Telefónica

Whitepaper

Architecture, requirements and use cases of the Carrier Billing Open Gateway API

Telefónica Open Gateway

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1. Introducción

1.1 Document Objective

The objective of this whitepaper is to provide a comprehensive understanding of the [CAMARA Carrier Billing API](#), focusing on its role in facilitating seamless transactions between telecommunications companies (telcos) and merchants. It aims to cater to a technical audience, including developers, engineers, and integration specialists, who are seeking to implement the API within their systems.

By delving into the intricacies of the CAMARA Carrier Billing API, this whitepaper aims to:

- Clearly articulate the purpose and functionality of the API within the context of Carrier Billing.

- Provide technical insights and guidance on integrating and leveraging the API effectively.

- Showcase the advantages and benefits of adopting the CAMARA Carrier Billing API for merchants and payment aggregators.

- Highlight best practices, recommendations, and real-world case studies to illustrate successful API implementations.

Through this document, readers will gain a solid understanding of the API's architecture, components, integration requirements, security considerations, and the overall workflow involved in leveraging Carrier Billing capabilities. It aims to empower technical professionals with the knowledge and tools necessary to integrate the CAMARA Carrier Billing API seamlessly into their systems, enhancing their payment offerings and enabling a frictionless experience for end-users.

Overall, the objective is to equip the technical audience with the necessary insights, guidelines, and practical examples to successfully implement and leverage the CAMARA Carrier Billing API, fostering a deeper understanding of its capabilities and potential for enhancing the payment ecosystem.

1.2 Background and Context of Carrier Billing

Carrier Billing, also known as mobile payment or direct carrier billing, is a payment method that allows users to make purchases or transactions and have the charges billed directly to their mobile phone carrier account. It eliminates the need for traditional payment methods like credit cards or bank accounts, providing a convenient and accessible payment option, particularly for mobile users.

The rise of smartphones and the proliferation of mobile applications and digital content have driven the demand for seamless and frictionless payment experiences. Carrier Billing emerged as a solution to address the challenges associated with traditional payment methods, such as entering credit card details or remembering login credentials.

Telcos, as providers of mobile network services, play a crucial role in enabling Carrier Billing. They act as intermediaries between merchants/aggregators and end-users, facilitating the payment process and ensuring the security and reliability of transactions. By leveraging their existing infrastructure and subscriber base, telcos can offer a streamlined payment option that is integrated into the user's mobile phone bill or deducted from their prepaid balance.

The context of Carrier Billing encompasses a wide range of digital goods and services, including mobile applications, in-app purchases, digital content (such as music, videos, e-books) and more. It has gained significant traction across various industries, including gaming, entertainment, media, and e-commerce, offering a convenient payment method for digital goods.

With the growing prominence of Carrier Billing, APIs like the CAMARA Carrier Billing API have emerged to provide standardized interfaces and protocols for seamless integration between telcos. These APIs enable secure and efficient communication, transaction processing, and billing management, ensuring a smooth payment experience for end-users.

1.2.1 EU Regulatory environment

The first Payment Services Directive (PSD1) was adopted in 2007. The Commission proposed to revise the Payment Services Directive (PSD1) in July 2013. The PSD2 entered into force on 12 January 2016 and EU Member States were given until 13 January 2018 to transpose it into national law

Under PSD1, payments made through a telecom operator were not covered. Under PSD2, the purchase of physical goods and services through a telecom operator now falls within the scope of the Directive.

The Payment Services Regulation (PSD2) is a significant regulatory framework governing online payment services within the European Union (EU). PSD2 sets the standards and requirements for payment service providers, including those involved in Carrier Billing.

Under PSD2, payment service providers involved in Carrier Billing must comply with stringent security measures and implement strong customer authentication protocols. This ensures the protection of consumer data and minimizes the risk of fraudulent

activities. Two-factor authentication, where users must provide at least two separate forms of identification, is one of the key requirements imposed by PSD2.

The regulation also emphasizes the need for **transparency** and consumer consent in payment transactions. Users must be fully informed about the charges, terms, and conditions associated with Carrier Billing before making a purchase. Payment service providers are required to obtain explicit consent from users, ensuring that they have a clear understanding of the payment process and any recurring charges.

Compliance with PSD2 and its associated regulations is crucial for payment service providers and telcos involved in Carrier Billing. By adhering to these regulations, they not only meet the legal requirements but also build trust with consumers and contribute to a secure and reliable payment ecosystem.

PSD3, or the 3rd Payment Services Directive, is an upcoming regulatory framework within the European single market area (EEA) that focuses on licensing and authorization for payment firms, strong customer authentication (SCA), open banking standards, protection against payment fraud, and aligning with the European Commission's Retail Payments Strategy. It aims to create a unified regulatory framework, harmonize approaches across EU member states, and cover all important market players in the payment's ecosystem. PSD3 is currently in the proposal stage, awaiting the final version after consultations with relevant stakeholders.

It is important for stakeholders utilizing the CAMARA Carrier Billing API to be aware of the applicable regulations, such as PSD2 or coming PSD3. PSD2 also updates the telecom exemption by limiting it mainly to micro-payments for digital services and includes transactions with third countries when only one of the payment service providers is located within the EU ("one-leg transactions").

