SIMPLE                                                    H. Schulzrinne
Internet-Draft                                              Columbia U.
Expires: August 9, 2004                                      V. Gurbani
                                                                Lucent
                                                            P. Kyzivat
                                                                 Cisco
                                                          J. Rosenberg
                                                           dynamicsoft
                                                      February 9, 2004

## RPID - Rich Presence Information Data Format
### draft-ietf-simple-rpid-01

Status of this Memo

Copyright Notice

Abstract

   The Rich Presence Information Data Format (RPID) adds elements to the
   Presence Information Data Format (PIDF) that provide additional
   information about the presentity and its contacts.  This information
   can be translated into call routing behavior or be delivered to
   watchers, for example.  The information is designed so that much of
   it can be derived automatically, e.g., from calendar files or user
   activity.

Table of Contents

## 1. Scope

This extension does not replace media negotiation mechanisms defined
for SIP (e.g., SDP [8]), therefore media negotiation (e.g., choice of
voice and video codecs) MUST be performed according to RFC 3264 [10].
This extension is only aimed to give the watchers hints about the
presentity's preferences, willingness and capabilities to communicate
before watchers initiate SIP-based communication with the presentity.

## 2. Terminology and Conventions

This memo makes use of the vocabulary defined in the IMPP Model
document [4].  Terms such as CLOSED, INSTANT MESSAGE, OPEN, PRESENCE
SERVICE, PRESENTITY, WATCHER, and WATCHER USER AGENT in the memo are
used in the same meaning as defined therein.  The key words MUST,
MUST NOT, REQUIRED, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and
OPTIONAL in this document are to be interpreted as described in BCP
XX, RFC 2119 [1].

[3](#). **The Meaning of "open" and "closed"**

   PIDF describes the basic status values of "open" or "closed" only as
   "have meanings of general availability for other communications
   means". We define "closed" in our context as meaning that
   communication to the contact address will in all likelihood not
   succeed, is undesired or will not reach the intended party.  (For
   example, a presentity may include a hotel phone number as a contact.
   After check-out, the phone number will still ring, but reach the
   chambermaid or the next guest.  Thus, it would be declared "closed".)
   For "pres" contacts, "closed" means that no presence status
   information is available.

**4**. **RPID Elements**

**4.1 Introduction**

   Below, we describe the RPID elements in detail.  <activity>, <idle>
   <placetype>, <privacy>, <relationship>, extend the PIDF <status>
   element, while <class> and <contacttype> extend the PIDF <tuple>
   element.

   In general, it is highly unlikely that a presentity will publish or
   announce all of these elements at the same time.  Rather, these
   elements were chosen to give the presentity maximum flexibility in
   deriving this information from existing sources, such as calendaring
   tools, device activity sensors or location trackers, as well as to
   manually configure this information.

   The namespace URIs for these elements defined by this specification
   are URNs [2], using the namespace identifier 'ietf' defined by [3]
   and extended by [5]:

      urn:ietf:params:xml:ns:pidf:rpid-status
      urn:ietf:params:xml:ns:pidf:rpid-tuple


**4.2 Activity Element**

   The <activity> indication describes what the presentity is currently
   doing.  This can be quite helpful to the watcher in judging how
   appropriate a communication attempt is and which means of
   communications is most likely to succeed and not annoy the
   presentity. The activity indications correspond roughly to the
   category field in calendar entries, such as Section 4.8.1.2 of RFC
   2445.

   An activity indication consists of one or more values drawn from the
   list below, any other token string or IANA-registered values (Section
   Section 7).  Communities of interest such as a profession or an
   organization may define additional activity labels for their internal
   use.

   Depending on the presentity intent, all but the "available"
   indication can be used with either status OPEN or CLOSED.

   Available: The presentity is available for communication.

   On-the-phone: The presentity is talking on the telephone. This
      activity is included since it can often be derived automatically.

Away: The presentity is physically away from the device location.
   This activity was included since it can often be derived
   automatically from security systems, energy management systems or
   entry badge systems.

Appointment: The presentity has a calendar appointment.

Holiday: This is a scheduled national or local holiday. This
   information can typically be derived automatically from calendars.

Meal: The presentity is scheduled for a meal.  This activity category
   can often be generated automatically from a calendar.

Meeting: This activity category can often be generated automatically
   from a calendar.

Steering: The presentity is controlling a vehicle, ship or plane.

