Telefónica, Ericsson and MATSUKO successfully integrate Holographic Calls

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Integrating holographic calls directly into dialer apps would allow users to access and utilize this advanced communication technology seamlessly without the need for additional applications. Telefónica, Ericsson and MATSUKO, in close collaboration, have successfully completed one of the most complex demonstrations of IMS (IP Multimedia Subsystem) Data Channel technology to date. This groundbreaking Proof-of-Concept (PoC) showcases the potential of IMS Data Channel to revolutionize future 5G and 6G voice services with innovative applications, including holographic communication..

IMS Data Channel Technology: The Future of Voice Services

IMS Data Channel is a cutting-edge, standards-based technology that enhances existing IMS voice networks, allowing mobile network operators to deliver improved services to millions of users. This technology leverages the inherent strengths of telephony networks, such as quality-of-service, reliability, seamless mobility, and security, while introducing new capabilities for interactive and immersive communication. Since 2021, Telefonica has been at the forefront of IMS Data Channel innovation, executing various PoCs with partners including Ericsson and MATSUKO. The goal has been to demonstrate the feasibility and potential of integrating this technology into commercial services, particularly on 5G smartphones.

Holographic Communication: No need for Additional Applications

The recent PoC focuses on developing and testing holographic communication services, as part of the 6G-XR European project, which aims to bring holographic communication closer to reality. The companies successfully demonstrate holographic calls using IMS Data Channel compliant devices from Samsung Galaxy S series, where a caller face and torso can be captured and transmitted as a real-time

hologram to the receiver. In this PoC each contributor plays crucial role:

- Telefónica: Coordinates PoC activities and is ultimately responsible for providing the service.

- Ericsson: Provides IMS infrastructure and services to make this holographic communication a reality..

- MATSUKO: Provides holographic technology and applications for viewer and presenter.

The PoC achieved several significant milestones. It demonstrated the transmission of a one-way hologram (from presenter to viewer) with two-way audio between them, using IMS infrastructure. The holographic service was seamlessly integrated into native smartphone dialers, eliminating the need for additional applications. Additionally, MATSUKO's advanced holographic service processed and reconstructed the hologram data in the cloud, ensuring high-quality performance.

Shaping Tomorrow: Future Work to Define Standards

The PoC also faced a number of challenges. Current 3GPP specifications lack standards for IMS Data Channel interfaces with third-party servers, which complicates broader implementation. Bandwidth and payload limitations for higher resolution holograms were identified, emphasizing the need for improvements in data segmentation and reassembly for better performance. Also, achieving perfect synchronization between audio and holographic video remains a technical challenge.

Looking ahead, the companies are committed to enhancing the user experience and the quality of holographic services. They plan to focus on improving the user interface with features like RGB background integration, 3D controls, and better hologram manipulation. Additionally, they aim to further improve the overall quality of the holograms and explore the implementation of two-way call. The teams are also working towards defining the necessary standards and interfaces to support the widespread adoption of IMS Data Channel technology, ensuring it can be effectively used in future applications.

We are thrilled with the progress made in demonstrating the

> capabilities of IMS Data Channel for innovative applications like holographic communication. This technology holds immense potential for transforming the way we connect and communicate, leveraging a widely spread IMS network already used by millions of customers.

said Cayetano Carbajo Martin, Core & Transport Director, Chief Technology & Information Office at Telefonica S.A.

> In this world of interconnected experiences, IMS Data Channel technology is propelling us toward a future where holographic calls seamlessly integrate into our everyday lives. We're proud of the progress we've made, and I'm excited for what lies ahead!

said Matus Kirchmayer, Co-founder and CTO at MATSUKO.

> The breakthrough in this rich area of telecoms technology truly demonstrates how we may experience daily communication in the future. The work completed in this partnership is an essential element in driving the whole industry forward, and we're looking forward to continued collaboration, success and invention as we fully explore and exploit the capabilities of the IMS data channel.

said Jon Illana, Head of Solution Line Communication Services, UDM & Exposure, Ericsson.

This research was conducted in the context of the 6G-XR project under Horizon Europe and the 6G Smart Networks and Services Joint Undertaking (SNS), https://smart-networks.europa.eu/.

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