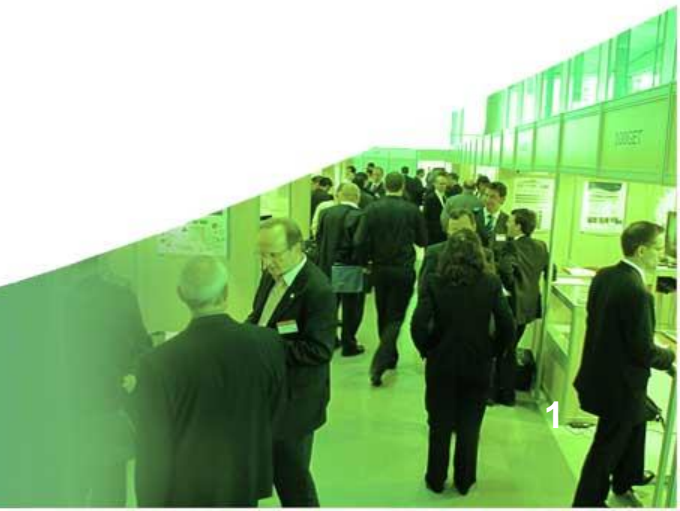Celtic-Plus Proposers Day
29 June 2015, Orange, Issy les Moulineaux

Indoor geolocation application on smartphone / tablet

Loc[k]os

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Organisation Profile

- **IT Link Group** is a Digital Services Company specialized in Embedded Systems and IT

- **Unique experience** in the design of embedded systems for the Automotive industry and of critical systems for the Defense sector

31,11M€ 2014 turnover	93% engineers
441 employees	12 mastered languages
8 locations in France	54 represented schools
2 locations worldwide	96 current customers
29 years of existence	296 ongoing projects
31 y.o. average age	7 accreditations

Project objectives

Booming markets:

- **Indoor geolocation market = 4.4 \$B in 2019** (CAGR$_{2014-2019}$: +36.5%)

  (*http://www.marketsandmarkets.com, November 2014*)

- **MEMS motion sensors market = 5.2 \$B in 2019** (CAGR MEMS$_{2012-2019}$: +13%)

 (*http://www.semi.org/eu/sites/semi.org, October 2014*)

LOCKOS main objectives:

- Develop an indoor geolocation solution at lower cost
- Use last generation smartphones / tablets as hardware platforms
- Minimize the support infrastructure of this solution
- Provide end users with a calculation engine
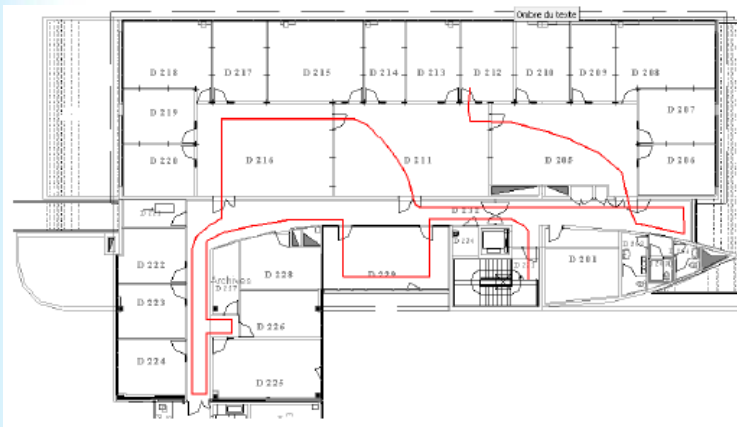
Project advantages

- Autonomous solution based on inertia: **no need to deploy a significant hardware architecture**

- Solution **optimally using inertial sensors** (not reduced to the Dead Reckoning = pedometer) in the form of a strap-down navigation

- Solution **exploiting all available sensors** on a smartphone (magnetometer, GPS, Wi-Fi, 2G/3G/4G, photo and video) through an optimal data fusion

- Solution **performing all the calculations "on board"**, exploiting the computing resources of modern smartphones

- **Scalable** solution based on the available sensors (pressure sensor, NFC ...)