In-transit: The presentity is riding in a vehicle, such as a car, but
   not steering. Alternatively, the presentity MAY offer more
   specific information.

Travel: The presentity is on a business or personal trip, but not
   necessarily in-transit.  This category can often be generated
   automatically from a calendar.

Vacation: This activity category can often be generated automatically
   from a calendar.

Sleeping: This activity category can often be generated automatically
   from a calendar, local time information or biometric data.

Busy: User is busy, without further details.  This activity category
   would typically be indicated manually.

Permanent-absence: Presentity will not return for the foreseeable
   future, e.g., because it is no longer working for the company.

The <activity> element MAY be qualified with the 'from' and 'until'
attributes to describe the time when the element assumed this value
and the time until which is element is expected to be valid.  The
'from' time MUST be in the past, the 'until' time in the future
relative to the publication of the presence information.

## 4.3 Class

The 'class' attribute describes the class of the tuple.  Multiple
tuples can have the same class name within a presence document.  The

naming of classes is left to the presentity.  The presentity can use
this information to group similar tuples or to convey information
that the presence agent can use for filtering.


## 4.4 Contact-Type Element

The <contacttype> element describes the type of the tuple.  A tuple
can represent a communication facility ("device"), a face-to-face
communication tuple ("in-person"), a set of devices offering a common
service ("service"), or a whole presentity ("presentity").
Additional types can be registered with IANA.


## 4.5 Idle Element

The <idle> records the absolute time and date the communication
device was last used.  This provides an indication as to how likely a
user is to answer the device.  A device that has not been used in a
while may still be OPEN, but a watcher may choose to first contact a
device that is both OPEN and not marked as idle.

The <idle> element can be empty if the presentity wants to indicate
that the device has not been used for a while, but does not want to
reveal the precise duration:

The <idle> SHOULD be included in the presence document if the idle
time exceeds a user-setable threshold, with a RECOMMENDED default
value of 10 minutes.  Configuration MUST include the option to omit
the timestamp.

## 4.6 Type of Place Element

The <placetype> element describes the type of place the presentity is
currently at. This offers the watcher an indication what kind of
communication is likely to be appropriate. We define an initial set
of values below:

home: The presentity is in a private or residential setting, not
    necessarily the personal residence of the presentity, e.g.,
    including hotel or a friend's home.

office: The presentity is in a business setting, such as an office.

public: The presentity is in a public area such as a shopping mall,
     street, park, public building, train station, airport or in public
     conveyance such as a bus, train, plane or ship. Alternatively, the
     more detailed indications below may be provided.

street: Walking in a street.

public-transport: Any form of public transport, including aircraft,
     bus, train or ship.

aircraft: The presentity is in a plane, helicopter or balloon.

ship: Water vessel, boat.

bus: Public bus.

train: The presentity is traveling in a train, cable car.

airport: Airport, heliport or similar location.

station: Bus or train station.

mall: Shopping mall or shopping area.

outdoors: General outdoors area, such as a park or city streets.

This list can be augmented by free-text values or additional
IANA-registered values (Section [Section 7](#)).

The <placetype> element MAY be qualified with the 'from' and 'until'
attributes to describe the time when the element assumed this value
and the time until which is element is expected to be valid.  The
'from' time MUST be in the past, the 'until' time in the future
relative to the publication of the presence information.


## [4.7](#) Privacy Element

The 'privacy' element indicates whether third parties may be able to
hear or view parts of the communication.

public: Others may be able to see or hear the communications.

private: Inappropriate individuals are not likely to see or hear the
     communications.

   quiet: The presentity is in a place such as a library, restaurant,
      place-of-worship, or theater that discourages noise, conversation
      and other distractions.

   This indication is not limited to voice communications.  For example,
   a presentity might label her privacy as "quiet" when giving a talk,
   since it would be inappropriate if an instant message popped up on
   the laptop screen that is being projected for the audience.

   The 'activity' element MAY be qualified with the 'from' and 'until'
   attributes to describe the time when the element assumed this value
   and the time until which is element is expected to be valid.  The
   'from' time MUST be in the past, the 'until' time in the future
   relative to the publication of the presence information.

## 4.8 Relationship Element

   The <relationship> element designates the type of relationship an
   alternate contact has with the presentity.  This element is provided
   only if the tuple refers to somebody other than the presentity.
   Relationship values include "family", "associate" (e.g., for a
   colleague), "assistant", "supervisor".  Other free-text values and
   additional IANA-registered values (Section Section 7) can be used as
   well.

