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**E.212 number and DNS**  
**draft-dommety-e212-dns-00.txt**

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Abstract

An E212 number or IMSI (International Mobile Station Identity) is used to uniquely identify a mobile station Internationally. This document discusses the use of the Domain Name System (DNS) for storage of information regarding E.212 numbers and how DNS can be used for identifying available services connected to one E.212 number. This draft is adaptation of [RFC 2916](#) to E.212 numbers.

## **1. Introduction**

An E212 number or IMSI (International Mobile Station Identity) is used to uniquely identify a mobile station Internationally. Through transformation of E.212 numbers into DNS names and the use of existing DNS services like delegation through NS records, and use of NAPTR [[1](#)] records in DNS [[2](#)] [[3](#)], one can look up what services are available for a specific domain name in a decentralized way with distributed management of the different levels in the lookup process. This document discusses the use of the Domain Name System (DNS) for storage of information regarding E.212 numbers and how DNS can be used for identifying available services connected to a E.212 number. This document is very similar to the [RFC 2916](#).

### **1.1 Terminology**

The key words "MUST", "REQUIRED", "SHOULD", "RECOMMENDED", and "MAY" in this document are to be interpreted as described in [RFC2119](#) [[4](#)].

## **2. E.212 numbers and DNS**

This document discusses the use of the Domain Name System (DNS) for storage of information regarding E.212 numbers and how DNS can be used for identifying and obtaining information related to an E.212 number.

The domain "e212.arpa" is being populated in order to provide the infrastructure in DNS for storage of E.212 numbers. In order to facilitate distributed operations, this domain is divided into subdomains. Just like in normal DNS operations, holders of E.212 numbers which want to be listed in DNS should contact the appropriate zone administrator in order to be listed, by examining the SOA resource record associated with the zone. As with other domains, policies for such listings will be controlled on a subdomain basis and may differ in different parts of the world.

To find the DNS names for a specific E.212 number, the following procedure is to be followed:

1. See that the E.212 number is written in its full form (MCC (Mobile Country Code) , MNC (Mobile Network Code) and MSIN (Mobile Subscriber Identification Number). Example:  
404984809514412
2. Remove all non-digit characters and characters with the with the exception of the digits.



3. Put dots (".") between each digit. Example:  
4.0.4.9.8.4.8.0.9.5.1.4.4.1.2

4. Reverse the order of the digits. Example:  
2.1.4.4.1.5.9.0.8.4.8.9.4.0.4

5. Append the string ".e212.arpa" to the end. Example:  
2.1.4.4.1.5.9.0.8.4.8.9.4.0.4.e212.arpa

### **3. Fetching URIs given an E.212 number**

For a record in DNS, the NAPTR record is used for identifying available ways of contacting a specific node and associated services identified by that name [[1](#)]. Use of NAPTR records for the obtaining URIs associated with E.164 numbers is specified in [[6](#)]. The same service E2U can be used to obtain URIs associated with E.212 addresses by using an DNS name corresponding to a E.212 number instead of a E.164 number as specified in [[6](#)].

### **4. IANA Considerations**

This memo requests that the IANA delegate the E212.ARPA domain following instructions to be provided by the IAB. Names within this zone are to be delegated to parties according to the ITU recommendation E.212. The names allocated should be hierarchic in accordance with ITU Recommendation E.212, and the codes should assigned in accordance with that Recommendation.

Delegations in the zone e212.arpa (not delegations in delegated domains of e212.arpa) should be done after Expert Review, and the IESG will appoint a designated expert.

### **5. Security Considerations**

As this system is built on top of DNS, one can not be sure that the information obtained from DNS is more secure than any DNS query. To solve this problem, the use of DNSSEC [[7](#)] for securing and verifying zones is recommended.

The caching in DNS can make the propagation time for a change take the same amount of time as the time to live for the NAPTR records in the zone that is changed. The use of this in an environment where IP-addresses are for hire (for example, when using DHCP [[9](#)]) must



therefore be done very carefully.

There are a number of countries (and other numbering environments) in which there are multiple providers of call routing and number/name translation services. In these areas, any system that permits users, or putative agents for users, to change routing or supplier information may provide incentives for changes that are actually unauthorized (and, in some cases, for denial of legitimate change requests). Such environments should be designed with adequate mechanisms for identification and authentication of those requesting changes and for authorization of those changes.

## **6. Funny Note**

One of the ideas was to have a one line draft that said "replace "E.164" by E.212 and "e164" by "e212" in [6] to transform E.212 numbers into DNS names.

## **7. Acknowledgements**

The document is based on [6] and would like to thank Patrik Faltstrom for consenting to use text from [6]. We would also like to thank Michel Young and Tim Stammers for the discussing involving this and various other solutions.

### References

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