

Case study

Case study  
November 2021

# MULTI-HOST, a differentiating service to compete for value



JSC INGENIUM

[www.jscingenium.com](http://www.jscingenium.com)

## Alestra becomes the first multi-host mobile operator in the Mexico region

The scope of the project focuses on the triple integration of the operator to offer greater availability to its customers

### History

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.

### Background

One of the main challenges in the Mexico region is its large size. Mexico is one of the three countries with the largest area in all of Latin America, with 1,943 million km<sup>2</sup>. Being such an extensive region, **no Mobile Network Operator is able to offer guaranteed quality coverage** that reaches all corners of the country.

In 2020, the radio network operator that offered the greatest mobile coverage in Mexico barely exceeded 83% of 3G coverage and 77.7% of 4G coverage in the country. Altán, the reference radio network operator of Axtel, in 2020 barely exceeded 60% of coverage of the national territory.

#### *Altán, the Shared Network*

*Altán is a wholesale and neutral network that offers 4.5GLTE 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%.*

“Deploying the first integrated multi-host service with three of the four national Mobile Operators has been a real challenge that has involved a complex and meticulous integration and operation work. Being the first positions us as an indisputable reference, compared to the large Mobile Network Operators, for companies and government services that need to guarantee their service throughout the national territory and be able to manage the quality of QoS service. Working hand in hand with JSC Ingenium has allowed us to have the technical capacity to develop and integrate new advanced services that are completely differentiating.”

**Christian Jeftee Galán Torres**  
**Mobile Services Director Alestra**  
**Móvil**

## Challenge

Alestra sets itself a completely innovative and revolutionary challenge in the region's mobile market, **offer a complete mobile phone service** - voice, sms and mobile data- 2G/3G/4G/VoLTE, and looking to the future also in 5G, that also allows it **to ensure to all its customers a guaranteed quality of the radio signal throughout the national territory**, including rural areas and less populated areas

This advantage will allow Alestra's customers to be able to offer mission-critical communications services to their customers with guarantees, ensuring 100% of communications and guaranteeing a quality of service, throughout the national territory, with the best radio network coverage in the whole country.



## Strategy and solution

### Brief description

To overcome this challenge and be able to offer its customers a solution with guarantees, Alestra focuses on deploying a multi-host solution that allows it to offer the best and most extensive radio network available in Mexico.

To this end, the operator closes agreements with 3 of the 4 Mobile Network Operators in the country:

- **Telcel**, the largest telephone company in Mexico, is part of Grupo América Móvil and has a market share of more than 60% and a coverage of 90% of the inhabited areas in the country.
- **AT&T México** is the third Operator, behind Movistar. It offers 3G and 4G services, and has a market share of 15.3%. Its advanced 4G LTE network covers nearly 100 million people.
- Shared/agnostic network **ALTAN** offers 4.5G LTE service.

## Technical solution - Description

### Capacities

The multi-host solution developed by JSC Ingenium will give both Alestra and the MVNOs that operate its platform the ability to decide:

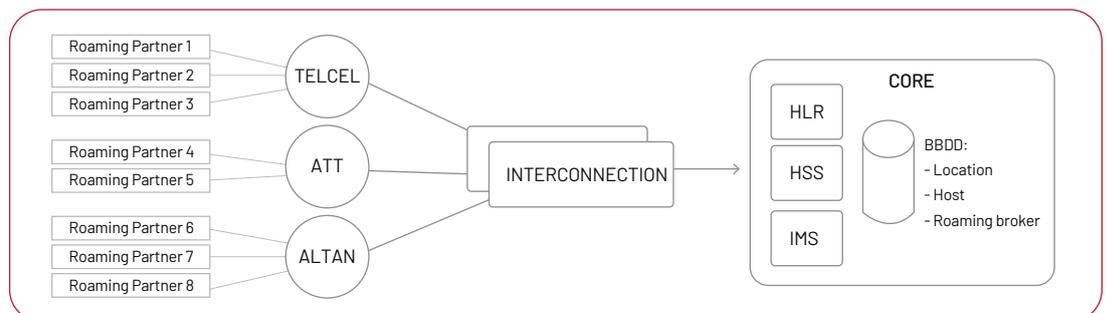
- which customers receive which coverage or mix of coverages
- what services and qualities of service are provided on which coverages

- with which roaming operator to operate at all times according to the most convenient criteria of price, quality...