In order to avoid the risk of exposure to substantial financial risks to payers, only payments under a certain threshold are excluded (€50 per transaction; €300 per billing month) and ensure that their implementation aligns with the security and authentication requirements mandated by the regulatory framework.

This ensures compliance, safeguards consumer interests, and promotes a trustworthy environment for Carrier Billing transactions.

1.3 Purpose of the Carrier Billing CAMARA API

The GSMA Open Gateway initiative, led by the GSMA (Global System for Mobile Communications Association), aims to drive collaboration and interoperability among telcos, merchants, and service providers in the mobile ecosystem. It provides a platform for industry stakeholders to develop and deploy innovative mobile services, including Carrier Billing solutions.

By participating in the GSMA Open Gateway initiative, telcos and merchants can leverage the collective expertise and resources of the mobile industry to accelerate the adoption and advancement of Carrier Billing services. The Carrier Billing CAMARA API aligns with the goals of the GSMA Open Gateway initiative by providing a standardized interface that enables seamless integration and interoperability among participating stakeholders.

Additionally, the CAMARA Telco Global API Alliance, facilitated by the GSMA, focuses specifically on fostering collaboration and standardization in Carrier Billing through the development and adoption of common APIs. The alliance brings together telcos from around the world to establish best practices, share knowledge, and promote industry-wide cooperation.

The Carrier Billing CAMARA API plays a significant role within the CAMARA Telco Global API Alliance by providing a standardized API that aligns with the alliance's objectives. It enables telcos to offer consistent and interoperable Carrier Billing services, regardless of geographical boundaries or technological differences. This promotes a global ecosystem where merchants can seamlessly integrate with multiple telcos, expand their reach, and offer enhanced payment options to a wider customer base.
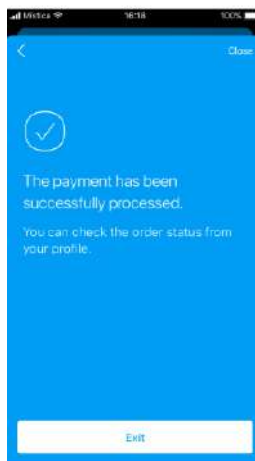
Through the GSMA Open Gateway initiative and the CAMARA Telco Global API Alliance, the Carrier Billing CAMARA API serves as a key enabler for collaboration, standardization, and innovation in the Carrier Billing ecosystem. It empowers telcos and merchants to leverage industry-wide resources and expertise, fostering a more efficient, secure, and user-friendly payment experience for mobile consumers worldwide.

2. Overview of the Carrier Billing CAMARA API

2.1 Definition of the Carrier Billing CAMARA API

The Carrier Billing CAMARA API is a software interface that enables applications to initiate and manage charges on a mobile line. It serves as a communication channel between the application, the aggregator and the mobile network operator, facilitating the billing process for digital goods or services provided by the application.

A typical carrier billing payment flow has four steps:

STEP 1
The customer selects the Carrier Billing payment method from the merchant's app to initiate their purchase.

STEP 2
The merchant presents the user with the payment card, including the payment conditions, terms, and regulatory compliance.

STEP 3
Once the user has reviewed and accepted the payment conditions, a unique One-Time Password (OTP) is generated and sent to the user's mobile device.

The OTP is a temporary, single-use code used to validate and authorize the transaction. The user will receive the OTP on their mobile device through a text message or push notification. The merchant will prompt the user to enter the provided OTP in the app or payment page to proceed with the transaction.

STEP 4
Upon successful completion of the payment process through Carrier Billing, the user is presented with a confirmation of the payment made.

The merchant optionaly will provide the user with a notification or message, indicating that the payment has been successfully processed. This gives the user the assurance that their transaction has been completed satisfactorily, and the corresponding charge has been applied to their Carrier Billing account.

With the Carrier Billing CAMARA API, application developers can integrate payment functionality directly into their software, allowing users to make purchases or transactions that are billed directly to their mobile line. The API provides a comprehensive set of functions and methods to handle the entire lifecycle of a payment entity, including creation, authorization, capture, and cancellation.

By leveraging the Carrier Billing CAMARA API, applications gain the ability to interact seamlessly with the mobile network operator's systems, ensuring accurate and secure billing for the provided goods or services. The API handles the intricacies of payment management, enabling developers to focus on delivering a seamless user experience while relying on the API to handle the payment entity's lifecycle.

Overall, the Carrier Billing CAMARA API empowers applications to offer a convenient and streamlined payment option that leverages the mobile line as the billing source. It simplifies the integration process and provides robust functionality for managing payment entities, enhancing the overall payment experience for users.

2.2 Advantages and benefits of using Carrier Billing API

The CAMARA API for Carrier Billing offers numerous advantages and benefits for both telcos and merchants. Here are some key arguments highlighting the advantages of using the CAMARA API:

1. **Usability:** The CAMARA API is designed to be developer-friendly and easy to set up and use. It simplifies the integration process for telcos and merchants, allowing them to offer Carrier Billing as a payment option quickly and efficiently.

2. **Ubiquity:** Carrier Billing provides a payment option that is accessible to a larger portion of the population compared to traditional credit cards. In Europe, for example, approximately 60% of mobile subscribers do not have a credit card. By leveraging Carrier Billing through the CAMARA API, merchants can tap into this significant market segment and expand their customer base.

