



# Spain Ib-red

## “High Yield and Low Risk” Insures Ib-red an Expanding Business



Low investment on Small Cell and shorter Rol



Cloud-based Core Network



Easy configuration & management from OMC

### About Ib-red

Ib-red is the first operator in Europe who has deployed LTE network. Founded in 2007, Ib-red offers internet access and telephony services based on their own infrastructure as an Internet Service Provider, and now it has become one of the leading ISPs in the Balearic Islands.

To acquire market sharing rapidly in the huge competitive environment, Ib-red decided to provide internet service, firstly from the places with geographically difficult access or areas with little coverage by traditional operators. Benefiting from fast learning and fast response, Ib-red engineer team quickly grew up and has been widely approved of by end-users.

### About spectrum policy in Spain

Operators are able to choose freely to buy or to rent the regional spectrum. This policy insures an investment protection with a moderate price for the fragment of spectrum. Ib-red rented 3.5GHz spectrum profiting from this policy and thereby built the first 4G rural network in Europe. Before long, Ib-red acquired 2.6GHz regional spectrum in an auction held in 2014.

### Pain points:

**With limited end users around, it is hard to cover the cost with Macro station deployment.**

At first, Ib-red deployed Macro station but quickly found out the problem: Habitants on the Balearic Islands are with relatively low ARPU and the population is smaller compared to Spain Mainland. In this case, the revenue gained is hard to cover the high expense of Macro Base Station deployment. And Return on Investment is quite long.

**High CAPEX and Operation fee on the traditional Core Network.**

The high investment on traditional EPC becomes serious problem because it's not one-time payouts. High cost of licenses for each user and daily maintenance, high rental fee for storage are burdens for Ib-red to profit.

**Due to scattered sites and limited manpower, BTS maintenance is a problem**

Considering economical cost, it is a heavy burden to make engineers go on site once there is something wrong with networks. For a telecom operator who has large amount of BTS but limited operation employees, this is a problem to be handled.



### Easy configuration & management from OMC.

Baicells BaiOMC system provides remote operation. Once there is a network accident, BaiOMC system could do trouble-shooting to find out the original reason to the problem, thus reducing the frequency of engineers' on-site service.

## Future Evolution

Evolution to SDN EPC and ready for 5G: Traditional EPC seems a heavy load during the network development process, the additional licenses fee and a long-term maintenance fee will take a large proportion of OPEX, slowing down the company's growth rate. In this case, the software defined EPC is the best choice. Friendly cost on software, could be installed in common server, the affordable CAPEX and OPEX will lead to a fast growing business for lb-red.

Also based on SDN, network could be divided into different slices which flexibly adapted to different requirements of applications. A SDN LTE network for lb-red, could smoothly evolved to future 5G architecture, no need changing hardware.

Flexible network expanding to other regions: lb-red has plan to expand the business in Madrid in 2018.

## Solution and Products

- Nova 243
- Outdoor CPEs
- BaiOMC system

## Highlights

### Low investment on Small Cell and short RoI

Small cell is a light cost and easy-to-install solution, which integrated antenna, radio unite, BBU in one box, which spares machine room (installing BBU) rent fee. For rural scenarios, it is critical to reduce initial investment, as number of potential users and ARPU are much lower than those in urban areas. Therefore, RoI could be shorter compared to Macro Base Station Solution.

### Cloud-based Core Network

Baicells EPC solution is agile to customers. They could choose to host on dedicated server, or install EPC on Cloud. The latter is recommended for WISP, because capacity could smoothly expanded as users number grow, and the cost is reasonable for those who don't have a large amount of subscribers.