



API OVERVIEW

# Overview, use cases and case studies on the QoD Wi-Fi API

Telefónica Open Gateway

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**Description**

01



# The QoD Wi-Fi API, short for "Quality of Service-on-Demand Wi-Fi Application Programming Interface", is an application programming interface.

That enables third-party clients to dynamically configure and manage Quality of Service (QoS) behaviour's for devices connected to a user's home Wi-Fi network.

Also known as Home Devices API, its primary purpose is to enhance the quality of user experience for various applications and services running on home devices. It achieves this by offering on-demand QoS control,

which can be particularly beneficial for real-time applications such as virtual reality (VR), augmented reality (AR), video communication, cloud gaming, and voice over IP (VoIP).

# Features and Categorization

CAMARA	
COUNTRIES	
SECTORS	<p>ICT SERVICES</p> <p>MEDIA, ENTERTAINMENT &amp; XR</p>
SERVICIOS	CONNECTIVITY



# Characteristics of QoD Wi-Fi

02



# Overview

## Characteristics of QoD Wi-Fi



### Dynamic DSCP Assignment

Dynamic DSCP (*Differentiated Services Code Point*) Assignment is a numerical value included in data packet headers to specify their priority and how they should be treated within the network.

Think of Dynamic DSCP Assignment as creating express lanes on a digital highway: it enables the labelling of various traffic types (such as voice calls and video) for prioritized handling, ensuring that critical data arrives swiftly while less urgent data follows a slower path.

### Traffic Classification and QoS

Provides eight levels of traffic prioritization within the home network, ensuring that data flows are treated appropriately based on their importance and requirements. Briefly, these prioritization levels are:

- CS0 (Class Selector 0): Default traffic class for unclassified data.
- CS1 (Class Selector 1): Low-priority class for less critical traffic.
- AF11, AF12, AF13 (Assured Forwarding): Assured Forwarding classes with different priority levels.
- AF21, AF22, AF23: Additional Assured Forwarding classes.
- CS6 (Class Selector 6): For critical network control applications.
- CS7 (Class Selector 7): High-priority class for crucial network control traffic.
- EF (Expedited Forwarding): Reserved for high-priority traffic like VoIP.
- MAX\_ALLOWED: Represents the maximum allowed priority level.

### Targeted Home Network Devices

This API is purpose-built to oversee and fine-tune the performance of devices linked to the user's home router within the confines of the home network. It offers meticulous control and the ability to fine-tune the settings of these devices, guaranteeing a personalized quality of service (QoS) and an enriched user experience.

# Overview

## Characteristics of one standard QoD Wi-Fi



### Integration in home environment

With a standardized API, developers can seamlessly Quality of Service (QoS) capabilities into the home environment.

### Uniform Access to Telco Capabilities

The standardized API provides uniform access to various telco capabilities, such as QoD in home, through a single interface. This ensures consistency and versatility across different operators and markets.

### Enhanced Dev Experience

This API offers a user-friendly interface for configuring QoS settings. Users can easily customize the QoS parameters for their home devices without the need for advanced technical knowledge. This simplifies the management of network priorities, ensuring a smooth and efficient user experience within the home network.



**Use cases**

03

# Overview / Use Cases

## Enhancing Home Tele-Work Experience

The Home Tele-Work application leverages the powerful QoD Wi-Fi API to provide users with an exceptional remote working experience. With this solution, employees can accomplish the following:

- **Enhanced Communication:** Prioritize calls and video conferences for effective remote communication.
- **Seamless Streaming:** Ensure uninterrupted content streaming for presentations and videos.
- **Optimal Business Apps:** Maintain peak performance for critical business applications.
- **Dynamic Control:** Administrators can adapt network quality to meet changing needs, ensuring an exceptional home tele-work experience.



<p>OTHER RELATED APIs</p> <p><b>QoD Mobile</b></p>	<p>SECTOR</p> <p>TIC</p>	<p>DEVELOPER NEEDS</p> <ul style="list-style-type: none"> <li>• <b>Competitive Edge:</b> Stand out by offering top-quality telework solutions, meeting rising demand.</li> <li>• <b>Improved User Experience:</b> QoD Wi-Fi API enhances telecommuting apps with better communication, video, and data streaming.</li> <li>• <b>Easy Integration:</b> Streamline development with seamless API integration, saving time and resources.</li> </ul>
	<p>SERVICE</p> <p>HOME TELECOM SOLUTIONS</p>	

# Overview / Use Cases

## Empower Your Smart Devices with QoD WiFi API

Elevate your smart device offerings with the cutting-edge capabilities of the QoD Wi-Fi API. Provide your customers with an unparalleled level of control and performance for their connected devices, including thermostats, cameras, and lighting systems.. Seamlessly prioritize and optimize the performance of your connected devices, such as thermostats, security cameras, and lighting systems, ensuring efficient operation and uninterrupted convenience.

