

**EDITORIAL BY PETER R. MARTIN (SWISSCOM), BOARD MEMBER**

## DECT in Public Access Networks

"Public Access based on Wireless Local Loop applications are becoming the cost effective alternative to Fixed Wired Networks". This sentence which some years ago was completely unthinkable is now the reality. Hundreds of thousands of lines have been installed throughout the world, and new contracts are signed every week, wireless is a reality and no one can say that it has not covered expectations.

In my opinion DECT has proved itself as the best suited Wireless Local Loop infrastructure for the largest number of scenarios. The future evolution of the markets makes DECT the real solution for cost efficient and technologically sound investment for the operators. DECT enables operators to provide high potential systems for the development of basic services or integrating higher data rates, digital interfaces or mobility.

Easy provision of connections, low cost per line, maintenance benefits, wide range of services: this is a list of advantages which are inherent to the DECT wireless applications that have driven the development of these solutions. For SWISSCOM, DECT is the favourite standard which allows a fast and effective way to deploy network expansion in new domestic and foreign markets thus increasing the functionality of the existing fixed networks.

This DECT Forum News Letter is dedicated to the growing market of DECT Wireless Local Loop (WLL).



## The DECT Forum Mission

*DECT Forum is an international organisation formed by leading telecom operators and manufacturers. DECT Forum has representatives in all the major geographical regions.*

*DECT Forum provides a unique platform for the exchange of experience between users, operators, regulation and standardisation bodies to ensure the sustained growth and acceptance of DECT world-wide.*

## A PERFECT TECHNOLOGY FOR ACCESS PROVIDER

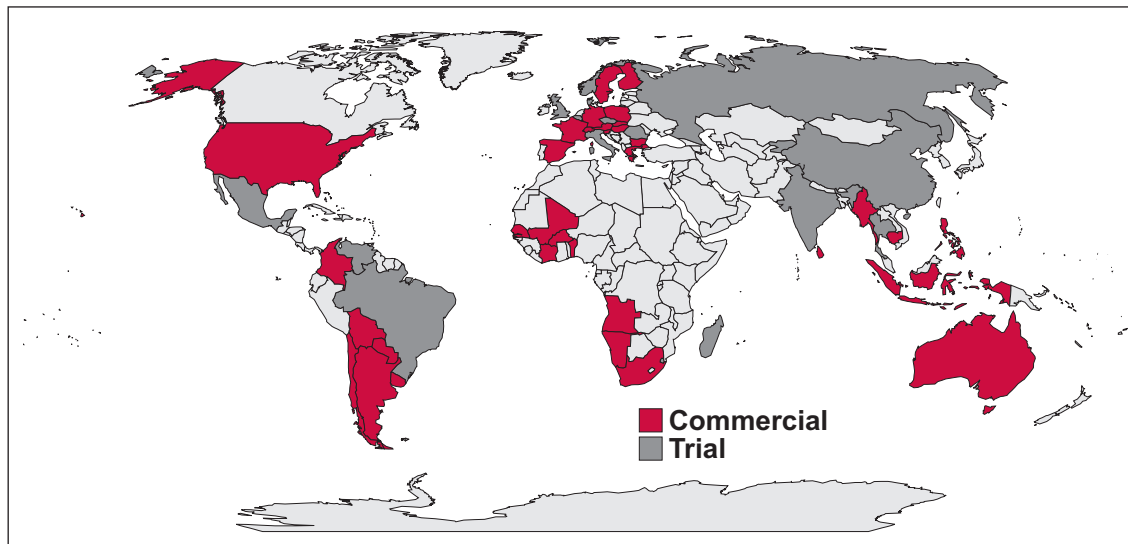
### DECT in the Wireless Local Loop

DECT has been awarded more contracts for Fixed Wireless Local Loop services than any other technology during 1996. And it seems that in 1997 the share of this technology will even increase. Why this success? What makes DECT sell better than the other technologies? Is it only because it is first choice of leading manufacturers or is there a technological reason for this superiority?

