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FOR USERS OF HANDHELD & POCKET PCs

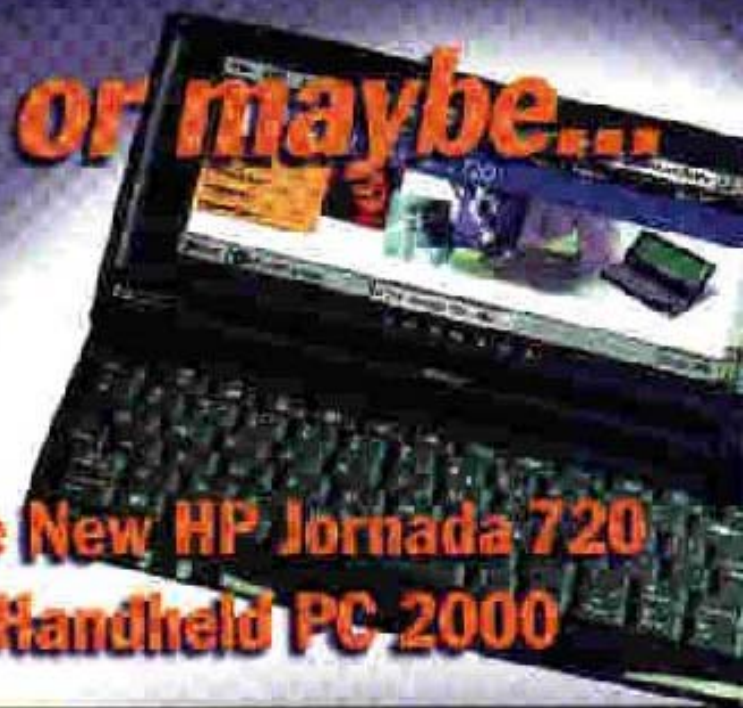
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PERIODICALS



Computer Animated Newscaster on the Pocket PC

Tigris, the TIE project's "virtual personality," will appear on Pocket PC screens presenting news, weather, sports and business information via wireless mobile phone technology

BY OLINGA TA'EED, PhD.

Late this year Tigris will hit Hollywood, but you won't see her on the big screen. Tigris (see Screen 1), a computer animated newscaster, will appear on color screen Pocket PCs and she will present to you news, weather, sports and business - all via your mobile phone. Alongside Tigris will be a range of new services over the existing mobile phone networks, including video conferencing, home surveillance, watching the stars at the Hard Rock Cafe in LA, looking at traffic build up on wireless traffic cameras and finally, downloading film trailers of new movie releases straight to your Pocket PC.



Tigris is the TIE project's virtual personality appearing on Pocket PC screens presenting news, weather, sports and business information via wireless mobile phone technology.

To coincide with the launch of their LA office, Pedagogy Limited (www.pedagogy.com) is providing the technology for a 25-man trial based in Los Angeles, together with content from Entertech Media Group Inc (www.entertechmedia.com), the Hollywood film company chaired by Joan Daly best known for his big screen accolades "Platoon," "Last Emperor" and "Terminator". The project code named TIE (Tigris in Entertainment) is a new step in wireless data applications, only possible due to the release of new technologies.

Progress is the basis of ... progress

In the last few years, rapid progress has been made in thin clients, wireless connectivity, Internet video and more efficient codecs (compression/decompression algorithms). In addition, powerful (150-233 MHz) 64 bit color Palm-size and Pocket PCs have become available, running Windows CE 3D rendering engines and remote command sets. The proliferation and globalization of mobile networks have made data more available and caused a big increase in mobile users. The TIE project uses all these advances, camouflaging the serious core technology with a sexy presenter in the face of Tigris.

So what are the core technologies that are at play here? One of the services I mentioned is video conferencing. It may come as a shock to some communications experts that bi-directional video at two frames per second over 2.6 kbps band GSM is already available in Europe using H263+ bitstream codecs (which are 95% replicated in Mpeg4). Put this onto a color-screen Casio Pocket PC equipped with Casio's Digital Camera Card and you immediately have a working solution. There are parts of the U.S., including Los Angeles, where companies such as AT&T provide CDPC (cellular digital packet call) wireless technologies giving 19.2 kbps data. This brings video conferencing to around 10 frames per second. Video is usually defined at 25 frames per second with the visual cortex recognizing smooth motion at anything over 17 frames per second. While not quite there, 10 frames per second is within striking distance of the goal.