- **Effortless Prioritization:** Prioritize traffic for your smart devices, ensuring they receive the bandwidth and responsiveness they need for optimal functionality.
- **Smooth Streaming:** Enjoy uninterrupted streaming of security footage or content from your smart cameras and entertainment systems, all with minimal latency.



<p><b>OTHER RELATED APIs</b></p> <p><b>QoD Mobile</b></p>	<p><b>SECTOR</b></p>	<p>TIC</p>	<p><b>DEVELOPER NEEDS</b></p> <ul style="list-style-type: none"> <li>• <b>Product Performance:</b> Enhance the performance of your IoT devices, meeting the expectations of tech-savvy consumers who seek top-notch smart home experiences.</li> <li>• <b>Competitive Advantage:</b> Leverage QoD Wi-Fi API to differentiate your IoT devices in the market with advanced quality of service (QoS) capabilities, making them stand out among competitors.</li> <li>• <b>User Satisfaction:</b> Offer a user-friendly and hassle-free experience with seamless connectivity and control, leading to increased customer satisfaction and loyalty.</li> </ul>
	<p><b>SERVICE</b></p>	<p>CONNECTIVITY</p>	

# Overview / Use Cases

## Home Entertainment Streaming

Take your home entertainment services to the next level with the QoD Wi-Fi API. Seamlessly deliver uninterrupted streaming experiences to your customers, ensuring they enjoy a world of entertainment within their homes without disruptions.

- **Seamless Content Delivery:** Offer your customers uninterrupted streaming of movies, TV shows, and content, creating a captivating and immersive entertainment ecosystem.
- **Optimized Gaming:** Provide lag-free online gaming experiences with reduced latency, giving gamers the competitive advantage, they desire.



### OTHER RELATED APIs

**QoD Mobile**

SECTOR

MEDIA, ENTERTAINMENT & XR

SERVICE

CONNECTIVITY

### DEVELOPER NEEDS

- **Access to Advanced Features:** Developers can leverage the advanced Quality of Service (QoS) capabilities offered by the API to enhance the performance and efficiency of their applications.
- **Easy Integration:** The API seamlessly integrates with other network management solutions and automation tools, making it easier to incorporate QoS capabilities into broader and more complex network environments.

# Overview / Use Cases

## Next-Gen VR and XR Experiences Enhanced

Revolutionize your VR and XR applications with the QoD Wi-Fi API. Seamlessly optimize content delivery, reduce latency, and create immersive Virtual Reality (VR) and Extended Reality (XR) experiences that captivate users like never before.

- **Immersive Content Delivery:** Harness advanced algorithms for smooth, efficient content delivery, eliminating interruptions and enhancing immersion in VR and XR worlds.
- **Ultra-Low Latency:** Leverage Quality of Service (QoS) mechanisms to slash network latency, delivering a hyper-realistic and highly responsive experience, ideal for demanding VR and XR applications.



<p>OTHER RELATED APIS</p> <p><b>QoD Mobile</b></p>	<p>SECTOR</p> <p>MEDIA, ENTERTAINMENT &amp; XR</p>	<p>DEVELOPER NEEDS</p> <ul style="list-style-type: none"> <li>• <b>Efficient Content Delivery:</b> Developers need a solution to ensure that content, whether it's streaming video, VR experiences, or gaming data, is delivered efficiently and without interruptions.</li> <li>• <b>Multi-User Experiences:</b> Developers often want to create multiplayer and collaborative experiences in their applications. They need the capability to synchronize actions and minimize delays for multiple users.</li> <li>• <b>Precise Interaction:</b> Developers aim to enhance user interactions with virtual elements, and reduced latency and precise tracking are key to achieving natural and intuitive interactions.</li> </ul>
	<p>SERVICE</p> <p>CONNECTIVITY</p>	

**Case Studies**

04



# Overview / Case Studies

## Uninterrupted online gaming

Performance when playing online games at home is key to a good user in-game experience. Smart WiFi is a Movistar service that allows you to manage the connection of the different devices in a home connected to a Wi-Fi network. Thanks to the integration of the QoD Wi-Fi API, Smart WiFi can interact with the network in real time to configure appropriate gaming parameters for better signal stability. This means offering premium-quality home connectivity to enhance users' gaming experiences.



