NGSI Registration and Discovery

Approved Version 1.0 – 29 May 2012

Open Mobile Alliance

OMA-TS-NGSI_Registration_and_Discovery-V1_0-20120529-A

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1. Scope

This document is the Technical Specification for the NGSI-11 and 12 interfaces. It specifies the service registration and discovery functions of the NGSI Enabler by utilizing the OMA Web Service EnableR (OWSER) and its UDDI interfaces and specification of the services through WSDL.

NGSI v1.0 defines abstract interfaces. This technical specification builds the basis for the definition of binding technologies based on the abstract interface definitions given in the TS.

The TS is not basis for testing without a respective binding.

2. References

2.1 Normative References

[NGSI-AD] "NGSI Architecture", Open Mobile Alliance™, OMA-AD-NGSI-V1_0, URL:http://www.openmobilealliance.org/

[NGSI-RD] "NGSI Requirements", Open Mobile Alliance™, OMA-RD-NGSI-V1_0, URL:http://www.openmobilealliance.org/

[OWSERspec] "OMA Web Services EnableR (OWSER): Core Specifications, Version 1.1", Open Mobile Alliance, URL:http://www.openmobilealliance.org/

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

[RFC4234] "Augmented BNF for Syntax Specifications: ABNF". D. Crocker, Ed., P. Overell. October 2005, URL:http://www.ietf.org/rfc/rfc4234.txt

[SCRRULES] "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL:http://www.openmobilealliance.org/

[UDDI] "UDDI Version 2.04 API Specification," UDDI Committee Specification, 19 July 2002, URL:http://uddi.org/pubs/ProgrammersAPI-V2.04-Published-20020719.htm

[WSDL] "Web Services Description Language (WSDL) 1.1", Erik Christensen, Francisco Cubrera, Greg Meredith, Sanjiva Weeravarana, W3C NOTE, March 15, 2001, URL:http://www.w3.org/TR/wsdl.html

[WSI] "Basic Profile Version 1.0", Web Services Interoperability Organization, Final Material, 2004/04/16, URL: http://www.ws-i.org/Profiles/BasicProfile-1.0-2004-04-16.html

2.2 Informative References

[OMADICT] "Dictionary for OMA Specifications", Version 2.7, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_7, URL:http://www.openmobilealliance.org/

[OWSEROvw] "OMA Web Services EnableR (OWSER): Overview", Version 1.1, Open Mobile Alliance™, OMA-OWSER-Overview-V1_1, URL:http://www.openmobilealliance.org/

[OWSERBP] "OMA Web Services EnableR (OWSER) Best Practices: WSDL Style Guide", Version 1.1, Open Mobile Alliance™, OMA-OWSER-Best_Practice-WSDL_Style_Guide-V1_1, URL:http://www.openmobilealliance.org/

3. Terminology and Conventions

3.1 Conventions

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 [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

The definitions of the OMA Dictionary [OMADICT] are valid for this document unless otherwise stated below.

Service Description see [NGSI-RD]

3.3 Abbreviations

NGSI	Next Generation Service Interfaces
OMA	Open Mobile Alliance
OWSER	OMA Web Services EnableR
UDDI	Universal Description, Discovery, and Integration
WSDL	Web Services Description Language
WS-I	Web Services Interoperability
TS	Technical Specification

4. Introduction

The Registration and Discovery APIs provides interfaces in order to support functionalities for

- Registration of resources
- Searching for resources

This TS specification is part of the TS specifications for the NGSI Enabler. The functionality is provided as specified by the OMA Web Service Enabler (OWSER) [OWSERspec]. An overview on the utilization of OWSER is given in [OWSEROvw] a style guide to describe webservice for OMA in WSDL is provided in [OWSERBP].

4.1 Version 1.0

The NGSI TS Registration and Discovery document specifies the NGSI-11 Interface with the following functions:

- registration of the Service Description of a service (including functionalities and Policies).
- modification of the Service Description (including functionalities and Policies) of a service.
- deregistration of a Service Description of a service

and the NGSI-12 interface with the following function:

- Retrieval of the Service Description of all services matching some given information in the description (e.g. providing a specific functionality, requirements in Policies).

4.1.1 Backward Compatibility to the Parlay Specifications

None.

