



# US ENUM Trial

Karen Mulberry  
Sr. Director, Distinguished Member of Technical Staff  
Advanced Services - Technology Initiatives  
46000 Center Oak Plaza  
Sterling VA 20166 USA  
571-527-7248  
[karen.mulberry@neustar.biz](mailto:karen.mulberry@neustar.biz)



# CC1 ENUM LLC – What is it?

## Country Code (CC) 1 ENUM Limited Liability Company

- Formed September 2004 by industry
- Mission to implement ENUM within CC1, especially the US
- Obtain the CC1 ENUM delegation for a trial and then for commercial operations
- Develop requirements and select the CC1 commercial Tier 1A vendor
- Develop requirements and select the US commercial Tier 1B vendor

# CC1 ENUM LLC's Roles

- Obtaining the CC1 ENUM trial delegation (Feb. 2006)
- Overseeing an ENUM trial for the United States
- Compliance with the USG “guiding” principles to:
  - promote competition among registrars, providers and operators
  - accommodate interoperability of alternative deployments
  - encourage innovative services and products
  - protect the privacy and security of all ENUM users within its purview
- Responsible for:
  - issuing an RFP for the selection of the commercial Tier 1A Registry, as well as the US commercial Tier 1B Registry
  - contract negotiation and execution
  - vendor supervision
  - determination of applicable database and /or system changes
  - governing of emerging issues (e.g. vendor/provider interfaces)
  - ongoing vendor change management

# US ENUM Trial Delegation Terms and Conditions

- Must provide copies of the detailed trial plans before commencing any trial activities to all CC1 Countries
- Must provide the administrative procedures for the delegation of trial telephone numbers
- Must apply to the FCC to obtain geographic telephone numbers for use in the trial
- Only permitted to use geographic telephone numbers approved by the FCC, no non-geographic (Toll Free) numbers permitted to be used in the trial
- Not permitted to test carrier or infrastructure ENUM
- Must provide monthly progress reports and a final trial report 60 days after the trial ends
- Must provide a list of all numbers contained in the Tier 1A upon request to the USG