PARTNERS



SECTOR

MEDIA, ENTERTAINMENT & XR



**Start using  
QoD Wi-Fi API**

05

# Getting Started with QoD Wi-Fi API

Harness the power of Open Gateway and seamlessly integrate our API services into your app

Follow these initial steps for seamless API services to Developers within Channel Partners' environments, including Operators API Services integration for a cohesive product experience and efficient collaboration among stakeholders.



**Documentation**

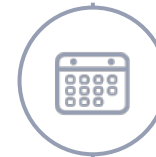
06

# Official Home Devices QoD CAMARA API Documentation

## Over 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).

## Camara is supported by:



## Meetings

- Regular Virtual Meetings
- bi-weekly, Thursday,
- 4:30pm CET



## Contributor ship & Mailing List

- ✓ [Subscribe](#)



## CCB (Subproject)

- ✓ [CAMARA Home devices QoD GitHub](#)

**FAQs**

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## QoD Wi-Fi API / FAQs

### What is the QoD Wi-Fi API, and what is its primary purpose?

The QoD Wi-Fi API is an Application Programming Interface designed to enable developers to control Quality of Service (QoS) for devices connected to a home network. Its primary purpose is to provide tools for optimizing data delivery and improving user experience in applications such as streaming, gaming, and virtual reality.

### What are the main technical features of the QoD Wi-Fi API?

Key technical features include content delivery optimization, network latency reduction, support for multi-user experiences, and customization of network environments for specific applications.

### Which types of applications benefit the most from the QoD Wi-Fi API?

Applications like video streaming, online gaming, virtual reality (VR), and multi-user collaborative apps benefit the most by ensuring optimal Quality of Service.

### How can I integrate the QoD Wi-Fi API into an existing application?

Integration is relatively straightforward. We provide detailed documentation and code examples to guide developers through the integration process.

### Does the QoD Wi-Fi API support multi-user applications?

Yes, the API supports multi-user experiences with synchronization and latency reduction features to ensure smooth collaboration.

### What is the role of the GSMA in standardizing the QoD Wi-Fi API?

The GSMA plays a key role in setting standards and guidelines for QoD Wi-Fi, ensuring consistency and interoperability across the industry.

## QoD Wi-Fi API / FAQs

### **Can the API be used to prioritize specific types of traffic, such as voice over IP (VoIP) or video conferencing?**

Yes, the API allows developers to prioritize specific types of traffic based on their QoS requirements, including VoIP and video conferencing.

### **Can the QoD Wi-Fi API be used in both residential and business network environments?**

Currently, the API is primarily designed and supported for residential network environments. It provides Quality of Service (QoS) enhancements tailored for home use cases. Support for business network environments may be explored in the future.

### **Can the QoD Wi-Fi API be used to control Quality of Service in online gaming applications?**

Yes, the API is well-suited for online gaming. It reduces network latency, synchronizes player actions, and ensures optimal performance in multiplayer games.

### **How do VR applications benefit from the QoD Wi-Fi API?**

The API reduces latency and optimizes content delivery, significantly improving immersion and the user experience in VR applications.

### **What advantages does the QoD Wi-Fi API offer for smart home applications and IoT devices?**

It allows customization of data traffic for home IoT devices, prioritizing actions such as lighting and thermostat control for a more efficient smart home experience.

### **Is it possible to use the QoD Wi-Fi API for home security and surveillance applications?**

Yes, the API is ideal for home security and surveillance applications. It reduces latency in real-time video streaming and ensures more effective monitoring.

**Related  
Resources**

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## Further information

### Join our Developer Hub

Join the [Telefónica Open Gateway Developer Hub](#) to test our APIs, develop use cases with the power of the network and improve user experiences.

### Enroll our Partner Program

If you are interested in the potential of Telefónica Open Gateway and you are willing to collaborate with us, you can [enroll our exclusive Partner Program](#).

### Subscribe our newsletter

Find out all about the latest of Telefónica Open Gateway in our [newsletter](#).

### Contact our experts

If you have any questions about the initiative, don't hesitate to [contact our experts](#).





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