



IoT Smart Buildings Challenge

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Evaluation Criteria



The submitted proposals will be evaluated according to the following criteria:

Business

How well does the proposal support the outlined use cases, provide value-add for the partners and deliver innovation?

Technology

How well does the proposal describe how it will ensure scalability and realistic rollout in an enterprise environment? Proof of concepts will be given bonus consideration.

Community Contribution

How well have the contributors supported the challenge events reflected in the timeline?

Submission deadline: August 30, 2019





Challenge Submission

Please use the following slides to make your submission to the challenge



Use this PowerPoint template to submit your proposed concept for the challenge.

Fill out each slide from the following, using the appendix for additional material.

Optional:

- Video
 - Highly recommended
 - Should provide insights into the work you did for the challenge (not simply product advertisement)
 - Please attach or embed this into this PPT
- Code / PoC (proof of concept) Results
 - Optional, but highly desirable
 - Include high-level overview in PPT, with link to your repo





About Oriient



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- Oriient New Media Ltd (Israeli private corporation)
 - VC-backed (\$5M raised)
 - CEO, Co-Founder: Mickey Balter (mickey@orient.me) – PRIMARY CONTACT
 - Other contacts:
 - Amiram Frish (CTO, Co-Founder) – amiram@orient.me
 - Or Shin (Director of Business Strategy & Operations) – or@orient.me
 - www.orient.me





Use Case: Smart Space Flow Analytics



- Oriient developed a zero-hardware Indoor Positioning System (IndoorGPS)
- Our solution **does not use any beacons or WiFi**. It is based solely on **Earth's magnetic field** and existing smartphone sensors.
- By integrating our SDK into mobile applications, the mobile application becomes aware of the smartphone's precise position in a building (**1m accuracy**)
- Thus, by integration into a "mall app" (and giving consent for location permissions), the mall visitor can get access to **navigation in the mall**, product search, personalized promotions, etc.
- The mall gets access to anonymized location data showing the **precise, continuous** user journey through the mall – which areas are visited, for how long, individual and aggregated traffic patterns (heatmaps), changes over time, etc.
- Unlike cameras – tracking is **continuous** and shows the complete user journey, not just the temporary congestion in a particular area.
- [Demo video](#)





Contributions to the Smart Buildings Challenge



We are an Innogy Innovation Hub portfolio company, and would love to get involved in the community further (this is our first challenge).





Solution Design: Business Perspective



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- Our approach enables mall operators to enrich the mall visit experience through a mobile app, providing meaningful time-savings and adding a relevant smartphone layer to the mall visit – merging online and offline.
 - Visitors enjoy a more relevant and time-saving experience by getting access to personalized offerings and navigation.
 - The mall operator enjoys an additional digital touch point with the visitors and access to anonymized analytics which enable space optimization, attribution-based business models and additional value to tenants, as well as improved safety and workforce control.





Solution Design: GTM Perspective



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- Oriient is an established company which is already in the market. We are already selling directly and supporting our product.
 - We offer the Indoor Positioning service in a SaaS model
 - Other providers (app developers, IoT providers) can integrate into our system for leveraging the location data (either real-time or historic) for further optimizations and as additional data sources into their systems.
 - Our solution can be tested "standalone" using our demo apps and white label offerings, or integrated into existing solutions the mall may have. We can carry out the entire PoC standalone, but are happy to cooperate with additional ecosystem members on joint collaborative use-cases leveraging the location data.





Solution Design: Differentiation



We are the **only solution** in the market enabling **true zero-hardware** IndoorGPS which relies on no external hardware (**no beacons, no WiFi**).

Our solution is **10-30x more accurate** than WiFi (5-10x more accurate than beacons), and available on both **iOS** and **Android** devices (**cross-platform**).

Since we are purely software-based, our solution is offered in a **cost-effective SaaS model** which enabled rapid implementation, integration, deployment and testing, without committing to significant CAPEX investments.

The traffic data we collect shows the entire continuous user journey, allowing the mall operator to understand which stores are visited by each person, in what order, for how long, etc. Data is fully anonymized and cannot be traced to an individual's identity, but does provide full visibility into the complete user journey. This stands in contrast to WiFi-based systems or cameras.

