EDITORIAL

ETSI and DECT Forum Build the Future Through Partnership

At the European Telecommunications Standards Institute (ETSI) stand at Telecom 99 in Geneva, the ETSI leitmotiv was 'Building the future through Partnership'. DECT Forum and ETSI put this into practice with a joint promotion of DECT technologies. DECT Forum was one of the 7 standardization partners invited to participate in the ETSI stand.

«The Partnership with DECT Forum was very successful and provided a good opportunity to demonstrate the collaboration that exists between our organizations. DECT is the most successful digital standard for cordless applications and is the only cordless technology among the IMT-2000 family member that is fully available today,» stated Mr Christopher Corbett, ETSI Marketing Manager. «I am very enthusiastic about our collaboration with the DECT Forum and our joint efforts in 1999 have gone a long way to reinforce our partnership for the years to come.»

During Telecom 99, the partnership between the DECT Forum and ETSI also included the production of a DECT brochure that was distributed to Telecom 99 visitors. This brochure is now available on the ETSI web site and gives DECT market information as well as some forecasts for the next few years.

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 worldwide.

THE IMPORTANCE OF DATA DEMONSTRATED AT DECT 2000

DECT 2000: News and Views!

From January 18th till 20th, 2000, IBC's fifth annual DECT Congress will be held at the Cavalieri Hilton Hotel in Rome, Italy.

As in previous years participants will all be key industry players, from manufacturers and suppliers to operators and customers. This congress will be an excellent opportunity to catch up with the latest news and views on DECT.

The conference will cover such topics as the positioning of DECT, market development in general and more specifics about the various DECT applications, market drivers for DECT evolution and an outlook on the future of DECT.

For the first time in history DECT Forum members will take the opportunity to present live demonstrations of a variety of data applications at the DECT Forum stand in the exhibition area. The demonstrations will show why DECT is perfectly suited for creating a mass market for wireless data solutions. Demonstration on show will be for example wireless Internet access, wireless video conferencing and WAP over DECT. More information on the demonstrations can be found in the article «DECT 2000 demonstrations» below.

We hope to welcome you at the DECT Forum stand at DECT 2000 in January in Rome, Italy.

DECT Forum Members Present Progress In Data Communications

Several DECT Forum members (all participating in the DECT Forum Data applications Workgroup) will present at DECT 2000 their progress and data applications possible with DECT today.

ALPS will provide a demonstration with a digital still camera connected to a notebook PC via a DECT link. Thus the digital camera settings can be remote controlled from the PC, pictures can be taken and downloaded from the camera to the PC via the DECT DATA link. Involved are a standard digital still camera, a notebook PC and two ALPS Virtual Cable DECT DATA modules. The Virtual Cable modules are connected to the RS232 interface of the camera and the notebook PC. Even the camera and the notebook PC are connected wireless; no additional software beside of the standard camera control software is required to let the system work.

Ericsson demonstrates Personalized Real-time Corporate Information access using a Wireless Personal Digital Assistant with DECT-WAP technology. The end-user uses the PDA to be more efficient in day-to-day work situations. The PDA is personalized – the user has a dedicated set of information services to choose from. All informational links can be changed according to the personal needs. This provides the worker with a Virtual Home Environment,

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News Bits

A few months ago, on the request of some member states, the CEPT ERC Spectrum Engineering (SE) Working Group undertook to reassess the risk of interference between GSM 1800 and DECT operating in adjacent frequency bands (GSM1800 using 1710-1785 MHz paired with 1805-1880 MHz and DECT using 1880-1900 MHz).

Thanks to the active partici-pation of The DECT Forum in the Working Group and to the «DCS algorithm for DECT and intracell handover for GSM 1800», the main conclusions of the just approved report (SE(99)152) are as follows (quote):

1. DECT has very low probability to cause harmful interference to GSM 1800 systems.
2. A guard band is not required to protect DECT from GSM 1800 interference, but measures are proposed to facilitate the coexistence when the GSM sub-band 1878-1880 MHz is used.

In November 1999, the ITU Task Group 8/1 completed their «Detailed Specification of the Radio Interfaces of IMT-2000 [IMT.RSPC]» which includes DECT (called IMT-FT – IMT Frequency-Time – in the ITU terminology) as one out of 5 IMT family members. Later that month, their parent Group SG 8 adopted this specification, making DECT definitively a ITU family member.

were the user can access his own information any time, any place.

Philips Business Communication will demonstrate mobile Internet access from a laptop PC.

Using a standard format type II PC card the laptop will run a web browser accessing the Internet via a DECT infrastructure to a laptop running the Internet application and connected by a similar type of interface to the DECT infrastructure.

The use of standard format PC cards for this DECT interface will allow the users increased freedom to move around without any significant additional hardware.