3. **Security:** Carrier Billing eliminates the need for users to share their payment details online, reducing the risk of data breaches and unauthorized transactions. With the CAMARA API, customers can enjoy a secure payment method that safeguards their personal and financial information.

4. **Quick and Higher Conversion:** Carrier Billing offers a streamlined and frictionless payment experience, leading to higher conversion rates for businesses. With fewer clicks and a seamless checkout process, customers can easily complete their purchases, reducing abandonment rates and driving higher conversion rates.

5. **Mobile Centric:** Carrier Billing is the most native payment method for mobile devices, aligning perfectly with the mobile-centric nature of today's digital landscape. The CAMARA API enables merchants to leverage the primary distribution channel for digital services, ensuring a seamless payment experience tailored to mobile users.

By utilizing the CAMARA API for Carrier Billing, telcos, merchants and aggregators can capitalize on the usability, ubiquity, security, quickness, and mobile-centric advantages of Carrier Billing. This empowers businesses to enhance their payment offerings, reach a broader audience, increase conversion rates, and provide a seamless payment experience for their customers.

2.3 Common Use Cases

In this section, we will explore three common use cases for the Carrier Billing CAMARA API, highlighting its relevance and benefits in the following domains: Gaming, Mobility (Smart Cities), and Live Sports Streaming (OTTs).

2.3.1 Gaming

The gaming industry has experienced significant growth, particularly in the mobile gaming segment. The Carrier Billing CAMARA API provides a seamless and convenient payment method for in-app purchases, game subscriptions, and virtual currency top-ups. With Carrier Billing, gamers can make purchases without the need for credit cards or additional authentication, leading to higher conversion rates and enhanced user experience. The API streamlines the payment process, allowing gamers to enjoy uninterrupted gameplay while ensuring secure and efficient transactions.

Developer needs:

- Provide mobile customers with access to a gaming library through plans, enabling players to enjoy a wide range of games at their convenience, anytime and anywhere, based on their selected plan.

- Optimize and make the connection more stable for a better gaming experience (5G use case)

- Making gaming more accessible by paying through the phone bill

Additional use cases:

- Skins for games, create premium avatars, acquire super-powers or special weapons

- Unlock advertisement

- In-app purchase

2.3.2 Public transport

As cities embrace smart solutions, the Mobility sector plays a crucial role in providing efficient transportation services. Carrier Billing via the CAMARA API offers an alternative payment method for various mobility services, such as ride-sharing, public transportation, parking, and bike-sharing. Users can easily pay for these services directly through their mobile carrier accounts, eliminating the need for separate payment cards or cash. The CAMARA API enables seamless integration with mobility service providers, ensuring a convenient and frictionless payment experience for users in smart city environments.

Merchant needs:

- Provide solutions for people to move easily around/in the city, making it affordable for the citizens

- Get out of the most from new 5G connection use cases in Smart cities such as mobility, communications, services, etc.

- Making smart cities services more accessible by paying through the phone bill

Additional use cases:

- Car sharing / Bike sharing

- Monthly transportation fee

2.3.3 Live Sports Streaming (OTTs)

Over-the-top (OTT) platforms that provide live sports streaming services have gained immense popularity. The Carrier Billing CAMARA API enables users to subscribe to these services and make one-time or recurring payments through their mobile carrier accounts. This simplifies the subscription process, enhances accessibility for users without credit cards, and improves payment success rates. With Carrier Billing, sports enthusiasts can enjoy their favorite live events hassle-free, while OTT platforms can expand their customer base and drive revenue growth.

These use cases illustrate the versatility and advantages of utilizing the Carrier Billing CAMARA API across different industries. By integrating the API, stakeholders in gaming, mobility, and live sports streaming sectors can offer a seamless payment experience, increase conversion rates, and cater to a wider range of customers, ultimately fostering growth and customer satisfaction.

Merchant needs:

- Bundle offers – principally, free or discounted access to OTT services – are an easy way to scale and achieve a large customer base

- The battle for positioning is on and bundling space is very crowded so OTTs want to differentiate by partnering with telco providers knowing that multi-subscription ownership is the norm among SVOD users

Additional use cases:

- Tickets for events and live concerts

- Pay per view access to specific events such as premium and exclusive point of views, …

3. Architecture and Components

3.1 High-Level Architecture

The high-level architecture of the Carrier Billing CAMARA API comprises several key components that work together to facilitate seamless transactions between telcos, merchants, and end-users. The following are the primary components of the API's architecture:
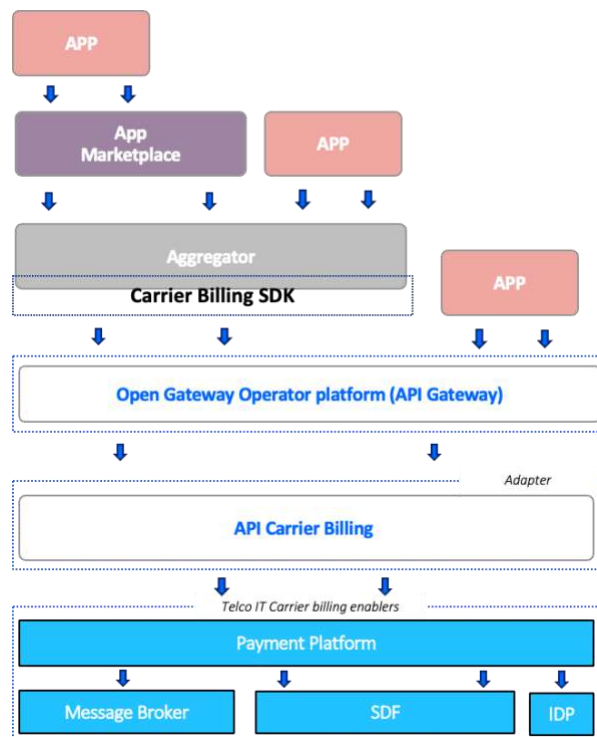
Where:

- **APP / Application Layer:** This layer represents the merchant's application or platform that integrates with the Carrier Billing CAMARA API. It encompasses the user interface, business logic, and other application-specific functionalities related to payment processing. Apps can be integrated into the value chain through three main models. Firstly, with a marketplace (e.g., Android Store, Apple Store, Samsung, etc.), by integrating the marketplace's SDK that incorporates the Carrier Billing API from the aggregator. Secondly, through a payment aggregator, usually by using the aggregator's own SDK. And thirdly, by directly integrating with the operator's API Gateway that exposes the Camara Carrier Billing API.

- **Aggregator:** The payment aggregator plays a crucial role in the architecture of the Carrier Billing system. It acts as a middleman between the telco and the merchant, streamlining payment transactions and offering additional services. By consolidating payments from various merchants and distribution channels, the aggregator provides a unified interface for merchants to integrate CAMARA Carrier Billing API through their own software development kits (SDKs). This simplifies the integration process, offers reporting and analytics capabilities, handles disputes and claims, and ensures efficient payment settlement for merchants.

- **Open Gateway Operator platform (API Gateway):** The API Gateway is a critical component in the architecture of the Carrier Billing system. It acts as a centralized and secure entry point for communication between different systems and services. In the context of the fourth platform strategy in Telefónica, the API Gateway, with its central element known as kernel, plays a pivotal role in implementing and managing services and applications. Kernel provides essential capabilities, such as security, traffic management, request routing, and data transformation, ensuring interoperability and consistency across systems. The API Gateway, simplifies system integration, centralizes security policies and access management, and offers scalability and adaptability to meet the evolving needs of the Carrier Billing ecosystem.

- **Payment platform:** The payment platform acts as an intermediary between the merchant's application and the telco's systems. It facilitates the secure transfer of payment data, initiates the payment request, and handles the communication between the merchant and telco systems such us OCS (Online Charging System, Mediation or Billing platforms.

- **Usability:** The CAMARA API is designed to be developer-friendly and easy to set up and use. It simplifies the integration process for telcos and merchants, allowing them to offer Carrier Billing as a payment option quickly and efficiently.

- **Ubiquity:** Carrier Billing provides a payment option that is accessible to a larger portion of the population compared to traditional credit cards. In Europe, for example, approximately 60% of mobile subscribers do not have a credit card. By leveraging Carrier Billing through the CAMARA API, merchants can tap into this significant market segment and expand their customer base.

Other elements involved in different flows are:

- **User Authentication:** Authentication mechanisms, such as OTP (One-Time Password) involve platforms to send SMS (via Messaging brokers) and/or other security authentication flows such us Authcode , are employed to validate the user's identity and ensure secure access to the Carrier Billing service.

- In the telecommunications industry, a Service Delivery Framework **(SDF)** enabler refers to a technology, platform, or solution that supports the implementation and operation of the Service Delivery Framework. It provides the necessary tools, capabilities, and infrastructure to facilitate service provisioning, management, and delivery. SDF orchestrate different flows and components, such as:

    o Security flow orchestration enablers employ advanced risk assessment mechanisms to analyze payment-related risks, such as fraud, payment limits or unauthorized users.

    o Online Charging System (OCS) is a critical component in the telecommunications industry that enables real-time charging and rating of services.

    o Billing and Mediation Systems: These systems handle the billing and monetization aspects of service delivery.

