

TECH FOCUS

Showcasing 3G future in Bangladesh

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SIRAJUL Islam, a sixty year old man, during his morning walk in the Gulshan area, saw an ambulance with a crowd of people surrounding it. His curiosity took him to the spot, where he found that he could get a medical checkup done by doctors sitting miles away from the ambulance.

Seeing this as an opportunity, he requested for a checkup. The officials in the ambulance took his ECG, medical history and details and sent them through telemedicine software and hardware to a medical specialist in a distant hospital. After checking the details and seeing the patient live through video conferencing, the doctor prescribed Islam as needed.

My friends, the above story is not a futuristic one, but of here and now, thanks to a pilot project 'Alokito Bangladesh' (Enlightened Bangladesh) led by Ericsson



A medical staff performs a ECG of a patient over 3G networks



A computer screen shows the patient, medical technician and the remote doctor connected through a 3G network inside the Alokito Bangladesh ambulance



PHOTO: ANSAR RAHMAN

Bangladesh Ltd. The project, which has just been started on trial basis uses 3G/HSPA (3rd generation/High Speed Packet Access) technology.

The ehealth application under the 3G demo was conducted with assistance from Apollo Hospital, India and Bangladesh.

Arun Bansal, president and country manager, Ericsson Bangladesh said, "I believe 3G/HSPA has tremendous future in Bangladesh, one of the fastest growing mobile markets of the world."

He also added, "Ericsson Bangladesh is really privileged to be a part of such a pioneering project and I would like to thank BTRC for giving us the opportunity and the support to demonstrate the first 3G/HSPA trial in Bangladesh."

The Bangladesh Telecommunication Regulatory Commission

(BTRC) gave Ericsson Bangladesh permission to deploy a demo 3G/HSPA network in the Dhaka region on October 10, 2007.

The given bandwidth was 1920MHz to 1925MHz for uplink and 2110MHz to 2115MHz for downlink.

Possible Applications of 3G Networks

A large segment of the Bangladeshi population still has no access to modern health care services due to lack of proper infrastructure. As a result, a good number of people in the rural area die due to insufficient access to good doctors and diagnosis.

For such people, this latest technology could be a new ray of light if implemented across the country's rural areas.

In fact, the health sector is not

the only sector that will benefit. The education sector can also take advantage of this technology by extending the knowledge of skilled teachers to rural students.

In the transportation sector, video surveillance systems can monitor traffic congestion.

There are more fascinating things that 3G/HSPA can make possible, for example, you can watch your new-born baby at home while you are on the move or in the office through mobile video call. Remote Surveillance is the latest in mobile security - offering the freedom to view live images or videos captured from cameras installed directly on a PC or your mobile/PDA.

For TV buffs, it's good news too. With the new Mobile TV, you can watch your favorite programs wherever you are.

Now you may ask, why do we

need 3G networks to get these features?

Why 3G networks?

The answer is that HSPA data transmission has the capability to deliver at speeds of up to 14.4Mbit/s on the downlink and 5.8Mbit/s on the uplink which is much greater than the 9.6 kbit/s of a single GSM error-corrected circuit switched data channel or multiple 9.6 kbit/s channels in HSCSD (14.4 kbit/s for CDMAOne).

According to sources from Ericsson, 512Kbps bandwidth will allow users to make video calls, run E-Learning, E-medicine or E-surveillance software, as well as play video on Demand without disruption.

Technicalities

Currently in Bangladesh, five mobile operators -

GrameenPhone, Banglalink, AKTEL, Warid and Teletalk use the GSM (Global System for Mobile communications) technology and only CityCell uses the CDMAOne technology.

GSM is a cellular network, which means that mobile phones connect to its network by searching for cells in the nearest surrounding area. GSM networks operate in four different frequency ranges namely 850/900/1800/1900 MHz. Most GSM networks operate in the 900/1800 MHz bands.

Lets take a look at how the GSM network system works for 2G networks. The network can be divided into three sections.

One is the Base Station Sub-system (BSS) which consists of Base Transceiver Station (BTS), Base Station Controller (BSC), and Packet Control Unit (PCU).

The next section is Network Switching Subsystem (NSS) which consists of Mobile Switching Center (MSC), Home Location Register (HLR), Visitor Location Register (VLR), Authentication Center (AUC) and Equipment Identity Register (EIR).

The last segment is the GPRS Core Network, which consists of Serving GPRS Support Node (SGSN) and Gateway GPRS Support Node (GGSN).

All GSM operators more or less, have these common elements for its 2G/2.5G networks.

Difference between 2G and 3G

The basic difference between 2G and 3G networks is the Radio Network Controller (RNC), which works for 3G as the BSC of 2G, and the Node B, which works as the BTS.

Compared to GSM, UMTS networks initially required a higher base station density. For a full-fledged UMTS incorporating video on demand features, one base station needed to be set up every 1km to 1.5km.

This was the case when only the 2100 MHz band was being used, however the problem has been solved by using lower-frequency bands (such as 850 and 900 MHz).