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Project applications
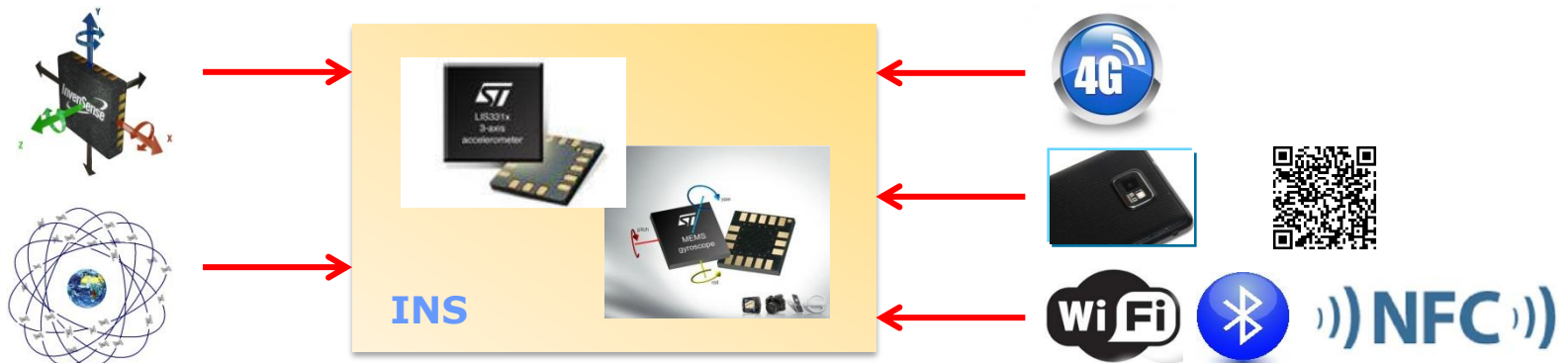
Civil application (malls, public building, public transport, industry, …)

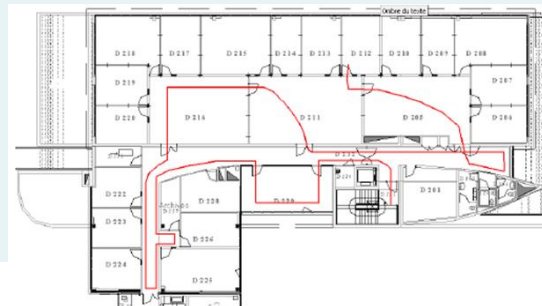Example: Alert message dissemination in case of aggression in the metro
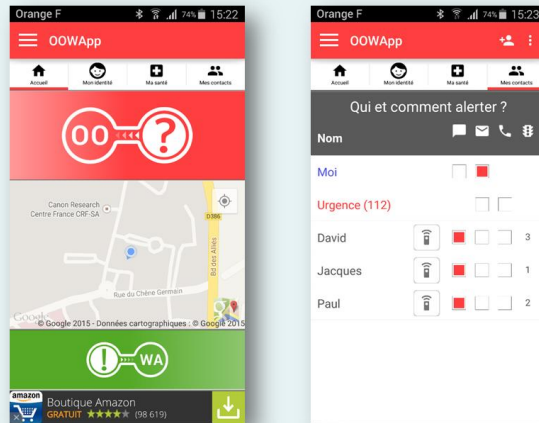
Example: Navigation to an underground car parking

Choice of a free parking place

Guiding to the free place

Security application (public security, …)

Example: Guidance of firemen in buildings

Looking for Partners

- To build up a map based on 2G/3G/4G, Wi-Fi and NFC collected data. LAC-CID and signal power transmitted from user community/antenna position will be provided.

  Deliverable intended by the partner: a tool to generate the map (precision scale of 1 meter)

- To follow-up the aging of the map and then continuously update it (through continuous data gathered and compiled)

  Deliverable intended by the partner: a tool to update the map

- To geolocate the user based on the map generated (Where am I on the map?) using fingerprinting with GSM/UMTS/LTE, Wi-Fi an NFC data

  Deliverable intended: a Fingerprinting localization solution

- To develop a mobile application (Android & iOS) that detects, warns and protects users from having unwanted or unsecured applications downloaded on their cell-phones. **The partner should also develop a technique in order to force downloading the application on a user's phone, discreetly, with or without the user's consent.**

Contact Info

For more information and for interest to participate please contact:

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