3.2 Typical Workflow

The Typical Workflow for a Carrier Billing payment in direct integration involves a series of steps to facilitate a seamless and secure payment process. Here is an overview of the workflow:
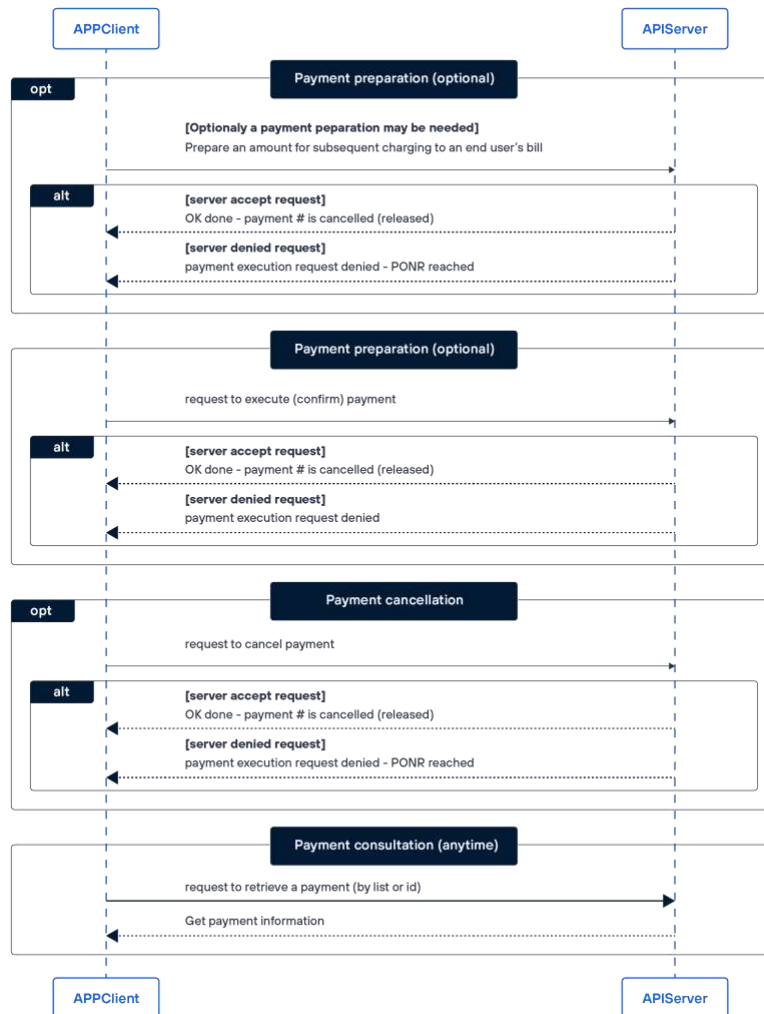
Step 1: Payment Preparation (Optional)

In the Carrier Billing payment workflow, the first step is Payment Preparation, which is an optional stage depending on the specific requirements of the merchant or the payment scenario. This step involves any necessary preparations or validations needed before initiating the actual payment transaction.

This step is optional because the API supports single-step payments where there is a combined prepare and charge scenario. It is a merchant's choice to include this step, which allows for intermediate ordering processes (such as user registration on a streaming platform) to perform a prior validation before initiating the provisioning process.

Step 2: Payment Request

In the Carrier Billing payment workflow, the second step is the Payment Request. This step involves the merchant sending a payment request to the telco's API Gateway to confirm the payment transaction. The merchant gathers the necessary payment information, such as the transaction amount, user identifier, and any additional details related to the purchased product or service. This is a final step where the transaction amount is deducted from the user's balance if the transaction is successfully executed.

These previous steps allow for payment to be made in one or two steps. Additionally, the API provides the following endpoints:

Payment cancelation

Payment cancellation refers to the process of revoking or voiding a payment transaction that has been initiated but not yet completed (in preparation state). It allows for the reversal of the payment and ensures that the user is not charged for the intended transaction.

Payment consultation

Payment consultation refers to the process of retrieving information and details about a specific payment transaction. It allows users, merchants, or relevant parties to inquire about the status, details, or history of a payment.

4. Technical Requirements and Considerations

This chapter provides a comprehensive overview of the integration flows needed for seamless integration with the Open Gateway Operator platform (API Gateway).

4.1 User identity

Understanding the identity of the end user is crucial for various reasons within the CAMARA API integration. Here are the key considerations:

- Determining the User's Operator: Knowing the user's identity helps resolve the specific operator to which they belong. This information is essential for authorization/authentication processes, ensuring that the user's credentials are validated against their respective operator's platform. It also allows for the appropriate routing of CAMARA API calls from the aggregator to the relevant operator platform.

- Associating Aggregator Access with the User: The user's identity enables the aggregation platform to associate their access and actions with a specific user. This association is useful for auditing application actions performed on behalf of

the user and implementing fine-grained fraud prevention measures. It helps in restricting access to certain users who may be abusing the APIs or engaging in suspicious activities.

- Privacy and Consent Considerations: In a privacy-centric system, identifying whether the user has provided consent is crucial, particularly when personal information is involved. Compliance with applicable legal requirements and regulations necessitates obtaining user consent when required. The user's identity facilitates determining whether they have given consent based on the applicable legal basis.

Identity poses two significant challenges that need to be addressed:

1. Choosing the Identifier: Selecting the appropriate identifier is essential. The reference implementation currently utilizes the IP address as the identifier, but the system is designed to be flexible, allowing for the addition of other identifiers as needed. This flexibility ensures adaptability to varying requirements and evolving best practices.

2. Sending the Identifier to the Aggregator: The mechanism for transmitting the user's identifier to the aggregator is handled through OAuth 2.0 / OpenID Connect. These industry-standard protocols provide a secure and standardized approach for exchanging identity information between the aggregator and the operator platforms, ensuring the protection of user data during transmission.

By understanding and addressing these challenges related to user identity, the CAMARA API integration can establish secure and privacy-compliant interactions while providing the necessary functionality and protection for both users and service providers.

4.2 Transparency Considerations

For certain Open Gateway products, explicit consent from the end user is required, especially during the initial usage, to authorize the Developer to access and utilize the network capabilities provided by the Operator through the Open Gateway.

It is important to note that the responsibility of collecting the final user's consent lies with the Operator, not the Channel Partner. Since the Operator is the provider of the network capabilities involved in the API consumption, they are responsible for obtaining the necessary consent from the end user. To facilitate this process, the Operator will provide a privacy website and share the relevant URLs with the Developer. The end

user will be redirected to these URLs to provide their consent to the Operator, allowing the Developer to access and leverage the Operator's network capabilities on their behalf.

