

# ITU Perspective on ENUM

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# What is the ITU?

- International organization where governments and private sector coordinate global telecom networks and services
- Founded in 1865, it is the oldest specialized agency of the UN system
- 189 Member States, 650 Sector Members, 75 Sector Associates
- Website: <http://www.itu.int>

# Issues of Convergence

- Problems of addressing 'calls' that pass from one network service to another:
  - Now widely possible to originate calls from IP address-based networks to other networks
  - But uncommon to terminate calls from other networks to IP address-based networks
  - To access a subscriber on an IP address-based network, some sort of global addressing scheme across PSTN and IP address-based networks needed
- ENUM may be solution

# Why is discussion of ENUM important?

- Mapping of telephone numbers onto Internet
- Could allow conventional telephones to call IP terminals (e.g. PCs).
- Should telephone numbers used in this way be subject to government oversight and regulation?
- Who should exercise control over telephone numbers used in this way?

# Caveats

- Complex topic
- Focused on E.164 infrastructure and policy issues, not ENUM services
- Work in progress

# What is E.164?

- ITU-T Recommendation E.164: “The international public telecommunication numbering plan”
- Tied to treaty obligations (specific roles and obligations defined for ITU Member States and ITU-T TSB Director)
- Defines number structure and functionality for four principal categories of numbers

# Examples of E.164 Resources

- Geographic areas
  - ITU Member States, including integrated numbering plan involving more than one (e.g. +1)
- Global Services
  - Universal International Freephone Numbers (+800)
  - Universal Personal Telecommunications (+878 + 2 digit IC)
- Networks
  - Global Mobile Systems (+881 + 1 digit IC)
  - Shared code for Networks (+ 882 + 2 digit IC)
- Groups of Countries
  - ETNS

# Some Complexities

- In telecommunication numbering, regulatory tradition with government involvement
- In the Internet, management of naming and addressing has tradition of “self-regulation”
  - but increasing government interest
- National numbering/regulatory authorities involved in coordinating ENUM servers & services for their portion of E.164 resources in respective countries



# Some National Issues

- Integrity of national numbering plans
- Competition between service providers
- Telecommunications network security
- Number portability
- Carrier selection
- Emergency services calls (including LBS)
- Privacy
- Control over personal records & slamming
- Legal intercept

# Roles and Responsibilities

- Most ENUM service and administrative decisions are national issues under purview of ITU Member States, since most E.164 resources are utilized nationally
- ITU to ensure that Member State has specifically authorized inclusion of geographic country code in the DNS
- In integrated numbering plan, each ITU Member State within plan may administer their portion of E.164 resources mapped into DNS as they see fit

# ITU Responsibilities

- Define and implement administrative procedures that coordinate delegations of E.164 numbering resources into the agreed DNS name servers
- Defined in draft Recommendation E.A-ENUM under preparation by ITU-T Study Group 2
- Interim procedures agreed by SG2 at: [www.itu.int/ITU-T/inr/enum/index.html](http://www.itu.int/ITU-T/inr/enum/index.html)

# National Consideration Issues

- Consultation process with interested communities
- National deployment Issues
  - How do you authenticate the identity of the subscriber for ENUM services?
  - Who are ENUM Registrars, what are they responsible for?
  - How do you validate ENUM data for potential users (Add - Modify – Delete) NAPTR list of services and preferences?
  - How is data provisioned in the country code name servers?
  - Competition policy issues
- For info on actual consultations, see:  
[www.itu.int/ITU-T/inr/enum/trials.html](http://www.itu.int/ITU-T/inr/enum/trials.html)

# ITU Past Activities

- Discussion with IETF and RIPE NCC on roles and responsibilities
- Preparation and circulation of tutorial papers, workshops
- ITU-T SG 2 'Supplement' on issues that need to be addressed by national and international authorities
- ITU-T SG 2 Meetings in 2001 and 2002
- Interim administration arrangements

# ITU Future Activities

- Workshops
- Cooperate with IAB/IETF on final choice of TLD, registry, operations requirements
- Further discuss new draft Recommendation E.A-ENUM (next SG meeting in May 2003)
- For more info:
  - [www.itu.int/ITU-T/inr/enum/](http://www.itu.int/ITU-T/inr/enum/)
  - [www.itu.int/ITU-T/worksem/enum/](http://www.itu.int/ITU-T/worksem/enum/)
  - [www.itu.int/newsroom/press\\_releases/2002/NP05.html](http://www.itu.int/newsroom/press_releases/2002/NP05.html)

# International Telecommunication Union

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Thank you