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| Work Item |
| Work Item Title: | IPE-based Device Management with FlexContainers |
| Document Number | WI-xxxx |
| Supporting Members or Partner type 2 | Orange, Hansung University, Exacta GSS, Deutsche Telekom, Nokia |
| Date: | 2021-09-16 |
| Abstract: | Propose a work item for Device Management (DMG) with IPE-based approach with FlexContainers |
| 'Template Version: January 2019 (do not modify) |

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1 Title (abbreviation)

IPE-based Device Management with FlexContainers (IPE-DM)

2 Justification

In Release 4, SDT (Smart Device Template) (WI-0081) was extended to include device management functions in addition to the existing services. This justified extension creates a new way to perfom device management compared to the existing Device Management (DMG) Common Service Function (CSF) model using <mgmtObj>.

In order not to live with 2 solutions for the same purpose, in Release 4, a work item (WI-0099) was created to study a possible transition phase allowing implementation using DMG <mgmtObj> to migrate towards SDT model. The study done in TR-0067 concluded that such a migration was not desirable and thus, DMG <mgmtObj> should stay as is.

The WI-0099 study raised a new vision on the way the Device Management should be designed, especially for IoT network technologies, with more abstract APIs and independently from any external DM technology, relying on IPE guidelines.

Benefits are:

* Simplified architecture: one IPE per interworked technology, not a global CSF for the CSE to handle all external technologies.
* Simplified data model: no need to describe in each managed entity the full information on its origin.
* Simplified design: only <flexContainers>, not <mgmtObj> + <mgmtCmd>. FCs more flexible than MOs (FCs can have FC children).
* Simplified usage: unified Service & Device Management.

This Release 5 Work Item proposes to define an IPE-based Device Management with FlexContainers that will be more future-proof and applicable to any kind of existing or future IoT 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 scope of the Work Item is to specify the IPE-based Device Management with FlexContainers (IPE-DM)

6 Schedule and impacted specifications

Provide the schedule of tasks to be performed;

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| New Specifications (if any) |
| DocumentType | DocumentNumber\* | Title | Schedule (TP No.) | Lead WG | Impacted WGs | Comments |
| Start  | Change Control  | Freeze | Approval |
| TR |  |  |  |  |  |  |  |  |  |
| TS/TR | NEW | IPE-based Device Management with FlexContainers | TP 51 | TP 56 | TP 57 | TP 58 | RDM | SDS |  |

\* The first versions will be assigned by the secretariat (WPM Secretary)

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| CRs to existing specifications (if any) |
| ImpactedTS/TR |  | Subject of the CR | Approved at plenary# | Impacted WGs | Comments |
| TS-0001, TS-0004 |  | Allow [flexNode] child to <node> |  | SDS |  |
| TS-0023 |  | Move DM to TS-xxxx |  | RDM |  |
| TS-0033 |  | Extend guidelines with TS-xxxx DM |  | RDM |  |
| TR-0039 or new TR |  | Developer guide for IPE-based DM |  | TDE |  |
| TS-0021, TS-0024, TS-0030, TS-0035, TS-0040, TR-0042, TR-0064, TR-0065 |  | Extend with reference to TS-xxxx DM |  | RDM, SDS |  |
| TBC |  |  |  |  |  |

7 Work Item Rapporteur(s)

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8 History

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| Document history |
| V0.0.1 | 2021-09-16 | Initial proposal |
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