

The International Publication for DECT Markets, Applications, and Technology

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## The "DECT" Choice

In 1995, the arrival in France of the first DECT telephones stimulated what was at that time a monotonous and uninventive market. Consumer choice was limited to classic analogue cordless phones (CT0 -mono and multichannel).

For FNAC, given the context, it was obvious that DECT would win....! With this standard, the products finally gave the customers what they were looking for, offering a whole new way to communicate.

Today, DECT is taken for granted and is well-known in the consumer market (domestic cordless) and the workplace (PABX - public access infrastructures for increased mobility). It owes its success to its technical advantages: digital sound quality, security and confidentiality of communications - DECT eliminates interference with neighbors' cordless phones and makes it impossible to pirate your line. The expandable system enables several handsets to be connected to the same base, behaving like a mini PABX and capable of handling several communications simultaneously.

The DECT system has opened up a whole array of new possibilities, and indeed, manufacturers must now use their imagination to create tomorrow's products.

These new products will offer the same possibilities as professional PABX. All the services provided by such systems will, at last, be available via a user friendly interface (no need to continually refer to the manual).

A rosy future awaits DECT, which has succeeded in introducing the notion of the pleasure in using such technically sophisticated products. Despite its currently higher price, DECT will rapidly replace the analogue cordless standards.

A superb opportunity for specialized distributors such as ourselves...

<sup>1</sup> FNAC (Fédération Nationale d'Achats des Cadres), founded 1954 is a French leader in retailing cultural goods (books, multimedia, telephony).



## The DECT Forum Mission

*DECT Forum is an international organization 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 standardization bodies to ensure the sustained growth and acceptance of DECT world-wide.*

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## DECT IN THE HOME

### DECT: The Real Standard for Residential Cordless... And More

**In recent years cordless telephony has become an essential communications tool and a fact of every day life for a growing number of households.**

It is probably the freedom aspect of cordless telephony that has been the most attractive benefit for consumers:

- I can move during my calls
- I can keep my calls confidential
- I can call in a quiet environment

Within the residential cordless telephone segment, Digital Enhanced Cordless Telecommunications (DECT) will become the dominant segment in '98. The estimated market for DECT cordless phones is more than 11 millions units in 1998, a growth rate of more than 60% between 1997-1998!

Why is DECT so successful? What more can DECT offer compared to traditional cordless technologies? Why are consumers prepared to pay between 50-100 Euros more for a DECT phone?

There are three main factors to explain DECT's success:

**Reaction factors** which are related to custom-

ers' dissatisfaction with old analogue technologies, CT0, CT1

**Positive factors** which come from the pleasant unexpected surprises such as free inter-communication between multiple handsets

**Reassuring factors** which guarantee the consumer's long term investment. He or she can be confident that DECT will not become obsolete.

Let's have an in detail look at these different factors.

### Reaction factors

The old analogue technologies have several weak points: their poor acoustic quality (interference); their inability to protect your privacy; a bulky and fragile antenna; and high power consumption.

All of these shortcomings have contributed to give to cordless phones an image of "not reliable" and "of poor quality" phones. This was especially true in countries using the CT0 standard. Luckily the freedom which has been offered to consumers by the cordless telephones resulted in the creation of a sufficient demand among them, as this phenomena has been seen with GSM mobiles!

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## News Bits

In the Philippines, a multi-million contract has been granted to design, supply and install a complete state-of-the-art turnkey DECT based communications network for Bayan Telecommunications Inc. (Bayantel), one of the country's leading network operators. The project will include 90'000 wireline and 25'000 wireless local loop access lines, covering the regions of the Visayas and Mindanao, in the southern Philippines.

Basically customers primary requirement is good acoustic quality which must be at least the same as for a corded telephone, the "reference" point in customers' mind.

A technology leap was needed to rid cordless telephony of its negative image. DECT made it possible, similar to the "CD versus audio records" parallel.

But this association wouldn't have had the right effect if the product hadn't kept its promises. The most important advantage of DECT comes from its communication quality.

DECT has also managed to give other solutions to the problems of dissatisfied consumers: the DECT frequency bandwidth allows manufacturers to integrate antennas into the handset, which means no more protruding, obtrusive antenna.

### Positive factors

The DECT technology has also brought some unexpected benefits to the user such as the fact that DECT allows no-cost intercommunication between handsets connected to one base station. This function is without doubt becoming a major "Unique Selling Point" for DECT.

