WISE IOT

OCOVA FORUM, LES ORRES, JANUARY 11TH 2018

INTEROPÉRABILITÉ DANS L'INTERNET DES OBJETS

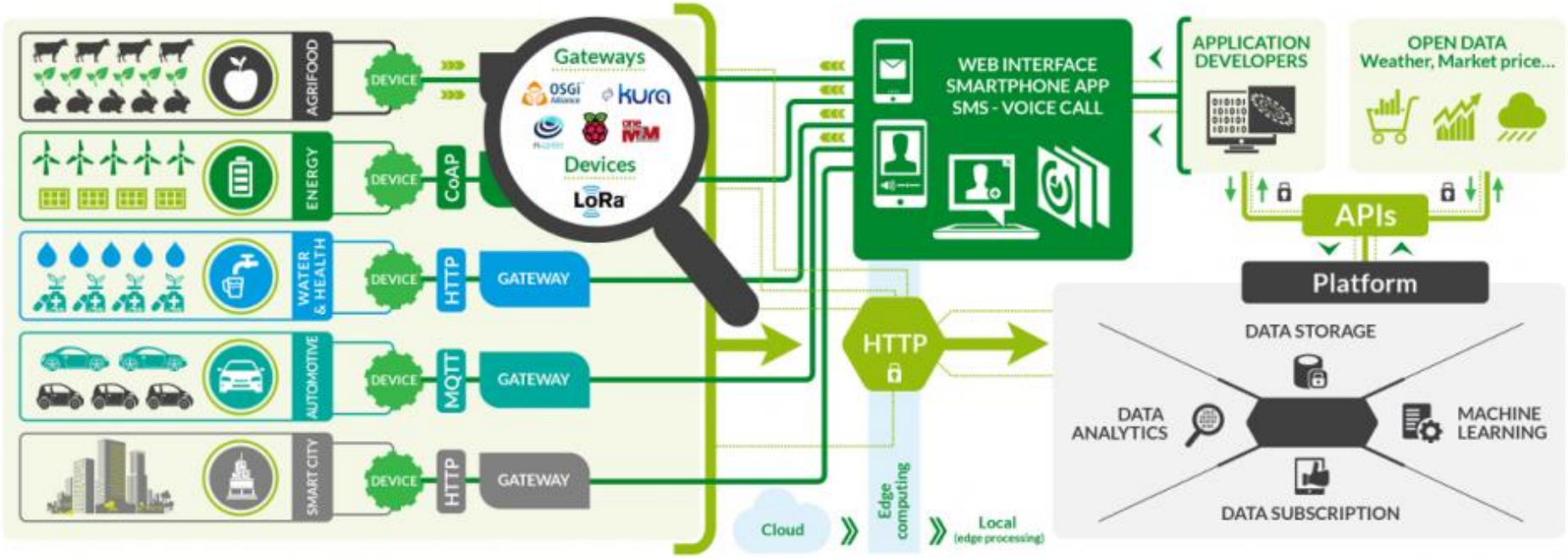
CAS D'USAGES MONTAGNE

