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| Input Contribution | |
| Meeting ID\* | SDS#47 |
| Title:\* | GDPR feature analysis and impact to oneM2M |
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| Date:\* | 2020-09-28 |
| Input related to\* | WI-0095 oneM2M System Enhancement to Support Privacy Data Protection Regulations (eDPR)  TR-0062 V 0.2.0 |
| Intended purpose of  document:\* | Decision  Discussion  Information  Other <specify> |
| Impacted other TS/TR(s) |  |
| Decision requested or recommendation:\* | Agree for inclusion in TR-0062 |
| Template Version: January 2017 (Do not modify) | |

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# Introduction

This contribution provides input about key issue on consent management for GDPR.

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

# 8 Proposed Solutions

*Editor’s Note: The section provides solutions to the required functions identified in the previous section.*

## 8.x Solution: Key Issue x – Consent Management

Under GDPR, processing personal data is generally prohibited, unless it is expressly allowed by law, or the data subject has consented to the processing by the owner of the data. According to GDPR, consent must be freely given, specific, informed and unambiguous. In order to obtain freely given consent, it must be given on a voluntary basis. Therefore, it is very important how to manage consent in IoT platforms.

oneM2M system supports access control policy (ACP) to handle the access right of the resources containing data. However, the current ACP is limited to support the concept consent management introduced by GDPR as it only defines the access right of originator for the given operations (i.e., CRUDN).

In order to support the concept of consent management from GDPR, oneM2M system should answer the following two questions:

* How to provide consent from the users?
* How to manage consent information?

Consent is strictly related to data processing as it gives a clear indication about which is the purpose that the personal data of an user is processed for. Each processing purpose is associated with one or more processing activities. Basically, individuals who own IoT data want to limit their consent. Assume that as a IoT service platform provider, you want to use collected IoT data for various purposes, including marketing purposes. Here are some examples about various consents.

* Customer A agrees to share personal bio data measured by wearable IoT devices to specific hospitals.
* Customer B agrees to use personal location data to be used by marketing companies after three months from now.
* Customer C agrees to forward personal data from IoT devices to 3rd party data analytics companies and receive recommendations.

**Provisioning of consent:**

As IoT platforms need to get users’ consent for their data, there should be clear and easy ways to aquire the consent from users. There exist three different ways to get it from IoT service platforms.

1. Pre-provisioning: When a user purchases an IoT device from a service provider, a consent can be given and embedded to the IoT device. When the device is registered to an IoT platform, the pre-provisioned consent can be included in the registration procedures.
2. Post-provisioning: An IoT application is registered to an IoT platform without consent. Once the data of the IoT application is identified as a personal data, a user can select its consent via for example a web interface IoT application.
3. Interactive-provisioning: When an IoT application is registered to an IoT platform, there should be an additional step acquiring users’ consent.

Below table shows the differences among three consent provisioning mechainsms.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Post-provisioning** | **Pre-provisioning** | **Interactive-provisioning** |
| Who | User | User or Service Provider | User |
| When | After registration | At purchasing IoT device | During registration |
| How | Using UI (e.g., Web UI) | Using pre-configured message | Using enhanced registration procedures |

**Consent management:**

Consent should include various information to make the purpose and associated activities clearly. Such activities and information can be modeled as a resource called [*consentMgt*]. Each resource identified as personal data refers associated consent resources. The following figure introduce a high-level concept of consent management.



Figure x. Consent management concept

The [*consentMgt*] resource is used to store consent purposes and relevant information.



Figure x.1: Structure of [*consentMgt*] resource

The *[consentMgt]* resource shall contain the attributes specified in the table below.

Table x: Attributes of [consentMgt] resource

| Attributes of *[consentMgt]* | Multiplicity | RW/  RO/  WO | Description |
| --- | --- | --- | --- |
| *ownerID* | 1 | RO | The owner of the consent. |
| *creationTime* | 1 | RO | Indicate when this consent is created. |
| *consentName* | 1 | WO | The name of this consent. |
| *allowedProcessing* | 0..1 (L) | RW | A list containing allowed processing, for example,   * Sharing with 3rd party * Marketting |
| *validity* | 1 | RW | Indicate the validity of this consent. |
| *consentID* | 1 | WO | The identifier of this consent. |
| *expirationTime* | 1 | RO | The expiration time of this consent. |
| *rightToWithdraw* | 1 | RW | Indicate whether the owner has a right to withdraw the consent at anytime. |

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