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LFN Developer & Testing Forum

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Technical Community Coordination Network Management

Standardization

Magnus Buhrgard (Ericsson)

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Agenda

Activities since last DFT:

- Liaison statement to 3GPP SA regarding IPR issues
- ONAP - TM Forum meeting on Intent-based Management – 6th April 2022
- Incoming LS from ITU-T regarding the Focus Group on Testbed Federations
- AN Multi-SDO initiative from TM Forum

- Information about ONAP in Digital Transformation World Catalysts - (not yet)

TCC Generic Network Management on the ONAP wiki

Liaison statement to 3GPP SA regarding IPR issues

Magnus Buhrgard

ONAP Technical Community Coordinator
– Generic Network Management

2022-March-31

3GPP TSG SA

Liaison Statement **LS – ONAP TSC 2022-03-31**

Source: **ONAP**

Title: Request to clarify whether there are IPR issues with using 3GPP terminology and information objects and names in code contributed to ONAP

Document for: **Request for guidance, Discussion**

Introduction

ONAP is an open-source project for real-time, policy-driven orchestration and automation of network functions, hosted by the Linux Foundation. Designers often pursue standards compliant implementations.

Request for guidance

ONAP designers have expressed that it is presently unclear whether there are IPR issues with using 3GPP terminology and information objects and names in code contributed to ONAP.

We ask 3GPP to provide guidance on this matter.

Request for guidance

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Approved by TSC 2022-03-31

Incentives for clarity and examples of potential issues

Clarity would be beneficial for 3GPP and the industry since:

(1) Using the standardized names will reinforce the use of 3GPP standards and avoid parallel tracks that would fragment the industry

(2) It will be possible to track standards compliance to the code in future products, which is important since an increasing part of the code base will constitute of open-source code.

N.B. This is not an attempt to solve the entire licensing issue, just this particular matter.

A specific case provided as example:

There is open-source project implementation work in ONAP in which there are messages sent between CU/DU and SMO, and they relate to:

(1) Yang models of CU and DU (3GPP 28.541)

(2) Performance measurements (3GPP 28.552)

Uncertainty will lead to designers avoiding 3GPP terminology etc, just to be on the safe side.

Answer from 3GPP SA

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3GPP TSG SA Meeting#96 ***SP-220712***
07 – 10 June 2022, Budapest, Hungary

Title:	**LS on potential IPR issues**
Response to:	**SP-220364 Request to clarify whether there are IPR issues with using 3GPP terminology and information objects and names in code contributed to ONAP (LS ONAP TSC 2022-03-31) from ONAP**
Release:	**-**
Work Item:	**-**
Source:	**3GPP SA**
To:	**ONAP (Technical Community Coordinator)**
Cc:	**3GPP PCG, 3GPP SA5**

Contact person: **Thomas Tovinger**
<thomas><tovinger><at><ericsson><dot><com>
+46 709873010

Send any reply LS to: 3GPP Liaisons Coordinator,
mailto:3GPPLiaison@etsi.org

Short answer:

From a legal point of view, the use by ONAP of the terminology or names alone (by referencing 3GPP specifications) is possible and is not subject to IP issues.

Longer answer

SA would like to thank ONAP for the LS on Request to clarify……..

We have now discussed this with the ETSI legal office and have the following response:

From a legal point of view, the use by ONAP of the terminology or names alone (by referencing 3GPP specifications) is possible and is not subject to IP issues.

If you have been considering reproduction of any text from 3GPP Technical Specifications (TSs) except the above-mentioned terminology or names alone in your documents, we advise that the ONAP documents instead refer to the relevant text/definitions in the respective 3GPP TS(s) to avoid any IP issues.

If you are concerned about the TSs changing afterwards, then ONAP can use dated references (either to Release or individual Version) and then ONAP will need to monitor to see if changes we make need to be reflected by updating the dated references or not.

To ONAP

ACTION: 3GPP SA kindly asks ONAP to take the above information into account and to inform us of any concerns or questions on this reply LS.

