's standard interconnection offer. If the service is not listed in the interconnection offer, new interconnection conditions are laid down.

Interconnection interface: the set of technical specifications necessary for prac-

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tical implementation of interconnection by establishing a dialogue between networks. It defines the physical interconnection arrangements, services and advanced functions accessible between the networks concerned, the control mechanism for these services and their billing and operating arrangements.

International Settlement Rate: amount paid by one operator to another as part of the international accounting rates system.

Internet: a network of variable sized networks interconnected by the Internet Protocol (IP), over which a wide range of services can be provided.

Interoperability: service interoperability is the possibility for different services to operate on different networks. The technical specifications at the interconnection interface determine, in part, service interoperability between different operators.

Intra-CAA (Commutateur à autonomie d'acheminement)/Local exchange interconnection: service listed in France Telecom's standard interconnection offer enabling an operator to interconnect at France Telecom's local exchange. Up to 30,000 lines can be connected.

Intranet: a corporate network using Internet Protocol, reserved for internal data communication. It enables businesses or organisations to exchange information using the IP standard. Hypertext Markup Language (HTML) makes the presentation of data user-friendly, using hyperlinks to permit users to browse through screen pages (as on a website).

IP (Internet Protocol): telecommunications protocol used on networks supporting the Internet, to allow the information to be transmitted to be broken down into data packets, transmitted independently based on address information carried in the packet and reassembled at the receiving end. The switching technique is therefore referred to as packet switching. For Internet use, it is associated with a data transmission control protocol called TCP (Transmission Control Protocol) known as the TCP/IP protocol.

IP address: an address allowing equipment connected to the Internet to be identified.

IP telephony: voice communication service using the telecommunications IP protocol (Internet protocol) developed for the Internet.

IRG (Independent Regulators Group): informal body comprising representatives

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of the various regulatory bodies in EU and EEA countries, established on ART's initiative following the European NRAs' meeting in 1997.

ISDN (Integrated Services Digital Network): digital telecommunications network, capable of carrying image, sound and text data simultaneously.

ISO: International Standards Organisation.

ISP: Internet Service Provider.

ITU (International Telecommunications Union): international organisation under the aegis of the United Nations, based in Geneva and responsible for coordinating global electronic communications networks and services.

LCR (Least Cost Routing): optimal routing using a system enabling the least expensive links to be chosen systematically as a function of the destination and time of the call.

Leased line: from a technical viewpoint, this is a permanent link (as opposed to a switched link which is temporary) comprising one or several parts of a public network and reserved exclusively for a user. From a legal viewpoint, a leased line, which is also called a dedicated line, is defined in the Post and Telecommunications Code as: "a contract between the public operator and a user to provide transmission capacity on a rental basis between pre-determined termination points of the public network. The user has no control over switching". This type of service is used by businesses for corporate networks, and also by telecommunications service providers, which either have no infrastructure or wish to extend existing infrastructure.

LEO: Low Earth Orbit (Satellite).

Licences: the Telecommunications Act of 26 July 1996 stated that telecommunications activities could be freely provided. However, it stipulated that certain activities required a licence (also known as an authorisation). For example, a licence had to be obtained from the Minister responsible for Telecommunications, after applying to ART, to set up and operate a public network, to provide a public telephone service and to provide the public with telecommunications services using microwave frequencies. ART was also responsible for issuing licences to set up and operate independent networks.
The new legal framework, which transposes the European "telecoms package" Directive into national law, removes and replaces the system of individual autho-

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risation (licence) with a system of prior declaration.

LLO (Local Loop Operator): see Local operator.

LMDS (Local Multipoint Distribution Services): technology supporting high-speed transmission using microwave frequencies to provide access to the telephone service, Internet and television programmes. This type of transmission is particularly well suited to sparsely populated areas not served by cable. However, its development is hindered at present by technical barriers such as signal attenuation, caused on the one hand by the weather (rain), and on the other hand by obstructions (buildings, vegetation, hills) which interfere with radio wave propagation.

