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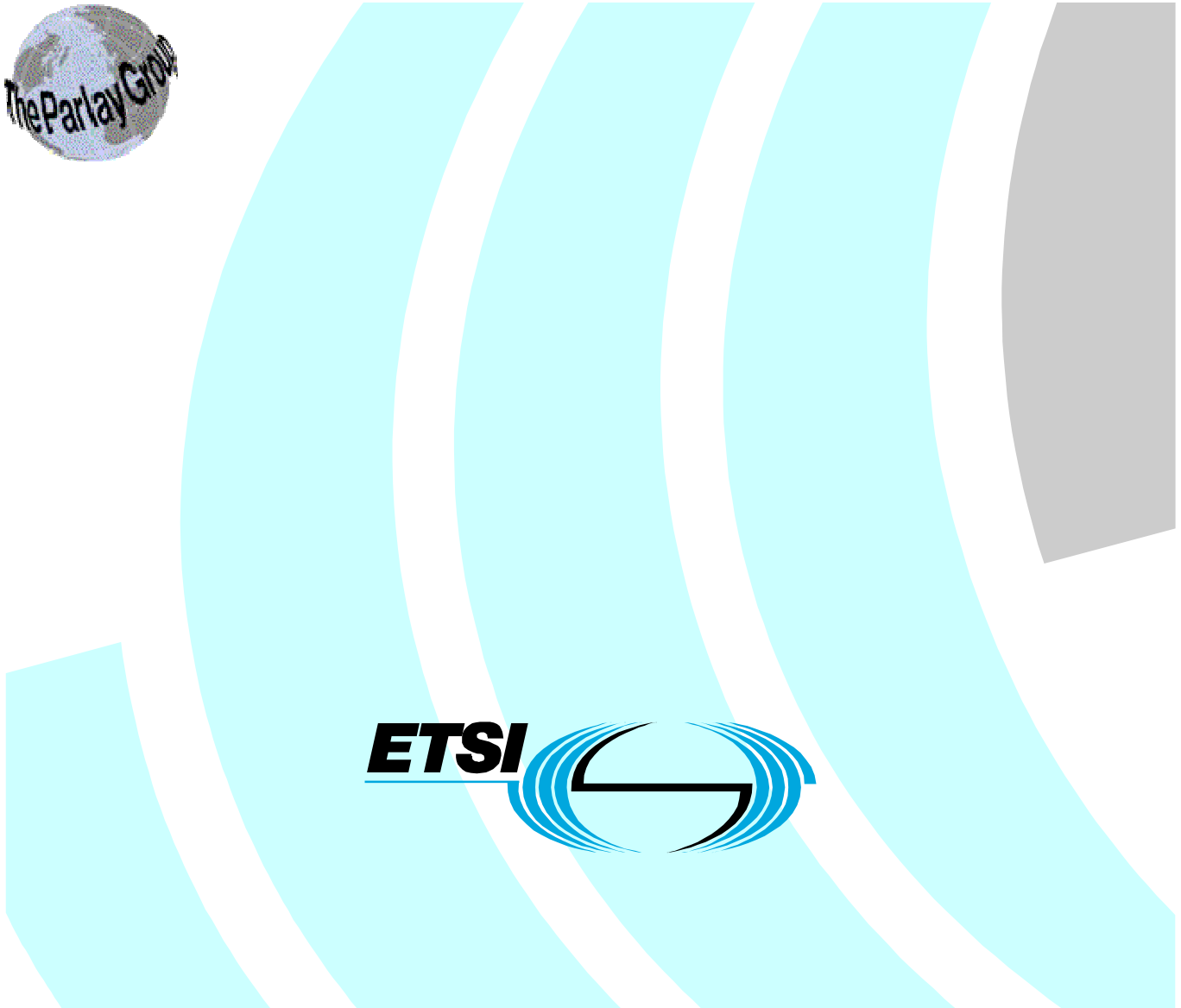
Technical Report

Open Service Access (OSA);
Mapping of Parlay X Web Services to Parlay/OSA APIs;
Part 14: Presence Mapping;
Sub-part 2: Mapping to SIP/IMS Networks



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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 14, sub-part 2, of a multi-part deliverable covering Open Service Access (OSA); Mapping of Parlay X Web Services to Parlay/OSA APIs, as identified below:

