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RPID: Rich Presence: Extensions to the Presence Information Data
Format (PIDF)
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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. The information is designed so that much of it can be derived automatically, e.g.,

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from calendar files or user activity.

This extension includes information about what the presentity is doing (the activity element), a grouping identifier for a tuple (the class element), the type of tuple (the contact-type element), whether a contact is idle (the idle element), the type of place a presentity is in (the placetype element), whether the presentity is in a public or private space (the privacy element), the relationship of a tuple to another presentity (the relationship element), and the overall role of the presentity (the sphere element).

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[1.](#) Scope

The Presence Information Data Format (PIDF) defines a basic format for representing presence information for a presentity. That format defines a textual note, an indication of availability (open or closed) and a URI for communication. However, it is frequently useful to convey additional information about a user that needs to be interpreted by an automata, and is therefore not appropriate for placement in the note element of the PIDF document. This document defines extensions to the PIDF document format for conveying richer presence information. Generally, the extensions have been chosen to provide features common in existing presence systems at the time of writing, in addition to elements that could readily be derived automatically from existing sources of presence, such as calendaring systems, or sources describing the user's current physical environment.

[2.](#) Terminology and Conventions

This memo makes use of the vocabulary defined in the IMPP Model document [\[5\]](#). 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 14](#), [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. <activities>, <idle>, <placetype> and <privacy> extend the PIDF <status> element, while <class>, <contacttype> and <relationship> 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 [\[4\]](#) and extended by [\[6\]](#):

```
urn:ietf:params:xml:ns:pidf:status:rp-id-status
urn:ietf:params:xml:ns:pidf:status:rp-id-tuple
```

This document uses a separate namespace for extending the PIDF 'status' namespace, in accordance with Section 4.2.5 of [\[7\]](#).

All elements described in this document are optional.

The elements <activity>, <placetype>, <privacy> and <sphere> MAY be qualified with the 'since' and 'until' attributes to describe the absolute time when the element assumed this value and the absolute time until which is element is expected to be valid. The 'since' time MUST be in the past, the 'until' time in the future relative to the time of publication of the presence information and, if available, the PIDF 'timestamp' element.

[4.2](#) Activities Element

The <activities> element 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](#) [10].

An activity enumeration consists of one or more values drawn from the list below, any other token string or IANA-registered values (Section [Section 7](#)).

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

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, without specifying exactly of what type. This activity is indicated if more detailed information is not available or the presentity chooses not to reveal more information.

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: A meeting is a sub-class of an appointment. 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. The 'placetype' element provides more specific information about the type of conveyance the presentity is using.

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: Leisure travel. 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. While this activity would typically be associated with a status of CLOSED, a presentity may declare itself busy to discourage communication, but indicate that it still can be reached if needed.

permanent-absence: Presentity will not return for the foreseeable future, e.g., because it is no longer working for the company. This activity is associated with a status of CLOSED.

The <activity> element MAY be qualified with the 'since' and 'until' attributes as described in [Section 4](#).

The <activities> element can be used with tuples of all values of <contact-type>. For tuples consisting of multiple physical devices, i.e., of <contact-type> 'service' or 'presentity', these components can engage in multiple types of activities, particularly if qualified by a <relationship> element. In those cases, the <activities> element enumerates all unique values as child <activity> elements.

The <activities> element can be extended by adding elements from other namespaces, e.g., to reflect activities appropriate for a particular occupation.

[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

For tuples representing a single device, i.e., having a <contact-type> of 'device', the <idle> element 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 when contacting that 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 has been used more recently. Note that the idle time refers to the whole device, not just the particular service. For example, a tuple describing an instant messaging device expresses the last time that the PC or PDA was used, not the last time an instant message has been sent.

For tuples representing a 'presentity' or 'service' with multiple devices, the device with the most recent usage, i.e., the shortest idle time, determines the idle time for the whole tuple.

The use of 'idle' for tuples with contact-type 'in-person' is not defined.

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, as in:

```
<idle/>
```

The <idle> element 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.

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

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. This general description encompasses the more precise descriptors 'street', 'public-transport', 'aircraft', 'ship', 'bus', 'train', 'airport', 'mall' and 'outdoors' below.

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 or charter bus.

train: The presentity is traveling in a train, monorail, maglev, cable car or similar conveyance.

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 can be used with tuples of all values of <contact-type>. For tuples consisting of multiple physical devices, i.e., of <contact-type> 'service' or 'presentity', these devices can be in multiple types of places. In those cases, the <placetype> element enumerates all unique values as a token list.

The <placetype> element MAY be qualified with the 'since' and 'until' attributes as described in [Section 4](#).

