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**Motivation for feed for Presence State  
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Abstract

Web feeds (hereby referred to as 'feed') have always played an important role in providing users content related updates of Websites without having to visit those websites manually. Typical examples of feed usage include users 'subscribing' to the feed of a website (example, CNN.com) and thereby automatically receiving 'news headlines' when the content changes. Recently, there have been

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significant innovations (example [13][12]) where feeds from different sources have been combined to produce new services in a 'Web Based Service Creation Environment' model allowing users to create interesting services building on top of 'primitives' that can be represented on the Web.

This document describes the motivation for a feed for Presence information, which the authors believe would be useful to create new services using a similar environment described above.

NOTE 1: Architecturally, it is also possible that the reverse situation, i.e. feed converted to a Presence state is also useful, typically for services that could be triggered at the Presentity based on certain conditions. However, this document focuses on the former, i.e. Presence state to feed.

NOTE 2: It is not necessary that each PUA support the capability of generating feeds. It is possible that a central aggregation server generates the required feed on behalf of the PUAs.

Conventions used in this document

In examples, "C:" and "S:" indicate lines sent by the client and server respectively.

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](#) [1].

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## 1. Terminology

- o The following terminology has been used in the document:
- o For the scope of this document the term 'Web' refers to an environment where the 'Server' is any entity which is accessible on the Internet that can communicate with the User Agent using standards such as URIs, HTTP, HTML, XML and similar. 'User Agent' is any entity capable of rendering the information provided by the server (for example, a Browser)
- o The term 'feed' describes syndicated feed and includes feed format as specified by both RSS([9]) and ATOM([10]). In future, the 'feed' format could also be extended to other formats including [11]
- o The terms 'feature provider', 'provider', 'service provider' refer to any individual user or entity that is/are capable of hosting the mentioned feature or service

## 2. Introduction to feeds and Web based Mash-ups

This section may be useful to readers not familiar with Web based Mash-ups in general. Readers well versed with this may directly skip to the next section.

Simply put, a 'feed' is a data format which describes content of any data source. Content distributors syndicate a web feed, thereby allowing users to subscribe to the feed (source:[15]). There are two commonly used feed formats as specified in. When this document refers to the term 'feed' it implies feed in either format.

The fundamental concept behind a 'Mash-up' is to be able to create a set of primitives and make it available on the Web in a way that those primitives could be used by any third party developer to extend and build upon the provided functionality. In concept, this is similar to creating a set of 'C (or any other programming language)-based libraries' and offering APIs on top of those libraries to others to create new functionality, but has significant differences:

- o A 'Web' based Mash-up re-uses well known protocols for accessing sources (example HTTP, REST)

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- o A 'Web' based Mash-up re-uses well known formats for accessing data contained within sources (example JSON [11], XML [6], RSS [9])

- o A 'Web' based Mash-up may have multiple hosting environments. In other words, if feature provider 'B' were build a new application on top of a feature provided by 'A', B would only access content from A using well known Web Standards and would not need to host A's content in its own domain. Similarly, A does not need to access any more data in B's domain beyond what is needed to make the service work.
- o A 'Web' based Mash-up leverages the vast content that is already accessible across the Internet in a well defined manner and does not require duplication or local availability of data in different domains
- o As a derivative difference, a 'Web' bashed Mash-up is therefore accessible by any common browser and does not need special libraries or downloads beyond what the browser already supports.

As an example of how services can be created rapidly using the Web Model:

- o Consider an example, where a subscriber using a 'triple play' service (one that offers Voice, TV and Data over a single IP pipe) is listening to a radio stream of their favorite song. The provider wants to be able to tap into this by showing a list of locations where the artist of that song may be performing in the coming months as well as show a preview video of the song he is listening to (in the hope that the subscriber might purchase one of these offerings). Such as combined solution can be easily provided leveraging the Web and the Internet:
  - o Let us assume the radio service itself publishes the currently playing information (such as Artist, Title, etc.)
  - o The provider can fetch the name of the artist and provide it as an input to common ticketing sites (like TicketMaster) which in turn returns the list of locations where this group is performing
  - o At the same time, the provider can fetch the name of the radio song & title and feed it to a video service, which generates a response feed with the URI of the preview video which is then displayed as a small window on the subscriber's display

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- o The provider also taps into e-commerce sites with the same input parameters and receives a feed response on links to 'Buy it now' for the subscriber to place an order for this album

The above example describes rapid creation of a combined service where the provider is re-using already existing data sources & technologies in a standard way to create this value addition. Creating such services is

not just theory today. Consider for example, solutions like [12] and [13] that provide such environments for regular users to create such combinations.

