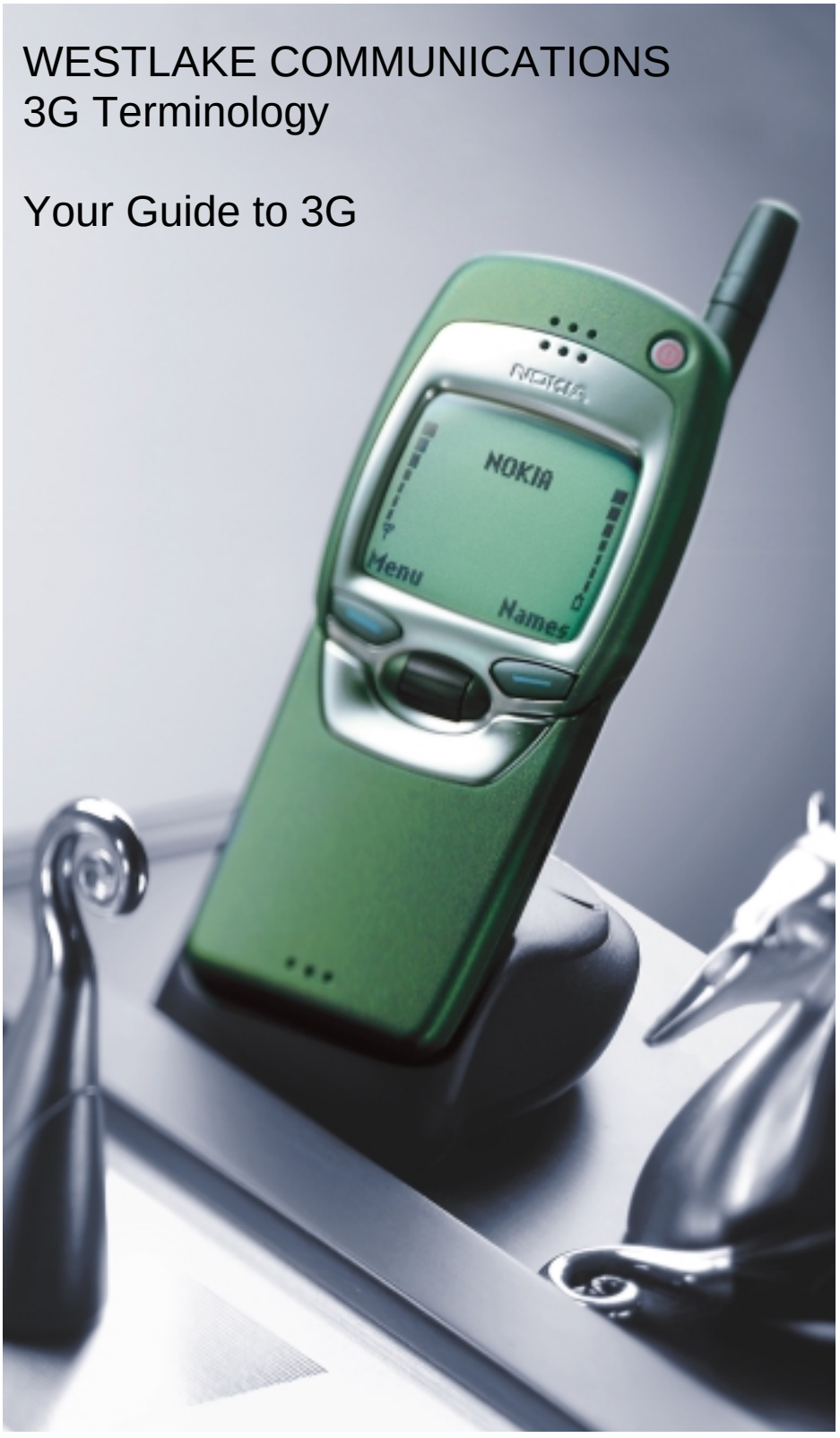
WESTLAKE COMMUNICATIONS
3G Terminology

Your Guide to 3G



0800 015 0286

www.westlakecom.com

CONTENTS

MAKING MOBILE MULTIMEDIA A REALITY

With mobile communications and the Internet coming ever closer together, the world is quickly evolving towards the Mobile Information Society. In the very near future, most personal communications - phone calls, images and multimedia messaging - will be mobile.

Did you know that estimates suggest that the milestone of one billion people in the world using a mobile phone will be reached by the end of year 2002? It is expected that 2000 10-15% of all mobile phones sold will be Internet capable, exceeding the sales volume of portable computers. In 2003, the number of mobile devices capable of Internet access will exceed the number of PCs connected to the Internet. This will have an effect on your daily life and business, and maybe even sooner than you think.

Third Generation (3G) mobile networks will be taken into use in the beginning of year 2002 in Europe and even earlier in Japan. From the beginning of 1990's we witnessed how 2G phones we becoming indispensable throughout the world. Now we predict that in the first years of the next millennium, we will see the same happening with 3G terminals. Do you know what you need to know in order to make the best out of 3G?

Keeping up with the latest 3G technology and service development can be really frustrating sometimes. One of the main reasons is that no one seems to use real words anymore. It's like the whole world can be explained with acronyms and nothing but acronyms. Westlake Offer this booklet in order to provide you with a guide to 3G terminology. We hope that it helps you to identify what is relevant in 3G and what you need to know when living and managing your 3G life and business. Remember that 3G is the Internet in everyone's pocket, and much more...