Part 1: "Common Mapping";

Part 2: "Third Party Call Mapping";

Part 3: "Call Notification Mapping";

Part 4: "Short Messaging Mapping";

Part 5: "Multimedia Messaging Mapping";

Part 6: "Payment Mapping";

Part 7: "Account Management Mapping";

Part 8: "Terminal Status Mapping";

Part 9: "Terminal Location Mapping";

Part 10: "Call Handling Mapping";

Part 11: "Audio Call Mapping";

Part 12: "Multimedia Conference Mapping";

Part 14: "Presence Mapping";

Sub-part 1: "Mapping to Presence and Availability Management"

Sub-part 2: "Mapping to SIP/IMS Networks".

NOTE: Part 13 has not been provided as there is currently no defined mapping between ES 202 391-13 [10] and the Parlay/OSA APIs. If a mapping is developed, it will become part 13 of this series.

The present document has been defined jointly between ETSI, The Parlay Group (http://www.parlay.org) and the 3GPP.

1 Scope

The Parlay X Web Services provide powerful yet simple, highly abstracted, imaginative, telecommunications functions that application developers and the IT community can both quickly comprehend and use to generate new, innovative applications.

The Open Service Access (OSA) specifications define an architecture that enables application developers to make use of network functionality through an open standardized interface, i.e. the Parlay/OSA APIs.

IP Multimedia Subsystem (IMS) is a Core Network architecture for supporting multimedia services via a SIP infrastructure.

The present document specifies the mapping of the Parlay X Presence Web Service to SIP/IMS Networks.

2 References

For the purposes of this Technical (TR), the following references apply:

[1] ETSI TR 121 905: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Vocabulary for 3GPP Specifications (3GPP TR 21.905)".

[2] W3C Recommendation (2 May 2001): "XML Schema Part 2: Datatypes".

NOTE: Available at http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/.

[3] ETSI TR 102 397-1: "Open Service Access (OSA); Mapping of Parlay X Web Services to Parlay/OSA APIs; Part 1: Common Mapping".

[4] draft-ietf-simple-event-filter-funct-05: "Functional Description of Event Notification Filtering".

NOTE Available at http://www.ietf.org/internet-drafts/draft-ietf-simple-event-filter-funct-05.txt

[5] ETSI ES 202 915-14: "Open Service Access (OSA); Application Programming Interface (API); Part 14: Presence and Availability Management SCF".

[6] draft-ietf-simple-presence-10: "A Presence Event Package for the Session Initiation Protocol (SIP)".

NOTE Available at http://www.ietf.org/proceedings/03nov/I-D/draft-ietf-simple-presence-10.txt.

[7] Repository of information about the Extensible Messaging and Presence Protocol (XMPP), which was contributed by the Jabber SoftwareFoundation (JSF) to the IETF http://www.jabber.org/ietf/.

[8] draft-ietf-simple-rpid-08: "RPID: Rich Presence: Extensions to the Presence Information Data Format (PIDF)".

NOTE Available at http://www.ietf.org/internet-drafts/draft-ietf-simple-rpid-08.txt.

[9] ETSI TS 123 141: "Universal Mobile Telecommunications System (UMTS); Presence service; Architecture and functional description; Stage 2 (3GPP TS 23.141)".

[10] ETSI ES 202 391-13: "Open Service Access (OSA); Parlay X Web Services; Part 13: Address List Management".

[11] IETF RFC 3265: "Session Initiation Protocol (SIP)-Specific Event Notification".

[12] draft-ietf-simple-xcap-03: "The Extensible Markup Language (XML) Configuration Access Protocol (XCAP)".