*US Trial is for End User ENUM ONLY*



**FEDERAL TRADE COMMISSION**  
FOR THE CONSUMER

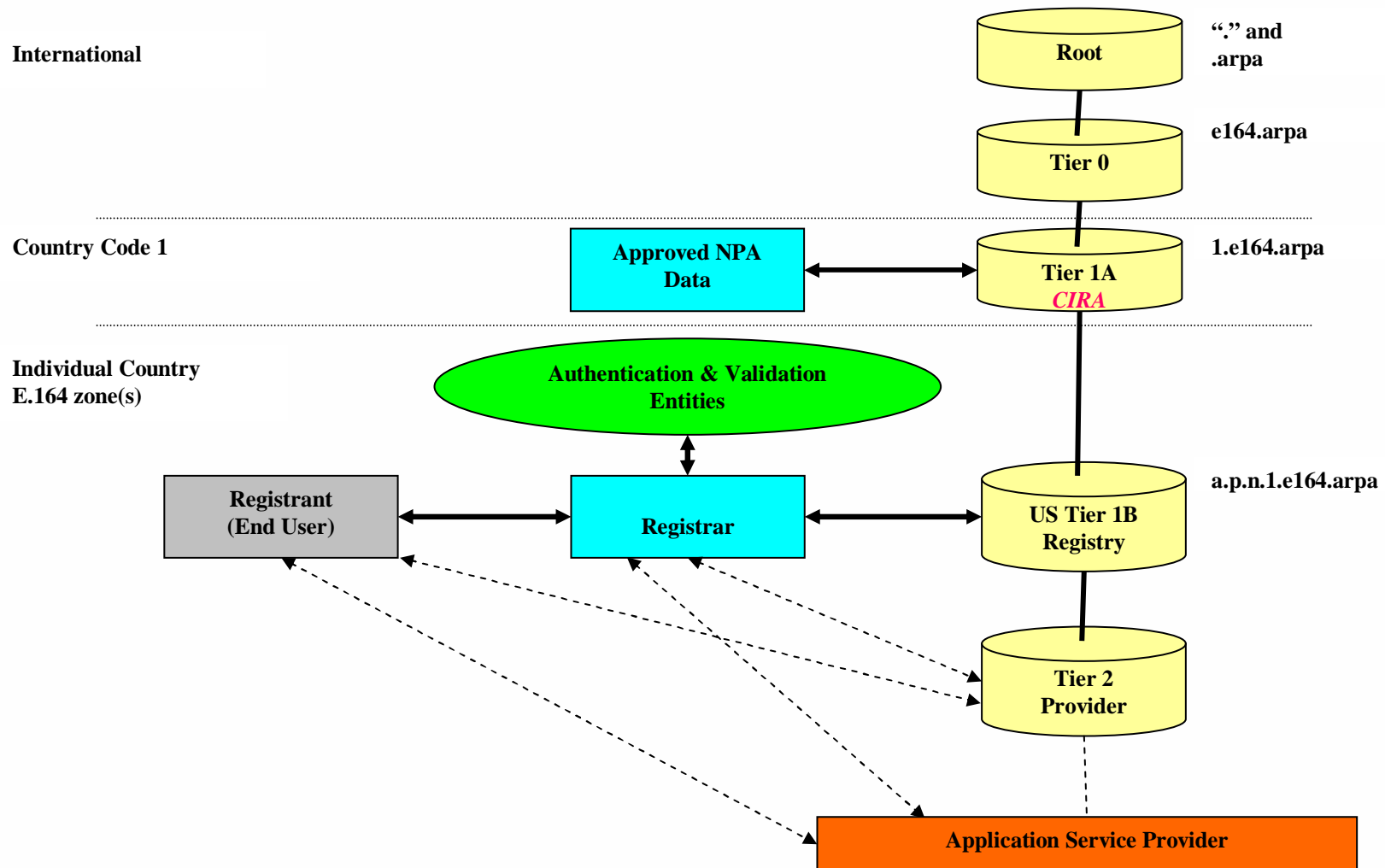
# CC1 ENUM Trial

- CC1 trial is designed to test ENUM services and interfaces, to trial the registration process, and to provide participants with hands-on experience (e.g. limited call/service setup and completion, and ENUM-enabled application service)
- CC1 ENUM LLC contracted with CIRA to host the temporary Tier 1 registry
- Each CC1 nation must opt into the ENUM trial and authorize use of its own numbering resources
- Trial plans being developed on an individual CC1 nation basis
  - ENUM Forum prepared the initial US trial framework document
- Each nation expected to conduct an estimated six month trial during the one year CC1 delegation period
  - US expected to commence its trial upon completion of USG terms and condition requirements
  - Canadian trial planning underway
  - Jamaican ISPs considering conducting an ENUM trial

# US ENUM Trial Formation - TPAC

- The CC1 ENUM LLC formed a Trial Participants Advisory Committee (TPAC) to conduct the US trial and hired a Project Executive to manage trial activities
  - The TPAC is currently developing the US ENUM trial test cases and format for all reporting documents to the LLC and USG
- The US trial is expected to start as soon as the FCC grants access to numbering resources per the delegation terms and conditions
  - An FCC waiver has been filed and numbers are anticipated to be allocated by late May/early June 2006
- Memoriam of Understanding (MOU) developed to define US trial participants roles and responsibilities and is required in order to participate in trial planning discussions and for US trial participation
  - Trial participants **MUST** follow the USG trial terms and conditions

# CC1 ENUM Architecture – ENUM Trial



# US ENUM Trial Roles

- Tier 1A Registry - entity that registers ENUM domains corresponding to CC1 NPAs and hosts the set of their authoritative name server (NS) records
- Tier 1B Registry –entity that registers CC1 NPA-NXX ENUM domains corresponding to 10 digit E.164 numbers (NPA-NXX-XXXX) and hosts the set of pointers to their Tier 2 name servers
- ENUM Registrar – entity that provides registration services to Registrars. Registrars are also the operational contact with End Users (Registrant) and they interface between the Registrant, the Tier 1B and the Tier 2 Providers.
- Tier 2 Provider – entity that maintains ENUM zone including the NAPTR resource records for that e.164 number and is pointed to by the Tier 1B and acts as the Registrant's Naming Authority Pointer (DNS Resource Record) or NAPTR records hosting company. A Tier 2 Provider maintains the actual NAPTR records that contain information for specific communications services.
- Application Service Provider (ASP) – the entity that provides applications directly to the ENUM End Users
- Authentication Agent – entity that is responsible for providing information that may be used by the Registrar in validating the assignment of ENUM end user E.164 numbers.
- Registrant/End-User - Person/organization that has registered their E.164 number into the CC1 ENUM Tier 1B Registry
- Carrier/Numbering Host – service provider that agrees to “host” the FCC approved telephone numbers for the trial



