



# Open Gateway Channel Partner Onboarding Guide

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## 1 Introduction

### 1.1 Overview

Open Gateway is an initiative led by the GSMA in the telecommunications sector, with the goal of transforming communication networks into platforms. This is achieved by offering telco capabilities through standardized APIs on a global scale, under the framework of CAMARA. CAMARA is an open-source project that is led by the Linux Foundation.

The purpose of this document is to provide a guide for third parties such as cloud hyperscalers or other services providers with capabilities to aggregate APIs, interested in becoming part of the Open Gateway ecosystem as Channel Partners, aggregating the offering from Operators.

Channel Partners are an ideal go-to-market for Operators seeking to sell their APIs to a broad range of Developers who may not wish to integrate individually with each of them. By aggregating every Operator's APIs into a single Operator-agnostic interface, Channel Partners can offer these APIs to a vast community of application Developers.

This working document analyses the main topics that require alignment: the commercial model, the contractual framework and the product integration processes model. Information related to the Technical Architecture can be found in the GSMA Open Gateway GitHub see Annex A for access information.

The proposed approach is based on the extensive work already carried out at GSMA, TM Forum and CAMARA. The outcome of this document would be transferred to broader fora (GSMA, TM Forum, CAMARA etc.) for the benefit of all Operators and Channel Partners who participate and are involved in such entities.

Other Operator APIs may benefit from the same approach.

### 1.2 Scope

While other go-to-market strategies may exist, they are beyond the scope of this document. Specifically, this text is focused exclusively on defining the interface between Operators and Channel Partners. The following models, therefore, will not be discussed:

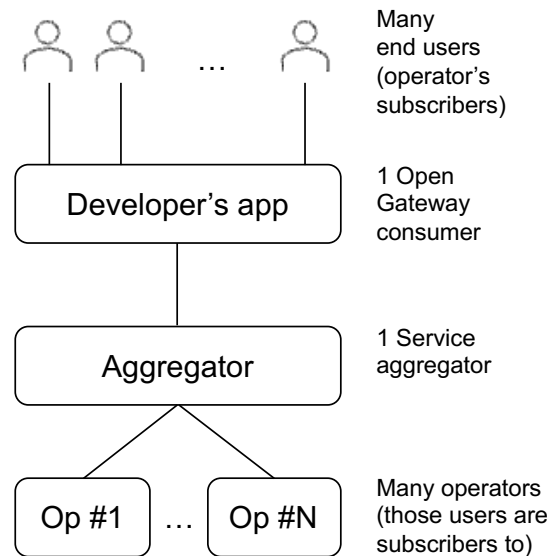
- Commercial opportunities where a direct integration between the Operator and a Developer is required.
- Operator federation models where the Operator commercialises products to the Developer and redirects API calls from Developer's apps to the target Operators.

Service aggregation models where an Operator acts as a Channel Partner for other Operators can also occur. In these cases, the content of this document will still apply as long as the Operator commercialising Open Gateway products to Developers finds the proposed model to fit with its commercialisation strategy.

### 1.3 Channel Partner Model Overview

Open Gateway Channel Partner model is composed of different players:  
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- **End Users** are both subscribers to Operators and users of the application published by the Developer.
- **Developers<sup>1</sup>** build and owns the app that consume Services to provide End Users with enhanced features or enable new use cases.
- **Channel Partners** aggregate Operator’s CAMARA standardised APIs to build Open Services and implement Operator end-point routing based on final user identification on the networks.
- **Operators** expose telco capabilities through CAMARA standardised APIs and could partner with Channel Partners to enable the Services that they offer to Developers.

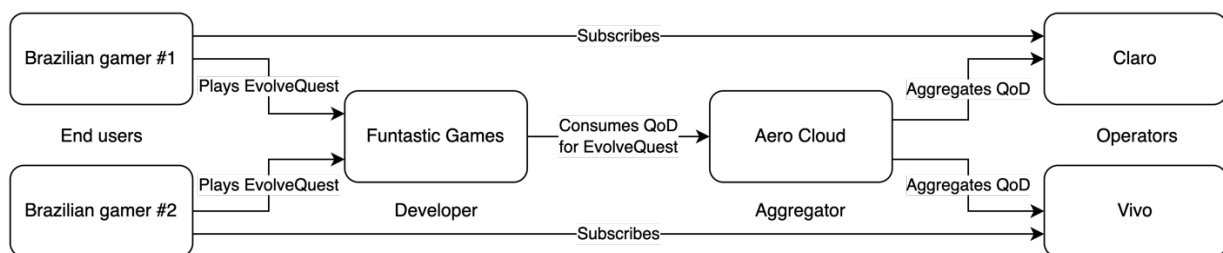


The following is an example of interaction between the players on the model:

“Funtastic Games” is a company developing and publishing videogames (the Developer) and hosts its servers on the cloud services from the cloud provider “Aero Cloud” which commercialises Services as well (the Channel Partner).

Funtastic Games wants to publish a game (the application) called “EvolveQuest” which features the network capability to assign custom quality when used in cloud gaming mode on mobile devices (Open Gateways’ QoD product).

Two different gamers playing EvolveQuest in Brazil are subscribers to different Operator’s mobile network access services, resulting in the following relational diagram:



**Figure 1: Example Interaction between players on the model**

### 1.4 Definitions

Term	Description
<b>Actors</b>	

<sup>1</sup> Developers are considered as the legal entities publishing and therefore liable of their applications, and subscribing Open Gateway products through Aggregators, and not the individuals actually coding, who are not relevant to this model.

Term	Description
Operator	<p><i>Synonyms: Telco, CPS (Communication Service Provider), MNO (Mobile Network Operator)</i></p> <p>A telco sector company providing both telco capabilities exposed through CAMARA standardised APIs to Developers and Channel Partners, and network access to End users as subscribers. For the case of companies or holdings operating on several countries, or as different carriers on the same country, the term Operator will refer to each local carrier separately, as party on the contract with End users as a Subscribers.</p>
Channel Partner	<p><i>Synonyms: Aggregator, Hyperscaler, CPaaS (applies to one particular type of partner), Marketplace (less accurate, as it only applies to one particular commercialization model implemented by an aggregator)</i></p> <p>An ecosystem partner commercializing Services to its customers, the Developers, by aggregating Operator's offering.</p>
Developer	<p><i>Synonyms: Application Provider, ASP (Application Service Provider), Application Publisher, Consumer (Open Gateway-based service's consumer), Legal Entity (applies to the application provider as an accountable body on the Privacy framework)</i></p> <p>A company, customer to the Channel Partner, developing and publishing an application that consumes Services provided by the latter.</p>
End User	<p><i>Synonyms: Subscriber, Final user, Target User</i></p> <p>An individual accessing the network, as a subscriber to an Operator, and using an application published by a Developer which consumes Open Gateway Products to provide the former with an enhanced usage of such network or programmable network enabled features.</p>
<b>Other Bodies</b>	
CAMARA	The telco industry alliance led by the Linux Foundation in partnership with the GSMA for network APIs standardisation <a href="https://camaraproject.org">https://camaraproject.org</a>
TM Forum	A global industry association for service providers and their suppliers in the telecommunications industry which provides an open environment along with practical tools and information to support transformation initiatives <a href="https://www.tmforum.org">https://www.tmforum.org</a>
<b>Main Concepts</b>	
API	<p><i>Application Programming Interface</i></p> <p>Denominates any interface designed not for human but software interaction. Open Gateway initiative relies on CAMARA standardised APIs exposed by Operators compliant to the HTTP protocol on the Internet</p>
API Gateway	Denominates an API exposed by, in this model, the Channel Partner, compliant with CAMARA standards to match Operators' APIs, which routes calls to the proper Operator's API exposure platform by implementing the Telco Routing capability
SDK	<p><i>Software Development Kit</i></p> <p>Denominates a software provided by, in this model, the Channel Partners to Developers, on several programming languages, with a well-designed and documented interface, to abstract them from the implementation of APIs Authentication and calling</p>
Service	Open Gateway based services as described herein.
Telco Routing	<p><i>Synonyms: Telco finder, Operator routing or similar combinations</i></p> <p>Denominates the ability for a Channel Partner to route a call to its own API</p>

Term	Description
	Gateway to the proper Operator's API according to the user device's network connectivity information.
Lawful Basis	The lawful grounds for processing personal data as stated in Article 6 of the General Data Protection Regulation (consent, performance of a contract, legitimate interest, legal obligation, vital interest or public interest).
Authentication	The process of verifying who a user is
Authorization	The process of verifying what a user have access to
<b>Other referred Terms</b>	
Single line of code	Developer experience consisting of the simplicity of usage of a programming interface. In the context of Open Gateway Channel Partners, the ideal interface to provide is an SDK which Developer can instantiate as a client with their credentials and then invoke one its functions to actually consume the network capability exposed through it.

