



SUCCESS STORY SUMA MÓVIL

march 2019



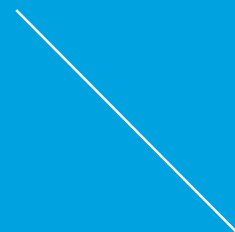
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Index

- 01** Company Info
- 02** SUMA Móvil Offering
- 03** CORE Platform
- 04** BSS Platform
- 05** SUMA services
- 06** Deployed and operative references in April 2019.



Company info



SUMA Móvil...

...is a subsidiary of [Grupo Ingenium Tecnología](#). It started to operate in Spain as a Mobile Service Platform in 2012 under the brand IOS –Ingenium Outsourcing Services-, using JSC Ingenium's MVNA technology, and the Orange radio network in Spain.

By the end of the first year of operating, the Company had 11 MVNOs deployed and operative: services for individuals and companies, services for super-niche operators, Quadruple play, Machine to Machine, Multi-IMSI, VoIP, and services for social groups and communities. The portfolio of brands operating under the SUMA Platform has a wide range of business possibilities for mobile telephony.

2015

In 2015, it reaches an agreement with its Host operator and starts to provide all its customers with 4G. By the end of the year, it has 16 MVNOs deployed and operative within its Platform, more than 100,000 customers and more than 1,200 promotional price plans, among pricing plans and operative bundles

2017

SUMA Móvil starts to provide services in Colombia as an MVNA Platform using the Tigo radio network. The company finishes the year with 3 MVNOs deployed and operative.



Dic 2018

With the aim of unifying the Company activity as an MVNA Platform, both at domestic (Spain) and international levels, the Company strategically decides to rebrand in Spain as SUMA Móvil Spain.

2019

Jan

SUMA starts 2019 with 30 operative brands within its MVNA technology; 26 of which are based in Spain, which makes SUMA the leading Independent MVNA Platform at a domestic level.

Apr

SUMA Spain begins to provide FTTH service to its first customers, and become the leading independent Converged Platform Triple-play in Spain.

Apr

SUMA Colombia reaches an agreement with Grupo Corbeta, one of the country's main business groups, to launch its MVNO under the Kalley brand.

Apr

SUMA Móvil officially begins to provide services in Chile as an MVNA Platform within the Movistar network-. The first MVNA to join the platform is Mundo Pacífico, a Chilean telecommunications operator that intends to bring in mobile phones, and to become a Quadruple-play operator.

SUMA Móvil Offering

SUMA Móvil offers 2G/3G and 4G mobile phone services as an MVNA Platform in three countries: Spain (HQ), Colombia and Chile, for a turnkey solution to companies that wish to operate MVNOs -service providers, brands. Its Full Core BSS/OSS technology has been fully developed in house, and gives hosted operators a high level of flexibility, independence and autonomy regarding the service operation in order to arrange their own SIMs, handle subscribers' data, create and launch new pricing plans, promotions, and the like, as well as carrying out maintenance work.

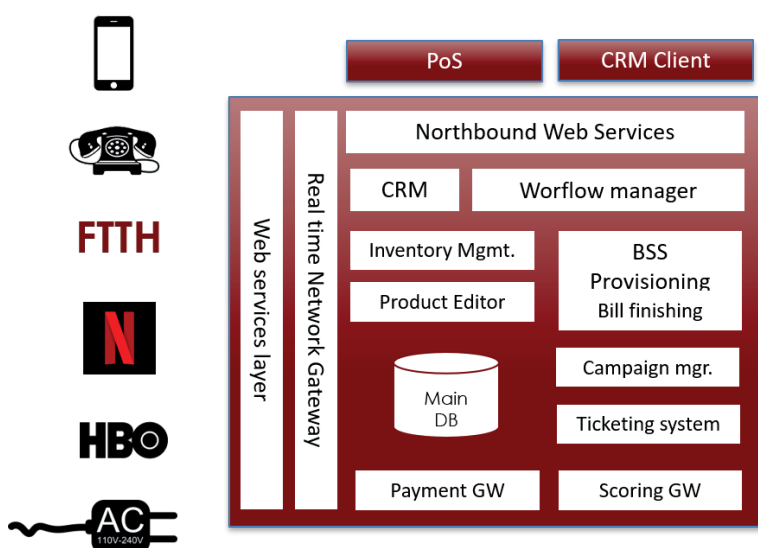
SUMA Móvil currently provides 3 different network operators:



As a Platform, SUMA offers the following main innovations, among others:

1. Convergent BSS system

SUMA's new BSS system has been designed to add new services: FTTH, Landline, TV contents, utilities... enabling to the hosted MVNOs the chance to quickly include these services in their portfolio and launch their own N-Play bundling offers.



