



Indoor Positioning System

an introduction...

‘Are you interested in...’

- Understanding how people or things move in indoor spaces?
- Collecting precise localised data even indoors?
- Building analytics & profiling about indoor behavioural scenarios?
- Enable targeted proximity services WITHOUT installing lots of infrastructure?
- Starting meaningful interaction with your customers via their Smartphones?

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IPS Can Help...

‘What is an IPS?...’

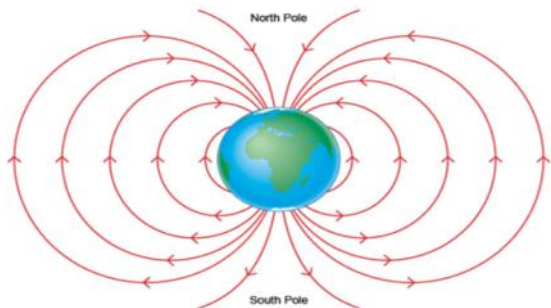
GPS was a revolution in localisation,
but unfortunately it doesn’t work indoors!...

IPS enables ‘GPS-like’
functionality to large indoor spaces...



High Precision IPS - How does it work?

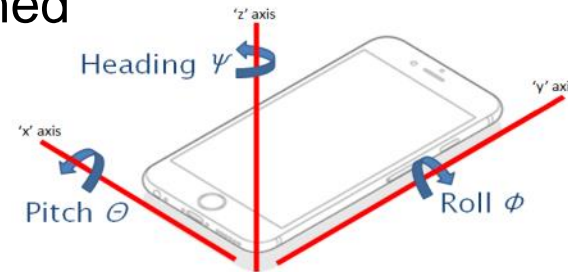
“Accuracy to approx 1m with little to no infrastructure!”



The advanced indoor localisation utilises;

- The natural ‘Geo-Magnetic’ field ...

- Consumer sensors – already contained within a Smartphone
- Any pre-existing Wi-Fi or Bluetooth infrastructure.