CALL US FREE ON

0800 015 0286

MOBILE INTERNET

3G migration to high-speed, packet-based data creates the conditions for the mobile and Internet worlds to converge, providing mobile users with new opportunities to access Internet-based services and applications. This in turn will stimulate demand for high data rate connectivity as well as helping reduce subscriber management costs.

Making Internet accessible through mobile devices opens a huge new business opportunity. But because much of this information is freely available, the value provided by the operator is based on pinpointing what is relevant. For example, frequently used applications can be made easily accessible through personalised portal services, where the operator can advertise new services and attract users to test them. Location-specific data will prove to be even more useful in offering here-and-now relevance.Another key business area for operators will be providing secure access for employees to their own business Intranet. Operators providing services in this segment need high-capacity solutions with guaranteed service quality and security.

MOBILE MULTIMEDIA MESSAGING

The development of imaging and video technologies, together with the evolution of multimedia standards, creates the environment for new messaging services. Our multimedia messaging concept will provide users with new ways of communicating while operators gain additional service revenue opportunities. Soon images will enrich both voice calls and text messaging, allowing the user not only to “listen to what I say” but also to “see what I mean”. Messaging is similarly enhanced through images, music or video clips.

OPEN STANDARDS AND OPERATING SYSTEMS

The development of new content and application will be an important driver in 3G. That’s why we have strongly encouraged the establishment of open standards and operating systems for mobile terminals, as well as the foundation of third-party developer forums. Crucially we support three key technology platform building blocks that provide the foundations to translate the Mobile Information Society vision into commercial reality: WAP to provide access to Internet content and, ultimately, the development of Multimedia Messaging Services; Bluetooth to enable seamless interconnection with other electronic devices; and FPOC to create an open mobile operating system that stimulates the creation of third-party mass market applications.

3G NETWORKS

Be the first with the first

The Nokia 3G system is a world-class combination of network technologies, products, operational support systems, and competent local people. Nokia can provide operators with complete end-to-end solutions, from phones to servers, such as roll-out and customer care services, systems integration and end-user applications. Nokia provides 3G systems for both WCDMA and EDGE technologies. These systems include Base Station Subsystems, Circuit and Packet Switching Systems, Service and Network Management Systems including Service Provisioning and Billing, and 3G Terminals.

Our position as a major supplier of infra-structure and terminals means that we can bring in-depth experience to help those GSM and cellular network operators that require a smooth evolution, thus protecting network investments. The Nokia 3G system fully conforms to global standards and consequently can minimise time to market.

As the networks evolve, it is vital that the supporting systems can be fully trusted. It must be possible to operate any given system by using the same processes and tools, whatever technology or end user services are deployed. Also, it is equally vital that users experience the same or better levels of quality when new services are introduced in the networks. With Nokia, continuity in the management of systems and services is fully assured.

Nokia can help you plan, deploy, manage and enhance your 30 system with a full house of service solutions. And we can offer all this with Roll-out and Nokia Care Packages, allowing you to mix and match service options to meet your exact needs-providing you with differentiation in the marketplace.

Nokia assures full continuity in the management of systems and services, ensuring investment protection today and tomorrow. Our full service offering ranges from developing end-to-end applications, to running and managing the underlying network, to sophisticated customer care, service provision and billing. Local service support is complemented by Nokia Online Services, a global web-based eBusiness concept.

1G

1st Generation Mobile Telecommunications. First generation systems are analog and were designed for voice transfer. AMPS, NMT, TACS, etc are included among first generation systems. With the recent proliferation of PDC/PHS in Japan, post-analog technology has advanced rapidly and consequently only a very few analog systems remain in existence.

2G

2nd Generation Mobile Telecommunications. Second generation systems are digital and are capable of providing voice/data/fax transfer as well as a range of other value-added services. At present, second generation systems are still evolving with ever-increasing data rates via new technologies such as HSCSD (High Speed Circuit Switched Data) and GPRS (General Packet Radio Service). Second generation systems include GSM, US-TDMA (IS136), cdmaOne IS-95) and PDC. US-TDMA/PDC have been structured atop existing first generation analog technology and are premised on compatibility and parallel operation with analog networks. GSM/IS-95, on the other hand, are based on an entirely new concept, and have been subject to increasing adoption worldwide.

3G

3rd Generation Mobile Telecommunications. Third generation mobile communication systems are scheduled for operational startup in Japan and Europe in 2001-2002. Applying high-speed data transfer and state-of-the-art radio terminal technology, third generations systems enable multimedia and are currently in the process of being standardised under 3GPP. Among the three types of system to be standardised (i.e. WCDMA-DS, MC-CDMA, UTRA TDD), Japan and Europe will adopt WCDMA-DS in a strategy to take the lead through superior service.

3G HARMONISATION

Harmonising of UTRA and cdma2OOO (third generation system in the US). At present, there are three coinciding technologies under third generation systems: DS-CDMA (UTRA FDD), MC-CDMA and UTRA TDD. Current chip rate for both UTRA FDD and TDD is 3.s8Mchips. MC-CDMA adopts the previous 3.8sMchips as is. As a result, transition from the existing 2G to 3G will be facilitated on a worldwide level. Despite the fact that it will not comprise one uniform system, convergence of 3G into three systems with maximum compatibility will still enable achieving the primary 3G goal of service to users over a seamless worldwide network.

3G.IP

Third generation internet project which will become a part of 3GPP with release 2000.


NOKIA
NOKIA

3GPP

3rd Generation Partnership Project. 3GPP's organisational partners have agreed to cooperate in the formulation of technical specifications for a third generation mobile system based on further evolved GSM core networks and radio access technologies.

