Push-To-Talk

IN THIS ISSUE

- Push-To-Talk
- World Summit on the Information Society (WSIS)
- Reorganization of TEC

प्राक्कथन

दूरसंचार इंजीनियरी केन्द्र के समाचार पत्रिका के प्रकाशन के आठ वर्ष पूरे हो गये हैं। हम आपकी सतत् रुचि व सराहना के लिये आभारी हैं।

दूरसंचार इंजीनियरी केन्द्र को पुर्नगठित किया जा रहा है। जबकि दूरसंचार इंजीनियरी केन्द्र भारत में दूरसंचार मानकीकरण की जिम्मेदारी निभाता रहेगा, बी एस एन एल / एम टी एन एल के लिये परीक्षण की जिम्मदारी बी एस एन एल को स्थानांतरित की जा रही है। प्रौद्योगिकी क्षेत्र में दूरसंचार दृश्य रोचक बना रहेगा क्योंकि नवीन सेवाओं की लगातार मांग होती रहेगी। भारत में मोबाइल फोन के क्षेत्र में अदभुत वृद्धि हो रही है। ब्राडबैंड सेवा आरम्भ होने जा रही है। दूरसंचार इंजीनियरी केन्द्र, समाचार पत्रिका के माध्यम से दूरसंचार क्षेत्र में हुए विकास से सम्बंधित समाचारों को प्रस्तुत करता रहेगा।

मैं इस अवसर पर पाठकों व उनके परिवार वालों को सुखमय व सम्पन्न नव वर्ष की हार्दिक शुभकामनाऐं देता हूँ।

(जगदीश राय गुप्ता)

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Push-To-Talk

Note : This article is for providing technical information only and does not take into consideration the terms and conditions of service providers to run this service. No party may construe the content as a permission to run the service

Mobile telecom is witnessing a phenomenal growth worldwide. Mobile operators are looking for new services to increase the subscriber base, lower customer churn and increased Average Revenue Per User (ARPU). Push-To-Talk is currently talked about in the mobile industry as one such service.

Push-To-Talk (PTT), also referred to as PoC (Push-To-Talk over Cellular) is a wireless service that turns mobile phones into long-range walkie-talkies by connecting to other phones without dialling. Instead of calling, one can simply push a button and talk to members of a group. The speech will be one-way-at-a-time rather than a two-way conversational mode. It can be used for short-duration and high-urgency voice communications and keeps an 'always-on' connection between groups of frequently called mobile subscribers like family, colleagues, business associates etc. All members of the group can hear the speech from others. The listener need not press any button to hear the speech from others. It is always on.

Push-To-Talk is built around VoIP (Voice over IP) technology.

Standards

Standardisation towards an access-independent and globally interoperable standard for PTT is in progress.

Open Mobile Alliance (OMA), a Standards Development Organisation with membership of mobile operators, manufacturers, IT companies and content providers is specifying mobile services to ensure global interoperability. Joint efforts by equipment manufacturers to drive a common worldwide PTT standard through OMA are on. It is expected to be based on IP Multimedia Subsystem (IMS) being developed by 3GPP/3GPP2.

IP Multimedia Subsystem (IMS)

IMS is a new framework, basically specified for mobile networks, for providing IP based services. IMS will be useful to deliver one-to-one and one-to-many real-time multimedia

communications. IMS uses the Session Initiation Protocol (SIP) an application-layer signalling protocol defined by the IETF, for signalling and session control for real-time multimedia services. 3GPP/3GPP2 has introduced IMS in two releases (release 5 and release 6). The IMS framework facilitates:

> Person-to-person real-time IP-based multimedia communications as well as person-to-machine communications
> Integration of real-time with non-real-time multi-media communications
> Interaction of different services and applications
> Easy user setup of multiple services in a single session or multiple sessions

Implementation of Push-To-Talk

Implementation of Push-To-Talk requires support from network elements as well as terminals. Moreover, different mobile technologies like GSM, CDMA etc. are in use worldwide.