   The <contact> element for tuples labeled with a relationship can
   contain either a communication URI such as "im", "sip"/"sips",
   "h323", "tel" or "mailto", or a presence URI, such as "pres" or
   "sip".

## 4.9 Sphere Element

   The <sphere> element designates the current state and role that the
   presentity plays.  For example, it might describe whether the
   presentity is in a work mode or at home or participating in
   activities related to some other organization such as the IETF or a
   church.  This document does not define names for these spheres except
   for two common ones, "work" and "home".

   Spheres are likely to be used for two purposes:  they allow the
   presentity to easily turn on or off certain rules that depend on what
   groups of people should be made aware of the presentity's status.
   For example, if the presentity is a Boy Scout leader, he might set
   the sphere to 'scouting' and then have a rule set that allows other
   scout masters in his troup to see his presence status.  As soon as he
   switches his status to 'work' or 'home' or some other sphere, the
   fellow scouts would lose access.

**5**. Examples

**5.1** Presentity with Activity

```
<?xml version="1.0" encoding="UTF-8"?>
  <presence xmlns="urn:ietf:params:xml:ns:pidf"
      xmlns:es="urn:ietf:params:xml:ns:pidf:rpid-status"
      xmlns:et="urn:ietf:params:xml:ns:pidf:rpid-tuple"
      entity="pres:someone@example.com">

    <note>I'm in a boring meeting</note>

    <tuple id="7c8dqui">
      <et:class>assistant</et:class>
      <et:contact-type>presentity</et:contact-type>
      <status>
        <basic>open</basic>
        <contact>sip:secretary@example.com</contact>
        <ep:relationship>assistant</ep:relationship>
      </status>
      <note>My secretary</note>
    </tuple>

    <tuple id="18x765">
      <et:class>sip</et:class>
      <et:contact-type>service</et:contact-type>
      <status>
        <basic>open</basic>
        <ep:activity>meeting</ep:meeting>
        <ep:placetype until="2003-01-27T17:30:00Z">office</ep:placetype>
        <ep:privacy>quiet</ep:privacy>
        <ep:idle>2003-01-27T10:43:00Z</ep:idle>
      </status>
      <contact priority="0.8">sip:someone@example.com</contact>
      <timestamp>2001-10-27T16:49:29Z</timestamp>
    </tuple>

    <tuple id="35bs9r">
      <et:class>phone</et:class>
      <et:contact-type>device</et:contact-type>
      <status>
        <basic>open</basic>
        <ep:privacy>quiet</ep:privacy>
      </status>
      <contact priority="0.8">im:someone@mobilecarrier.net</contact>
      <timestamp>2001-10-27T16:49:29Z</timestamp>
    </tuple>
```

```
     <tuple id="8eg92n">
       <et:class>mail</et:class>
       <et:contact-type>device</et:contact-type>
       <status>
         <basic>open</basic>
       </status>
       <contact priority="1.0">mailto:someone@example.com</contact>
     </tuple>
   </presence>
```

**6**. **XML Schema Definitions**

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns="urn:ietf:params:xml:ns:pidf:rpid-tuple"
  xmlns:pidf="urn:ietf:params:xml:ns:pidf"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">

  <!-- This import brings in the XML language attribute xml:lang-->
  <xs:import namespace="http://www.w3.org/XML/1998/namespace"
    schemaLocation="http://www.w3.org/2001/xml.xsd"/>

  <xs:annotation>
    <xs:documentation xml:lang="en">
        Describes RPID tuple extensions for PIDF.
      </xs:documentation>
  </xs:annotation>

  <xs:element name="contact-type">
    <xs:simpleType>
      <xs:restriction base="xs:token">
        <xs:enumeration value="device"/>
        <xs:enumeration value="in-person"/>
        <xs:enumeration value="service"/>
        <xs:enumeration value="presentity"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>

  <xs:element name="class" type="xs:token"/>
</xs:schema>




<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns="urn:ietf:params:xml:ns:pidf:status:rpid-status"
  xmlns:pidf="urn:ietf:params:xml:ns:pidf"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">

  <!-- This import brings in the XML language attribute xml:lang-->
  <xs:import namespace="http://www.w3.org/XML/1998/namespace"
    schemaLocation="http://www.w3.org/2001/xml.xsd"/>
```

```
      <xs:annotation>
        <xs:documentation xml:lang="en">
        Describes RPID status extensions for PIDF.
        </xs:documentation>
      </xs:annotation>

