

URSI JS14 L'homme connecté

Conférence invitée localisation indoor

Accurate and scalable indoor positioning for smartphones

*Jean-Baptiste Prost**, *Baptiste Godefroy***

*Pole Star, Deputy General Manager & CTO, jb.prost@polestar.eu

**Pole Star, Head of Engineering, baptiste.godefroy@polestar.eu

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Abstract

The growth of the indoor location market has been stimulated by the traction of venue owners, willing to engage consumers in order to improve customer loyalty and increase revenue. For this purpose, venue owners require accurate, scalable, manageable solutions at an affordable price. In this presentation, Pole Star summarizes market requirements and explains how the company designed its flagship product, NAO Campus, in order to meet market expectations.

At core technology level, cutting edge real-time fusion enables high location accuracy: in order to work in the most complex environments with limited impact on infrastructure, the NAO algorithm hybridizes in a unique way opportunistic Wi-Fi and/or Bluetooth 4.0 Low Energy signals, motion sensors and map data. Device centric architecture ensures high reactivity and off-line operation in places where no data connection is available. Pole Star has launched NAO BlueSpot, low cost BLE beacons that can complete or supersede existing Wi-Fi infrastructure if need be. NAO BlueSpot can also provide micro-location and proximity detection services.

To reach world-wide coverage, Pole Star has made the choice of scalability. In a first step, Pole Star has developed tools that ensure highly efficient fingerprinting. The NAO Cloud platform enables mobile solution providers to deploy indoor location services in a fast and easy way anywhere in the world. Pole Star is now delivering brand new technology, Blind Crowd Sourcing. With this technology, it becomes possible to setup NAO Campus on new indoor venues and maintain the service without any staff on the field, simply by collecting anonymous users' smartphone data.

In a first section, the article will present market requirements. In a second section, the article will present the core technology developed to meet these requirements. In a third section, the article will expand on the scalability of the solution and on the Blind Crowd Sourcing technology. In a last section, the article will present performance results achieved in real conditions for real life applications.

About Pole Star. Pole Star was founded in 2002; its twenty employees are located in Europe (France - Toulouse and Paris) and in the USA (Palo Alto, CA and Boston, MA). With more than ten years of innovation and 5 years of field experience – six millions of square meters have been covered in 20 countries and more than 200 venues –, Pole Star has a leading role in the indoor positioning industry. Pole Star acquired the trust of tier-one customers, among which some of the largest airports, department stores, exhibition centers, shopping malls, museums in the world with live applications.

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