



**CELTIC-NEXT**



**Project Proposal**

**MASSLORA -**

**Massive IoT over High  
Density LoRaWan Networks**



# Teaser



*LoRaWAN® networks has been growing non stop since they were created 5 years ago, and LoRaWAN® solution is the key answer for many IOT solution due to the simplicity, scalability and availability,*

*Very soon LoRaWAN® networks will be dense due to the increase of the demand of this solution, besides dense networks provides big benefits like longer battery lifes of the nodes and better geolocalization, features highly appreciated by end customers.*

*Validation of future massive network deployment and new commercial use cases  
Validation of new business models and new use cases under dense LoRaWAN® networks*

***We believe in massive unlicense network deployments for the development of new innovative solution and opportunities for the industry***



# Organisation Profile



*Fonlabs is an innovation, R&D company with more than 8 years giving solutions under WiFi, 5G and IoT.*

*We are part of Fon Group ([www.fon.com](http://www.fon.com)) that managed more than 25 millions Hotspots around the world in a massive deployment.*



*We are focused in the development of new connectivity solutions to answer the global hyperconnectivity demand*



# Proposal Introduction

## LoRaWAN® Networks technology

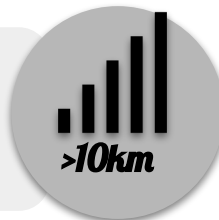


### Unlicensed bands

They allow to create your own networks and not to use third-party networks such as LTE-M, NB-IoT

### Long distance

The signal achieve a more than 10km range vs other short range like WiFi or Bluetooth

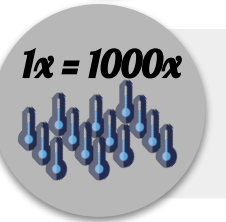


### No SIM cards

As they are not used the cost is less than with LTE-M or NbioT

### Low cost, easy deployment

Installations that enable a quick mass deployment



### Scalable network

It allows to increase the number of devices very easy

### Battery low consumption

The devices could have a battery long life of more than 10 years.



# Proposal

## Introduction

### Simple networks →



*1 LoRaWAN Gateway per Km<sup>2</sup>*  
*Sometimes Coverage problems and some packet lost*  
*Deployment messy*  
*Battery life (3- 10 years)*  
*AES security*  
*Geolocalization basically over GPS and WiFi, BLE Sniffing*

## Dense Networks



*More than 2 LoRaWAN Gateway per Km<sup>2</sup> (to be defined)*  
*Coverage problems reduced, reduction of packet lost*  
*Congestion of the network → Optimization*  
*Advanced Deployment for massive IoT applications*  
*Battery life (up to 10 times vs simple deployment)*  
*Security reinforced*  
*Improved Geolocalization over LoRaWAN*

# Proposal Introduction



*R&D Dense networks and massive  
deployments*

*Massive deployment simplified  
New services proposal validation  
Architecture designs  
Network management orchestration  
New business model validations  
Software and Hardware development  
new opportunities*



# Proposal Introduction

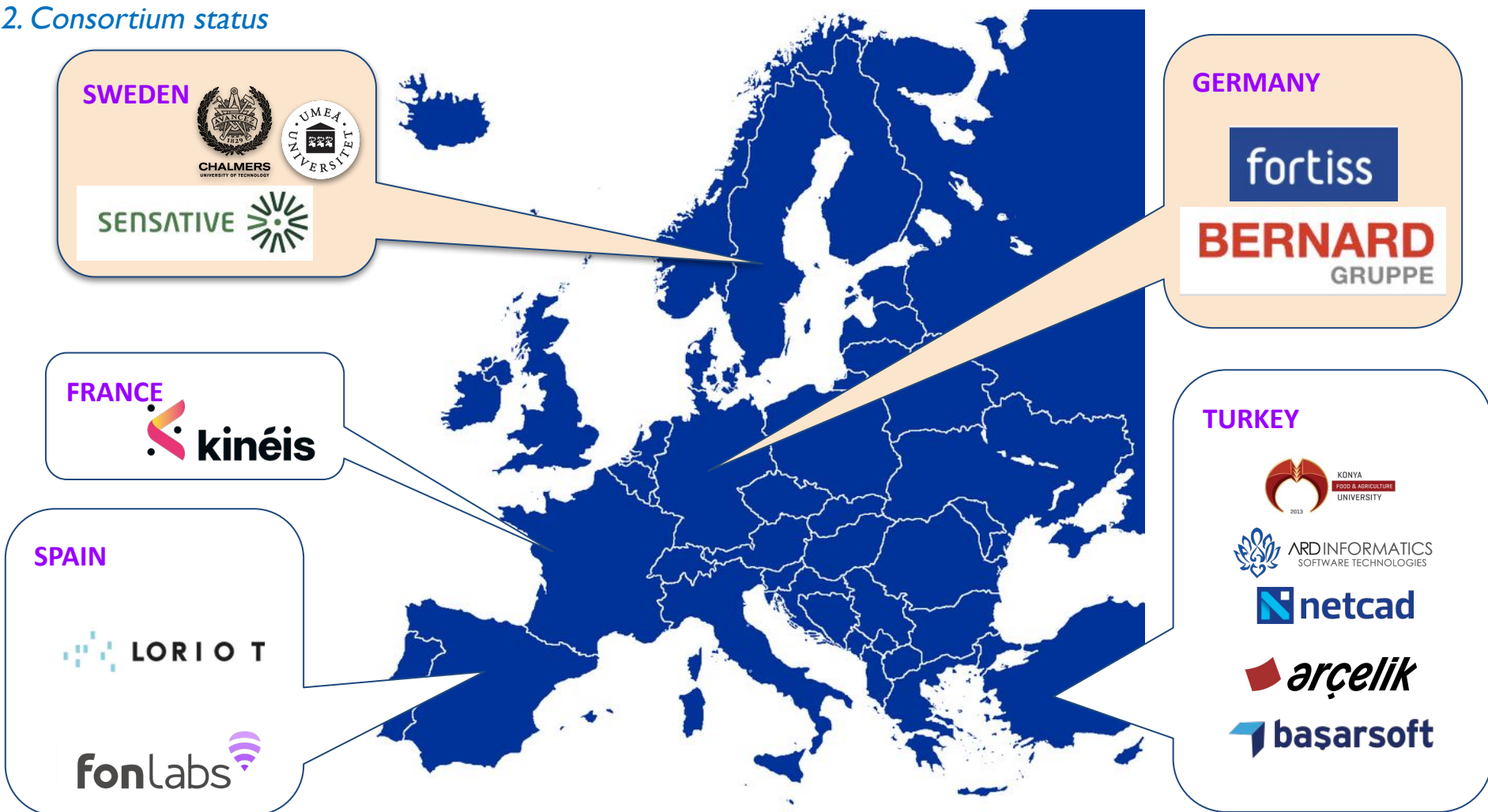
- *Massive deployment simplified*
- *New services proposal validation*
- *Architecture designs*
- *Network management orchestration*
- *New business model validations*
- *Software and Hardware development new opportunities,*



- *New business models*
- *New hardware*
- *New software solutions*
- *Proof of Concepts implementations*
- *Publication & Thesis & Collaboration*



2. Consortium status





# Contact Info

**For more information and for interest to participate please contact:**

Iñaki Etxebarria  
inaki.etxebarria@fon.com  
+34 673 218 008  
Plaza Euskadi 5, 15-15, 48009 Bilbao  
Spain



Asier Lopez  
asier.lopez@fon.com  
+34 679 646 740  
Plaza Euskadi 5, 15-15, 48009 Bilbao  
Spain