      <xs:element name="activity" type="activity_t"/>

      <xs:simpleType name="activityToken">
        <xs:restriction base="xs:token">
        </xs:restriction>
      </xs:simpleType>

      <xs:complexType name="activity_t">
        <xs:sequence>
          <xs:element name="activity" type="activityToken"/>
        </xs:sequence>
        <xs:attribute name="from" type="xs:dateTime"/>
      </xs:complexType>

      <xs:element name="placetype">
        <xs:complexType>
          <xs:simpleContent>
            <xs:extension base="xs:token">
              <xs:attribute name="from" type="xs:dateTime"/>
              <xs:attribute name="until" type="xs:dateTime"/>
            </xs:extension>
          </xs:simpleContent>
        </xs:complexType>
      </xs:element>

      <xs:simpleType name="privacy_t">
        <xs:restriction base="xs:token">
          <xs:enumeration value="private"/>
          <xs:enumeration value="public"/>
          <xs:enumeration value="quiet"/>
        </xs:restriction>
      </xs:simpleType>

      <xs:element name="privacy">
        <xs:complexType>
          <xs:simpleContent>
            <xs:extension base="privacy_t">
              <xs:attribute name="from" type="xs:dateTime"/>
              <xs:attribute name="until" type="xs:dateTime"/>
            </xs:extension>
          </xs:simpleContent>
        </xs:complexType>
```

```
    </xs:element>

    <xs:simpleType name="sphereToken">
      <xs:restriction base="xs:token">
      </xs:restriction>
    </xs:simpleType>

    <xs:complexType name="sphere_t">
      <xs:sequence>
        <xs:element name="sphere" type="sphereToken"/>
      </xs:sequence>
    </xs:complexType>

    <xs:element name="sphere">
      <xs:complexType>
        <xs:complexContent>
          <xs:extension base="sphere_t">
            <xs:attribute name="from" type="xs:dateTime"/>
            <xs:attribute name="until" type="xs:dateTime"/>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
    </xs:element>

    <xs:element name="relationship" type="xs:token"/>
    <xs:element name="idle" type="xs:dateTime"/>
  </xs:schema>
```

[7](#). **IANA Considerations**

   This document calls for IANA to:

   o  register two new XML namespace URNs per [[5](#)];

   o  establish registry for activity categories (Section [Section 4.2](#),
      place types (Section [Section 4.6](#)), and relationships (Section
      [Section 4.8](#)).

   Note that this document does not need a new content type.  It
   inherits the content type from [[6](#)], namely application/cpim-pidf+xml.

[7.1](#) **URN Sub-Namespace Registration for**
    'urn:ietf:params:xml:ns:pidf:rpid-status'

   URI: urn:ietf:params:xml:ns:rpid-status

   Description: This is the XML namespace for XML elements defined by
      RFCXXXX to describe rich presence information extensions for the
      status element in the PIDF presence document format in the
      application/cpim-pidf+xml content type.

   Registrant Contact: IETF, SIMPLE working group, simple@ietf.org,
      Henning Schulzrinne, hgs@cs.columbia.edu

   XML:

```
 BEGIN
   <?xml version="1.0"?>
   <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML Basic 1.0//EN"
   "http://www.w3.org/TR/xhtml-basic/xhtml-basic10.dtd">
   <html xmlns="http://www.w3.org/1999/xhtml
   <head>
        <meta http-equiv="content-type"
        content="text/html;charset=iso-8859-1"/>
        <title>RPID -- Rich Presence Information Data Format
 for Presence</title>
    </head>
    <body>
        <h1>Namespace for rich presence extension (status)</h1>
        <h2>application/pidf+xml</h2>
        <p>See <a href="URL of published RFC">RFCXXXX</a>.</p>
     </body>
     </html>
    END
```

**7.2** **URN Sub-Namespace Registration for**
     'urn:ietf:params:xml:ns:pidf:rpid-tuple'

   urn:ietf:params:xml:ns:rpid-tuple

   This is the XML namespace for XML elements defined by RFCXXXX to
   describe rich presence information extensions for the tuple element
   in the PIDF presence document format in the application/cpim-pidf+xml
   content type.

   IETF, SIMPLE working group, simple@ietf.org, Henning Schulzrinne,
   hgs@cs.columbia.edu.

