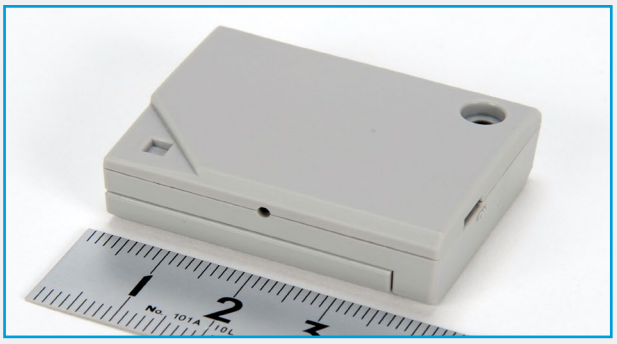
acal bfi European leader in advanced technology solutions

Are smart beacons the next step in the third industrial revolution?

In less than a decade, wireless connectivity, the Internet of Things (IoT), smart devices and apps have become the norm. Today, this technology is expanding at a phenomenal rate. The way we access information and go about our daily lives has changed, with technology behind these new behaviours.

When travelling by air, for example, we no longer book flights with a travel agent in person. Instead, we go online and search dates and times to find the best deal. We digitally check in before we even reach the airport. And rather than printing tickets, we add our boarding pass to the digital wallet in our devices.

Technology has come a long way over the last 10 years and we have quickly adapted to these new ways of commerce, entertainment and travel. This change, known as the 'third industrial revolution' is gaining momentum, and smart beacons are the next step in this journey.



consult. design. integrate.

Smart beacons – moving us from pull to push systems

Today, many digital designs are based on the fact we always keep our devices with us, ready to access information. As such, the vast majority of designs are pull systems but these are not always effective. Sending a request, we receive only the latest information available at that time, whether it is relevant or not.

Pull systems are reliant on user action; this is needed before information is sent to our device and what we see is dependent on the request submitted. We pull information to us, and then only use a fraction of this to make decisions offline. At the airport, for example, we can see the latest departure and gate details for all flights but only really need the details of ours. At the gate, we search for entertainment whilst 'hugging' the gate, waiting for it to open.

As convenient and advanced these systems are, we have only really achieved the digitalisation of an existing journey, and it is still reliant on our action. Smart beacons, however, could change this.

Low Energy technology could further the revolution

Smart beacons use Bluetooth Low Energy (LE) technology as a radio transmitter to broadcast signals to nearby receivers such as smart phones, tablets, sensor monitoring units and other Bluetooth-enabled devices. As Bluetooth is a short-range transmitter, anything receiving the signal is within a known approximate distance and can be assumed to be at a certain location.

Crucially, smart beacons do not rely on user action to share information. Smart beacon Bluetooth LE technology is used with the technology embedded in devices we constantly carry with us to send relevant information and notifications when users meet certain criteria, such as location.

This push system does not rely on us to trigger information being shared with us; instead, it is pushed down to our devices when they are in proximity. Going back to our airport example, our experience could be very different with just a handful of smart beacons placed around the building.

Stepping through a world of convenience

As we enter the airport, a smart beacon recognises us from our passenger details and boarding pass already saved on our device. Directions to our specific airline's bag drop area are then automatically shared with us. For airlines, alerts can be triggered to open more check-in desks if a large number of passengers arrive at once. This reduces waiting times for the benefit of both parties.

Once our baggage has been checked in, another beacon notifies us that security checks are busier than usual with an estimated waiting time; this manages passenger expectations and allows them to forward plan.

In departures, beacons around the building can send the latest departure and gate details directly to our device, keeping us constantly updated without the need for us to constantly check our devices. As we travel around departures, beacons recognise our location to provide updated walking times and distances to our gate. Then, when our gate is opened and our flight is ready to board, we receive a notification in good time to go to the gate with relevant directions.

The result is a far more relaxed experience, allowing us to make the most of our time in departures. We are happier to explore and not wait for gates to open at the gate itself. And as we explore, retailers can use the technology to share promotions, which can be tailored to specific users based on their profiles.