RTX Telecom will show two different applications of DECT Data:

1. A Wireless ISDN (IIP) system. One end of the wireless system is a DECT ISDN fixed part connected to an ISDN line. To this fixed part a number of standard GAP handsets are supported. An ISDN portable part is then connected to the fixed part over the air using the Intermediate ISDN access Protocol. At the portable ISDN part a number of standard ISDN telephones can be connected. The system is implemented using LU7/LU8 data services.

2. A Wireless videoconference System using DECT Packet Radio Service (DPRS). The fixed part of the systems consists of a PC with a camera and a DECT FP connected to the PC using the USB interface. To the FP a number of standard GAP handsets can be connected. The portable part of the

demo system also contains a PC with camera and a DECT PP connected via the USB interface. The FP and PP are wirelessly interconnected using DPRS supporting the LU10 services and having a unidirectional throughput of up to 552 kbit/s.

Siemens will show the combination of cordless speech and data within a basestation with an analogue line interface. A standard V.90 56 kbit/s modem is included for the data path in parallel to a comfort speech basestation.

The air interface is based on DPRS. The Data link is setup via a Gigaset M101 Data wireless RS232-adapter. For speech transmission two Gigaset 3000C comfort GAP-handsets are used.

URMET will demonstrate that a normal commercial portable bar code reader can be real time connected to the Personal Computer.

Instead of storing the data of the products on the shelves into the bar code reader, this application connects the code reader directly to a PC and to the Data Base, allowing for real time processing of the data and acknowledgments back to the mobile operator of the reader.

The radio connection is DECT standard using data transmission at low speed (2 kbit/s) to one or more RFP's (Radio Fixed Part) and up to 6 bar-code readers can be working per RFP.

The mobile Radio Part can be easily integrated into the Code reader machine and even connected to a portable handset for a normal Voice DECT service using the same RFP.

NEW TRENDS IN DECT DATA

DECT and Multimedia Applications

Data traffic on fixed and mobile networks is increasing steadily. Some operators say, that they have already more traffic generated by data applications than by voice, and they expect up to 90% of traffic coming from data within the next five years. A big piece of this cake will come from Multimedia applications.

What is Multimedia?

For people on the move, major aspects of Multimedia are expected to be:

- **Real-time video telephony**. Fixed line video telephones initially were used for face-to-face conversation, but a mobile videophone offers much more benefits than that. The camera can be used for showing things on the move: tricky situations on construction site, car damages, children playing in the garden and so on. The screen allows mobile access to a door camera, looking via a surveillance camera into a child's room or to survey other places.
- **Internet access**. Until now, the place for the Internet is the PC on the desk. Mobile Internet access devices will overcome this limitation and offer valuable services wherever you are.
- **Download or streaming of video and audio contents** are special types of interactive services. In the mobile environment they will be used mainly for entertainment, e.g. playing MP3 music.

Download means to pull the content with lower speed, store it in the terminal and play it offline. Streaming means playing of the content in real time, but with some delay. This delay is due to buffering which is needed for smoothing the bursty internet transmission.

- **Interactive games** are a new dimension of games in mobile environment. Different people can play the same game, one against the others, when they are logged into the same server. Of course younger people are expected to be the main drivers of this business.

DECT is well prepared for these applications.

Which DECT data profiles are suitable for Multimedia?

Most important is the new DPRS (DECT Packet Radio Service), which is decided in its 1st version now (up to 552kbit/sec). The 2nd version will cover 2Mbit/sec and will be ready in the middle of 2000. DPRS replaces the former profiles A,B and C and allows different transmission modes with inherent error protection. DPRS and GAP are both under the umbrella of DMAP (DECT Multimedia Access Profile). However, since most Multimedia applications

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VIDEO TELEPHONY STANDARDS

In fixed networks there are three standards used for video telephony, defined by ITU

These standards include the definition of end-to-end protocol, audio/video multiplexer and Audio/video codecs.

For video telephony in the world of 3rd Generation Mobile Communication (3G) a slightly different version of H.324 was decided by 3GPP in 1999, the 3G-H324M. It uses circuit switched transmission on the air interface, because packet switched radio transmission cannot achieve the appropriate QoS for real-time video telephony in the first phase of 3G networks. 3G-H324M has some measures for error prone networks. The video codecs are H.263 and MPEG4 (simple profile). Since they use the same core technology, image quality and compression efficiency is the same. In addition, both codecs have similar mechanisms for error resilience. Japanese 3G manufacturers prefer MPEG4, while H.263 gives a better base for interoperation with existing corded video telephones. The best way is probably to have both implemented in a mobile terminal. The mandatory audio codec defined in 3G-H324M is the AMR-CODEC (Adaptive Multirate Codec), which is the mandatory codec also for voice calls in 3G. This is a difference to ITU H.324, where G.723 is the mandatory Audio codec. Standardization work for packetised video transmission over the air has already started and will be based on H.323.