New telecommunication networks enable economic growth in many parts of the world.

Operators are working to rise the penetration of telecommunication services at the highest possible speed and at lowest possible costs. DECT local loop solutions offer high rollout speed at low cost

The DECT standard has been accepted in a large number of countries world-wide. Currently DECT has been accepted and introduced in Europe, and in most of the countries of America, Africa, Asia and Australia. DECT is now operational in more than 30 countries. The map shows the countries



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## News Bits

A DECT Conference held 24th and 25th June in Paris was again attended by delegates from all over the world. Participants were informed about the latest developments in the areas RLL, CTM, as well as the role Intelligent Network (IN) services will play in the near future. It was also mentioned that DECT systems have become operational in many areas of the world including in those areas where the respective operators had full freedom in choosing their preferred technology. On the following day, the delegates could attend a work shop to learn more about the huge potential of DECT to evolve into the next generation mobile technology (UMTS).

The 2nd Annual Indian DECT Forum Symposium took place on the 8th of August 1997 in New Delhi with a strong presence of participants from the Ministry, Operators and Manufacturers. The Minister of Telecommunications of India, Mr. Beni Verma chaired the opening session.

During the Symposium the question of having the frequency allocated for DECT has been seen from the Ministry as only a question of time while the DECT Forum members attending: Alcatel, Ericsson, Siemens, Crompton Greaves, C-DOT, presented contributions on DECT applications and other different topics..

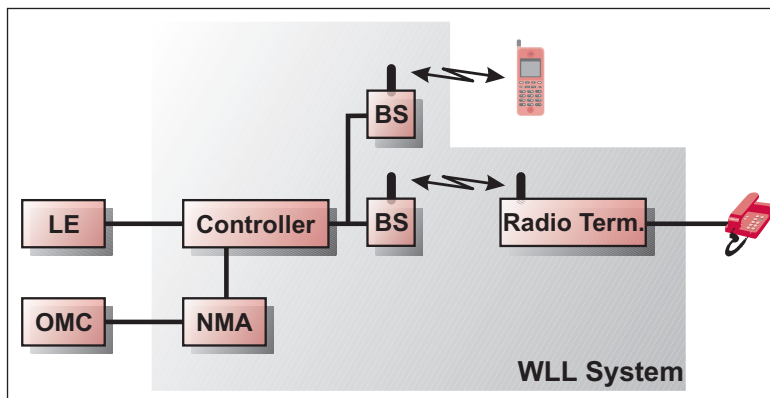
DECT Forum Member Swiss Telecom PTT which is awaiting to become a share holding company next year will change its name to "Swisscom". The name change becomes effective 1st October 1997.

that already have committed to public commercial DECT services. It also shows the countries with trial systems, which are operating to demonstrate the power of DECT in public applications (see also the list on the next page).

In Radio, or Wireless, in the Local Loop (RLL/WLL) the DECT infrastructure, base stations (BS) and controllers, are connected to a local exchange (LE), as is illustrated in the diagram. Being wireless means that domestic installation is easier and quicker - service provision can start immediately. DECT's large capacity allows coverage to be built up on an as-needed basis so up-front investment is reduced. Subscribers enjoy a voice quality like wireline and the availability advanced services as they appear in the market.

DECT is flexible and provides access to many types of telecommunication networks, supporting numerous different applications and services. The standard has been designed from the start with this aim. The range of DECT supported services in Wireless Local Loop includes voice telephony, fax, modem, dedicated data access, switched data access, ISDN, E-mail, Internet, X.25 and many other services in a cost efficient manner.