3GPP2

3rd Generation Partnership Project 2. 3GPP 2 is an effort spearheaded by the International Committee of the American National Standards Institute's (ANSI) board of directors to establish a 3G Partnership Project (3GPP) for evolved ANSI/JIA/EIA-41 "Cellular Radio Communication Intersystem Operations" network and related RTT.

3GPP RELEASE 99

3rd Generation Partnership Project specification scheduled for release at the end of 1999. The first commercial UMTS systems will essentially be implemented according to this specification.

AAC

The MPEG-2 AAC (Adaptive Audio Coding) is a new audio coding standard used in digital television systems. According to listening tests, AAC provides the same sound quality as MP3 (MPEG1 Layer 3) with only 70% of the MP3 bit rate.

AMPS

Advanced Mobile Phone Service. Analogue cellular communications system developed and used in the US, and which operates in the 8OOMz band. AMPS covers the entire country, and is utilised by 80% of US mobile phone subscribers. It has been introduced into the UK and Japan in slightly modified form as the TACS system.

AMR

Advanced Multi Rate codec. During 1999, ETSI standardised this new speech codec for GSM. The codec adapts its bit-rate allocation between speech and channel coding, thereby optimising speech quality in various radio channel conditions. For this reason, 3GPP (under which the next stage GSM speech quality will be realised) has selected the AMR codec as an essential speech codec for the next generation system. AMR was jointly developed by Nokia, Ericsson and Siemens.

ANSI

American National Standards Institute. ANSI is a nonprofit organisation in the US which pursues standardisation within the industrial sector. It is also a member of ISO (International Standard Organisation). ANSI itself, however, does not establish standards. Instead, it assists in reviewing proposals put forth by various standardising bodies in the US and accordingly assigns a category code and number after approval.

ARIB

Association of Radio Industries and Businesses. An incorporated body designated by the Ministry of Posts and Communication of the Japanese government to pursue effective radio utilisation in the radio communication and broadcast sector. With regard to standardisation, ARIB is currently primarily engaged in standardising procedures for IMT-2000 (next generation mobile communication system) and digital TV broadcasting.

ATM

Asynchronous Transfer Mode. Technology for high-speed transport (up to 6.22 megabytes per second) and switching of various types of data, voice and signals. In contrast to Synchronous Transfer Mode (STM) which always transfers a frame whether or not data for transmission is present, ATM transfers a cell to the network only when data to be transmitted actually exists. Hence the dubbing “asynchronous”.

BEARER

The name of the ‘virtual bit pipe’ carrying a particular end user service

BLUETOOTH

Short range radio technology expanding wireless connectivity to personal and business mobile devices enabling users to connect their mobile phones, computers, printers, digital cameras and other electronic devices to one another without cables. Bluetooth has begun to experience rapid proliferation, and is fast becoming a defacto world-wide standard. Nokia participates as a founding member in the Bluetooth Special Interest Group (SIG). Current membership inSIG comprises over 1300 firms from all over the world.

BTS

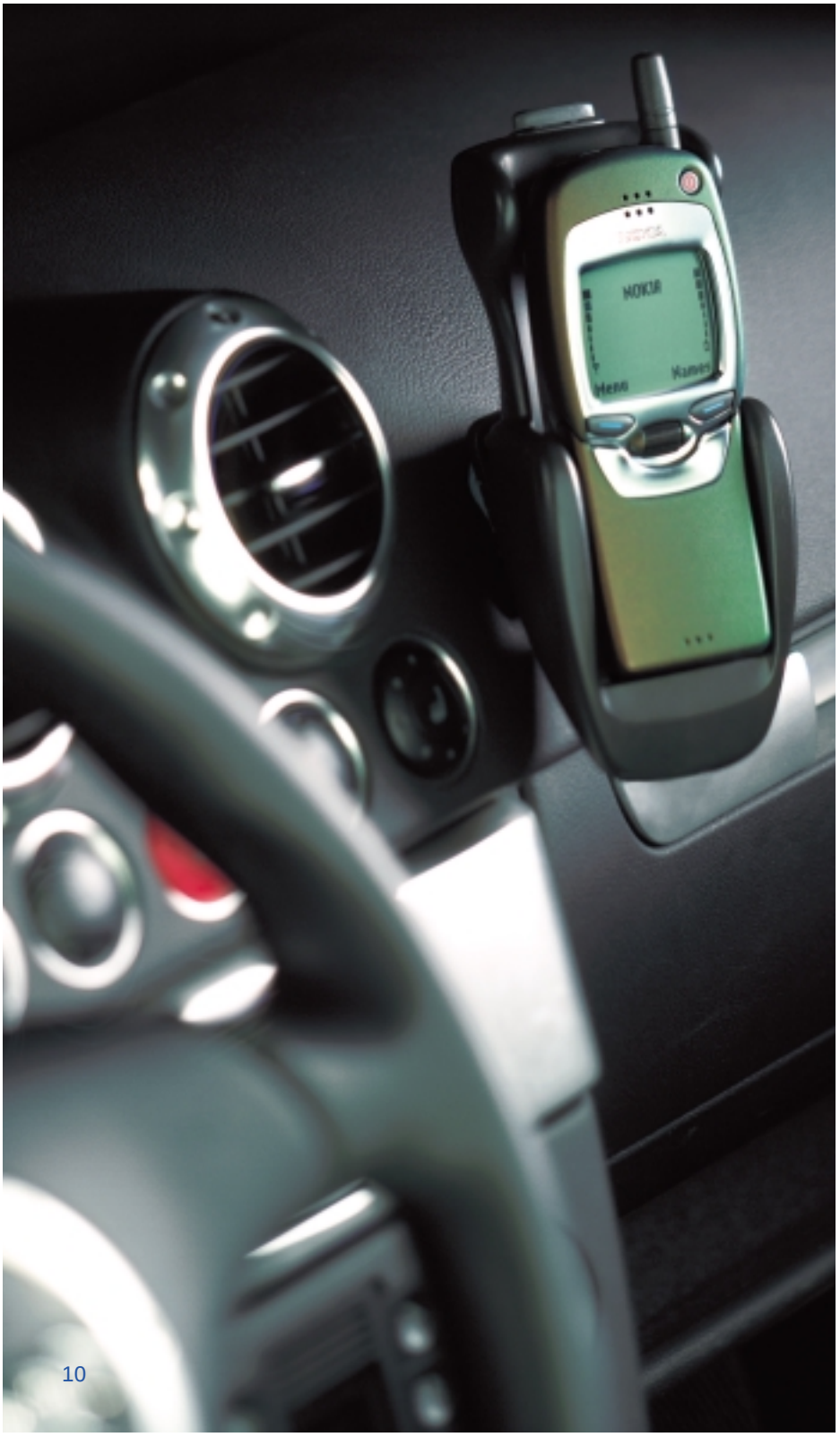
Base Transceiver Station. Although specifications differ for each system, the BTS effects radio communication with mobile stations (MS) via its respective radio access system and transmits/receives signals to/from connected radio network controllers (RNC) located along transmission routes.