[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.

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 'placetype' element MAY be qualified with the 'since' and 'until' attributes as described in [Section 4](#).

[4.8](#) Relationship Element

The <relationship> element extends <tuple> and 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 7](#)) can be used as well.

If a relationship is indicated, the RPID <status> values describe the <contact>, not the presentity.

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

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the sphere to 'scouting' and then have a rule set that allows other scout masters in his troupe 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.

The <sphere> element can be used with tuples of all values of <contact-type>. For tuples representing multiple physical devices, <contact-type> 'service' or 'presentity', these devices can be controlled by people in multiple different spheres. In those cases, the <sphere> element enumerates all unique values as a token list.

The <sphere> element MAY be qualified with the 'since' and 'until' attributes as described in [Section 4](#).

[5](#). Examples

[5.1](#) Presentity with Activity

```
<?xml version="1.0" encoding="UTF-8"?>
<presence xmlns="urn:ietf:params:xml:ns:pidf"
  xmlns:ep="urn:ietf:params:xml:ns:pidf:status:rp-id-status"
  xmlns:et="urn:ietf:params:xml:ns:pidf:rp-id-tuple"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  entity="pres:someone@example.com">
  <tuple id="c8dqui">
    <status>
      <basic>open</basic>
      <ep:relationship>assistant</ep:relationship>
    </status>
    <et:class>assistant</et:class>
    <et:contact-type>presentity</et:contact-type>
    <contact>sip:secretary@example.com</contact>
    <note>My secretary</note>
  </tuple>
  <tuple id="x765">
    <status>
      <basic>open</basic>
      <ep:activity>
        <ep:activity>meeting</ep:activity></ep:activity>
        <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>
      </ep:activity>
    </status>
  </tuple>
</presence>
```

```
</status>
<et:class>sip</et:class>
<et:contact-type>service</et:contact-type>
<contact priority="0.8">sip:someone@example.com</contact>
<timestamp>2001-10-27T16:49:29Z</timestamp>
```

```
</tuple>
<tuple id="bs9r">
  <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="eg92n">
  <status>
    <basic>open</basic>
  </status>
  <et:class>mail</et:class>
  <nn:blah>blah</nn:blah>
  <et:contact-type>device</et:contact-type>
  <contact priority="1.0">mailto:someone@example.com</contact>
  <note>I'm in a boring meeting</note>
</tuple>
</presence>
```

[6.](#) XML Schema Definitions

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[6.1](#) urn:ietf:params:xml:ns:pidf:rp-id-tuple

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns="urn:ietf:params:xml:ns:pidf:rp-id-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:element name="relationship" type="xs:token"/>
</xs:schema>

```

6.2 urn:ietf:params:xml:ns:pidf:status:rp-id-status

```

<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XMLSPY v2004 rel. 3 U (http://www.xmlspy.com) by Henning Sc
<xs:schema xmlns="urn:ietf:params:xml:ns:pidf:status:rp-id-status" xmlns:pidf
  <!-- This import brings in the XML language attribute xml:lang-->
  <xs:import namespace="http://www.w3.org/XML/1998/namespace" schemaLocat
  <xs:annotation>

```

```

    <xs:documentation xml:lang="en">
      Describes RPID status extensions for PIDF.
    </xs:documentation>
  </xs:annotation>
  <xs:attributeGroup name="SinceUntil">
    <xs:attribute name="since" type="xs:dateTime"/>
    <xs:attribute name="until" type="xs:dateTime"/>
  </xs:attributeGroup>
  <xs:simpleType name="tokenlist">
    <xs:list itemType="xs:token"/>
  </xs:simpleType>
  <xs:element name="activities">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="activity" minOccurs="0" maxOccurs="1">
          <xs:simpleType>
            <xs:restriction base="xs:token">
              <xs:enumeration value="active"/>
              <xs:enumeration value="inactive"/>
              <xs:enumeration value="unknown"/>
              <xs:enumeration value="on-hold"/>
              <xs:enumeration value="out-of-office"/>

```

```

<xs:enumeration value="
<xs:enumeration value="
<xs:enumeration value="
<xs:enumeration value="
<xs:enumeration value="
<xs:enumeration value="
<xs:enumeration value="
<xs:enumeration value="
</xs:restriction>
</xs:simpleType>
</xs:element>
<xs:any maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="placetype">
  <xs:complexType>
    <xs:simpleContent>
      <xs:extension base="tokenlist">
        <xs:attributeGroup ref="SinceUntil"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
</xs:element>
<xs:element name="privacy">
  <xs:complexType>

```

