



Topics in Real-time Communications: ENUM, Presence and Integrated Communications

Presented by
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Agenda

- **ENUM Basics**
- **ENUM in Operation**
- **Beyond Voice**
- **Essential Guidance**

What is ENUM?

- **TE**lephone **NUM**ber Mapping
 - IETF RFC 3761
 - Based on DNS architecture
 - E.164 → NAPTR (Naming Authority PointeR)
 - Registry, registrar, registrant

The ENUM working group has defined a DNS-based architecture and protocol [RFC 3761] by which an E.164 number, as defined in ITU Recommendation E.164, can be expressed as a Fully Qualified Domain Name in a specific Internet Infrastructure domain defined for this purpose (e164.arpa).

Sample ENUM Query

Input

Output

E.164 TN

+16505259200

0.0.2.9.5.2.5.0.5.6.1.e164.arpa

h323:

NAPTR Record

NAPTR 10 100 "u" "E2U+sip"
"!^.*\$!sip:info@example.com!"

mailto:

Telephone number in, IP out

The Various Flavors of ENUM

Public ENUM

- ▶ End-user control of data, users opt-in
- ▶ Publicly-accessible registry
- ▶ Resolution accuracy depends on self-policing by end-users
- ▶ Uses e164.arpa tree

Private ENUM

- ▶ Network mechanics similar to Public User ENUM
- ▶ Closed group, private focus
- ▶ User data not propagated across Internet
- ▶ Small, non-public community
- ▶ Does not use e164.arpa tree

Carrier ENUM

- ▶ AKA Provider, Infrastructure, Operator ENUM
- ▶ Similar to Private, but broader in scope to multiple service providers
- ▶ Shared routing and device interconnection between service providers
- ▶ Trusted community
- ▶ Does not use e164.arpa tree

One size does not fit all...