Another positive surprise of DECT is Caller Line Identification that will soon become a "standard" function for handsets with LCD displays, integrated in the DECT chipset and consequently offered for free!

### Reassuring factors

Several elements will contribute to the positive and "reassuring" image of DECT.

Among the most important is the Generic Access Protocol (GAP) compatibility. GAP is a protocol that guarantees a true inter-operability between a cordless handset and base stations from different manufacturers. Through this double advantage the user can reuse his "old handset" with a new cordless base station or he can buy the most up-to-date cordless handset and use it with his old base station. This function of GAP, which is still quite abstract for the end user, is now well understood by dealers who sort their cordless telephones between GAP and non-GAP products.

Consumers have always been worried by questions such as: how long this is going to work? How much it is going to cost me? The trend with DECT is to use batteries which are more and more "standard" (i.e. batteries which are available at any point of sale) and on the other hand to decrease their number while offering talk time and stand-by time which are long enough for a residential use!

Because of all the reasons discussed above and others which remain to be revealed to the consumer, DECT has definitely taken the leadership position in the cordless market. This phenomenon will increase, as mass-market distribution tends to prefer products with high added value.

At the beginning there was a product which kept

## FORUM MEMBERS

### New Full Members

RTX Telecom, Nørresundby, Denmark  
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### New Associated Members

Arthur D. Little Cambridge Consultants Ltd.,  
Cambridge, United Kingdom  
Saint Martin Téléphone, St. Martin

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

its promises. The market did the rest!

## Market Locomotive for Cordless Phones

Over the years mobility has been the magic word in communications. Driven by professional users, the growing popularity of mobile and cordless phones continues at the private consumer level.

If an average household plans to buy a new phone within the next 2 to 3 years, over 80% decide on a cordless phone. This attitude of consumers has led to a strong growing demand for cordless phones within the last few years. Today the share of cordless phones represents over 50% of the entire European terminal market. Nevertheless the share of cordless phones is still growing. Forecasts predict a 60% share in 1998. That means that nearly 2 of every 3 phones sold in the private sector will be cordless.

What are the reasons for the immense success of cordless telephony in Europe? On the one hand the trend to more mobility, especially at home, on the other hand the advanced transmission quality offered by implementing the DECT standard. Results of a market study cite the main advantage of DECT, speech quality, as identical to the key selling factor for cordless phones.

Meanwhile, DECT telephones are the market locomotive for cordless phones in Europe. In Germany 50% of the cordless devices on the market in 1997 were based on DECT technology.

Also the business segment is using DECT, both multi-cell applications and behind PBX applications. That makes sense. Employees spend more than one third of their working time listening to voice mails, calling colleagues and customers, leaving a message, or being simply out of reach without a means of accessibility. Therefore the use of a cordless phone could increase efficiency all types of business. Today wireless PBX accounts for 2% of PBX systems shipped in Europe. By 2003, wireless PBXs will account for approximately 13%, according to a recent Frost & Sullivan study.

Furthermore, DECT offers an immense market growth. Due to its unique features, DECT opens plenty of new market segments or customer groups, supporting a number of partners (suppliers, operators, retailers, etc.) to extend their business opportunities.

## TRENDS AND PROSPECTS IN CORDLESS TELEPHONY

### DECT@Home

**DECT cordless telephones have for some time now enjoyed full acceptance at home and at the office. The DECT standard is secure against eavesdropping and unites prolonged standby operation with enhanced telephone features; at**

**the same time, the design of DECT telephones has become more and more compact.**

Classic cordless telephones have numeric displays, rendering enhanced network telephony features, such as conference call, automatic callback

if busy and display of the caller's number are more difficult to implement in these devices, DECT handsets with full-graphics display are much easier to operate because they allow interactive user prompting. This makes it much more enjoyable to use the telephone and does away with having to memorize key codes or constantly consult the comprehensive manual.

**Easy-to-use and long-lasting**

A typical handset weighs somewhere between 170 to 200 grams today. Its illuminated, full-graphics display accommodates at least four lines of text. One line generally identifies which function keys are used to operate the user interface. The power consumption of DECT (10 milliwatt on average) is unbeatably low and one battery charge provides 130 hours or more of standby and well over 10 hours of normal operation.