```
  BEGIN
    <?xml version="1.0"?>
    <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML Basic 1.0//EN"
    "http://www.w3.org/TR/xhtml-basic/xhtml-basic10.dtd">
    <html xmlns="http://www.w3.org/1999/xhtml
    <head>
         <meta http-equiv="content-type"
         content="text/html;charset=iso-8859-1"/>
         <title>RPID -- Rich Presence Information Data Format
   for Presence</title>
    </head>
    <body>
         <h1>Namespace for rich presence extension (tuple)</h1>
         <h2>application/pidf+xml</h2>
         <p>See <a href="URL of published RFC">RFCXXXX</a>.</p>
     </body>
     </html>
    END
```

**7.3** **Place Type, Tuple Type, Activities, Relationships**

   This document creates new IANA registries for activities, tuple
   types, place types and relationships.  All are XML tokens.
   Registered tokens must be documented at the time of registration, as
   most descriptions are expected to be brief.

   The SIMPLE working group, or, if no longer available, the SIP working
   group should be consulted prior to registration.

8. **Security Considerations**

   The security considerations in [6] apply, as well as [7]. Compared to
   PIDF, this presence document format reveals additional information
   that can be highly sensitive. Beyond traditional security measures to
   protect confidentiality and integrity, systems should offer a means
   to selectively reveal information to particular watchers and to
   inspect the information that is being published, particularly if it
   is generated automatically from other sources, such as calendars or
   sensors.

Normative References

   [1]   Bradner, S., "Key words for use in RFCs to Indicate Requirement
         Levels", BCP 14, RFC 2119, March 1997.

   [2]   Moats, R., "URN Syntax", RFC 2141, May 1997.

   [3]   Moats, R., "A URN Namespace for IETF Documents", RFC 2648,
         August 1999.

   [4]   Day, M., Rosenberg, J. and H. Sugano, "A Model for Presence and
         Instant Messaging", RFC 2778, February 2000.

   [5]   Mealling, M., "The IETF XML Registry",
         draft-mealling-iana-xmlns-registry-05 (work in progress), June
         2003.

   [6]   Sugano, H. and S. Fujimoto, "Presence Information Data Format
         (PIDF)", draft-ietf-impp-cpim-pidf-08 (work in progress), May
         2003.

   [7]   Rosenberg, J., "A Presence Event Package for the Session
         Initiation Protocol (SIP)", draft-ietf-simple-presence-10 (work
         in progress), January 2003.

Informative References

    [8]    Handley, M. and V. Jacobson, "SDP: Session Description
           Protocol", RFC 2327, April 1998.

    [9]    Dawson, F. and Stenerson, D., "Internet Calendaring and
           Scheduling Core Object Specification (iCalendar)", RFC 2445,
           November 1998.

    [10]   Rosenberg, J. and H. Schulzrinne, "An Offer/Answer Model with
           Session Description Protocol (SDP)", RFC 3264, June 2002.

    [11]   Lennox, J., Wu, X. and H. Schulzrinne, "CPL: A Language for
           User Control of Internet Telephony Services",
           draft-ietf-iptel-cpl-08 (work in progress), August 2003.

    [12]   Dawson, F., Reddy, S., Royer, D. and E. Plamondon, "iCalendar
           DTD Document (xCal)", draft-ietf-calsch-many-xcal-02 (work in
           progress), July 2002.

Authors' Addresses

    Henning Schulzrinne
    Columbia University
    Department of Computer Science
    450 Computer Science Building
    New York, NY  10027
    US

    Phone: +1 212 939 7042
    EMail: hgs+simple@cs.columbia.edu
    URI:   http://www.cs.columbia.edu


    Vijay Gurbani
    Lucent
    2000 Naperville Rd.
    Room 6G-440
    Naperville, IL  60566-7033
    US

    EMail: vkg@lucent.com

      Paul Kyzivat
      Cisco Systems
      BXB500 C2-2
      1414 Massachusetts Avenue
      Boxborough, MA   01719
      US

      EMail: pkzivat@cisco.com


      Jonathan Rosenberg
      dynamicsoft
      600 Lanidex Plaza
      Parsippany, NJ   07054-2711
      US

      EMail: jdrosen@dynamicsoft.com

## Appendix A. Acknowledgements

The document reflects the discussion on the SIMPLE mailing list, with contributions from many individuals.  Markus Isomaki, Hisham Khartabil, Jon Peterson and Brian Rosen provided detailed comments and suggestions. Xiaotao Wu assisted with schema testing.

Acknowledgment