What is E2MD

- E2MD:
  - E.164 To Meta-Data mapping

- Use cases are about providing further information on E.164 numbers

- Why not use ENUM (E.164 To URI Mapping)?
  - ENUM has limitations for usage for metadata
    - Result must always be a URI, and
    - Using the URI establishes a communication session
Differences ENUM / E2MD

ENUM:
- **E2U “label”**
- Result must always be a URI
- Establishes a communication session

E2MD:
- **E2M “label”**
- Result can be either a URI or a (short) ASCII String
- Provides information about a phone number (i.e. Meta-Data)
Framework approach, specifying
- DDDDS application (E2U / E2M)
- Template and process for IANA registration of ENUM / E2MD services*

Any new ENUM / E2MD service* follows this registration process
- Specification Required (implies Expert Review)

ENUM and E2MD may share the same tree
- e.g. sub-delegations within e164.arpa.

* service refers to Enumservices / metadata types
Both make use of DNS NAPTR RR

Privacy issues must be handled in each service registration

- Base-specification will mandate security considerations section in each registration and guidance on privacy
- Security / Privacy considerations shared by all services can be described in the base-specification

There are more commonalities than differences between ENUM and E2MD
Some E2MD Use Cases

- **Unused**
  - Indicator that number is not in use

- **send-n**
  - Information about the numbering plan

- **cnam**
  - Name of calling party

- **Global Service Provider Identifier**
Unused

- Indicates whether an E.164 number (or number range) is allocated or assigned for communications service.

- Lets client know that a call will fail without wasting the effort of a session setup
  - E2MD lookup is faster than SIP INVITE
  - The user can be provided with a correct announcement (or other indication)

- See: draft-ietf-enum-unused-04
Increases efficiency of overlapped dialing
  - Reduces DNS lookups and SIP INVITEs
  - Decreases frequency of timeouts
  - Could extend SIP "484 address incomplete" handling: no need for a new SIP dialogue for each dialed digit

Deployed in empty non-terminals (i.e. in the branches)

Indicates the minimum depth of the tree below this record
"You must send N more digits before any leaf-node NAPTRs will be returned"

- Designed for private ENUM, but works also in public ENUM

- See: draft-bellis-enum-send-n-02
cnam

- Returns the Calling Name (like directory name) for a given phone number.

- Used in cases where this information is not available or lost:
  - Calls that originate on (or transited via) the Public Switched Telephone Network (PSTN)
  - Calling Name to be displayed on VoIP or other Real-time Clients

- See: draft-ietf-enum-cnam-08
Global Service Provider Identifier

- Indicates the Communication Service Provider (CSP) responsible for this number
  - AKA the “carrier-of-record” or “ITAD identifier”

- Potential uses:
  - Optimize routing
  - Advising end-users about costs when charging depends on the terminating CSP

- Not yet documented in an Internet-Draft
Questions?
More E2MD Use Cases

- **Service capabilities:**
  - SMS | MMS | video calls | presence | IM | ...

- **Payment Type:**
  - PrePaid | PostPaid | ...

- **Network Type:**
  - TDMA | GSM | 3G | ...

- **Region Code:**
  - Numeric value indicating a region within a country

- **Least cost routing information**
  - e.g. preferred gateway
Potential E2MD Use Cases

- Charging information
  - In particular useful for premium rate numbers

- Assignee address information
  - e.g. to report abuse of premium rate number

- Emergency Call routing:
  - Location information
  - PSAP (Public Safety Answering Point)