Enhanced, smarter experiences

This is just one location where smart beacons can transform the user experience, but the technology can be – and is already – being used to solve more problems and enhance more user experiences.

On the London Underground, smart beacons guide visually impaired passengers with audio directions triggered on their phone. Engineers are using beacons to provide indoor navigation, overcoming GNSS and GPS signal issues. Retailers can send promotional offers to customers when they are near or in a store. Restaurants can share menus and daily specials to attract dinners with specific tastes or dietary requirements.

As we walk into at a railway station, the latest departure information can be sent to our device for travel we have pre-booked or for the destinations we travel to most. Then, as we arrive at the destination, maps could be downloaded to our device from a local hub, saving on data consumption. This could include information on local attractions or events, furthering their promotion and our knowledge. Our smart devices would finally become 'smart', appearing to think for us and prevent us from constantly searching for information.

Smart beacon Bluetooth LE technology has huge potential, especially with the supporting infrastructure – users having compatible devices – already in place. Two thirds of the population in Europe currently carry a smart phone, and this is set to rise over the coming years.

Join the IoT universe with Acal BFi

Whether you have just an idea, an initial concept design or are already developing a new product, Acal BFi can help you. We provide independent, impartial advice with knowledge, experience and access to a portfolio of leading IoT technologies. From initial concept consultation to design support and even technology integration and customisation, we can support you at any stage of your design, and could broaden your vision to what is possible with the latest technology. Analysts predict the technology to be adopted even faster, with millions of beacons expected to be installed in the next four years.

Find out more about smart beacons here or contact us today.

Acal BFi Belgium
Zaventem, Belgium
Tel: +32 (0)2 720 5983
Email: sales-be@acalbfi.be
Web: www.acalbfi.be

Acal BFi Nordic AB
Roskilde, Denmark
Tel: +45 7026 2225
Email: info@acalbfi.dk
Web: www.acalbfi.se

Acal BFi Nordic AB
Vantaa, Finland
Tel: +358 207 969 770
Email: info@acalbfi.fi
Web: www.acalbfi.se

Acal BFi France SAS
Evry, France
Tel: +33 (0)1 6079 5900
Email: sales-fr@acalbfi.fr
Web: www.acalbfi.fr

Acal BFi Germany GmbH
Dietzenbach, Germany
Tel: +49 (0)6074 4098 0
Email: sales-de@acalbfi.de
Web: www.acalbfi.de

Acal BFi Germany GmbH
Gröbenzell, Germany
Tel: +49 (0)8142 6520 0
Email: sales-de@acalbfi.de
Web: www.acalbfi.de

Acal BFi Italy SRL
Milan, Italy
Tel: +39 02 53583.1
Email: sales-it@acalbfi.it
Web: www.acalbfi.it

Acal BFi Italy SRL
Roma, Italy
Tel: +39 06 86894259
Email: sales-it@acalbfi.it
Web: www.acalbfi.it

Acal BFi Netherlands BV
Eindhoven, The Netherlands
Tel: +31 (0)40 250 7400
Email: sales-nl@acalbfi.nl
Web: www.acalbfi.nl

Acal BFi Nordic AB
Hönefoss, Norway
Tel: +47 (0)32 16 2060
Email: info@acalbfi.no
Web: www.acalbfi.se

Acal BFi Nordic AB
Sundbyberg, Sweden
Tel: +46 (0) 8 5465 6500
Email: info@acalbfi.se
Web: www.acalbfi.se

Acal BFi Nordic AB
Uppsala, Sweden
Tel: +46 (0)1856 5830
Email: info@acalbfi.se
Web: www.acalbfi.se

Acal BFi UK Limited
Wokingham, UK
Tel: +44 (0)1189 788 878
Email: sales-uk@acalbfi.co.uk
Web: www.acalbfi.co.uk

Acal BFi UK Limited
Milton Keynes, UK
Tel: +44 (0)1189 788 878
Email: sales-uk@acalbfi.co.uk
Web: www.acalbfi.co.uk

acal bfi

consult. design. integrate.