Aggregator platforms can begin consuming operator Open Gateway APIs, specifically CAMARA APIs, on behalf of existing applications. These APIs may involve the processing of personal information, which necessitates a valid legal basis such as consent, legitimate interest, or contractual necessity. Operators prioritize a privacy-by-default approach to comply with privacy regulations like GDPR and protect user privacy.

In the following consumption flow of CAMARA APIs, some parts like consent capture are not depicted for simplicity. The flow enables the aggregation platform to access and utilize the APIs securely and compliantly. It ensures that user privacy is respected and legal requirements are met, allowing for various use cases like fraud prevention, service delivery, and quality of service optimization. The diagram provides a high-level overview of the flow, serving as an introduction to the general structure and interactions involved in consuming CAMARA APIs.

Consume a CAMARA API - summary
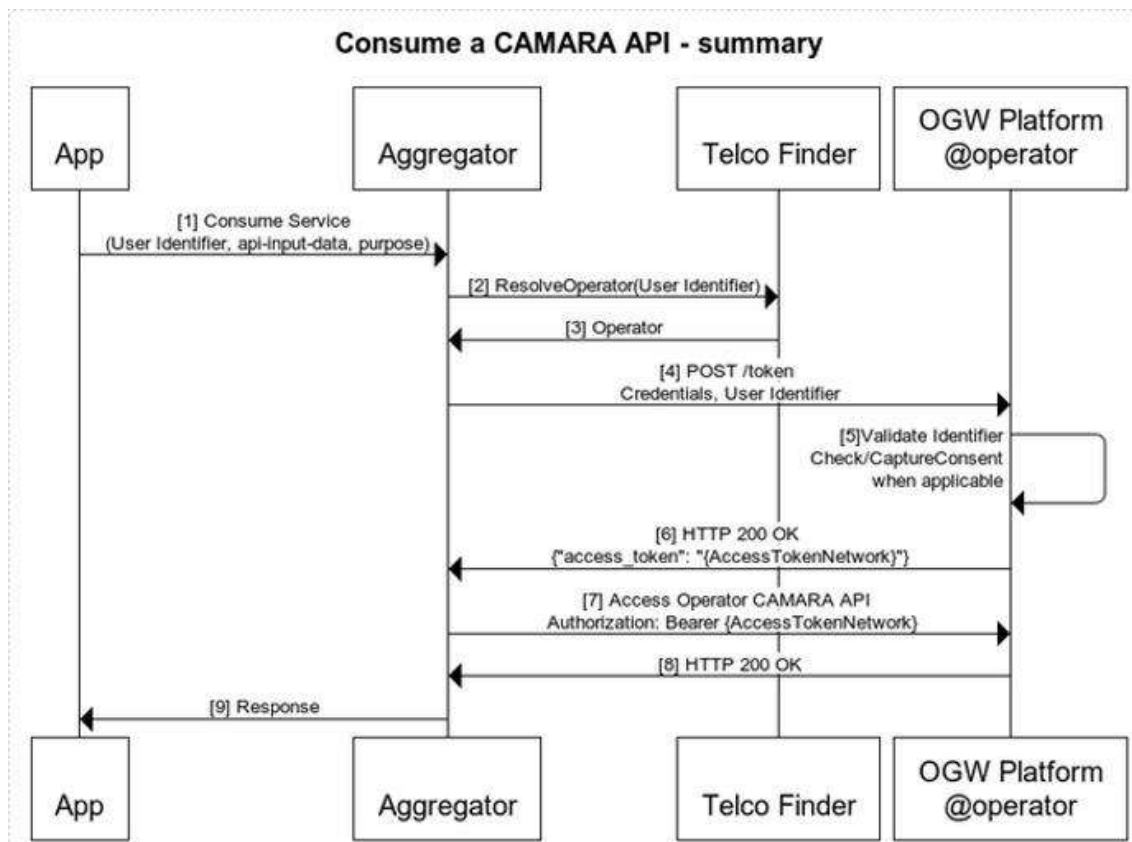
The initial step involves the application utilizing an aggregator service that requires a specific network capability provided by an operator. The aggregator receives a user identifier from the application (Step 1).

To determine the user's operator, the aggregator employs the telco finder mechanism (Steps 2-3). This allows the aggregator to identify the corresponding telco server it needs to communicate with, utilizing the CAMARA API.

Prior to invoking any CAMARA API, user authentication with the telco operator is necessary. This authentication process follows the standardized OpenID Connect (OIDC) mechanism, utilizing a backend-based OAuth2 Grant (such as CIBA or JWT-Bearer). This process enables user identification based on the provided user identifier. Additionally, consent verification and capture occur if required but not yet granted. If successful, the aggregator obtains an OAuth2 access token (Steps 4-6).

With a valid access token, the aggregator can proceed to invoke the operator's CAMARA API, as depicted in the final stages of the flow (Steps 7-8).

At this point, the aggregator can verify the application's authenticity and provide relevant information based on the specific use case (Step 9).

5. API Documentation

This API enables clients to initiate payment requests for one or more goods/services and retrieve payment-related information. The API offers the following endpoints/operations:

1. **Single-step payment endpoint:** Allows clients to request payment in a single step.