5. NGSI-11: Service Registration Interface

5.1 Service Description

The Web Service provider SHALL register or publish its service at a dedicated Web Service Registry which realizes the NGSI-11 interface. In Figure 1 a simple deployment is shown.

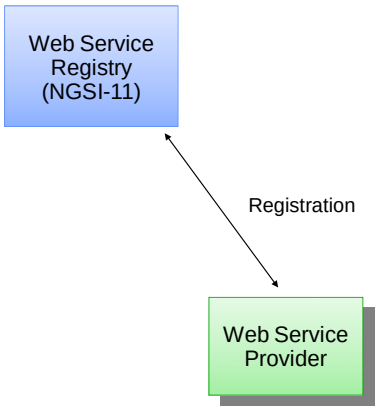

Figure 1: NGSI-11 Service usage

5.1.1 Utilization of UDDI and WSDL as specified in OWSER

The above functionality has been discussed as part of the OMA Web Service EnableR (OWSER). The core specification of OWSER [OWSERspec] is build upon several existing standards utilizing among others WSDL for the description of the service on the one hand and UDDI for registration/management of service. In Figure 2 an overview of the so called web services stack described by OWSER is shown [OWSERspec].

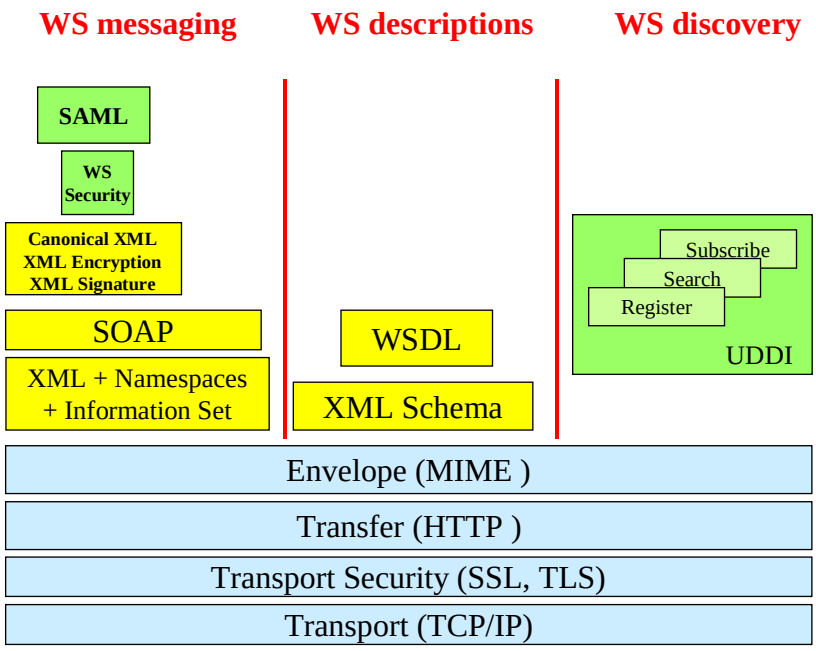

Figure 2: Utilization of various specification by OWSER [OWSERspec]

The NGSI-11 Service Registration interface is realized as a combination of existing standards as specified by the OMA Webservice EnableR - Core Specification [OWSERspec]. The NGSI-11 Service Registration interface SHALL implement the interfaces according to section 4.3 and 4.4. of the UDDI 2.0.4 Publishing API [UDDI] taking into account the WS-I Basic Profile 1.0 [WSI1.0] which utilizes WSDL 1.1[WSDL] to for the description of the Web Service.

5.1.2 Service Recommendation

The NGSI-11 and NGSI-12 allow an application to configure how to recommend content or services in order to enhance the user experience of multimedia communications. The following section describes the data type definition.

5.1.2.1 Data Type Definition

5.1.2.1.1 InvocationType enumeration

This is a list of InvocationType that is used in the *ServiceRecommendation* metadata.

Enumeration	Description	New Parameters
InvokeAutomatically	Start automatically	NGSI-11, NGSI-12
InvokeManually	Start with manual confirmation	NGSI-11, NGSI-12

Table 1: InvocationType enumeration

5.1.2.1.2 PushTrigger enumeration

This is a list of *PushTriggere* enumeration that is used in the *ServiceRecommendation* metadata.

