

TM Forum Technical Specification

Resource Catalog Management

TMFC010

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Notice

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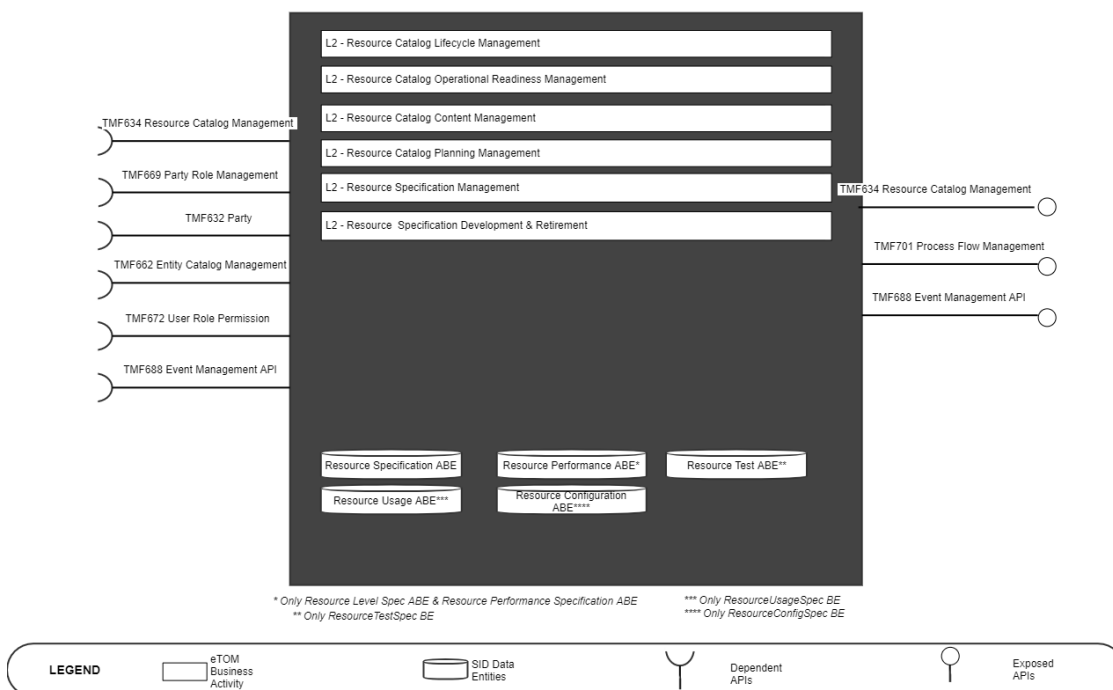
1. Overview

Component Name	ID	Description	ODA Function Block
<i>Resource Catalog Management</i>	<i>TMFC010</i>	<p>Resource Catalog Management component is responsible for organizing the collection of resource specifications that identify and define all requirements for a resource.</p> <p>Resource Catalog Management component has the functionality that enable presenting a customer-facing view, so users are able to browse and select resource they need, as well as a technical view to enable define and setup resources contained in the resource catalog.</p> <p>Additional functionalities include capturing specifications of new resource specifications, managing resources (registering assets and components and identifying and mapping connections/relationships), administering the lifecycle of resources, describing relationships between resources, reporting on resources and changes to their attributes, and facilitating easy access to identify and assign resources.</p>	<i>Production</i>

2. eTOM Processes, SID Data Entities and Functional Framework Functions

2.1. Resource catalog management

TMFC010 : Resource Catalog Management



2.2. eTOM business activities

2.2.1. eTOM business activities this ODA Component is responsible for:

Identifier	Level	Business Activity Name	Description
1.5.15	L2	<i>Resource Catalog Lifecycle Management</i>	<p>Catalog Lifecycle Management business process covers a set of business activities that enable manage the lifecycle of an organizations catalog from design to build according to defined requirements.</p> <p>Catalog Lifecycle Management proves the overarching governance to manage all the stages in the realization and operationalization of the Product/Service/Resource Catalog in support of the organizations business goals.</p>
1.5.16	L2	<i>Resource Catalog Operational</i>	Resource Catalog Operational Readiness Management business process establishes and administers the support needed to operationalize