Local loop: the wireline or radio connections between the customer's premises and the local exchange. The local loop is the part of the network that allows the operator to access the customer directly.

Local loop unbundling: local loop unbundling, also know as unbundled access to the local network, allows new operators to use the incumbent operator's local copper-pair network to serve subscribers directly. Naturally, new entrants are required to compensate the incumbent for the use of its network.
Consequently, customers of new-entrant operators will no longer be required to take out a subscription with France Telecom to access their operator's services. This broad definition encompasses several options. The preparations for the public consultation exercise conducted by ART in 1999 identified five:

- three of these five emerged during deliberations concerning the possibility of unbundled access to the incumbent's local loop. This unbundled access may entail:
  - physical unbundling of the local loop, where the new operator gets direct access to the copper pair. This is known as raw copper access (option 1),
  - access to transmission capacity, comprising bitstream access and access to a permanent virtual circuit (options 2 and 3).

The remaining two options are equivalent to a resale business, namely local traffic resale and subscription resale (options 4 and 5).

Local operator (or local loop operator): telecommunications company that operates subscriber lines.

Local sorting zone: the local loop operator only sends those calls to the carrier selected by the calling party which are destined for calling parties outside the local sorting zone; calls within the local sorting zone are retained and routed by the local loop operator irrespective of the numbering sequence used by the calling party. In France, the local sorting zone generally corresponds to a département.

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Long-run average incremental costs (LRIC): the Telecommunications Act stipulates that interconnection tariffs must be set according to the actual costs incurred by the operator providing the interconnection service.
Two methods can be used to determine these costs: the first consists of using the operator's historic network costs; the second, of evaluating the cost of building a new network at current and future prices, which are generally lower than historic costs due to advances in technology. Long-run average incremental costing aims to reconcile these two methods by comparing two evaluations:

- one based on the operator's accounts,
- another based on a technical and economic model of network roll-out and operations.

This reconciliation should provide better understanding of network cost drivers and their relationship with the different interconnection services.

MDF (Main Distribution Frame): apparatus allowing the subscriber copper pairs to be jumpered across to the cables connected to the local exchange. It enables several subscriber lines to be distributed over a single cable.

Microwave radio links: terrestrial radiocommunication links between fixed points.

Mobile wireless network: network using radio frequencies to connect mobiles to the fixed or mobile network.

MRC (Milestone Review Committee): advisory group set up jointly by ECTRA and the ERC within the CEPT, in order to ensure that the various regulatory systems fulfil their requirements.

MSC/VLR (Mobile services Switching Centre/Visitor Location Register): GSM and/or UMTS circuit switch (MSC) for managing incoming and outgoing calls. This switch is linked to a database (VLR) containing a copy of the user profile and information on the terminal or handset location.

NAS (Network Access Server): equipment used by operators to provide Internet access services over the switched telephone network. A NAS converts telephone calls into IP data streams so that the switched telephone network and the IP data transport network can interface with each other.

Network: combination of telecommunications resources, e.g. exchanges, wirelines (copper cable, optical fibre) and terrestrial or satellite radio transmission links (electromagnetic waves).

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Non-geographical numbers: number beginning with 08. Services can be distinguished by type e.g. general mobile services, virtual private network services, and by pricing, e.g. freephone services, shared-cost services and shared-revenue services.

NRA: National Regulatory Authority.

Number portability: possibility for subscribers to retain their telephone number when changing local loop operator (service available since 1st January 1998 if the subscriber does not change address) or when changing geographical location or local loop operator, or both (service available as of 1 January 2001).

On-net and off-net calling: calls between two customers on the same mobile network or between customers on separate mobile networks.

ONP (Open Network Provision): rules allowing the incumbent's network to be used by new operators. Network ownership and architecture and the provision of commercial services over the network are treated separately. The European ONP directives aim to harmonise conditions so that ONP principles can be applied to all telecommunications services. The harmonised conditions guarantee open and effective access to telecommunications networks.

