A Uniform Resource Name (URN) for Services
draft-schulzrinne-sipping-service-01

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Abstract

   The content of many communication services depend on the context,
   such as the user's location. We describe a 'service' URN that allows
   to register such context-dependent services that can be resolved in a
   distributed manner.

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[1](#). **Introduction**

   In existing telecommunications systems, there are many well-known
   communication and information services that are offered by loosely
   coordinated entities across a large geographic region, with well-
   known identifiers. Some of the services are operated by governments
   or regulated monopolies, others by competing commercial enterprises.
   Examples include emergency services (reached by 911 in North America,
   112 in Europe), telephone directory and repair services (411 and 611
   in the United States and Canada), government information services
   (311 in some cities in the United States), lawyer referral services
   (1-800-LAWYER), car roadside assistance (automobile clubs) and pizza
   delivery services. Unfortunately, almost all of them are limited in
   scope to a single country or possibly a group of countries, such as
   those belonging to the North American Numbering Plan or the European
   Union. The same identifiers are often used for other purposes
   outside that region, making accessing such services difficult when
   users travel or use devices produced outside their home country.

   These services are characterized by long-term stability of user-
   visible identifiers, decentralized administration of the underlying
   service and a well-defined resolution mechanism. (For example, there
   is no national coordination or call center for 911; rather, various
   local government organizations cooperate to provide this service,
   based on jurisdictions.)

   In this document, we propose a URN namespace that, together with
   resolution protocols beyond the scope of this document, allows to
   define such global, well-known services, while distributing the
   actual implementation across a large number of service-providing
   entities. While there are many ways to divide provision of such
   services, we focus on geography as a common way to delineate service
   regions. In addition, users can choose different directory providers
   that in turn manage how geographic locations are mapped to service
   providers.

   Availability of such service identifiers simplifies end system
   configuration. For example, an IP phone could have a special set of
   short cuts or buttons that invoke emergency services, as it would not
   be practical to manually re-configure the device with local emergency
   contacts for each city or town a user visits with his or her mobile
   device. Also, such identifiers allow to delegate routing decisions
   to third parties and mark certain requests as having special
   characteristics while preventing these characteristics to be
   accidentally invoked on inappropriate requests.

   This URN allows to identify services independent of a particular
   protocol to deliver the services. It may appear in protocols that

allow general URIs, such as SIP [4] request URIs, web pages or
mapping protocols.

Existing technologies address the mapping of service identifiers to a
service for a particular DNS domain (DNS SRV [6], DNS NAPTR [7]) or a
local area network (SLP [5]).

The tel URI [9] allows to express service codes such as 911 by adding
a context parameter, but does not address the problem of global
validity.

LUMP [10] is a prototype resolution system for mapping URNs to URLs
based on geographic location. However, it is anticipated that there
will be several such systems.

2. Registration Template

Below, we include the registration template for the URN scheme
according to RFC 3406 [8].
Namespace ID: service
Registration Information: Registration version: 1; registration date:
   2005-07-10
Declared registrant of the namespace: TBD
Declaration of syntactic structure: The URN consists of a
   hierarchical service identifier, with a sequence of labels
   separated by periods. The left-most label is the most significant
   one and is called 'top-level service', while names to the right
   are called 'sub-services'. The set of allowable characters is the
   same as that used for domain names. Any string of service labels
   can be used to request services that are either more generic or
   more specific. In other words, if a service 'x.y.z' exists, the
   URNs 'x' and 'x.y' are also valid service URNs. [?]

     "URN:service:" top-level-service *("." service-identifier)
     top-level-service = ALPHA / DIGIT / "-" /
     service-identifier = ALPHA / DIGIT / "-" /

Relevant ancillary documentation: None
Identifier uniqueness considerations: 'service' URNs identify one
   logical service, recognized by human users as such. The service
   does not have to be provided by the same organization or to the
   same standards over time and space. Unlike for other URNs, the
   content of the service is by nature dynamic. While undesirable in
   many cases, two users making the same request for a service from
   the same place may not necessarily be directed to the same
   resource.

Identifier persistence considerations: The 'service' URN for the same
   service is expected to be persistent, although there naturally
   cannot be a guarantee that a particular service will continue to
   be available globally or at all times.
Process of identifier assignment: Details of the service assignment
   depend on the service and national regulations. In general, it is
   assumed that providers of services can register through a service
   mapping mechanism for a particular service in a particular
   geographic area. The provision of some services may be restricted
   by local or national regulations. (As a hypothetical example,
   providing emergency services may be restricted to government-
   authorized entities, which may limit the region where each entity
   can advertise its services.) The rules for each service are
   described in a service-specific document.
Process for identifier resolution: 'service' identifiers are resolved
   by the TBD mapping protocol, an instance of a Resolution Discovery
   System (RDS) as described in RFC 2276 [2]. (In theory, there
   could be several such mapping protocols in concurrent use, as long
   as there are reasonable guarantees that all services are available
   in all mapping protocols.)
Rules for Lexical Equivalence: 'service' identifiers are compared
   according to domain name comparison rules. The use of homographic
   identifiers is NOT RECOMMENDED.
Conformance with URN Syntax: There are no special considerations.
Validation mechanism: The RDS mechanism is also used to validate the
   existence of a resource. As noted, by its design, the
   availability of a resource may depend on where service is desired
   and there may not be service available in all or most locations.
   (For example, roadside assistance service is unlikely to be
   available on about 70% of the earth's surface.)
Scope: The scope for this URN is public and global.

3. Example

For discussion and illustration purposes only, we include an example
of a particular service. We choose emergency services as an example,
with the top-level service identifier 'sos'. A possible list of
identifiers might include:

```
urn:service:sos
urn:service:sos.fire
urn:service:sos.police
urn:service:sos.marine
urn:service:sos.mountain
urn:service:sos.rescue
urn:service:sos.poison
urn:service:sos.suicide
urn:service:sos.mental-health
```

4. IANA Considerations

   New service-identifying tokens and sub-registrations are to be
   managed by IANA, according to the processes outlined in [3]. The
   policy for top-level service names is TBD, but could be
   'specification required', 'IETF Consensus' or 'Standards Action'.
   The policy for assigning names to sub-services may differ for each
   top-level service designation and MUST be defined by the document
   describing the top-level service.

5. References

5.1 Normative References

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         Resolution", RFC 2276, January 1998.

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         Considerations Section in RFCs", BCP 26, RFC 2434, October 1998.

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         Session Initiation Protocol", RFC 3261, June 2002.

5.2 Informative References

   [5]   Guttman, E., Perkins, C., Veizades, J., and M. Day, "Service
         Location Protocol, Version 2", RFC 2608, June 1999.

   [6]   Gulbrandsen, A., Vixie, P., and L. Esibov, "A DNS RR for
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   [9]   Schulzrinne, H., "The tel URI for Telephone Numbers", RFC 3966,
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Appendix A. Acknowledgments

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Intellectual Property Statement