Open Gateway Community Webinar #3
Exploring Innovation in the Digital Landscape
9th November 2023

Open Gateway Product Stream
GSMA Antitrust Policy

All GSMA participants must abide by the following rules:

**DO** clearly identify the positive purpose of each project and follow it

**DO** consult with legal in areas where you are unsure

**DON’T** enter into agreements that restrict other parties’ actions or creates barriers to market entry

**DON’T** discuss or exchange information on pricing, business plans, or any other confidential or commercially sensitive data

**DON’T** discuss or recommend any reference prices, or any particular pricing policy
Agenda

Welcome

Open Gateway API Certification & Compliance
  ▪ GSMA - Mark Cornall

Open Gateway Challenge
  ▪ GSMA – Lucy Thatcher

Reflections from MWC Kigali & Las Vegas
  ▪ Nokia – Mikko Jarva
  ▪ Chenosis – Waseem Amra

Open Gateway Update From Market Champions
  ▪ Telecom Argentina – Damian Sanchez
  ▪ Deutsche Telekom – Markus Kuemmerle
  ▪ Telkomsel - I Gusti N Panca
Open Gateway Certification

North Star: A developer should only need to change their credentials for global mobility

Mark Cornall
Powered by Open Gateway - Certification

Standalone Deployment
Channel Partner Deployment
Federation Deployment

Consistent API deployments
Reduced integration testing
Costs reduction
Improved time to market
Enables Global Catalogue

Pure adoption of CAMARA APIs
Initial flexibility on Authorisation Flows
Definitive migration to 3 leg flows for user data
Initial Focus on flows 2 and 4
Certification approach

Authorisation flow according to CAMARA

- Fully Compliant
- Partially Compliant

CAMARA API 100% Adopted

Fully Compliant
# Testing Matrix

<table>
<thead>
<tr>
<th>API</th>
<th>Function</th>
<th>Fully Compliant Flow*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device Location</strong></td>
<td>Location Retrieval</td>
<td>CIBA</td>
</tr>
<tr>
<td></td>
<td>Location Verification</td>
<td>CIBA</td>
</tr>
<tr>
<td></td>
<td>Geofencing Subscriptions</td>
<td>CIBA</td>
</tr>
<tr>
<td><strong>Carrier Billing Checkout</strong></td>
<td>One Step Payment</td>
<td>Authorisation Code</td>
</tr>
<tr>
<td></td>
<td>Two Step Payment</td>
<td>Authorisation Code</td>
</tr>
<tr>
<td></td>
<td>Payment</td>
<td>Authorisation Code</td>
</tr>
<tr>
<td></td>
<td>Payment Notifications</td>
<td>Authorisation Code</td>
</tr>
<tr>
<td><strong>Device Status</strong></td>
<td>Device Roaming Status</td>
<td>CIBA</td>
</tr>
<tr>
<td></td>
<td>Device Status Event Subscription</td>
<td>CIBA</td>
</tr>
<tr>
<td></td>
<td>Notification Callback</td>
<td>CIBA</td>
</tr>
<tr>
<td><strong>Quality On Demand</strong></td>
<td>QoS Sessions</td>
<td>CIBA</td>
</tr>
<tr>
<td></td>
<td>QoS Profiles</td>
<td>ClientCredentials</td>
</tr>
<tr>
<td><strong>Sim Swap</strong></td>
<td>Retrieve Date</td>
<td>CIBA</td>
</tr>
<tr>
<td></td>
<td>Check</td>
<td>CIBA</td>
</tr>
<tr>
<td><strong>Number Verification</strong></td>
<td>Phone Number Verify</td>
<td>Authorisation Code</td>
</tr>
<tr>
<td></td>
<td>Phone Number Share</td>
<td>Authorisation Code</td>
</tr>
<tr>
<td><strong>OTP Validation API</strong></td>
<td>OTP Management</td>
<td>ClientCredentials</td>
</tr>
<tr>
<td><strong>Device Identifier</strong></td>
<td>Get Device Identifiers</td>
<td>ClientCredentials</td>
</tr>
</tbody>
</table>

**Certification per API**

- **100% Adoption of the CAMARA definition**
  - Any Authorisation flow until Q2 2024
  - Partially Compliant

- **CAMARA Authorisation flow adopted**
  - Fully Compliant
Open Gateway Challenge
Lucy Thatcher
The GSMA Open Gateway Challenge

GSMA Open Gateway is a framework of common network APIs designed to provide universal access to operator networks for developers. It helps developers and cloud providers enhance and deploy services more quickly across operator networks via single points of access to the world’s largest connectivity platform.