## 1.5 Abbreviations

Term	Description
API	Application Programming Interface
CP	Channel Partner
SDK	Software Development Kit

## 2 Commercial Model

### 2.1 The Customer

Developer companies are the customers of Open Gateway capabilities, since they make the decision of incorporating the APIs into their applications. This includes engineers writing software, architects, CTOs and legal representative making purchasing decisions.

Developers carry out their daily work using the platforms and environments provided by Channel Partners (for development, testing and pre-production, etc.). Therefore, exposing Open Gateway capabilities through these Channel Partners will favour their adoption by Developers.

Since Developers are very familiar with these platforms, they are reluctant to learn a new environment unless they see a clear benefit. For this reason, the customer experience for Developers using Open Gateway APIs should align closely with their current practices. Specifically, the interfaces, workflow, and support they encounter when using Open Gateway APIs should mirror what they are accustomed to when engaging with other Channel Partners services.

Channel Partners are an effective market route for Services due to their strong Developer relationships. However, no matter the reach, without a seamless Open Gateway product experience, adoption will be limited. Thus, prioritizing a user-friendly interface is key where Developers consume Services in the same way that they consume the rest of the Channel Partner's services.

## 2.2 The Product

Operators provide Channel Partners with products, each of them is defined as the combination of:

- CAMARA standardised API available on the Operator’s API exposure platform.
- A concrete CAMARA standardised API scope/endpoint/functionality, defined as a specific API technical endpointscope of a CAMARA API. For example. “check-sim-swap”, “
- A usage purpose, based on a set of standardised W3C purposes (<https://w3c.github.io/dpv/dpv/#vocab-purpose>) that the product can be used for.
- Charging models and a pricing list.
- Different characteristics associated to each APIs, that can be seen as a range of products around an API
- Different Services associated to the product APIs such customer support
- A description of the product and its value proposition.
- The minimum and maximum versions of the CAMARA API supported by the Operator.
- Specific terms & conditions of use, including SLAs and privacy requirements associated to the purpose.

The following are some examples of product definitions:

	Sample product offering A	Sample product offering B	Sample product offering C
Appellation	Device Status for Fraud Prevention	Device Status for Service Provision	Quality on Demand (QoD) for mobile connectivity
Open Gateway Scope	<a href="#">device-status</a>	device-status-roaming-event	<a href="#">Quality</a> on Demand
Supporting Product Specification	Device Status	Device Status	Quality on Demand
Purpose (example)	<a href="#">FraudPreventionAndDetection</a>	<a href="#">ServiceProvision</a>	<a href="#">ServiceProvision</a>
Description (example)	This provides information of the country where the user is located to validate if a transaction in a foreign country is valid, by verifying if the device is connected in a roaming country or in its national network. Developer may also subscribe to events or check if the device is reachable in the network,	This sends a notification about a roaming change to a developer to be able to automatically provision a Service, by informing if a user is moving abroad or from one country to other.	This exerts control over the mobile connectivity service quality (throughput, latency, congestion). Our QoD Mobile API provides more accurate control of the connectivity service quality.

	Sample product offering A	Sample product offering B	Sample product offering C
Supported CAMARA API versions (example)	From v0.1.0 to v0.5.1	From v0.1.0 to v0.5.1	Up to v0.8.1
Charging model and price (example)	x€/month per availability + x€ per call	x€ per call	x€ per call + x per minute of a session
Particular conditions (example)	Link to a webpage from the Operator, including T&Cs and indicating limitations such as granularity by zip code	Link to a webpage from the Operator, including T&Cs and indicating limitations such as granularity by zip code	Link to a webpage from the Operator, including T&Cs and indicating limitations such as available QCI classifications

Note: Information included in this table shall only be considered as examples. Scopes, descriptions, or purposes may not fit with last discussions of the APIs/products.

Each Channel Partner is responsible for crafting their unique offerings based on Open Gateway products. There are two potential models for this, direct or combined:

- A direct exposure of the raw CAMARA API in an aggregated fashion, including full documentation and sample code. This can be encapsulated within Software Development Kits (“SDKs”). The key is to enable Developers to easily build new applications that take advantage of Operator capabilities by simply inserting a few lines of code in their apps, resting assured that this code will work, without changes, across all the Operators in the world.
- A native cloud service that combines several technologies including CAMARA APIs. This usage can be made transparent to the Developer or remain a hidden part of the implementation of the native service. An example could be a face recognition cloud service that combines cloud databases, AI modules and the QoD API product from CAMARA.

Each Channel Partner is required to expose the CAMARA version (or a range from minimum to maximum supported CAMARA versions) of APIs towards its Developers. Each Channel Partner can additionally build their own APIs extending CAMARA APIs with improved documentation and services around, and can improve their own native services (e.g., cloud services) using the CAMARA APIs.

Channel Partners will also need to manage their product roadmap taking into consideration that Operators might not be entirely synchronized in their offerings. At any given time, certain APIs might be available in some regions but not in others, and some Operators might offer different versions of the same API. It is up to the Channel Partner to make Developers aware of the different version of the same API.



Depending on the API charging principles negotiated between every Operator and its Channel Partner, the charging unit may be any, or a combination of units such as the amount of API calls, traffic affected in GB, time duration, etc. Each Operator and Channel Partner individually will agree on specific charging terms.

## 2.3 Channel Partner integration models

The two approaches for aggregating APIs within the scope of this document are: the Wholesale Reseller model and the Marketplace Aggregator model as explained below.

- In the **Wholesale Reseller model**, the Service is fully managed by the Channel Partner.
- In the **Marketplace Aggregator model**, the Channel Partner leverages its Marketplace to individually expose the APIs. To ensure a coherent user experience, a UX layer is applied, creating a unified interface for the Developer see <https://www.tmforum.org/oda/business/process-framework-etom/>.

### 2.3.1 Wholesale Reseller Models

This model is defined by the following aspects:

- The Channel Partner offers Developers its own services, which consume Operator's Open Gateway APIs for implementing either explicit or implicit features but also raw CAMARA APIs.
- The Channel Partner is tasked with managing an API Gateway that they deploy and operate independently. The Channel Partner carries out the process known as "telco Finder", which frees the Developer from worrying about the specific Operator each of their application's users is subscribed to. Ideally, the Channel Partner would equip Developers with an SDK. This SDK encapsulates the actual calls to the API Gateway and provides a simplified user experience, ideally reducing the process to just a "single line of code".
- The Channel Partner sets the Service pricing.
- Operators are responsible for establishing and updating their Terms and Conditions of use for the Developers. The role of Channel Partner is to present this information to Developers for their acceptance, simplifying the process- and verify that the developer respects the pre-requisite associated to those terms and conditions. The Channel Partner could potentially request that Operators harmonise the Terms and Conditions.
- In addition to the standard CAMARA Service APIs, Operators shall provide Channel partners with a set of Operation, Administration and Maintenance (OAM) APIs so that Channel Partners can register Applications and Developers, receive new portfolio updates, provide level 3 support requests, reconcile API usage information, etc. (see Product Integration Processes)
- The Channel Partner will invoice Developers based on the commercial terms of its Service, irrespective of which Operators are involved in the actual usage of APIs, as determined by the network subscription of the End-User of the Developer's application.

- Operators will invoice Channel Partners according to the usage of its APIs as measured by the Operator. It is expected charging units can only be measured by the Operator for example the traffic routed while a certain network capability is active.

