Case study

Deploying VoLTE to ensure voice calls on 4G networks

Alestra deploys VoLTE with the help of JSC Ingenium to guarantee voice calls in 4G networks

Background

Founded in 1996 in Monterrey, Alestra, Axtel's ICT services business unit, is a leader and precursor of Digital Innovation for companies and government. It has been a leader for **more than 25 years in digital transformation and has almost 15 years of experience in corporate innovation solutions.**

Through its portfolio it enables organizations with managed networking, collaboration, cyber security, cloud, systems integration and digital transformation solutions, in alliance with leading technology manufacturers in the world.

In 2019 the company makes the decision to become a **Mobile Virtual Operator** under the **Alestra Servicios Móviles** brand and the **coverage of the Altán Redes network,** with the aim of incorporating the mobile to its portfolio of services, launch its own offer of mobile solutions for the Business and Government segments and also operate as a **mobile services platform** for the enablement and operation of other MVNOs.

Challenge

Alestra's decision to become a mobile services platform for MVNOs also entails the decision to offer **the greatest radio network coverage to its subscribers** through **integration** with different **hosts.**

Integration with the different national mobile network operators **depends on the physical network of each of them.** In the case of the Altán network, also known as the Shared Network, of which Alestra has a 4% stake as an industrial partner, a new challenge arises, since it is a pure 4G-LTE operator and voice calls cannot

be made with current media; this would prevent integration with the agnostic network.

As it does not coexist with a 2G/3G network, it is not possible to make calls with subscribers operating on another radio technology. Until then, end-to-end telephony over IP voice was done with apps such as Skype or WhatsApp. However, this implied that both parties had to have the application installed, and that the quality was not guaranteed, since it depended on third parties and did not allow emergency calls.

Altán, the Shared Network

Alestra is a consortium participated by several operators, created to promote a shared network nationwide coverage with 4G. The Shared Network is a 4.5G LTE mobile broadband network with low latency, high speed and indoor coverage. Altán is a wholesale and neutral network that offers 4.5G LTE coverage nationwide to operators that offer mobile phone and fixed internet services for the home. In 2020 the coverage of Altán covers 61,30% of the population and in 2021 it expects to reach 70%.
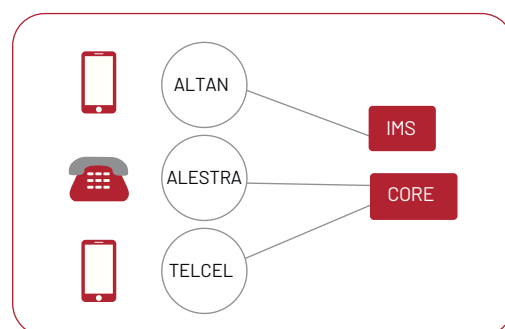
Solution

When a subscriber makes a call from the Altán network, **this operator sends the call via VoLTE** and Alestra has to process it. The only way to integrate with the agnostic network and guarantee calls is by incorporating **VoLTE**.

Technical solution

Thanks to the VoLTE technology of JSC Ingenium, Alestra integrates with the ALTÁN Radio Network and allows native calls in VoLTE from a 4G network of one Host to the 3G network of another different Host.

The interconnection solution deployed between the JSC Ingenium Core and the Altán network includes a tailor-made solution according to Altán's requirements and VoLTE interconnection to enable voice and SMS services.

The solution includes the deployment of several nodes, highlighting:

- **HSS** for the **authentication and registration o**f Alestra subscribers in 4G.

- **TAS** (Telephony Application Server) to ensure that Alestra subscribers on VoLTE enjoy the same telephony services as in a conventional telephone network.

- **SM-IP-GW** for sending SMS via SIP in VoLTE.

Calls, whether originating from the Telcel network or the Altán network, are routed in SIP to the JSC Core, where they are **validated, charged and routed** to the appropriate destination. If the termination belongs to an Altán subscriber, the call will be routed through the appropriate interconnection depending on the network in which it is registered.
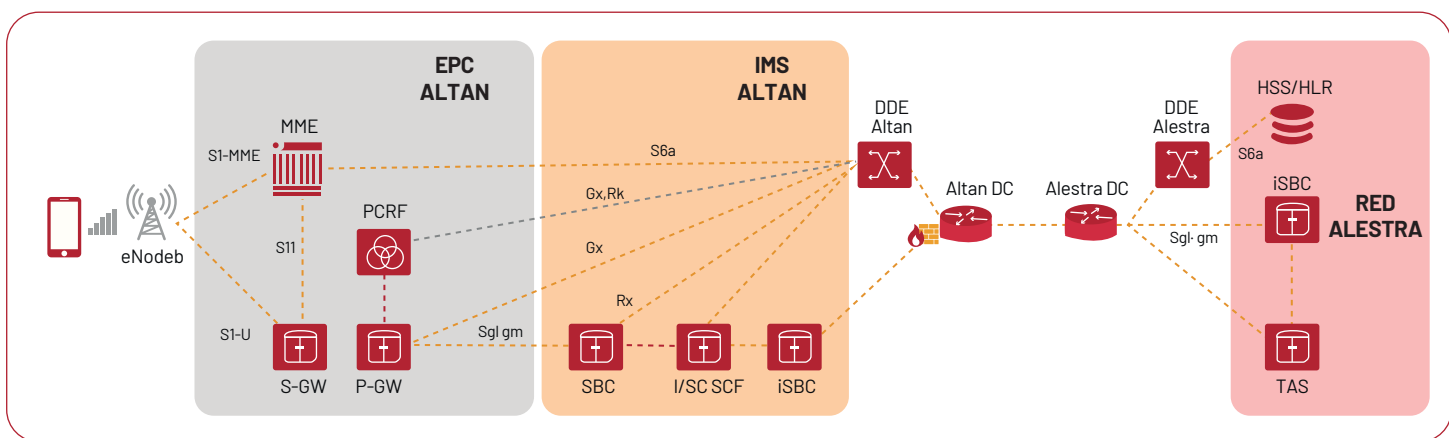
Advantages

The main advantage is **to have greater coverage,** allowing Alestra **to position itself against the competition** and enjoy the technological differential and innovation capacity of Altán.

The arrival of **5G** will make the situation change radically; the hardware and equipment will be different, and to make calls VoLTE will be essential. In this aspect, Alestra once again demonstrates its pioneering capacity, **anticipating the new scenarios.**

The deployment of VoLTE benefits **subscribers** as they enjoy **better call quality.** Its configuration guarantees clearer calls, high–definiton voice even

in noisy environments, lower battery consumption, **enriched conversations** (video calls, simultaneous sending of location and images, etc.)

In addition, during calls the navigation maintains the data rate in 4G, which allows to dial a number and to contact at the same time. Make a wifi call and continue it using data when leaving home.

In the case of MVNOs, the **physical interconnection with the Host** is the same as the data interconection, so the investment in new equipment is **much cheaper.**

RESULT

The incorporation of VoLTE allows Alestra to position itself clearly against the large mobile network operators by:

Having ALTAN coverage

Offer the subscriber not only an improvement in the quality of the calls, but also the   possibility of browsing and calling at the same time.

Cost competence.

Provide the same voice and SMS services to the user regardless of whether they are registered on one or another network, being different   network technologies.

JSC INGENIUM