F. Le Gall (Easy Global Market) – Rémi Druilhe (CEA-LETI)

Ministry of Science, ICT and Future Planning

SELF INTRODUCTION & EGM POSITIONING

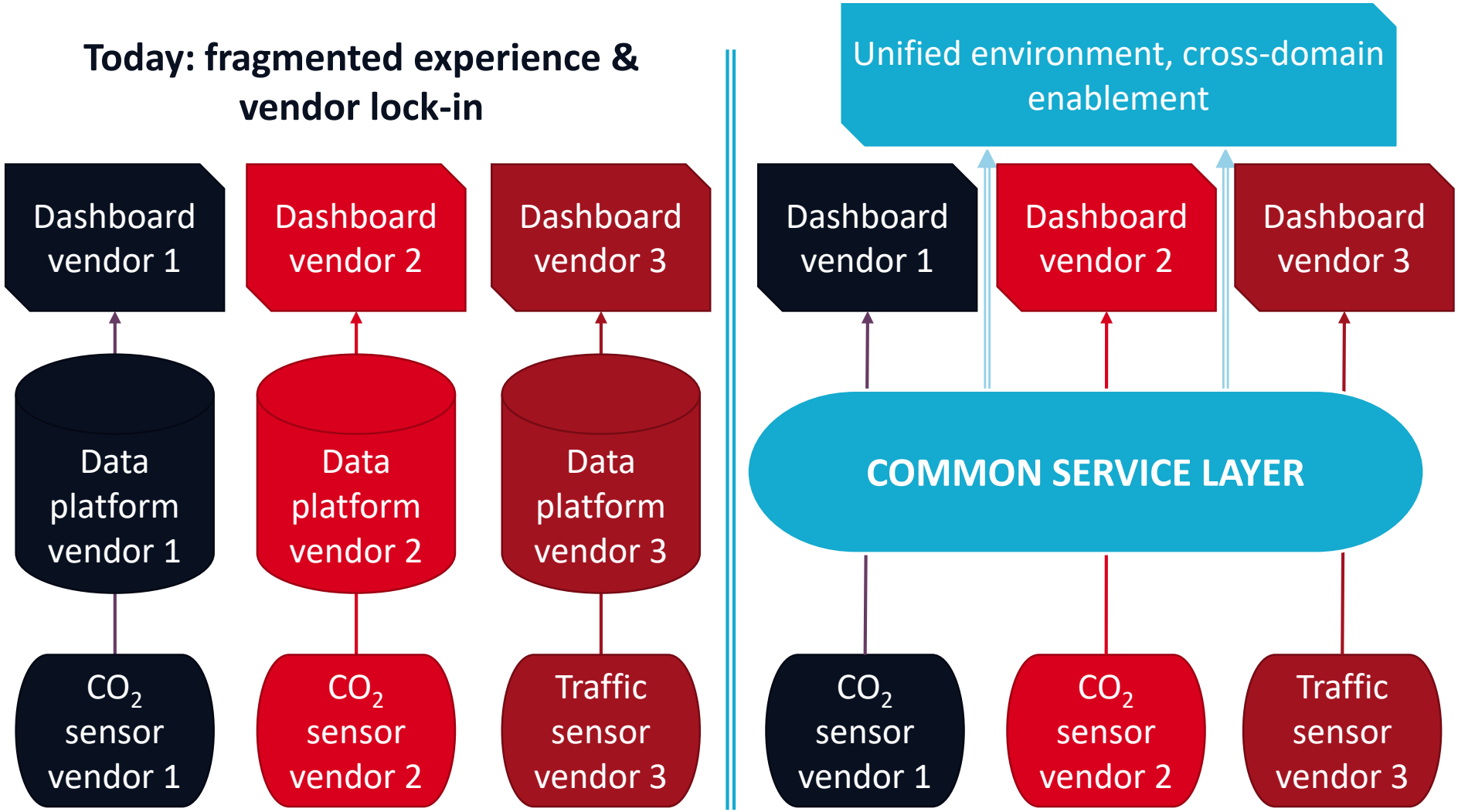
Interoperable IoT engineering



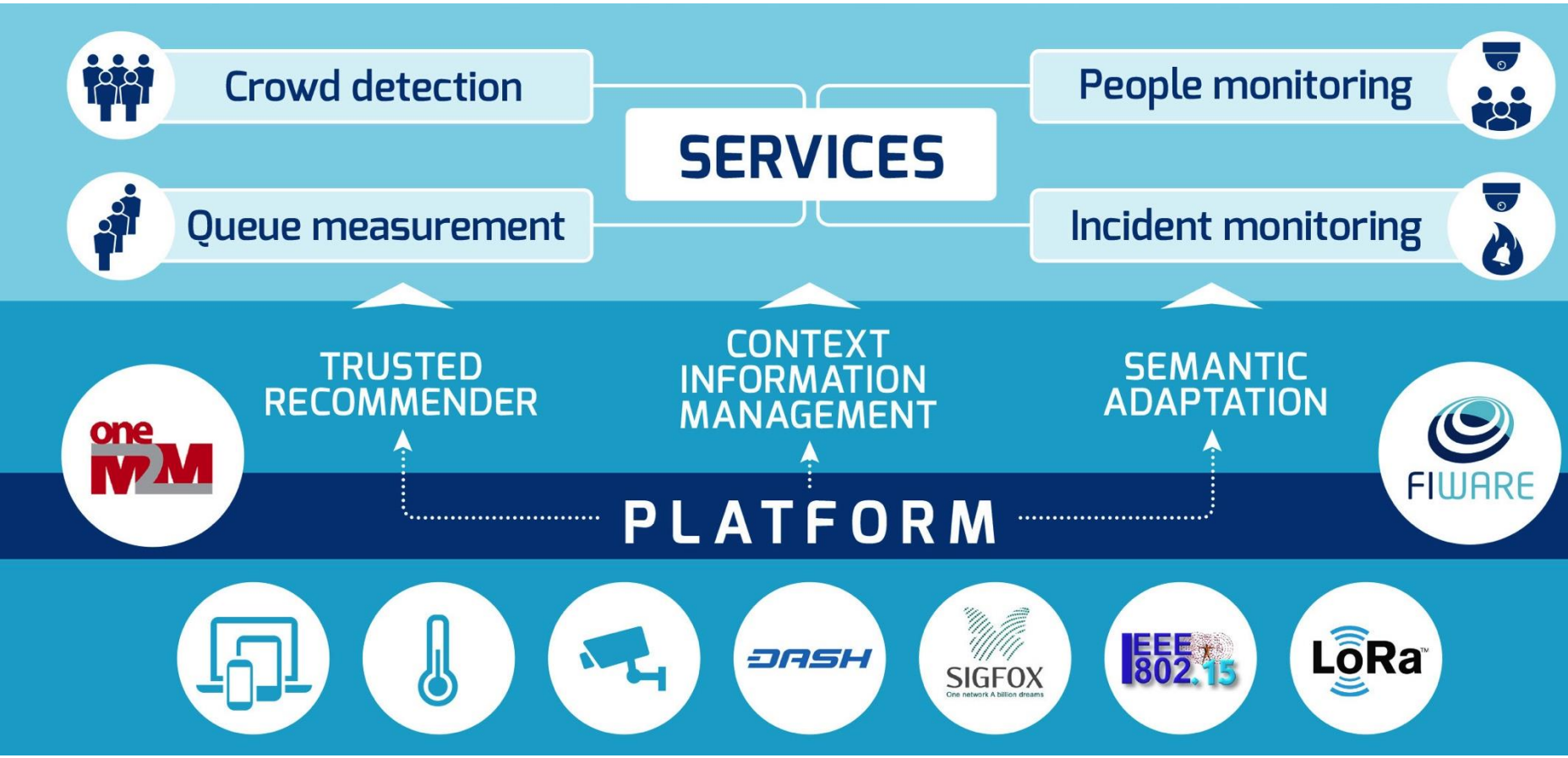
Founded 2010
15 pers @ Dec' 17
Engineers & PhDs