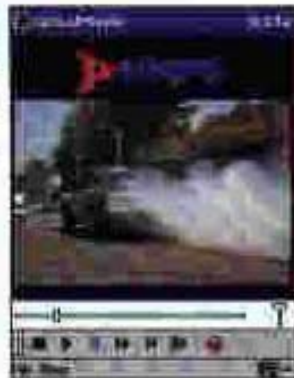
I also mentioned home surveillance. Wireless surveillance of your own home is

covered through remote systems that plug into your normal phone socket and power supply, switching it on like an answering machine as you go out. Then from anywhere in the world you can use a Palm-size or Pocket PC to watch what's happening in your home. Similar technology is already being used in Eviden by parents watching their children at drop-off Daycare Nurseries (www.parentwatch.co.uk). A variation of this is used in solar powered wireless CCTV cameras which are already available (www.slawley.com) and behave to some extent like web cameras except over the mobile phone network.

Ironically, the most unimpressive use of this technology is in downloading film trailers and playing them on the GlobalMovie player (see Screen 2). GSM's download rate of 2.6 kbps means you may have to wait up to five minutes before you can view the trailers.

An introductory HTML text can be

Screen 2: The GlobalMovie player lets TIE project members play film trailers and other MPEGs on their Pocket PCs.



downloaded first to give the user something to read while downloading the MPEG trailer in the background. This system was already demonstrated effectively at the Cannes 53rd Film Festival in February 2000.

Dr. Olinga Ta'eed (olinga@compuserve.com) is involved in the development of mobile video solutions utilizing Windows CE devices. He is a shareholder in a number of companies involved in this, including Pedagogy Limited (VIR-tuan CE development team), Slawley Limited (CCTV Manufacturing), and Prestige Network Limited (Language Technology). He has held similar positions in a number of other companies and is the recipient of awards including the 1995 European IT Award. He remains external PhD Supervisor at the University of Wolverhampton, Department of Computing Studies, and has over 50 papers to his credit, including for The Finns.



Making Tigris move

Considerable more expertise was required to animate Tigris, the virtual newscaster. Unlike streaming video across the Internet, where 56 kbps and upwards bandwidths make animated newscasting plausible, wireless bandwidths are too restrictive. Instead, Tigris resides on the PDA and a full set of her movements and expressions are pre-loaded into the client Palm-size or Pocket PC. Then, all you have to do is download a brief command set to get her to do her stuff. Like any newscaster, she has the ability to download and present maps, video clips, sound bites, etc.

One problem wireless content provision highlights is "micro charging" for small amounts of information. The commercial proposition for multimedia content, whether Internet or wireless related, is moving away from a subscription based scenario which penalizes the occasional (as opposed to regular volume) user who is seeking to download the odd film clip now and then, and interact with a variety of content services rather than bulk purchase one. After all, this is the underlying reason behind the outstanding success of the pay-as-you-go services, eg. on demand

cable programming, and contract/subscription free credit based mobile phones which now outsell monthly contracted cellular services worldwide. This is likely to become more important over wireless applications than the Internet where downloads are more easily verified and less susceptible to error. Dropping the line on your cellular phone as you drive is annoying enough when on a voice call, but disastrous if you've already paid for and in the middle of downloading a music video to your PDA; how do you prove it wasn't your fault?

The fact is that it is unlikely that wireless online time of greater than five minutes will be sustainable or even desirable over current 2G (second generation) network offerings. The situation may change with 2.5G (GPRS - General Packet Radio Services, HSCSD - High Speed Circuit Switch Data) and 3G (EDGE and UMTS - Universal Mobile Telephony Services) developments, but even these increase bandwidth to 384 kbps rates but not necessarily guarantee connectivity in a moving car or in mountainous areas. For these applications it is important to provide verifiable information downloads, error corrected, as well as a charging mechanism for lots of

small amounts of packet data. The quickest solution is to take a percentage cut from the mobile phone line charge but this is not discriminatory in terms of the information being sent. You cannot distinguish between a 60 second trailer and a 60 second video conferencing period. For this you need dedicated services, which can identify the phone and thus the account. For the Los Angeles TIE trials, the server end is covered by Worldnet Resource Group (www.wirg.com), based on experience gained from a Brisbane (Australia) trial in another market sector (www.vtm3g.com.au).

Being first has its advantages

It may surprise industry experts to learn that these trials are being undertaken using the current 2G wireless technology. Many believe that wireless entertainment needs the faster 3G technology of the future to overcome bandwidth problems. A great number of parties are interested in the results of the TIE trials. Being first in this area has its advantages - if you're successful. And a number of companies are trying to figure out how to successfully bring information and entertainment to the wireless user. ■