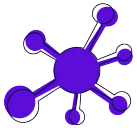
quobis : R&D plans focused on SNS R&I Work Programme 2025

quobis:

40+ engineers working in UC



Integrating telco-class solutions since 2006

JQs in Spain worldwide operations

Building products since 2012

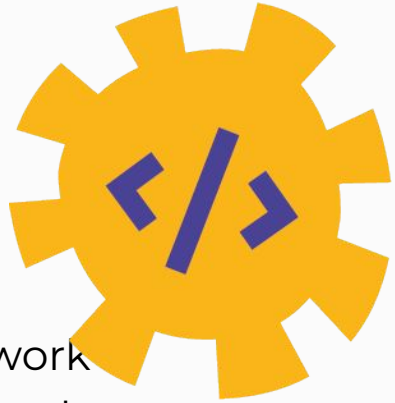
Leaders in voice interconnection

Industry awards & certifications

Quobis platform is being used today for adding voice, video & collaboration on theses scenarios:

- Private 5G networks
- Critical communications
- Real-time communications & IoT for industry
- Edge computing
- On-prem deployments
- Use cases with limitations due legal compliance
- etc.

Our R&D colleagues are working on....



- Artificial inteligence applied to video manipulation
- AI applied to voice transcription

- Prioritization of emergency media flows over congested network
- Management or real-time communication alarms. Intelligence to avoid false positives

- Security on real-time voice & video. Content protection, ciphering and attack protection.
- Machine learning applied to real-time communications routing

- Use of datachannel for machine control (servo, drone camera, etc).

Stream B-03: Non-Terrestrial-Networks

Quobis specializes in Voice and Video over IP and IMS networks, making us a valuable partner in the integration of Non-Terrestrial Networks (NTN) and Terrestrial Networks (TN) for future mobile services. As the industry moves toward seamless communication between satellite and terrestrial systems, our expertise in real-time multimedia transmission, signaling protocols, and interoperability can help address key technical challenges, including:

- Optimized Voice and Video Communication: Ensuring high-quality, low-latency audio and video services over hybrid NTN-TN architectures, even in challenging conditions such as high-latency satellite links.
- IMS and 3GPP Compliance: Contributing to the adaptation of IMS-based architectures for NTN, ensuring interoperability with existing terrestrial mobile networks.
- Protocol and Signaling Adaptation: Supporting the unification of SIP, WebRTC, and RTP/RTCP for satellite and terrestrial integration, while ensuring seamless handovers and session continuity.
- Network Resilience and Scalability: Leveraging our knowledge of distributed media processing and signaling routing to improve the reliability of NTN-based services for applications like Direct-to-Device (D2D) and PPDR (Public Protection and Disaster Relief).
- Testing and Validation: Bringing extensive experience in SIP call flow validation, network simulations, and real-world testing to assess and fine-tune the integration of NTN with 5G/6G architectures.

By leveraging our technical expertise, we can help advance the standardization, optimization, and real-world deployment of NTN-TN integrated systems, contributing to the success of this ambitious initiative.

Stream C-01 6G Telco (1/2)

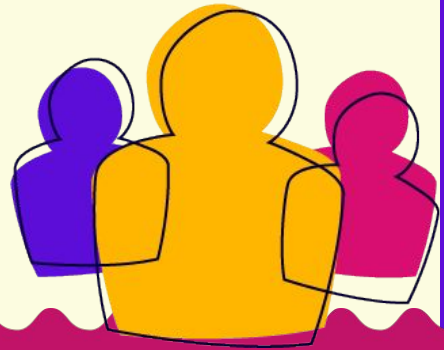
Quobis brings deep expertise in telco cloud, Kubernetes, CI/CD, WebRTC, SIP and IMS, making us a key contributor to the development of 6G experimental infrastructure and telco cloud and to the standardization of WebRTC protocols and telco APIs such as OpenGateway or CAMARA (where we lead the WebRTC working group) positioning us to support the integration of advanced cloud-native architectures in next-generation networks.

We can add value to the consortium in the following ways:

- Cloud-Native Telco Infrastructure: Leveraging our Kubernetes and CI/CD expertise to build, deploy, and manage scalable, disaggregated telco cloud solutions that align with 6G network slicing, edge computing, and softwarization principles, while keeping the open source alignment via the CNCF and other standardization bodies.

- Open & Standardized Telco APIs: Contributing to the design and integration of CAMARA APIs and other GSMA Open Gateway initiatives, ensuring interoperability across multi-tenant, private, and public networks.

- WebRTC & SIP for 6G: Driving the evolution of real-time communication by optimizing WebRTC and SIP protocols for cloud-native environments, ensuring low-latency, high-reliability services in next-gen RAN, edge, and core networks. We cannot forget that the SNS need to be backwards compatible with existing telephony networks, where SIP plays a central role.



Stream C-01 6G Telco (2/2)

- AI-Driven Network Automation: Supporting the automation of telco applications through AI-native frameworks, enhancing the efficiency of service orchestration, anomaly detection, and traffic optimization.
- AI-Powered Security & Fraud Prevention: Implementing AI-driven security models to detect and mitigate fraud, identity spoofing, and cyber threats in real time. Our expertise in machine learning for anomaly detection enables proactive monitoring of network traffic, securing the 6G telco cloud against evolving threats.
- End-to-End Validation & CI/CD: Implementing continuous testing, validation, and deployment pipelines for experimental 6G infrastructures, ensuring robust, real-world-ready solutions.