### 2.3.2 Marketplace Aggregator Model

In the marketplace-based commercialization model, the Channel Partner is responsible for enhancing the Developer's customer journey by adding a UX aggregation layer over the marketplace itself. This layer is designed to streamline the discovery and ordering process of Open Gateway products, effectively making the most of the underlying complexity transparent for the Developer.

The only points in which this model differs from the Wholesale Reseller model are in relation to the pricing and invoicing models:

- The Operator exposes the API Product on the marketplace.
- The Channel Partner offering is built from the products each Operator publishes, as a vendor, on the marketplace platform.
- Operators are responsible for determining the pricing of their products. Channel Partners may either decide to (1) do a passthrough of the different prices provided by an Operator or (2) aggregate those different prices into one unique price for the Developer.
- Operators are responsible for establishing and updating their Terms and Conditions of use for the Developers. The role of Channel Partner is to present this information to Developers for their acceptance, simplifying the process- and verify that the developer respects the pre-requisite associated to those terms and conditions. The Channel Partner could potentially request that Operators harmonise the Terms and Conditions.
- The Channel Partner will invoice Developers for the final price and pricing model unit as published by the Operator on the marketplace platform.
- The Channel Partner may apply a per Operator fee and will make payments to Operators on an automated and regular basis.

Note: In case different prices are established as a passthrough of the Operator's, developer may experience different prices for the same API call based on which Operator is in charge of solving the request.

### 2.3.3 Channel partner models comparison

Marketplace and Wholesale models implement the same technical integration and follow the same principles in terms of Service implementation, with a homogeneous approach in both cases. Operators' integrations also follow the same principles and specifications, as defined in the Operate APIs see <https://www.tmforum.org/oda/open-apis/table>.

Considering the specific activities and interactions in which channel partners participate, the main differences and similarities are summarized in the following points.

	Wholesale Reseller	Marketplace Aggregator
--	--------------------	------------------------

1. Application	Apps provided by CP customers – App Developers	Apps provided by CP customers – App Developers
2. Developer	Developer is an enterprise with a legal representative responsible of the APP, customer of the CP	Developer is an enterprise with a legal representative responsible of the APP customer of the CP
3. Integration model	CP integrates to Operator's OGW Platform Technical integration will follow the same conditions (technical Playbook) and the Operate APIs	CP integrates to Operator's OGW Platform. Each Operator is responsible of loading (push mode) the Service into CP Marketplace – Operator Marketplace Offer Technical integration will follow the same conditions (technical Playbook) and the Operate APIs
4. Discovery & description	OGW Services implemented as native CP Services	OGW Services integrated as CP Marketplace offers. CP can create a unified layer of abstraction (including telco-finder).
5. Registration / Provision	Developer registers directly in CP product. CP registers the developer using Operate APIs	Developer registers in CP Marketplace– CP creates unified UX abstracting Operators, and relays the requests using Operate APIs
6. Legal	Operators APIs T&Cs signed by Developer with Operator through CP. T&C that will be signed will be between developer and CP reflecting the T&C of the Operators for the developers to use the APIs. Contract CP - Operator can use the GSMA template.	Operators APIs T&Cs signed by Developer with Operator through CP. T&C that will be signed will be between developer and CP reflecting the T&C of the Operators for the developers to use the APIs. Contract CP - Operator can use the GSMA template.
7. Pricing	Provides a single price abstracting underlying Operators.	Provides individual pricing to each Operator as a Marketplace offer.
8. Service execution	Developer executes OGW service using Service APIs with CP experience including AuthN/AuthZ, consent and Telco Finder	Developer executes OGW service using Service APIs with CP experience including AuthN/AuthZ, consent and Telco Finder
9. Billing & Charging	Operator sends Service/API consumption to CP using reporting Operate API.	Operator sends Service/API consumption to CP using reporting Operate API.

	<p>Operator generates an invoice for CP based on Service/API consumption.</p> <p>CP generates an invoice for developer based on Service/API consumption.</p> <p>Developer pays on CP platform &amp; CP pays Operator invoice.</p> <p>Billing to Developer is responsibility of the CP with no impact on Operators.</p>	<p>Operator generates an invoice for CP based on Service/API consumption.</p> <p>CP generates an invoice for Developer on behalf of Operator using this information.</p> <p>Developer pays on CP platform &amp; CP pays Operator based on Marketplace model.</p> <p>Billing to Developer is responsibility of the CP with no impact on Operators.</p>
10. Assurance	<p>Developer generates ticket on CP platform &amp; CP generates ticket on Operator using Operate APIs</p> <p>Operator provides basic Service level to CP and CP provides their own basic Service level to the Developer.</p>	<p>Developer generates tickets on CP Marketplace platform &amp; CP generates ticket on Operator using Operate APIs</p> <p>Operator provides basic Service level to CP and CP provides their own basic Service level to the Developer.</p>

## 2.4 Antitrust Considerations

Any discussions regarding pricing or price sensitive matters are purely a bilateral matter between individual Channel Partners by Operators. Prices or fees charged to the Channel Partners by Operators are agreed 1-2-1 and are never shared or discussed with other parties. Pricing strategies are equally private to avoid predictability in pricing.

As stated above, in the Wholesale Reseller model the price charged to developers is published on the Channel Partner platform, but the price paid to each individual Operator is never shared. In the Aggregated Marketplace model, the price published is that demanded for the Service by each individual Operator, or a common price is published for all Operators, but never shared with third parties nor the fee that is charged by the Channel Partner.

The charging unit for API usage will be negotiated bilaterally between each Operator and its Channel Partner and can be any combination of standard measures such as the number of API calls, traffic in gigabytes, or time duration. These units will be outlined in the bilateral agreement. Consequently, every Operator and Channel Partner will settle on the charging terms that best suit their collaboration.

## 3 Contractual Framework

This section of the document outlines the contractual framework to support the commercialization of Open Gateway Products through Channel Partners.

The defined contractual framework that governs the relationship between Operators, Channel Partners and Developers includes two main agreements:

- GSMA Open Service Agreement Template: primary service agreement between Operators and Channel Partners that establishes the general conditions for making available the Operators' API Services.
- Developer Terms & Conditions: access conditions, responsibilities and guarantees, liabilities, privacy/sovereignty requirements and use restrictions that Developers will be required to sign with Operators.
- Overall, this contractual framework ensures a clear understanding between Operators, Channel Partners and Developers, facilitating the provision of Open Gateway Products in a seamless and efficient manner.

### 3.1 GSMA Open Service Agreement Template

An Agreement Template has been developed by the GSMA Open Gateway Business Workstream GSMA Open Service Agreement Template (WA.100) that when used, is expected to accelerate time to market, increase scalability, and reduce Service complexity.

The GSMA Open Service Agreement Template can be used to cover the relationship between Operators and their Channel Partners.

The main body of the GSMA Open Service Agreement Template contains general provisions regarding each party's obligations, security and data privacy requirements, suspension of the Services, term and termination, IPR's regime, liability regime, applicable law and jurisdiction.

The GSMA Open Service Agreement Template also includes some annexes:

- Annex A, containing the list of contacts of the parties.
- Annex B, Service Level Agreement KPIs expected to be common to all Operators APIs Products.
- Annex C, containing the Operators APIs Services annexes, one per API. Whilst the Operators APIs Services description is common for all Operators from CAMARA standardisation, the rest of the annex is specific per Operator as per its Product design, including specific terms of use, local service levels, pricing models, payment terms, privacy/sovereignty technical requirements, etc. that will need to be adapted in each specific agreement.
- Annex D, place holder for Data Privacy requirements

It is expected that each time an Operator adds a new Operators APIs Service to its portfolio, a new Operators APIs Service Annex will be agreed with the Channel Partner and added to the existing GSMA Open Service Agreement.

In addition, each time the Channel Partner foresees a new purpose of usage of the APIs, a new Operators APIs Service Annex will be agreed and added to the existing GSMA Open Service Agreement

The Operator APIs Service annex may also include the template for the Developer Information Form that the Channel Partner will have to collect from the developer to facilitate Operator's approval to their application's registration.