How ENUM Works

2. Calling party user agent client queries DNS for endpoint location

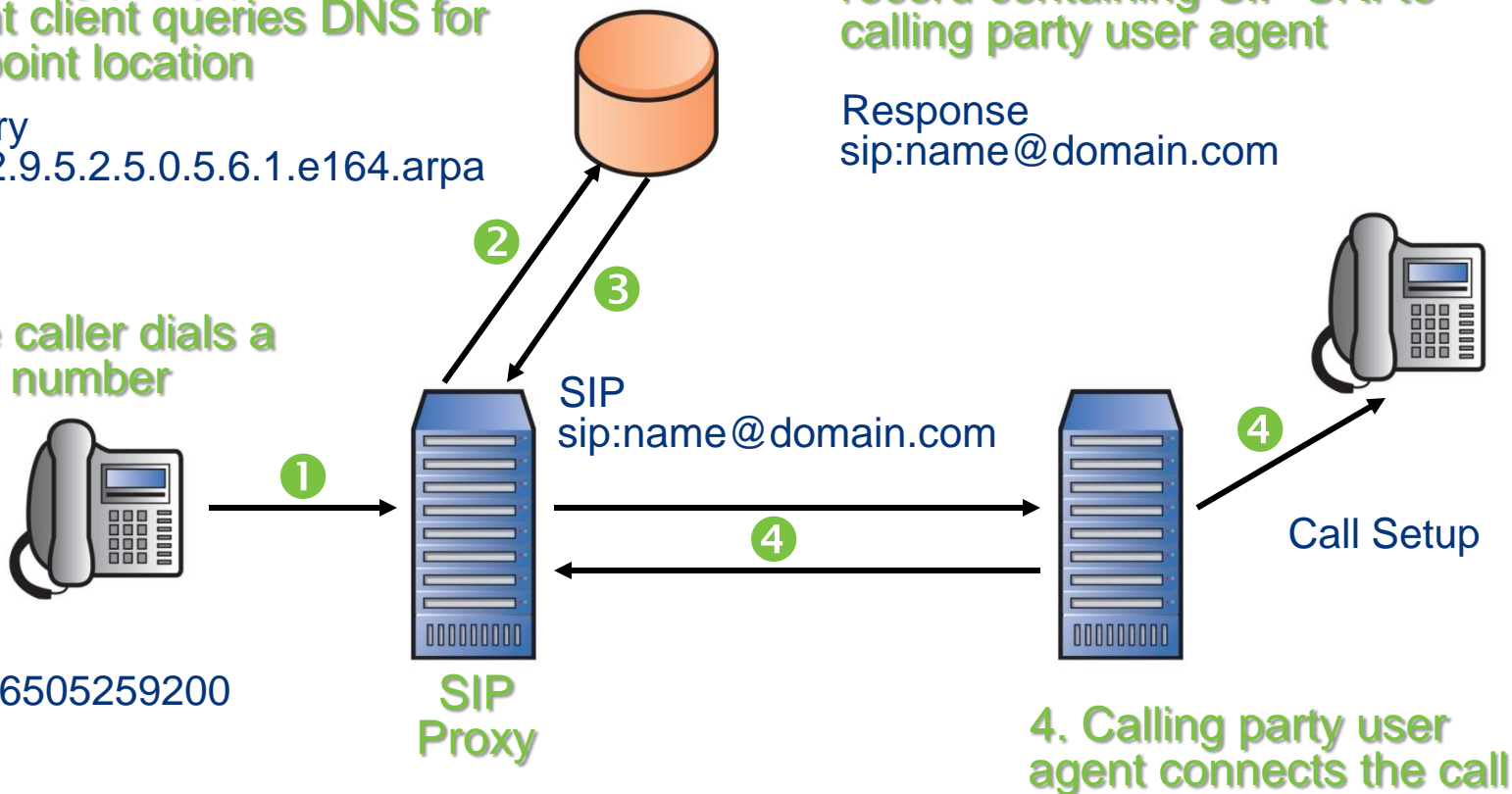
Query
0.0.2.9.5.2.5.0.5.6.1.e164.arpa

3. DNS returns NAPTR record containing SIP URI to calling party user agent

Response
sip:name@domain.com

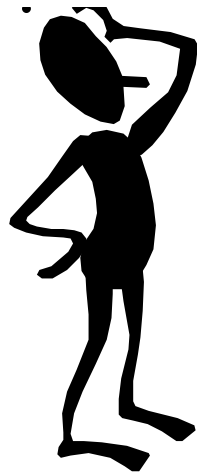
1. The caller dials a phone number

Dial +16505259200



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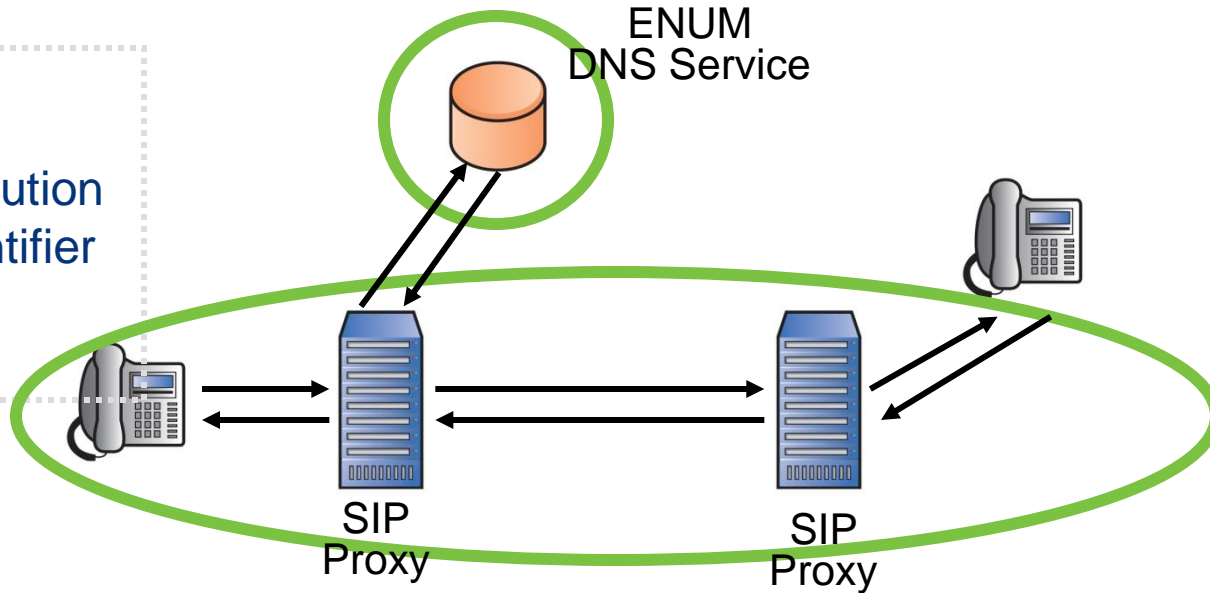
Is ENUM a service?
If so, do you plan to offer it?

Putting ENUM to Work

ENUM is...

- ▶ Address resolution
- ▶ Common identifier

It is a technology specification



ENUM is not...

- ▶ Transport
- ▶ PSTN interworking
- ▶ Signaling
- ▶ Comprehensive mapping of TN data

It is not a business solution

What is the Challenge?