Identifier	Level	Business Activity Name	Description
		<i>Readiness Management</i>	Resource catalogs for ongoing day-to-day business needs. These business activities implement the Resource Catalog through Release and Deploy business activities.
1.5.17	L2	Resource Catalog Content Management	Resource Catalog Content Management business process define and provide the business activities that support the day-to-day operations of Resource Catalogs in order to realize the business operations goals. Resource Catalog Content Management business processes include administering the Resource Catalog instance in production, maintaining catalog entries, assuring catalogs, managing catalog access, managing entry lifecycle through versioning, handling catalog entity entry and changes, supporting distribution of catalogs as needed, and supporting user-facing activities.
1.5.18	L2	Resource Catalog Planning Management	Resource Catalog Planning Management business process covers a set of business activities that understand and enable establish the plan to define, design and operationalize a catalog in order to meet the needs and objectives of Resource cataloging. The Resource Catalog Planning Management business process ensure that the organization is able to identify the most appropriate scheme and goal for it catalog. It includes designing the Catalog plan and developing the specification according to Resource management requirement.
1.5.19	L2	Resource Specification Management	Resource Specification Management business process leverages captured resource requirements to develop, master, analyze, and update documented standard conditions that must be satisfied by a resource design and/or delivery. Resource Specifications Management can result in establishing, in a centralized way, technical (know-how) standards. Such standards provide the organization with a means to control and approve the values and inputs of specification through structure, review, approval and distribution processes to stakeholders and suppliers.
1.5.3	L2	Resource Specification Development & Retirement	Resource Specification Development & Retirement processes develop new, or enhance existing technologies and associated resource types, so that new Products are available to be sold to customers. They use the capability definition or requirements defined by Resource Strategy &

Identifier	Level	Business Activity Name	Description
			<p>Planning They also decide whether to acquire resources from outside, taking into account the overall business policy in that respect. These processes also retire or remove technology and associated resource types, which are no longer required by the enterprise.</p> <p>Resource types may be built, or in some cases leased from other parties. To ensure the most efficient and effective solution can be used, negotiations on network level agreements with other parties are paramount for both building and leasing.</p> <p>These processes interact strongly with Product and Engaged Party Development processes.</p>
1.5.3.4	L3	Develop Detailed Resource Specifications	<p>The Develop Detailed Resource Specifications processes develop and document the detailed resource-related technical, performance and operational specifications, and manuals. These processes develop and document the required resource features, the specific technology requirements and selections, the specific operational, performance and quality requirements and support activities, any resource specific data required for the systems and network infrastructure. The Develop Detailed Resource Specifications processes provide input to these specifications. The processes ensure that all detailed specifications are produced and appropriately documented. Additionally the processes ensure that the documentation is captured in an appropriate enterprise repository.</p>
1.5.3.8	L3	Resource Specification Test Development & Retirement	<p>Resource Test Development & Retirement is in charge of the Resource Test catalogue.</p> <p>A type of Resource Test aims at measuring proper functioning and capacities of a Resource.</p> <p>Resource Test Development & Retirement includes:</p> <ul style="list-style-type: none"> • Specifying in detail each Resource Test according to the different context. It includes specifying: <ul style="list-style-type: none"> - the roles authorized to use the Test and quotas for each type of role - the method to conduct the Test - the rules that define the strategies for conducting the test (including the test plan) - the thresholds and related actions

Identifier	Level	Business Activity Name	Description
			<ul style="list-style-type: none"> - the report of test results with rules for enrichment of Resource Tests results according to role asking for it - Specifying test scenarios defining sequence of Tests with rules about context and planning to trigger it. It includes roles allowed for asking test scenario and corresponding quotas.