### 3.2 Developer Terms & Conditions

In addition to the GSMA Open Service Agreement and without affecting the commercial relationship managed by the Channel Partner, there are certain terms and conditions that Developers shall accept on an individual basis. This creates a direct contractual relationship between the Developers and the Operators. These terms and conditions include specific access conditions, responsibilities, guarantees, privacy regulations, and usage restrictions. These terms are crucial requirements due to the security and privacy model outlined by the Operators for Open Gateway Services.

Additionally, specific terms and conditions will be agreed between the Developer and the Channel Partner to regulate the use of Open Gateway products through the Channel Partner (Channel Partner T&C).

These are out of the scope of this document.

## 4 Product Integration Processes

This section of the document describes the integration associated with Open Gateway including the different processes required to offer the Operators API Services to the Developers integrated in a seamless Open Gateway product experience within Channel Partners environments.

The main processes covered are:

1. **Product Catalogue Setup by Channel Partner from Operators product catalogue:** processes related with the initial setup of the Open Gateway product to make it available for Developers, including:
  - **Legal Relationship Management:** management of the legal relationship between the stakeholders to enable the implementation of Open Gateway Products within the defined business and contractual models.
  - **Product Description:** define and manage description of Open Gateway Products.
  - **Product Pricing Definition:** generic definition of the price associated with the Open Gateway Products within the business model.
  - **Product Lifecycle Management:** management of the evolution of the existing Open Gateway Products, making the appropriate updates to reflect the changes that could happen over time.
2. **Product Discovery and Application & Products Registration by Developers:** processes related with the registration of specific Open Gateway Products to be used.
  - **Product Discovery:** provide Developers access to Open Gateway products in a simple and integrated way with a common experience within Channel Partner platform. It should include some illustrated examples of usage of APIs and different way to use them, guidance on pricing model for example, excel spreadsheet or calculator)
  - **Developer Application Registration:** management of the registration of the Developers application for the use of the Open Gateway Products.

3. **Product Use:** processes related with the use of specific Open Gateway products
  - **Service Consumption:** requirements to perform the consumption of Open Gateway Products.
  - **Privacy and sovereignty Management:** explicit privacy and user consent management required to consume Open Gateway Products.
4. **Product Support:** processes related with the support provided to Open Gateway product.
  - **Developer Support:** support for Developers associated with the Open Gateway Products incident management.
5. **Product Billing**
  - **Service Charging:** generation and provision of the charging information associated with the consumption of the Open Gateway Products.
  - **Service Billing:** billing tasks to implement the defined Commercial Models associated with Open Gateway Services, including the billing for Developer and the billing between Channel Partners and Operators.

The following sections provide detailed information on each of these processes.

Depending on the Channel Partner Model implemented, as described in Channel Partner integration models the scope of the activities in each process could differ, but the final experience remains the same for Developers.

These processes will be implemented through three different types of standardised APIs exposed by Operators to Channel Partners:

- Operate APIs (Standardised at TM Forum) – Consumed by the Channel Partner to implement its integration with Operators (for activities such as registering Developer's applications or getting charging information).
- Service APIs (Standardised at CAMARA) – Invoked by the Channel Partner when the Developer wants to consume an Open Gateway Product (for instance, to find an End Users location or to improve the quality of a connection).
- Service management APIs (Standardised at CAMARA and TM Forum) – Consumed by the Channel Partner on behalf of the Developer to enable or check the Open Gateway Product consumption (for activities such as authentication or feedback on the network capability activated by the Service API call)

## 4.1 Product Catalogue Setup by Channel Partners

### 4.1.1 Legal Relationship Management

- As explained in the Contractual Framework section, certain agreements will need to be signed between the different stakeholders involved in the Service. **GSMA Open Service Agreement Template (Channel Partner – Operator)** The signature of this agreement will trigger the registration of the specific Channel Partner as an Operator

customer for Open Gateway. This process needs to be implemented by each Operator.

- **Developer Terms & Conditions (Developer – Operator)** will detail the requirements and limitations, associated with the use of specific Operator resources that need a detailed control to comply with the legal and privacy requirements. They will be defined by Operator and their acceptance should be part of the provisioning process implemented by the Channel Partner.
- Privacy is one of the key commitments of the Operators to their End Users and end-users, ensuring that they have full control over their personal data. Therefore, the Open Gateway privacy model is designed based on the principal guarantee and protect the right of the end-users. As a result, Developers are required to accept the Open Gateway Service Terms & Conditions for each Operators API Service through Channel Partners, establishing a direct privacy relationship between Developers and Operators.

#### 4.1.2 Product Description

The description of the Open Gateway Products will include:

- General definition of the product that includes features, value proposition and usage examples.
- Geographic footprint where each Open Gateway product is available.
- Operator availability for each product and in each geography.

The Open Gateway Products that are exposed through the Channel Partner belong to different Operators and in different locations. However, the general definition of these products will be agreed in the GSMA, so it should be the same regardless of the Operator.

#### 4.1.3 Product Pricing Definition

It is important to highlight that in addition to different prices, each Open Gateway product could have a different charging model, such as: per call, per execution time, per capacity provisioned...

The process of definition of the pricing will be transparent to the Developer. It will be managed by Channel Partners, that are the owners of the commercial relationship, and will follow the guidelines described in 2.4 Antitrust Considerations.

#### 4.1.4 Product Lifecycle Management

Open Gateway product is a continuous evolution. New Open Gateway products will be created, and current ones will have changes and versions that need to be updated and registered. For this reason, there shall be a lifecycle management process for these API Services between the Operator and the Channel Partners and Developers, which shall include the following steps.

##### 4.1.4.1 Product Catalogue

Operators manage their own Open Gateway product catalogues (create, update or discontinue products) according to the Open Gateway product model (see 2.2 [The Product](#))



to ensure cross-Operator interoperability of the Products when published on the Channel Partners' platforms.

The Open Gateway product offering shall be designed agnostic to the commercialisation model (see 2.3 [Channel Partner integration Models](#)) and compliant with the privacy and antitrust framework (see 4.3.2 [Privacy Management](#) and 2.4 [Antitrust Considerations](#)).

#### 4.1.4.2 Product Update

Secondly, Open Gateway products can experience changes in aspects such as: description, pricing, input parameters, authentication method, consent management, etc. described in Channel Partner integration models. All these changes will be managed by a version control of the Open Gateway products and the Operator will have several versions of each Open Gateway product available to enable the Channel Partner integration process.

Channel partners and Operators will use Operate API catalogue functionality to exchange product update information. Pull mode (channel partner consulting) or push mode (Operator enforcing new product information) are supported to ensure the usability of this mechanism in the two different models of channel partner.

Operators will define a shared policy on maintaining a certain number of releases of Open Gateway products. Operators will ask Channel Partners to stop exposing some APIs version but also to advise their Developers when an API version will not be maintained any more.

#### 4.1.4.3 Operate APIs

The communication between Channel Partners and Operators may be based on specific Operate APIs standardized within the TM Forum based on GSMA requirements including specific functions associated with the lifecycle management.

Function	Description
Product list management	Operators shall provide the capability for Channel Partners to manage the Open Gateway product offering accordingly to the former's product list and per Operator availability.

## 4.2 Product Discovery and Registration by Developers

### 4.2.1 Product Discovery

The first step of the Developer journey is the discovery of Open Gateway products through the common interfaces of the Channel Partners. The experience will follow the guidelines described in Channel Partner integration models.

This process of discovery should be implemented by the Channel Partner within their platform and under their total responsibility and control.

#### 4.2.1.1 Discovery Flow

The following shows an example of the steps that a Developer could follow until discovering an Open Gateway product in the Channel Partner platform:

- The Developer navigates on the Channel Partners portal where it finds a native service that aggregates Open Gateway products.
- The Channel Partner presents a set of Open Gateway products grouped according to its use case or value proposition (i.e., Connectivity, Antifraud...).
- The Developer navigates to a category and receives a list of Open Gateway products with their associated description.