This prize rewards developers who use public CAMARA APIs to create a commercial cloud-based service which:

• Uses multiple APIs from one or many mobile operators
• Is a solution for local markets and/or international markets
• And demonstrates business value created in a specific vertical industry, e.g. FinTech (reduce fraud); Automotive (real-time telemetry)

Please note a test bed is available by contacting networks@gsma.com.
The Prize

The winning company of the **Open Gateway Challenge** will receive a range of prestigious benefits, including:

- Invitation to receive the winner’s trophy on stage at the **GLOMO Awards Ceremony** during **MWC Barcelona 2024**.
- Listing on the GLOMO Awards website as a winner.
- Inclusion in a press announcement.
- Opportunity to collaborate with the team to create original content shared through relevant GSMA channels.
- Introduction to the Conference Content team responsible for programming the GSMA event series, including MWC Las Vegas, MWC Africa, MWC Shanghai, MWC Kigali, and the M360 Series.
- Mentions on MWC Barcelona’s official social media channels.

The **Open Gateway Challenge** is **FREE** to enter.
DevCon Challenge (GSMA)
Application/solution ideas

September 2023
Find out more about the Open Gateway Challenge and enter by

November 16, 2023
Updates from MWC Las Vegas & Kigali
Network as Code

Enter the world of ecosystem programmed networks
Why programmable networks?
Changing the relation between applications & networks

Over-the-top
Application
Network

EDGE
Application
Network

Better, new apps!

New innovations & agility of developer ecosystem!

Optimized use & monetization of the network!
Remote operations of drones over programmable network
our two network APIs:
Remote road-legal driving of cars
Network as Code
Available by December 2023 for application developers in selected networks
The power of the world’s mobile networks in your apps.

Create all-new 5G experiences with Network as Code. Make your apps network-aware.

What is Network as Code?

Nokia’s Network as Code, a platform empowering you to develop applications that seamlessly integrate with the network and unlock the potential to create something new, amazing, and powerful.
Network as Code platform

Developer experience

- Application showcases
- Examples & documentation
- Registration
- Developer env. & SDKs
- Sandbox

- App access tokens
- API catalog
- Charging & monetization
- Analytics
- Communities
- News and blogs

Network as Code services

- QoD
- Device insights
- Specialized network
- Network insights
- ID & consent
- Edge apps
- Accurate location
- Network sensing

API routing & mapping

Network/CSP

Enterprise/campus

Private wireless

Private edge

Enterprises (B2B & B2C)

Application with Network as Code SDK

API transaction management

Developers (B2B & B2C)

© 2023 Nokia
Powerful network capabilities

Specialized, custom network for application use

Emerging new applications, such as those for XR (Extended Reality) have unique and contextual needs for the network. Such applications might need assured very high quality video to be sent from specific devices to be down streamed to other specific devices, while minimizing the latency and optimizing data transfers over the network. Often, in such optimization, the data needs to be processed in relative proximity of the devices and the network needs to be adapted to that.

Network as Code Slicing capability enables applications to define and create on-demand specialized networks – or slices in telco-speak - for their purposes.

Slicing

All that is needed is a few lines of code to create a specialized network (i.e., slice) directly from the application. The application can control the network slice type, coverage area and SLA attributes, and thereafter the attachment of the device to the network slice.

Works on supported 5G mobile networks.

T Mobile
First application in minutes
Chenosis | MWC Kigali Reflections
Chenosis Participation

Stand

CEO Chenosis Presentation

Panel Session
The Fraud Threat Landscape

Closed Group Workshop
Closed Group Session
Partnership Announcements

TechAfrica News

12,787 followers

+++ Experian and Chenosis Partner to Drive Financial Inclusion Through Data in South Africa +++

...see more

Techish

210 followers

TransUnion Africa Partners with Chenosis to Boost Financial Inclusion Using Telecom Data

...see more

Chenosis Partners with Bothlale AI Solutions to Break Language Barriers in AI Interaction

Chenosis teams up with Bothlale AI to offer conversational AI in diverse African languages, enhancing accessibility.

OCTOBER 26, 2023

BY ARYUBIYA RANJAN
Open Gateway Market Champions
Open Gateway
Argentina Market Update

• Damián Sánchez
<table>
<thead>
<tr>
<th>Company</th>
<th>Event</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>telecom</td>
<td>Kick Off</td>
<td>Sept ‘23</td>
</tr>
<tr>
<td>Claro</td>
<td>Deploy</td>
<td>4Q ‘23</td>
</tr>
<tr>
<td>Telefónica</td>
<td>SIM Swap</td>
<td>1H ‘24</td>
</tr>
</tbody>
</table>

**Business Discussion - First Challenge API Alignment**

**SIM Swap** (Value Proposition: Fraud Prevention)
01 Integration Model

Wholesale Reseller Model ➔ Aggregators – *Meetings in Progress*
Agreement by Operator / GSMA Template

