

# TM Forum Technical Specification

## Resource Inventory

**TMFC012**

|                                                  |                                        |
|--------------------------------------------------|----------------------------------------|
| <b>Maturity Level: General Availability (GA)</b> | <b>Team Approved Date: 08-Aug-2023</b> |
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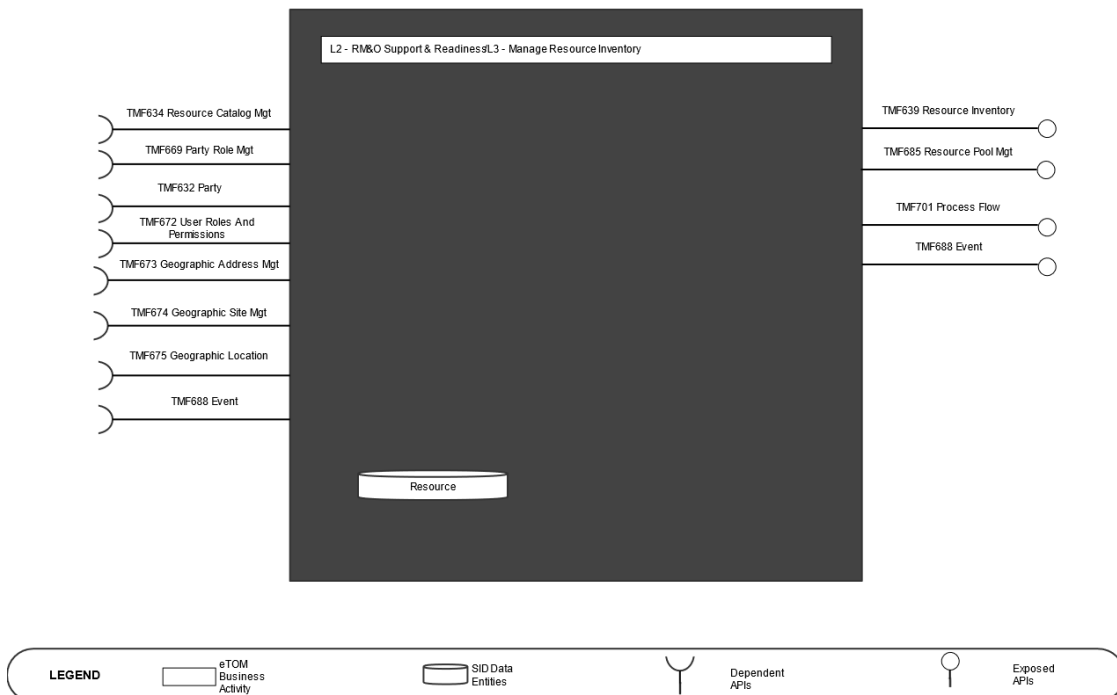
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# 1. Overview

| Component Name     | ID      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ODA Function Block |
|--------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Resource Inventory | TMFC012 | <p>Resource Inventory component is responsible for accounting for resources (all inputs - including stock, parts, assets, production components etc.) that are owned and/or held for allocation and/or use by the organization.</p> <p>Resource Inventory component has functionality that includes inventory items creation, inventory organization, inventory search or filter, inventory monitoring and tracking, inventory control (organization, re-stock management etc.) and inventory auditing.</p> <p>The minimum check to be performed at inventory items creation or update is the global consistency with related Resource Catalog information.</p> | Production         |

TMFC012 : Resource Inventory



## 2. eTOM Processes and SID Data Entities

### 2.1. eTOM business activities

eTOM business activities this ODA Component is responsible for:

| Identifier | Level | Business Activity Name    | Description                                                                                                                                                                                                                                                                                                                                  |
|------------|-------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.5.4      | L2    | RM&O Support & Readiness  | Manage resource infrastructure to ensure that appropriate application, computing and network resources are available and ready to support the Fulfillment, Assurance and Billing processes in instantiating and managing resource instances, and for monitoring and reporting on the capabilities and costs of the individual FAB processes. |
| 1.5.4.5    | L3    | Manage Resource Inventory | Establish, manage and administer the enterprise's resource inventory, as embodied in the Resource Inventory Database, and monitor and report on the usage and access to the resource inventory, and the quality of the data maintained in it                                                                                                 |