Note that the above is possible only if the output of each component is understood by other components. Feed formats as defined [9] and [10] are dialects of XML and are a popularly supported content syndication format and is therefore a common 'data format' that are often used to exchange information between different modules hosted by different providers. Feeds therefore, provide easy to understand "tags" under which information is classified and can be extracted by standard XML parsers. In addition, feed formats allow for easy implementation of 'Filters' as services are combined (For example, 'Show me all movies from Youtube that do not have rating=Mature' may translate to parsing the feed and deleting feed entries that have a <rating> tag of Mature)

In each of these examples, the following important characteristics emerge:

- o Adopting a 'Web based' approach to create incremental services (referred to as 'Mash-Ups') significantly reduces service creation time (since the interfaces are well known and do not require a steep learning curve)
- o Adopting a 'Web based Mash-up' approach significantly reduces the infrastructure and technology requirement from a single provider

Thus, this model works well when:

- o The effectiveness of what can be achieved is directly related to the nature of data and access each domain is willing to expose to build upon.
- o The feed based model of constructing combined services is a simple chain of output of one module serving as an input to another and does not provide complex flow control logic

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This therefore leads us to why we believe exposing certain SIP related data in such a standard format would benefit more value added service creation.

### **3. Use Cases for Presence State represented as feed.**

In all the use-cases below, publishing the information in feed format enables third party developers to create new combined services without requiring any other specialized tools or protocols beyond free Mash-up editors [12][13] that already exist today.

Use-Case-1: Consider a user Bob, who subscribes to an ad-supported live traffic service that provides him with up to date traffic information for one of his selected highway routes on I-270N. This is provided to him as a feed to see a live traffic map update. However, it would be useful if the traffic service could ask for Bob's current Presence state and provide information accordingly. For example, if Bob's <activities> element shows a value of 'in-transit', then the provider can choose to filter out or reduce the sidebar ads so that it is simpler for Bob to convert the feed to speech using free tools available such as [14]

- o Use-Case-2: Consider another example where user Alice is in a community chat room, and has her mood (via the <mood> element) set to <hungry> with a child element <note> set to "would love a burger". The Chat provider can create a sidebar customized service by putting the following elements together:
  - o Get the Presence feed from Alice's UA and parse the hungry element
  - o Assuming Alice's presence feed also publishes location, retrieve current location
  - o Pass on the note text and the location to Yahoo Local Maps and obtain a list of burger places and display that feed on the sidebar
  - o (One could continue to combine more attributes to make this more specific)

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o Use-Case-3: 'Trackit' is a presence publishing system that allows different Presentities to update their presence state periodically. Presentities that publish their state also specify access rules which govern who can read this presence data (example "all", "none", or explicit list of identities, domains etc.). Bob is a subscriber to 'Trackit' and decides to offer a 'Map & Track' service on top of Trackit like so:

- o users, who publish their state in Trackit create ad-hoc groups of friends, co-workers and publish an additional attribute in their presence information, such as <mnt:mapandtrack-group>AlumniMeet</mnt:mapandtrack-group>

- o Members of the group called AlumniMeet can now log into a specific webpage provided by Bob which provides a movable map with 'presence markers' of where each user currently is and what they are doing (subject to what each presentity agrees to publish).
- o Bob creates the above page by accessing the feed provided by Trackit for the group members, extracts the location and activities elements, passes the location information to an appropriate mapping service and then overlays the map with placepoint information showing their presence status.
- o Now, if the users are all supposed to meet at 6PM for the alumni meeting at Palo Alto, the co-ordinator knows where everyone is, how long they would take to arrive and other information.