CDMA

Code Division Multiple Access is one type of multiple access system used in radio communication. Other multiple access methods include TDMA, FDMA, etc.

CDMAONE/IS-95

Interim Standard-95 is one type of digital mobile phone system which applies CDMA to realise large volume traffic and enable numerous users to access a limited bandwidth. Also known as cdmaOne, this system is used in Hong Kong, North and South America, Korea and Japan.


NOKIA
Menu
Names

CIF

Common Intermediate Format. CIF is a video image format using 352 horizontal pixels and 288 vertical lines. The format is adopted in multimedia communication standards.

CIRCUIT SWITCHED SERVICE

This is a data transfer communication service which (as in the case of standard telephone service) applies circuitswitching for each call to establish a circuit with the other party and then disconnect that circuit upon call completion. However, circuit-switched services are losing their relevance with the development of packet-switching as typified by communication over the Internet.

CODEC

CODEC is an amalgam of the terms “Coder” and “Decoder” It generally signifies the encoding device/module which carries out highly efficient conversion processing from the basic digital signal to a compressed signal during digitalisation of voice and picture signals. Encoding specifications for the voice CODEC and image CODEC are stipulated by the G-series and H-series ITU-T recommendations, respectively. In the case of mobile communication, encoding specifications are established by the concerned standardising bodies.

CUTTING EDGE

Enhanced Data Rates for GMS Evolution, also referred to as GSM384 or UWC-136. EDGE is an evolution of GSM and US-TDMA systems. It provides data rates up to 384 kbit/s.

DIGITAL SIGNATURE

An electronic signature. A technology used to guarantee the reliability of information during electronic transactions. Digital signaturing is enabled through the application of open key encryption technology, and comprises electronic data verifying the identity of the user. A digital signature is created by coding data using an encryption key. Since only the user him/herself is in possession of the corresponding encryption key, the digital signature is essentially unforgettable. The digital signature is subsequently attached to data transmitted to another party to guarantee that the individual sending the message really is who he or she claims to be.

DIGITAL CASH

Generic term for new types of electronic currency being used over the Internet. Digital cash makes possible transactions between two parties through electronic communication only, thereby bypassing the need to actually exchange true money. As a result, product and service purchases become possible via the mobile phone without requiring cash or credit card.

EPOC TERMINAL

An operating system that turns voice-oriented handsets into Mediaphones and Wireless Information Devices. EPOC places a lighter load on the processor compared to present PDA operating systems and thus has the capacity to enhance the multimedia capacity of mobile phones. EPOC is being developed by Symbian, a joint company of Psion, Nokia, Ericsson, Motorola and Matsushita (Panasonic). It constitutes an open platform optimised for mobile phone use.

ETSI

European Telecommunication Standards Institute. ETSI is a European organisation corresponding to the Japanese ARIB under joint Japan-Europe activities related to WCDMA-DS, and plays a major role in 3G standardisation efforts.

FDD

Frequency Division Duplex. Radio technology using a paired spectrum. Used in cellular communication systems such as GSM; also applied under UMTS.

GGSN

Gateway GPRS Support Node. A gateway from a cellular network to an IP network.

GIF

The GIF (Graphics Interchange Format) file format was developed in 1987 by Compuserve Inc. primarily for the serial transmission of graphic images via a modem. GIF has become widely supported on a variety of platforms. It is standard for almost all Internet browsers and there is a high likelihood that it will be adopted by WAP browsers as well. The three advantages which make this format so powerful are (i) an interlacing function enabling rapid image recognition, (ii) transparency enabling fusion of image and background, and (iii) animation enabling timed /Sequential loop image display.

GPRS

General Packet Radio System. GPRS will provide packet switched data primarily for GSM based 2G networks. GPRS network elements consists of two main elements: SGSN (Service GPRS Support Node) and GGSN (Gateway GPRS Support Node).