April 2019

SUMA Spain starts offering FTTH service to the operators hosted in its multiservice and multitenant platform.

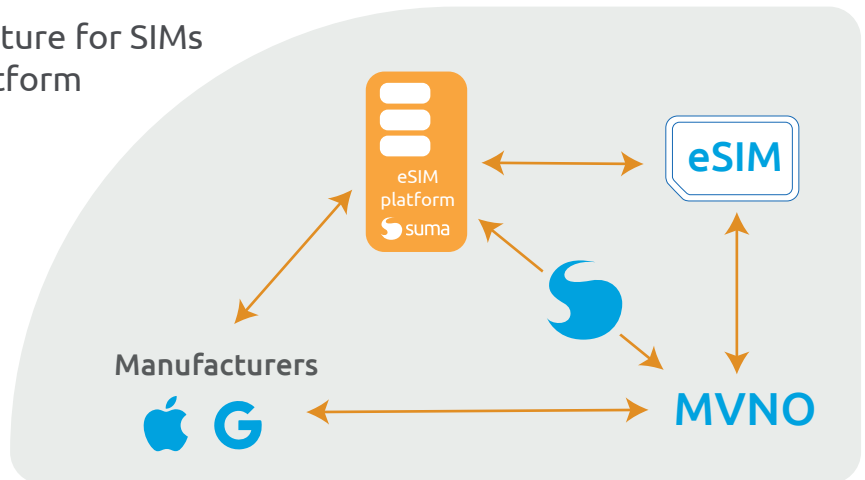
2. Full DPI

Full DPI analysis is embedded in our GGSN/PGW and is essential for application and services (f.i. Facebook, Whatsapp...) identification for the following data user cases:

- Traffic shaping
- Fair Usage Quota
- Charging out
- Customised, subscriber consumption reporting

3. eSIM Platform

- Remote provisioning architecture for SIMs
- Certified & Homologated platform
- Available in Q3'19