Existing PTT implementations are based on proprietary architectures limiting it to single operator, single vendor solutions. Push-To-Talk can be implemented using switch based solutions or central server based solutions. Switch based solutions will need software upgrades in each MSC and other network elements. On the other hand, IMS infrastructure is still evolving and could be expensive at present. In the intermediate stage, operators are planning to implement the service by deploying a central IP service node. Different network elements need not be upgraded with software to support Push-To-Talk service. This approach will enable the operators to deploy the service quickly in a cost-effective manner. At the same time, it will be possible to upgrade and interoperate with a future IMS infrastructure. Depending on the availability of stable global standards, operators would be looking to introduce future-proof solutions based on open standards and off-the-shelf hardware, to ensure interoperability across networks and terminals.

Implementation of Push-To-Talk Service
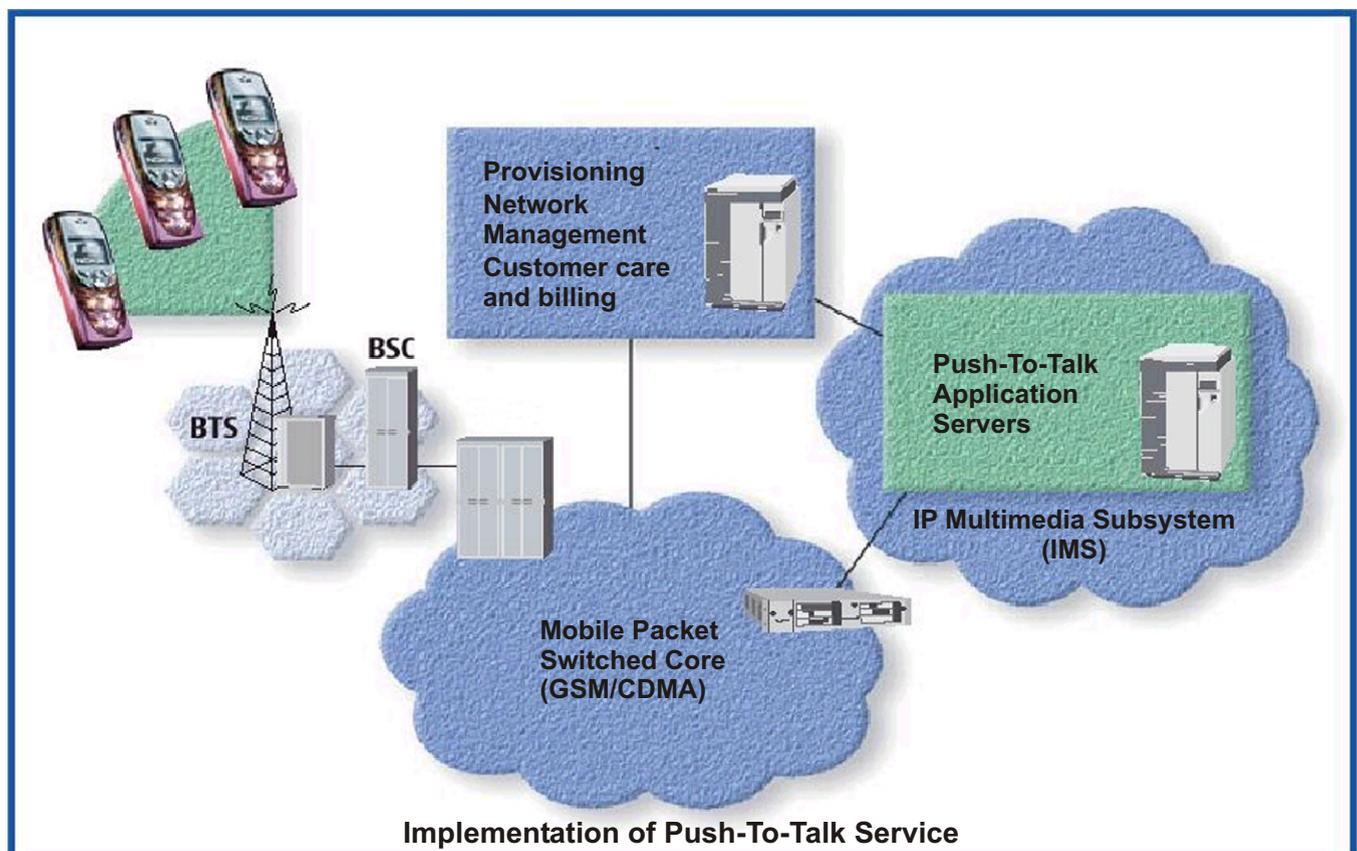
Industry Gears Up

- Push-To-Talk, using both GSM and CDMA technologies, is gaining momentum worldwide and several operators including Orange, Sprint PCS, Verizon, Telstra, and Cellcom have already launched the service with several others to follow soon.

