

3GPP Inputs to GSMA OPAG API Mapping (SDO References)

GSMA OPAG API Mapping Feedback – NBI (1/3)



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
Application onboarding and image management	Provide and manage application images to be deployed on resources within the operator network	ETSI MEC 010-2	How much can be reused?	3GPP TS 28.538 (Stage 1+2+3) 3GPP TS 28.532 (Stage 2+3)	3GPP TS 28.538 specifies Edge Computing Management. It support lifecycle management (e.g. onboarding) of Edge applications. Provisioning management services defined in TS 28.532 are used to perform LCM.
Application Instance Management (Resource Life-Cycle Management)	Reserve and use compute resources within the operator network for the deployment of applications on VMs or Containers	ETSI MEC 010-2	How much can be reused?	3GPP TS 28.538 (Stage 1+2+3)	3GPP TS 28.538 specifies Edge Computing Management. It support lifecycle management of Edge applications.
Telemetry	Track usage and load of resources/capabilities used within the operator network	3GPP TS 29.122 (SCEF) TS 29.522 (NEF), 3GPP 28.552, 3GPP 28.554 (depending on data source)	Not all requirements collected in the PRD might be covered in 3GPP definition.	3GPP TS 28.532 (Stage 2+3) 3GPP TS 28.550 (Stage 1+2+3) 3GPP TS 28.552 (Stage 2) 3GPP TS 28.554 (Stage 2) 3GPP TS 32.422 (Stage 2+3) 3GPP TS 28.104 (Stage 1+2+3)	It is unclear on the use of SCEF/NEF for this API. All telemetry requirements refers to management plane, and specified in 3GPP TS 28.552/28.554. 3GPP TS 28.532/28.550 define the mechanism to collect measurements (Telemetry). 3GPP TS 32.422 specifies trace and MDT data collection mechanism. NOTE: 3GPP TS 28.538 will specify requirements and impacts to 28.552/554 for Edge-related telemetry functions. 3GPP TS 28.104 provides data analysis and prediction.
Notifications	Be informed about events related to reserved/used resources/capabilities	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)	Not all requirements collected in the PRD might be covered in 3GPP definition.	3GPP TS 23.558 (Stage 2) 3GPP TS 29.558 (Stage 3) 3GPP TS 28.532 (Stage 2+3)	3GPP TS 23.558 specifies Edge-specific notifications about events related to <ul style="list-style-type: none"> - UE: UE location in clause 8.6.2, Application Client Information in clause 8.6.4, and - EES: service continuity management notifications in clause 8.6.3, QoS event notification in clause 8.6.6, service continuity status notifications in clause 8.8.3.6 - See also UE location event as defined in 29.122 and QoS event notifications as specified in 29.522 3GPP TS 28.532 captures the management related notification.

GSMA OPAG API Mapping Feedback – NBI (2/3)



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
Network Events	Be informed about events related to users/subscribers using the reserved/used resources/capabilities	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)		3GPP TS 23.558 (Stage 2) 3GPP TS 29.558 (Stage 3) 3GPP TS 23.222 (Stage 2) 3GPP TS 29.222 (Stage 3)	3GPP TS 23.558 specifies enhanced application-aware exposure of network events via EDGE-3 (leveraging CAPIF as specified in clause 8.7.3) e.g. for continuous reporting to track UE's location
Trouble Ticketing	Inform network(s) of issues arising around resource/capability reservation/usage	TMF 621		3GPP TS 28.532 (Stage 2+3)	3GPP TS 28.532 provides fault supervision management service which supports the trouble ticketing.
Application Resource Catalogue	Retrieve information on available resources and capabilities	ETSI MEC 011, TMF 639, TMF 634 (Resource inventory), (Resource Catalog)	ETSI MEC to confirm if ETSI MEC 010-2 or 011?	3GPP TS 28.538 (Stage 1+2+3) 3GPP TS 28.632 (Stage 2) 3GPP TS 28.633 (Stage 3)	3GPP TS 28.538 specifies resource management for Edge applications (e.g. virtual network resource) TS 28.632/28.633 provides 3GPP inventory management.
Ordering	Order the use of resources/capabilities	TMF 641		3GPP TS 28.531 (Stage 1+2+3) 3GPP TS 28.541 (Stage 2+3) 3GPP TS 28.312 (Stage 1+2+3)	TS 28.531 provides provisioning management service which supports the service order. TS 28.541 provides SLA information related to service ordering. TS 28.312 provides intent management.
Charging	obtain charging data on used capabilities/resources	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)		3GPP TS 32.240 (Stage 2) 3GPP TS 32.290 (Stage 2) 3GPP TS 32.254 (Stage 2) 3GPP TS 32.291 (Stage 3)	3GPP TS 32.240 Charging Architecture and Principles 3GPP TS 32.290 5G system, Charging services, operations and procedures using Service Based Interface (SBI) 3GPP TS 32.254 (SCEF and NEF northbound API charging) 3GPP TS 32.291 (Open API for NEF Charging)
Billing	Retrieve bill/billing data	TMF 636 (BSS)			

