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| Title:\* | License management using a dedicated resource |
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# Introduction

This contribution proposes a solution managing data license management using a dedicated resource called <dataLicenseMgt>.

There exist multiple ways to support data license management.

This solution provides a case where a sophisticate management mechanism is required to manage various information related to data license management.

For example, when a dataset is published, a license should be applied to the dataset. A license is composed of various information that acts as the owner’s official permission for others to use or own something.

For example, others need to know exactly how they can use the shared or available dataset. Even the systems do not provide a means to control data, the information included in the license scheme is useful for others when they need to use the dataset.

Therefore, this contribution analyses existing data license scheme and retrieve items included in typical data license statements. Then, this contribution simply proposes a dedicated resource to hold such information required to describe a license scheme.

SDS-2021-0127R01:

* Add two use cases for data license based discovery and data transfer.
* Add an attribute to check the proper usage of data license.

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

# 8 Proposed Solutions

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

## 8.1 Solution: Key Issue x – decicated resource for data license

*Editor’s Note: Each Solution section references one or more key issues identified in the previous section. A proposed solution needs to describe how the associated key issue(s) can be resolved.*

There exist multiple ways to support data license management. This solution provides a case where a sophisticated management mechanism is required to manage various information related to data license management. For example, when a dataset is published, a license should be applied to the dataset. A license is composed of various information that acts as the owner’s official permission for others to use or own something. For example, others need to know exactly how they can use the shared or available dataset. Even the systems do not provide a means to control data, the information included in the license scheme is useful for others when they need to use the dataset.

Therefore, a solution described in this section introduces a new resource to hold the information required to describe a license scheme.

The first thing is to know what kinds of information is needed to describe a license scheme. As described in Section 7.1 Key issue 1, data license management requires various information to support proper license management. Such information can be modeled as a resource called [*dataLicenseMgt*]. Resources that need to be managed under a specific license scheme have to be associated with a [*dataLicenseMgt*] resource implementing the specific license scheme.

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



Figure 9.2.1-2: Structure of [*dataLicenseMgt*] resource

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

Table 9.2.1-1: Attributes of [*dataLicenseMgt*] resource

| Attributes of *[dataLicenseMgt]* | Multiplicity | RW/  RO/  WO | Description |
| --- | --- | --- | --- |
| *termRef* | 1 | RO | The header or copyright statements that comes with the data |
| *licenseAck* | 1 | RO | Include any attribution statement specified by the Information Provider and, where possible, provide a link to this licence. |
| *licenseType* | 1 | RO | Indicate which types of data license is applied |
| *creationTime* | 1 | RO | Indicate when the data license is created |
| *expirationTime* | 1 | RW | Indicate when the data license is expiring |
| *providerID* | 1 | RO | Indicate the provider of data |
| *creatorID* | 1 | RO | Indicate the creator of data |
| *restrictionID* | 0..1 (L) | RW | If the provider of data wants to limit the use of data to specific users or groups, they can include such information in this attribute. |
| *availableOperation* | 1 | RO | Provide information about what kinds of operations are available to the given dataset. (Modify, Copy, Publish to public, Translate, Adapt, Distribute are available options) |
| *userID* | 0..1 (L) | RW | Include information which platforms or users have used this data |
| *linkOriginalLicense* | 1 | RW | Indicate a link to the original license |
| *modifiedTag* | 1 | RW | Indicate whether the data is modified |
| *usageCheck* | 1 | RW | Indicate the need for checking proper usage of data based on the given license |

If the [dataLicenseMgt] resource is available, oneM2M resources can have a link to proper [dataLicenseMgt] resource as show in the below Figure 9.2.1-3.



**Figure 9.2.1-3: Links to [dataLicenseMgt] resources**

**License-based resource discovery:**

This allows discovering resources based on a specific license. For example, an IoT application that wants to provide a service that shows weather forecasting based on available open sensor data under CC0 (because CC0 means that anyone can do anything with the given dataset and even don’t need to mention about the provider or owner of the dataset). Then the application can discover resources that hold weather sensor data under CC0. The following Figure 9.2.1-4 shows a discovery procedure based on a given license scheme.



Figure 9.2.1-4: Discovery procedure based on license scheme

**License-based resource transfer and checking:**

Another available use case using a license is to transfer a set of discovery resources to a target IN-CSE and checking the license. If a set of open data is shared with others and there is an IoT application that wants to use the dataset, the IoT application downloads or retrieves the dataset and store the downloaded dataset to its IoT platform. Then there is a need to support such dataset transfer under a specific license. In addition, the source IN-CSE needs to check whether the target IN-CSE properly stored transferred dataset based on the guidance described in the license scheme. Figure 9.2.1-5 shows procedures supporting such use case.



**Figure 9.2.1-5: Dataset transfer and checking procedure based on license scheme**

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