"BEST IN CLASS" REASONS

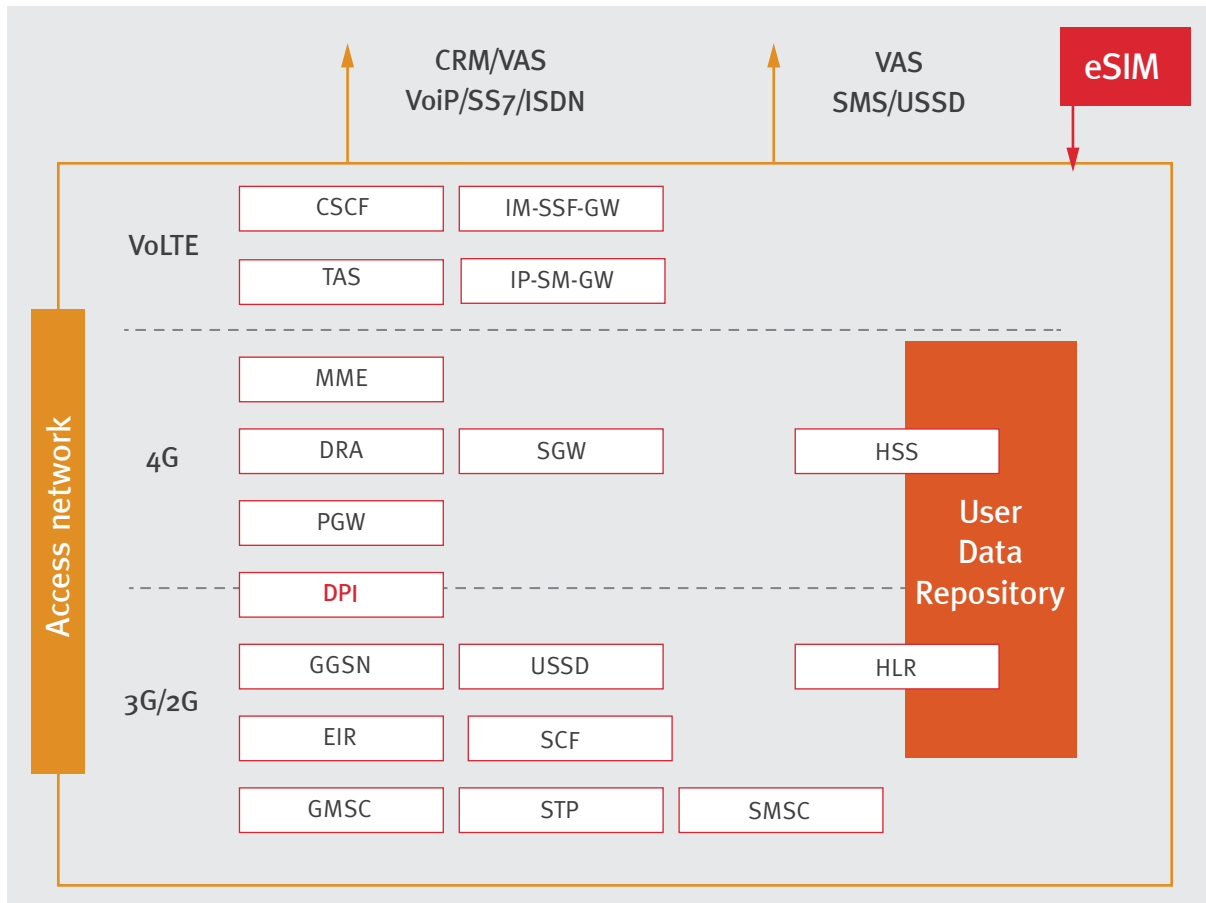
Full Core OSS/BSS Multi-service
Convergent Platform for companies
-operators, service providers,
brands...-

Full DPI

eSIM Platform

CORE Platform

- Complete 3G/4G Core Network. A comprehensive set of nodes are included in the MVNA Core Network



Multi-brand · Geo-redundant · Convergent · Proven Solution
Multi-site · Multi-tenant · Telco grade