2015- EU Commission list of top 10 most innovative SMEs in ICT. EGM is 7th

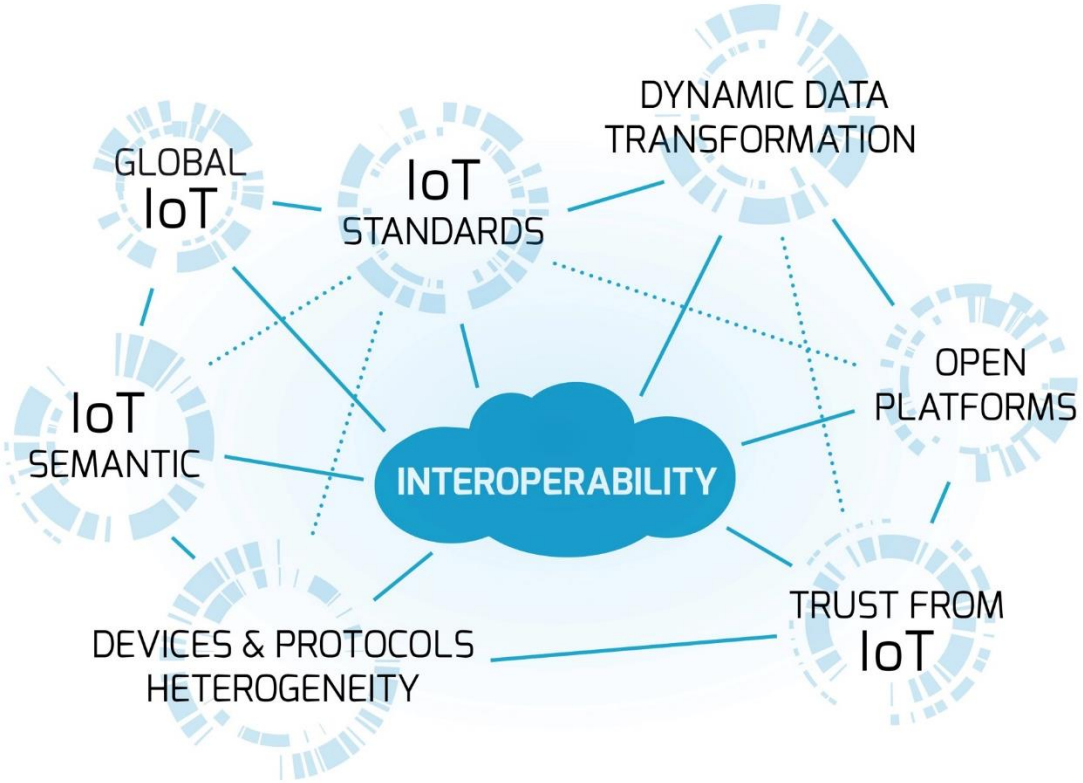
WHY HORIZONTALIZATION IS URGENTLY NEEDED?



OVERALL SEAMLESS INTEGRATION



WISE-IOT APPROACH



www.wise-iot.eu

#WiseIoT

감사합니다 ! THANK YOU !

Worldwide Interoperability for Semantic IoT

WISE IOT

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11 JANUARY 2018 – FORUM OCOVA

