GALGUS: DEMOCRATIZING WIRELESS NETWORKS WITH WORLD'S FIRST SOFTWARE-DEFINED WI-FI

INTRODUCTION

Galgus democratizes access to high quality WiFi with cutting-edge features (automatic resource optimization, enhanced cloud management, in-depth analytics, advanced security) by providing a complete portfolio of network equipment (APs, switches, network enhancers) and services (design, deployment, 3d simulation, troubleshooting). **This enables network service providers to deploy state-of-the-art WiFi networks powered by AI-software at an affordable price, achieving higher profit margins**. Every day, over 1 million people enjoy Galgus' WiFi technology in environments such as trains, stations, businesses, schools, shopping malls, smart cities, rural areas, soccer stadiums, aircraft, and hotels, among others.

DESCRIPTION OF THE CASE

It is well known that the profit margin for modern WiFi infrastructures is less than 10% for the network service provider, leaving more than 90% of benefits for the hardware provider (the classic AP manufacturer). Galgus has arrived to change the rules of the game, allowing to reduce by more than 60% the CAPEX and OPEX of WiFi deployment projects thanks to our disruptive proposal.

Network service providers (Galgus' natural customers) find themselves in the dichotomy of **deciding between affordable WiFi devices without any intelligence or advanced features, or expensive APs from the classic vendors** of the WiFi industry that are either out of budget or leave them with minimal profit margins.

In this context, Galgus democratizes access to high-quality WiFi with cutting-edge features and in-depth analytics. **This enables network service providers to deploy state-of-the-art WiFi networks powered by AI-software** at an affordable price, achieving higher profit margins.

Figure. The Software-Defined WiFi architecture.
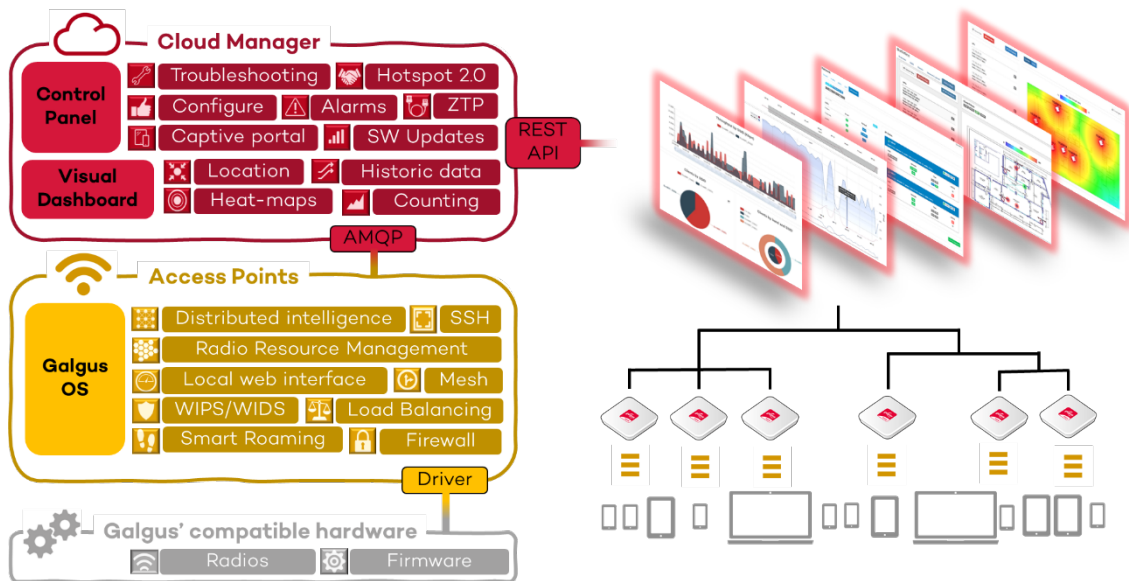
SOLUTIONS

With a software-defined approach, we can add advanced features to every Galgus-compatible WiFi hardware. **Just like installing apps on your Android smartphone**. In this context, we offer our technology in two forms:

1. **Our main business activity is the sale of our own Galgus APs**, with our embedded software and cloud platform included. Just plug and play.
2. However, **for special projects** (aviation, trains, industry) we can integrate our full software stack (driver, OS, embedded software, cloud, API, etc.) on specific hardware provided by our customers or partners.

Most of our business relationships with network service providers, such as Telefónica, fall into the first category. Galgus also commercializes all the products needed for your network (switches, routers, antennas, PoE injector cables, network enhancers, etc.), as well as engineering services **to make easier your life as a network service provider** (logical and physical network design, remote management, 3D simulation, configuration, setup, troubleshooting, training, etc.).

Among these advanced features, we highlight automatic resource optimization, load balancing, smart roaming, **unified management from the cloud** (Cloud Manager), mesh, analytics, location and heat maps, people counting (even with random MAC addresses), hacker detection and prevention, advanced security, Deep Packet Inspection, Firewall, WPA3 Personal & Enterprise, Passpoint, etc.

Figure. Some of Galgus' main clients.

That is why Galgus has successfully deployed projects to **provide quality Internet access service to more than 1 million people every day**, in challenging environments such as soccer stadiums, enterprise, office, convention centers, retail, connected schools, smart cities, towns, and rural zones, hotels, luxury resorts, aircraft, trains, buses, cruises or train stations. Of special interest are the more than 50 towns, cities, and rural areas connected to the Internet for the enjoyment of hundreds of thousands of inhabitants in total, including citizens, tourists, and teleworkers.