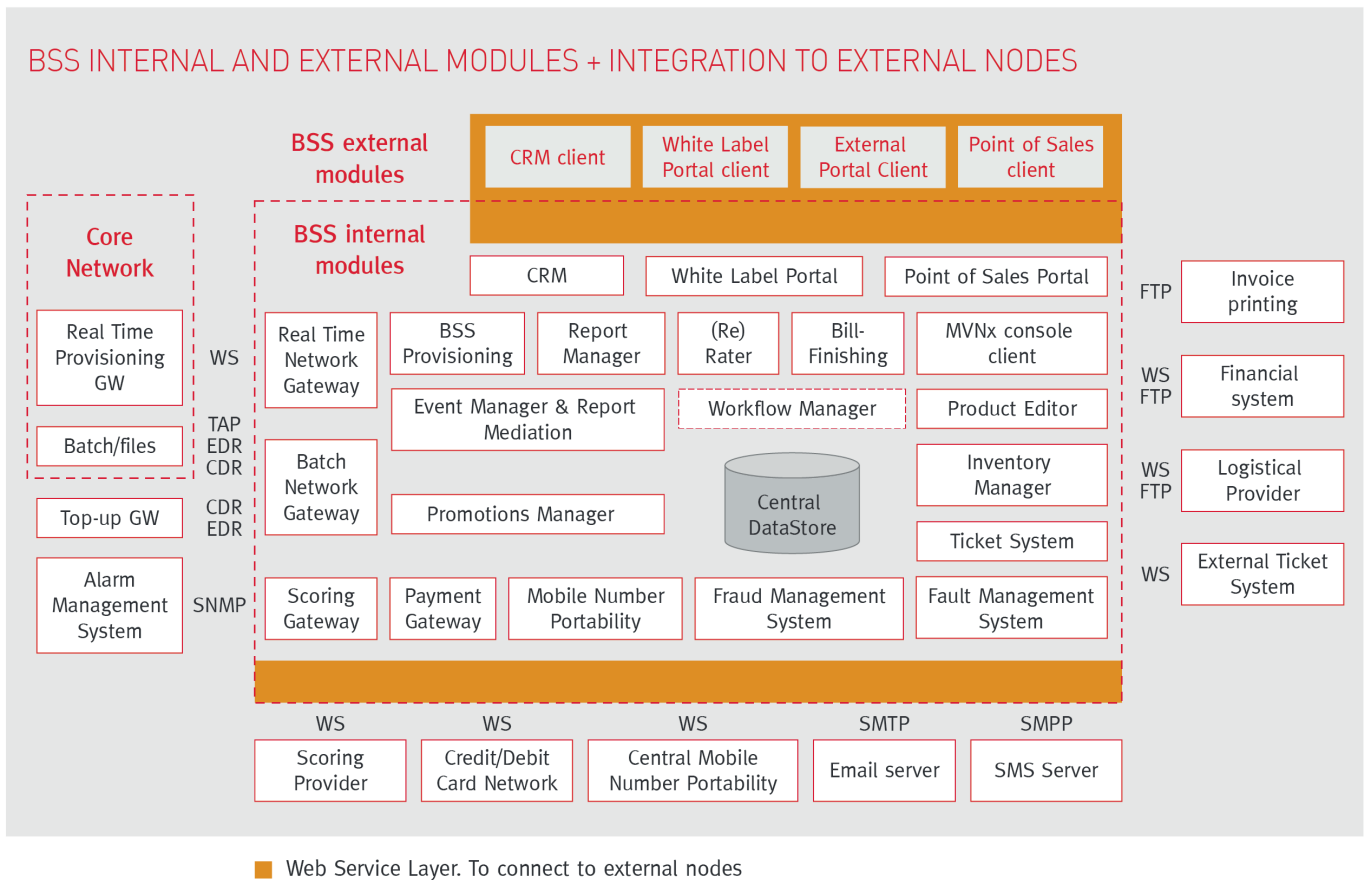
- Cloud deployment option (TaaS) on premise
- Value added services customizable on demand to meet serve targets
- Fully compliant to 3GPP standards -2G,3G,4G network nodes- and according to GSMA recommendations
- Cost effective solution
- End to end development cycle under control

Benefits for the MVNOs:

- Market development sharing strategic vision
- Network island: a specialised sub-network for virtual operators.
- Creating added value proposals with zero impact on the Host's network

BSS Platform

- BSS internal and external modules + integration to external nodes



Multi-brand · Convergent · Proven Solution · Multi-site · Multi-tenant · Telco grade

- Hierarchical multi-level brand and sub-brand management to define products and prices
- Products are managed internally as “Packages”
- Implementation process with 2 alternatives:
 - > SUMA provides its application clients
 - > Web service layer for the integration with existing systems
- Designed internally:
 - > More flexible: any personalization can be done internally
 - > There is no third party dependency

Funcionalities:

- Prepaid, postpaid, hybrid
- Multi-subscription users
- Member gets member
- Dealer management
- Comission calculation
- Customisable resource management
- Inventory management
- Anti-fraud
- Reporting capabilities
- Data bonus roll-over (Keep your unused data to enjoy next month)
- Real-time notification of business triggers
- Provisioning, mobile number portability entity integration
- Invoicing and collection
- Resiliency
- Landline, mobile, internet and TV convergence

SUMA Services

I) Services for the end user

- Mobile phone services: voice, SMS and mobile data
- FTTH
- Wi-Fi offloading
- SMS Antiphishing

II) Platform services

1. Self-care portal

- Subscribers management -end customer-
- POS -Point of sales-: Details about each point of sales, hierachy, packages and dependencies
- Subscriptions: Information related to the lines of the subscribers
- Users: access to the CRM's user's administration tools
- Reports: Access to the Reporting tool
- End user tickets: Provide Access to the internal ticketing tool

2. Geo-redundance

3. VoLTE

4. IoT/M2M Platform

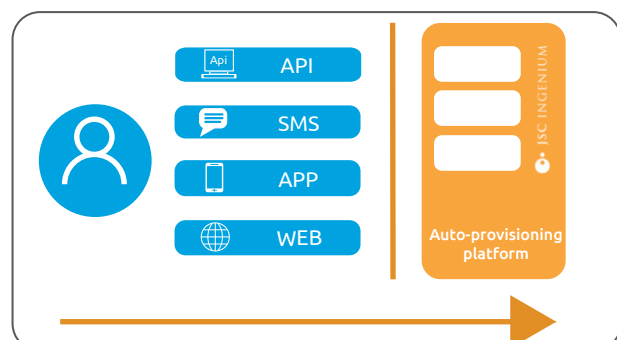
5. Customizable Selfcare APP available for IOS and Android (for end users)