Enumeration	Description	New Parameters
OnRegistration	Push at registration time	NGSI-11, NGSI-12
OnCallSetup	Push at call setup time	NGSI-11, NGSI-12
OnUserAvailability	Push at user's availability	NGSI-11, NGSI-12
WithOngoingCommunication	Push during ongoing communication	NGSI-11, NGSI-12
OnMetaData	Push on meta data conditions	NGSI-11, NGSI-12

Table 2: PushTrigger enumeration

5.1.2.1.3 ServiceRecommendationMetadata structure

This structure contains the *ServiceRecommendation* metadata.

Part name	Part type	Optional	Description	New parameters
PushTrigger	PushTrigger	No	Identifier used to indicate when to push service recommendation to the UEs: • on Call setup or on registration, • on availability of the user, • on basis of ongoing communication only, • on basis of meta data	NGSI-11, NGSI-12
MetadataCriteria	xsd:string	Yes	SHALL be included if PushTrigger is set to onMetaData. Indicates criteria which needs to be met on PushTrigger condition	NGSI-11, NGSI-12
ServiceType	xsd:string	No	Indicates the type of content/services thatis being recommended (e.g. content links or plug-in),	NGSI-11, NGSI-12
Receiver	xsd:string	No	Indicates to whom the service recommendations are issued (e.g. same for all users, personalized, group-specific, on user basis)	NGSI-11, NGSI-12
PushConditions	xsd:string	Yes	Identifies particular conditions under which the service recommendations are issued (e.g. specific context) Default setting: void	NGSI-11, NGSI-12
InvocationMethod	InvocationType	No	Indicates how to invoke the service recommendations (e.g. presented on the user's choice to use (manually), or to be invoked automatically (e.g. dynamic advertisement driven by service provider's policies))	NGSI-11, NGSI-12
UserChoice	InvocationType	Yes	Indicates how to involve a user choice to seek user's consent, when invoking automatically; Default setting is on user's consent.	NGSI-11, NGSI-12

Table 3: ServiceRecommendationMetadata structure

6. NGSI-12: Service Discovery Interface

6.1 Service Description

The Web Service Registry contains a set of known web services. A Web Service Requestor SHALL utilize the discovery functionality of the Web Service Registry to get detailed information on a Web Service fulfilling its specification. A sample deployment is shown in Figure 3.

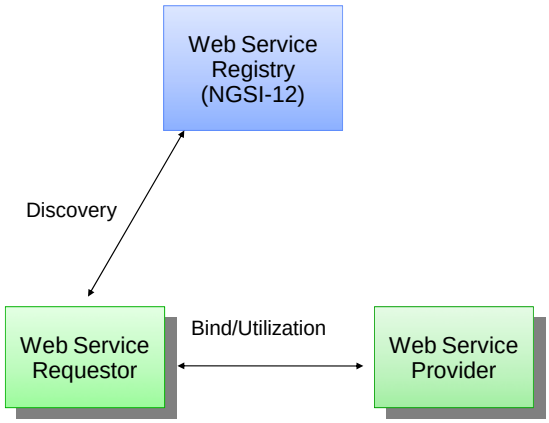

Figure 3: NGSI-12 Service Usage

6.1.1 Utilization of UDDI and WSDL as specified in OWSER

The above functionality has been discussed as part of the OMA Web Service EnableR (OWSER). As discussed in section 5.1.1 OWSER utilizes existing standards.The NGSI-12 Service Discovery is realized as a combination of existing standards as specified by the OMA Webservice EnableR - Core Specification [OWSERspec]. The NGSI-11 Service Discovery interface SHALL implement the interfaces according to section 4.1 and 4.2 of the UDDI 2.0.4 Inquiry API [UDDI] taking into account the WS-I Basic Profile 1.0 [WSI1.0] which utilizes WSDL 1.1[WSDL] to for the description of the Web Service.

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-TS-NGSI_Registration_and_Discovery-V1_0-20120529-A	29 May 2012	Status changed to Approved by TP Ref TP Doc # OMA-TP-2012-0203-INP_NGSI_V1_0_ERP_for_final_Approval

Appendix B. Static Conformance Requirements (Normative)

As NGSI v1.0 specifies the level of abstract interfaces, no testing of those is applicable. Therefore, the Static Conformance Requirements (SCR) tables are not defined. Those are subject for definitions in the related technical specification defining the bindings.