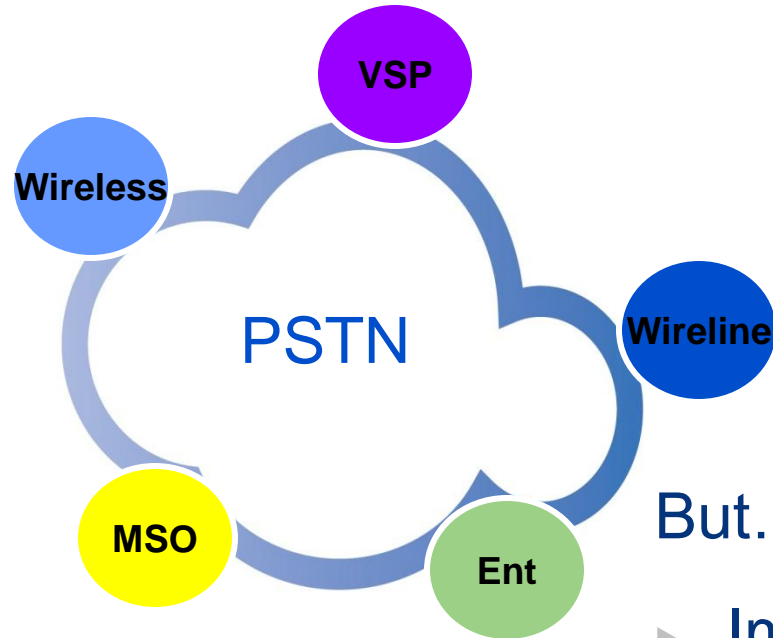
Universities, Cable, Wireless and Next-Generation Networks (including IMS) Cannot Ignore PSTN

- Legacy TDM-based Network is the Lowest Common Denominator Interconnection Method
- Time-Proven Stable Interface – Ubiquitous & Reliably Consistent Presence, Global Reach
- Standardized, Managed Addressing Scheme
- Interconnection Mandated in Many Cases
- Remember Metcalfe's Law: Largest Mass of Users

Finding the Shortest Route

PSTN provides...

- ▶ Ubiquitous addressing scheme
- ▶ Reliable voice interoperability



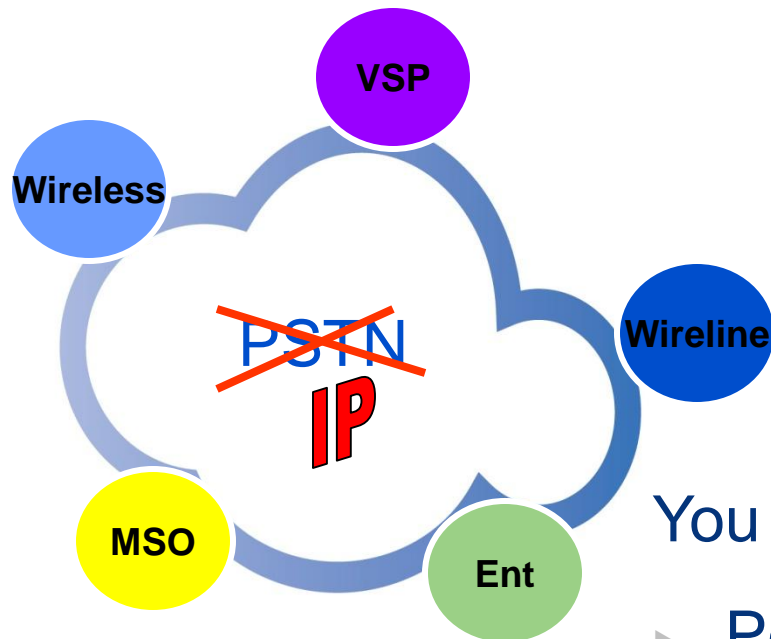
But...

- ▶ Imposes a significant cost
- ▶ Stops enhanced IP services

Finding the Shortest Route

ENUM provides...