- Push-To-Talk enabled handsets are available in the market.

- Market analysts forecast that if mobile operators utilise Push-To-Talk successfully in terms of pricing and market strategies, the service could see over 350 million subscribers worldwide by 2009, generating almost $12 billion in revenue.

- Some operators in India have launched the service and others are gearing up.

Source: Internet & GSA

Terminals

Since deployment of PTT requires terminal support, availability of mass-market handsets is a prerequisite. Capabilities to provide customer managed group lists and mixing with other services like SMS, MMS etc. will be needed in the terminals. Terminals supporting features for Push-To-Talk have already been introduced by several leading terminal manufacturers.

Other Issues

Since PTT is based on VoIP, issues related to call set-up time and latency will be critical. It is reported that some of the initial deployments using CDMA have experienced longer call set-up time, when the sender and receiver are in a dormant state. It is expected that call set-up time will improve as GSM and CDMA standards further evolve.

Depending on the success of PTT, different service flavors could emerge. The use of Presence, Availability and Location (PAL) services will add convenient features like determining the availability of a PTT subscriber before making a call; notifying other services when engaged in a PTT call etc.

Important Activities of TEC during October to December 2004

A. Preparation of GRs/IRs & Technical documents

GRs

60 Meter Narrow Base Light Weight for Cellular Systems

GSM SIM Card for 16 KB

Centralised Control and Monitoring of Power Plants and its associated equipment

40/30/20 Meter Tower for Cellular System

Revised GRs/IRs

7 GHz SDH-STM-1 M/W equipment

Permanently Lubricated HDPE Telecom Ducts for use as Underground Optical Fibre Cable Conduits

High Speed Internet Leased access line doubler

System Employing Computer Telephony Integration

800 and 1900 MHz Patch Panel Antenna

15 GHz High Performance Antenna

IR for Router

B. Tests and Field trials

GSM, IN and GPRS

STM-1 equipment of C-DOT

LAN switch of M/s Huawai

Billing Server (iCollect) of M/s ITI

ADSL-DIAS of M/s Banyan Networks Chennai

16K and 32K GSM SIM Cards of M/s G & D, Schlumberger and Syscom and ITI

World Summit on the Information Society (WSIS)

Geneva 2003 - Tunis 2005

The UN General Assembly Resolution 56/183 (21 December 2001) endorsed the holding of the World Summit on the Information Society (WSIS) in two phases. The first phase took place in Geneva hosted by the Government of Switzerland from 10 to 12 December 2003 and the second phase will take place in Tunis hosted by the Government of Tunisia, from 16 to 18 November 2005.

World Summit - The Need for a Global Discussion

The digital revolution, fired by the engines of Information and Communication Technologies, has fundamentally changed the way people think, behave, communicate, work and earn their livelihood.

Paradoxically, while the digital revolution has extended the frontiers of the global village, the vast majority of the world remains unhooked from this unfolding phenomenon. With the ever-widening gulf between knowledge and ignorance, the development gap between the rich and the poor among and within countries has also increased. It has therefore become imperative for the world to bridge this digital divide and place the Millennium Development Goals (MDGs) on the ICT-accelerated speedway to achievement.

Recognising that this new dynamic requires global discussion, the International Telecommunication Union, following a proposal by the Government of Tunisia, resolved at its plenipotentiary Conference in Minneapolis in 1998 (Resolution 73) to hold a World Summit on the Information Society (WSIS) and place it on the agenda of the United Nations.