- Retrieve invoice for post-pay
- Voucher activation
- Status bonus
- Service status
- Multi-line support
- Refresh by pull-down
- Migrate package + buy package with balance
- Balance transfer
- Payment with credit card
- Consumptions
- My Data
- Balance information

6. Remote device configuration through OPP (Open Provisioning Platform)

A subscriber can configure a device in different ways (i.e. APN config):

- From a web, by introducing the MSISDN
- From the MVNO's APP
- Sending a SMS
- Based on EDRs (Register) via API



7. PoS

- Pre-provisioning
- Operation
- Selection of package
- Brand manager
- SIM distribution
- Request more SIMs
- Portability

8. Fraud protection

- SUMA provides fraud built-in protection capabilities in the platform in order to ensure no-bad-surprises operation.
- Bill shock prevention

9. Pharos

A smart monitoring system for operation and business. It allows us to visualise all the elements of service of each customer, and to detect any kind of incident on a real-time basis. At the same time this means we can provide the required proactivity and take the relevant measures, then help to re-establish the right service performance and minimise the impact on the end user.

10. Minos

A ticketing registration tool design to notify a service incident in a fast, structured and complete way. It is a smart system that is integrated with the monitoring system –Pharos– and the ticket management system –Zendesk–, with the aim of facilitating incident resolution in the shortest time possible.

11. Managed Services

Tasks related to OSS / Core Network	Tasks related to BSS
<ul style="list-style-type: none"> • Register new MSISDN blocks • Register new set of SIM cards • Create new interconnection route • Change routing of voice calls • Create new APN (including QoS and Pricing) • Change the setting up of parameters for the retry attempts. • Change SMS routing • Create new SMPP account • Manage SMPP account • Change default service profile • Create new service profile • Create new subscription life cycle • Change existing subscription life cycle • Change top-up validity • Update roaming agreements (CAMEL) 	<ul style="list-style-type: none"> • Change parameters and VMS location • Create IVR service • Change IVR service • Create USSD service • Change USSD service • Develop new webservice to offer service or data to an external system • Connect to an external entity through webservice to get data • Add destination to CDR distribution • Create a product • Change a product or a destination price • Change fraud limit for a post-paid or a controlled account • Create a promotion • Change a promotion • Create a fraud profile • Change a fraud profile • Create a new invoicing life cycle • Change invoice layout • Create a new report • Change an existing report • Change or integrate a new Call Centre • Connect to a new top-up network • Change logistic provider • Create a new sales channel • Connect a new payment entity (a bank) • Connect a new collection agency • Change invoice printing company • Change scoring provider



III) Other Added Value Services

- Consumption limit
- Bundles hierarchy
- Multi-ring
- Accumulates non-consumed data
- Reroutes calls to the call centre for non-payment
- Size of bundles reservation upon variable QOS
- Report of balances and bundles (including expiry).
- New patterns of revision for high consumption
- Structure of parents/children packs
- PCRF
- FTTH

Main features of SUMA MVNA technology.

Among its general features, we can highlight: its great level of efficiency, its capability to integrate multiple services within a single platform, and its high availability in Carrier Grade infrastructures.

1) High level of flexibility to:

- adapt to any mobile business model requested by customers, and adapt to both business and technical flows, according to their needs
- develop new value added services
- integrate third party components-
- incorporate new partners to the ecosystem (new SIM- providers, new mobile phones access providers...)
- complete services through different means: call termination by specified third parties, according to the MVNO, data termination in secure LANs, SMPP integrations...
- give control of IPs allocation of HA solutions in SIMs

2) Custom Design capability

at a Business level:

- pricing plans: pricing policies are totally different for each brand
- self-care: possibility to customise the look & feel of each brand and the operation.
- own processes: customer registrations, invoicing, customer service, etc.
- download qualities and speeds

at a Telco level. Integration of Telco services:

- Voice:

- > Custom design, from service accessory components, such as announcements, to call terminations, either for domestic or international calls, according to their respective interconnection agreements.
- > Convergent services with landlines: unified voice mailbox and short dialling –extension numbers.