### 2.2. SID ABEs

SID ABEs this ODA Component is responsible for:

| SID ABE Level 1 | SID ABE Level 2 (or set of BEs) |
|-----------------|---------------------------------|
| Resource        |                                 |

### 2.3. eTOM L2 - SID ABEs links

### 2.4. Functional Framework Functions

| Function ID | Function Name                                 | Function Description                                                                                                                                                                                   | Sub-Domain Functions Level 1 | Sub-Domain Functions Level 2  |
|-------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|
| 426         | Physical Implementation Information Capturing | Physical Implementation Information Capturing provide levels of implementation details that tactical planning does not need to specify, such as duct routes and the frame appearances of device ports. | Resource Management          | Resource Inventory Management |

| Function ID | Function Name                          | Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sub-Domain Functions Level 1 | Sub-Domain Functions Level 2  |
|-------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|
| 442         | Network Overviews Presentation         | Network Overviews Presentation provides a more generalized view of the network than found in resource management.                                                                                                                                                                                                                                                                                                                                            | Resource Management          | Resource Inventory Management |
| 447         | Resource Activation Inventory Updating | Resource Activation Inventory Updating functions updates Resource Inventory with the resource status information, and notifies surrounding applications about new activation status.                                                                                                                                                                                                                                                                         | Resource Management          | Resource Inventory Management |
| 453         | Resource Configuration Change Logging  | Resource Configuration Change Logging - Collects and Records the history of configuration changes                                                                                                                                                                                                                                                                                                                                                            | Resource Management          | Resource Inventory Management |
| 454         | Resource Configuration Management      | Resource Configuration Management provides configuration database and management of the configurations of the individual resources                                                                                                                                                                                                                                                                                                                           | Resource Management          | Resource Inventory Management |
| 456         | Resource Topology Verification         | Resource Topology Verification work with the Inventory Management functions to ensure that the topology reflected in its database is in sync with that in the Inventory Management Systems                                                                                                                                                                                                                                                                   | Resource Management          | Resource Inventory Management |
| 468         | Resource Information Model Creation    | Resource Information Model creation function allows Service Providers to create information base in the resource inventory of the managed resources along its attributes. This function uses the standardized information model (e.g. TM Forum Information Framework) for the resources to be managed. The specific details will depend on the particular resources (e.g., particular types of managed elements and equipments) and associated technologies. | Resource Management          | Resource Inventory Management |

| Function ID | Function Name                | Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Sub-Domain Functions Level 1 | Sub-Domain Functions Level 2  |
|-------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|
| 470         | Resource Inventory Retrieval | <p>This function allows for client operations support (service assurance and billing systems) to retrieve part or all of the resource inventory known to the target OSS. This feature may allow the following selection criteria:</p> <ul style="list-style-type: none"> <li>• retrieval of a specified set of one or more sub-trees</li> <li>• exclusion or inclusion of specified object types from the selected sub-tree</li> <li>• further filtering based on attribute matching</li> <li>• retrieval of only the object instances that have been modified after a provided date and time</li> <li>• For the selected objects, this feature may allow the client operations support (service assurance and billing systems) to specify what specific attributes and relationships shall be returned. This (the attributes and relationships to be returned) would be the same for all objects of the same type.</li> </ul> | Resource Management          | Resource Inventory Management |
| 471         | Resource Inventory Updating  | <p>Resource Inventory Updating function entails update of the resource inventory based on a provided collection of updates. The expectation is that the inventory is updated as requested, but no other side effects are expected (e.g., creating a Sub Network Connection (SNC) in the network). This is a key point concerning this capability. The inventory update request can involve addition (new object), modification (change to an existing object) or</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Resource Management          | Resource Inventory Management |

