Generic Inventory   
Business Agreement

TIP\_GIN\_BA

Version 1.0



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List of Requirements

* From TR189 Generic Query (Refer to [3]):

|  |  |
| --- | --- |
| Query a single Managed Object knowing its identifier | R\_TMF\_GQ\_II\_0005 |
| Query several Managed Objects knowing their Identifiers | R\_TMF\_GQ\_II\_0006 |
| Query several Managed Objects in the same containment tree | R\_TMF\_GQ\_II\_0007 |
| Query several Managed Objects exactly matching the same Template | R\_TMF\_GQ\_II\_0008 |
| Query several Managed Objects exactly matching any Template from a list | R\_TMF\_GQ\_II\_0009 |
| Query several Managed Objects matching a Characteristics Filter | R\_TMF\_GQ\_II\_0010 |
| Query several Managed Objects matching a Query Filter | R\_TMF\_GQ\_II\_0011 |
| Query by Entity Type Names | R\_TMF\_GQ\_II\_0012 |
| Query by Associations | R\_TMF\_GQ\_II\_0013 |
| Query by Graph Query | R\_TMF\_GQ\_II\_0014 |

* From TR188 Generic Update (refer to [2])

|  |  |
| --- | --- |
| Get Policies | R\_TMF\_GU\_II\_0005 |
| Validate Multiple Objects  *knowing their Identifiers* | R\_TMF\_GU\_II\_0006 |
| Validate Multiple Objects  *exactly matching any TemplateFilter from a List* | R\_TMF\_GU\_II\_0007 |
|  |  |
| Create a Single Object | R\_TMF\_GU\_II\_0008 |
| Create Multiple Objects of the Same Class*by Value* | R\_TMF\_GU\_II\_0009 |
| Create Multiple Objects of the Same Class  *by Reference* | R\_TMF\_GU\_II\_0010 |
| Create n Objects of the Same Class *by Value* | R\_TMF\_GU\_II\_0011 |
| Create n Objects of the Same Class *By Reference* | R\_TMF\_GU\_II\_0012 |
| Create Multiple Objects of Multiple Classes | R\_TMF\_GU\_II\_0013 |
|  |  |
| Modify a Single Object *knowing its Identifier* | R\_TMF\_GU\_II\_0014 |
| Modify a Single Object with Modification Patterns *knowing its Identifier* | R\_TMF\_GU\_II\_0015 |
| Modify Multiple Objects of the Same Class  *by Value knowing their Identifiers* | R\_TMF\_GU\_II\_0016 |
| Modify Multiple Objects of the Same Class  *by Reference knowing their Identifiers* | R\_TMF\_GU\_II\_0017 |
| Modify Multiple Objects of the Same Class  *by Value exactly matching any TemplateFilter from a List* | R\_TMF\_GU\_II\_0018T |
| Modify Multiple Objects of the Same Class  *by Reference exactly matching any TemplateFilter from a List* | R\_TMF\_GU\_II\_0019T |
| Modify Multiple Objects with Modification Patterns *knowing their Identifiers* | R\_TMF\_GU\_II\_0018 |
| Modify Multiple Objects with Modification Patterns *exactly matching any TemplateFilter from a List* | R\_TMF\_GU\_II\_0021 |
|  |  |
| Delete Multiple Objects  *knowing their Identifiers* | R\_TMF\_GU\_II\_0022 |
| Delete Multiple Objects  *exactly matching any TemplateFilter from a List* | R\_TMF\_GU\_II\_0023 |

List of Guidelines

No guidelines have been identified.

List of Use Cases

* From TR189 Generic Query (Refer to [3]):

| **Use Case Id** | **Use Case Name** |
| --- | --- |
| UC\_TMF\_GQ\_0001 | Query using Managed Objects Identifier(s) (Query by direct identification) |
| UC\_TMF\_GQ\_0002 | Query by attributes values equality  (Query using attribute values of given Classes). |
| UC\_TMF\_GQ\_0003 | Query by attributes properties  (Query using attributes properties comparison) |
| UC\_TMF\_GQ\_0004 | Query by containment |
| UC\_TMF\_GQ\_0005 | Query a Graph |

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# Overview

As part of a separate but related work, the TIP team has started specifying a set of generic task centric interface patterns.

The TIP team has deliberately taken the approach to identify capabilities that are frequently needed in management interfaces in various domains and to elaborate corresponding interface patterns supporting these capabilities using a domain neutral specification style. This approach leads to the availability of generic interface patterns which set of capabilities is relevant in different context.