With our strong background in AI-driven security, telco innovation, and cloud-native deployments, we are well-positioned to help shape the future of 6G, ensuring its scalability, efficiency, and resilience against cyber threats.

Stream D-01: SNS Trials and Pilots (T&Ps) with Verticals

We can add value to the consortium in the following ways:

- Evaluation, Measurement, and Validation of 5G/6G Technologies: Implementation of end-to-end (E2E) testing and CI/CD pipelines for continuous validation of experimental 6G infrastructures, and evaluation of KPIs/KVIs in vertical scenarios, providing key metrics for network and service optimization.
- Cloud-Native Telco Infrastructure for 6G: Development and management of cloud-native architectures based on Kubernetes and CI/CD, enabling the integration of edge computing, slicing, and softwarization in 6G; and use of open standards and contribution to CAMARA APIs and Open Gateway, ensuring interoperability in multi-tenant environments and public/private networks.
- NTN-TN Integration in 6G Networks: Optimization of voice and video over NTN-TN architectures, ensuring service continuity and low latency in hybrid environments; and adaptation of IMS and SIP/WebRTC protocols for compatibility with non-terrestrial networks, facilitating interoperability in critical communications.
- Security and Automation in 6G: Implementation of AI for security and fraud prevention, with real-time anomaly detection to protect telco cloud infrastructures; and network automation through AI-native frameworks for traffic optimization and service orchestration.
- Contribution to Standards and the European Ecosystem: Participation in the evolution of GSMA, 3GPP, and CNCF standards, focusing on WebRTC, SIP, and open APIs; and support for adoption of solutions in vertical sectors and dissemination of 5G/6G technologies through open events and standardization activities.

Communication technology used by telcos and enterprises is overwhelming complex and increasing year over year.

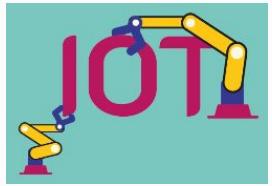
Quobis defeats this challenge, keeping people **communicating clearly, effectively and intuitively**.

quobis :

The **6G ON TIME project** reduces latency in real-time communications (SIP & WebRTC) over 5G/6G networks while ensuring QoS and optimal user experience.

Key Technologies and Innovations:

- **ECN for Congestion Management**: Evaluates Explicit Congestion Notification (ECN) in xURLLC scenarios to handle packet loss, jitter, and retransmissions.
- **RTCP-Based Media Adaptation**: Uses real-time media feedback (RTCP/SRTCP) to dynamically adjust frame rates, buffer sizes, and codec behavior.
- **Adaptive Codecs & ptime Tuning**: Leverages OPUS/SILK codecs and SDP-based ptime negotiation to reduce latency and improve media quality in real time.
- **WebRTC Integration**: Supports HD multicamera streaming and remote control over 5G, with third-party integration via exposed APIs.



https://quobis.com/es/6g-on-time/

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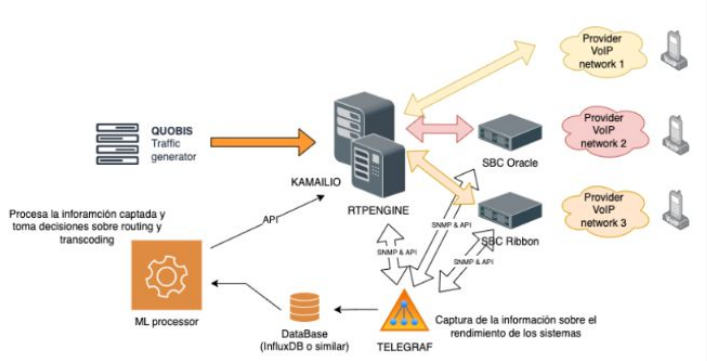
Financiado por la Unión Europea NextGenerationEU
Plan de Recuperación, Transformación y Resiliencia
UNICO I+D 5G-6G 2022: Programa de Universalización de Infraestructuras Digitales para la Cohesión (Infraestructuras de investigación, equipamiento científico técnico y Proyectos de I+D en 5G Avanzado) Expediente: TSI-064200-2022-18

quobis:

The **MLSIP project** optimizes the use of 5G, and eventually 6G, network capabilities to support unified communications, especially in real-time use cases that require high temporal precision.

Key Features:

- **Smart SIP Routing Module**: Learns from past SIP sessions to determine the best path for each new call.
- **Machine Learning Integration**: Enables real-time optimization of routing parameters and uncovers hidden performance patterns.
- **Dynamic Traffic Handling**: Selects optimal gateways based on criteria like prefixes, call groups, or time of day.
- **Real-Time Route Adjustment**: Continuously updates routing decisions based on live data and ML model output.



https://quobis.com/es/machine-learning-ml-sip/

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Plan de Recuperación, Transformación y Resiliencia

UNICO I+D 6G 2023: Concesión de ayudas para la financiación de infraestructuras de investigación, adquisición de equipamiento científico-técnico y proyectos de I+D en 5G avanzado del Programa UNICO I+D 6G 2023, en el marco del Plan de Recuperación, Transformación y Resiliencia. Expediente TSI-064200-2023-9.

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