DECT provides solutions for densely populated areas with its traffic capacity of 10.000 Erlang/km<sup>2</sup>. It also provides a large area coverage with cells which can range of up to 15 km radius. It can be combined with point-to-multipoint backhaul networks for low density areas or provide the whole Access Network in dense urban areas. DECT is much more resistant to noise than other technologies, yet provides no interference to adjacent bands. DECT provides simple implementation with no frequency planning requirements thanks to its Dynamic Channel Selection (DCS). This also allows the coexistence of several operators and private users in the same area



without the need for frequency allocation.

Leading manufacturers have chosen DECT for their public Wireless Local loop systems. Operators benefit from multi vendor solutions to speed up innovation and decrease cost (i.e. interoperability with RAP or V5.x interfaces in the Access Network). DECT operators will have access in the future to existing terminal populations (with GAP) DECT provides these benefits that provides to new entrants and to established operators alike. In conclusion, DECT is a proven technology chosen by the lead manufacturers as being the best for Wireless Local loop. It has been extensively deployed and provides a future proof choice for an access network ready to incorporate new services as they appear. DECT Wireless Local Loop systems reduce upfront investment, and give faster implementation times than cable based solution.

Few of the reasons for the choice of DECT include:

- a large number of operators around the world are already using public DECT WLL networks today;
- secure and high quality access to services such as: voice, fax, modems, data, Internet, ISDN, multimedia;
- ease of deployment with no need for frequency planning;
- high resistance to noise, no interference with other systems;
- DECT is a proven and accepted technology;
- low cost of deployment, reduced upfront investment;
- end user satisfaction.

## DECT IN AFRICA

### South Africa Chooses DECT

Two DECT Forum Member companies have been awarded a Rand 2 billion contract to provide wireless technology for the provision of more than 400 000 lines to under-serviced areas over the next two years.

These lines will be served with Wireless Local Loop equipment using the DECT (Digital Enhanced Cordless Telecommunications) technology. Different scenarios are foreseen and to be provided with pure DECT systems or with DECT combined with point-to-multipoint radio backhaul.

Telkom, which successfully used DECT technology in field trials during 1996/97, expects the first services to be installed within by this autumn with rollout rapidly continuing over the next two years. The systems will be deployed in

## FORUM MEMBERS

### New Full Members

Advanced Fibre Communications, Petaluma, Ca., U.S.A.  
 Airtel Móvil, Madrid, Spain  
 CSyS, Munich, Germany  
 Freepoint Telecom, Walnut Creek, Ca., U.S.A.  
 Telcom, Moscow, Russia  
 Urmet S.p.A., Milano, Italy

### New Associated Members

Blitz Limited, Sliema, Malta  
 ComLab, Kjeller, Norway  
 GMD Fokus, Berlin, Germany  
 Shree Tele Network Pvt. Ltd., Ahmedabad, India  
 Wavecom, Issy-les-Moulineaux, France

### New Board Members

Enrico Venuti, Telecom Italia, Italy, replacing Sandro Dionisi

see <http://www.dect.ch> for a complete list of DECT Forum Members

**DECT PUBLIC SYSTEMS WORLD-WIDE**

Country	Operator	Supplier	System
<b>Africa &amp; Middle East</b>			
<b>Angola</b>	Angola Telecom	Alcatel	A9800
<b>Bahrain</b>	Batelco	Ericsson	DRA1900
<b>Benin</b>	PTT	Lucent	Swing
<b>Burkina-Faso</b>	Onatel	Alcatel	A9800
<b>Ivory Coast</b>	CITELCOM	Lucent	Swing
<b>Madagascar</b>	Telecom Malagasy	Alcatel	A9800
<b>Mali</b>	Sotelma	Alcatel	A9800
<b>Namibia</b>	Telecom Namibia	Siemens	DECTLink
<b>Pakistan</b>	Alcatel	A9800	
<b>Senegal</b>	SONATEL	Alcatel	A9800
<b>South Africa</b>	Kranskop	Alcatel	A9800
	TELKOM	Alcatel	A9800/A9500
	TELKOM	Ericsson	DRA1900
	TELKOM	Lucent	Swing/IRT + DECT
	TELKOM	Siemens	DECTLink
	TELKOM-Bochum	Lucent	Swing