| Function ID | Function Name                           | Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sub-Domain Functions Level 1 | Sub-Domain Functions Level 2  |
|-------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|
|             |                                         | deletion (removal of an object).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |                               |
| 472         | Resource Inventory Update Notification  | <p>Resource Inventory Update Notification function entails the generation of inventory update notifications based on changes to the inventory: Notifications concerning object creation, object deletion and attribute value changes to other systems.</p> <ul style="list-style-type: none"> <li>• Single Entity Notifications – in this variation of the feature, each notification pertains to only one entity, e.g., an equipment instance</li> <li>• Multi-entity Notifications – in this variation of the feature, a single notification may report on inventory changes for multiple entities.</li> <li>• Notification Suppression – in this variation of the feature, each notification pertains to only one entity.</li> </ul> | Resource Management          | Resource Inventory Management |
| 562         | Voucher Reporting                       | Voucher Reporting function for querying and reporting of voucher related data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Resource Management          | Resource Inventory Management |
| 738         | Resource Data Inventory Synchronization | Resource Data Inventory Synchronization is the function that ensure OSS Inventory data generated in each function is available to other functions as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Resource Management          | Resource Inventory Management |

**Note:**

Resource Management Sub-Domain Level 1 definition is: Resource Management groups functions in charge of managing the inventory of resources.