#### **4.2.1.2 Bundle Open Gateway Products**

Channel Partners, who know their user community well, may choose to bundle Open Gateway products with other native services from their portfolio to facilitate or enhance Open Gateway products consumption among Developers

For example, the Channel Partner may integrate the Open Gateway Device Location product into their native location service. In this case the Open Gateway products will remain transparent to the Developer and the process of discovery will be hidden and not required.

#### **4.2.2 Developer Application Registration**

To use and consume the Open Gateway products, any Developer should follow a registration process for each new product that involve the registration in the Channel Partner platform and transparently in the Operator platforms.

This process shall be implemented by the Channel Partner in a seamless experience for the developer as an ending step of the product discovery process.

Channel partner, as the party first interacting with the Developers, may validate the applications and Developers accessing to its portal, and reject certain of them if required.

The criteria used by each Channel Partner may be different and based on its own internal rules and policies. Operators may request Channel Partners to prevent the registration of certain application/Developers, as part of the agreed contract.

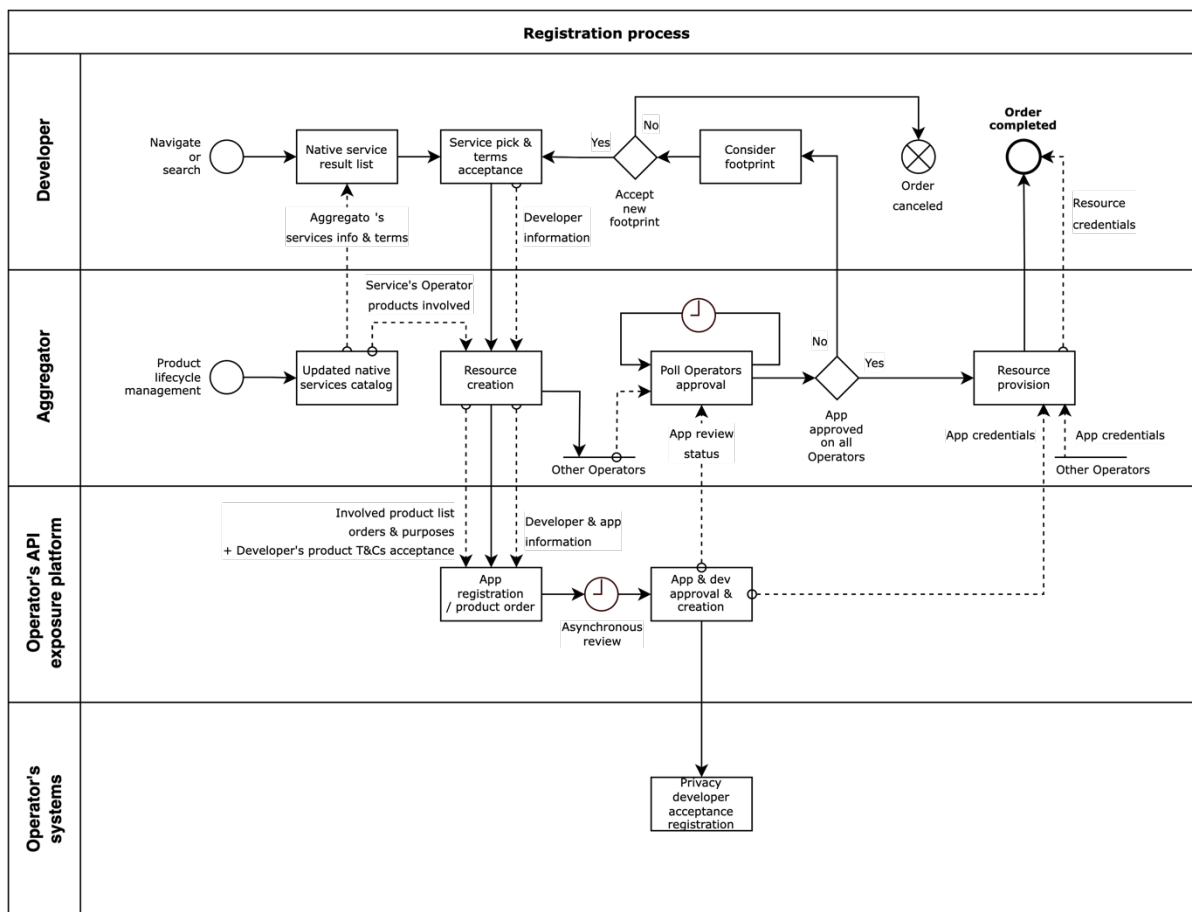
Channel Partner retains the right to deny access to certain applications/Developers if needed, e.g., due to unfair usage.

Operator, through the process of onboarding, will be able to validate and accept both the Developer (manual process) and the applications (automatable process). Operator may reject the registration of Developers during the onboarding API request, analysing the information requested in the T&C, e.g., could automatically validate those Developers/companies that the Operator already have additional contracts for other services.

An Operator may be able to automatically validate at its own responsibility an application whose purpose match with the purpose requested in the API/product, or whose type (e.g., banking) matches with the expected consumers of the requested API/product.

The criteria used by each Operator may be different and based on its own internal rules and policies and shall be provided in the T&C.

The required steps to complete a registration will be:



**Figure 2: Registration Process**

- Channel Partner or, a third-party caller or an End User’s use of the Operator API (i) poses a security risk to the Operator API or any third party, (ii) could adversely impact Operator’s systems, the Operator API, or the systems or content of any other of Operator’s End Users, (iii) could subject Operator, Operator’s affiliates, or any third party to liability, or (iv) could be fraudulent.
- Developer is in breach of the T&C or
- Developer or Channel Partner has ceased to operate or become the subject of any bankruptcy, reorganization, liquidation, dissolution or similar proceeding.
- Suspension will remove Channel Partner app right to access or use any portion or all of the Operator API.

Following the process of onboarding, different steps and information shall be considered by Channel Partners for being able to configure and onboard Operators with new Developers and applications.

- **Developer Information:** A Developer shall have a registered account in the Channel Partners developer platform in order to subscribe any of its Services, and it also requires that a Developer and their associated application are registered in the Operator API exposure platform.
- Therefore, the first time an application of a given Developer is registered on an Operator, the Channel Partner shall share that Developer’s information, using the

appropriate Operate API. A Developer ID will be given by the Operator as a result, that will be used when registering successive applications.

- The information required to be gathered from Developer should include:
  - Tax id
  - Business name
  - Contact Information
  - .....

For the sake of a better customer experience, the Channel Partner, which would previously know such Developer's information as a customer, will share it with each Operator on application registration without asking Developer to fill it in a form.

- **Open Gateway Product Selection:** the Developer should select their required Open Gateway product for their application with different selection options:
  - **Geographic footprint:** In order to facilitate the selection an ideal approach would be letting the Developer set the geographic areas where they want their application to operate, so the portal can build a list of Operators at such area countries for them.
  - **Per-country Operator availability:** For each geographic area country, the ideal experience on the portal would be presenting a list of the Operators providing Open Gateway products, indicating those providing the product selected by the Developer on the previous step (i.e., showing those which does not as disabled) and providing the Developer with checkboxes to select which Operators they want to register their application with.

For the sake of a better customer experience, the selection checkboxes could be complemented with automated controls such as the following:

- Select all Operators in this country
- Select all Operators in this geographic area (e.g., Asia)
- Select an Operator on all countries, for Operators present in other countries
- Select all Operators globally (with confirmation alert popups anticipating Developer action results)
- **Per-Operator local product pricing, features and terms and conditions:** The Channel Partners portal could display a comparative table of the product particularities for each Operator at the selected country, containing at least but not exclusively:
  - Specific service level agreements, limitations or any other relevant to consumption.
  - Open Services Terms & Conditions, including privacy requirements associated to the purpose, to be displayed from a link to a full view page.
  - Technical specs particular to the Operator's local implementation, such as the minimum and maximum versions of the CAMARA API supported, or any other relevant to the integration, to be displayed from a link to a full view page.