GPS

The Global Positioning System is a worldwide radio-navigation system that was developed by the US. Department of Defence. In addition to military purposes it is widely used in marine and terrestrial navigation (for example car navigation systems).

GSM 1800

GSM cellular system operating in the 1800 MHz frequency band (also referred to as PCN or PCN 1800 or DCS 1800). Primarily used in urban areas in Europe.

GSM 1900

GSM-based cellular system operating in the 1900 MHz frequency band (also referred to as PCS 1900 and DCS 1900). Primarily used in urban areas in the US.

GSM 900

Global System for Mobile communication. Digital cellular network operating in the 900 MHz frequency band. This system is the most extensively used worldwide, having been adopted in over 100 countries in Europe, Asia, etc. In many such countries, GSM provides international roaming service.

H.323

The H.323 recommendation was formulated by ITU in 1996. It is an umbrella recommendation that defines multimedia communication algorithms and protocols for IP-based Local Area Networks. The newest version of the standard will also be used under mobile packet networks.

H.324M

The H.324 recommendation was formulated by ITU in 1995. It is an umbrella recommendation that defines multimedia communication algorithms and protocols for Public Switched Telephony Networks. The recommendation has been extended (H.324M) for use in mobile circuit-switched networks as well.

HIPERLAN

High Performance Radio Local Area Network. HIPERLAN Type 1 is a wireless LAN that is ISO 8802 compatible. It is intended to allow high performance wireless networks to be created, without existing wired infrastructure. In addition it can be used as an extension for a cable LAN. HIPERLAN is now in the process of being standardised by ETSI.

HIPERLAN/2

This short range variant is intended as a complementary access mechanism for UMTS systems as well as for private use as a wireless LAN type system. It will offer high speed access (25 Mbit/s typical data rate) to a variety of networks including the UMTS core network, ATM network and IP base network. Spectrums are allocated for HIPERLAN in the 5GHz range, and a project is underway in collaboration with CEPT (European Conference of Postal and Telecommunications Administrations) for extending this allocation either in licensed or unlicensed format.

HLR

Home Location Register. A data base system which manages subscriber data. It enables the smooth processing of ID/charged fee data, etc. during roaming in the case of a variety of differing communication devices and networks.

HSCDS

Hi Speed Circuit Switched Data. An upgrade to GSM networks that enables data rates up to 57.6kbps. HSCSD was introduced in 1999 to upgrade the GSM data rate from the previous maximum of 14.4kbps.

IMAP4

Internet Messaging Access Protocol. IMAP is a remote mailbox access protocol. It enables efficient operation such as downloading only essential data by first acquisitioning the e-mail header prior to actual e-mail download. This feature makes the protocol well suited to remote environments.

I-MODE

i-mode is a wireless service launched in Japan in spring 1999 by NTT DoCoMo. The service is accessed by a wireless packet network (PDC-P) and the contents are described in a subset of the HTML language.

IMT-2000

International Mobile Telecommunication 2000. IMT-2000 is an initiative of the International Telecommunications Union (ITU) to provide wireless access to global telecommunication infrastructure through both satellite and terrestrial systems, serving fixed and mobile phone users via both public and private telephone networks. Development is being pursued based on a “family of systems” concept defined as an amalgam of systems providing roaming on a global scale and extending IMT-2000 service functions to subscribers to all types of communication service providers.

IP

Internet Protocol. A communication protocol commonly utilised by communication hardware comprising the Internet

IPV6

Internet Protocol version 6. IPv6 is the latest IP version. Address exhaustion is prevented by means of a long address field, thereby enabling further Internet expansion. In addition, security and mobility are built into the protocol. Currently utilised IP addresses are almost all 1Pv4, and with the present rate of Internet growth this type of address will be exhausted by 2010. IPv6 on the other hand enables 10 to the 29th power more available addresses than the previous IPv4.

IRDA

Infrared Data Association. IrDA is a private sector body established in 1993 to promote standardisation in the field of infrared data communication. The organisation currently has over 160 member firms. IrDA is also the term generally applied to the system itself which operates in accordance with the standards established by the organisation. This system has been incorporated in notebook PCs, PDAs, and most recently in the NM208 (PDC) model portable phone by Nokia as well, and has become a worldwide defacto standard. The standards set by IrDA include the IrTran-P protocol for still images.

IRMC

Infrared Mobile Communication. This is a sub working group within IrDA which has defined infrared for mobile terminals (portable phones and portable information terminals).

IRTRANP

IrTranP is a standard system for the infrared transfer of digital still images between such devices as digital cameras PDAs etc. It was standardised by IrDA (Infrared Data Association) and adopts a JPEG file format for exchanged data.

ISDN

Integrated Services Digital Network. It signifies an integrated digital network capable of complete digitalising and handling of information from differing services including telephone, fax, data, images, etc.

ITU

International Telecommunications Union. ITU is a UN affiliated body engaged in standardisation relevant to international telecommunications. It includes two standardising divisions, i.e. ITU-T (standardisation for modems, ISDN, network interfaces for communication system operators, etc.) and ITU-R (standardisation related to radio communication services). Standards established by the organisation are referred to as “recommendations”, and are formally adopted as such only upon the unanimous consent of all member countries.