#### 4. Examples

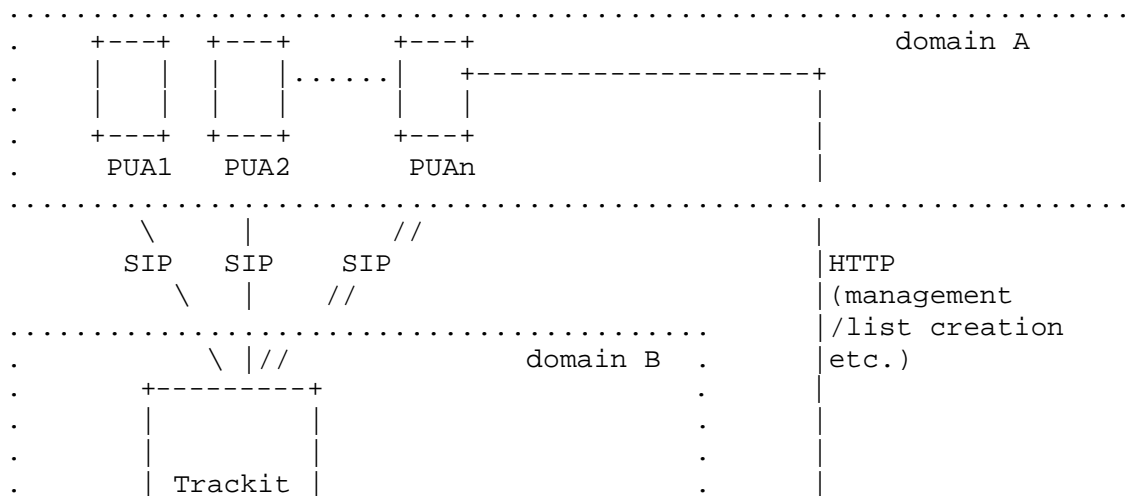
This section provides examples on how some of the services described in [Section 3](#).

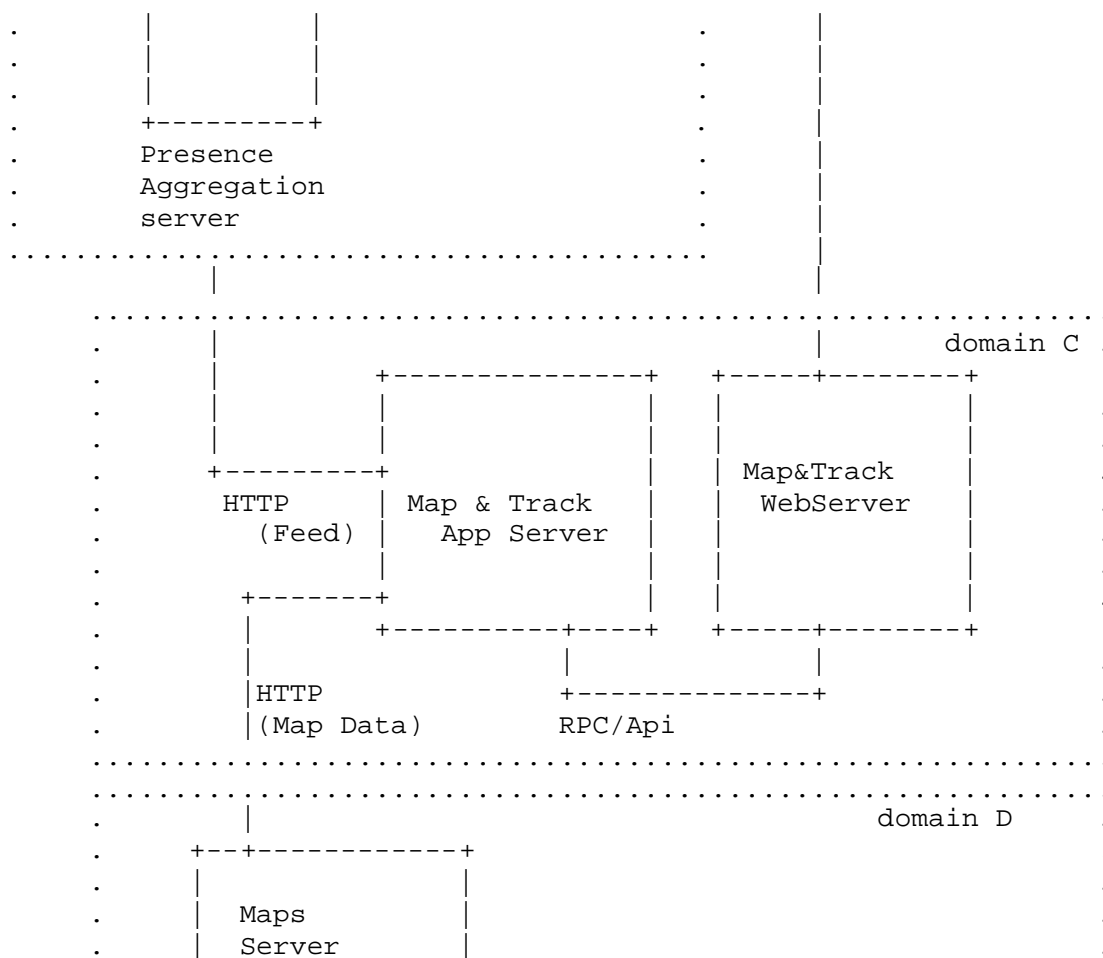
The author has chosen to use Google Mash-up Editor (GME) [13] as a platform for demonstrating how some of the use cases can be implemented. The same examples Readers can translate these examples to other Mash-up environments based on feeds.

