

# TM Forum Technical Report

## Intent Common Model

TR290

Maturity Level: General Availability (GA)	Team Approved Date: 04-Jul-2024
Release Status: Production	Approval Status: TM Forum Approved
Version 3.6.0	IPR Mode: RAND

## Notice

Copyright © TM Forum 2024. All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to TM FORUM, except as needed for the purpose of developing any document or deliverable produced by a TM FORUM Collaboration Project Team (in which case the rules applicable to copyrights, as set forth in the [TM FORUM IPR Policy](#), must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by TM FORUM or its successors or assigns.

This document and the information contained herein is provided on an “AS IS” basis and TM FORUM DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

TM FORUM invites any TM FORUM Member or any other party that believes it has patent claims that would necessarily be infringed by implementations of this TM Forum Standards Final Deliverable, to notify the TM FORUM Team Administrator and provide an indication of its willingness to grant patent licenses to such patent claims in a manner consistent with the IPR Mode of the TM FORUM Collaboration Project Team that produced this deliverable.

The TM FORUM invites any party to contact the TM FORUM Team Administrator if it is aware of a claim of ownership of any patent claims that would necessarily be infringed by implementations of this TM FORUM Standards Final Deliverable by a patent holder that is not willing to provide a license to such patent claims in a manner consistent with the IPR Mode of the TM FORUM Collaboration Project Team that produced this TM FORUM Standards Final Deliverable. TM FORUM may include such claims on its website but disclaims any obligation to do so.

TM FORUM takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this TM FORUM Standards Final Deliverable or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on TM FORUM's procedures with respect to rights in any document or deliverable produced by a TM FORUM Collaboration Project Team can be found on the TM FORUM website. Copies of claims of rights made available for publication and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this TM FORUM Standards Final Deliverable, can be obtained from the TM FORUM Team Administrator. TM FORUM makes no representation that any information or list

of intellectual property rights will at any time be complete, or that any claims in such list are, in fact, Essential Claims.

Direct inquiries to the TM Forum office:

181 New Road, Suite 304  
Parsippany, NJ 07054, USA  
Tel No. +1 862 227 1648  
TM Forum Web Page: [www.tmforum.org](http://www.tmforum.org)

# Table of Contents

Notice .....	2
Table of Contents .....	4
Executive Summary.....	5
Introduction.....	6
Scope .....	7
Revision History .....	7
Model version 3.....	7
Model version 2.....	7
Model version 1.....	7
Revision Information.....	7
1. Document Overview.....	8
2. Administrative Appendix.....	9
2.1. Document History .....	9
2.1.1. Version History.....	9
2.1.2. Release History.....	9
2.2. Acknowledgments.....	10

## Executive Summary

This document describes the TR290 series of specifications covering the intent common model. The intent common model specifies mandatory vocabulary and semantics of intent and intent report expressions. This means that every intent manager must support at least one version of the intent common model.

## Introduction

Intent is introduced and defined as formal expression of requirements, goals and constraints. Intent management functions (aka. intent managers) control and participate in the life cycle of intent. They communicate with each other over an intent enabled API such as TMF921. The main artifacts on this interface are intents and intent reports. The intent common model specified in this document defines common vocabulary and semantics that can be used for formulating intent as well as intent reports.

Intent modeling is based on a model federation. This means that the definition of expressiveness needed by an intent management function within an autonomous domain and for supporting domain specific use cases is distributed over multiple distinct models. The intent common model specified in this document, defines the minimum set of domain independent vocabulary and semantics. As the intent common model introduces basic artifacts, such as classes and properties its definitions are universally applicable to all intent management functions irrespective of their application domain and handling scope.

The intent common model does not define domain specific modeling artifacts. It also does not contain the vocabulary and semantics needed for optional features and concerns, such as intent negotiation. Consequently, the intent common model is not the only source for intent expression vocabulary. An intent management function has a scope of responsibility, which usually matches an operational domain. This means, an intent manager typically needs to support the generic vocabulary of the intent common models in combination with domain specific extensions. This combination of partial models is the model federation of intent expressions. The intent common model is federated with those intent extension models needed and supported by an autonomous domain.

Models for intent and intent reports are closely related and are therefore specified together by the intent common model. It defines not only the classes and properties to be used for creating intent objects but also the corresponding classes and properties needed for expressing intent reports.

TM Forum publishes and holds the copyright to the intent common model. The Autonomous Networks Project within TM Forum manages governance and life-cycle of the intent common model.

## Scope

This document introduces the TR290 series of specification documents focusing on the intent and intent report structure and specification vocabulary of the intent common model.

