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| Work Item |
| Work Item Title: | Interworking with 3GPP networks |
| Document Number | WI-0058 |
| Supporting Members or Partner type 2 | Orange, AT&T, Deutsche Telekom, Huawei, KDDI, Sierra Wireless, Sensinov, Oberthur Technologies, Gemalto, ZTE Corporation, Nokia, NEC, KT, Convida |
| Date: | 2019-12-12 |
| Abstract: | This Work Item is intended to produce an interworking specification between oneM2M service layer and Cellular IoT network (3GPP Rel13, Rel14 & Rel15) features. |
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oneM2M Copyright statement

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1 Title (Acronym)

Interworking with 3GPP networks.

2 Justification

While oneM2M WI-0037 Interworking with 3GPP Rel-13 MTC features (see oneM2M TR-0024) was the basis to initiate consideration of 3GPP TS 23.682 architecture interworking with oneM2M, the present WI intends to go further in the consideration of recent 3GPP progress on new class of low power wide area (LPWA) technologies for the Cellular IoT network. It is expected this WI will cover extended Cellular IoT features in 3GPP Rel-14 & Rel-15.

Contributions to TP#24, TP-2016-0177R01 and TP-2016-0181, explicitly show the interest to actively work on interworking with latest versions of 3GPP Rel13 & Rel14.

As examples, the following features from 3GPP Rel-13, Rel-14 & Rel-15 targeting enhancing services for M2M / IoT users are considered of particular interest for interactions with oneM2M service layer:

* Cellular IoT IP and non-IP data
	+ - Communication using SCEF (API exposure function)
		- communication using data path
* UE context information storage for device trigger and NIDD (PSM/eDRX timer)
* High latency communications
* Monitoring events
* Group message delivery
* Informing about Potential Network Issues
* Setting up an AS session with required QoS procedure
* Resource management of background data transfer
* Change the chargeable party at session set-up or during the session procedure

Following oneM2M’s request in TP-2017-0005R04-Reply\_LS\_to\_3GPP\_on\_Northbound\_SCEF\_API\_standardisation 3GPP agreed to standardize the northbound API to 3GPP SCEF in 3GPP Rel-15.
SCEF framework functions have been standardized by SA2 (WI: NAPS)

SCEF T8 API will be standardized by CT3 (WI: NAPS, target approval date June. 2018)

Based on this 3GPP decision oneM2M should consider the new northbound API to 3GPP SCEF as the main interface for Interworking with 3GPP networks. However, since interworking with selected 3GPP features - using 3GPP internal interfaces or OMA interfaces - has been specified in 3GPP releases 11 – 14 the current WI can additionally specify the use of these interfaces for Interworking with 3GPP networks.

3 Intended Output

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| Tick all the appropriate cases  |  |
| x | Change request(s) to existing Technical Specification(s) |
| x | Change request(s) to existing Technical Reports(s) |
| x | New Normative Technical Specifications(s) |
|  | New Permanent Technical Reports(s) |
|  | New Temporary Technical Reports(s) |

4 Impact

4.1 oneM2M Work Items

None

5 Scope

The objective of this work item is to study and specify interworking between oneM2M service layer and 3GPP Rel-13, Rel-14 & Rel-15 features, so that some 3GPP Rel-13, Rel-14 & Rel-15 features can be exposed to oneM2M service layer for the benefit of IoT applications, and vice-versa (some oneM2M features that can be used by Cellular IoT networks).

Mapping of relevant oneM2M data to the parameters exposed in TS 23.682 and TS 29.122 by the 3GPP SCEF northbound API will be specified.

A new Technical Specification (TS-0026) will be generated. In addition to input related to Cellular IoT interworking, the TS will include 3GPP Interworking text from TS-0001 which will be moved for restructuring purposes.

Depending on this TS, Change Requests to following specifications may be needed:

* Technical Specification TS-0001 on Functional Architecture
* Technical Specification TS-0004 on Service Layer Core Protocol
* Technical Specification TS-0003 on Security

Also CRs to the following technical reports are expected:

 - The Technical Report TR-0024 on 3GPP Interworking

 - The Technical Report TR-0047 on developer’s guide of 3GPP interworking

6 Schedule and impacted specifications

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| New Specifications (if any) |
| DocumentType | DocumentNumber\* | Title | Schedule (TP No.) | Lead WG | Impacted WGs | Comments |
| Start  | Change Control  | Freeze | Approval |
| TS | TS-0026 | 3GPP Interworking | TP#25 | n/a | TP#45 | TP#46 | WG2 | WG3 |  |

\* Optional for first versions (i.e. before it will be assigned by the secretariat)

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| CRs to existing specifications (if any) |
| ImpactedTS/TR | CR number (when known) | Subject of the CR | Approved at plenary# | Impacted WGs | Comments |
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| TS-0001 |  | Enhancements to TS-0001 | TP#45 | WG2 |  |
| TS-0004 |  | Enhancements to TS-0004 | TP#45 | WG3 |  |
| TS-0003 |  | Enhancements to TS-0003 | TP#44 | WG4 |  |
| TR-0047 |  | Enhancements to TR-0047 | TP#45 | WG6 |  |
| TR-0024 |  | Enhancements to TR-0024 | TP#44 | WG2 | Link to WI-0037 |

7 Work Item Rapporteur(s)

co-rapporteurs: Kenichi Yamamoto (KDDI), Marianne Mohali (Orange), James Hu (AT&T); and Shao Weixiang (ZTE Corporation) as a rapporteur of TR-0024 (WI-0037)

8 History

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| Document history |
| V0.0.1 | 21 July 2016 | Initial proposal |
| 28 July 2016 | Uploaded as a permanent document following approval of TP-2016-0207R01 |
| V0.1.0 | 20 October 2016 | Uploaded as a permanent document following approval of TP-2016-0308R01 |
| V0.2.0 | 20 February 2017 | Uploaded as a permanent document following approval of TP-2017-0044R02 |
| V0.3.0 | 27 March 2017 | Updated  |
| Uploaded as a permanent document following approval of TP-2017-0069 |
| V0.4.0 | 02 June 2017 | Uploaded as a permanent document following approval of TP-2017-0117R01 |
| V0.5.0 | 12 Mar 2018 | Timeline completion, Justification, and scope update |
| 20 Mar 2018 | Uploaded as a permanent document following approval of TP-2018-0088R01 |
| V0.6.0 | 28 Sep 2019 | Timeline Updated |
| 01 Oct 2019 | Uploaded as a permanent document following approval of TP-2019-0145 |
| V0.7.0 | 18 Nov 2019 | Updated a co-rapporteur |
| 12 Dec 2019 | Uploaded as a permanent document following approval of TP-2019-0175R01 |

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