2. **Two-step payment endpoints:** Includes an endpoint for setting up a payment reservation and separate endpoints to confirm or cancel the reservation.

3. **Payment retrieval endpoints:** Provides a range of endpoints to retrieve information about a list of payments or a specific payment. The payment is identified by its unique paymentId.

4. **Notification endpoint:** Enables the API server to send notifications regarding the payment process to the specified webhook.notificationUrl, if provided by the API client.

6. Case Studies and Real-World Implementation Examples

6.1 Case Study 1: Kanto integrates a new payment method into its Living App for Movistar Plus+

Kanto's Living App is one of the digital experiences available in the "Apps" section of Movistar Plus+. It offers a catalog of songs from different genres to transform users' living rooms into a karaoke venue.

As a new feature, customers now have the option to pay for a subscription to enjoy unlimited access to the service for one year, in a simple and secure manner. The cost of the annual premium plan is charged directly to the Movistar invoice. This is made possible through the Open Gateway CAMARA Carrier Billing API, which transforms telecommunications networks into future-ready platforms. This initiative enables Telefónica to open up telco capabilities to a standardized and interoperable environment through global APIs. It also allows service providers like Kanto to seamlessly communicate with the network in real-time. The Carrier Billing API is a reality that will benefit users.

Tomi Toyosato, Co-founder and Chief Marketing Officer of Kanto, provides insights into the Living App and the advantages for businesses and users when integrating the new payment method through the carrier billing SDK.

Advantages for Kanto and Movistar Plus+ Users:

- What advantages does this new payment model, where the payment is charged directly to the invoice, bring to you?

This integration can significantly increase our payment acceptance rate by removing barriers and friction when paying for a subscription. Additionally, it provides greater security and customer confidence as no banking data is shared with the applications.

- And what about Movistar Plus+ users?

With this new payment method, subscribing to Kanto's Premium service is now easier and faster than ever before. There is no need to enter all the card details on the TV and waste time doing so. With just a couple of clicks, users can enjoy the unlimited Kanto experience. This innovation represents a great opportunity for us, and we are excited to offer users a simpler and more convenient way to subscribe to our platform.
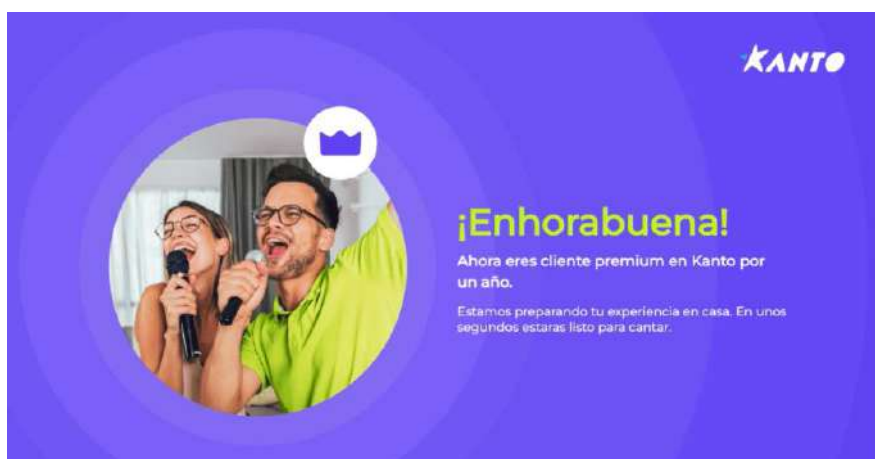
Seamless Integration of the Carrier Billing CAMARA API:

- How long did it take to incorporate this new payment functionality through the Carrier Billing CAMARA API?
The implementation was a seamless process that took us just a weekend to complete. The API provided us with an easy integration process, and we were able to find all the necessary documentation we needed to get started.

- Would you recommend other partners to integrate the Carrier Billing CAMARA API then?
Absolutely, the Carrier Billing CAMARA API is an excellent addition for any e-commerce platform or application looking to offer a simpler and more secure payment experience for their users. We highly recommend it.

7. Conclusions

The integration of the Carrier Billing CAMARA API has proven to be a valuable addition to the payment ecosystem, providing numerous benefits for both businesses and users. By leveraging carrier billing as a payment method, companies can streamline the payment process, increase conversion rates, and enhance the user experience. Users, on the other hand, benefit from a secure, convenient, and frictionless payment option that eliminates the need to share sensitive financial information online.

The successful integration of the API has demonstrated its effectiveness in various use cases, such as gaming, mobility, and live sports streaming. The flexibility and usability of the API have allowed businesses to tap into a wider customer base and provide seamless payment experiences across different digital services.

Furthermore, the integration process itself has been streamlined, with easy-to-use documentation and a smooth implementation experience. This has facilitated the adoption of the API by partners, enabling them to quickly leverage carrier billing capabilities and improve their payment infrastructure.

Looking ahead, the Carrier Billing CAMARA API holds great potential for further growth and innovation in the payment industry. Its ability to simplify payments, enhance security, and cater to the needs of both businesses and users makes it a compelling solution in an increasingly digital and mobile-driven world.