GSMA OPAG API Mapping Feedback – NBI (3/3)



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks*
QoS Management	Control QoS profiles used for user/subscriber access to application	3GPP TS 29.122 (SCEF) TS 29.522 (NEF), ETSI GS MEC 015 (NEF)		3GPP TS 23.558 (Stage 2) 3GPP TS 29.558 (Stage 3) 3GPP TS 28.541 (Stage 2+3)	3GPP TS 23.558 specifies Edge application-aware management (create/update/revoke) of session with specific QoS in clause 8.6.6 3GPP TS 28.541 specifies the configuration of 5QI including dynamic5QI and configurable5QI.
Traffic Influence	Influence routing and mobility policies for traffic associated to application	3GPP TS 29.522 (NEF), ETSI GS MEC 015 (NEF)		3GPP TS 23.558 (Stage 2) 3GPP TS 29.558 (Stage 3) 3GPP TS 28.104 (Stage 1+2+3)	3GPP TS 23.558 clause 8.6.3 specifies detection of user plane path change for the application traffic and report user plane path change to the Application 3GPP TS 28.104 provides network slice traffic analysis and prediction.
Managing Service availability in LADN	Manage area where application should be available	LADN Concept defined by 3GPP 23.501	Stage 2 and Stage 3 Status?	3GPP TS 28.538 (Stage 1+2+3) 3GPP TS 23.558 (Stage 2) 3GPP TS 29.558 (Stage 3)	3GPP TS 28.538 address EDN with LADN (DN) 3GPP TS 23.558 specifies EDN deployment using LADN in clause 7.3.3.4 and Annex A.2.4.
Application relocation	Manage the relocation of a user session to another resource	3GPP 23.558 TS 23.548 ETSI MEC 021 3GPP TS 23.501, TS 23.502	How much work is already done on 3GPP?	3GPP TS 29.558 (Stage 3)	3GPP TS 29.558 specifies Stage 3 aspects of Application relocation APIs
NEW: Confirm User Location	Confirm whether the user is at a given location	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)		3GPP TS 23.558 (Stage 2) 3GPP TS 29.558 (Stage 3)	3GPP TS 23.558 in clause 8.6.2 specifies both request-response for one-time query as well as subscribe-notify model for providing UE's location on a continuous basis enabling EAS to track any UE's location changes

*CAPIF offers a common API framework that can be leveraged to host NBI and EWBI functionality e.g. discovery, authentication/authorization, publish, onboarding, within a single domain (CAPIF-1/1e, 2/2e) and across multiple OP domains (CAPIF-6/6e). Refer to 3GPP TS 23.222 (Stage 2), 3GPP TS 29.222 (Stage 3) for additional details.

GSMA OPAG API Mapping Feedback – EWBI (1/2)



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
Application onboarding	Provide and manage application images to be deployed on resources within the operator network	ETSI MEC 010-2		See NBI	<p>Requirements for EWBI has a strong dependency on NBI requirements, therefore the mapping information provided for NBI also applies for EWBI.</p> <p>Further, please note that 3GPP is addressing EWBI functionality as part of Rel-18 in SA2, SA5 and SA6 working groups.</p> <p>NOTE: EWBI requirements (e.g. application roaming) are being studied in 3GPP TR 23.700-98 (Rel-18)</p>
Application Instance Management (Resource Life-Cycle Management)	Reserve and use compute resources within the operator network for the deployment of applications on VMs or Containers	ETSI MEC 010-2		See NBI	
Telemetry	Track usage and load of resources/capabilities used within the operator network	3GPP TS 29.122 (SCEF) TS 29.522 (NEF), 3GPP 28.552, 3GPP 28.554 (depending on data source)	Not all requirements collected in the PRD might be covered in 3GPP definition.	See NBI	
Notifications	Be informed about events related to reserved/used resources/capabilities	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)	Not all requirements collected in the PRD might be covered in 3GPP definition.	See NBI	
Network Events	Be informed about events related to users/subscribers using the reserved/used resources/capabilities	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)		See NBI	
Trouble Ticketing	Inform network(s) of issues arising around resource/capability reservation/usage	TMF 621		See NBI	