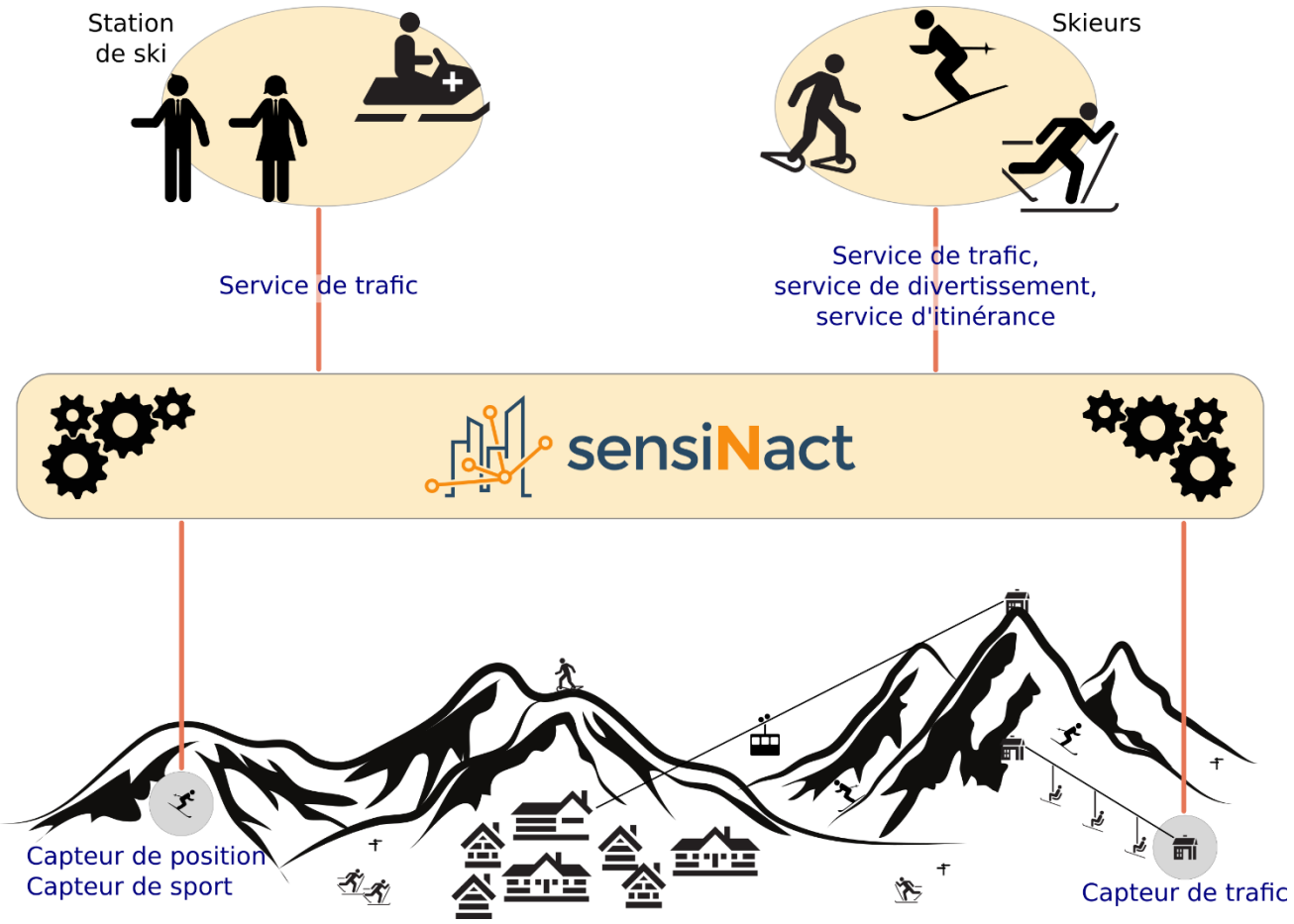
SMART SKIING

THE CASE OF CHAMROUSSE

Rémi Druilhe (CEA)

Ministry of Science, ICT and Future Planning

IMPROVE SKIER EXPERIENCE USING THE INTERNET OF THINGS



THE USE CASES

- The project propose various use cases for the skiers and for the ski resort
  - Skier side (experience in Chamrousse, Europe)
    - Assets tracking of the skiers
    - Traffic monitoring
    - « Conquer the slope »
  - Ski resort side (experience in Alpensia, Korea)
    - Location of the rescues/instructor
    - Rescue button

- Each use case must be reproducible on the other country

THE USE CASES

- Display of the traffic in the ski resort
  - Analyze of the traffic near the ski lifts using network activity processing (WiFi and Bluetooth)
  - The result is displayed on a map using simple icons
  - The skier looks at this map and adapt its journey in consequence.
  - The information is also retrieve by the manager of the ski resort as a guide.

THE USE CASES

- Assets tracking
  - A European skier wants to ski in Korea for the Winter Olympic Games in 2018.
  - During its trip, he wants to know the location of its skis.
  - A low power location sensor is attached to the skis.
  - Those information are displayed in a mobile application.
  - The roaming service between Europe and Korea allows to retrieve this information no matter the Internet provider and it is transparent to the user.
  - Moreover, the user can access to those data without being close to its skis.

THE USE CASES

- Conquer the slope
  - Using a sport sensor, the skier can participate to competitions with others skiers in order to determine, according to various criteria, who is the best on this slope.
  - The sport sensor detects the start of the skier, saves its performance and displays it on a leaderboard.
  - (If the skier is bitten by another skier, he is notified and can try again)
  - (At the end of the day/week/season, a leader is designated and gains discount voucher for local shops)