2.3. SID ABEs

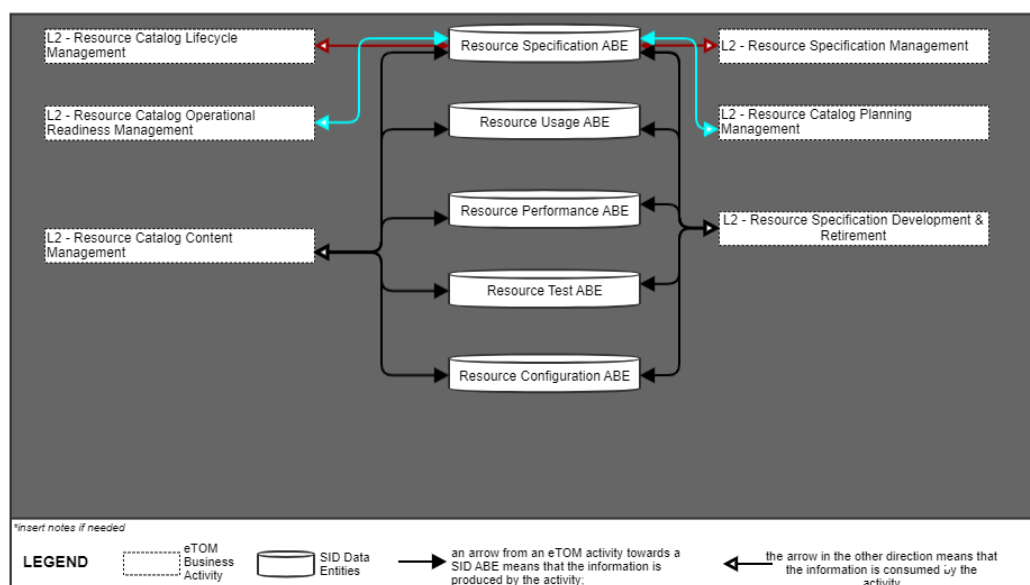
SID ABEs this ODA Component is responsible for:

SID ABE Level 1	SID ABE Level 2 (or set of BEs)*
Resource Specification ABE	
Resource Performance ABE	Resource Performance Specification BE
Resource Test ABE	Resource TestSpec BE
Resource Usage ABE	ResourceUsageSpec BE
Resource Configuration ABE	ResourceConfigSpec BE

*: if SID ABE Level 2 is not specified this means that all the L2 business entities must be implemented, else the L2 SID ABE Level is specified.

2.4. eTOM L2 - SID ABEs links

eTOM L2 vS SID ABEs links for this ODA Component.:



2.5. Functional Framework Functions

Function ID	Function Name	Function Description	Sub-Domain Functions Level 1	Sub-Domain Functions Level 2
1	Catalog Change Auditing	Catalog Change Auditing manage the implications of catalog changes to determine the consequences of any given change. In addition, catalog users should be able to track and locate the history of changes in the catalog in an easy and accessible manner.	N/A	N/A
2	Catalog Entity Compatibility Configuration	Catalog Entity Compatibility Configuration configures rules on catalog operational entities to be used by downstream systems when instantiating the catalog entities in the operational systems	N/A	N/A
3	Catalog Entity Relations Configuration	Catalog Entity Relations Configuration manage hierarchical, inheritance and reuse relations between catalog entities. Re-usability is a major requirement for management of a catalog. Re-usability is achieved through inheritance and through the re-use of standalone entities as well as entity hierarchies	N/A	N/A