A High-Level Summit Organising Committee (HLSOC) has been established under the patronage of Kofi Annan, UN Secretary-General. Its purpose is to coordinate the efforts of the international United Nations family in the preparation, organisation and holding of WSIS. The UN agency that holds the leading role in the organisation of the Summit is the International Telecommunications Union (ITU), based in Geneva (Switzerland). Charles Geiger, a Swiss national has been appointed on 1st November 2004 as the Executive Director of the WSIS Executive Secretariat, based at ITU headquarters to organise the seemed phase or the summit in Tunis.

Phase 1 : Geneva, 10-12 December 2003

The objective of the first phase was to develop and foster a clear statement of political will and take concrete steps to establish the foundations for an Information Society for all, reflecting all the different interests at stake. At the Geneva Phase of WSIS nearly 50 Heads of state/government and Vice-Presidents, 82 Ministers, 26 Vice-Ministers and Heads of delegation as well as high-level representatives from international organisations, private sector, and civil society provided political support to the WSIS 'Declaration of Principles' and 'Plan of Action' that were adopted on 12 December 2003. More than 11,000 participants from 175 countries attended the Summit and related events. The scope and nature of this ambitious project requires new public-private partnerships, many of which were formalised during the Geneva Summit. Some of them were specifically targeted at bridging the digital divide.

Phase 2 : Tunis, 16-18 November 2005

The task of the Tunis phase of the Summit will be to refine some of the broader goals agreed in Geneva and to hammer out the details needed to translate these goals into measurable results. Furthermore, this second phase of the Summit is

to implement and follow up the Geneva decisions by stakeholders at the nation, regional and inter-national levels. It is also to complete the unfinished business started in Geneva on Internet governance and on reviewing the current mechanisms for financing ICT for development.

Declaration of Principles

Key principles for building an Information Society are identified as the following :

1) The role of governments and all stakeholders in the promotion of ICTs for development

2) Information and communication infrastructure: an essential foundation for an inclusive information society

3) Access to information and knowledge

4) Capacity building

5) Building confidence and security in the use of ICTs

6) Enabling environment

7) ICT applications: benefits in all aspects of life

8) Cultural diversity and identity, linguistic diversity and local content

9) Media

10) Ethical dimensions or the Information Society

11) International and Regional cooperation

Plan of Action

1. The common vision and guiding principles of the Declaration are translated as Plan of Action into concrete action lines to advance the achievement of the internationally-agreed development goals. The Information Society envisaged in the Declaration of principles will be realised in cooperation and solidarity by governments and all other stakeholders.

2. The Information Society is an evolving concept that has reached different levels across the world, reflecting the different stages of development.

Technological and other changes are rapidly transforming the environment in which the Information Society is developed. The Plan of Action is thus an evolving platform to promote the Information Society at the national, regional and international levels. The unique two-phase structure of the World Summit on the Information Society (WSIS) provides an opportunity to take this evolution into account.

3. All stakeholders have an important role to play in the Information Society, especially through partnerships:

a) Governments have a leading role in developing and implementing comprehensive, forward looking and sustainable national e-strategies. The private sector and civil society, in dialogue with governments, have an important consultative role to play in devising national e-strategies.

b) The commitment of the private sector is important in developing and diffusing information and communication technologies (ICTs), for infrastructure, content and applications. The private sector is not only a market player but also plays a role in a wider sustainable development context.

c) The commitment and involvement of civil society is equally important in creating an equitable information Society, and in implementing ICT-related initiatives for development.

d) International and regional institutions, including international financial institutions, have a key role in integrating the use of ICTs in the development process and making available necessary resources for building the Information Society and for the evaluation of the progress made.

Objectives, goals and targets

4. The objectives of the Plan of Action are to build an inclusive Information Society, to put the potential of knowledge and ICTs at the

service of development; to promote the use of information and knowledge for the achievement of internationally agreed development goals, including those contained in the Millennium Declaration; and to address new challenges of the Information Society, at the national, regional and international levels. Opportunity shall be taken in phase two of the WSIS to evaluate and assess progress made towards bridging the digital divide.