IMPLEMENTATION

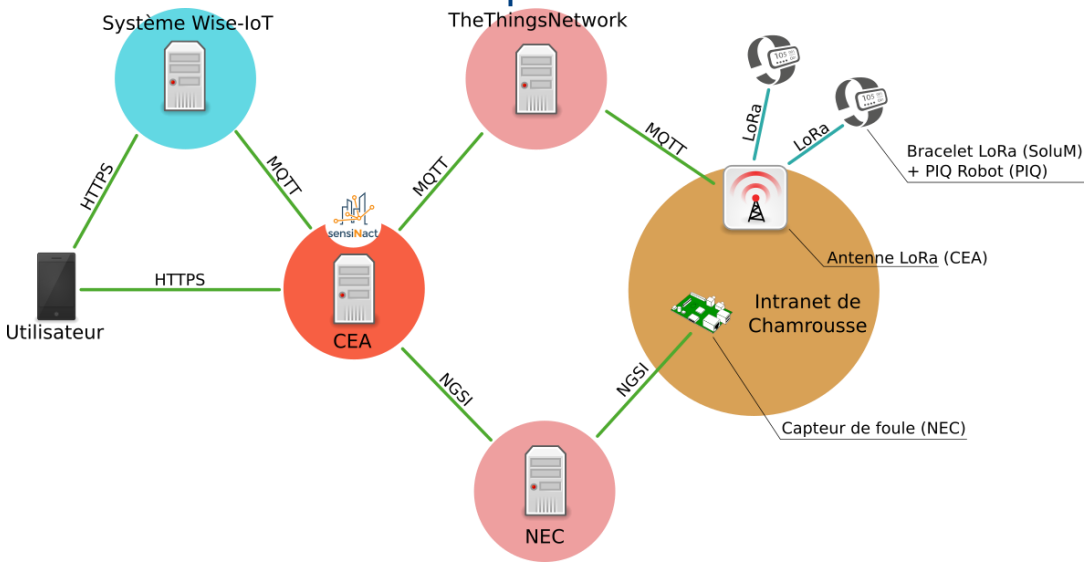
THE CHAMROUSSE DEPLOYMENT

- Deployment of a LoRa gateway and of the LoRa bands
  - The gateway is deployed near the top of Chamrousse
  - The LoRa bands and PIQ Robots are worn by the participants

- Crowd detector
  - Collect the network activity (WiFi and Bluettoth) to determine the quantity of skiers in an area
  - Deployment in Recoin and Roche Béranger

INFORMATION SYSTEM

- Deployment of the devices in Chamrousse
- Deployment of sensiNact, the open source IoT gateway from the CEA
  - Using the community network TheThingsNetwork
  - Using the traffic data from NEC
- Transfer to the Wise-IoT system for further processing if necessary
- Display of the data on the smartphone of the user



COLLECTED DATA

- LoRa band
  - GPS location
- PIQ Robot
  - Number of jumps
  - Complexity of the jump
  - Air time
  - Number of turns
  - Maximum angle from the vertical
  - Descent height
  - …
- Crowd detector
  - Number of persons in a given area