The image quality, which can be achieved with video telephony, is (roughly) defined as image frames/sec with two different resolutions:

For smoothly moving video 15 frames/sec are required. This can be achieved at 64 kbit/s (error free) for QCIF and at 128 kbit/s for CIF, respectively. Unfortunately this is highly dependent on the amount of movement in the video. The values given above are valid for video streams with typical video telephony scenes, not for James Bond movies...

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will present audio and video simply as data, Multimedia likely will happen mainly inside DPRS.

The «D»-profile defines data transmission in one unprotected channel (32kbit/s) and will be of minor impact for Multimedia applications.

Definition of proper DECT data profiles was an important step. But the data format by itself needs also to be defined and standardised. As an example for Multimedia, this article will give a brief introduction into Mobile real-time video telephony.

Real-time video telephony is the most demanding Multimedia application. Since uncompressed video data is far too much for transmission over telecommunication networks, a video compression/decompression unit (codec) has to be implemented in the terminals. That takes a lot of processing power. For appropriate quality of service (QoS) a continuos high datarate has to be transmitted, in combination with low delay.

Mobile video telephones are in prototype stage today: a very advanced prototype of a mobile DECT videophone was presented at the Telecom fair ´99 in Geneva (picture below). With a volume of 130 cm³ it is astoundingly small. It can perform 15 image frames/sec video compression according to ITU H.263, implemented as Software on a fast RISC processor. Two CMOS-cameras (face and environment view) and a reflective TFT-LCD screen are built in. Transmission is done with four DECT channels, using a protocol subset of H.324M (see box). 50 minutes of battery powered video operation are possible.

Conclusion

Standardization of Multimedia data, e.g. video, is very well developed today. The technology for mobile Multimedia terminals is available. DECT is the leading technology for cordless mobility with a clear migration path to 3rd generation mobile communication. DECT offers a full set of flexible and matured standards guaranteeing reliable development and interoperability. It has a well-defined interface to fixed networks, e.g. ISDN. Because of its high data rates it is very suitable for video and other Multimedia applications. As a result of its well-defined data profiles, DECT can be used for Multimedia today and it can anticipate future applications of 3G mobile networks.

SETTING TRENDS IN WIRELESS

DECT Forum at Telecom 99

The DECT Forum was present at Telecom 99 on a special stand organised by our partner the European Telecommunications Standards Institute (ETSI).

This enabled both organisations to benefit from all the exhibition visitors who were on the stand in search of information about building and using successful standards. Indeed, ETSI invited a total of seven standardisation partners from different fields in telecommunications and data networking to work together on its stand.

As a result the DECT Forum presented at the ETSI stand its activities together with organisations promoting GSM, Synchronous Transfer Mode (ATM), Universal Mobile Telecommunications System (UMTS) and Digital Video Broadcasting (DVB).

Additionally ETSI Developed for DECT, and also for all other main standardisation areas, a comprehensive brochure presenting a clear definition of the standard, its potential, and its performance and future outlook.

These brochures were clearly a big success as visitors took them away in very high volumes.

All visitors to the DECT Forum stand were received by DECT Forum representatives and could be informed in depth about the standard, its advantages and its future direction and about the benefits of the DECT Forum Membership.

Telecom 99 – The Main Messages This Year:

The main themes of Telecom 99 revolved around the convergence of fixed, mobile and Internet services, the arrival of multimedia, and the development of new end user applications for large corporations, SME/SOHO or the general public.

All the large and established telecom vendors continued to have enormous stands presenting solutions for the migration from legacy circuit switched networks to IP connectionless networks, a message which was clearly welcomed by incumbent operators.

For the first time, large IT and data networking companies made a significant appearance at Geneva, with Bill Gates himself flying in to present Microsoft's view of the important role tomorrow's communications networks will play in our society. Other leading datacom companies presenting a new IP centric world included Cisco Systems, Sun Microsystems, Newbridge, 3M and 3Com to name but a few.

DECT at Telecom '99

DECT products were well present at Telecom '99, both by the DECT Forum members who presented their current products and future visions, but also by new companies using the DECT standard in innovative new products and solutions like a cordless door intercom and cordless data and video communications.

Most suppliers gave an indication of their future direction with DECT resulting in the presentations of many new ranges of DECT handsets and solutions for the Wireless local Loop and the Business environment and the Consumer market.

It was also good to see that DECT products are no longer provided by European manufacturers only but also many suppliers from the Far East, India, and Russia are now using the DECT standard in their products and professional solutions more and more.