In conclusion, the successful integration of the Carrier Billing CAMARA API has paved the way for more convenient, secure, and user-friendly payment experiences. It has provided businesses with a powerful tool to drive revenue, while users can enjoy seamless payment processes and hassle-free transactions. The API's versatility and positive impact on the payment ecosystem make it a valuable asset for the future of digital commerce.

8. Other relevant information

You can join now the Telefónica Open Gateway Developer Hub to test our API, develop use cases with the power of the network and improve user experiences.
Join Developer Hub

If you are interested in the potential of Telefónica Open Gateway and you are willing to collaborate with us, you can access our exclusive Partner Program.
Join Partner Program

For further questions about the initiative, don't hesitate to contact our experts.
Contact our experts

9. References and Additional Resources

9.1 Additional information about Telefónica Open Gateway Initiative

Learn more about the Carrier Billing API in our website. On the other hand, if you need further information about Telefónica Open Gateway initiative or other available APIs, click here.

9.2 Additional information of the Carrier Billing CAMARA API

- The Carrier Billing CAMARA API official documentation is collected in the following GitHub Repository:
  Carrier Billing

- Meetings:
  The CAMARA Carrier Billing Sub Project conducts regular virtual meetings to ensure effective collaboration and progress. These meetings take place bi-weekly on Wednesdays from 16:00 to 17:00 CET. The virtual format allows contributors from different regions to participate conveniently, fostering global engagement.

- Results:
  The Sub Project is actively advancing towards its goals. Contributors are diligently working together to drive innovation and enhance the Carrier Billing CAMARA API. The ongoing progress reflects the commitment of the community in delivering a robust and feature-rich API that meets the needs of businesses and end-users alike.

- Contributorship and Mailing List:

    o To actively participate in the CAMARA Carrier Billing Sub Project and become a valuable contributor, individuals can subscribe to the mailing list at https://lists.camaraproject.org/g/sp-cbc.

    o Subscribing allows them to receive important updates, discussions, and announcements related to the Carrier Billing CAMARA API.

        ▪ Conversely, contributors who wish to discontinue their involvement can easily resign from their role by unsubscribing from the mailing list.

- Communication:
  The mailing list, sp-cbc@lists.camaraproject.org, serves as a means to connect and disseminate information among all contributors of the Sub Project. It

enables effective communication, allowing contributors to share insights, ideas, and updates related to the API development.

9.3 Glossary of Terms

TERM	DEFINITION
Aggregator	Aggregator or 'Channel Partners' aggregate Operator's CAMARA standardised APIs to build Open Gateway-based services and implement Operator end-point routing based on final user identification on the network.
API Gateway	An intermediary platform that allows communication between different systems and APIs, providing a centralized and standardized approach for accessing and utilizing APIs. The Open Gateway operator platform is the API GW platform in the operator that exposes standardized APIs so third-party services can consume them in a secure and consistent way. Operator platform APIs are based on REST/HTTP. OAuth 2.0 and OpenID Connect are standard security mechanisms to control access to the APIs. APIs are reachable from the Internet and all traffic is encrypted with TLS.
AuthCode	Authentication method to validate the user's identity during the authentication process.
CAMARA	CAMARA is an open source project within Linux Foundation to define, develop and test the APIs. CAMARA works in close collaboration with the GSMA Operator Platform Group to align API requirements and publish API definitions and APIs. Harmonization of APIs is achieved through fast and agile created working code with developer-friendly documentation. API definitions and reference implementations are free to use (Apache2.0 license).
Carrier Billing	A payment method that allows users to charge purchases to their mobile phone bill or deduct the amount from their balance.
Consent	The explicit permission given by the user for the processing of their personal data, as required by privacy regulations such as GDPR (General Data Protection Regulation).

IDP	Identity Provider, a service that authenticates and verifies the identity of users.
OCS	Online Charging System, a system used by telecom operators to manage and process charging requests in real-time.
Open Gateway	An industry initiative led by GSMA (Global System for Mobile Communications Association) that transforms telecom networks into future-ready platforms, enabling seamless integration and access to telco capabilities through standardized APIs.
Open Code Repository	A platform or repository where developers can access and collaborate on open-source code and projects, such as GitHub.
OAuth 2.0 / OpenID Connect	Standards and protocols for user authentication and authorization, allowing secure access to APIs and services.
Payment Aggregator	A service provider that consolidates various payment methods and processes payments on behalf of merchants or businesses. There are payment aggregators specifically dedicated to carrier billing, and they specialize in this payment method. These aggregators provide a platform that enables businesses to easily integrate carrier billing as a payment option for their products and services. They work closely with mobile network operators to facilitate smooth and secure payment processing through carrier billing.
Privacy-by-Default	A principle that ensures privacy protection is integrated into systems and processes by default, requiring explicit user consent for the processing of personal data.
PSD2	The Payment Services Directive 2, a European Union regulation that sets standards for online payment services, including security requirements and strong customer authentication.

SDK	Software Development Kit, a set of tools, libraries, and documentation that enables developers to build applications for a specific platform or system.
Service Delivery Framework	An architecture or framework that enables the delivery of services in a structured and efficient manner.
Subscription	A recurring payment arrangement where users pay a specified amount at regular intervals to access a service or content for a defined period.
User Identifier	A unique identifier associated with a user, such as an IP address or MSISDN, used for authentication, routing, and identification purposes.

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