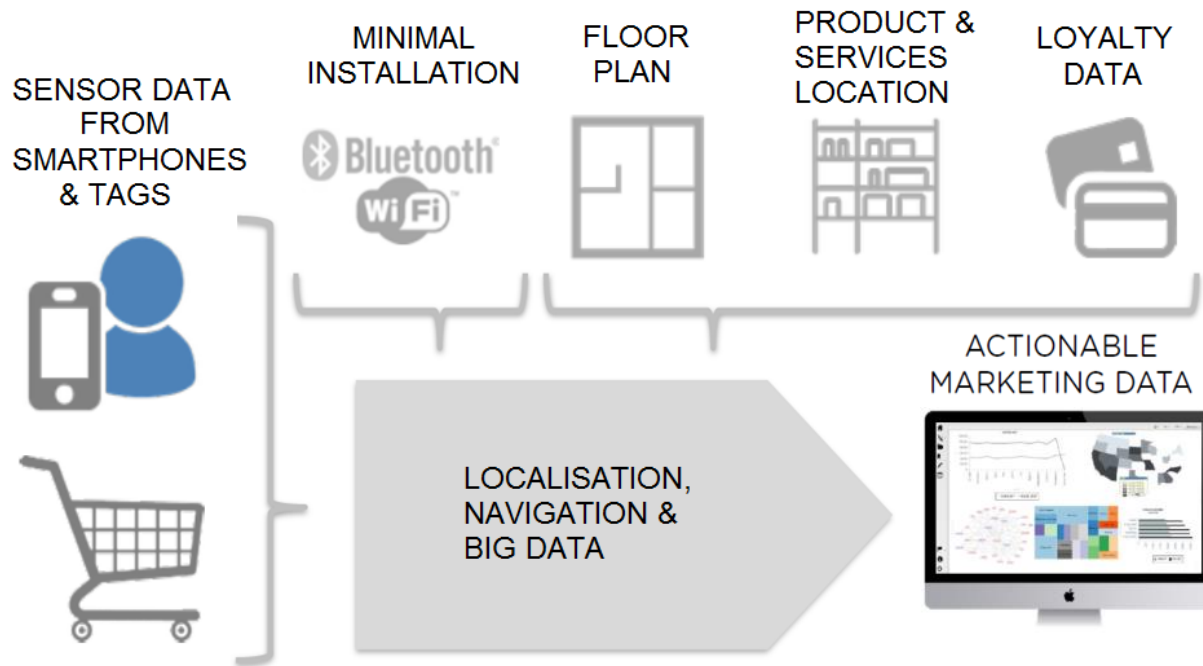


Unique Value Proposition...

“The platform allows you - precisely and inexpensively - to collect, distribute and leverage localised data from indoor environments, and to develop high value services for both the customer and the business...”



Based on Low-Cost Infrastructure...



Advanced Localisation & Analysis...

- Smartphone App:
 - 'Blue Dot' on screen location
 - Navigate to 'Points of Interest' (POI)
 - Proximity Tools – Messages / Marketing



- Server App & Dashboard:
 - Real-time identification & localisation
 - 'Heatmaps' – Granular & Aggregated
 - Security Management – Proactive & Emergency
 - POI Definition & Management



Real-Time Positional Data...

“understanding crowds to implement actions”

- At key times during the operational hours of the building / facility, knowing in real-time how customers / passengers move and group, allows you to identify possible risk scenarios and act upon them before a situation develops...
- Maximises the effectiveness of local resources and allows greater targeted planning...



Aggregate Data...

“Quantify how your Users use & enjoy the space”

- Anonymously track Users with high levels of precision...
- Enables a highly granular, yet clear understanding of how Customers / Travellers use the building / facility...
 - Where do travellers prefer to go whilst waiting for a flight or train?...
 - Where & when do visitors stay longer?...
 - Where, when & what do they NOT go / use?...
 - Which messages get what reaction? & when?...



POI Definition & Management...

“your Space & your Content”

- Defining the content that Users can find in any environment holds great value...
- The creation and management of the POI('s) is with the System Owner / Administrator – not ARVA or a 3rd Party...
- You define your POI and all the associated content...



User Localisation & Self Navigation...

- Orientation for the Customer / Traveller in large and complex buildings is not as simple as we'd like...
- With our solution, the Customers / Travellers can easily get their position on a map ('Blue Dot'), directly on their Smartphones...
- We 'Geo-Magnetically' map the internals of the building and then overlay the building floor plan, to provide the indoor GPS-type navigation functionality...



Proximity Alerts...

“Targeted Information that Displays where it is relevant”

- Knowing where the Customers / Travellers are, you are able to deliver alerts or marketing messages for that Customer / Traveller in that specific location...
- Without Moving Beacons...
 - Direct to Smartphone...
 - Smallest ‘Proximity’ on the market – **2m** vs. 5-10m typically...
- Individually targeted at Customers or a Time / Date...
 - Shopping special offers or events...
 - Restaurant / Food offers...
 - Customer Service Messages...



Turn-By-Turn Navigation...