GSMA OPAG API Mapping Feedback – EWBI (2/2)



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks*
East/West Bound Interface Management	Setup and maintain the EWBI (E.g. keep alive)	ETSI MEC is leading the EWBI scope, however these functionalities are not yet defined/developed. ETSI MEC 40? Stage 3 Development?	To check how 3gpp and ETSI can collaborate on those capabilities not already defined.		Requirements for EWBI has a strong dependency on NBI requirements, therefore the mapping information provided for NBI also applies for EWBI. Further, please note that 3GPP is addressing EWBI functionality as part of Rel-18 in SA2, SA5 and SA6 working groups. NOTE: EWBI requirements (e.g. application roaming) are being studied in 3GPP TR 23.700-98 (Rel-18)
Availability Zone Information Synchronisation Service	obtain information about which zones are shared by a partner OP, where they provide coverage and what amount and type of compute they provide				
LBO Roaming (Monitoring)	obtain telemetry/usage data of subscriber's using the services/capabilities exposed by a Partner OP			3GPP TS 28.532 (Stage 2+3) 3GPP TS 28.550 (Stage 1+2+3) 3GPP TS 32.422 (Stage 2) 3GPP TS 28.104 (Stage 1+2+3)	
LBO Roaming (Authentication)	authenticate and authorise subscribers needing access to services/capabilities exposed by a partner OP			3GPP TS 23.501 3GPP TS 23.502 3GPP TS 23.503	
Edge Node Sharing (resource onboarding & Management)	Use and manage edge resource controlled by other OP for services offered to own users				

*CAPIF offers a common API framework that can be leveraged to host NBI and EWBI functionality e.g. discovery, authentication/authorization, publish, onboarding, within a single domain (CAPIF-1/1e, 2/2e) and across multiple OP domains (CAPIF-6/6e). Refer to 3GPP TS 23.222 (Stage 2), 3GPP TS 29.222 (Stage 3) for additional details.

GSMA OPAG API Mapping Feedback – SBI-CR



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
Orchestration	automated management of the application deployment on the reserved/desired resources			3GPP TS 28.531 (Stage 1+2+3) 3GPP TS 28.532 (Stage 2+3) 3GPP TS 28.541 (Stage 2+3)	3GPP TS 28.532, 28.531 and 28,541 together specify orchestration for 5G VNF. Edge Application when deployed as VNF can be orchestrated using same specifications.
Virtualised Infrastructure Manager	Configuration and management of virtualisation infrastructure				
Container Infrastructure Manager	Configuration and management of container infrastructure				
Telemetry	Obtain usage and load data on cloud resources			3GPP TS 28.552 (Stage 2) 3GPP TS 28.554 (Stage 2) 3GPP TS 28.550 (Stage 1+2+3) 3GPP TS 28.532 (Stage 2+3)	3GPP TS 28.552 and TS 28.554 define the performance measurements and KPIs for edge applications respectively. 3GPP TS 28.532/28.550 defined mechanism to collect measurements (Telemetry). NOTE: 3GPP TS 28.538 will specify requirements and impacts to 28.552/554 for Edge-related telemetry functions.
Notifications	Receive notifications on events regarding cloud resources			3GPP TS 28.552 (Stage 2) 3GPP TS 28.532 (Stage 2+3)	3GPP TS 28.552 defines the virtual resource usage measurements for a slice. Measurements for edge application can also be defined. TS 28.532 captures the management related notification.

GSMA OPAG API Mapping Feedback – SBI-NR (1/2)



A GLOBAL INITIATIVE

Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
User Authentication and Authorisation	Authenticate subscribers wanting to access resources/capabilities and authorise their usage	3GPP TS 29.522		3GPP TR 33.839 3GPP TS 33.558 3GPP TS 23.501 3GPP TS 23.502 3GPP TS 23.503 3GPP TS 23.548 3GPP TR 28.817	3GPP TR 33.839 and TS 33.558 is specifying security aspects for Edge computing application architecture. Clause 7 of 3GPP TR 33.839 provides the study conclusions. 3GPP TS 23.501 TS 23.502 TS 23.503 TS 23.548 provides core network procedures related to user authentication/authorization. TR 28.817 provides access control for management services
Mobility Triggers	Be informed about the need to move an application session to a different anchor point or of the actual move	3GPP TS 29.122 3GPP TS 29.522			
Mobility Control	Control when an application session is moved to a different anchor point	3GPP TS 29.522			
Confirm user location	Confirm that a provided location corresponds to a user's connection to a mobile network	3GPP TS 29.122 (SCEF) TS 29.522 (NEF)			