PDH (Plesiochronous Digital Hierarchy): a digital transmission standard based on dividing information up into identical time intervals.

Peering: refers to a type of interconnection agreement between two IP backbone networks (called peer networks) for the exchange of Internet traffic between their respective networks. These exchanges take place in public or private nodes.

"Plan Câble" (Cable plan): this term refers to a French government plan introduced in the Audiovisual Communication Act 82-652 dated 29 July 1982, which sought to develop audiovisual cable networks in France.

PMR (Professional Mobile Radio): mobile radio networks for business users. In France the distinction is drawn between:

- 3RP: trunked private mobile radio network
- 3RPC: trunked public access commercial mobile radio networks
- RPN: digital trunked professional mobile radio networks, using Tetra or Tetrapol technology
- 2RC: trunked private mobile radio networks for commercial purposes
- 3R2P: trunked private mobile radio networks for private purposes

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- RPX: local trunked networks (new category of networks)
- RPS: short-range business radio.

POI (Point of Interconnection): operator interconnection point.

PoP: Point of Presence.

Price squeeze: see Price squeeze effect.

Price squeeze effect: there is a risk of price squeeze when two companies A and B are competing in a retail market and B depends on A in an intermediate market. A price squeeze occurs when operator A's retail tariff is lower than the sum of the wholesale tariff for the intermediate goods or services and operator B's own costs. In the case of tests carried out in accordance with ART recommendations, France Telecom retail tariffs generate a tariff squeeze if the average revenue is lower than the average cost of an equivalent retail offer supplied by an operator considered to be efficient and obliged to use France Telecom interconnection services. The term price squeeze comes from the fact that the other alternative operator must compete with France Telecom retail tariffs while at the same time depending on France Telecom for intermediate services i.e. interconnection.

Public network: network established or used for the provision of public electronic communications services.

Radio interface: system enabling a mobile terminal to communicate with the network. Numerous discussions were held within ETSI in 1997 on the standardisation of a radio interface for UMTS. On 29 January 1998 the SMG committee adopted the UMTS Terrestrial Radio Access standard (UTRA). NB: terrestrial as opposed to satellite. The UTRA standard is a compromise between two originally competing standards: WCDMA and TD/CDMA. UTRA was adopted by the ITU in March 1999 as a radio interface standard for IMT 2000.

Radio paging: radiocommunications system enabling users equipped with pagers to receive call-alert signals (beeps) and messages composed of numbers (numeric) or combinations of numbers and letters (alphanumeric).

Regulation: in the telecommunications sector, regulation may be defined as the enforcement, by the competent authority, of all the legal, economic and technical provisions enabling telecommunications activities to be carried out freely, as stipulated by law. Telecommunications regulation is essentially economic regulation, which is not the case in the broadcasting sector, where content is also regulated in accordance with cultural objectives.

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RLAN: Radio Local Area Network.

Satellite network: network using radio frequencies relayed by satellite.

SCS (Société de commercialisation de services): French company selling and managing mobile telephony subscriptions on behalf of an operator.

SFCA (Services et fonctionnalités complémentaires et avancés): ancillary and advanced services included in France Telecom's standard interconnection offer.

Shared-cost services: service in which the cost is divided between the calling and the called parties.

Shared-revenue services: service in which the called party receives a payment from the telecommunications service provider.

Shelter: shelter fitted out for the installation of an operator's co-located equipment for the unbundled local loop.

SIM (Subscriber Identification Module): smart card in the mobile terminal containing subscriber data required for network authentication.

Signalling: on a telecommunications network, signalling supports the exchange of the internal network data needed for call routing and can be compared with the road signs on a road network. It includes the information required to identify the user for billing or calling-line identification. When carried out by the network that carries the calls to subscribers, it is generally integrated in the exchange. It can also be performed by a separate network, called the semaphore network.

SIM Card (Subscriber Identity Module): subscriber and value-added services card (GSM standard).

Single tandem exchange interconnection: service listed in France Telecom's interconnection offer. It enables an operator interconnected at a trunk exchange (CT) to reach the subscribers served in that trunk exchange area (ZT), which is usually around two million lines.

