TM Forum Technical Report

TM Forum Intent Ontology (TIO) - References

TR292R

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1. Appendix A: Terms & Abbreviations Used within this Document

1.1. Terminology

Term	Definition	Source
Function	In mathematics, a function from a set X to a set Y assigns to each element of X exactly one element of Y. The words map, mapping, transformation, correspondence, and operator are often used synonymously. In engineering, a function is interpreted as a specific process, action or task that a system is able to perform. In computer programming, a function or subroutine is a sequence of program instructions that performs a specific task, packaged as a unit. The combined essence of these definitions is that a function represents an operation that delivers a result based on a set of input parameters. The operation is typically a mapping or transformation of input into the resulting output. The words map, mapping, transformation, correspondence, and operator are often used synonymously when describing what a function does and represents.	https://en.wikipedia.org/wiki/Function_(mathematics) https://en.wikipedia.org/wiki/Function_(engineering) https://en.wikipedia.org/wiki/Function_(computer_programming)
Intent Common Model	A mandatory partial model in the TM Forum Intent Ontology.	

Term	Definition	Source
Intent Extension Model	A optional partial model in the TM Forum Intent Ontology	
Intent Handler	Intent handler is a role an intent manager has regarding an intent. An intent handler receives intent from an intent owner and is responsible to operate its autonomous domain according to the requirements expressed in this intent. Intent handlers are also creating intent reports for those intents they are handling.	
Intent Management Function	An intent management function is an entity within an autonomous domain that manages and coordinates intent based operation within that domain.	
Intent Manager	In instance of an intent management functions.	
Intent Owner	Intent owner is a role an intent manager has regarding an intent. An intent owner has requirements it needs other autonomous domains to comply to. It is using intent to communicate these requirements to intent handlers allocated in the targeted autonomous domain.	

1.2. Abbreviations & Acronyms

Abbreviation / Acronym	Abbreviation / Acronym Spelled Out	Definition	Source
CSP	Communication Service Provider	A communication service provider is a company or organization that provides telecommunications services such as telephony and data communications access.	
IANA	Internet Assigned Numbers Authority	IANA is standards organization that oversees the global coordination of the DNS Root, IP addressing, and other Internet protocol resources.	https://iana.org
IEC	International Electrotechnical Commission	The International Electrotechnical Commission is an international standard organization that prepares and publishes international standards for all electrical, electronic and related technologies.	https://www.iec.ch/homepage
IRI	Internationalised Resource Identifier	The Internationalized Resource Identifier (IRI) is an internet protocol standard which builds on the Uniform Resource Identifier (URI) protocol by greatly expanding the set of permitted characters.	https://datatracker.ietf.org/doc/html/rfc3987
ISO	International Organization for Standardization	The International Organization for Standardization is an international standard development organization composed of representatives from the national standards organizations of member countries.	https://www.iso.org/home.html
ISQ	International System of Quantities	The International System of Quantities (ISQ) consists of the quantities used in physics and in modern science in general	
ODA	Open Digital Architecture	Open Digital Architecture (ODA) provides the blueprint that CSPs and suppliers/SIs need to change their IT and network systems to create new and differentiated	https://www.tmforum.org/oda/

Abbreviation / Acronym	Abbreviation / Acronym Spelled Out	Definition	Source
		services that improve productivity, reduces maintenance and integration costs whilst enhancing customer experience. It replaces traditional operations and business support systems (OSS/BSS) with a new approach that will simplify your design, modernize your build and automate your operation.	
OWL	Web Ontology Language	OWL refers to a family of knowledge representation languages for authoring ontologies. It is defined by W3C as part of the RDF family of specifications.	https://www.w3.org/TR/owl2-overview/
RBS	Radio Base Station	In mobile telephony, a Radio Base Station provides the connection between mobile phones and the wider telephone network.	
RDF	Resource Description Framework	The Resource Description Framework (RDF) is a framework for representing information in the Web.	https://www.w3.org/TR/rdf11-concepts/
RDFS	RDF Schema	RDF Schema provides a data-modelling vocabulary for RDF data. RDF Schema is an extension of the basic RDF vocabulary.	https://www.w3.org/TR/rdf-schema/
SDO	Standards Developing Organization	A standards developing organization (aka. standards organization, standards body, or standards setting organization) is an organization whose primary function is developing, coordinating, promulgating, revising, amending, reissuing, interpreting, or otherwise contributing to the usefulness of technical standards.	
SI	Internatinal System of Units	The International System of Units, known by the international abbreviation SI is the modern form of the	https://www.bipm.org/en/home