Iu

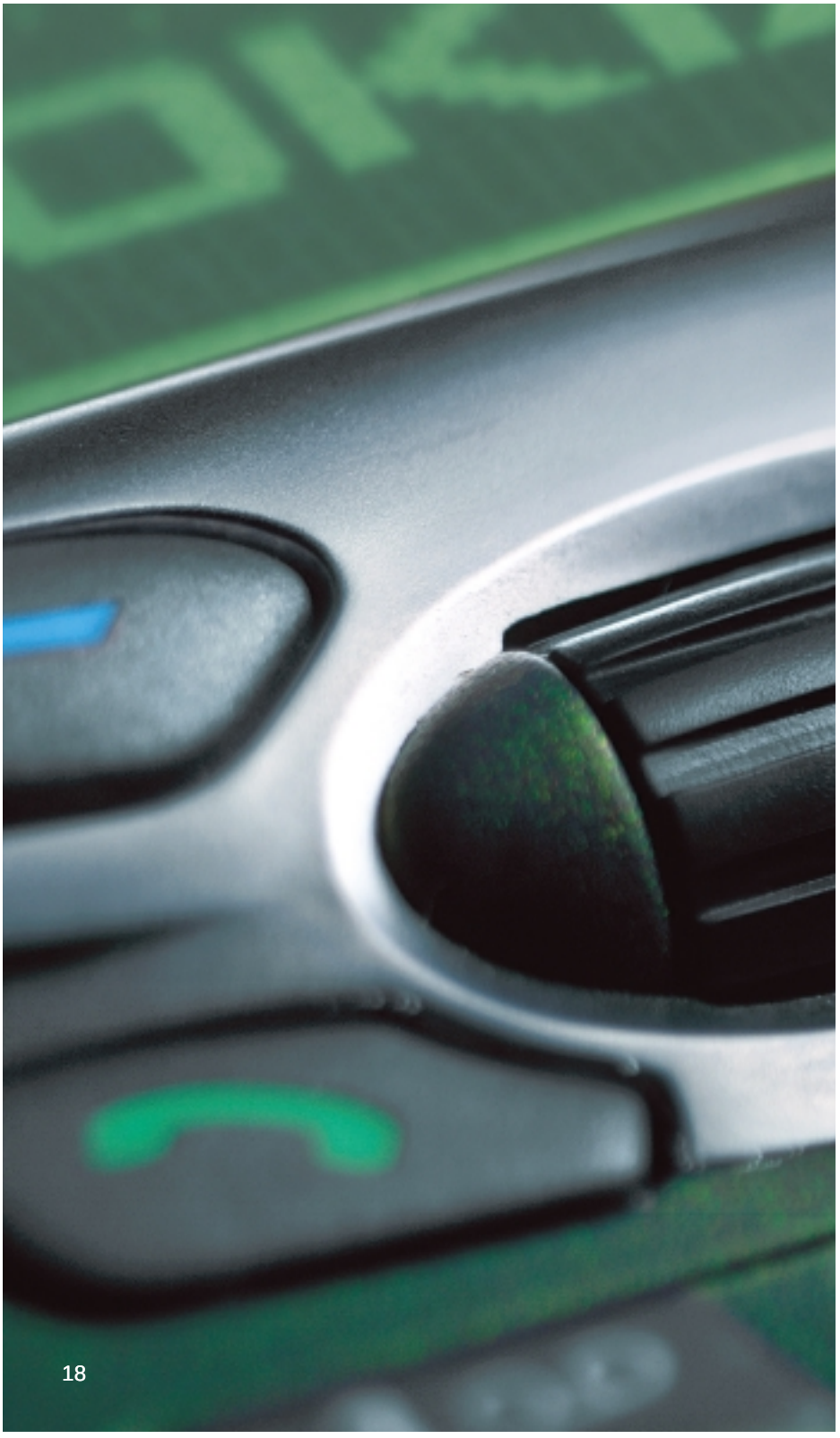
Standardised interface between a Radio Network Controller Network and Packet Subsystem (e.g. RNC3GSGSN)

Iub

Interface between a Base Station and Radio Network Controller.

IWF

Inter-Working Function. A system under voice band data communication service _MODFM: V.90 max. 56kbps/ G3 FAX: max. 14.4kbps_ which functions to convert digital signals transferred over the air interface to 3.1 KHz band data.



JAVA

Programming language developed by Sun Microsystems. Some versions of Java are likely to be used in the creation of wireless services. Java is primarily characterised by the fact that programs written in the language do not rely on an operating system.

JPEG

JPEG (Joint Photographic Expert Group) compression standard was developed by ISO and ITU in 1990. The standard is suitable for compressing continuous tone images, i.e. natural true-colour pictures. JPEG has become widely supported in digital imaging and photography and is expected to be used in mobile multimedia applications as well. Compression level is adjustable in line with required quality.

LUR

Open RNC-RNC interface.

MC-CDMA

Multi-carrier Code Division Multiple Access. Typically, this means the combination of three IS-95 carriers to form one wideband carrier. It is an evolution of IS-95 for third generation systems. Also called cdma2OOO. The current nomenclature is temporary, with a formal name for this technology to be determined under 3GPP2.

Mobile Media Mode. The WWW:MMM logo is a marketing innovation comprising a unifying industry-wide marketing symbol representing leading edge web-based products and services.

MMS

Multimedia Messaging Service is a new standard that is being defined for use in advanced wireless terminals. The service concept is derived from Short Message Service and allows for non-real-time transmission of various kinds of multimedia contents like images, audio, video clips, etc. As a further evolution of the current text mail, for example, electronic postcards, audio/video clips, etc. can be sent.

