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| CHANGE REQUEST |
| Meeting:\* | REQ#16 |
| Source:\* | Yuan Tao, Huawei Technologies, Co. Ltd., taoyuan.tao@huawei.comMitch Tseng, Huawei Technologies, Co. Ltd., mitch@T-infoserv.com |
| Date:\* | <2015-03-23~27> |
| Contact:\* | Yuan Tao, Huawei Technologies, Co. Ltd. ,taoyuan.tao@huawei.com |
| Reason for Change/s:\* | This contribution intends to move the industrial use case from TR0001 to TR0018. |
| CR against: Release\* | Release 2 |
| CR against: WI\* | [x]  Active <WI-0028> [ ]  MNT Maintenace / < Work Item number(optional)>[ ] STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TR-0018 V0.1.1 |
| Clauses/Sub Clauses\* | Section 6 |
| Type of change: \* | [ ] Editorial change[ ]  Bug Fix or Correction[ ]  Change to existing feature or functionality[x]  New feature or functionalityOnly ONE of the above shall be ticked |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES [ ]  NO [x] This CR is a mirror CR? YES[ ]  NO [x]  if YES, please indicate the document number of the original CR: <><CR Number of the original CR to the current Release> |
| Template Version:23 February 2015 (Dot not modify) |

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GUIDELINES for Change Requests:

Provide an informative introduction containing the problem(s) being solved, and a summary list of proposals.

Each CR should contain changes related to only one particular issue/problem.

Follow the principle of completeness, where all changes related to the issue or problem within a deliverable are simultaneously proposed to be made E.g. A change impacting 5 tables should not only include a proposal to change only 3 tables. Includes any changes to references, definitions, and acronyms in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar to the extent practicable.

Use Change bars for modifications.

The change should include the current and surrounding clauses to clearly show where a change is located and to provide technical context of the proposed change. Additions of complete sections need not show surrounding clauses as long as the proposed section number clearly shows where the new section is proposed to be located.

Multiple changes in a single CR shall be clearly separated by horizontal lines with embedded text such as, start of change 1, end of change 1, start of new clause, end of new clause.

When subsequent changes are made to content of a CR, then the accepted version should not show changes over changes. The accepted version of the CR should only show changes relative to the baseline approved text.

## Introduction

This contribution removes section 12.11 from TR0001, and adds it to TR0018.

### -----------------------Start of change 1-------------------------------------------

## 6 Use Cases

<Text> memo: Convert use cases in ppt at REQ on 19th January into oneM2M use case format.

## 6.1 An industrial use case for on-demand data collection for factories

### 6.1.1 Description

In factories, a lot of data are created from Programmable logic controllers (PLCs) every second and data are utilised to monitor production lines. These data are available via industrial bus systems, e.g. Real-time Ethernet. In order to monitor remotely, data are gathered by the M2M service platform, that needs to interface with such industrial bus systems via M2M gateways. However, it is difficult to gather all data to M2M service platform because sometimes more than 1M bit data are created per second. In such cases, only necessary data are gathered depending on situations and filtering / pre-processing of the raw data needs to be performed at the gateway.

This use case proposes that the oneM2M System offers pre-processing capabilities, e.g. rule-based collection policies (averages, thresholds …). These rules (e.g. in XML format) are called “data catalogues”.

### 6.1.2 Source

Hitachi

### 6.1.3 Actors

* PLC (Programmable logic controller): It controls sensors and devices in a production line according to embedded programs. It also has interface to Real-time Ethernet. It broadcasts data related to the production line to Real-time Ethernet.
* M2M Gateway: It provides an interface from the Real-time Ethernet to the OneM2M System. An application on the gateway collects necessary data from Real-time Ethernet according to the configuration called data catalogue, and send collected/pre-processed data to M2M service platform.
* M2M service platform: It stores data gathered from gateway(s), and provide data to applications. It also manages data catalogue in gateway(s).
* Application: An M2M Application in the Infrastructure Domain that monitors production lines by using collected data in M2M service platform, and send change request of data catalogue depending on situations.
* Real-time Ethernet: A technology standardized in IEC TC65. Ethernet is used at physical layer, but upper protocol is designed for industry purpose. In this use case, broad cast protocol is assumed. On top of Ethernet cable, data are broadcasted with ID. Address configuration is not necessary here.
* Internet connection: M2M service platform and gateway(s) are connected by the Internet physically.

### 6.1.4 Pre-conditions

* PLCs and gateway are connected to Real-time Ethernet. PLCs broadcast data to Real-time Ethernet. Gateway is configured to pick up necessary data from Real-time Ethernet.
* On top of the internet, VPN connection is established between M2M service platform and gateway(s).
* The data catalogue is managed by M2M service platform

### 6.1.5 Triggers

* Data catalogue is configured for gateway to pick up data in the Real-time Ethernet

### 6.1.6 Normal Flow

* Gateway picks up broadcasted data. It picks up only data that matches condition described in the data catalogue. If data does not match the condition, gateway neglects the data.
* Gateway send collected data to M2M service platform.
* M2M service platform receives data and store.
* Application utilise the data. For example, it monitors the status of production line.
* If application user finds some trouble in a production line, he/she changes the data catalogue in M2M service platform to collect all data related to the production line, and sends the data catalogue to the target gateway.

### 6.1.7 Alternative Flow

None

### 6.1.8 Post-conditions

None

### 6.1.9 High Level Illustration

Factory(s)

Collects only data

defined in catalogue

Broadcasts data

Devices

and Sensors

Production Lines

M2M Platform

M2M

Gateway

PLC

Applications

Update of

data catalogue

Data

Data

catalogue

### 6.1.10 Potential requirements

1. The gateway shall be able to collect data from field area network (e.g. industrial bus systems) according to data collection policy stored in the gateway.
2. The data collection policy shall be manageable (configured, updated, deleted..) by M2M Applications on the M2M service platform

### -----------------------End of change 1---------------------------------------------

CHECK LIST

* Does this change request include an informative introduction containing the problem(s) being solved, and a summary list of proposals.?
* Does this CR contain changes related to only one particular issue/problem?
* Does this change request make **all** the changes necessary to address the issue or problem? E.g. A change impacting 5 tables should not only include a proposal to change only 3 tables. Includes any changes to references, definitions, and acronyms in the same deliverable?
* Does this change request follow the drafting rules?
* Are all pictures editable?
* Have you checked the spelling and grammar?
* Have you used change bars for all modifications?
* Does the change include the current and surrounding clauses to clearly show where a change is located and to provide technical context of the proposed change? (Additions of complete sections need not show surrounding clauses as long as the proposed section number clearly shows where the new section is proposed to be located.)
* Are multiple changes in this CR clearly separated by horizontal lines with embedded text such as, start of change 1, end of change 1, start of new clause, end of new clause.?