NOTE Available at http://www.softarmor.com/wgdb/docs/draft-ietf-simple-xcap-03.txt.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 102 397-1 [3] and the following apply:

applications: for Instant Messaging, Push to Talk, or call control and other purposes may become clients of the Presence Web Service

NOTE: We assume that these applications belong to a watcher and authenticate to the services in the name of the watcher.

identity: representation of a user in the real world

NOTE: See ES 202 915-14 [5], clause 4.4.1.

presence attributes: contain information about a presentity

NOTE: An attribute has a name and a value and can be supplied by any device, application or network module that can be associated to the presentity's identity. A watcher can obtain attributes only after he has successfully subscribed to them. Examples for attributes are activity, location type, communication means, etc.

presence information: set of attributes that characterize the presentity such as current activity, environment, communication means and contact addresses

NOTE: Only the system and the presentity have direct access to this information, which may be collected and aggregated from several devices associated to the presentity.

subscription: relationship between a watcher and present data

NOTE 1: Before a watcher can access the presence data, he has to suscribe to it. One possibility the API provides is an end-to-end subscription concept, in which only identities that have accepted a subscription to their presence can be addressed. Subscriptions can be also automatically handled by server policies edited by the presentity or other authorized users. The service/protocol to manage those policies is out of the scope of the present document.

NOTE 2: This definition is not related to the term "subscription" in ETSI TR 121 905 [1].

watcher and presentity: We use these names to denote the role of the client connected to the presence services.

NOTE: As in Parlay/OSA PAM [5] the watcher and the presentity have to be associated to identities registered to the system, i.e. users, groups of users or organizations.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 102 397-1 [3] and the following apply:

DMS	Data Manipulation Server
IETF	Internet Engineering Task Force
IMS	IP Multimedia Subsystem
PAM	Presence and Availability Management
PIDF	Presence Information Data Format
RLS	Resource List Server
RPID	Rich Presence Information Data
SCF	Service Capability Feature
SIMPLE	SIP for Instant Messaging and Presence Leveraging Extensions
SIP	Session Initiation Protocol
XCAP	XML Configuration Access Protocol
XML	eXtensible Markup Language
XMPP	eXtensible Messaging and Presence Protocol

4 Mapping Description

The Presence capability can be implemented in SIP/IMS networks supporting the SIP/SIMPLE protocol.

5 Sequence Diagrams

5.1 Presentity Resides in SIP/IMS network

In this sequence diagram, the watcher is a web service client, but the presentity is located in an SIP/IMS network