## Revision History

This chapter provides a brief overview of the most significant conceptual changes between model versions to illustrate the evolution of intent modeling. An iteration of the major model number indicates revisions with substantial conceptual changes. An iteration of intermediate model number indicates minor additions, while the overall concept of the model are kept. The minor model number iterates if error corrections are needed.

### Model version 3

The third major version of the intent common model introduces functions for expressing operators. Functions provide a more intuitive way to express requirements. They also improve precision in the logical expression.

Condition objects are introduced and replace parameters. Conditions are more generic and re-useable in other cases where logical evaluations are needed, for example in context.

### Model version 2

The second major version of the intent common model introduces the concept of providing requirements through logical conditions. If and when a condition is evaluated as true, the system is compliant to the requirement. Logical operators allow concatenating conditions for defining the overall logic of overall compliance to an intent.

### Model version 1

The version one of the intent common model establishes the basic structure of intent and intent reports. Requirements are provided by means of expectations, which specify goals to be fulfilled. This version also introduces the concepts of context and information as part of the intent specification.

## Revision Information

This revision v3.6.0 of the Intent Common Model is part of the TM Forum Intent Ontology (TIO) v3.6.0.

The revision v3.6.0 of this document replaces v.3.5.0 with the following changes within its constituent documents.

- Minor editorial corrections.

# 1. Document Overview

The specification of this revision of the intent common model consists of the following documents:

Document	Title	Version	Description
TR290	Intent Common Model	v3.6.0	This document. It provides an overview and common definitions.
TR290A	Intent Common Model - Intent Expression	v3.6.0	Defining model elements used for expressing intent.
TR290B	Intent Common Model - Intent Reporting	v3.6.0	Defining model elements used to express intent reports
TR290V	Intent Common Model - Vocabulary Reference	v3.6.0	Alphabetical list and explanation of all modelling artifacts introduced by the intent common model

## 2. Administrative Appendix

### 2.1. Document History

#### 2.1.1. Version History

Version Number	Date Modified	Modified by:	Description of changes
3.0.0	07-Feb-2023	Alan Pope	Final edits prior to publication
3.1.0	11-Apr-2023	Alan Pope	Final edits prior to publication
3.2.0	15-Aug-2023	Alan Pope	Final edits prior to publication
3.4.0	29-Feb-2024	Alan Pope	Final edits prior to publication
3.5.0	03-May-2024	Alan Pope	Final edits prior to publication
3.6.0	04-Jul-2024	Alan Pope	Final edits prior to publication

#### 2.1.2. Release History

Release Status	Date Modified	Modified by:	Description of changes
Pre-production	07-Feb-2023	Alan Pope	Updated to version 3.0.0
Pre-production	17-Mar-2023	Adrienne Walcott	Updated to Member Evaluated status
Pre-production	11-Apr-2023	Alan Pope	Updated to version 3.1.0
Pre-production	15-May-2023	Adrienne Walcott	Updated to Member Evaluated status
Pre-production	15-Aug-2023	Alan Pope	Updated to version 3.2.0
Pre-production	18-Sep-2023	Adrienne Walcott	Updated to Member Evaluated status
Pre-production	29-Feb-2024	Alan Pope	Updated to version 3.4.0
Production	26-Apr-2024	Adrienne Walcott	Updated to reflect TM Forum Approved status
Pre-production	03-May-2024	Alan Pope	Updated to version 3.5.0
Production	28-Jun-2024	Adrienne Walcott	Updated to reflect TM Forum Approved status
Pre-production	04-Jul-2024	Alan Pope	Updated to version 3.6.0
Production	30-Aug-2024	Adrienne Walcott	Updated to reflect TM Forum Approved status

## 2.2. Acknowledgments

Team Member (@mention)	Company	Role*
<a href="#">Jörg Niemöller</a>	Ericsson	Author, Project Co-Chair
<a href="#">Kevin McDonnell</a>	Huawei	Project Co-Chair
<a href="#">Yuval Stein</a>	Amdocs	Project Co-Chair
<a href="#">Kamal Maghsoudlou</a>	Ericsson	Key Contributor
<a href="#">Leonid Mokrushin</a>	Ericsson	Key Contributor
<a href="#">Marin Orlić</a>	Ercisson	Key Contributor
<a href="#">Aaron Boasman-Patel</a>	TM Forum	Additional Input
<a href="#">Alan Pope</a>	TM Forum	Additional Input
<a href="#">Dave Milham</a>	TM Forum	Additional Input
<a href="#">Xiao Hongmei</a>	Inspur	Reviewer

\*Select from: Project Chair, Project Co-Chair, Author, Editor, Key Contributor, Additional Input, Reviewer