*DECT market offers a large variety of cordless voice and ...*

The pronounced trend in DECT terminals is definitely toward even more convenient user interfaces. Soon, there will be DECT cordless telephones that look like GSM mobile phones and are equipped with voice-input

functions and color displays.

Color displays in DECT cordless telephones are not merely a means to provide better user interfaces; they are also paving the way for face-to-face communication. The cordless videophone will soon be available as a consumer product; first working prototypes weighing only 300 grams were presented at the 1998 CeBIT. Thanks to the low-power RISC processors used to provide more than 250 MIPS, full-motion video based on the H.263 Standard plus G.723.1 audio transmission was possible at 128 Kbps using four bundled DECT channels.

Face-to-face communication will no longer be tied to the office, but can take place at a location of the user's choice. By the time these DECT videophones are ready for series production, video codecs will be so powerful that they will produce adequate video quality over one ISDN-B channel, or even via the analogue telephone network. Application of cordless videophones will range from the service sector to child monitoring and wireless entrance telephones.

**GAP: the big opportunity**

Initially, the Generic Access Profile (GAP) interface was only a small common denominator that was used merely to define the basic functionality for internal and external calls.

However, GAP not only supported the handset and base station, the standard has also progressed

to cover future-generation DECT repeaters, that can be set up around base stations to close some of the gaps otherwise encountered. Quiet hand-over from one repeater to the next is a further feature provided.

GAP standardization still has its critical points; however, it does offer an ideal opportunity to orient the customer towards DECT. Opting for a GAP telephone now ensures that your 'old' unit will still work as a satellite handset when you upgrade your system to the next generation. So there is no reason for DECT users to look for another cordless standard.

If all DECT-system manufacturers were to take heed of these market mechanisms when implementing the CAP interface (Common Access Profile), DECT devices could be used universally in small systems, in large in-house systems and in public DECT networks in the future.

**Miniaturization without compromise**

This trend towards total mobility is aided by the fact that miniaturization is producing enhanced-feature DECT devices that weigh no more than 130 grams and fit easily into any pocket.

And miniaturization potential is by no means exhausted: a waterproof DECT wristwatch has been announced for the year 1999. Today, it difficult to say whether there is a real trend towards miniaturization or whether it is just a fad the ease of operation of these "tiny telephones" will largely determine their success.

It is not really necessary to reduce the size of DECT devices at all costs: the market also requires flexible desktop solutions. It is not surprising that recent developments have concentrated on producing and marketing cordless desktop telephones with large displays and integrated hands free functionality.

**Ideal for non-voice applications**

DECT is also gaining importance in the market for non-voice applications. Bundled DECT channels are opening the door to an elegant variant for cordless in-house data communication. The DECT-PC adapters still only use two channels for a combined data stream of 64 kbit/s. The target for the future, however, is to group several DECT channels to form a cordless data highway with 500 kbit/s or more – a cordless USB interface based on DECT is also conceivable.

When the DECT data adapter appears on the market in the form of a PCMCIA card, there is no obstacle to user-friendly Internet surfing from your hammock – via palmtop!



*... data products for every need of residential and small office users*

**Frequency Allocations**

After a period of study and careful analysis of the benefits of DECT equipment, a number of administrations within Latin America have come to the conclusion that DECT is one of the best solutions for the provision of Fixed Wireless Access in their countries, as well as for private applications.

In 1998, frequencies have been allocated in the band 1910-1930 MHz by a large number of countries such as: Brazil, Chile, El Salvador, Honduras, Panama, Peru, Dominican Republic which have added to the already existing list of Argentina, Bahamas, Bolivia, Colombia, Costa Rica, Ecuador, Mexico, Uruguay, Paraguay.

These decisions have followed the success of the first deployments of DECT in Latin America, the clear leadership of DECT in the world and the studies undertaken by CITELE, that ensure the coexistence with all the other systems to be deployed in this region of the world.

During the last meeting of the Permanent Consultative Committee III of CITELE, in Lima (Peru) 14<sup>th</sup> to 18<sup>th</sup> September 1998, the decision was taken to close the experts study group on coexistence in the 1.9 GHz band following the positive results obtained. In Resolution 69/98, PCC-III approved the publication of the results of the study while Res.70/98 formally approved unanimously the work done and in addition reinforced the Recommendation 32/97 which already pushed for the use of DECT in 1910-1930 MHz.