**America**

<b>Argentina</b>	Cooperativa Centenario	Siemens	DECTLink
<b>Bahamas</b>	Batelco	Ericsson	DRA1900
<b>Bolivia</b>	Comtelco/Entel	Ericsson	DRA1900
	Cotel	Siemens	DECTLink
<b>Brazil</b>	Sercomtel	Ericsson	DRA1900
	Telepar	Siemens	DECTLink
	Telesp	Alcatel	A9800
	Telesp	Lucent	Swing
<b>Chile</b>	CNT Telefonica	Siemens	DECTLink
	CTC	Alcatel	A9800/A9500
<b>Colombia</b>	Telecom/Emcali	Ericsson	DRA1900
	Telecom	Siemens	DECTLink
	Transtel	Siemens	DECTLink
<b>Mexico</b>	TelMex	Lucent	Swing
<b>Paraguay</b>	CITSA	Siemens	DECTLink
<b>Peru</b>	Telefonica	Alcatel	A9800
<b>U.S.A.</b>	ComScape	Ericsson	SuperCordless
<b>Uruguay</b>	Antel	Ericsson	DRA1900
<b>Venezuela</b>	BT	Ericsson	DRA1900
	CANTV	Siemens	DECTLink

**Asia Pacific**

<b>Australia</b>	Telstra	Lucent	Swing
<b>Burma</b>	Myanmar PTA	Ericsson	DRA1900
<b>Cambodia</b>	CAMINTEL	Ericsson	DRA1900
<b>China</b>	PTA	Ericsson	DECT
	Beijing PTA, GuangXi	Siemens	DECTLink
	PTA Hunan	Siemens	DECTLink
	PTA Shandong	Siemens	DECTLink
	Shen Zen	Alcatel	A9800
<b>India</b>	Yunan	Alcatel	A9800
	DOT	Alcatel	A9800
	DOT	C-DOT/NSC	DECT
	DOT	IIT/Midas	DECT
<b>Indonesia</b>	Bukaka Singtel	Lucent	Swing
	Bukaka Singtel	Siemens	DECTLink
	Daya Mitra Malinda	Siemens	DECTLink
	Pramindo	Ericsson	DRA1900
	Pramindo	Lucent	IRT+DECT
	PT Input	Lucent	Swing
	PT Mitra	Ericsson	DRA1900
	PT Telkom	Alcatel	A9800
	PT Telkom	Ericsson	DRA1900
	PT Telkom	Lucent	IRT+DECT
	PT Telkom (Surabaya)	Siemens	DECTLink
	PT Telkom (Kalimantan)	Siemens	DECTLink
<b>Kirgisia</b>	Kirgiztelekom	Siemens	DECTLink
<b>Malaysia</b>	Telekom	Lucent	Swing