All this depending on the national and international agreements that they have reached with each Host, and the agreements of these with their roaming partners.

### Technical description

- The system has to be aware of which subscriber it is, where it is located and in which of the interconnected Hosts -or their partners- it has requested coverage.
- Depending on the service contracted, the system must determine if that request is valid or not, to accept or deny it.



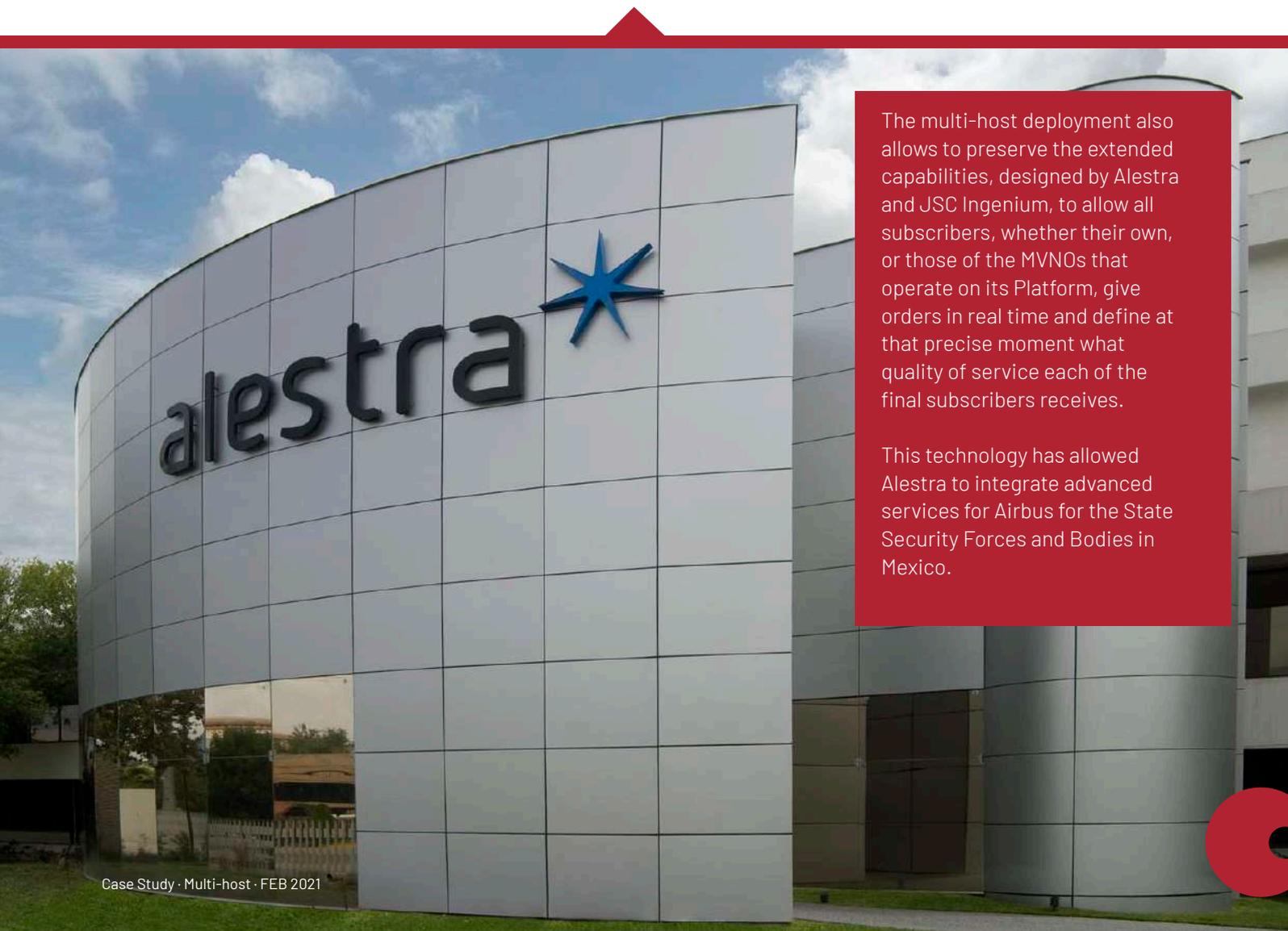
- If the request is accepted, the infrastructure has to remember where that access has occurred, both geographically and at the interconnection level, so that all subsequent services of the user are directed to the correct footprint and geographical location.
- Additionally, in the event that different Hosts require different IMSI identifier ranges to be used for their coverages, the infrastructure must also remember which is the last employee for all services to use that identifier.