- Data:

- > Possibility that the termination could be carried out by the brand itself, specially designed in the case that the brand is an Internet service provider –ISP.
- > Assignment of IP addressing –either private or public-, brand's IP addressing plan. Alternatively IP assignment can be done through a external RADIUS server
- > Data delivery/submission through VPN, especially designed for companies and large accounts.



www.sumamovil.com

3) Ability to create offers, promotions, campaigns...:

- almost immediately, within hours, then being able to publish, modify or remove a pricing plan or a promotion instantly.
- with full autonomy. Through the pricing plan editor, the marketing and commercial teams of the different brands can create, publish and modify a rate, independently of their technical team and technological partner.
- without compromising the service.

4) Ability to operate as an MVNE Platform as an extension of the Host Operator

- deploying new brands and services with no impact on the Host network.
- quick time to market. Implementing MVNE Platform in less than four months

5) Interworking Functions capability. It allows the incorporation of Full MVNOs within the MVNA/E Platform, to:

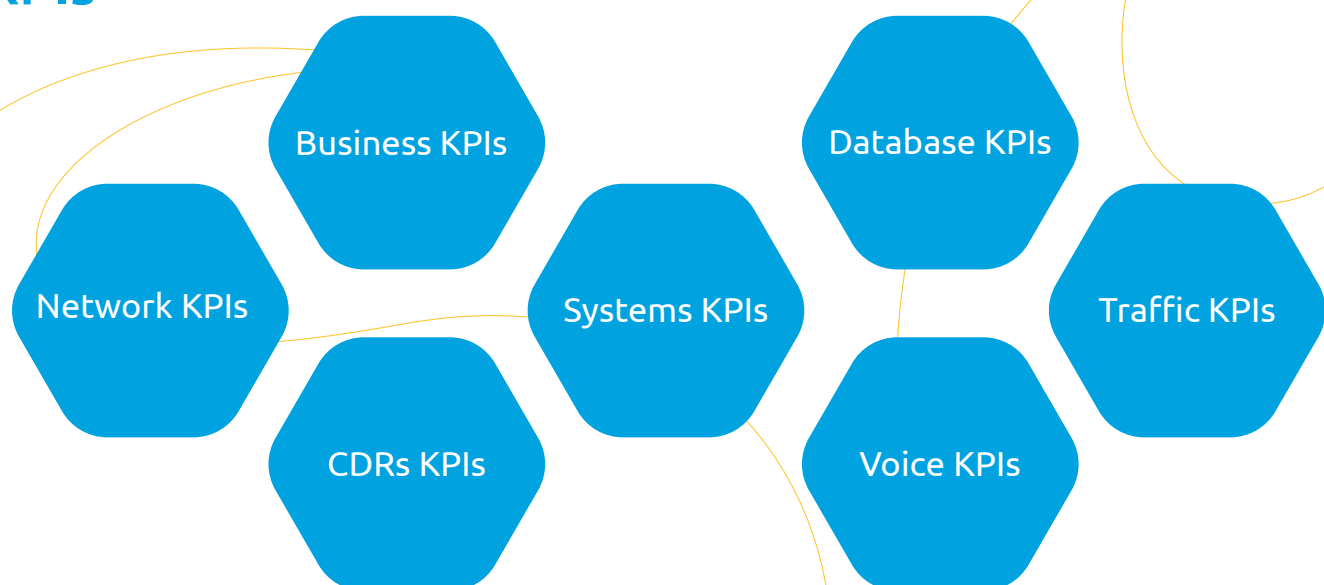
- give call control to SIP network partners.
- share credit control with third parties
- be the HOST of MVNEs connected in IOS
- advanced functions of STPs to filter components non-interpreted by partners
- translate 4G signalling to third parties that have HLR and do not have HSS

6) Ability to integrate within the MVNA Platform operators with their own 4G radio coverage in their area, and providing 3G call and data services with the Host Operator.

Other advantages of SUMA MVNA technology

- Cost effectiveness:
 - a) solutions designed from a very low entry level and with great scalability.
 - b) it implements mission-critical hardware of a general nature.
- Isolation of the Host operator network, which allows new developments on the MVNA network without affecting the Host network or needing specific developments of that network, which avoids delays.