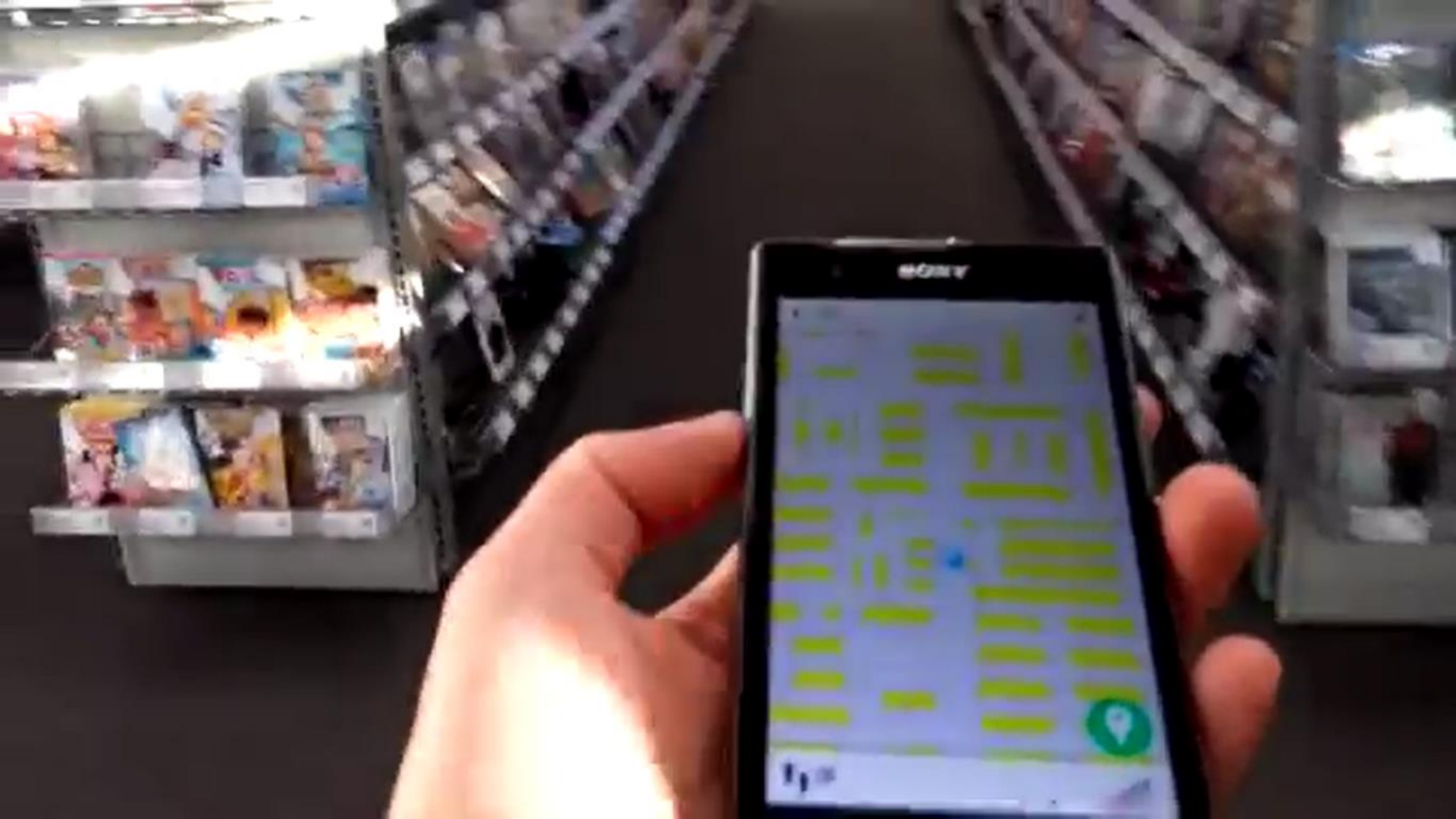
“Let customers / travellers find what they are looking for”

- The Customers / Travellers can search for any POI – Retail Store, Ward or Department, Service Point , Toilet / Baby Change, Airport Gate or Railway Platform) and then receive comprehensive routing instructions from the App on their Smartphone...
- If the destination changes unexpectedly – Gate, Consultation Room, Platform – the User can receive notifications within the App and can then be guided quickly to the new destination, saving time, money and resources...



What's it look like?...

- Example....
 - Retail Electronics store...
 - 'Blue Dot' tracking around the store fixtures...
 - Converts to Heat Mapping / Dwell Times...
 - Identify 'Hot Spots' & 'Dead Space'...
 - Can help identify internal routing / walking paths...