Ericsson is conducting its 3G trial by using the site and transmission networks of three telecom operators - Warid Telecom International Bangladesh, Grameenphone, and Telecom Malaysia International (Bangladesh), which operates under the brand name AKTEL.

According to sources, it is possible to upgrade to 3G network in six to twelve months, and hopefully, the people of Bangladesh will enjoy the high speed of 3G at the beginning or middle of year 2010.

TECH VIEWS

A 'Frankenrobot' with a biological brain

AFP, Paris

MEET Gordon, probably the world's first robot controlled exclusively by living brain tissue.

Stitched together from cultured rat neurons, Gordon's primitive grey matter was designed at the University of Reading by scientists who unveiled the neuron-powered machine on Wednesday.

Their groundbreaking experiments explore the vanishing boundary between natural and artificial intelligence, and could shed light on the fundamental building blocks of memory and learning, one of the lead researchers told AFP.

"The purpose is to figure out how memories are actually stored in a biological brain," said Kevin Warwick, a professor at the University of Reading and one of the robot's principle architects.

Observing how the nerve cells cohere into a network as they fire off electrical impulses, he said, may also help scientists combat neurodegenerative diseases that attack the brain such as Alzheimer's and Parkinson's.

"If we can understand some of the basics of what is going on in our little model brain, it could have enormous medical spinoffs," he said.

Looking a bit like the garbage-compacting hero of the blockbuster animation "Wall-E", Gordon has a brain composed of 50,000 to 100,000 active neurons.

Once removed from rat foetuses and disentangled from each other with an enzyme bath, the specialised nerve cells are laid out in a nutrient-rich medium across an eight-by-eight centimetre (five-by-five inch) array of 60 electrodes.

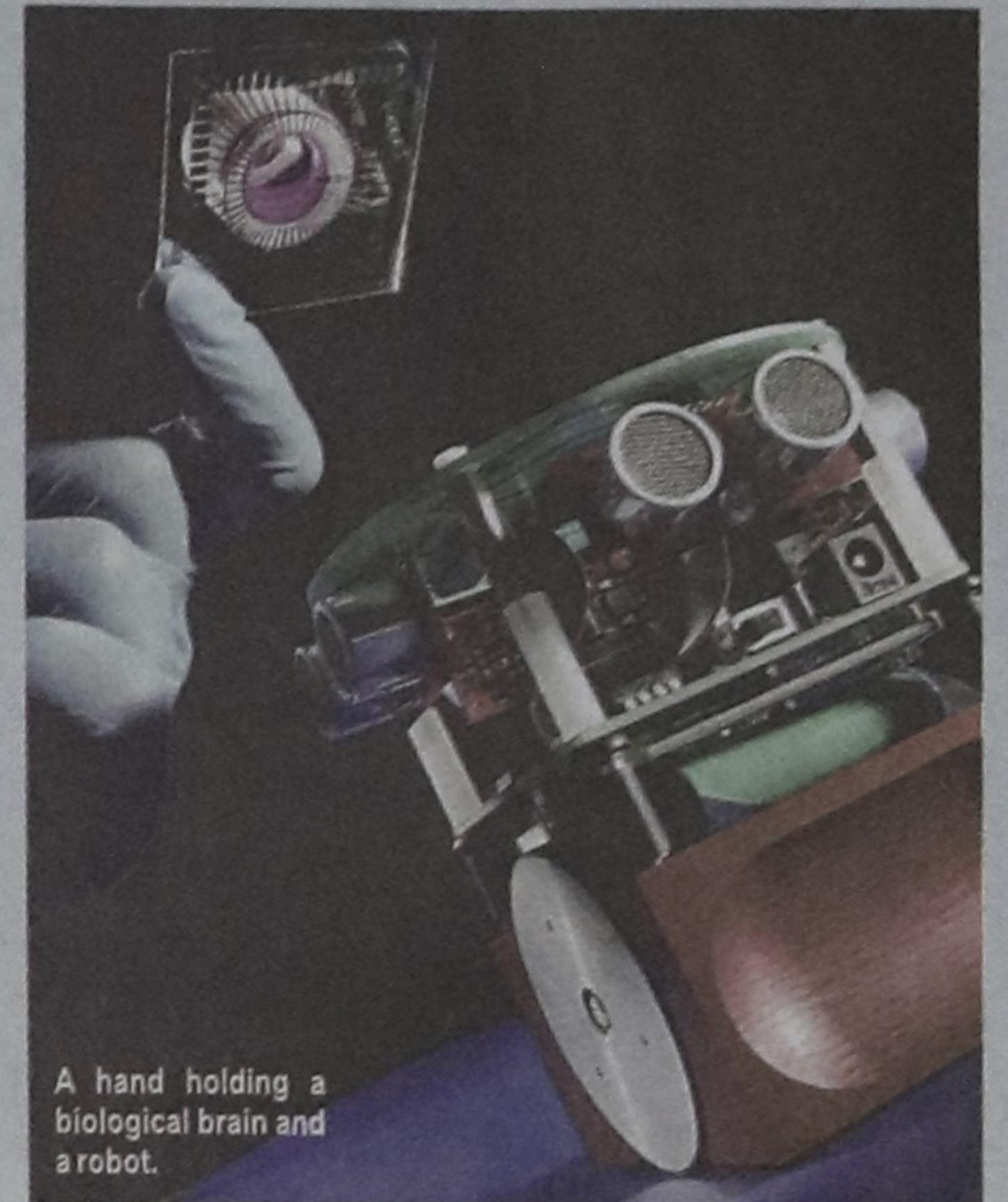
This "multi-electrode array" (MEA) serves as the interface between living tissue and machine, with the brain sending electrical impulses to drive the wheels of the robots, and receiving impulses delivered by sensors