KPIs



Deployed and operative references in April 2019



At the time of writing SUMA Móvil's candidacy as the best MVNA, the Company has 30 brands deployed and operative on MVNA technology. The majority of the brands operating within the SUMA Platform are telecommunications operators that intend to add mobile phones to their portfolios of convergent services, newly created MVNOs, niche MVNOs, M2M/IoT services, multi-IMSI, VoIP...

SUMA Spain brands deployed:

One of the main references is Alai Secure



Alai Secure, subsidiary of Grupo Ingenium, is Spain's first exclusive M2M/IoT operator specialising in Telco Security. It launched its own special High-Performance SIM card for M2M/IoT communications onto the market in 2015. It has the most comprehensive portfolio of Telco Security services deployed and operational in some of the main verticals:

VERTICALS:

Private Security

It works with more than 150 private security companies, managing more than 200,000 connections, and it receives more than 300,000 impacts/month.

Social-healthcare - telecare

It manages more than 40% of all teleservice communications in Spain, more than 300,000 connections and over 4,000,000 impacts/month.

Elevators

Utilities

Fleet location and management

It provides a service to some of the leading business groups in Spain in the provision of comprehensive services, in some of their main verticals: private security, social-healthcare, facility services, authentication and access control. It offers a secure opening system.



Deployed and operative references in April 2019

Other customers that have entrusted SUMA to offer mobile phone services to their customers as OMV are:



BT España. This operator, with HQ in the UK, offers services in Spain for communications and information technology to companies and public bodies. www.bt.es



SUOP Móvil, first reference in Spain of MVNO community. It is the leading mobile operator managed by subscribers. www.suop.es



Ocean's, a quadruple-play telecommunications operator, offers landline and mobile phone services, Internet and pay TV to individuals and companies. With HQ in A Coruña, it began by offering services in rural areas in Galicia. It currently provides services at a national level. www.oceans.es



Grupalia (GNET), is an advanced services provider of IP telecommunications, infrastructures and technologies. Since its creation in May 1999, this company has been providing a service to thousands of national and international companies within its main business areas: DPC, Voice, Connectivity/Internet, and Cloud. www.gnet.es



Voz Telecom, an operator of icloud services for companies. It offers mobile phone services integrated in its service of IP telephony and virtual switchboards. www.voztele.com



MovilDia, a mobile operator owned by the supermarket chain Dia. It started to provide -mobile phone services in 2007 through its network of 3474 stores. In 2018 this company decided to migrate its mobile service to the SUMA Spain Platform. www.movildia.com



Telsome, an operator of IP telephony with more than 15 years of experience providing telecommunications services to companies. . www.telsome.es



JOI Mobile is about simplicity and clarity. Fundamentally it is about peace of mind: providing client with the calls, texts and data he needs to 'touch' and 'connect'. One plan that fits every lifestyle, for a great price. All the calls and SMS and loads of internet the client needs to connect and touch the world in the way he wants to. www.joitelecom.co.uk



Oniti, a newly-created Spanish brand, mainly targeted at those customers who value good service and who are not willing to pay more than necessary to obtain it. This company provides 4G services to surf the Internet. www.oniti.es



Jetnet, a telecommunications operator that offers services to individuals, companies and institutions. It leads the way in Spain in terms of deploying Wimax wireless broadband networks, a technology that reaches areas where neither traditional wire nor fibre optic can. www.jetnet.es



Knet, is the Telcom operator that operates in the La Rioja region – landline, Internet and pay TV. It also offers Voice, SMS and Data services to individuals and companies. www.knet.es



Flexi Móvil. A low cost MVNO for national / international calls. Flexi Móvil placed a mixed offer on the market for national and international communications. www.fleximovil.es



Lemonvil, offers cloud data centre services-, traditional wireline voice and IP, and mobile telephony with a wide range of flat rates and “pay-per-use” rates to talk and browse. It operates in the Eastern part of Spain and offers services to individuals and companies. www.lemonvil.es



Quattre, a local Telcom operator, leader in high speed and telephony, which is backed up by its 10 years of experience. Its service portfolio includes Internet, mobile phone and landline, all-in-one. Quattre vertical is the easiest, fastest and most economical broadband solution for neighbourhoods and large buildings. www.quattre.com