Galgus has extensive experience in the disaggregation of software and hardware of WiFi networks, allowing the customer to choose the device that best fits their needs and budget, and unleashing its full potential with our software stack. We have **more than 100 advanced WiFi features** and every few months we add several more with each new release, adapting to market and customer needs. That is the power of Software-Defined WiFi.

Figure. Galgus Location Analytics suite.
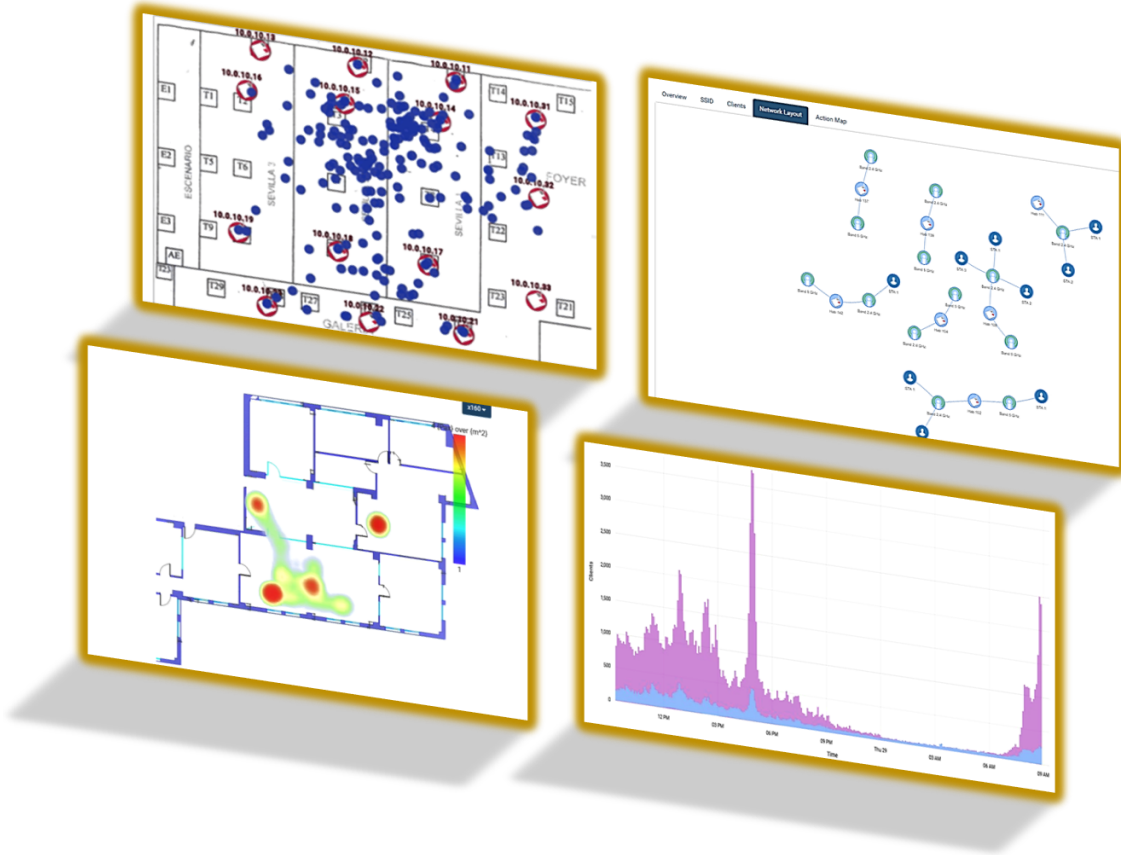
IMPACTS TO PEOPLE AND INDUSTRY

We also have huge expertise in location analytics using WiFi, to make systems for people counting, heat map generation, asset tracking, geofencing, etc. This is a product that is currently in high demand and that many customers want even if they do not provide WiFi service. Every week, **Galgus networks collect more than 70 million contextual data** from the network and its surroundings, for exploitation by administrators. They can use all this collected information (in compliance with data protection laws) for advanced marketing, forecasting, surveillance, security, etc.

"Galgus' product is highly innovative and necessary to help Network Service Providers (NSPs) lower their costs and increase their profits by separating hardware from software, thus multiplying their creative possibilities."

Facebook Connectivity Steering Committee.

"Today, having a good connection and access to the Internet is essential. Much more since the outbreak of the coronavirus. Therefore, from the consistory we have tried to ensure that Andratx and all its population can enjoy a fast and quality connection in the urban areas of the municipality. When we say that no one should be left behind with technology we mean this. Now everyone will be able to have access to Internet in these areas of the municipality in a fast and free manner".

Joan Manera (Mayor of Andratx)

Figure. Some of the scenarios where Galgus has successfully deployed its WiFi technology.

CONCLUSION

Galgus is interested in helping network service providers and system integrators to deploy WiFi projects with better features (optimization, cloud, security, analytics, location, etc), at a more affordable price and with higher profit margins. This is something that is already working with **Telefónica, which wins 87% of the tenders it goes with Galgus technology**, obtaining the highest scores in the technical and economic rankings and achieving a higher profit margin. We have already deployed more than 50 WiFi projects with Telefónica, and we have more than a hundred more in the pipeline. With the Software-Defined WiFi approach, you can:

> Gain more public and private WiFi trends.

- › Enable your customers to enjoy better Internet access.

- › Exploit network and location analytics for marketing actions, surveillance, logistics, etc.

- › Obtain higher profit margins than with traditional WiFi vendors.

- › Deal directly with the supplier and participate in the development of new functionalities tailored to your project.

- › Have WiFi devices specifically adapted to each project, from an airplane to a soccer stadium.

- › Have constant software updates, keeping your network always up to date.