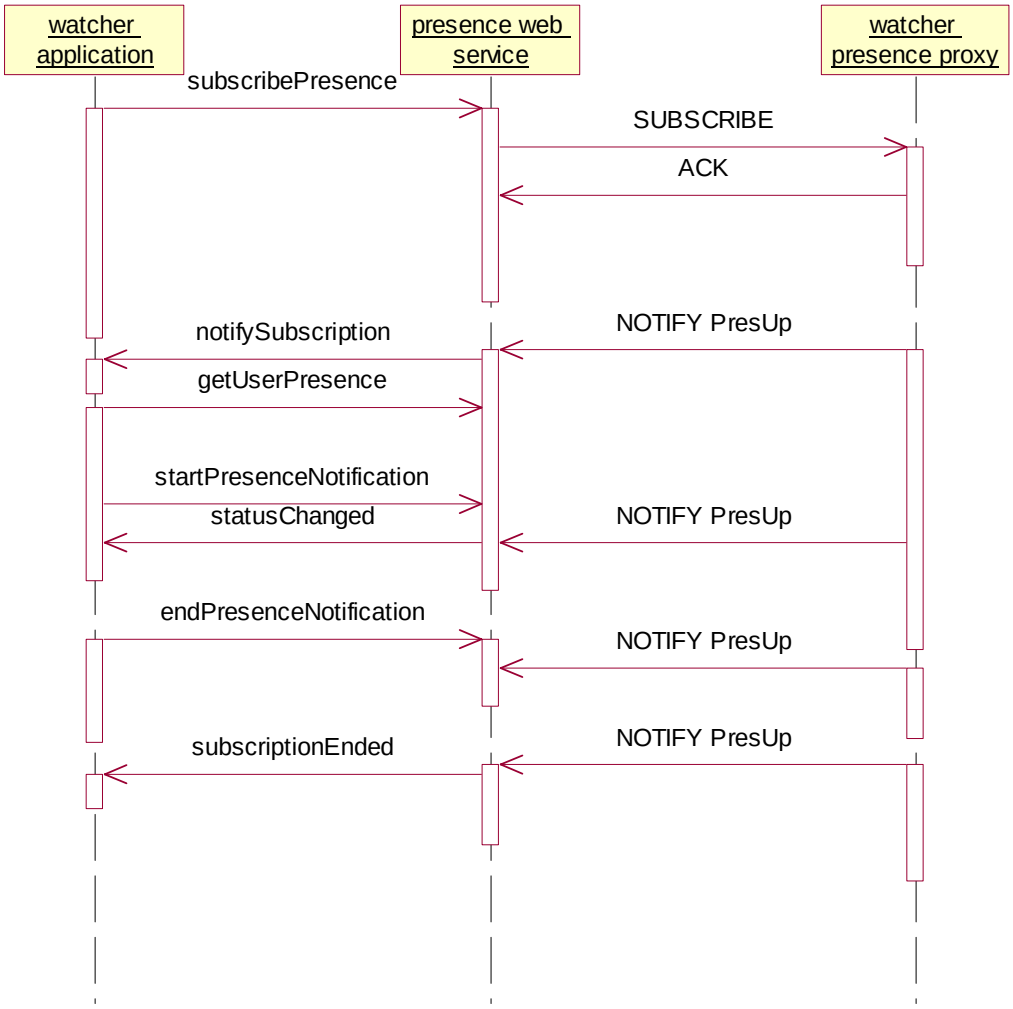

Figure 1

5.2 Watcher Resides in SIP/IMS network

In this sequence diagram, the presentity is a web service client, but the watcher is located in an SIP/IMS network

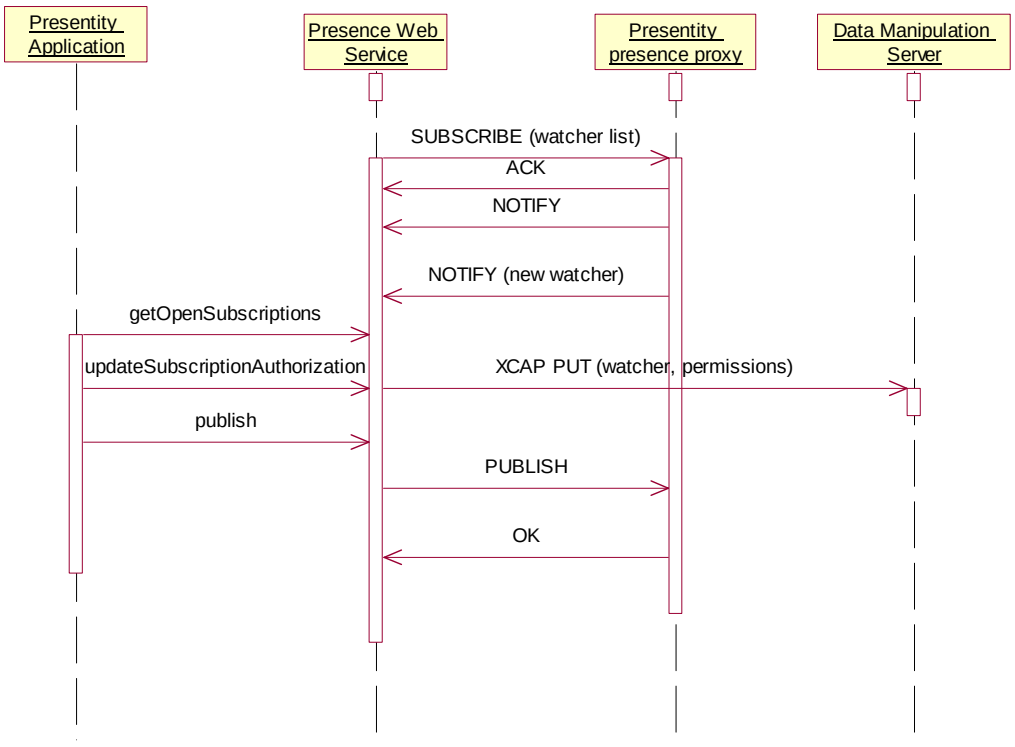

Figure 2

6 Detailed Mapping Information

6.1 Operations

6.1.1 subscribePresence

The sequence diagram in clause 5.1 illustrates the flow for the **subscribePresence** operation.