# US ENUM Trial Organization

Trial divided into three phases over a 6 month period:

- Phase 1 – Registry Infrastructure
  - Roles involved: Tier 1A, Tier 1B, Tier 2, ASP
- Phase 2 – Registry/Registrar Interface
  - Roles involved: Tier 1B, Tier 2, Registrars, ASP
- Phase 3 – Application Testing
  - Roles involved: Tier 1B, Tier 2, Registrars, ASP

# TPAC Activities

- Currently has 11 members who have signed the MOU
- Developing the following documentation:
  - TPAC01 Test Case Proposal
  - TPAC02 Test Case Result Form
  - TPAC03 Monthly Test Case Progress Report
  - TPAC04 Phase 1 Requirements and test case outlines
  - TPAC05 Phase 2 Requirements and test case outlines
  - TPAC06 Phase 3 Requirements and test case outlines
  - TPAC07 Trial Participants' Numbering Requests

# TPAC US Trial Estimated Timeline

- Phase 1 – Registry Infrastructure
  - Expected to start late May/June
  - Phase to last up to 2 months
- Phase 2 – Registry/Registrar Interface
  - Expected to start July/August
  - Phase to last 2 months
- Phase 3 – Application Testing
  - Expected to start September/October
  - Phase to last 2 months

# CC1 Timeline as of March 2006

Estimated Date	Proposed Event		
	US ENUM Trial	Tier 1A	Tier 1B
March 31, 2006		--	LLC releases CC1 ENUM Tier 1B draft RFP to US Government
April 25-27, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a>	Florham Park, New Jersey
May 12, 2006 (estimated)	TPAC Meeting May 11-12, 2006 Sterling VA		Comments requested from USG on Tier 1B draft RFP
May 23-25, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a>	Atlanta GA
June 12-16, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a>	TBD
<b>July 10, 2006</b>		<b>Tier 1A RFP released to bidders</b>	<b>Tier 1B RFP released to bidders</b>
July 18-20, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a>	Phoenix AZ
August 2006		Begin Permanent Delegation Request Process	
August 15-17, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a>	TBD
August 14, 2006 (Week of)		Tier 1A Bidder Conference - RFP clarifying questions to LLC	Tier 1B Bidder Conference Week - RFP clarifying questions to LLC
August 31, 2006		Tier 1A RFP Responses Due	Tier 1B RFP Responses Due
September 1 to October 2, 2006		Tier 1A Proposal Review by CC1 ENUM LLC	Tier 1B Proposal Review by CC1 ENUM LLC
September 11-15, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a> Las Vegas NV	
October 9, 2006 (Week of)		Tier 1A "Short List" Best and Final Bidder Presentations	Tier 1B "Short List" Best and Final Bidder Presentations
October 9-13, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a> Washington DC	
October 23, 2006		LLC selects Tier 1A vendor	LLC selects Tier 1B vendor
November 13-17, 2006		<a href="#">CC1 ENUM LLC Monthly Meeting</a> TBD	
<b>November 17, 2006</b>		<b>CC1 Tier 1A Vendor Contract Signed</b>	<b>US Tier 1B Vendor Contract Signed</b>

# CC1 ENUM Commercial Operations

- Developing two RFPs for commercial ENUM production
  - Tier 1A
  - Tier 1B for the US
- Expect to release these RFPs 3<sup>rd</sup> quarter 2006
- Vendors to be designated by 4<sup>th</sup> quarter 2006 or 1<sup>st</sup> quarter 2007
- Commercial Functional & Operational Beta Testing expected 2<sup>nd</sup> quarter 2007
- Commercial launch expected 3<sup>rd</sup> quarter 2007

# Challenges

- Defining the global standard for Carrier/Infrastructure/Operator/Provider ENUM
- Protecting End User privacy and security
- Managing opt in requirements
- Ensuring verification and authentication
- Integrating domestic/global policy mandates

# CC1 ENUM Information Resources

- CC1 ENUM LLC
  - <http://www.enumllc.com>
- US ENUM Forum
  - <http://www.enum-forum.org/>
- Canadian ENUM Working Group
  - <http://www.enumorg.ca>