##### 4.1. 'Track-it' service

In this example, we describe how the 'Track-it' service can be implemented as a Mash-up based on GME. The overall architecture depicts all the entities participating in this service:

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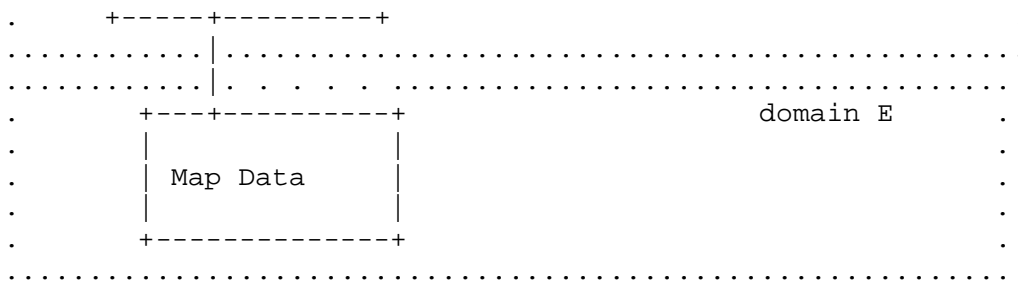
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We will focus on the data exchange and call flow for "domain C" which is the domain where the Mash-up is being implemented.

**4.1.1.1. Assumptions for this service**

PUAs alice@example1.com, bob@example2.com, joe@example3.com are subscribers who participate in publishing their presence state to the Trackit server. The presence document published by the PUAs are

compliant to the document format specified in [2][3][4]. The PUAs are further assumed to have capability to publish location information compliant to the GEOPRIV location object format specified in [7](The location information may be provided to the PUAs via an installed GPS chip, or by network assisted GPS etc.)

It is further assumed Bob, Alice and Joe have already registered with the Map&Track web-server and have created a group called 'AlumniParty' for which they would like to track their location and presence. Furthermore, all the above mentioned UAs have a local client capable of receiving the image slices overlaid with presence information that Map&Track creates.