Function ID	Function Name	Function Description	Sub-Domain Functions Level 1	Sub-Domain Functions Level 2
4	<i>Catalog Entity Grouping Configuration</i>	<i>Catalog Entity Grouping Configuration</i> <i>Defines the grouping of catalog entities. A catalog user needs flexibility and openness in configuring data catalog entities. One of the configuration options that enable high re-usability is the possibility to group entities and re-use the group level</i>	N/A	N/A
5	<i>Catalog Data Driven Security Control</i>	<i>Catalog Data Driven Security Control</i> <i>provides access to the catalog data based on access rights, so a user may not see offerings in which the customer type (which is an attribute) is Business if he (the use) is allowed to see only residential customers information.</i>	N/A	N/A
6	<i>Catalog Entity Data Model Configuration</i>	<i>Catalog Entity Data Model Configuration</i> <i>enables the catalog to provide the capability to have a flexible data model with the ability to structure entities and attributes as desired by the user and to extend the model according to the requirements.</i>	N/A	N/A
7	<i>Catalog Entity Management</i>	<i>Catalog Entity Management is able to create, modify and delete catalog entities.</i> <i>This includes the ability to manage the state of an entity during its lifecycle (e.g. planned, deployed, in operation, replaced by, locked...)</i>	N/A	N/A
9	<i>Catalog Data Retrieval</i>	<i>Catalog Data Retrieval provides easy retrieval of information. Historical changes should be stored and easily retrieved, including changes done on the entity level or changes done by different users.</i> <i>Retrieval function should return responses to simple queries but also complex queries retrieving of data entities that comply with complex conditions, in order to enable easier analyzing and slicing of the catalog data.</i>	N/A	N/A
10	<i>Catalog Entity Integrity Rules Control</i>	<i>Catalog Entity Integrity Rules Control</i> <i>applies integrity rules at the catalog entity level. Rules are required to maintain data integrity in the catalog.</i>	N/A	N/A

Function ID	Function Name	Function Description	Sub-Domain Functions Level 1	Sub-Domain Functions Level 2
		<i>Human errors during product and service configuration cause major problems in testing and production phases, and automatic mechanisms that can eliminate such errors in advance are mandatory.</i>		
11	<i>Catalog Entity Hierarchy Management</i>	<i>Catalog Entity Hierarchy Management manage rules that governs the relationships between entities in different layers. A catalog that manages different layers needs to maintain the rules within the layer and between the layers. For example, how product definition translate corresponds to different services provisioning rules, and so on</i>	N/A	N/A
12	<i>External Access to Catalog Integration</i>	<i>External Access to Catalog Integration provides partner integration for both export and import of catalog entities</i> <i>- Export to external partners: A Catalog Management application should include the ability to allow partners (e.g. Content Providers, or other SPs) to browse in catalog in real time or batch mode. Not all data shall be exposed, security and access control (as mentioned above) are essentials features</i> <i>- Import from external partners: External partners may want to populate catalogs with their own (entities) specifications and be able to create associations with existing entities. Access control, validation and testing must be set appropriately.</i>	N/A	N/A
13	<i>Catalog Revision Control</i>	<i>Catalog Revision Control provides a work environment that permits users to work in parallel without interfering with each other's efforts, to manage the relevant permissions on the data or on activity level, and to support the different user interfaces required.</i>	N/A	N/A
14	<i>Catalog Entity Versioning</i>	<i>Catalog Entity Versioning; Manage multi-versions of the same entity is a very important aspect in a catalog.</i> <i>The complexity starts with the ability to manage multiple versions for single entities, however in real life it is required</i>	N/A	N/A

Function ID	Function Name	Function Description	Sub-Domain Functions Level 1	Sub-Domain Functions Level 2
		<i>to support much more complex scenarios where entities relate to other entities that have a different lifecycle and a different versions map, however the validity and maintenance of the versions needs to be maintained</i>		
15	Catalog View Management	<p>Catalog View Management; Generating different views for users that manage different data layers. As a master catalog can support multiple lines of business and multiple layers, it should be dynamic enough to provide different display options for the different cases</p> <p>For example, a network implementer may require a visual graph that will show relations between services in a graphical manner, while a product manager will require a dedicated view that displays only the product offerings that are under his domain of responsibility. Creating different custom views for different roles is a mandatory requirement in such a catalog.</p>	N/A	N/A
467	Resource Data Transformation/Parsing Rules Configuration	Resource Data Transformation/Parsing Rules Configuration provides tools to set up and maintain resource data parsing rules	Resource Specification Management	Resource Specification Management
506	Resource Testing Rules Configuration	Resource Testing Rules Configuration provides management of resource end to end testing rules	Resource Specification Management	Resource Test Policy and Schedule Management
737	Resource Capability Specification Management	Resource Capability Specification Management; This function involves the creation, editing, storage and retrieval of capability specifications. The capability specifications represent the general, common and invariant characteristics of resource that may be realized in more than one type of specific resource. Examples of capability are Layer2, Data, radio and Transport.	Resource Capability Management	Resource Specification Capability Development
951	Resource Catalog Entities Management	Resource Catalog Entities Management identifies resource entities in a common Catalog Management from the Common Domain, or identifies a specific instance	Resource Specification Management	Resource Specification Development

