|  |  |
| --- | --- |
| Work Item | |
| Work Item Title: | System enhancements to support AI capabilities |
| Document Number | WI-00XX |
| Supporting Members or Partner type 2 | Hyundai Motors, KETI, ??? |
| Date: | 2021-05-27 |
| Abstract: | This work item aims to enable oneM2M to utilize Artificial Intelligence models and data management for AI services. |
| Template Version:23 February 2015 (Do not modify) | |

oneM2M Copyright statement

No part may be reproduced except as authorized by written permission.

The copyright and the foregoing restriction extend to reproduction in all media.

All rights reserved.

1 Title (Acronym)

oneM2M System Enhancements to support Artificial Intelligence capabilities.

2 Justification

Today’s business world is changing with the adoption of Internet of Things (IoT). IoT is helping in prominently capturing a tremendous amount of data from multiple sources. However, wrapping around the variety of data coming from countless number of IoT devices, makes it complex to collect, process, and analyze the data.

Realizing the future and full potential of IoT services will require an investment in new technologies. The convergence of Artificial Intelligence (AI) and Machine Learning (ML) with IoT can redefine the way industries, business, and economies functions. AI/ML enabled IoT creates intelligent machines that simulate smart behavior and supports in decision making with little or no human interference.

Combining these two streams benefits the common person and specialists alike. While IoT deals with devices interacting using the internet, AI/ML makes the devices learn from their data and experience. So oneM2M needs to investigate what features are needed to support AI/ML capabilities in oneM2M architecture and service layers.

3 Intended Output

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

4 Impact

4.1 oneM2M Work Items

None

5 Scope

This Work Item will initially focus on the creation of a Technical Report analysing existing AI technologies (incl. Machine Learning) that can be resourced into oneM2M architecture. The TR will also investigate potential AI service use cases that use IoT data. The study on AI technologies and use cases will be further analysed to understand what features are supported and unsupported by the oneM2M system. Unsupported features will be used to generate potential requirements.

The Technical Report will investigate items as follows:

* State of the art AI technologies that uses data from IoT systems
* Potential use cases and requirements to support AI services and their data management
* Managing and manipulating training data in oneM2M to support AI technologies to build a model
* Feasibility study on running AI algorithms in oneM2M as a new CSF
* Generalization of steps performing AI algorithms to identify required common functions that can be supported by oneM2M
* Supporting different parameters schemes i.e., power consumption, cost for the future etc. in oneM2M to support AI services

Additional functionality will be identified through use case analysis and investigation of potential mechanisms.

Results of this WI are expected to propose changes for existing TS as CRs.

6 Schedule and impacted specifications

Provide the schedule of tasks to be performed;

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| New Specifications (if any) | | | | | | | | | |
| Document  Type | Document  Number\* | Title | Schedule (TP No.) | | | | Lead WG | Impacted WGs | Comments |
| Start | Change Control | Freeze | Approval |
| TR | TR-00xx | AI-enablement to oneM2M | TP 50 | TP 53 | TP 54 | TP 55 | RDM | SDS |  |
| TS | TS-00xx | Use cases for AI-enablement to oneM2M | TP 54 | TP 56 | TP 57 | TP 58 | RDM | SDS |  |
| TS | TS-00xx | AI-enablement to oneM2M | TP 54 | TP 57 | TP 58 | TP 59 | SDS | RDM |  |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CRs to existing specifications (if any) | | | | | |
| Impacted  TS/TR | CR number (when known) | Subject of the CR | Approved at plenary# | Impacted WGs | Comments |
|  |  |  |  |  |  |

7 Work Item Rapporteur(s)

JaeSeung Song (KETI), jssong@sejong.ac.kr

8 History

|  |  |  |
| --- | --- | --- |
| Document history | | |
| V.?.?.? | xx May 2021 | Initial proposal |

-------------------------------