In addition to these, in the Marketplace Aggregator model:

- Charging model or models (i.e., per call + per enhanced network time).
- Price, per charging model.
- **Acceptance of legal terms:** As described in the section 3 [Contractual Framework](#) section for legal requirements on the subscription of an Operator's product by a Developer, the customer flow described above assumes that the Developer has been presented with every Operator's Open Service Terms & Conditions and, by checking its checkbox they effectively accept them.
- **Open Gateway Privacy settings:** Once the Developer selects their required Open Gateway product to be provisioned for their application, the Channel Partner shall complete the registration to Operators, on behalf of the Developer if the information is known or be displaying a form for it to be completed if not. The following are examples of what may be included:
  - Developer's company name
  - Developer tax number
  - Legal representative
  - Type of organization. W3C types of organizations catalogue
  - Developer jurisdiction
  - Social address
  - Developer contact information
  - DPO Contact details of the Developer's  
In case it is required to have one in accordance with the regulations of the Operator's territory. If they are not obliged, the data of the team in charge of privacy (legal, security, etc.) shall be provided
    - Note: This information will need to include at least one email or link to a web form. A postal address will not be accepted as the only form of contact for these purposes.
  - Contact information for the exercise of data protection rights to which the End Users of the Operator can address.
    - Note: This information shall include at least one email or link to a web form. A postal address shall not be accepted as the only form of contact for these purposes.
  - Data of the Developer's representative in the EU in case they had appointed one in accordance with the European data protection regulations.
    - Does not apply outside the European Union.
  - Developer privacy policy - The developer shall provide the privacy policy URL
  - Categories of processors that will process the data in the name and on behalf of the Developer, selected from the catalogue of types of managers available.
  - Country or countries to which the data will be exported by the Operator when the Developer consumes the API.

- Note: (1) this includes the countries through which the data passes in transit and the destination(s) in which it is stored; and (2) this includes only the first level of data export from Operator to Developer (or its assignees), but not subsequent re-exports from Developer (or its assignees)
- Purpose - The Developer will have implicitly or explicitly selected a purpose by selecting the Product, since it is one of the attributes on the product model. The purposes will be standardised by W3C, and a list of them will be provided, as well as the text associated and the agreed Lawful Basis.
  - Depending on the product and the selected purpose, the required integration flow is different (see 4.3.2 [Privacy Management](#)).
  - Purposes published on the Operator's Product catalogue will be based on of the DPV WC3 v1 standard, with the restrictions indicated by the Operator
- Processing operations catalogue of the DPV WC3 v1 standard, with the restrictions of the Operator.
  - Processing operations related to profiling and automated decisions will be allowed, however, the Developer will not be allowed to transfer the data to third parties or carry out other subsequent processing for purposes other than those indicated.
- Context of the process derived from the catalogue of the DPV WC3 v1 standard, with the restrictions of the Operator.
- Duration and frequency of processing derived from the catalogue of the DPV WC3 v1 standard, with the restrictions indicated by the Operator
  - The Developer will not be able to persist the data received through the API in their systems and will only be able to use it under a "just in time" logic in the session and the specific interaction that is having with the user at that moment.
- **Consequences if the consent of the "Risks and Impacts"** catalogue of the DPV WC3 v1 standard is not granted, with the restrictions indicated by the Operator
  - The non-granting of consent cannot imply a negative impact for the client in such a way that he is forced to grant consent and, therefore, his choice is conditioned.
- **Provisioning on the Operator's platform:** Once the Developer has gone through the reading information, selection of Services and acceptance of legal terms, the process shall feature a call-to-action to proceed with the Service subscription with selected Operators.

Besides sharing Developer's information with each selected Operator if first time subscribing Open Gateway Services, as described in the first step of this flow, the Channel Partner will complete the subscription by registering the application on each one's platform including the following information:

- Application name – As given by the Developer
- Application description – As given by the Developer
- Application category – As given by the Developer
- Open Gateway Product to consume – As selected by the Developer in the previous steps
- Application’s purpose for the selected Open Gateway product – To be indicated by the Channel Partner as per Product definition and within the agreement with the Operator in the open gateway Term & conditions.

See GSMA Github Open Gateway Documents for an implementation guide on how the Channel Partner may perform this Developer and their application registration by using the Operator’s Operate APIs. Information on how to access GSMA Github is available in Annex A.

- **Developer Application Approval:** As a result of the Developer’s application registration on every selected Operator for the selected Open Gateway product, the Channel Partner will receive a registration ID from every one of them. Some Operators may enable automatic registration, while others may decide the application, including its Developer, should go through an asynchronous approval process whereby it can be rejected as a valid Open Gateway product consumer for one or several Operators.

When the registration is automatic for an Operator, the Channel Partner will receive application credentials from it for such application to authenticate the calls to its APIs and will keep them to perform the authentication on its behalf.

When it is not, the Operator may decide to provide app credentials on first instance and reject afterwards at its discretion, in which case the approval status will need to be handled by the Channel Partner by consuming the Operate APIs. On the other hand, the Operator may decide not to provide app credentials until the approval is effective. The Channel Partner can find out that this is the case by polling the Operate APIs to check the approval status.

#### 4.2.2.1 Operate APIs

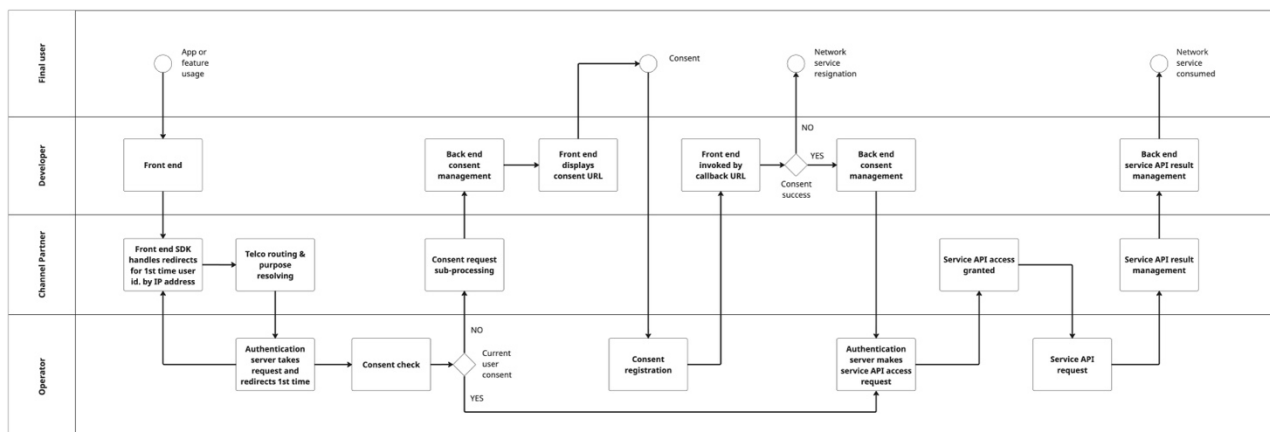
The registration of a Developer may be managed through specific Operate APIs standardized within TM Forum based on GSMA requirements and implemented by the Operators.

Function	Description
Developer and application management	Operators shall provide the capability for Channel Partners to request the registration of Developers’ applications on their Service subscription process. This addresses the end-to-end lifecycle management including validation of the Developer, modification of existing applications or management of T&C acceptance.  Enabling automation when onboarding Developers and registering their applications through the Channel Partners portal

## 4.3 Product Use

### 4.3.1 Service Consumption

The below diagram shows the end-to-end flow described above, for a use case initiated by the End user:



**Figure 3: End-to-end flow for Use case initiated by the End User**

Once a Developer has subscribed the Service on the Channel Partners portal and the latter has the former’s credentials to access the Open Gateway product on every Operator where their application has been registered, calls to the Service APIs may be performed through the Channel Partners API Gateway.