#### 4.1.1.2. Creation of the Mash-Up

The template for the Mash-UP in GME can be as follows:

(Readers are encouraged to refer to documentation of [13] for complete details. However, for the sake of completeness, a brief description is provided below each code segment.

```
<div style="float:left;width="50%">
```

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```
<gm:list id="PresenceFeed"
data="http://www.mapandtrack.com/group0aE952.xml"
pagesize="25"/></div>
```

Explanation: The above lines create a list which will be populated with the presence feed from Alice, Bob and Joe. The URL <http://www.mapandtrack.com/group0aE952.xml> represents a URL generated by MapandTrack when the users created their Alumni Group, and will contain the aggregated presence documents from each PUA.

```
<div style="float:left;width="50%">
```

```
<gm:map id="PresenceFeedMapMarkers" data="{PresenceFeed}"
latref="geo:lat" lngref="geo:long">
```

```
<gm:handleEvent src="PresenceFeed"/>
```

```
</gm:map></div>
```

Explanation: The above lines create an association between the map

object and the PresenceFeed xml list shown earlier. Specifically, the `handleEvent` tag creates an association where the map object 'listens' to the PresenceFeed list. When the user clicks on an item in the PresenceFeed list (an item could be the presence state of one of the users), the Latitude (`geo:lat`) and Longitude (`geo:long`) is extracted and sent to the map object as input.

#### 4.1.1.3. Example of Trackit Server receiving Presence information

Alice's PUA publishes the following Presence document (only relevant excerpts shown) to the Trackit server possibly by a SIP NOTIFY message

```
<status>

  <gp:geopriv>

    <gp:location-info>

      <gml:location>

        <gml:Point gml:id="point1" srsName="epsg:4326">

          <gml:coordinates>37:46:30N 122:25:10W</gml:coordinates>
```

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```

          </gml:Point>
        </gml:location>
      </gp:location-info>
    <gp:usage-rules>
      <gp:retransmission-allowed>no</gp:retransmission-allowed>
      <gp:retention-expiry>2003-06-23T04:57:29Z</gp:retention-
expiry>
    </gp:usage-rules>
  </gp:geopriv>
  <basic>open</basic>
</status>
```

This in turn could be translated to the following feed generated by the Trackit

#### 4.1.1.4. Example of Trackit Server publishing feed

This section is illustrative only. The exact mapping between the presence document and the feed format may be addressed in a future Internet Draft.

After Alice's PUA updates Trackit with a recent presence information, the TrackitServer could expose the following format when Map&Track server (the third party Mash-up) requests the Presence feed using the URI specified (in this case

<http://www.mapandtrack.com/group0aE952.xml>)

(only relevant portions of feed shown)

```
<?xml version="1.0" encoding="UTF-8"?>

<rss version="2.0" xmlns:presrss="http://www.example.com/rsspres"
xmlns:geo="http://www.w3.org/2003/01/geo/wgs84_pos#" >

<channel>
```

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```
<title> Presence Feed for AlumniParty </title>

<item>

<rsspres:id-name>Alice</rsspres:id-name>

<rsspres:id-uri> sip:alice@example1.com </rsspres:id-uri>

<rsspres:presence>online</rsspres:presence>

<geo:long>-123.618334</geo:long>

<geo:lat>41.12505189</geo:lat>

</item>

</channel>

</rss>
```

## 5. Working Example

As a working example of a proof-of-concept Mash-up development using these concepts, readers are encouraged to visit [16]

## 6. Security Considerations

Security conditions that apply to publishing of Presence Information as specified in [2][3][4] also apply here. In addition, a Web based Mash-up model involves interaction of data from multiple, disconnected domains. By only enabling HTTP GET to retrieve a feed across domains reduces the potential attacks, but it is critical for the domains participating in a mash-up service to secure their data appropriately.

Furthermore, it is assumed that all presence authorization rules are applied to the Presence Information before they are published as a feed.

## 7. IANA Considerations

None identified

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## 8. Conclusions & Future work

This draft describes the motivation for providing Presence related data as a feed. The primary advantage that has been described is that this allows third party developers to rapidly & incrementally create new services using standard web-tools.

As further work, it may be possible that non-presence related SIP data is also identified as potentially useful in created services chained by feeds.

A possible next step is to work on a specification that describes a feed format for Presence tags that could be adhered to by Presentities wanting to publish such attributes.

## 9. Acknowledgments

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