MPEG4

MPEG4 is a technology for compressing voice, video and related control data and is one of the MPEG (Moving Picture Experts Group) international standards. It is currently a focus of attention due to the fact that it enables high speed and stable video transmission even in heretofore difficult environments such as mobile communication. Incorporation of this leading edge technology will imbue 3G terminals with a rich multimedia capability.

MS

Mobile Switching Center. Equipped with a switching function for mobile communication.

NMT

Nordic Mobile Telephone. Analog cellular system originally developed for use in Finland, Sweden, Denmark, Norway and Iceland. NMT is operated in 450 MHz and 900 MHz bands.

PACKET SWITCHING SERVICE

A communication system whereby data is divided and transmitted in packets of set size. Its special feature is that communication between terminals with differing speeds and formats is possible since transmission/ reception is performed after data has first been stored at the exchange. In contrast to circuit-switching where a circuit is occupied until all data transfer has been completed, packet-switching improves efficiency through common use of circuits.

PCN

Personal Communications Network. A standard for digital mobile phone transmissions operating at a frequency of 1800 MHz (also referred to as OSM 1800). Adopted mainly in urban areas of Europe.

PCS

Personal Communication Service. Digital mobile phone network which operates at the 1900 MHz frequency band. GSM 1900 is one of the technologies used in building PCS networks (also referred to as PCS 1900 or DCS 1900). Such networks employ a range of technologies including GSM, TDMA and cdmaOne.

PDC

Personal Digital Communications. A digital cellular standard presently being used in Japan. To avoid the previous problem of lack of compatibility between the differing types of earlier analog mobile phones in Japan (i.e. NTT type and US developed TACS type), digital mobile phones have been standardised under PDC. In the case of the PDC standard, primarily six channel TDMA (Time Division Multiple Access) technology is applied. PDC, however, is a standard unique to Japan which renders such phone units incompatible with devices which adopt the more worldwide prevalent GSM standard. Nevertheless, digitalisation under the standard enables ever smaller and lighter mobile phones which in turn has spurred market expansion. As a result, over 930/0 of all mobile phones in Japan are now digital.

PHS

Personal Handyphone System. A digitalised evolution of the earlier analog cordless phone concept which enables outdoor use as well. PHS incorporates a unique Japanese standard which melds the advantages of the European DECT and CT2. The system operates in the 1.9 GHz band.

PSTN

Public Switched Telephone Network. Switch-connected type telecommunications circuitry provided by communication service operators. In a narrow sense, it implies a subscriber telephone network. In a broader sense, it is a concept which includes data communication as typified by the packet-switched network (also referred to as PSDN). ISDN is sometimes included within this definition. By connecting a computer or other type of terminal, a user can communicate with multiple parties. PSTN services are broadly categorised into four types, i.e. telephony, telegraphy, packet-switched (data type) and circuit-switched (for data use).

QCIF

Quarter CIF (1/4C1 F). QCIF is as video image format which employs 176 horizontal pixels and 144 vertical lines. Although resolution is courser than CIF, QCIF consumes less memory while still achieving an acceptable level of clarity on small displays such as those incorporated in mobile phones.

QOS

Quality of Service. QoS indicates user perception of a particular service and is defined in terms of a range of technical parameters including delay, jitter, reliability, etc. Under the OSI reference model stipulated by ISO, QoS is considered to be controlled at the network layer (third layer). Although definition varies depending on the type of network service, the following service classes apply in the case of ATM (asynchronous transfer mode).

(1) CBR (constant bit rate): Transfer at a set bit rate. For real-time transmission of voice and video data, etc. (2) VBR (variable bit rate): Transmission quality is enhanced by altering the transfer band depending on data volume. For variable bit rate voice and video. (3) ABR (available bit rate): Dynamic altering of data bit rate without band reservation. (4) UBR (unspecified bit rate): Attempts the best transmission possible without guaranteeing any specific throughput level.

RNC

Radio Network Controller under the UMTS system.

ROAMING

A service which enables the user to utilised his or her mobile phone via the network facilities of another provider outside the service area of the communication service operator to which he or she actually subscribes.

RRM

Radio Resource Management. One of the RNC functions.

SGSN

Service GPRS Support Node. Gateway between the RNC and the core network.

SMS

Short Message Service is a text message communication service prescribed by the European Telecommunications Standards Institute. A single 'short message can contain text up to a maximum of 160 characters, and can be promptly transmitted provided the receiving terminal is "on" and within the mobile network transmission range. If this is not the case, the short message is stored for later transmission when the receiving party terminal is turned on or reenters the network range. This service is particularly popular among young people in Europe and Japan.

SOHO

Small Office Home Office. A small scale office system which enables internet access for self business or work at home. With UMTS, a SOHO transfer speed of over 2Mbps is considered possible.

STREAMING

One-way transmission of video and audio contents over the Internet is called streaming. Streaming can be pointto-point or broadcasting from one origin to multiple receivers. There are a number of radio stations already broadcasting over the Internet, and video broadcasting as well is steadily gaining popularity. Streaming is also possible over advanced wideband wireless networks. In this manner, it becomes possible to view a certain news program or the video clip of a favourite singer without placing a burden on the terminal memory.

SYMBIAN

Symbian is a company created jointly by Psion, Nokia, Ericsson and Motorola in June 1998 with the primary aim of developing and standardising mobile phone operating Systems. The "EPOC" OS currently under development by Symbian achieves commonality among portable phones by differing manufacturers with regards to wireless information, network, contents service, messaging and other functions, in effect aiming at a defacto standard. Matsushita (Panasonic) as well became a shareholder in 1999.