ONAP - TM Forum meeting on Intent based automation

ONAP team: Dong Wang, Henry Yu, Lin Meng

TM Forum team: Jörg Niemöller, Kevin McDonnell

Host: Magnus Buhrgard

2022-04-06

Agenda & Team Introductions

Agenda

- Permission to record?
- Introductions – All [5 min]
- Presentation of the Intent Based Networking Use Case in ONAP – Dong Wang [15-20 minutes, including Q&A]
- Guidance on how specifications from TM Forum could be utilized for the use case – Jörg Niemöller, Kevin McDonnell [10-15 minutes]
- Discussion on continued cooperation – All [10 minutes]

- ONAP Team: Dong Wang (China Telecom), Henry Yu (Huawei), Lin Meng (China Mobile)
- TM Forum Team: Jörg Niemöller (Ericsson), Kevin McDonnell (Huawei), *Dave Milham (TM Forum)*
- Host: Magnus Buhrgard (Ericsson) – ONAP Technical Community Coordinator for Network Management

Intent-driven Closed-loop Autonomous Networks

ONAP - TM Forum meeting on Intent based automation
6th April, 2022

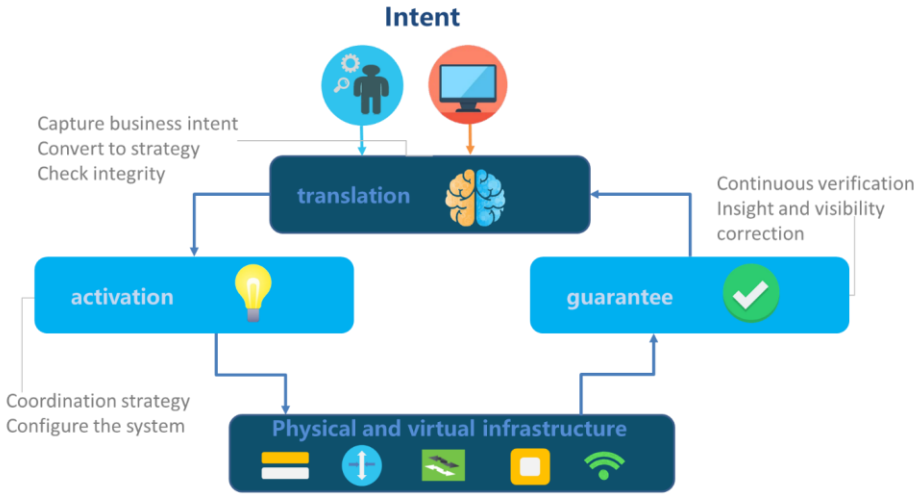
ONAP team members:
Dong Wang (China Telecom)
Keguang He; Lin Meng (CMCC)
Henry Yu; Chuanyu Chen (Huawei)

Outline

1. Overview of Intent-based Networking
2. Implementation of IBN in ONAP
3. Discussion and Collaboration with TM Forum

Intent-based Networking (IBN)

- Intent-based networking (IBN) is a self-driving network that uses **decoupling network control logic** and **closed-loop orchestration techniques** to automate application intents.
- An IBN is an intelligent network, which can **automatically convert, verify, deploy, configure, and optimize** itself to achieve target network state according to the intent of the operators, and can **automatically solve abnormal events** to ensure the network reliability.



A high-level framework of Intent-based Networking

- ITU-T Y.IBN-reqts "Scenarios and requirements of Intent-Based Network for network evolution".
- L. Pang, C. Yang, *et.al*, "A Survey on Intent-Driven Networks," in *IEEE Access*, vol. 8, pp. 22862-22873, 2020.

Collaborations among Academics, SDOs and ONAP

Academics

IEEE

- A Survey on Intent-Driven Networks
- A Brief Survey and Implementation on Refinement for Intent-Driven Networking

Academic exchanges

Open-source

ONAP
OPEN NETWORK AUTOMATION PLATFORM

Align with Multi-SDO

SDOs

IETF

IETF/IRTF:

- Intent-Based Networking - Concepts and Definitions
- Intent Classification

ETSI

ETSI ZSM/ENI:

- ZSM 011 Intent-driven autonomous networks; Generic aspects
- ENI 008 InTent Aware Network Autonomicity (ITANA)

tmforum

TMF:

- IG1234 Intent Oriented Customer Engagement (IoCE) Guide
- IG1253 Intent in Autonomous Networks

3GPP

3GPP SA5:

- TS 28.312 Intent driven management services for mobile networks
- TR 28.812 Study on scenarios for Intent driven management services for mobile networks

ITU

ITU-T:

- Scenarios and Requirements of Intent-Based Network for network evolution
- functional architecture of NGN evolution by adoption of Intent-Based Network

CCSA

CCSA:

- 2015B58 Network Intelligent Capability Enhancement for SDN/NFV: Study of Key Technologies of Intent Network