**Calendar**

Don't miss the DECT'99 conference which will cover all the latest issues of DECT communications worldwide. DECT'99 will again be held in Barcelona (Spain) from 26<sup>th</sup> to 29<sup>th</sup> January 1999.

**DECT RESIDENTIAL CORDLESS PHONE CHOSEN BY MILLIONS OF HOUSEHOLDS**

**DECT Residential Market Trends**

**The DECT Cordless Telephone is becoming the unique reference for residential cordless telephone use. Day by day, digital cordless telephones using DECT technology replace the traditional analogue cordless technologies (CT0 and CT1/CT1+). DECT Cordless Telephones are now sold at an affordable street price, everywhere in Europe. In the Asia Pacific region or in Latin America, sales are just starting after recent frequency allocations. Why such a success story?**

The excellent audio quality and the call privacy brought by DECT seem to be the main purchasing criteria. Moreover, manufacturers have launched DECT cordless phones with an array of attractive features: digital answering system, internal call, call cost, hands-free function on handset, etc.

cordless market has not been widely developed.

**DECT Residential Cordless Telephone: Street Prices Are More And More Attractive**

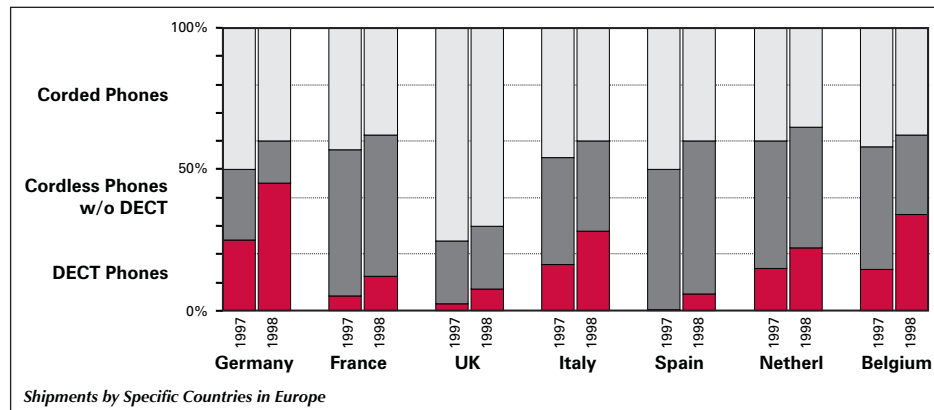
Street Price for a DECT Cordless Telephone continues to decrease, therefore accelerating the switch from analogue to digital. Price erosion 1997/1998 is between 15% and 20%. Some experts predict that the price erosion could be higher depending on the product portfolio structure.

**DECT Residential Cordless Telephone: More and More Products**

The Residential DECT Market is so attractive that many new players are continuously entering the market.

Just in 18 months (1997 against 1998) the number of DECT Cordless phones available in the market has doubled. In Western Europe, DECT Cordless Phones are sold under 57 different brand names!

As new network services, such as Caller ID, Call Waiting, and new network solutions - typically ISDN - are now coming to our



**Trends & Market Forecast**

The residential cordless phone penetration is still very low in Europe (40%) compared to the United States (80%). European DECT Cordless market has a big potential in terms of sales due to Cordless replacement rate and first-time buyers. As DECT shipments will represent more than half of the total cordless units in 1999, manufacturers have a strong interest in getting a leadership position as quickly as possible. All major players have already identified the huge potential of the DECT Residential Market. Alcatel, Bosch, Ericsson, Philips, Samsung, Siemens, to name a few.

The lower the price differences between CT1 and DECT, the quicker the increase in DECT penetration. Some CT0 countries are considered as markets of major potential in coming years.

Hence few DECT players have entered into these CT0 countries, but Telcos and retailers are already pushing the DECT standard and the product benefits.

**Shipments Evolution (1997 to 2002) by Standards**

Telecom experts agree on the major trend that in Europe the substitution between CT1 Cordless and DECT Cordless occurred in 1997 while the CT0 to DECT shift will probably happen during 1999-2000.

living room, DECT Residential Cordless Phones are already compatible with these services.

Undoubtedly, DECT is becoming the unique reference for residential users for the next five years at least.

**Shipments by Country in Europe: 5 Key Countries**

In Europe, the largest market places are Germany, France, Italy, UK and Spain. In Eastern Europe, DECT Cordless penetration could be higher because the analogue