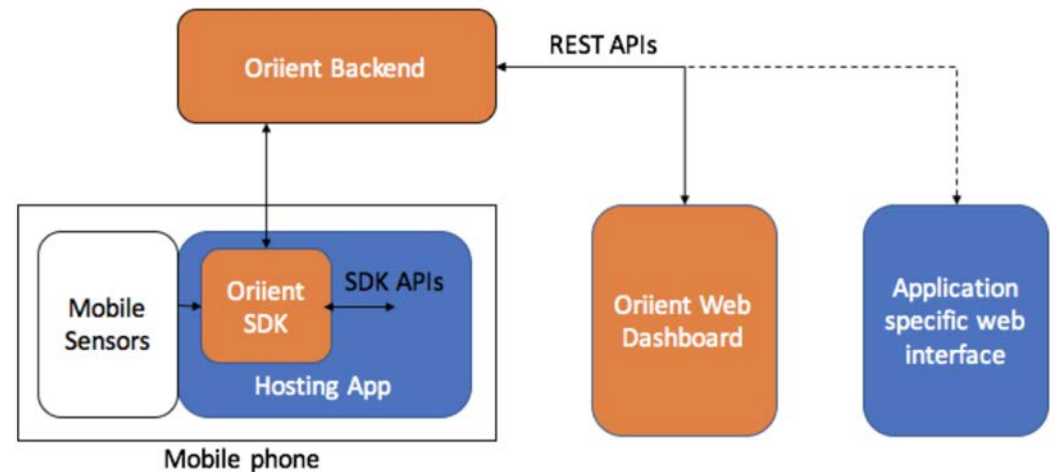




Solution Design: Architecture



- Cloud-based service
- Mobile SDK integrated into mobile app, communicating with our cloud-service
- The backend calculates the user's position based on sensor data, and sends back location updates
- A RESTful API system allows management of the system, access to raw analytics, real-time monitor
- A web dashboard provide access to processed analytics: heatmaps, traffic patterns, dwell times, etc.





How does Oriient's IndoorGPS work?

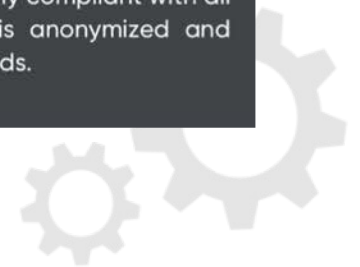
It's that simple.

Earth's magnetic field exists all around us, and geomagnetism is the science of the properties of this magnetic field. Indoors, every building introduces unique distortion of earth's magnetic field – with its own magnetic features.

Oriient leverages the sensors that already exist inside smartphones to identify and record these particular indoor magnetic landscapes – allowing us to create a map of a location by simply walking around with a smartphone in-hand, and then pinpoint locations of other smartphones within the same building based solely on the devices' readings.

State-of-the-art algorithms have been developed by Oriient to allow software-only indoor positioning. The proprietary technology, matching magnetic readings to the database of buildings, makes it possible to accurately locate any smartphone that moves inside any building, anywhere in the world.

*At Oriient we respect and value user privacy. Oriient is fully compliant with all data privacy regulations – including GDPR. All data is anonymized and protected by strong encryption and strict security standards.





Solution Design: Technology



1.



An Orient mapper records a building's magnetic landscape by walking around the space with a regular smartphone in hand

2.



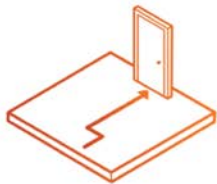
A magnetic map of the facility is created and uploaded to Orient's cloud

3.



Orient IndoorGPS capabilities are integrated into an iOS/Android mobile app (via a light-weight SDK with demo apps and example code, or using Orient's white-label app)

4.



Breakthrough algorithms process a user's smartphone sensor data together with the magnetic map to determine the precise position of the user

5.



Users can begin enjoying the service and building-owners can immediately gain visibility into the use and management of their facilities

6.



The content, including interest-point locations and notifications, can be modified using an intuitive dashboard. External systems can leverage the data using an API



Solution Design: Scale



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- We have successfully implemented the system in a mall of 50,000sqm (single floor).
 - Multiple floors are supported by the system, so larger malls are also supported.
 - We have operational capacity to deploy the system in any number of malls, and are working on scaling our internal operations for crowd-sourcing the process, allowing rapid expansion and deployment.
 - We are a VC-backed company (\$5M raised) with significant resources to support our operations.
 - Our cloud-based service supports scaling to any number of users (additional cloud resources are automatically deployed). The nature of the system does not create interference or cross-impact between users of the system in the same location.





Potential Issues/Challenges



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- The only challenge is the need to integrate into an existing mall app, or introduce an app for the users.





Tentative Timeline



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- System active in the mall (mapping): Project launch + 3 weeks (actual deployment takes 2-3 days)
 - User experimentation start: deployment + 2 weeks (based on Orient white label app)
 - Mall app integration and testing: Project launch + 4-12 weeks (typical times for a capable app development team)



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- Videos:
 - [Orient for Retail](#)
 - [Live demo](#)
 - [Retail promotions use-case](#)
 - [In-store product search use-case](#)
 - [Building Wayfinding](#)



Join Us Now!



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- Submit your application before August 30, 2019
 - Fill in the Submission PPT Template and email it to:

Kathy Walsh
walsh@iiconsortium.org

or

Evan Birkhead
evan@trusted-iot.org

