

Southbound Interface for Operation, Administration and Maintenance APIs

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1 Introduction

1.1 Overview

The Southbound Interface-Operation, Administration and Maintenance (SBI-OAM) allows the Operator Platform´s (OP) to interact with the Telco management systems. It is especially useful for Network Slicing as a Service (NSaaS).

Note: NSaaS also requires support on other OP interfaces as described in GSMA PRD OPG.02 [1] and GSMA PRD OPG.12 [7].

The purpose of this document is to provide the Application Programming Interface (API) requirements and the Standards Developing Organisation (SDO) reference mapping for each API listed.

The structure to document each API consists of:

1. Descriptions: summary of the purpose and expected use of the API
2. Requirements and Service Aspects: References to requirements related to the API identified in GSMA PRD OPG.02 [1] and GSMA PRD OPG.12 [7].
3. Procedures: References to procedures and flows from an SDO's specifications (e.g., 3GPP) that match with the OP's view for the API.
4. API: References to API (API parameters, HTTP implementation and YAML file) located in SDOs specifications.

The main reference source of the API Requirements are the GSMA PRD OPG.02 [1] and GSMA PRD OPG.12 [7]. Other sources for the API Requirements are found in the relevant SDO's reference documents definitions.

1.2 Scope

The present document aims to define OP APIs that are related to SBI-OAM Interface in the OP architecture. This set of APIs defines the Management, Administration and Maintenance Support APIs.

Note: The current version of this PRD addresses only the NSaaS Life Cycle Management (LCM) and in future versions it will be extended to Key Performance Indicators (KPIs) and Monitoring for NSaaS and possibly beyond.

1.3 Definitions

For the purposes of the present document, the term definitions given in OPG.02 [1] apply.

Note: There are no definitions specific to this document yet.

1.4 Abbreviations

Term	Description
API	Application Programming Interface
HTTP	HyperText Transfer Protocol

Term	Description
KPI	Key Performance Indicator
LCM	Life Cycle Management
NBI	Northbound Interface
NS	Network Slice
NSaaS	Network Slicing as a Service
NSI	Network Slice Instance
OAM	Operation, Administration and Maintenance
OP	Operator Platform
OPG	Operator Platform Group
PRD	Permanent Reference Document
SA	StandAlone
SBI	SouthBound Interface
SBI-OAM	SouthBound Interface Operation, Administration and Maintenance
SDO	Standards Developing Organisation
SLA	Service Level Agreement
YAML	YAML Ain't Markup Language

1.5 References

Ref	Doc Number	Title
[1]	PRD OPG.02	GSMA PRD OPG.02, “Operator Platform: Requirements and Architecture”
[2]	RFC 2119	“Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997. Available at http://www.ietf.org/rfc/rfc2119.txt
[3]	RFC 8174	Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words https://www.rfc-editor.org/info/rfc8174
[4]	3GPP TS 28.531	Management and orchestration; Provisioning, v18.3.0 https://www.3gpp.org/DynaReport/28531.htm
[5]	3GPP TS 28.532	Management and orchestration; Generic management services, v18.0.0 https://www.3gpp.org/DynaReport/28532.htm
[6]	3GPP TS 28.532	Management and orchestration; Generic management services, v17.1.1 https://www.3gpp.org/DynaReport/28532.htm
[7]	PRD OPG.12	GSMA PRD OPG.12, “Operator Platform: Requirements for Network as a Service”

1.6 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be

interpreted as described in RFC 2119 [2] and clarified by RFC8174 [3], when, and only when, they appear in all capitals, as shown here.

1.7 Summary SDO Reference Mapping Table

The OP's SBI-OAM Interface is linking with the 3GPP procedures for management and orchestration services of 5G Standalone (SA) Networks. The table below summarises the SDO Reference mapping between the OP's SBI-OAM and the 3GPP Interfaces and associated APIs.

No	APIs in SBI-OAM Interface	OP Interface	SDO Reference Mapping – 3GPP
1	NsaaS LCM	SBI-OAM	3GPP TS 28.531 [4]/28.532 [5]
2	KPIs and Monitoring	SBI-OAM	

2 OAM Integration Support APIs in the SBI-OAM Interface

2.1 NSaaS LCM APIs

2.1.1 Description

The purpose of the NSaaS LCM API is to provide an OP with an interface to support Network Slice (NS) Life Cycle Management to the Operator's 5G Network. With this API, the interface provides the OP with the enablers to offer services/capabilities to Application Providers to request specific Service Level Agreements (SLAs, e.g., throughput, latency, isolation…) for the Network Communication Service that they might need based on their Application requirements.

