

ENUM -- Telephone Number Mapping  
Working Group  
Internet-Draft  
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IANA Registration for Location ('loc') Enumservice  
draft-mayrhofer-enum-loc-enumservice-00

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Abstract

This document requests IANA registration of an Enumservice for reflecting location information. The Enumservice uses the 'loc' Type name, and makes use of the proposed 'held' and 'geo' URI schemes.

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Location Enumservice

Jun 2008

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## 1. Introduction

E.164 Number Mapping (ENUM) [[RFC3761](#)] uses the Domain Name System (DNS) [[RFC1035](#)] to refer from E.164 numbers [[refs.E164](#)] to Uniform Resource Identifiers (URIs) [[RFC3986](#)]. Specific services to be used with ENUM must be registered with IANA.

HTTP Enabled Location Delivery (HELD) [[I-D.ietf-geopriv-http-location-delivery](#)] specifies a Layer 7 location configuration protocol for retrieving location information from a server. The URI scheme 'helds' is specified to identify resources on such a location server.

[I-D.mayrhofer-geopriv-geo-uri] specifies the 'geo' URI scheme to identify a physical location by its latitude, longitude and optionally altitude in a compact, simple, human-readable, and protocol independent way.

The 'loc' Enumservice proposed in this document refers from a E.164 number to an URI identifying the physical location of the respective number, identified by 'helds' or 'geo' URIs resulting from the processing of the respective ENUM record.

## 2. Change Log

[Note to editors: This section is to be removed before publication - XML source available on request]

[draft-mayrhofer-enum-loc-enumservice-00](#)  
initial draft

## 3. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",

"SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

#### [4.](#) Enumservice Registration - 'loc'

The following template contains information required for the IANA registrations of the 'loc' Enumservice, according to [[I-D.ietf-enum-enumservices-guide](#)].

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##### [4.1.](#) Registration for 'loc:helds'

Enumservice Class: Application-type, Common

Enumservice Type: "loc"

Enumservice Subtype: "helds"

URI Scheme(s): "helds"

##### Functional Specification:

This Enumservice indicates that the resource identified is a HELD resource, which can be dereferenced to retrieve the location of the respective E.164 number. Clients should expect access to the HELD resource to be restricted, and should also be prepared for the server to return different granularity of information, based on for example the identity of the client.

Security Considerations: see [Section 6](#)

Intended Usage: COMMON

Registration Document(s): [RFC XXXX] (replace with RFC number of this document once assigned)

Author(s): Alexander Mayrhofer

Further Information: N/A

## [4.2.](#) Registration for 'loc:geo'

Enumservice Class: Application-type, Common

Enumservice Type: "loc"

Enumservice Subtype: "geo"

URI Scheme(s): "geo"

Functional Specification:

This Enumservice indicates that the resource identified is an 'geo' URI, which in turn identifies the physical location of the respective E.164 number.

Security Considerations: see [Section 6](#)

Intended Usage: COMMON

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Registration Document(s): [RFC XXXX] (replace with RFC number of this document once assigned)

Author(s): Alexander Mayrhofer

Further Information: N/A

## [5.](#) Examples

An example ENUM entry identifying the location of a number using a HELD resource could look like this:

```
$ORIGIN 6.9.4.0.6.9.4.5.1.1.4.4.e164.arpa.  
@ IN NAPTR (  
    100 10 "u"  
    "E2U+loc:helds"  
    "!^.*$!helds://nottinghamshire.example.com/sherwood/robin72!" .  
)
```

A client who retrieves that ENUM record would then try to dereference the resulting HELD resource, with the location server returning the

desired location information if the client is authorized to do so. The location server could, for example, return only rough location for anonymous clients, while trusted clients receive full location data.

An example ENUM entry referring to a location of a number using a 'geo' URI could look like this:

```
$ORIGIN 6.9.4.0.6.9.4.5.1.1.4.4.e164.arpa.  
@ IN NAPTR (  
    100 10 "u"  
    "E2U+loc:geo"  
    "!^.*$!geo:53.204628,-1.072359!" .  
)
```

The client could use the geographical coordinates contained in the URI to display a map of the current user's location. Note that the location information is contained in the URI (and therefore in the ENUM record) itself, which makes it unnecessary to contact a location server. However, it is therefore not possible to return different location information to different clients.

## [6.](#) Security & Privacy Considerations

General security considerations of the protocols on which this

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Enumservice registration is based are addressed in Sections [3.1.3](#) and 6 of [RFC 3761](#) (ENUM).

Since ENUM uses DNS - a publicly available database - any information contained in records provisioned in ENUM domains must be considered public as well. Even after revoking the DNS entry and removing the referred resource, copies of the information could still be available.

Information published in ENUM records could reveal associations between E.164 numbers and their owners - especially if IRIs/URIs contain personal identifiers or domain names for which ownership information can be obtained easily.

However, it is important to note that the ENUM record itself does not need to contain any personal information. It just points to a

location where access to personal information could be granted.

ENUM records pointing to third party resources can easily be provisioned on purpose by the ENUM domain owner - so any assumption about the association between a number and an entity could therefore be completely bogus unless some kind of identity verification is in place. This verification is out of scope for this memo.

## 7. IANA Considerations

This memo requests IANA to add a new "loc" Enumservice to the 'Enumservice Registrations' registry, according to the definitions in this document and [RFC 3761](#) [[RFC3761](#)].

The required templates are contained in [Section 4](#).

## 8. DNS Considerations

The proposed Enumservice does not require any special DNS considerations. While 'geo' URIs can be dereferenced even without subsequent DNS lookups, a 'helds' URI may require additional DNS queries to resolve the server location. However, such queries can never end up in another ENUM query, hence the probability of endless loops is zero.

## 9. Acknowledgements

Some text from HELD was used in the introduction

## 10. References

### 10.1. Normative References

- [RFC3761] Faltstrom, P. and M. Mealling, "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)", [RFC 3761](#), April 2004.

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## [10.2](#). Informative References

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