- ▶ A universal addressing scheme for IP
- ▶ Foundation for enhanced services

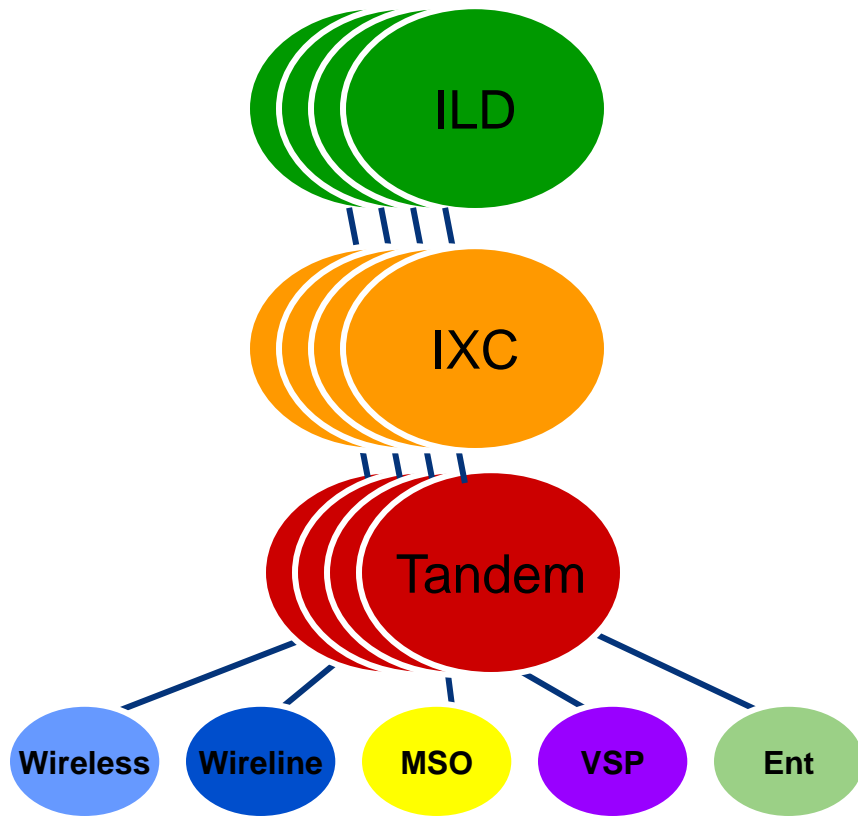


You provide...

- ▶ Peering relationships
- ▶ Media transport

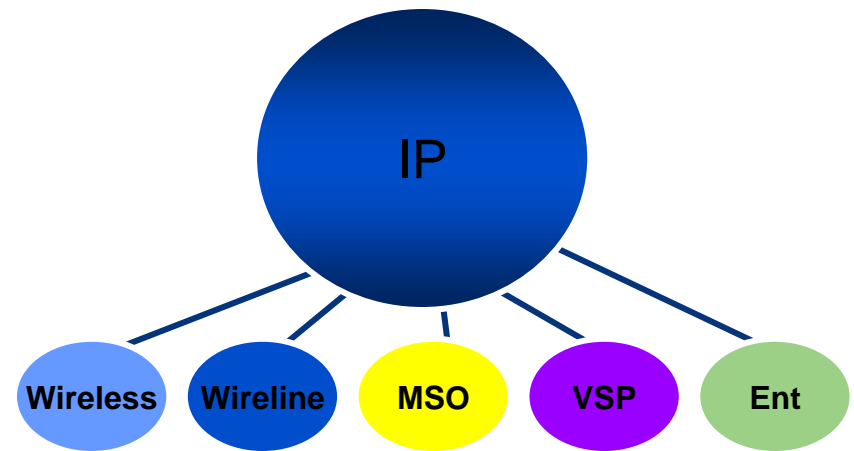
Lower Cost, Maximize Quality

PSTN Transport



IP Peering

- Compact the layers
- Connect directly
- Achieve scale



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Are you using ENUM today?
If so, do you use it for applications
other than voice?



Previously... Siloed Environments



Services and devices offered and consumed as “islands” with little interoperability

Now... One ID, Multiple Applications

SMS/MMS

IM/
Presence

Email

Multimedia/
Video

Voice

+16505259200



Fulfill end-user expectations for seamless and ubiquitous communications

Essential Guidance



- **Determine your objectives**
 - What role(s) does ENUM Play?
- **Search out the experts**
 - Find others who have done this before
- **Size does matter**
 - The larger the area mapped, the greater the value
- **ENUM is only a technology solution**
 - Don't forget to address business issues (cost, connectivity, commercial terms, etc.)
 - Look for a complete solution

QUESTIONS?

On Tue, 18 September 2007, the company once known as

VOEX




became

 **IntelPeer**TM

(in • TELLY' • peer)

 **IntelPeer**TM

Company Introduction

- Leading provider to traditional and VoIP-based carriers of voice peering & IP interconnect, registry and application services
- Provides carriers with three major offerings:
 -  **Voice Interconnect/IP Trunking** – leading VoIP-based interconnect/transport service
 -  **SuperRegistry™** – world's largest community of IP accessible telephone numbers supports peering grid
 -  **Application Services** – open communications platform to enrich carrier end-user experience (in development)
- Seasoned team with extensive experience in VoIP, intercarrier services & carrier applications





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**THANK YOU
FOR YOUR INTEREST!**