The following steps are involved in the Service consumption, and some implementations will depend on where the consumption is initiated from, either from the final user’s device (e.g., network performance use cases) or from the Developer’s backend (e.g., a bank consuming Open Gateway’s fraud prevention products):

- **Telco Routing:** The Channel Partners API Gateway should resolve to the target End User Operator. This can be achieved in different ways depending on the CAMARA ID management proposal to the API’s that could be (non-exhaustive)
  - From the End User’s device – The API Gateway will take device’s IP address, or any CAMARA identifier from the HTTP request and will resolve the Operator by the known IP pool allocation.
  - From Developer’s backend – The Developer shall know either the End User’s IP address or the phone number and provide the API Gateway with it so that it can resolve the Operator.
- **Authentication:** Check GSMA GitHub for implementation details of the different authentication methods. Information on how to access GSMA Github is available in Annex A. From the Service consumption flow perspective, once the target Operator has been identified in the previous step, its authentication server shall be called from the Channel Partners API Gateway prior to the call to the Service API to request an access token:
  - **From the End User’s device** – Developer’s application will need to use a front-end SDK published by the Channel Partner so its API Gateway can perform a



redirect to the Operator's authentication server. This way, the latter will reliably use End User device connection to authenticate them.

- **From Developer's backend** – The Channel Partners API Gateway will take the End User's phone number or IP address provided by the Developer's application. It will be included as a reliable identification inside a signed token on the call to the Operator's authentication server for it to authenticate the End User. If explicit consent is needed from the End User, a sub-flow will open from this step, as described in the following section 4.3.2 [Privacy Management](#).
- **Service API call:** From the previous steps, the Channel Partners API Gateway will know which Operator's APIs the Developer's application call shall be forwarded to and will have an access token for that call to be authorized. Last step will be the Channel Partners API Gateway handling Operator's API response and forwarding it back to the Developer's application.

### 4.3.2 Privacy Management

Open Gateway exposes Operator capabilities by enabling easy to use APIs for Developers. First the application receives an access token after a Developer successfully authenticates and authorizes access, then uses the access token as a credential when calling the target API.

In those cases where these capabilities process End User's data to Developers, a correct management of this data in terms of privacy and security should be agreed within the relevant agreement.

When there is a specific End User and/or the API handles End User's personal information, the CAMARA API is required to use 3-legged access tokens, identifying:

- End User: Operator subscriber, on which the query or modification is made through the API.
- Developer: who will invoke API, consume information and/or modify some user's configurations.
- Operator: who provides access to the API and information or data consult/modification owner.

Where the API does not process End User's personal information 2-legged access tokens may be used as specified in CAMARA.

Both Channel Partner integration models shall enable Operators to directly manage the privacy of their End Users and give them control over their personal data. This means Operators will be able to directly obtain and manage the lawful basis for using the personal data of the End Users. The applicable lawful basis on each of the APIs depends on each Operator's jurisdiction. As such, Operators would need to do their own analysis as to which data protection laws apply to their data processing and which lawful bases are available to them.

#### 4.3.2.1 Consent

It is the Operator, and not the Channel Partner, who will collect such End User's consent and send it to the Developer because it is the provider of the network capabilities involved in the API consumed. In order to do that, the Operator will provide a privacy website and share URLs to the Developer where the final user will be redirected.

If the Service API consumed requires explicit consent, and it has not been previously registered or has expired:

- The Authentication response described in the previous section will include a consent collection URL from the Operator's website.
- The Channel Partners API Gateway will handle such response and will forward the consent URL back to the Developer's application.
- Developer's application will display the consent URL to the End User.
- The Channel Partners API Gateway will resume the Service consumption flow once the user consent has been collected by the Operator. GSMA GitHub for implementation details on how the Channel Partners API Gateway finds out that consent is given. See Annex A for information on accessing GSMA Github.

For use cases in which the Service consumption is not initiated from the End-user's device, the Developer would need to design a Service activation user flow, so the user consent is collected previously.

### 4.4 Product Support

#### 4.4.1 Developer Support

A support model, along with corresponding support processes, shall be readily available for Developers. This ensures effective management of the issues, problems, and incidents associated with Open Gateway Products.

This support should cover the following activities:

- **Incident Registration:** The Developer will be able to open incident tickets associated with the Open Gateway products.  
Each Channel Partner should implement the required support tools and make available to Developers. It is up to the Channel Partner to decide which tools to use and how they integrate with their global Service experience.  
All communication with Developers, as Service users, will be conducted solely by the Channel Partner.
- **Incident Analysis:** registered incident tickets will be analysed by Channel Partners first levels of support. They will identify the type of problem and, based on the specific categorization scale, they will forward to the specific responsible teams.
- **Incident Resolution:** the responsible teams will receive the specific incidents ticket and will perform a diagnosis of the problem identifying the root cause and performing the required corrective action to solve it.  
Dedicated Level 3 support teams will be deployed by both, Channel Partners and Operators in order to cover the different problems associated with the Service.

Incident escalation will be managed between Channel Partners and Operators, based on the identified root cause of the problems.

- **Incident Follow Up:** ticket incidents changes shall be registered, and this information shall be available for Developers.

It is essential to create an official communication channel between Channel Partner and Operators to facilitate the necessary Developer support flow.

- **Change Management:** the changes performed in the Operator's Open Gateway API exposure platform, including elements updates or programmed maintenance, should be communicated, and managed with affected actors.

These changes could have an impact on the Service and should be informed with clarity.

#### 4.4.1.1 Service management and Operate APIs

This communication within Channel Partners and Operators may be based on specific Operate APIs or Service Management to be standardized within the TM Forum based on GSMA requirements.

Function	Description
Service Status (Service Management API)	Operators need to provide to Channel Partners' customers with the capability to supervise the status of running APIs from their Open Gateway Products
Service Ticketing (Operate API)	Operators need to provide to Channel Partners with incident management capabilities mechanisms.

#### 4.4.1.2 Incidents Categorization

An initial categorization of potential incidents its defined in the following table:

Type of Incident	Functionality	Description	Impact
Service execution error	Aggregator error	Error registered in the execution of the service in Channel Partner Environment	Developers are not able to consume Open Gateway service
Service execution error	Developer Authentication	Developer Authentication failure when executing a Service (API)	Unable to obtain the access token to execute the API
Service execution error	API execution	General failure/error result when running an Open Gateway Service (API)	Unable to run API because of an error in the platform
Service execution error	API execution consent	Consent error when executing an Open Gateway Service/API	Unable to execute the API due to associated consents error

<b>Service use error</b>	<b>API use</b>	Incident when executing a specific service	The service associated with the API is not correctly applied (i.e. Failure to assign QoD in the SDF, Device location returns a wrong location)
<b>Service operation error</b>	<b>Ticket request</b>	Error when trying to report a service incident	It is not possible to open a service ticket
<b>Service billing error</b>	<b>Billing request</b>	Query/Incident related to Billing information	Unable to obtain Billing information from the Service.
<b>Service provision error</b>	<b>Service subscription</b>	Error registered when subscribing to a specific Service	It is not possible to register a subscription to a Service
<b>Service provision error</b>	<b>Developer registration</b>	Error when registering Developer/Application for using Open Gateway Services	Unable to register a Developer on the Operator's platform.
<b>Service request</b>	<b>Info request</b>	Information request	Solve query associated with an Open Gateway Service

## 4.5 Charging and Billing

### 4.5.1 Product Charging

Service Charging process will be performed based on the consumption of the Open Gateway Products and will involve the following activities.

- **Charging Calculation:** charging calculation will be implemented by the Operator based on the usage of the specific APIs.  
The calculation will be performed based on billable concepts that could be different depending on Open Gateway Product. Examples of these billable concepts are availability, events, time duration, or data volume.  
The information associated to these billable concepts will be managed by Operators, as they have the control and details of Open Gateway Product execution. Operators will implement the required calculation process to generate the CDRs (Call Detail Record) which include the associated data.
- **Share Charging Information:** charging information will be shared from Operator to Channel Partners to be able to generate the required billable Information.  
Operators are responsible for implementing the mechanism to share this information with the Channel Partners.  
Charging Information could be shared using two different approaches:
  - **Operator exposes information to Channel Partner:** the charging information will be exposed by the Operator using Operate APIs that the Channel Partner can invoke.  
Operators should implement these APIs and make them available to Channel Partners that will implement the associated process to manage charging information.

- **Operator loads the information onto the Channel Partner:** the charging information will be loaded to the Channel Partner systems by invoking their proprietary APIs.  
Channel Partners usually implement these types of APIs as part of their standard service. Operators need to implement the associated process to load the required charging information.

