IMS based PSTN/ISDN Emulation
Achievements & Experiences

Dan CHEN, Ph.D.
IMS chief engineer
Email: chen.dan@zte.com.cn
Why IMS based PSTN/ISDN emulation?
What is IMS based PSTN/ISDN emulation?
Why IMS based PSTN/ISDN Emulation

- **A. Power Consumption** - 34%*
- **B. O&M** - 53%*
- **C. Maintenance Resources** - 66%*
- **D. Footprint** - 37%*

- Avoid high maintenance fee of legacy switches
- Save the cost of “first adopting Softswitch and migrating to IMS later”
- Introduce centralized core as the unique control and service triggering platform for both fixed and mobile networks
- Add new value-added services for legacy users, such as one number and converged Centrex

* Source: one of ZTE IMS based PSTN Emulation Projects
All users (broadband access and narrow band access) are controlled by an unified IMS core network.

MMTEL AS serves for both 3GPP SIP users and H.248/ISDN (BRI/ PRI), V5, H.323, NCS, MGCP, normal SIP users.
PSTN Class 5 Emulation Solution

- Swap aged PSTN Switches with MSAN, which connects with IMS core via AGCF/P-CSCF.
- PRI/V5/ISDN users remain unchanged and access IMS via AGCF/MSAN.
Two Approaches for PSTN/ISDN Emulation

**AGCF + MSAN**
- AGCF is the service control point for all the AG users
- AGCF could support multiple types interfaces beyond standards

**SIP MSAN + P-CSCF**
- Each SIP AG is the service control point for its users
- SIP AG only supports SIP
Business Trunking Solution

- **Trunk Model**
  - PBX connected to MGCF via IM-MGW by trunk to interwork with IMS

- **Subscriber Line model**
  - PBX connected to AGCF through TG/SG/AG if the uplink interface is PRI
  - PBX connected to AGCF/P-CSCF via AG/IAD if the uplink interface is TRK
  - PBX connected to IMS through P-CSCF through SIP GW
Experiences & Case Studies
Solution Highlights

- Advanced ETCA platform for all elements evolved: CSCF, PSS, AGCF, HSS
- Seamless cutover to maintain substantial service experience of PSTN user.
- Multi domain features
- Customization ability and fast response help operator keep higher competition in the market

- Swapping Fujitsu FETEX 150 switch in Aug, 2010
- Establishing an unified core network for both narrow-band and broadband user.
Multi Domain Features in China Telecom

Partial resource managed by Operator B in City B

Partial resource managed by Operator A in City A

Fu Zhou

HSS
EMS

Ning De

CS
BOSS
MGW
SBC
AG

Nan Ping

CS
BOSS
MGW
SBC
AG
On-net call: one IMS user calls a CDMA user
ISDN/PSTN User Profile Migration Tool
Flexible Provisioning Solution
Highlights of IMS-based PSTN Emulation

- Lower TCO
- New Services
- Convergent network
- Seamless & Smooth migration

- Realize unified OMM, User DB, service handling & charging to simplify operation & maintenance
- Break multi-network coexistence with uniform session control & service trigger
- Unified platform with easy function switch and consolidation
- Reuse existing equipment to the maximum

- Saving the cost & complexity of “first adopting Softswitch and then migrating to IMS later”
- Realize convergence of fixed and mobile, broadband and narrowband, provide full-service operation and enhance operators’ competitiveness

- Leverage legacy services
- Quick and flexible multimedia service delivery capability
- Adding new value-added services for legacy users, such as one number, converged Centrex, etc

- High density AGCF with multiple access mode capability
- Backward compatibility with non-IMS terminal/device in PSTN
Thanks!