The Benefit Cases...

Healthcare:

- Real-time tracking of Patients & Assets.
- Improving Operations & Reducing Costs.

Retail:

- Localised Customer Services & Offers.
- Dwell Times & Marketing Feedback.
- e-Commerce level customer information for 'Bricks & Mortar' retailers.

Public Buildings: (Airports & Rail Terminals, Hospitals & Museums)

- Orientation services and localised information.

Security Coordination:

- Geo-fencing & tracking of police, forces and security personnel in sensitive buildings.

Large Public Buildings...

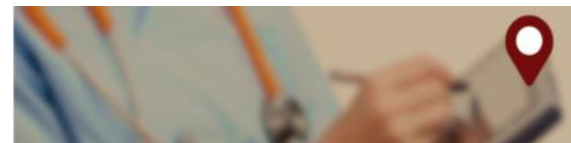
“enable orientation services and localised information”

- Visitor assistance; Use IPS to help track the visitor inside the building and direct to the correct place...
 - Confirm arrival for Hospital appointments / services – e.g. POI's;
 - Specialist Department (A&E, Imaging, Haematology, Pharmacy) ...
 - Monitor & Locate passengers in a terminal;
 - Minimise delays & cost at the Departure Gates...
 - Advise on time to Gate ahead of arrival at airport – ‘time of day’ & ‘day of week’ specific...
 - Museums & Galleries;
 - Exhibit information (audio visual content)...
 - Public Services as POI's...

Healthcare...

“the Birds-eye view of Geo-fenced assets – alerts before it goes!”

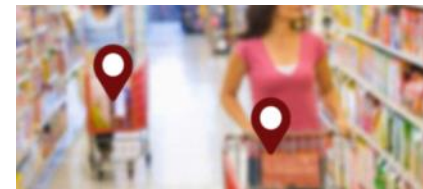
- Real-time tracking of Patients;
 - Vulnerable or ‘At Risk’...
 - Baby Unit...
 - Care Home...
- Real-time inventory & asset visibility;
 - Vital medical equipment – fixed & portable...
 - Beds / Wheelchairs...
 - Drugs trolleys...
- Home visit carers;
 - Tailored, Patient-specific tasks / checklists...
 - Patient & Residence are tags – Geo-locate (GPS) ensures correct care is administered...



Retail...

“e-Commerce level customer information for ‘Bricks & Mortar’ retailers”

- Localised Proximity Marketing;
 - Customer Services Messaging...
 - Personalised Product Offers...
- Marketing Effectiveness Feedback;
 - Profile in granular detail – per store...
 - Customer Dwell Times at Promotions...
 - Heat Mapping...
- Customer Density at key points:
 - Till / Checkout...
 - Fitting Room...
 - Click & Collect locations...



Industry...

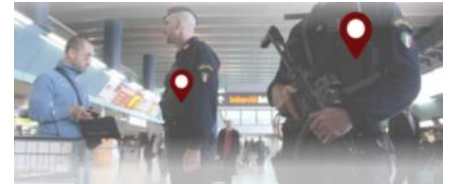
“minimise risk and maximise safety”

- Real-time tracking of Workers;
 - Sensitive or no lone-worker areas...
 - Warn / Advise of PPE requirements...
 - Track High Value Assets...
- Optimise Operations;
 - Visible location of key maintenance teams...
 - Quickly assign ad-hoc / reactionary tasks...
 - Maximise the ‘uptime’ of asset by minimising time to fix and increased first fix...

Security Coordination...

“the most advanced control room”

- With a simple belt-hardware for First Responders, the Control Room is able to visualise the real-time ground position of ‘assets’ ...
- For potential sensitive targets such as travel points, key public buildings and government establishments, it is essential to have available the best ‘tools’ in order to manage a situation or emergency...



FOR FURTHER DETAILS CONTACT

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