Country	Operator	Supplier	System
<b>Philippines</b>	Islacom	Siemens	DECTLink
	Islacom	Lucent	Swing
	PLDT - Camiquin	Alcatel	A9800
	PLDT - Princess Urduja	Alcatel	A9800
<b>Singapore</b>	Singapore Telecom	Ericsson	DRA1900
<b>Sri Lanka</b>	Suntel	Ericsson	DRA1900
<b>Thailand</b>	Telekom Asia	Siemens	DECTLink
<b>Europe</b>			
<b>Austria</b>	PTA (OPTV)	Siemens	DECTLink
<b>Belgium</b>	Belgacom	Alcatel	A9800
<b>Bulgaria</b>	BTC	Siemens	DECTLink
<b>Czech Republic</b>	SPT Telecom	Ericsson	DRA1900
	SPT Telecom	Siemens	DECTLink
	SPT Telecom-Brno	Lucent	Swing
	TeleDenmark	Ericsson	DRA1900
<b>Denmark</b>	HTV	Siemens	DECTLink
<b>Finland</b>	HPY-Helsinki	Ericsson	DRA1900
	Telecom Finland	Ericsson	DRA1900
<b>France</b>	CEGETEL St. Maur	Alcatel	A4200
	CEGETEL Nice	Alcatel	A9500
	CEGETEL Paris	Alcatel	A4200
	CEGETEL Paris	Ericsson	EDT360
	France Telecom	Lucent	Swing
<b>Germany</b>	DT-Mobil	DeTeWe-Hagenuk	DECT
	Mannesmann	Ericsson	DRA1900/GSM
	RWE/Vebacom	Ericsson	DRA1900
	Thyssen Telekom	Siemens	DECTLink
	OTE	Ericsson	DRA1900
	Deltav	Ericsson	DRA1900
<b>Greece</b>	Digitel 2002	Siemens	DECTLink
	HTCC	Siemens	DECTLink
	Hungartel	Ericsson	DRA1900
	Papatel	Ericsson	DRA1900
<b>Norway</b>	Telenor	Ericsson	DECT
<b>Poland</b>	Elektrim	Lucent	Swing
	NETIA	Alcatel	A9800
	Telek. Debicka	Siemens	DECTLink
	TPSA	Lucent	Swing
	TPSA	Siemens	DECTLink
	TPSA/Ostrowiec	Alcatel	A9800
	TPSA/Pruszkow	Alcatel	A9800
	TPSA/Czestochowa	Alcatel	A9800
	TPSA/Przemysl	Alcatel	A9800
<b>Romania</b>	IASI	Alcatel	A9800
	RomTelekom	Ericsson	DRA1900
	Elektrosviaz	Siemens	DECTLink
	FABSI	Siemens	DECTLink
	Ros Telekom	Alcatel	A9800
	Samara Koss	Siemens	DECTLink
	Slovak Telecom	Lucent	IRT+DECT
	Slovak Telecom	Lucent	Swing
<b>Slovakia</b>	Slovak Telecom	Siemens	DECTLink
	Telekom Slovenije	Alcatel	A9800
<b>Slovenia</b>	Telekom Slovenije	Lucent	Swing
	Airtel	Ericsson	DRA1900
<b>Spain</b>	Retevision	Alcatel	A9800
	Telefonica	Alcatel	A9800
	Telefonica	Ericsson	DRA1900
	Telefonica	Lucent	IRT+DECT
<b>Sweden</b>	Telia Mobitel	Ericsson	DRA1900
	Telia Mobitel	Ericsson	DRA1900
<b>Switzerland</b>	Swiss Telecom	Ericsson	DECT/GSM
	SwissTel Gandria	Lucent	Swing
	SwissTel Evionnaz	Lucent	Swing
	SwissTel Monte Morella	Lucent	Swing
<b>U.K.</b>	BT	Ericsson	DECT/GSM test

**Status of Standards**

ETS 300 764; Global System for Mobile communications (GSM); DECT/GSM Interworking Profile (IWP); Implementation of short message service, point-to-point and cell broadcast; published 15/05/1997.

ETS 300 755; Data Services Profile (DSP); Multimedia Messaging Service (MMS) with specific provision for facsimile services; (Service type F, class 2); published 31/05/1997.

TR 101 072; Global System for Mobile Communications (DECT/GSM); Integration based on dual-mode terminals; published 30/06/1997.

ETS 300 792; Global System for Mobile communications (GSM); DECT/GSM Interworking Profile (IWP); Implementation of facsimile group 3; published 30/06/1997.

ETS 300 788; Global System for Mobile communications (GSM); Integrated Services Digital Network (ISDN); DECT access to GSM via ISDN; Functional capabilities and information flows; published 15/07/1997.

ETS 300 787; Global System for Mobile communications (GSM); Integrated Services Digital Network (ISDN); DECT access to GSM via ISDN; General description of service requirements; published 15/07/1997.