- Coverage footprint information, geographic location, IMSI range... will be available for all charging systems, so that, if differentiated prices are charged for services in different coverage areas, they are applied correctly.

- The infrastructure deployed by JSC Ingenium also has the capacity to design and launch tailor-made tariffs according to the specific coverage needs of

each of its clients, ensuring that communications have the best coverage, speed and network, depending on each profile. In most cases customers do not need to have coverage with all operators; in other cases, however, customers need permanent connectivity... the casuistry in this sense is very broad. The infrastructure has the capacity to offer a tailor-made coverage solution for the case.

\* In the case of calls that are transferred from one Host operator to another for coverage reasons, it is important to note that this capability will depend on the handover agreements reached between the Hosts operators. The infrastructure allows the change of network coverage transparently.



The multi-host deployment also allows to preserve the extended capabilities, designed by Alestra and JSC Ingenium, to allow all subscribers, whether their own, or those of the MVNOs that operate on its Platform, give orders in real time and define at that precise moment what quality of service each of the final subscribers receives.

This technology has allowed Alestra to integrate advanced services for Airbus for the State Security Forces and Bodies in Mexico.

## Results

The triple integration carried out by Alestra allows to:

- Position itself clearly against the large Mobile Network Operators for having the best radio network coverage in the whole country, covering approximately 90% of the entire Mexican territory.
- Guarantee both its final subscribers and the MVNOs that operate on its platform - Companies and gubernamental services - the best signal strength, high speed, better data traffic and, above all, to have the highest existing availability in as much territory as possible.
- Have all available mobile phone services.
- Not being captive to a single Network Operator.
- Cost competence.
- Access to all state-of-the-art technologies deployed by Mobile Operators. Wholesale agreements with Mobile Network Operators provide access to all technologies deployed by Network Operators.

*The large hotel chain Xcaret, expanded throughout the region of Mexico, on many occasions has hotels in paradisiacal but remote areas in which there is no coverage and cannot enjoy the advantages offered by mobile telephony. Thanks to the new coverage and availability of Alestra, hotels can solve their problems and join a single operator that offers connectivity in all their hotels.*

## Future

JSC Ingenium is working on an infrastructure capable of monitoring the consumption of subscribers to detect the potential problems they are having and that this allows to balance, in a dynamic way, the coverage of the

different Hosts. In this aspect, technologies such as Artificial Intelligence or 5G will be capital for the definition of a new paradigm such as "Hyperelastic Networks".



## AIRBUS PROJECT

**Airbus**, a leading provider of secure communication and collaboration solutions, launches in 2019 **MXLINK, the first secure mobile network virtual operator (SMVNO)**, intended for Mexican public security and defense authorities. MXLINK is the first in Mexico and Latin America of its kind. MXLINK offers multi-host coverage, interoperability with the Tetrapol National Radio Communication Network, and end-to-end voice and data security from the platform of the most reliable data and telecommunications center in the country.

The deployed infrastructure allows to give orders in real time, for deciding which coverage to use

at the time of deploying a team to an area where there is a conflict, emergency or catastrophe, and what quality of service each of the final subscribers will receive. In this way their mobile phones play the role of walkie talkies, allowing the transmission of audio and video in real time, something totally revolutionary that Tetra systems did not allow to be carried out. The security team can be located in the critical area while its manager coordinates the operation from the plant, controlling the video signal provided by each of the members and allowing him to have a common line with everyone or launch orders one by one.