Upon receiving a **subscribePresenceRequest** message, the Presence web service will issue a SIP SUBSCRIBE message towards the watcher presence proxy. The role of the latter is address resolution, authentication of the web service, finding the network of the target presentity, accounting. In this state (S1), the web service expects to receive a SIP ACK message moving to state S2. In this new state (S2), it expects to receive a SIP NOTIFY PresUp message from the watcher proxy moving to state S3. In order to convey the selected presence attributes to the SIP system, a filter body has to be created in the SIP SUBSCRIBE message according to [4].

In case of a group of presentities, the URI of the group specifies whether the SIP SUBSCRIBE message is sent to a RLS (resource list server). If the URI specifies a group maintained by the Address List Management Web Service ES 202 391-13 [10], then every member residing in a SIP system is addressed individually.

6.1.2 getUserPresence

The sequence diagram in clause 5.1 illustrates the flow for the **getUserPresence** operation.

getUserPresence gets the actual status stored in the Web Service, since the status changes of the presentity are asynchronously sent to it through the SIP NOTIFY PresUp messages.

6.1.3 startPresenceNotification

The sequence diagram in clause 5.1 illustrates the flow for the **startPresenceNotification** operation.

This operation enables the SIP events received via NOTIFY PresUp to be sent further to the watcher. In case the presence attributes specified in this operation are not the same as in the **subscribePresenceRequest** message, the web service reissues a SIP SUBSCRIBE message with a different filter upon receiving the **startPresenceNotificationRequest**.

6.1.4 endPresenceNotification

The sequence diagram in clause 5.1 illustrates the flow for the **endPresenceNotification** operation.

With this operation, the service will cease to forward events to the watcher. The subscription remains active. No action occurs towards the SIP system.

6.1.5 statusChanged

The sequence diagram in clause 5.1 illustrates the flow for the **statusChanged** operation.

The asynchronous message **statusChangedRequest** is sent to the watcher upon receiving a SIP NOTIFY PresUp message from the SIP system, assuming the watcher notification has been previously enabled with the **startPresenceNotification** operation.

6.1.6 statusEnd

This asynchronous message **statusEndRequest** is triggered by the web service. There is no mapping to the SIP system.

6.1.7 notifySubscription

The sequence diagram in clause 5.1 illustrates the flow for the **notifySubscription** operation.

Upon receiving the first SIP NOTIFY PresUp message from the watcher presence proxy (state S3), the web service issues an asynchronous **notifySubscriptionRequest** message.

6.1.8 subscriptionEnded

The sequence diagram in clause 5.1 illustrates the flow for the **subscriptionEnded** operation.

The asynchronous message **subscriptionEnded Request** is sent to the watcher in case of a negative SIP NOTIFY PresUp message, following a subscription or a timeout.

6.1.9 publish

The sequence diagram in clause 5.2 illustrates the flow for the **publish** operation.

The **publish** operation maps in the web service to a SIP PUBLISH message to be sent to the next presentity proxy. The presence attributes are mapped to SIP presence (PIDF and RPID) records. Furthermore, the web service expects a SIP OK message

6.1.10 getOpenSubscriptions

The sequence diagram in clause 5.2 illustrates the flow for the **getOpenSubscriptions** operation.

This query function is local to the Presence web service and returns the status of pending subscriptions.

6.1.11 updateSubscriptionAuthorization

The sequence diagram in clause 5.2 illustrates the flow for the **updateSubscriptionAuthorization** operation.

This operation maps to an XCAP protocol request to a data manipulation server (DMS). An HTTP PUT message is sent, containing the permission statements for a certain watcher or group of watchers.

6.1.12 getMyWatchers

This query function is local to the Presence web service.

6.1.13 getSubscribedAttributes

This query function fetches the information locally from the Presence web service

6.1.14 blockSubscription

This method maps to a "negative" SIP NOTIFY message to be sent to the presentity presence proxy at the next subscribe refresh. Another possibility is to address the DMS and delete the watcher's subscription.

6.2 Exceptions

SIP/SIMPLE protocol exceptions are mapped to **ServiceException** and **PolicyException** messages. No new exceptions are defined.

7 Additional Notes

The web service (presentity role) client sends at startup a subscription to its own watcher list. In this state, the web service expects a SIP NOTIFY message each time a new watcher subscribes to the presentity. The sequence diagram in clause 5.2 illustrates this.

History

Document history		
V1.1.1	August 2005	Publication