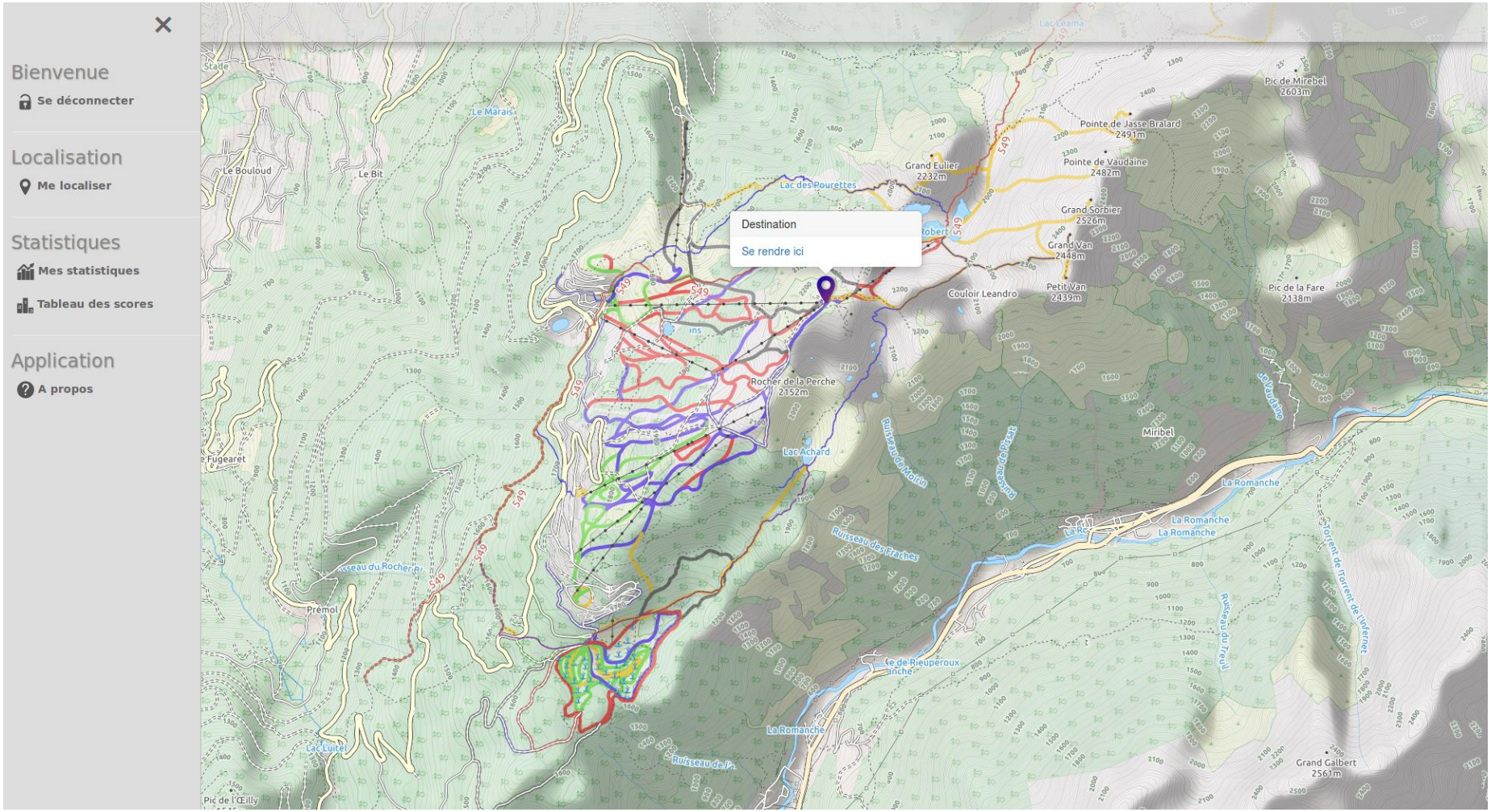
THE CHAMROUSSE EXPERIMENTATION

- The experiment will last until the closure of the station
  - A form is signed by the participants about data collection and privacy
    - This form has been submitted to the CNIL for validation
  - Distribution of the LoRa band and PIQ Robot to the participants
  - Presentation of the application to have a look at their data
  - Let them ski in the station
  - Recovery of the devices at the end
- Lending the devices
  - Lend for one day to multiples weeks in order to retrieve significant data according to different kind of skiers.

- Deletion of the data at the end of the experimentation or when the participants ask for it