TACS

Total Access Communications System. An analog cellular communications System derived from AMPS. It has been adopted in the UK (ETACS) and operates in the 900 MHz band. Likewise adopted in Japan first as JTACS, it exists at present as the further evolved NTACS with narrower bandwidth.

TTC

The Telecommunications Technology Committee. A private-sector corporate body established in 1985 to prepare domestic standards relevant to Japanese telecommunications.

TD/CDMA

Time DivisioneCode Division Multiple Access.

TDD

Time Division Duplex. Radio technology using an unpaired spectrum. UTMS also includes a band for TDD mode traffic. PHS and DECT incorporate TDD.

TDMA

Time Division Multiple Access. Used in current mobile phones (PDC). A digital transmission technology that breaks voice signals into sequential pieces of defined length, places each piece into an information conduit at specific intervals and then reconstructs the pieces at the end of the conduit. GSM and US-TDMA standards apply this technique. Compared to the FDMA (Frequency Division Multiple Access) applied in earlier analog mobile phones, it accommodates a much larger number of users by more finely dividing a radio frequency into time slots and allocating slots to multiple calls. Nevertheless, a shortage in the number of available channels is anticipated in the very near future. As a result, a more efficient system adopting CDMA is currently being developed under IMT-2000.

UMTS

Universal Mobile Telephone System: Third generation telecommunications system based on WCDMA-DS.

URL

An addressing method for specifying the numerous resources on the Internet in a uniform manner. A URL is indicated in the format: “protocol name” ://”host name”/”file name”. For example “http://www.nokia.com/3g/index.htm l” indicates the “3g index.html file” saved in the www server operating under the host name “nokia.com”.

USIM

Universal Subscriber Identity Module (Universal SIM). An upgrade of the SIM card (generally used under GSM) to enable use with IMT-2000.

US-TDMA/1S 36

A second generation system used in the US. Also referred to as D-AMPS (Digital AMPS). First digital system adopted in the US and covers the entire country.

UTRA

UMTS Terrestrial Radio Access. Often applied with identical meaning of WCDMA-DS.

UTRAN

UMTS Terrestrial Radio Access Network. UTRAN is a conceptual term identifying that part of the network which consists of Radio Network Controllers and Node Base stations.

VOIP

Voice over Internet Protocol. VoIP is not simply for voice over IP, but is designed to accommodate two-way video conferencing and application sharing as well. Based on IP technology, VoIP is used to transfer a wide range of different type traffic.

W3C

World Wide Web Consortium. A sector-wide body which promotes standardisation of WWW technology. Major Internet related vendors are consortium members, and to date the body has standardised a range of crucial technologies including HTTP, HTML, XML, etc.

WAP

Wireless Application Protocol. Wireless Application Protocol is the de facto worldwide standard for providing Internet communications and advanced telephony services on digital mobile phones, pagers, digital assistants and other wireless terminals. The WAP Forum was established in 1997 by Nokia, Ericcson, Motorola and Unwired Planet (now Phone.com). Its current members comprise over 200 leading firms in the wireless communication field.

WCDMA-DS

Wideband Code Division Multiple Access. A radio interface for UMTS. Characterised by use of a wider band than CDMA. Has additional advantages of high transfer rate, and increased system capacity and communication quality by statistical multiplexing, etc. WCDMA efficiently utilizes the radio spectrum to provide a maximum data rate of 2 Mbit/s. Originally, WCDMA was written with a “3G” indication. However, since it is now being reviewed under 30 Harmonisation together with two other systems, it is more precisely specified here as WCDMA-DS.

WLAN

Wireless Local Access Network. This type of network enables wireless access to an Ethernet network from a PC or other communication device via an access point, The Nokia WLAN format comprises a 2.4 GHz frequency band (no licensing fee), a PC card and an access point connected to wired infrastructure. Nokia applies an open standard (IEEE 802.11 and IEEE 802.11b) enabling wideband data access at data rates ranging from 2 Mbps to a maximum 11 Mbps.

WML

Wireless Markup Language is a markup language developed specifically for wireless applications. WML is based on XML

XML

The Extensible Markup Language (XML) is a format for structured documents and data. It was developed by the World Wide Web Consortium (W3C). XML is a meta-language, i.e. content is not directly encoded in XML but in a specific markup language defined using XML It corresponds to the successor language for the current HTML. In contrast to HTML where tags are pre-defined, the XML user can freely extend a data format applying his or her own uniquely defined tags. Since the tag structure in the case of XML enables the computer to automatically analyse data content, building EC (electronic commerce) and ED (electronic data interchange) systems is facilitated.

PROTOCOL

An agreed upon format used during communication or information exchange between two communication devices.

VHE

Virtual Home Environment. VHE is a 3G service concept where the end-user services and personal settings follow him wherever he goes and in whichever network he roams to. The terminal UI look-and-feel remains the same.

Contact Numbers

Customer Services

The following Westlake lines are open Monday to Friday 8.45am to 6pm and Saturday 9am to 5pm.

- All enquiries 0870 740 7717
- Fax number 0870 740 7718

Business Management Services

The following Westlake lines are open Monday to Friday 8.45 to 6pm.

- All enquiries 0800 015 0286
- Fax number 0870 740 7718

As part of our customer service policy, we may record your calls to our offices,

We may use these recordings to help train our staff.

Westlake Communications Ltd
International House
223 Regent Street
London
W1B 2QD

Tel : 0800 015 0286
Fax : 0870 740 7718

3g@westlakecom.com
www.westlakecom.com