reacting to the environment.

Because the brain is living tissue, it must be housed in a special temperature-controlled

brain, headed.

But without external stimulation, the brain will wither and die within a couple of months.



A hand holding a biological brain and a robot.

unit -- it communicates with its "body" via a Bluetooth radio link.

The robot has no additional control from a human or computer.

From the very start, the neurons get busy. "Within about 24 hours, they start sending out feelers to each other and making connections," said Warwick.

"Within a week we get some spontaneous firings and brain-like activity" similar to what happens in a normal rat -- or human --

"Now we are looking at how best to teach it to behave in certain ways," explained Warwick.

To some extent, Gordon learns by itself. When it hits a wall, for example, it gets an electrical stimulation from the robot's sensors. As it confronts similar situations, it learns by habit.

Gordon, in fact, has multiple personalities -- several MEA "brains" that the scientists can dock into the robot.

JEL Trading brings in new Macbook product range to Bangladesh

STARTECH DESK

'HIGHLY advanced, yet simple to use' -- that's what all say about the Apple Macbook. They are not only sleek and fashionable, but they also get



overwhelming applause for the performance they can dish out.

Apple Macbooks with its high quality glossy LCD screen is the love and desire of many IT and lifestyle consumers. Since the software on every

Macbook is created by the makers of Mac itself, you get a completely integrated computer that's as secure, stable, and powerful as it is elegant and easy to use.

Apple products are widely used by professionals such as designers, architects and media enthusiasts. The popularity of Apple also stems from its open source system. The Macbook is pre loaded with Mac OSxv10.5, which includes Times Machine, Quick Look, Spaces, Spotlight, Dashboard, Mail, iChat, QuickTime, iCal, DVD Player, Photo Booth, iTunes, and loads of other i's stuffs.

It also has lesser threats from viruses in comparison with other regular systems that increase the desirability of owning an Apple. Apple still

remains a high-end product because of its emphasis on quality. The most aspired of all, the Macbook Air-dubbed as the world's thinnest notebook, is already setting a new trend for mobile computing. All that can be said about Apple Macbook is-with all its beauty and brain, it's simply in a class of its own.

Most recently, JEL Trading Bangladesh Ltd is availing Apple Macbook in a high profile campaign in Dhaka, according to a press release. All products are available at Apple authorised reseller stores. Buying only from Apple Authorised Resellers will ensure you of getting a genuine product along with all the necessary product information and after sales service.



ALL ABOUT GAMES



Visitors check out the latest offerings at the GC (Games Convention) fair for computer games and entertainment on August 21, in Leipzig, eastern Germany. Exhibitors from all over the world will present their latest products during the fair running from August 21 to 24.

PHOTO: AFP

TECH NEWS



New pen drives from Twinmos

STARTECH DESK

SMART Technologies have introduced a range of new Twinmos 2GB and 8GB pen drives.

The USB 2.0 Compatible models X1 and B1 and the super-mini ultra thin pen drives support Windows XP/2000/Mininium/98, MAC 10.1+ and

LINUX 2.4+ OS, says a press release.

The models have an efficient password protection system, which ensure data security.

These devices are available countrywide with lifetime after sales service. The 'Smart Warranty Sticker' ensures original products.

Yahoo unveils plan to mesh internet and television

AFP, San Francisco

YAHOO and Intel on Wednesday unveiled plans to make television more interactive with online capabilities.

The internet pioneer and the chip-making titan said they are working together on a 'Widget Channel' that will use computer programs to add online features to television shows and advertising.

"TV will fundamentally change how we talk about, imagine and experience the Internet," Intel senior vice president Eric Kim said in a written statement.

"This effort is one of what we

believe will be many exciting new ways to bring the Internet to the TV, and it really shows the potential of what consumers can look forward to."

Kim vowed that television "would no longer be a passive experience unless the viewer wants it that way."

Yahoo and Intel said they are collaborating with television manufacturers and third-party software developers.

Television 'widgets', a reference to mini computer programs, will give viewers options such as tracking stocks or sport teams; messaging friends; and accessing videos via the Internet, according to Yahoo.

