

## Expert opinion

---

### **Geolocation of objects and people: the technology chosen depends on what it is to be used for**

**By Cédric Belmont, Business Solutions manager, Hardis Group**

*Indoor and outdoor geolocation of people and property provide considerable opportunities for new BtoC, BtoB and BtoE digital services in all sectors: distribution, health, industry, maintenance, logistics, agriculture, etc. All that remains is to make the right technology choices ... and these depend on the expected uses.*

#### **Outdoor and indoor geolocation: imagining the future**

In recent years, outdoor geolocation for BtoB, BtoC and BtoE applications has developed substantially. The advent of smartphones has seen opportunities for use of this technology explode: driver assistance, round management, searching for or suggesting restaurants, shopping, bargains or people with similar tastes nearby, etc.

Although more marginal, indoor geolocation should also see exponential growth in the coming years. Uses of it are already very diverse. In retail, which is one of the forerunners, indoor geolocation can be used to track customer paths in real time, and to assist them with buying. In the field of health, the location of dependent people makes it easier them to track them and to call up help in the event of a problem. In industry, it is developing to provide protection and ensure safety for employees. These are just a few examples: anything (or almost anything!) can be devised and implemented, as long as the right technologies are chosen.

#### **Numerous technologies**

In addition to the now widespread GPS, outdoor geolocation will soon be using the LoRa (Long Range) network, mainly dedicated to the Internet of Things. This still little-used technology is able to identify an active RFID chip within a radius of 15 km.

Inside buildings or underground, GPS does not work very well, if at all. There are several ways to geotag goods or people indoors, such as video, WiFi, RFID, Bluetooth, and Ultra Wide Band. All have their advantages and disadvantages, and they do not all offer the same level of geolocation detail.

Video gantry systems are placed at fixed points, and therefore do not enable someone's movements to be tracked accurately: we just know that someone passed by a certain place at a certain time. RFID requires that all objects to be located must be chipped. To be effective, Wifi geolocation must be able to pick up as many signals as possible. Bluetooth beacons are now easier and less expensive to set up, but they are currently accurate only to the nearest 1 to 3 meters. Geofencing systems based on iBeacon technology can trigger an action, such as launching an application, when a smartphone owner enters or leaves an area. But since they are based on a Bluetooth system, there may be areas of overlap between two

BLE (Bluetooth Low Energy) tags. Finally, Ultra Wide Band, still in only marginal use, is able to detect objects to the nearest 10 cm. But unlike WiFi and Bluetooth, for example, this technology is far from being in widespread use and is not deployed on most mobile phones.

### **Defining the purpose of these technologies and how they are used**

As such, there is no good or bad technology. But getting a clear understanding of the possibilities and imperatives of each will help avoid choosing the wrong technology for the intended use. Especially since, in some areas, the demand will be to be able to couple outdoor and indoor geolocation so as to provide continuous monitoring of property or persons: tracking a container in an industrial area and in the warehouse, or a customer path outside and then inside the shop, etc.

In addition to needs and uses, it is essential to be aware of the sustainability of any long-term choices made. Firstly because not all geolocation technologies, including indoor ones, are standardized as yet: it would be a shame to opt for a solution that is doomed to disappear or be fundamentally changed too quickly. Secondly, ethical questions arise: not all consumers or employees wish to have their movements and their behavior in general tracked.

Finally, in order to offer more and more intelligence and value creation for services based on the geographical position of individuals and objects, it is necessary to store data in order to analyze paths and behavior. This requires being equipped with predictive solutions and surrounded by experts (data scientists) who can valorize these data, while protecting them on account of their sensitive nature.

### **About Hardis Group**

---

Hardis Group, a digital services company and software publisher, assists its customers in their move to digital and omni-channel. The company helps them transform their information systems, their supply chain and their customer relationships to create value and increase operational performance. With its dual historical positioning, Hardis Group has developed business expertise in the areas of banking, insurance and e-health, distribution (CPG and luxury goods), industry and energy, logistics and transport services. This expertise now allows it to provide its clients with global responses to their needs, in an agile approach characterized by co-construction, innovation and continuous improvement.

Since its creation in 1984, the company has built its growth on a pragmatic approach and values of efficiency and firm commitment both to its 2,500 clients and its 700 employees (25% of whom are also shareholders). Hardis Group posted turnover figures of €62.1 million in 2014. The Group, whose headquarters are in Grenoble, has four other agencies in Lyon, Paris, Lille and Nantes.

[www.hardis-group.com](http://www.hardis-group.com)

### **Press contacts**

---

Anjuna  
Elodie Cassar  
elodie.cassar@anjuna.fr  
Tel: +33 9 64 15 31 27  
GSM: +33 6 80 53 82 94

Hardis Group:  
Hélène Leclercq  
helene.leclercq@hardis.fr  
Tel: +33 4 76 70 98 41