THE APPLICATION

THE APPLICATION



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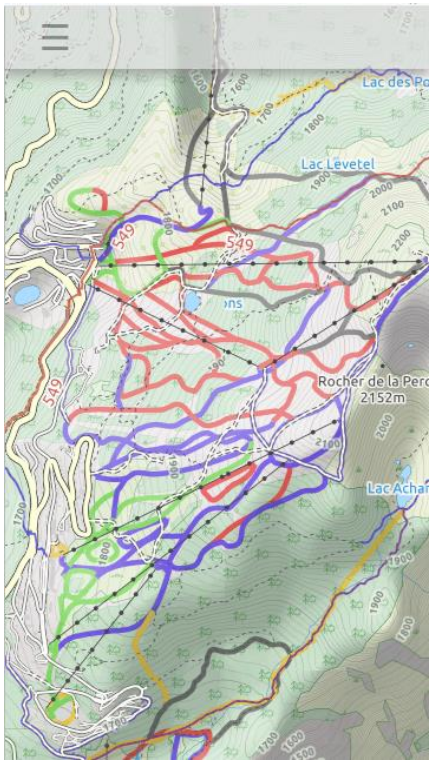
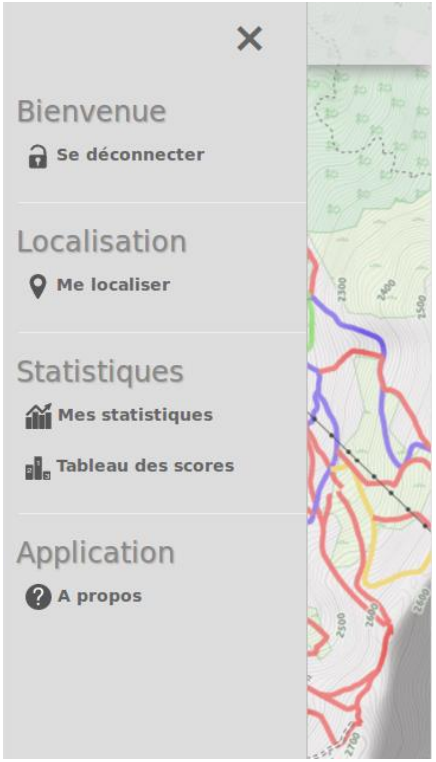
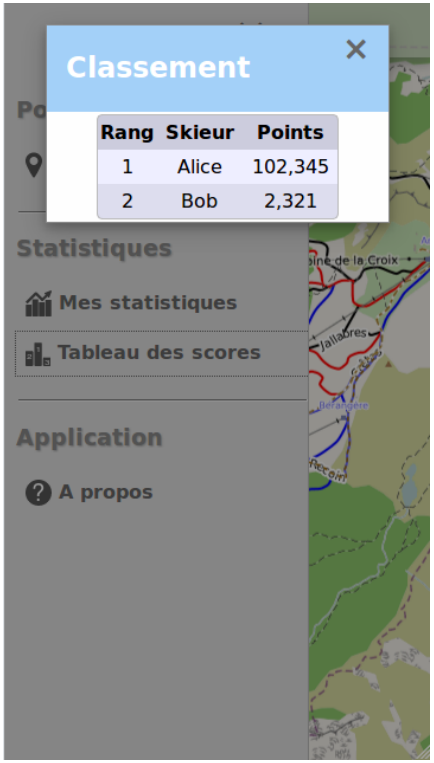
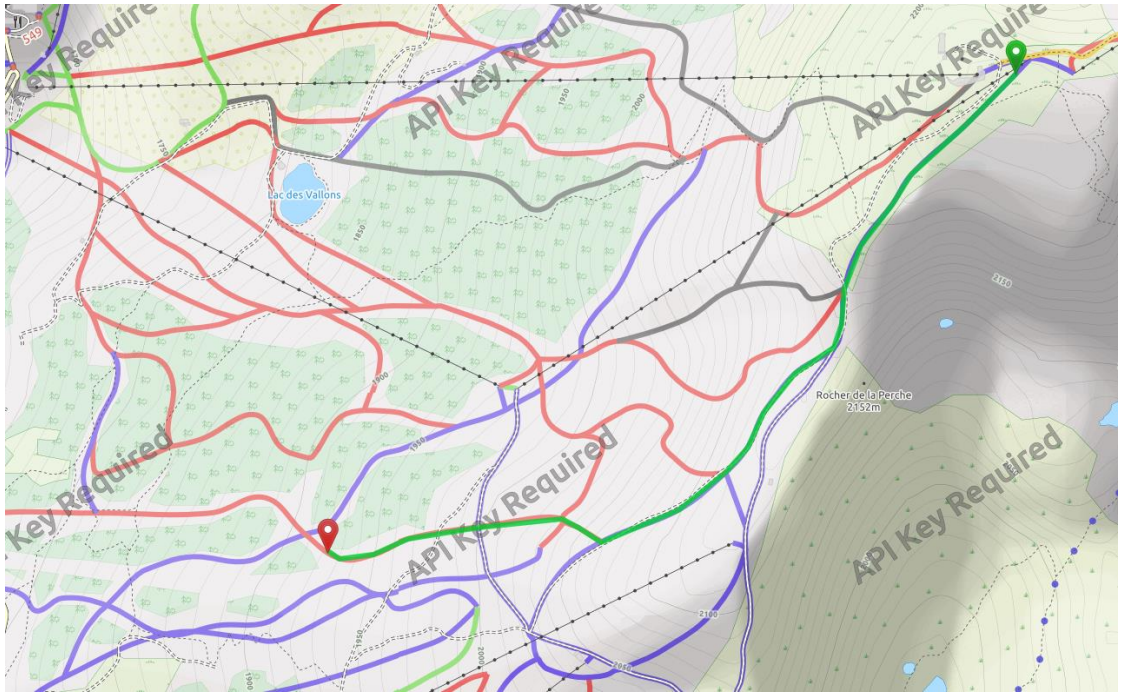






STILL IN PROGRESS

- Integration of the word detector
- Integration of the slope navigation system



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