Autonomous Networks Multi-SDO Initiative

Who we are

SDO	Group/Project	SDO	Role
3GPP	SA5	IETF	WG on AN
CCSA	TC7	ITU-T	FG-AN
ETSI	ENI, F5G, MEC, NFV, PDL, TC INT/AFI, ZSM	Linux Foundation*	ONAP
GSMA	Future Networks	NGMN	Automation
IEEE	Future Networks	TM Forum	AN Project

*Open Source Community

Outline

1. Overview of Intent-based Networking
2. Implementation of IBN in ONAP
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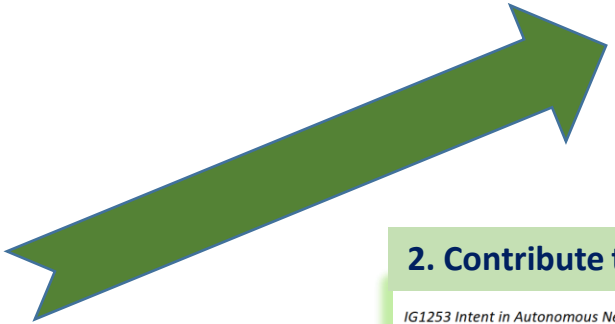
Collaborations



1. Align with TM Forum IG1253?

TM Forum Introductory Guide

Intent in Autonomous Networks

2. Contribute to IG1253E End-to-end use cases?

IG1253 Intent in Autonomous Networks v1.1.0

tmforum

24.Appendix E: Future work

The following topics need some further documentation and examples and will be addressed in future phases of the Autonomous networks project.

Topic	Description
End-to-end use cases	The document IG1253E is planned to be added in future releases. It is dedicated to use all techniques and concepts from IG1253 and its sub-documents to show end-to-end autonomous operation.

3. Submit a Catalyst proposal in 2023?

Reference IGs/Catalysts from TM Forum

TMF IGs related to Intents

- IG1253_Intent_in_Autonomous_Networks_v1.1.0
- IG1253A_Intent_Common_Model_v1.1.0
- IG1253B_Intent_Extension_Models_v1.0.0
- IG1253C_Intent_Life_Cycle_Management_and_Interface_v1.1.0
- IG1253D_Intent_Manager_Capability_Profiles_v1.0.0

- IG1234_Intent_Oriented_Customer_Engagement_Guide_v2.0.0
- IG1259_Study_of_Telecom_Industry_Intent_Meta_Modeling_Approaches_v1.0.0

- IG1161A_Hybrid_Intent_Management_Platform_Flyer
- IG1161B_Hybrid_Intent_Management_Platform_Business_Overview
- IG1161C_Hybrid_Intent_Management_Platform_Technical_Overview

TMF projects joined by China Telecom in recent years

IGs

- ✓ IG1190 AIOps Service Management
- ✓ IG1274 End-to-End AIOps Lifecycle Process

Catalysts

- ➢ C20.0.22 AIOps Autonomous Service Assurance
- ➢ C22.0.338 Intelligent operation of 5G cloud-network convergence services for vertical industries
- ➢ C20.0.06 5G Greener telco
- ➢ C21.0.185 Smart IDC - Intelligent Energy Saving for Data Centers

LS: ITU-T - Focus Group on Testbed Federations

This Focus Group serves as a platform to harmonize testbeds specifications across SDOs/Fora.

The FG-TBFxG is developing the required application program interfaces (APIs) aligned with the Testbeds Federations Reference Model defined in Recommendation ITU-T Q.4068, developed in collaboration with ETSI TC INT.

Also, the Focus Group will define a set of use cases for Federated Testbeds and APIs.

FG-TBFxG encourages all involved stakeholders, SDOs/Fora, to participate in the Focus Group activities and to:

1. Contribute to the development of the APIs being prescribed by the Testbeds Federations Reference Model
2. Share the burden on APIs Specifications and Standardization and on Roadmaps in a harmonized and collaborative way
3. Develop New use cases and services for Testbeds Suppliers that derive from the Testbeds Federations Reference Model and associated APIs, such as “Testbed-as-a Service” (TaaS)

AN Multi-SDO initiative from TM Forum

Seminar series organized by TM Forum, but uncertainties regarding dates.

I have received interest to present (topics from last DTF):

- TOSCA Defined Control Loop Lifecycle Management Demo – Liam Fallon, Zu Qiang
- Application Service Descriptor (ASD) for K8s NFs – Marian Darula, et al
- Orchestration of xNF Based 5G Service - Michał Chabiera, et al

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