         A Uniform Resource Name (URN) Namespace for
         Foundation for Intelligent Physical Agents (FIPA)

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Abstract

   This document describes a Uniform Resource Name Namespace
   Identification (URN NID) for the Foundation for Intelligent Physical
   Agents (FIPA). This URN NID will be used for identification of
   standard components published by the FIPA standards body in the area
   of Agent technology.

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1. Introduction

   The Foundation for Intelligent Physical Agents (FIPA) was established
   in 1996 in Geneva, Switzerland. FIPA is an international non-profit
   association of companies and organizations dedicated to promoting the
   industry of intelligent agents by openly developing specifications
   supporting interoperability among agents and agent-based
   applications. The core mission of the FIPA standards consortium is
   to facilitate the interworking of agents and agent systems across
   multiple vendors' platforms. Since its inception, FIPA has counted
   more than 60 member companies from over 20 different countries
   worldwide.

   FIPA publishes technical specifications, schemas, diagrams and other
   documentation related to the area of Agent technology. FIPA wishes
   to create and manage globally unique, persistent, location-
   independent identifiers for these resources.

2. Specification Template

   Namespace ID:

      "fipa"

   Registration Information:

      Version 1
      Date: 2002-02-28

   Declared registrant of the namespace:

      Name: FIPA Secretariat (J. Kelly)
      E-mail: secretariat@fipa.org
      Affiliation: Foundation for Intelligent Physical Agents (FIPA)
      Address: c/o Me Jean-Pierre Jacquemoud
                        2, rue Bellot
                        CH-1206 Geneve

   Declaration of structure:

   The identifier has a hierarchical structure as follows:

      urn:<assigned number>:{subspace-id1}:{subspace-id2}:...

      subspace-ids can be any US-ASCII string compliant with URI syntax
      and not containing the ":" character. The subspaces are used to
      divide the assigned namespace along one or more logical schemes.

Examples of such schemes are:

    * By standardization area:
urn:fipa:language:acl
urn:fipa:ontology:management

    * By technical committee:
urn:fipa:architecture:example:directory
urn:fipa:architecture:example:greenpolicy

Relevant ancillary documentation:

    None.

Identifier uniqueness considerations:

    Assignment of URNs in the requested namespace will be managed by
    the FIPA Architecture Board (FAB) which will ensure that URNs
    assigned in the requested namespace are unique.

Identifier persistence considerations:

    FIPA is committed to maintaining the availability and persistence
    of all resources identified by assigned URNs.

Process of identifier assignment:

    Assignment of URNs in the requested namespace will be managed by
    the FIPA Architecture Board (FAB) which is responsible for
    approval of all specifications published by FIPA.

Process for identifier resolution:

    FIPA will maintain published lists of assigned identifiers on its
    web pages at http://www.fipa.org.

Rules for Lexical Equivalence:

    URNs are lexically equivalent if they are lexically identical.

Conformance with URN Syntax:

    No special considerations.

Validation mechanism:

    None specified.

   Scope:

      Global.

3. Namespace Considerations

   As part of the consideration of the URN namespace issue, FIPA has
   engaged in a survey of existing and proposed URN NID schemes which
   might be used instead of applying for a dedicated scheme. FIPA's
   specific requirements are that the namespace should be:

   - Globally unique
   - Persistent
   - Location-independent
   - Reflect the logical structure of FIPA specifications (see section
      3)
   - Be purely logical and without reference to "location" related
      elements such as (in particular) domain names/Domain Name System
      (DNS) entries such as URLs
   - Be managed by the FIPA organisation to ensure the integrity,
      correctness and uniqueness of the namespace.

   The closest to the requirements identified by FIPA were the proposed
   Vocabulary (VOC) [4] and TAG [3] schemes:

   - In particular, TAG could be used in conjunction with the domain
      name "fipa.org" which FIPA has registered to generate unique
      identifiers. However, the problems with this scheme from FIPA's
      perspective are (in order of importance):

      * It has not yet (to our knowledge) been approved / accepted by
         IESG or IANA (making it inappropriate for use in a standards
         document).

      * The labels generated related to the time date, owner of the
         label but specify no particular semantics for the content/text
         of the label which would be desirable to identify a hierarchy
         of standards.

      * The uniqueness in the scheme is DNS based.

   - VOC provides a more logical structure for a logical hierarchy of
      specifications but still presents the following problems:

      * It has not yet (to our knowledge) been approved / accepted by
         IESG or IANA making it inappropriate for use in a standards
         document).

* The uniqueness in the scheme is DNS based.

In both cases, there is no clear authority for managing the
correctness of the namespace.

4. Community Considerations

FIPA standards address the area of interoperability between
autonomous software systems (agents) in open environments such as
company intranets or the Internet itself. Communication between such
systems is highly contingent on developers and the systems themselves
being able to unambiguously identify which technology specifications
(interaction protocols, languages, domain descriptions and the like)
are to be used for particular purposes in any given interaction.

The use of a managed, unique namespace for FIPA specification
components would therefore be of great benefit:

-   To the FIPA standards process: providing unique labels for
    individual specification components.

-   To developers implementing systems based on FIPA standards:
    identifying which specifications are in use in a particular
    system, allowing them to develop software able to flexibly
    distinguish between different technologies used.

-   To users of networks making use of FIPA technology (in whole or in
    part): improving the integrity and clarity of interactions in the
    system, allowing them to precisely identify technology
    requirements for interacting with any given software system using
    FIPA technology.

Whilst the assignment of identifiers is managed by the FIPA
Architecture Board the application for identifiers is through the
open FIPA standards process - thus anybody following the process is
entitled to request an identifier for technologies they consider
relevant to FIPA's work.

Final acceptance of any FIPA standard is contingent on a vote of the
FIPA membership. Although membership is not free (see [2] for
details of costs), it is open to any organisation with an interest in
FIPA's work.

The initial plans for identifier resolution are to host a web page on
http://www.fipa.org to provide for resolution of identifiers FIPA
will also encourage third parties (FIPA members and others) to host

   more advance dereferencing service or to develop software to provide
   dereferencing where these provide a correct and accurate reflection
   of the namespace. FIPA itself may also engage in such activities.

5. IANA Considerations

   The IANA has registered formal URN namespace 14, to FIPA within the
   IANA registry of URN NIDs.

6. Security Considerations

   The FIPA URN Namespace ID shares the security considerations outlined
   in RFC 3406 [1], but has no other known security considerations.

7. References

7.1. Normative References

   [1] Daigle, L., van Gulik, D., Iannella, R. and P. Faltstrom,
        "Uniform Resource Names (URN) Namespace Definition Mechanisms",
        BCP 66, RFC 3406, October 2002.

7.2. Informative References

   [2] Foundation for Intelligent Physical Agents. http://www.fipa.org/

   [3] Kindberg, T. and S. Hawke, "The 'tag' URI scheme and URN
        namespace", Work in Progress, September 2001.

   [4] Stickler, P., "The 'voc:' URI scheme for Vocabulary Terms and
        Codes, Work in Progress, January 2002.

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