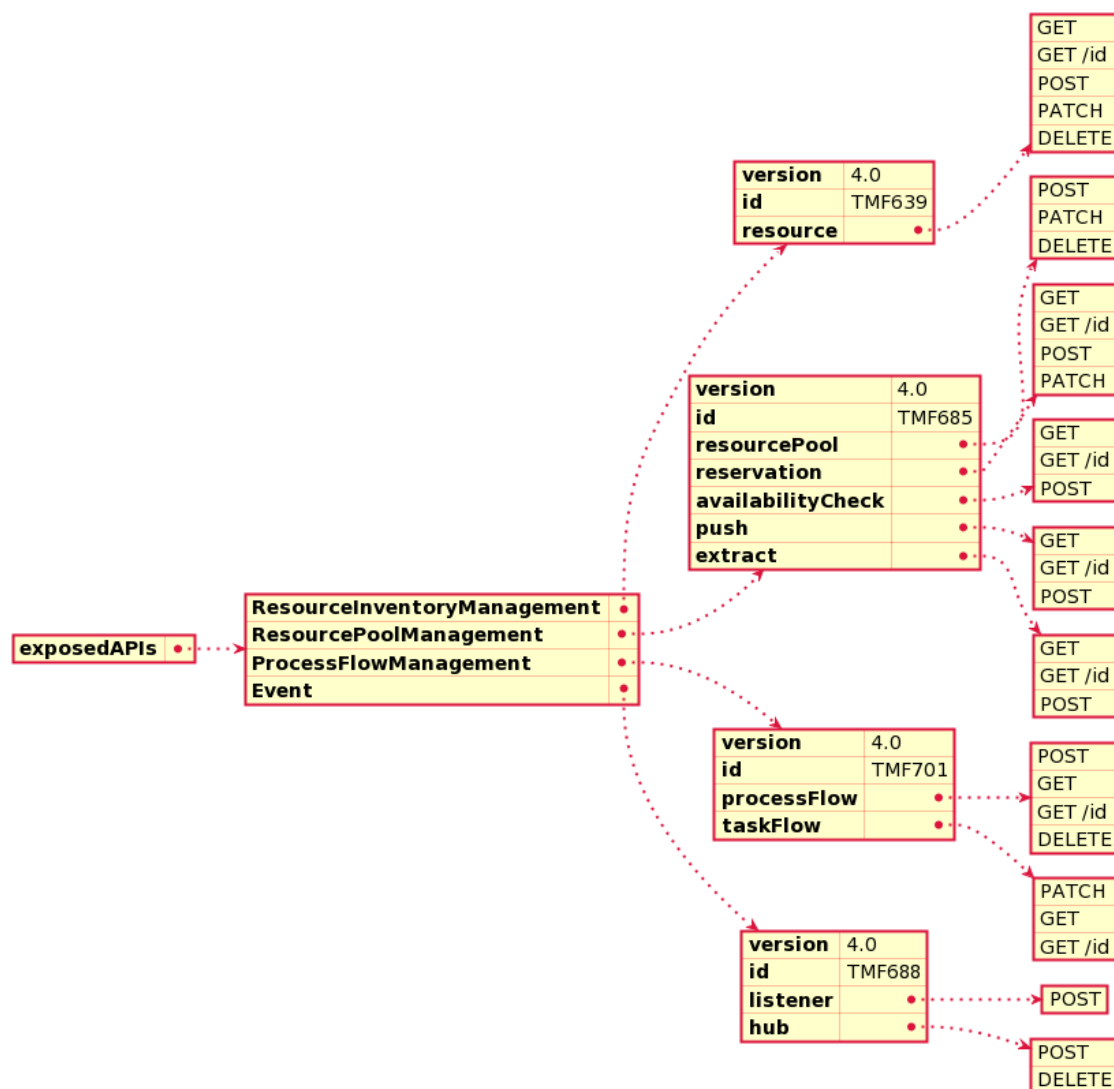
### 3. TM Forum Open APIs & Events

The following part covers the APIs and Events; This part is split in 3:

- List of **Exposed APIs** - This is the list of APIs available from this component. At this stage we list the APIs, resource and operation with no mention to optionally (in other word no mention about mandatory VS optional resource)
- List of **Dependent APIs** - In order to satisfy the provided API, the component could require the usage of this set of required APIs. At this stage **no optionally is defined** and none of this 'required' API is listed as 'mandatory'
- List of **Events (generated & consumed )** - The events which the component may generate are listed in this section along with a list of the events which it may consume. Since there is a possibility of multiple sources and receivers for each defined event.

#### 3.1. Exposed APIs

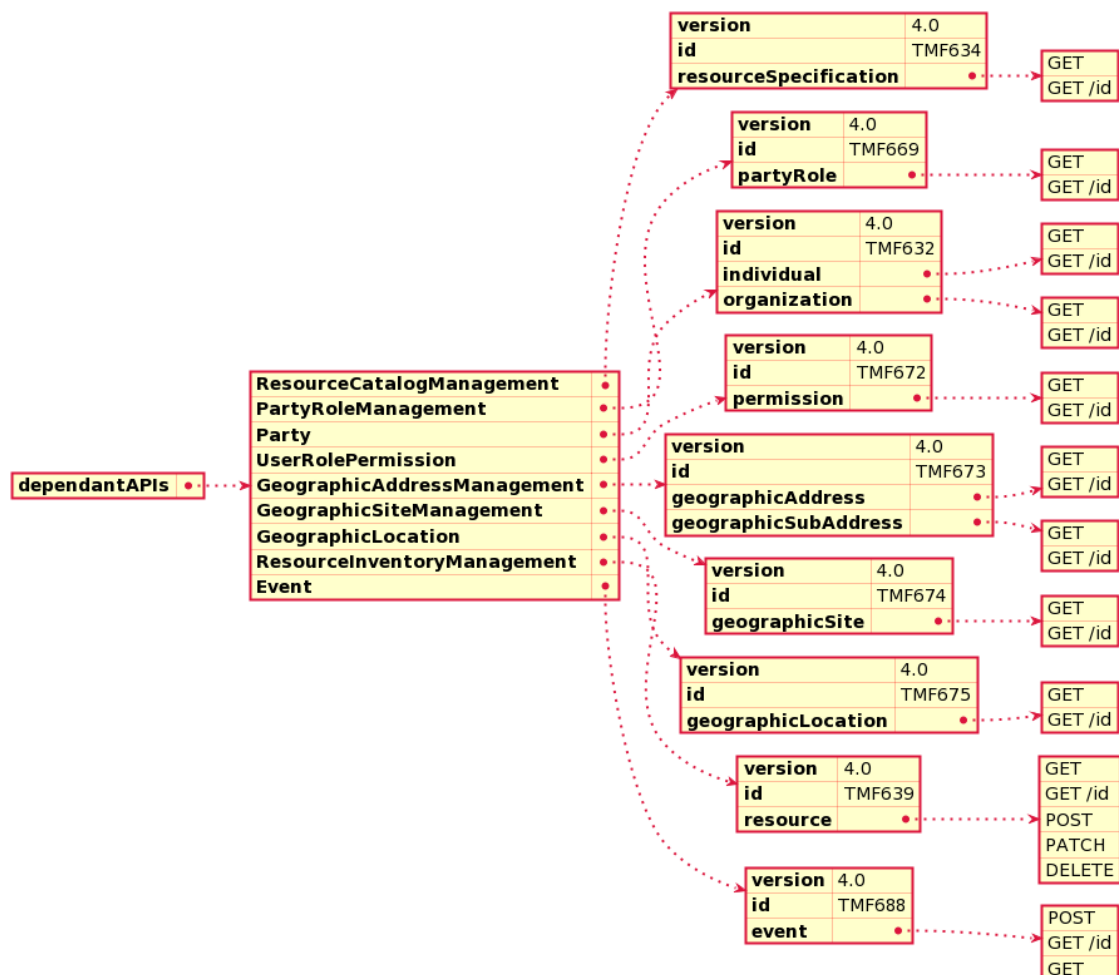
The following diagram illustrates API/Resource/Operation:



| API ID | API Name                                                                                                  | Mandatory / Optional |
|--------|-----------------------------------------------------------------------------------------------------------|----------------------|
| TMF639 | TMF639 Resource Inventory                                                                                 | Mandatory            |
| TMF685 | TMF685 Resource Pool Management<br>(Please note this component does not yet exist, see Jira for details.) | Optional             |
| TMF688 | TMF688 Event                                                                                              | Optional             |
| TMF701 | TMF701 Process Flow                                                                                       | Optional             |

### 3.2. Dependent APIs

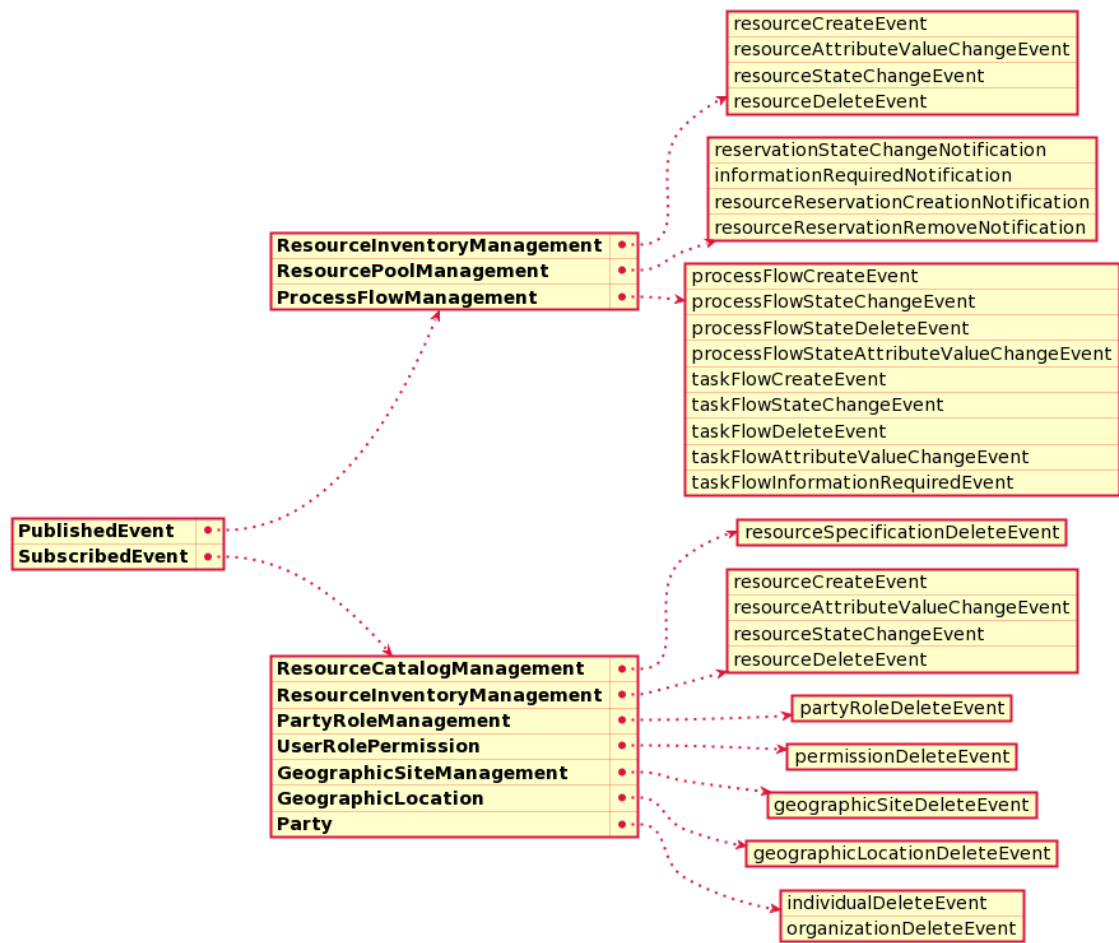
The following diagram illustrates API/Resource/Operation potentially used by the resource inventory component:



| API ID | API Name                      | Mandatory / Optional | Operations               |
|--------|-------------------------------|----------------------|--------------------------|
| TMF669 | Party Role Management         | Optional             | Get                      |
| TMF632 | Party                         | Optional             | Get                      |
| TMF672 | User Roles And Permissions    | Optional             | Get                      |
| TMF673 | Geographic Address Management | Optional             | Get                      |
| TMF674 | Geographic Site Management    | Optional             | Get                      |
| TMF675 | Geographic Location           | Optional             | Get                      |
| TMF634 | Resource Catalog Management   | Mandatory            | Get                      |
| TMF639 | TMF639 Resource Inventory     | Optional             | Get, Post, Patch, Delete |
| TMF688 | TMF688 Event                  | Optional             | Get, Post                |

### 3.3. Events

The following diagram illustrates the Events which the component may publish and the Events that the component may subscribe to and then may receive. Both lists are derived from the APIs listed in the preceding sections.



## 4. Supporting Functions (Reporting / Management / Execution / Security APIs)

Please refer to ODA Technical Architecture for further details and specifications.

## 5. Machine Readable Component Specification

Refer to the ODA Component table for the machine-readable component specification file for this component.

While we are building this over the lifespan of this document, the file can be found here as well:

[TMForum-ODA-Ready-for-publication/1Beta2/TMFC012-ResourceInventory/TMFC012-ResourceInventory.yaml](https://github.com/tmforum-oda/TMForum-ODA-Ready-for-publication/1Beta2/TMFC012-ResourceInventory/TMFC012-ResourceInventory.yaml) at main · tmforum-rand/TMForum-ODA-Ready-for-publication (github.com)

## 6. Further resources

This component is involved in the following use cases described in [IG1228 How to use ODA - Using Open APIs to realize Use Cases](#):

Refer to: UC4 and UC8

## 7. Administrative Appendix

### 7.1. Document History

#### 7.1.1. Version History

| Version Number | Date Modified | Modified by:                                                         | Description of changes                                                                                            |
|----------------|---------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1.0.0          | 31 May 2022   | <a href="#">Kamal Maghsoudlou</a><br><a href="#">Sylvie Demarest</a> | Initial release                                                                                                   |
| 1.0.1          | 25 Jul 2023   | Ian Turkington                                                       | No content changed, simply a layout change to match template 3. Separated the YAML files to a managed repository. |
| 1.0.1          | 14 Aug 2023   | Amaia White                                                          | Final edits prior to publication                                                                                  |

#### 7.1.2. Release History

| Release Status | Date Modified | Modified by:                 | Description of changes                      |
|----------------|---------------|------------------------------|---------------------------------------------|
| Pre-production | 31 May 2022   | <a href="#">Goutham Babu</a> | Initial release                             |
| Production     | 22-Jul-2022   | Adrienne Walcott             | Updated to reflect TM Forum Approved status |
| Pre-production | 14-Aug-2023   | Amaia White                  | New release v1.0.1                          |

#### 7.1.3. Acknowledgments

| Acknowledgements                        |          |                  |
|-----------------------------------------|----------|------------------|
| Team Member (@mention)                  | Company  | Role*            |
| <a href="#">Kamal Maghsoudlou</a>       | Ericsson | Editor           |
| <a href="#">Sylvie Demarest</a>         | Orange   | Reviewer         |
| <a href="#">Hugo Vaughan (TM Forum)</a> | TM Forum | Additional Input |
| <a href="#">Ian Turkington</a>          | TM Forum | Additional Input |