Abbreviation / Acronym	Abbreviation / Acronym Spelled Out	Definition	Source
		metric system and the world's most widely used system of measurement.	
TIO	TM Forum Intent Ontology	The TM Forum Intent Ontology refers a set of models in the form of ontology graphs defined by TM Forum Autonomous Networks Project. The ontology defines vocabulary and semantics for intent and intent report expression and intent based operation.	https://www.tmforum.org/resources/how-to-guide/ig1253-intent-in-autonomous-networks-v1-3-0/
TURTLE	Terse RDF Triple Language	Turtle is a textual syntax for RDF that allows an RDF graph to be completely written in a compact and natural text form.	https://www.w3.org/TR/turtle/
URI	Uniform Resource Identifier	A Uniform Resource Identifier (URI) is a unique sequence of characters that identifies a logical or physical resource used by web technologies.	https://www.rfc-editor.org/rfc/rfc2396
W3C	World Wide Web Consortium	The World Wide Web Consortium (W3C) is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards.	https://www.w3.org/
XML	Extensible Markup language	Extensible Markup Language is a markup language and file format for storing, transmitting, and reconstructing arbitrary data. It defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.	https://www.w3.org/TR/xml11/

2. Appendix B: References

Reference	Description	Source	Brief Use Summary
Project Charter	Project Charter		
Link to Models			
[ig1251]	IG1251 Autonomous Networks – Reference Architecture v1.0.1	https://www.tmforum.org/resources/how-to-guide/ig1251-autonomous-networks-reference-architecture-v1-0-1/	Introducing the reference architecture proposed by the TM Forum Autonomous Networks Project.
[ig1253]	Intent in Autonomous Networks v1.3.0	https://www.tmforum.org/resources/how-to-guide/ig1253-intent-in-autonomous-networks-v1-3-0/	The purpose of IG1253 is to document and define intent-driven operation according to the work in the Autonomous Networks project. This includes a definition of intent as well as the role of intent in of autonomous operation and the operational principles it implies.
[iso8000]	Quantities and Units	https://www.iso.org/committee/46202/x/catalogue/	ISO/IEC 80000 is multipart standard formalizing the international system of quantities and the International System of Units.
[iso80000-1]	ISO 80000-1:2009, Quantities and units — Part 1: General	https://www.iso.org/standard/30669.html	ISO 80000-1:2009 gives general information and definitions concerning quantities, systems of quantities, units, quantity and unit symbols, and coherent unit systems, especially the International System of Quantities, ISQ, and the International System of Units, SI.
[oda]	TM Forum Open Digital Architecture	https://www.tmforum.org/oda/	

Reference	Description	Source	Brief Use Summary
[owl2]	OWL 2 Web Ontology Language, Document Overview (Second Edition), W3C Recommendation 11 December 2012	https://www.w3.org/TR/owl2-overview/	
[owltime]	Time Ontology in OWL, W3C Candidate Recommendation Draft, 15 November 2022	https://www.w3.org/TR/owl-time/	OWL-Time is an OWL-2 DL ontology of temporal concepts, for describing the temporal properties of resources.
[turtle]	RDF 1.1 Turtle, "Terse RDF Triple Language", W3C Recommendation 25 February 2014	https://www.w3.org/TR/turtle/	
[rdf_mt]	RDF 1.1 Semantics, W3C Recommendation 25 February 2014	https://www.w3.org/TR/rdf11-mt/	
[rdf_primer]	RDF 1.1 Primer, W3C Working Group Note 24 June 2014	https://www.w3.org/TR/rdf11-primer/	
[rdf11]	RDF 1.1 Concepts and Abstract Syntax, W3C Recommendation 25 February 2014	https://www.w3.org/TR/rdf11-concepts/	
[rdfs11]	RDF Schema 1.1, W3C Recommendation 25 February 2014	https://www.w3.org/TR/rdf-schema/	

Reference	Description	Source	Brief Use Summary
[tmf291]	Intent Management API	Open API Table	This API allows intents to be expressed, reporting on and negotiated between the intent owner and the intent handler. The Intent API provides specifies the basic attributes and relationships that describe an Intent. The expression attribute of Intent contains a statement of the expectations for an intent in a particular ontology language and is validated by the TM Forum Intent Ontology (TIO).
[tr293]	TR293 Connector Model v2.0.0	https://www.tmforum.org/resources/technical-report/tr293-connector-model-v2-0-0/	TM Forum defined connector models
[sid]	ODA information framework	https://www.tmforum.org/oda/information-systems/information-framework-sid/	
[xml]	Extensible Markup Language (XML) 1.1 (Second Edition) W3C Recommendation 16 August 2006, edited in place 29 September 2006	https://www.w3.org/TR/xml11/	This document specifies version 1.1 of the Extensible Markup Language (XML)
[xsd-1]	W3C XML Schema Definition Language (XSD) 1.1 Part 1: Structures, W3C Recommendation 5 April 2012	https://www.w3.org/TR/xmlschema11-1/	This document specifies the XML Schema Definition Language
[xsd-2]	W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes, W3C	https://www.w3.org/TR/xmlschema11-2/	XML Schema: Data types are in part 2 of the specification of the XML Schema language. It defines facilities for defining data types to be used in XML

Reference	Description	Source	Brief Use Summary
	Recommendation 5 April 2012		

3. Administrative Appendix

3.1. Document History

3.1.1. 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

3.1.2. 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

3.2. Acknowledgments

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