#### 4.5.1.1 Billable Concepts

Billable concepts are defined as a feature associated with the Service that can be measured and accounted for, and to which a value is assigned. The billing process will use these values to charge the Service.

An initial list of identified billable concepts will be:

Billable Concept Type	Description	Examples Associated Billing Models
Availability	Billable concept associated with permissions and availability to execute a specific Service/API.	Recurring/activation fee associated with the use of Services.
Events	Billable concept that will measure the calls or responses associated to a Service/API.	Fee associated with the number of API calls/responses performed
Time	Billable concept that will measure the time the Service/API has been active.	Fee associated with active minutes runtime of the Service
Data	Billable concept that will measure the traffic the Service/API has consumed.	Fees associated with the volume of data consumed by the Service

#### 4.5.1.2 Charging Aggregation levels

Depending on the business model, different concepts will need to be shared with the Developer so they can bill their customers. To do so, charging information should be aggregated to provide the required detail to implement the associated commercial models.

In general, it will be required to generate an “Aggregation at Application Developer Services level” where all concepts associated with a specific application of a Developer will be aggregated, allowing for a detailed breakdown of the entire consumption of a Service associated with this developer and application (i.e., The time associated with the Quality of Data (QoD) Service for Developer1 AR application)

#### 4.5.1.3 Operate APIs

The Operate APIs involved in the charging and billing flows are:

Function	Description
Consumption reporting	Information related to consumption of Service APIs is managed by Operators, who are the ones having an end-to-end view of the services and network resources.

Function	Description
	Definition of a unified way to report usage information of the Open Gateway API Products, so that Channel Partners can make it available to Developers accordingly

#### 4.5.2 Product Billing

Processes associated with charging, billing and payment will be implemented between Developer and Channel Partners and between Channel Partners and Operators, including the following activities:

- **Developer Billing:** The Developer's billing experience will in all cases follow the Channel Partners native billing process. Billing and fiscal details for Developers will be solely handled by Channel Partners, as they maintain the commercial relationship with Developers who use the Services. Furthermore, payment processing from Developers will be conducted using Channel Partners tools, with the Channel Partner taking full responsibility and control over these transactions.
- **Channel Partner - Operator Billing:** the billing process between the Channel Partner and the Operator depends on the Channel Partner Model (see Channel Partner integration models):
  - **Direct Invoice:** In the Wholesale Reseller model, Operators generate a direct invoice to the Channel Partner for the APIs terminated, and the required payment is performed according to the agreed commercial terms between both parties. Operators should implement into their billing systems the required mechanism to generate this specific Open Gateway invoice and be able to manage the payment from the Wholesale Reseller. Channel Partners should provide their billing fiscal information to Operators and be registered as a customer.
  - **Credit invoice:** In the Marketplace Aggregator model, Channel Partners deduct a percentage fee to the amount paid by the Developer and make an account deposit to the Operator for the remaining amount. Channel Partners would need to implement into their billing system a mechanism to perform this credit bond payment. Operator should provide their billing fiscal information to the Channel Partner and be registered as a customer.

#### 4.6 Responsibility assignment matrix

As a reference for the responsibility every actor shall take on the integration journey proposed, a RACI matrix is included identifying the following roles:

- **R (Responsible)** Those who do the work to complete the task
- **A (Accountable)** Approver or final approving authority
- **C (Consulted)** Those whose opinions are sought
- **I (Informed)** Those who are kept up to date on progress
- **Blank or N/A** Not applicable for this model

		Wholesale Reseller Model		Marketplace Aggregator Model	
Activity	Task	Operator	Channel Partner	Operator	Channel Partner
Legal Relationship Management	Define and sign Channel Partner - Operator Agreement (GSMA Open Service Agreement Template)	A, R	A, R	A, R	A, R
	Define Channel Partner Terms & Conditions		A, R		A, R
	Define Open Service Terms & Conditions C	A, R	I	A, R	I
Product description	Generate an aggregated Open Gateway Product Information into Channel Partner	A, R (Raw CAMARA APIs), I for others	A, R for aggregated APIs	A,R	A, R
	Load Product Description into Marketplace	N/A	N/A	A, R	
Pricing definition	Provide pricing information for OPGW Service to Developers	C for big account I	A, R	C for big account I	A, R
	Definition of Service pricing into Marketplace	N/A	N/A	A, R	
	Definition of Service pricing by Channel Partner		A, R	N/A	N/A
Product lifecycle management	Keep Operators' product list and product information updated	A, R	C, I	A, R	C, I
	Keep Open Gateway-based Services offering updated accordingly to Operators' product updates	C, I	A, R	C, I	A, R
	Stop maintain a version of APIs	A,R	C, I	A, R	C, I
Service discovery	Present Open Gateway-based Services for Developers as a Channel Partner native service	I	A, R	I	A, R
Developer subscription	Gather Developer's information		A, R		A, R
	Present detailed information of Open Gateway products	C, I	A, R	C, I	A, R

		<b>Wholesale Reseller Model</b>		<b>Marketplace Aggregator Model</b>	
<b>Activity</b>	<b>Task</b>	<b>Operator</b>	<b>Channel Partner</b>	<b>Operator</b>	<b>Channel Partner</b>
	Collect Developer's acceptance of Open Gateway Product T&C	A	A, R	A	A, R
	Developer's application registration on Operators' API exposure platforms	A, C, I	R	A, C, I	R
	Application and Developer approval flow	A, R	C, I	A, R	C, I
	Generate required API credentials to provide Developers with on app registration	A, R		A, R	
	Obtain required API credentials from each Operator and manage it on behalf of the Developer		A, R		A, R
Service consumption	API Gateway exposure or SDK publishing for Developer's integration in their applications		A, R		A, R
	Telco Routing to from the API Gateway to the proper Operator	A, R	A, R	A, R	A, R
	Implement the Authorization request on API usage by invoking Operator's Authorization server according to each API's Authentication method	A	R	A	R
	Implement API call execution	C, I	A, R	C, I	A, R
	API implementation and operation on Operator's production environments and execution on Operator's network	A, R		A, R	
Developer support	Provide Developers with support case tools		A, R		A, R
	Level 1 case resolution (Developer contact)		A, R		A, R
	Level 2 case resolution (Initial root cause analysis)	C, I	A, R	C, I	A, R
	Level 3 Channel Partner case resolution (Channel Partner platform technical issues)	C, I	A, R	C, I	A, R



Activity	Task	Wholesale Reseller Model		Marketplace Aggregator Model	
		Operator	Channel Partner	Operator	Channel Partner
	Level 3 Operators case resolution (Operator's API exposure platform or network technical issues)	A, R	I	A, R	I
Charging	Calculate product's charging information from APIs consumption	A, R	I	A, R	I
	Send detailed charging Information to Channel Partner	N/A	N/A	A, R	I
	Generate Channel Partner invoice according to calculated charging information	A, R	I	N/A	N/A
Billing	Manage Developers Billing (information and tools)		A, R		A, R
	Obtain payment from Developers		A, R		A, R
	Manage Channel Partner - Operator Billing (provide fiscal information for payments and tools)	A	R	R	A
	Perform Channel Partner - Operator payment based on Direct Invoice	A	R	N/A	N/A
	Perform Channel Partner – Operator bond payment based on a Credit Invoice	N/A	N/A	A	R

## **Annex A      Open Gateway Technical Integration Guide**

Details about technical documentation are available for discussion in Github - GSMA-Open-Gateway/Open-Gateway-Documents and reference implementation in Github – GSMA-Open-Gateway/opengateway-reference-implementation.

To obtain access to the Github repository please email Daniel Okonkwo [dokonkwo@gsma.com](mailto:dokonkwo@gsma.com) or Toyeeb Rehman [trehman@gsma.com](mailto:trehman@gsma.com).

## Annex B Document Management

### B.1 Document History

Version	Date	Brief Description of Change	Approval Authority	Editor / Company
1.0	16 February 2024	New PRD WA.101 to support Operators implementing Open Gateway through a Channel Partner	WAS & TG	TBA

### B.2 Other Information

Type	Description
Document Owner	Wholesale Agreements & Solutions
Editor / Company	TBA

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