SMG (Special Mobile Group): ETSI committee responsible for mobile communications work.

SMP operator: an operator is designated as having significant market power

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when, either individually or jointly with other operators, it enjoys a position of dominance, i.e. it is in a position to act independently of its competitors, its customers and, ultimately, consumers, to a considerable degree.

SMS (Short Message Service): these messages are transmitted in the signalling channel of GSM mobile networks using a standardised protocol and have a maximum length of 160 characters. A short message server integrated into the mobile network provides an interface with the fixed network.

SNG (Satellite News Gathering): ground stations for temporary satellite video links.

S-PCS: Satellite-Personal Communication Services.

SPIROU (Signalisation Pour l'Interconnexion des Réseaux Ouverts): new signalling interface developed by the French Interconnection Committee on ART's initiative to adapt the French network to the ETSI European standard, ISUP. This interface comprises the specifications governing the signalling of basic telephone call commands, advanced services and functions, interworking functions with user access signalling and intelligent network protocols.

Standard interconnection offer (a.k.a the interconnection catalogue): technical and commercial interconnection offer which operators designated by ART as having significant market power, pursuant to Article L. 38 of the Post and Electronic Communications Code, are required to publish
annually to enable other operators to establish their own commercial offers and prices. The standard interconnection offer also sets out the conditions governing physical interconnection between the incumbent and other operators.

Switch: equipment used to route calls to their destination by establishing temporary connections between two circuits in a telecommunications network or by routing data packets. France Telecom's network comprises a hierarchical system of switches; the higher the exchange in the system, the greater number of subscribers it serves.

Switched Internet: refers to Internet access via the France Telecom public switched telephone network used for switching the plain ordinary telephone service (POTS).

Switching: in a telecommunications network, switching allows temporary traffic connections to be established between two or more network points. This is carried out by switching equipment called exchanges located at different points of the network. The basic structure of a telecommunications

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network therefore comprises transmission links interconnected by exchanges. Packet and circuit switching are two techniques used in telecommunications networks. The first is used by Internet (IP) networks and the second by traditional telephony (PSTN) networks.

TBR (Technical Basis for Regulation): harmonised standard established by ETSI. TBRs are used as the basis for technical regulations, which lay down the essential requirements with which terminal equipment must comply.

Telecommunications: transmission or reception of signs, signals, text, image, sound or other information, by wire, optical fibre, radio or other electromagnetic means.

Télétel: database consultation service offered by France Telecom using Minitel teletex terminals.

Terminal equipment: equipment allowing a user to send, process or receive information. e.g. telephone, fax, modem etc.

Third-party billing: service enabling new operators to entrust the incumbent with billing for services offered to their customers via interconnection. In the case of special services, third-party billing can only be used for charged services (not for services that are free for the caller). As this market develops, this service becomes essential for effective competition.

Third-party collection: interconnection service, which enables a network operator to collect traffic from the incumbent's network on behalf of another operator that does not have infrastructure in the geographical area concerned. This service is used in particular by telephone operators wishing to provide service over an extensive area without having to roll out a network.

TRAC (Technical Regulations Applications Committee): CEPT committee traditionally set up to draft common technical regulations (CTRs) for terminal equipment.

Transmission: on an electronic communications network, transmission is the carriage of information from one network point to another. The medium used may be copper cable, optical fibre or microwave radio. (see Switching).

Triple Play: provision of three services (voice, data, broadband Internet access) over the same electronic communications platform.

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T-WIMs (Terrestrial Wireless Interactive Multimedia): generic name used by the ITU to designate wireless services that combine voice, data and images.

UMTS (Universal Mobile Telecommunications System): European standard third-generation mobile telecommunications system, designed to support a wide range of services integrating voice, data and images. At ITU level there are several competing standards for these systems grouped under the umbrella term IMT 2000.