```

<xs:simpleContent>
  <xs:extension base="tokenlist">
    <xs:attributeGroup ref="SinceUntil"/>
  </xs:extension>
</xs:simpleContent>
</xs:complexType>
</xs:element>
<xs:element name="sphere">
  <xs:complexType>
    <xs:simpleContent>
      <xs:extension base="tokenlist">
        <xs:attributeGroup ref="SinceUntil"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>

```

```

    </xs:element>
    <xs:element name="idle">
        <xs:complexType>
            <xs:attribute name="since" type="xs:dateTime"/>
        </xs:complexType>
    </xs:element>
</xs:schema>

```

7. IANA Considerations

This document calls for IANA to:

- o register two new XML namespace URNs per [6];
- o establish registry for activity categories ([Section 4.2](#)), place types ([Section 4.6](#)), and relationships ([Section 4.8](#)).

Note that this document does not need a new content type. It inherits the content type from [7], namely application/pidf+xml.

7.1 URN Sub-Namespace Registration for

'urn:ietf:params:xml:ns:pidf:status:rp-id-status'

URI: urn:ietf:params:xml:ns:pidf:status:rp-id-status

Description: This is the XML namespace for XML elements defined by RFC&rfc.number [RFC editor: replace with RFC number]; to describe rich presence information extensions for the status element in the PIDF presence document format in the application/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/xhtml1-basic/xhtml1-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: Extensions to the Presence
    Information Data Format (PIDF)</title>
</head>
<body>
  <h1>Namespace for rich presence extension (status)</h1>
  <h2>urn:ietf:params:xml:ns:pidf:status:rp-id-status</h2>
  <p>See <a href="URL of published RFC">RFC&rfc.number; [RFC
editor: replace with RFC number]</a>.</p>
</body>
</html>
END

```

[7.2](#) URN Sub-Namespace Registration for 'urn:ietf:params:xml:ns:pidf:rp-id-tuple'

URI: urn:ietf:params:xml:ns:pidf:rp-id-tuple
 Description: This is the XML namespace for XML elements defined by
 RFCXXXX [RFC editor: replace with RFC number] to describe rich
 presence information extensions for the tuple element in the PIDF
 presence document format in the application/pidf+xml content type.
 Registrant Contact: IETF, SIMPLE working group, simple@ietf.org,
 Henning Schulzrinne, hgs@cs.columbia.edu.
 XML:


```

<?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: Extensions to the Presence
    Information Data Format (PIDF)</title>
</head>
<body>
  <h1>Namespace for rich presence extension (tuple)</h1>
  <h2>urn:ietf:params:xml:ns:pidf:rpid-tuple</h2>
  <p>See <a href="URL of published RFC">RFC&rfc.number; [RFC
editor: replace with RFC number]</a>.</p>
</body>
</html>
END

```

[7.3](#) Schema Registration for Schema

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

URI: please assign
 Registrant Contact: IESG
 XML: See [Section 6.1](#)

[7.4](#) Schema Registration for Schema

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

URI: please assign
 Registrant Contact: IESG
 XML: See [Section 6.2](#)

[7.5](#) Token Registrations

This document creates new IANA registries for RPID tokens:

contact-type: See [Section 4.4](#)
 placetype: See [Section 4.6](#)
 privacy: See [Section 4.7](#)
 relationship: See [Section 4.8](#)

All are XML tokens. Registered tokens must be documented at the time of registration, as most descriptions are expected to be brief.

Following the policies outline in [RFC 2434](#) [3], these tokens are assigned after Expert Review by the SIMPLE working group or its designated successor. Each registration must include the name of the token and a brief description similar to the ones offered in for the initial registrations contained this document.

[8](#). Security Considerations

The security considerations in [7] apply, as well as [8]. 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] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 2434](#), October 1998.
- [4] Moats, R., "A URN Namespace for IETF Documents", [RFC 2648](#), August 1999.
- [5] Day, M., Rosenberg, J. and H. Sugano, "A Model for Presence and Instant Messaging", [RFC 2778](#), February 2000.
- [6] Mealling, M., "The IETF XML Registry", [BCP 81](#), [RFC 3688](#), January 2004.
- [7] Sugano, H. and S. Fujimoto, "Presence Information Data Format (PIDF)", [draft-ietf-impp-cpim-pidf-08](#) (work in progress), May 2003.
- [8] Rosenberg, J., "A Presence Event Package for the Session Initiation Protocol (SIP)", [draft-ietf-simple-presence-10](#) (work in progress), January 2003.

Informative References

- [9] Handley, M. and V. Jacobson, "SDP: Session Description Protocol", [RFC 2327](#), April 1998.

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[Appendix A](#). Acknowledgements

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