For this API definition it makes sense to reuse the existing 3GPP OAM API for network management.

2.1.2 Requirements and Service Aspects

The requirements for the API are specified in the GSMA PRD OPG.12 [7] in the following sections:

Section	Document	Reference Section Title
3.2	OPG.12 [7]	NSaaS Enabling Requirements
5.3.3	OPG.12 [7]	Southbound Interface to OAM

2.1.3 Procedures

2.1.3.1 Network Slice allocation

The following procedures defined in 3GPP shall apply to the OP's NSaaS LCM allocation capability:

TS	Section	Allocation Procedure
28.531 [4]	6.5.1	AllocateNsi
28.532 [5]	11.1.1.1	createMOI

2.1.3.2 Network Slice deallocation

The following procedures defined in 3GPP shall apply to the OP's NSaaS LCM deallocation capability:

TS	Section	Deallocation Procedure
28.531 [4]	6.5.2	DeallocateNSI
28.532 [5]	11.1.1.4	deleteMOI

2.1.3.3 Network Slice feasibility check

The following procedure defined in 3GPP shall apply to the OP's NSaaS LCM feasibility check capability:

TS	Section	Feasibility Check Procedure
28.532 [5]	11.1.1.1	createMOI
	11.1.1.2	getMOIAttributes
	11.1.1.3	modifyMOIAttributes
	11.1.1.4	deleteMOI

2.1.3.4 Network Slice Instance (NSI) activation

The following procedures defined in 3GPP shall apply to the OP's NSaaS LCM instance activation capability:

TS	Section	Instance Activation Procedure
28.532 [5]	11.1.1.3	modifyMOIAttributes

2.1.3.5 Network Slice Instance deactivation

The following procedures defined in 3GPP shall apply to the OP's NSaaS LCM instance deactivation capability:

TS	Section	Procedure Name
28.532 [5]	11.1.1.3	modifyMOIAttributes

2.1.3.6 Network Slice Instance modification

The following procedures defined in 3GPP shall apply to the OP's NSaaS LCM instance modification capability:

TS	Section	Procedure Name
28.532 [5]	11.1.1.3	modifyMOIAttributes

2.1.3.7 Obtaining Network Slice management data

The following procedures defined in 3GPP shall apply to the OP's NSaaS LCM obtaining Network Slice management data capability:

TS	Section	Management Data Procedure
28.532 [5]	11.1.1.2	getMOIAttributes

2.1.3.8 Network Slice Instance notifications

The following procedure defined in 3GPP shall apply to the OP's NSaaS LCM instance notifications capability:

TS	Section	Notification Procedure
28.532 [5]	11.1.1.7	notifyMOICreation
	11.1.1.8	notifyMOIDeletion
	11.1.1.9	notifyMOIAttributeValueChanges

2.1.4 APIs

The following API as defined in 3GPP shall be endorsed for the OP's SBI-OAM.

Procedures	TS	Section	API name
NS Allocation	28.531 [4]	9.1.1.2	AllocateNsi
	28.532 [6]	12.1.1.1.2	createMOI
NS Deallocation	28.531 [4]	9.1.1.3	DeallocateNSI
	28.532 [6]	12.1.1.1.5	deleteMOI
NS feasibility check	28.532 [6]	12.1.1.1.2	createMOI
		12.1.1.1.3	getMOIAttributes
		12.1.1.1.4	modifyMOIAttributes
		12.1.1.1.5	deleteMOI
NSI activation	28.532 [6]	12.1.1.1.4	modifyMOIAttributes
NSI deactivation	28.532 [6]	12.1.1.1.4	modifyMOIAttributes
NSI modification	28.532 [6]	12.1.1.1.4	modifyMOIAttributes
Obtaining NS management data	28.532 [6]	12.1.1.1.3	getMOIAttributes
NSI notifications	28.532 [6]	12.1.1.2.2	notifyMOICreation
		12.1.1.2.3	notifyMOIDeletion
		12.1.1.2.4	notifyMOIAttributeValueChanges

Annex A Document Management

A.1 Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	16 Feb 2024	New PRD	ISAG	Daniel Doniz Aza / Telefónica
2.0	17 Jul 2026	Update implementing OPG.08 CR1002	ISAG	Tom Van Pelt / GSMA

A.2 Other Information

Type	Description
Document Owner	Operator Platform Group (OPG)
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