Universal service: principle component of the public telecommunications service, defined by law. It includes the provision of a quality telephone service to all at an affordable price, the carriage of emergency calls free of charge, the provision of an information service and a directory in printed and electronic form, and the supply of public phone booths on the public domain. It also sets out special technical conditions and prices for disabled and low-income users.

URA (Unité de Raccordement d'Abonné)/Subscriber connection unit: refers to the part of a telephone switch in the France Telecom network used to connect subscriber lines and convert information to digital format.

Voice telephony: the ONP "voice telephony" Directive of 26 February 1998 defines voice telephony as a public service for the commercial provision of directly transported real-time speech via the public switched network or networks, such that any user can use equipment connected to a network termination point at a fixed location to communicate with another user of equipment connected to another termination point. The term voice telephony is used in Community directives to designate traditional Plain Old Telephone Service (POTS).

VPN (Virtual Private Network): a virtual private network shares resources on one or several public networks for the internal requirements of a closed user group, which is defined as a "group which has a common interest, which is sufficiently stable to be identified and which pre-dates the provision of telecommunications services". It responds to a need for both internal communication (within the user group), and external communication (to public network users). For businesses that have sites spread over a wide area, the virtual private network, established on the operator's network, can function like a private network, with its own private numbering plan; this simulation provides the same service as a private automatic branch exchange (PABX) while at the same time saving the business costly investments.

VSAT (Very Small Aperture Terminal): satellite telecommunications services using

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a narrow part of the total satellite bandwidth and a very small transmitting/receiving terminal for low or medium-speed data transmission.

WAP (Wireless Application Protocol): standard for adapting the Internet to the constraints of mobile telephones. It deals in particular, with the use of a suitable content format. This communications protocol is part of the gradual process of incorporating Internet applications into GSM mobile networks.

Wi-Fi (Wireless Fidelity): commercial name for the IEEE 802.11b wireless local Ethernet network (WLAN) operating in the 2.4 GHz band.

WIMAX (Worldwide Interoperability for Microwave Access): certified seal of interoperability between the equipment produced by different manufacturers supporting the IEEE. 802.16 standard.

Wireline network: network using metal cables or optical fibres as a transmission medium.

WLAN (Wireless Local Area Network): wireless network operating over a limited area.

WLL (Wireless Local Loop): local loop network where the traditional copper wires are replaced with wireless network technology, giving greater flexibility in infrastructure deployment.

WRC (World Radiocommunications Conference): international coordination in the field of radiocommunications. This coordination is essential because frequencies have no national boundaries and it is simpler to have similar types of service in the same frequency band. This conference, organised in connection with the ITU, is usually held every three or four years. The results, once incorporated into radiocommunications regulations, constitute international treaty. The Radiocommunications Assembly is held prior to the conference. After the conference, a preparatory meeting is held to prepare for the next conference.

ZAA (Zone à autonomie d'acheminement)/Local exchange area: in France Telecom's network, the exchange area is the area in which subscribers are served by one or several exchange(s) corresponding to a particular level in the network hierarchy.
For local exchanges (CAA, lowest level) the area is called the local exchange area (ZAA), and for trunk exchanges (CT) it is called the trunk exchange area (ZT).

ZT (Zone de transit)/Trunk exchange area: see ZAA.

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Abbreviations used in the graphs

EU 25

AT	Austria	FI	Finland	NL	Nederlands
BE	Belgium	FR	France	PL	Poland
CY	Cyprus	HU	Hungaria	PT	Portugal
CZ	Tchekoslovaquia	IE	Ireland	SE	Sweden
GE	Germany	IT	Italy	SI	Slovenia
DK	Denmark	LT	Lithuania	SK	Slovaquia
EE	Estonia	LU	Luxemburg	UK	United Kingdom
EL	Greece	LV	Lettonia		
SP	Spain	MT	Malta		

Others

FIN	Finland	IC	Iceland	US	USA
E	Elisa	JP	Japan	US NY	USA New York
FI	Finland	NO	Norway	US CA	USA California
TS	Telia Sonera	SW	Switzerland		

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