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TM Forum Technical Report

Intent Common Model

TR290

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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.

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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 Referecne	v3.6.0	Alphabethical list and explanation of all modelling artifacts introduced by the intent common model

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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
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2.2. Acknowledgments

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