

## Liaison to IETF/ISOC on ENUM

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### Abstract

Working Party 1/2, of the International Telecommunication Union Telecommunication Standardization Sector (ITU-T) held a meeting of its collaborators in Berlin Germany 19-26 October 2000. The agenda of the meeting contained several contributions regarding RFC 2916: "E.164 Number and DNS" from the Internet Engineering Task Force's (IETF) ENUM Working Group - more specifically, the method for administering and maintaining the E.164-based resources in the Domain Name System (DNS) as related to the ENUM protocol. Consequently, in addition to the WP1/2 collaborators, there were several members of the IETF present to assist with the discussion of issues contained in the aforementioned contributions.

This liaison from WP1/2 to the IETF/ISOC conveys the understandings of the WP1/2 collaborators resulting from the discussions.

### 1. Considerations under Question 1/2 (Numbering)

Throughout this document, the terms "administration" or "administrative functions" refer to the provision and update of the E.164 numerical values, to be contained in the zones of a domain name in the "e164.arpa" domain, in the DNS.

It is noted that most ENUM service and administrative decisions are national issues under the purview of ITU Member States, since most of the E.164 resources are utilized nationally.

These understandings are relative only to the provision of E.164 information for DNS administrative functions, not policy or operational functions.

In order to advance a common terminology for the purpose of this liaison, we have defined the zones of a domain name as follows.

Using an example, domain name "1.5.1.5.0.2.0.4.1.3.3.e164.arpa" (as in RFC 2916) is segmented into zones as follow:

E164.arpa - domain zone

3.3. - country code zone (1, 2, or 3 digits dependent on CC)

1.5.1.5.0.2.0.4.1. - national zone

The first understandings to be conveyed are those regarding the responsibilities for administration of the various zones within the "e164.arpa" domain:

- o The domain zone administration was agreed to be outside the scope of this meeting and WP1/2.
- o For all E.164 Country Code Zone resources (Country Codes and Identification Codes), the ITU has the responsibility to provide assignment information to DNS administrators, for performing the administrative function. The ITU will ensure that each Member State has authorized the inclusion of their Country Code information for input to the DNS. For resources that are spare or designated as test codes there will normally be no entry in the DNS. However, the ITU will provide spare code lists to DNS administrators for purposes of clarification. The entity to which E.164 test codes have been assigned will be responsible for providing any appropriate assignment information to DNS administrators.
- o The administration of National Zone numbering information is determined by the type of Country Code resource that a National Zone is behind:
  - \* The national zone, for geographic resources, is a national matter and is, therefore, administered by the ITU Member State(s) to which the country code is assigned. In an integrated numbering plan, e.g., CC "1", each Country within the plan may administer their portion of the resource in a different manner.
  - \* For national zone resources behind the Country Codes assigned to and shared by Networks, the entity to which the resource is assigned provides the E.164 assignment information, to DNS administrators for performing the administrative function.

- \* For national zone resources behind the Country Codes assigned to and shared by Groups of Countries, the administrative entity identified by the Countries of the Group provides the E.164 assignment information, to DNS administrators, for performing the administrative function. Note that the creation of this category is dependent upon the approval of draft Recommendation E.164.3.
- o Each of the administrative entities responsible for the administration of resources within the zones (as identified above) is individually and separately responsible for ensuring that DNS administrators are aware of appropriate changes to their resources once they have agreed to their input into the DNS.
- o Assigned geographic E.164 resources, for all zones, not authorized for input by the appropriate administrative entity will not be entered into the DNS under any circumstance. For example, if the ENUM service is not approved for use in a country, by the appropriate ITU Member States, the E.164 numbers of that country will not be input to the DNS.
- o With regard to Number Portability, it was agreed that WP1/2 would further study this issue, in the context of ENUM. However, it is currently understood that this study and its result will not impact the IETF and its work.
- o The study being undertaken within WP1/2 (referred to above) will also attempt to identify options and provide guidance to assist those entities charged with the task of providing the administrative information to DNS administrators.
- o All administrative entities, including DNS administrators, will adhere to all the applicable tenets of all pertinent ITU Recommendations, e.g., E.164, E.164.1, E.190, and E.195, with regard to the inclusion of the E.164 resource information in the DNS.
- o The ITU, IETF, and IAB will jointly cooperate fully to ensure that the agreed administrative procedures to accommodate the above understandings, and any other mutually agreed appropriate future understandings, will be implemented and adhered to on an ongoing basis. The ITU may request the consultation of the WP1/2 experts as necessary and as prescribed in Resolution 20.

## 2. Additional items below are from Q.10/2 Rapporteur Group (Service Issues)

- o The issues surrounding number portability are to be addressed in the draft supplement to Recommendation E.370
- o This issue surrounding freephone service was expanded to include other global services (i.e., International Premium Rate Service and International Shared Cost Service). Preliminary findings would indicate that routing the call to the appropriate destination will depend on successfully receiving information about the geographic point of origination (e.g., calling "telephone Number"). A proxy server would process such information and either redirect or forward the call (based on the proxy owner's decision) on to the appropriate destination.
- o The issue surrounding selection of the IP gateway within a PSTN-to-IP call flow may depend on options that may be available to telephony carriers in such selection.

The WP1/2 collaborators thank their IETF counterparts who attended this meeting and assisted in the resolution of these issues.

Any questions regarding the contents of this liaison should be referred to the WP1/2 Chairman Roy Blane at Roy\_Blane@inmarsat.com.

## 3. Security Considerations (added by the IESG)

The ENUM solution uses the Domain Name System (DNS) for storage of information. Delegation and distributed administration is done according to DNS routines. The E.164 numbers are though distributed according to a different algorithm than domain names.

This Liaison Statement describes how mapping E.164 number administration and DNS administration can work together, and how further discussions are delegated to each administrative body for the country codes in E.164 space.

If delegation and mapping is not done carefully between E.164 and DNS there is a risk of "napping" of E.164 numbers when they are stored in DNS. It is also important that the DNS strictly hierarchal system is preserved (see RFC 2826 [1]).

## 4. References

- [1] IAB, "IAB Technical Comment on the Unique DNS Root", RFC 2826, May 2000.

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