5. Specific targets for the Information Society will be established as appropriate, at the national level in the framework of national e-strategies and in accordance with national development policies, taking into account the different national circumstances. Such targets can serve as useful benchmarks for actions and for the evaluation of the progress made towards the attainment of the overall objectives of the Information Society.

6. Based on internationally agreed development goals, including those in the Millennium Declaration, which are premised on international cooperation, indicative targets may serve as global references for improving connectivity and access in the use of ICTs in promoting the objectives of the Plan of Action, to be achieved by 2015. These targets may be taken into account in the establishment of the national targets, considering the different national circumstances;

a) to connect villages with ICTs and establish community access points;

b) to connect universities, colleges, secondary schools and primary schools with ICTs;

c) to connect scientific and research centres with ICTs;

d) to connect public libraries, cultural centres, museums, post offices and archives with ICTs;

e) to connect health centres and hospitals with ICTs;

f) to connect all local and central government departments and establish websites and email addresses;

g) to adapt all primary and secondary school curricula to meet the challenges of the Information Society, taking into account national circumstances;

h) to ensure that all the world's population have access to television and radio services;

i) to encourage the development of content and to put in place technical conditions in order to facilitate the presence and use of all world languages on the Internet;

j) to ensure that more than half the world's inhabitants have access to ICTs within their reach.

7. In giving effect to these objectives, goals and targets, special attention will be paid to the needs of developing countries, and in particular to least developed countries, peoples living in remote & rural areas and vulnerable groups.

Source : ITU wesite

Approvals issued by TEC during the period October 2004 to December 2004	
Type Approvals………………….............	112
Interface Approvals…………..............	50
Service Test Certificates..……..............	7
Total ………………….......................	**169**

Approvals issued by TEC upto 31.12.2004	
Type Approvals………………….............	7018
Interface Approvals…………..............	4065
Service Test Certificates..……..............	1684
Grand Total ………………….............	**12767**

Re-organisation of Telecom Engineering Centre (TEC)

TEC is reorganised as below:

The work which is BSNL/MTNL specific, i.e. Type Approvals, network engineering, solving the field problems, network planning & dimensioning, is being transferred to BSNL.

The work relating to issue of Generic Requirements (GRs), Interface Approvals, Fundamental Technical Plans, technical support to DoT shall continue with TEC. In addition, TEC may provide, as and when requested by DoT, technical advice to TRAI and TDSAT.

TEC will develop necessary expertise to imbibe the latest technologies and results of R&D and coordinate with C-DOT to provide details on the technological developments in the Telecom Sector for policy planning at DoT level.

TEC will continue to work under DoT, as at present, as an attached office of DoT.

The following items of work will also be looked after by TEC

(i) Interaction with multilateral agencies like APT, ETSI and ITU, etc.

(ii) Preparing standards for harmonious growth of the Indian telecommunication network, with the participation of public as well as private sector operators

(iii) Approving inter-operator Network-Network Interfaces (NNI) for facilitating interoperability between various networks of different service providers

(iv) Creating facilities to further the objectives of Mutual Recognition Arrangements (MRA)

The functions of Interface Approvals and evaluating the rollout of services by operators including issuance of Service Test Certificates will be performed by the Regional Centres of TEC i.e RTEC at Delhi, Mumbai, Banalore and Kolkata.

TEC will continue to carry out all types of Interface Approvals.

RTEC, Hyderabad and sub-centres at Chennai and Pune are closed.

Some more related news :

BSNL will set up five Technical Specification Evaluation Centres at New Delhi, Mumbai, Hyderabad, Bangalore and Kolkata.

The Approval Certificates to be issued by BSNL shall be termed as "Technical Specification Evaluation Certificate" (TSEC).

BSNL QA Wing will register new cases for TSEC-starting from 1st January 2005. The existing test fee structure of TEC shall be adopted by BSNL for the time being.

All the ongoing cases of Type Approval pending with TEC as on 31st December 2004 shall be made over to BSNL, on as is where is basis. From 1st January 2005, BSNL will issue TSEC for all such pending cases.

The validity of existing Type Approval Certificates issued by TEC will be accepted by BSNL and their further renewal as TSEC will be carried out by BSNL.