Function ID	Function Name	Function Description	Sub-Domain Functions Level 1	Sub-Domain Functions Level 2
		of a Catalog Management for resource entities		
992	Catalog Entity Management Notification	Catalog Entity Management Notification provides notifications after Catalog Entity Management actions to associated applications or application functions.	N/A	N/A
993	<i>Catalog Management Reporting</i>	<i>Catalog Management Reporting; Reporting to users or applications with defined and formatted content, scheduled on-demand or subscribed.</i>	N/A	N/A
996	Resource Task Item Policy Control Configuration	Resource Task Item Policy Control Configuration; Define and configure the policies which will be implemented during the Resource task item lifecycle.	Resource Specification Management	Resource Specification Development

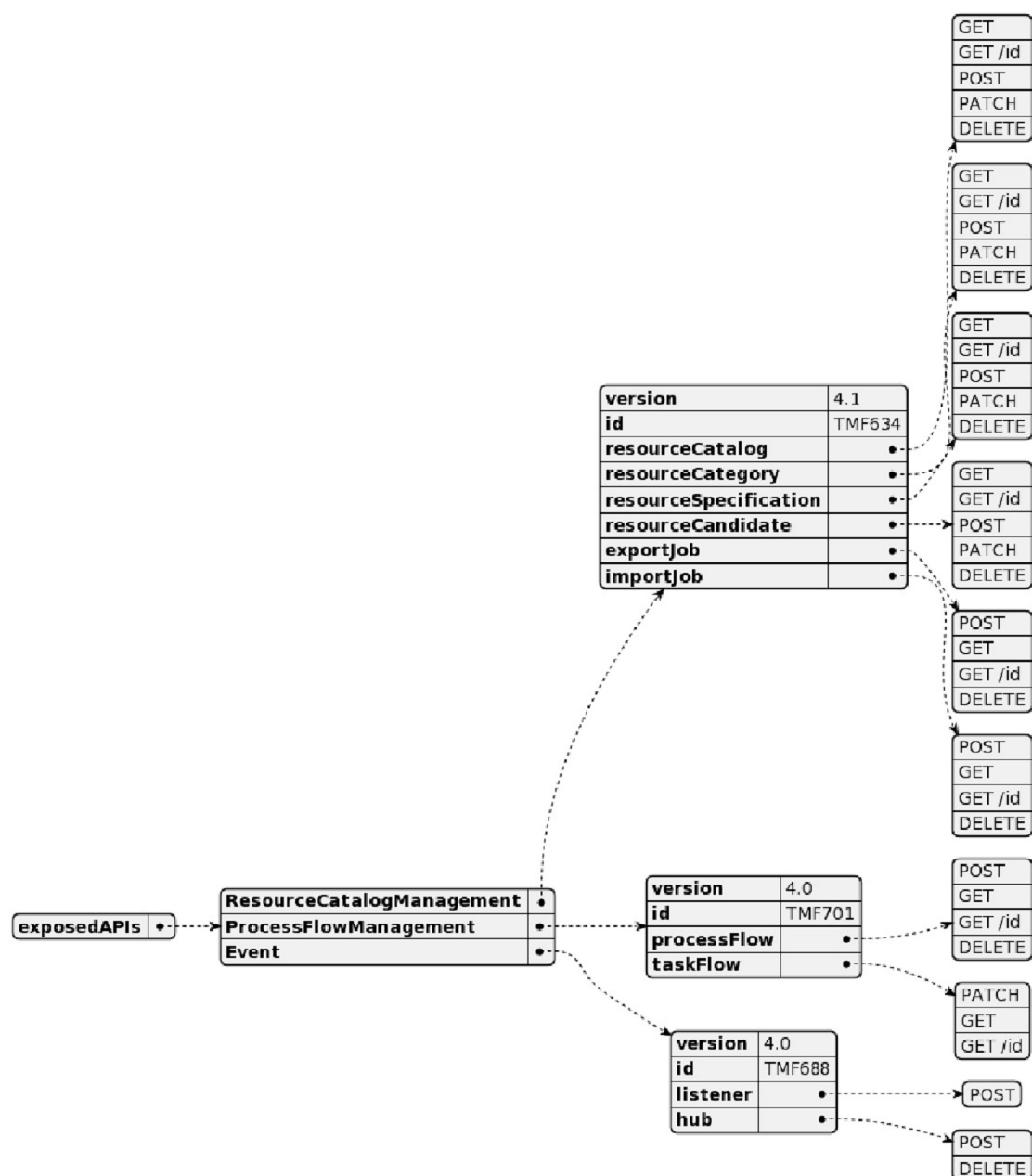
3. TMF OPEN APIs & Events

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 we no mention to optionally (in other word no mention 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 is 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

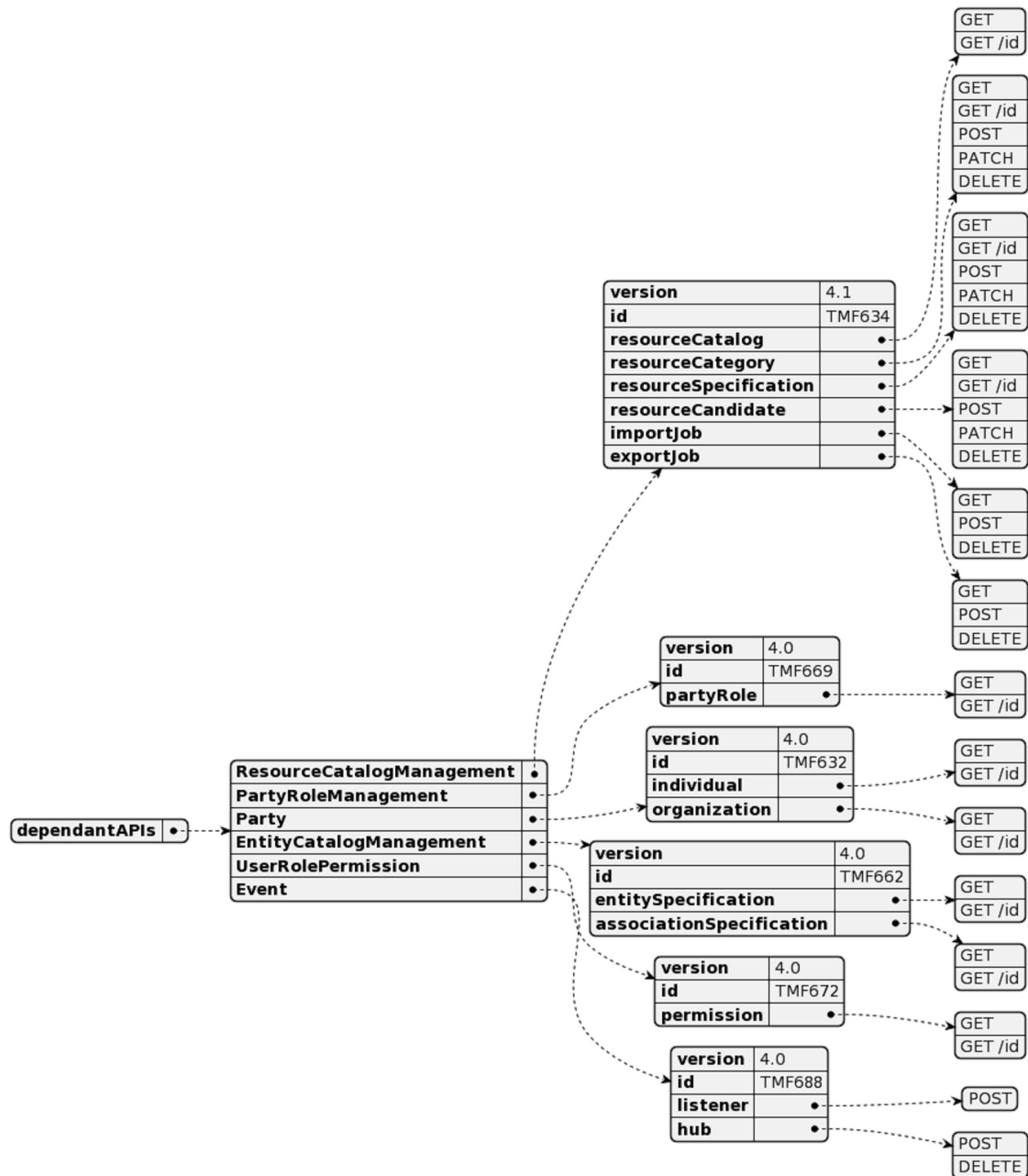
The following diagram illustrates API/Resource/Operation:



API ID	API Name	Mandatory / Optional
TMF634	Resource Catalog Management	Mandatory
TMF701	Process Flow Management	Optional
TMF688	Event Management API	Optional

3.2. Dependent APIs

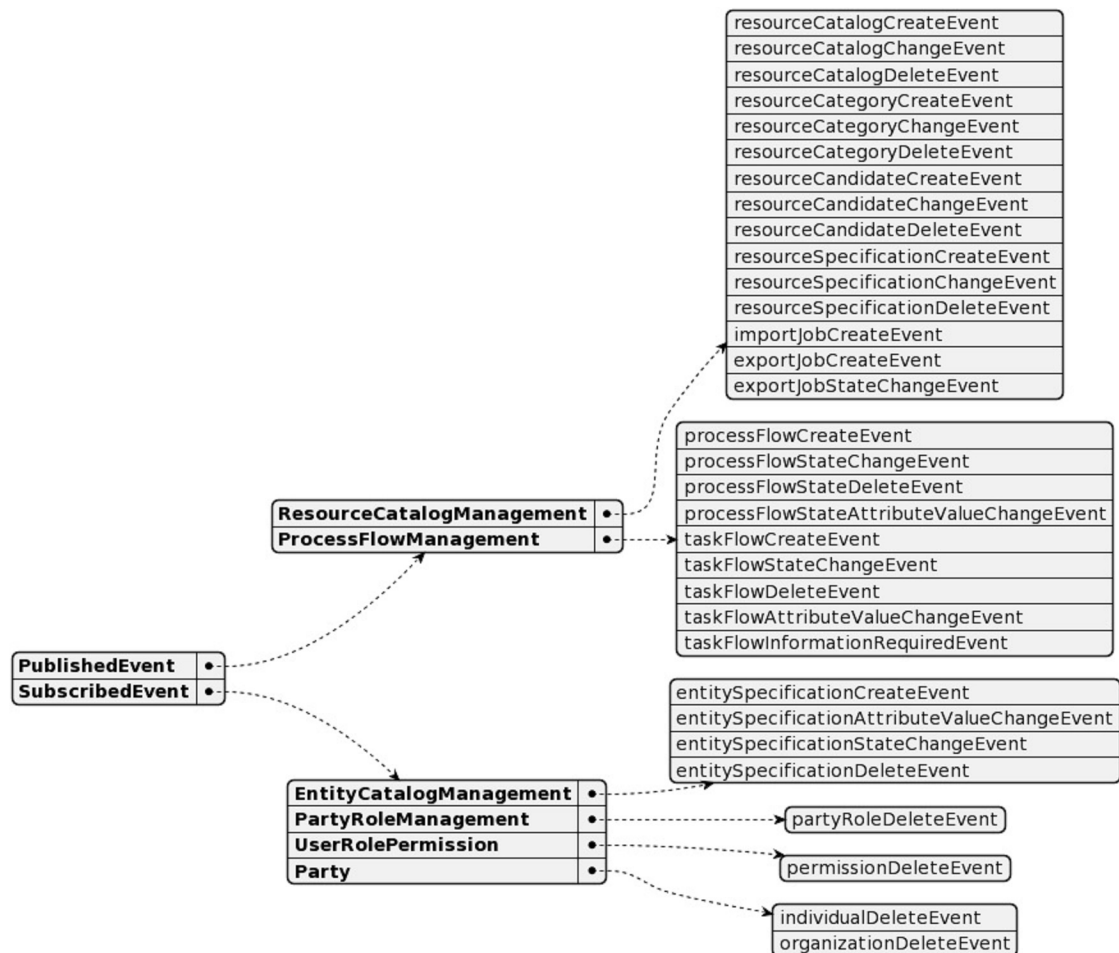
The following diagram illustrates API/Resource/Operation:



API ID	API Name	Mandatory / Optional
TMF634	Resource Catalog Management	Optional
TMF669	Party Role Management	<i>Optional</i>
TMF632	Party	<i>Optional</i>
TMF662	Entity Catalog Management	<i>Optional</i>
TMF672	User Role Permission	<i>Optional</i>
TMF688	Event Management API	<i>Optional</i>

3.3. Events

The 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.



Event name always follow same pattern: <<Resource>> + <<Type of Event>> + "Event". The type of event could be:

- Create : a new resource has been created (following a POST).
- Delete: an existing resource has been deleted.
- AttributeValueChange or Change: an attribute from the resource has changed - event structure allows to pinpoint the attribute.
- InformationRequired: an attribute should be valued for the resource preventing to follow nominal lifecycle - event structure allows to pinpoint the attribute.
- StateChange: resource state has changed.

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/TMFC010-ResourceCatalogManagement/TMFC010-ResourceCatalogManagement.yaml](https://github.com/tmforum-rand/TMForum-ODA-Ready-for-publication/1Beta2/TMFC010-ResourceCatalogManagement/TMFC010-ResourceCatalogManagement.yaml) at main · tmforum-rand/TMForum-ODA-Ready-for-publication (github.com)

6. Further resources

1. IG1228: please refer to IG1228 for defined use cases with ODA components interactions.

7. Document History

7.1. Version History

Version Number	Date Modified	Modified by:	Description of changes
1.0.0	05-Aug-2022	Kamal Maghsoudlou Gaetano Biancardi Sylvie Demarest	Final edits prior to publication
1.1.0	06-Oct-2022	Elisabeth Andersson	Added support for federated catalogs and minor fixes.
1.1.1	27 Jul 2023	Ian Turkington	No content changed, simply a layout change to match template 3. Separated the YAML files to a managed repository.
1.1.1	14-Aug-2023	Amaia White	Final edits prior to publication

7.2. Release History

Release Status	Date Modified	Modified by:	Description of changes
Pre-production	05-Aug-2022	Goutham Babu	Initial release
Pre-production	07-Oct-2022	Alan Pope	Version 1.1.0
Pre-production	14-Aug-2023	Amaia White	Version 1.1.1

7.3. Acknowledgments

Acknowledgements		
Team Member (@mention)	Company	Role*
Elisabeth Andersson	Matrixx	Editor
Hugo Vaughan (TM Forum)	TM Forum	Additional Input
Ian Turkington	TM Forum	Additional Input