+ plusmo
+ telesign
+ sinch
+ infobip
+ VONAGE

02 API Roadmap

<table>
<thead>
<tr>
<th></th>
<th>telecom</th>
<th>Claro</th>
<th>Telefónica</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Verification</td>
<td>1Q '24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device Status</td>
<td>2Q '24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device Location</td>
<td>2Q '24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number Verification</td>
<td></td>
<td>1Q '24</td>
<td></td>
</tr>
<tr>
<td>Device Status</td>
<td></td>
<td>4Q '23</td>
<td></td>
</tr>
<tr>
<td>Device Location</td>
<td></td>
<td>1Q '24</td>
<td></td>
</tr>
<tr>
<td>Number Verification</td>
<td></td>
<td></td>
<td>2Q '24</td>
</tr>
</tbody>
</table>
Open Gateway | Next Steps

Industry

- GSMA Workstream Involvement
- MNO Technical & Legal Meetings
- Process Alignment - Data Protection & Consent Management
- Early Adopter Programs

MNO

- API releases – Platforms & Aggregators on boarding
- Open Gateway Platforms deploy
- Open Gateway GSMA Certification
Questions?

Damián Sánchez
damsanchez@teco.com.ar
Thank you!

Damián Sánchez
damsanchez@teco.com.ar
Open Gateway Local Champion Germany

Deutsche Telekom, Markus Kuemmerle
Open Gateway Local Champion Germany

Started in July 2023

Target is to have the first commercial customer on an aggregated API by MWC2024 and to present it in Open Gateway Summit event.

We decided to follow

• A safe path
• An extended path
Safe path

CAMARA version of MobileConnect APIs:

- **Sim Swap**: obtain information on any recent SIM pairing change related to the user’s mobile account

- **Number Verification**: verify the phone number associated with the SIM used in the device connected to the mobile data network

- **KYC Match**: Enables Service Providers to compare the information they have on file for a particular user with that on file (and verified) by the user’s Operator in their own KYC records (name, address)
Extended path

New CAMARA versions of the network APIs:

- **Quality on Demand**: set quality for a mobile connection (e.g. required latency, jitter, bit rate), get notification if network cannot fulfill

- **Location Verification**: check the location of a device

- **Device Status**: check if a device is losing connection to the network or gets reachable again, and the roaming status

- Including solution for **Consent Management**
We’re learning…

Productizing an API is a much bigger nut than proving a technical service:

- Legitimate interest
- Delegated consent vs user consent
- Naming
- 2 legged vs 3 legged OAuth
- Regulated terms KYC
- Decision making

… but discussions are necessary and bring value to move the ecosystem forward!
GSMA CAMARA Open API Overview

November 2023

TECHSTRA
Beyond Technology
Telkomsel Open Gateway Initiatives

Telkomsel is currently in progress of developing an open gateway architecture that includes an aggregator and a telco finder based on GSMA Open Gateway APIs which are defined, developed and published in CAMARA.

Key Highlight

1. **Northbound Interface as Unified Communications**
   Node to enable communication for federated and northbound communication using the CAMARA Specifications

2. **Telco Founder as a Service Router**
   A service router based on what application requested to enable sending request to the designated operator

3. **Federated Connections between Alliances**
   Enabling federated connection between alliances to enhance the resource API Capability through aggregator alliances

4. **Translator Services to attracts Resources API Provider**
   Provide a translation service which can help to connect with Resources API Provider

Action Plan

- **Reconcile & Settlement Flow Process**
  Mechanism of API Usage between MNO, still not yet discussed how the operational flow

- **System Integration**
  Telco CAMARA API should be integrated to enable resource sharing between MNOs

- **Business Integration**
  To enable revenue generating part of this initiatives

*All the initiatives is targeted to be done by the end of December*
Telkomsel API Business Cases Scenarios

Telkomsel have several business case scenario regarding the development use case of Open API in Indonesia.

**Use Case**

1. Telkomsel partnership with Aggregator
   - Telkomsel supplies telco CAMARA Standards API to global aggregator to enable global business.

2. Telkomsel as aggregator partner with Existing customer
   - Digihub as TSEL API marketplace will engage to existing customer to offer new API which will have much functionalities than the existing one.

3. Telkomsel as aggregator partner with new customer
   - Telkomsel expanding their API Marketplace Digihub, to offer new API CAMARA to new customer to open new business stream.
Several business potential between operators regarding GSMA CAMARA Open API, which can be leverage by Indonesia as new business opportunities.

### Single Aggregator Model
Telkomsel work as Aggregator to aggregate southbound API from Operator, and deliver it to the customer in form of CAMARA Specs

### Federated Model
All operators will work as aggregator for their own, other operators API consumed by using federated link

### Join Venture of All MNO in Indonesia
Telkomsel as Indonesia Champion for GSMA CAMARA Implementation have several initiatives regarding the development of CAMARA Open APIs in Indonesia
Thank You
Thank You

Please Join us at DevCon!