GSMA OPAG API Mapping Feedback – SBI-NR (2/2)



A GLOBAL INITIATIVE

Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
QoS Management	Manage the QoS assigned to a subscriber's application session	3GPP TS 29.122 (SCEF) TS 29.522 (NEF), ETSI GS MEC 015 (NEF)		3GPP TS 28.541 (Stage 2+3)	TS 28.541 specifies the configuration of 5QI including dynamic5QI and configurable5QI.
Traffic Influence	Influence routing of traffic associated to an application	3GPP TS 29.522 (NEF), ETSI GS MEC 015 (NEF)			
Collecting Network Status	Obtain information on a subscriber's network status	3GPP TS 29.122 3GPP TS 29.522		3GPP TS 28.545 (Stage 1+2+3) 3GPP TS 28.550 (Stage 1+2+3) 3GPP TS 28.532 (Stage 2+3) 3GPP TS 28.552 (Stage 2) 3GPP TS 28.554 (Stage 2) 3GPP TS 28.541 (Stage 2+3)	3GPP TS 28.545 defined fault (alarm) supervision 3GPP TS 28.552/554 define performance measurement and KPIs 3GPP TS 28.550/532 define performance assurance used to collect network data. TS 28.541 provides network management resource models.
Managing Service availability in LADN	Manage area where application should be available	LADN Concept defined by 3GPP 23.501	Stage 2 and Stage 3 Status?	3GPP TS 23.501 TS 23.502 TS 23.503	LADN mechanism was defined in Rel-15 and has been implemented in stage 3 specs.
Application relocation	Manage the relocation of an application session to another resource	3GPP 23.558 TS 23.548 ETSI MEC 021 3GPP TS 23.501, TS 23.502		3GPP TS 29.558 (Stage 3) 3GPP TS 29.522 (NEF) (Stage 3)	3GPP TS 29.558 specifies Stage 3 aspects of Application relocation APIs
NEW: Location Privacy Indicator		3GPP TS 29.522			

GSMA OPAG API Mapping Feedback – SBI-CHF



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
Charging events	Provide charging data on application usage of resources and capabilities to be included in charging records	3GPP TS 32.291		3GPP TS 32.240 (Stage 2) 3GPP TS 32.290 (Stage 2) 3GPP TS 32.257 (Stage 2) 3GPP TS 32.255 (Stage 2) 3GPP TS 32.291 (Stage 3)	3GPP TS 32.240 Charging Architecture and Principles 3GPP TS 32.290 5G system, Charging services, operations and procedures using Service Based Interface (SBI) 3GPP TS 32.257 Edge application-specific domain charging framework. 3GPP TS 32.255 SMF charging supports the Edge application charging 3GPP TS 32.291 5G system, charging service SBI OpenAPI

GSMA OPAG API Mapping Feedback – UNI



Attachment to SP-220003

APIs	Description	SDO References	Comments	3GPP Inputs (on SDO references)	Additional Feedback/Remarks
Registration	Register and authenticate a UE with the OP	3GPP TS 23.558		3GPP TS 24.558 (Stage 3) 3GPP TS 23.548 (Stage 2)	3GPP TS 24.558 specifies Stage 3 aspects for registration 3GPP TS 23.548 specifies Stage 2 core network aspects on authorization, deployment information provisioning and support functions for Application level registration
Discovery	Discover the available resources, capabilities and applications	3GPP TS 23.558		3GPP TS 24.558 (Stage 3) 3GPP TS 23.548 (Stage 2)	3GPP TS 24.558 specifies Stage 3 aspects for discovery 3GPP TS 23.548 specifies Stage 2 core network aspects for DNS/EASDF based discovery
Mobility/QoE	Handling of mobility and QoE reporting	3GPP TS 23.558		3GPP TS 24.558 (Stage 3) 3GPP TS 28.404 (Stage 1) 3GPP TS 28.405 (Stage 2) 3GPP TS 23.548 (Stage 2)	3GPP TS 24.558 specifies Stage 3 aspects for mobility aspects 3GPP TS 28.404 and 3GPP TS 28.405 specifies QOE management. 3GPP TS 23.548 specifies Stage 2 core network aspects for mobility

Thank You!