CTR 6 ed. 2 (DECT radio), CTR 10 ed. 2 (DECT telephony), and CTR 22 (DECT Generic Access Profile) have been set into force by the European Commission. The decision has been published in the European Union's Official Journal of 07/08/1997. Within 6 months after publication any new DECT terminal equipment must comply with the applicable CTRs.



## Forthcoming Issues

Forthcoming issues of the DECT Forum News Letter will address special topics such as CTM, DECT world-wide, DECT Data

rural and under-served areas, as well as to enhance capacity in high-density areas where existing infrastructure is inadequate to meet demand. The standalone DECT system will be

used in high-density areas, while point-to-multipoint radio with DECT will be deployed in more rural areas with little or no existing infrastructure.

## DECT IN SOUTH AMERICA

### Wireless Local Loop Takes Off in Brazil

Following Brazilian plans to rise teledensity from 10 to 23 main lines per 100 inhabitants until the year 2003, Brazil has become one of the most promising markets of the world. Radio in the Local Loop (RLL) technology is being looked by TELEBRÁS, the operators holding, as one of the key technologies for fulfilling this objective. RLL promises short time for installation, low operation cost and optimum cost-benefit relation, just to name a few of the many properties. Based on these expectations and considering that one third of all the new fixed lines would use RLL solutions, the RLL market is estimated to US\$ 8 billion for the time frame from now to 2003. TELEBRÁS is conducting trials to evaluate various RLL technologies and to provide evidence of full service transparency for subscribers with the same services and voice quality as a wire-line network. Further requirements are high-speed data transmission, operation flexibility and, of course, fast installation.

DECT is the dominant technology within these trials. DECT equipment from various DECT Forum members is under trial operation till the end of 1997.

13 operating companies of the TELEBRÁS group will conduct 23 different trials. Approx-

imately 16 companies are proposing their products to the huge Brazilian market. In view of the large number of individual trial systems, the variety of technologies and the vast number of experts involved, it is fair to say that the knowledge gained from the Brazilian RLL trials will make them one of the most important activities in this field all over the world. Different configurations are tested in order to cope with scenarios ranging from urban and densely populated to rural and remote subscriber locations. For that purpose some equipment includes hybrid configurations of Point-to-Multipoint radio backhaul together with DECT coverage for the last part of the wireless loop. The current plans foresee installation of system at least 90 RLL subscriber terminals for each trial system. Interviews with the customers will be conducted to collect their comments concerning the telephone service during the trial period. In Latin America, Fixed Wireless Access within 1910-1930 MHz is also under tender, ordered or even in commercial operation in Argentina, Bolivia, Colombia, Chile, Ecuador, Uruguay, and Paraguay, using DECT for the provision of services in an economical and effective way. The Local DECT Forum Brazil has highly contributed to these results.

**A large number of handsets for business, public, and residential use is currently available on the market. See the next issue of the News Letter for a list of available products.**



1<sup>st</sup> column, front to back: Philips C911; Philips C311; DeTeWe Twinny; DeTeWe Varix M2; Bosch DECT-COM 557; Bosch DECT-COM 757. 2<sup>nd</sup> column: Hagenuk OfficeHandy; Hagenuk HomeHandy; SDX INDeX DH1; Ascom Avena, Ascom Ayato; Ascom Adesso. 3<sup>rd</sup> column: Siemens Gigaset 2000P; Siemens 2000C; Siemens 1000C; Siemens 1000S; Samsung SP-R5050; Samsung SP-R5000; Samsung SP-R5060. 4<sup>th</sup> column: Kirk dect-z; Alcatel 4074B; Alcatel 4074 H; Ericsson DT 360; Ericsson DT 120; Ericsson DT 310; Ericsson TH 337. 5<sup>th</sup> column: Sanyo DECT o2; Binatone Unit 1.