At the time of writing, four generic task centric interface patterns have been identified in a first round: Generic Query Interface pattern, Generic Update Interface pattern, Generic Notify Interface pattern and Import-Export Interface pattern. The use cases and requirements for the first two ones have already been consolidated in two Technical Reports:

TR188: Generic Update Technical Report

TR189: Generic Query Technical Report

The two remaining ones (Generic Notify Interface pattern and Import-Export Interface pattern) are for further study.

Taking advantage of these patterns, the Inventory team has started a specification task with the purpose of generating a Generic Inventory Interface. The intention to specify a Generic Inventory Interface is a direct consequence of previous studies analyzing existing Interfaces developed independently (MTOSI, OSSJ and 3GPP) and concluding in the need for a harmonized inventory interface (ref [4]).

A design goal of this Generic Inventory Interface is that it must be flexible in order to be applicable to different domains (e.g. service, resource, products) and be compatible with different kinds of associated Information Models. Also it is desirable to keep this Interface not too complicated in order to encourage its wide acceptance.

For this purpose, a generic approach was retained with polymorphic operations, with the possibility to support further extensions and specializations to adapt to specific domains (e.g. MTOSI and 3GPP wireline, wireless). More precisely, the TM Forum will consider specializations of this Generic Inventory Interface for the following Inventory systems: Inventory for Resources, Services, Products, Resource Specifications, Service Specifications, Product Specifications at minimum.

The use cases and requirements considered for the Generic Inventory Interface are directly taken from the ones described in the Technical Reports listed above. As a consequence they are not recopied here; they are simply listed at the beginning of the document. The reader is invited to access them through the two Technical Reports mentioned above;

# Future Directions

## Open Issues

No open issue identified at this stage.

## Deferred Work Items

### From TR189 Generic Query (Refer to [3]):

* + Extend R\_TMF\_GQ\_II\_0007 to consider searching in several disconnected sub-trees in the same request (and not limited to a single one).
  + How to select an object of a given class that has no superior (top level object).
  + Ability to distinguish instances of retrieval which may contain the same Model Entities. This could be useful or even necessary when there is the need to fetch the same entity for different fetch context and have them represented in the same graph.
  + Allow the flexibility to specify that graph returned should be plain graphs and not hypergraphs (an edge(association) having more than two nodes (Envelopes))
  + Provide a naming based reserved association type for capturing containment relationships.

### From TR188 Generic Update (refer to [2])

* + Consider an extra parameter “resynchRequired” for all modify operations; but in this case, we will have to pass the lastUpdateDate inside the envelope.
  + Concept of “UpdateProcedure” which is the equivalent of “NamedQuery”, supported by the Target and exposed to requestors.
  + Concurrency control from the requestor side; also transaction
  + When defining the Notify feature, we must propose a notification when the Target System changes one of its policies values.
  + Suggested extension: supply a prefix string for the Target supplied names
  + Question: should the execution mode (BESTEFFORT or ATOMIC) be also a policy supported by the Target System?
  + Validate the full repository; since it can be a very operation (another example of such a long “command” like operation is the import/export) it must be accompanied with a progress status/log kind of interaction
  + MTOSI had some advanced options for Merge with Overwrite and Merge without Overwrite. It does not appear that we cover the requirements presented here. For future study.
  + This Interface does not expose any operation to set or modify the values of the policies supported by the Target system. It is assumed that these policies values are set at configuration time or at run time through another Interface or another mechanism. To be further studied (possibly as part of the work of the PIE team).

# References and Disclosures

## References

1. [JOSIF General Patterns](http://sourceforge.net/apps/mediawiki/openoss/index.php?title=General_Patterns#Entity_Identifier)
2. TR188 Generic Update, V1.2, September 2012
3. TR189 Generic Query, V1.2, September 2012
4. FDD Inventory Harmonization Study, V1.0, September 2011

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# Administrative Appendix

This Appendix provides additional background material about the TM Forum and this document.

## About this document

This document has been generated from the TIP\_BA.dot Word template,   
which itself is based on Version 6.0 of the TMF 402, BA Template.

## Document History

| **Version Number** | **Date Modified** | **Modified by:** | **Description of changes** |
| --- | --- | --- | --- |
| 1.0 | September 2012 | Michel Besson | First stable version |

## Company Contact Details

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| --- |
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* Agreeing on information that needs to flow from one process activity to another.
* Identifying a realistic systems environment to support the interconnection of operational support systems.
* Enabling the development of a market and real products for integrating and automating telecom operations processes.

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