The Telecom Boutique (TTB) is a Telcom network operator whose social aim is providing wholesale telecommunications services to its clients: local operators of Fibre optics, Radio and Cable. www.the.telecom.boutique.es



ION Mobile is the MVNO of Aire Networks, the fourth national operator according to the Spanish National Commission of Markets and Commerce (CNMC), as well as one of the companies with more presence and capillarity in both metropolitan and rural areas of Spain. Its strong domestic and international interconnection agreements with the main sectoral agents and its own telecommunications network with an extension larger than 27,000 km are notable. www.ionmobile.es



Sewan, an operator of IP telephony for SMEs and professionals, with solutions for landline and mobile telephony based on VoIP technology. It has been growing since 2006, offering services at a domestic and international level with its in-house infrastructure. www.sewan.es



Wibaes, is a regional Telcom Quadruple play operator that offers Internet, landline and mobile telephony services, as well as pay TV in several municipalities of Seville, Cordoba and Malaga, in the South of Spain. www.wibaes.com



Ringsouth Europa, was created in 2005 as a VoIP telecommunications operator, with a clear differential value in its R+D+I area, a result of its wide experience in the Telcom Engineering sector. www.ringsoutheuropa.com



Wifeando, provides services of fibre optics, landline telephony, WIMAX and mobile phones, with provincial coverage in the region of Valencia (Spain). www.wifeando.com



Zerovoz. This company offers consulting services to help companies to reduce costs and to be more competitive. It generates economies of scale and achieves lower prices for calls thanks to bulk purchasing.. www.zerovoz.com



Ideatec is an Operator of Landline telephony and MVNO (Mobile Virtual Network Operator) at a domestic and international level. It has an in-house developed Cloud-based Virtual Switchboard; it is an expert in Web-RTC systems, Asterisk, and it provides integration solutions. Moreover, this company provides and trains on telecommunications hardware of VoIP, GSM and Networking. www.ideatec.io



Codinet is a top quality VoIP operator for operators, SMEs and professionals, with more than 15 years of experience in the Telco industry. Among its services, Codinet offers dedicated internet access, placement services or housing, NEBA (New Broadband Ethernet Service) services, OMV, IP -fibre optic traffic, VoIP services, and WDM technology. www.codinet.es



Phoners is a company that offers low-cost telecommunications services, mobile telephony and Internet. This Company is a subsidiary of Alohello and belongs to the technological holding company Clicly. www.phoners.es



Aire Networks, a national provider of telecommunications services, is focused on the development and provision of top-level solutions in the areas of voice, data and audiovisual content for operators, companies and public administration bodies. Solutions guaranteed and implemented in a multi-service network, permanently monitored by specialized technical personnel to ensure the quality and reliability of the service. www.airenetworks.es



Iberiatel base its customer relations on honesty, good working practice and loyalty. It guarantees a quality product, personal service and total trust. It offers tailored services for fixed telephony, internet and mobile telephony. Also, its clients can use their app to make calls through VoIP in Europe. www.iberiatel.com

SUMA Móvil Colombia and Chile references:



Conéctame was created with a clear aim: building a user community and treating its customers as a part of such a community, by offering permanent affordable prices and innovative services according to the real needs of the market, through their prepaid plans. www.conectame.com.co



Comunicamos mas provides TV and Internet services and has decided to enter the mobile phone sector with its own SIM aimed at its customers by completing the triple play offer, giving users the possibility of receiving full services of TV, Internet plus mobile telephony, focused on competitive prices and user service. www.comunicamosmas.com.co



SIP Móvil is a telephony service offered by the Sistemas Satelitales de Colombia SA ESP – SSC Operator, enabled by the Colombian Ministry of Technology and monitored by the Colombian Industry and Commerce Superintendence. www.sipmovil.com.co



Kalley Móvil, provides services of fibre optics, landline telephony, WIMAX and mobile phones, with provincial coverage in the region of Valencia (Spain). www.kalley.com.co



Mundo Pacífico This company offers consulting services to help companies to reduce costs and to be more competitive. It generates economies of scale and achieves lower prices for calls thanks to bulk purchasing. www.mundopacifico.cl