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MindSphere
Open Space Challenge

Case Specification

Company

Expo 2020

Company Details

Expo 2020 is a World Exposition to be hosted by Dubai in the United Arab Emirates, opening on October 20, 2020 and running through April 21, 2021.

Case Title

Crowd Management at Expo2020 in Dubai

User Story

Expo 2020 will open on 20 October 2020 in Dubai under the theme "Connecting Minds, Creating the Future", sub-themes being Sustainability, Mobility and Opportunity. Siemens is the Premier Partner for Intelligent Infrastructure & Operations. The event will run for six months, closing on 21 April 2021.

Every day, 150k visitors will be expected at Expo 2020 on a 4.38 km² area. They will arrive using various methods of transport, by car, bus and metro. Each visitor will receive a wearable device (details for the wearables not yet defined).

The Expo management is looking for a solution for crowd and queue management including the following:

- Wi-Fi signal
- Heat maps
- Live event management
- Planning
- Ticketing
- Crowd simulation
- Footfall analysis
- Integration with traffic, signage, visitor mobile app
- Journey planning, personalized offers
- Wearables and VA
- Gamification
- People tracking (cameras, wearables, beacons, RFID, GPS)

On the one hand, this crowd and queue management should provide visibility for the Expo organizers to know where crowds are and where to deploy staff, buses and other resources accordingly. On the other hand, it should provide visitors of the Expo with a better visiting experience, by showing wait times for pavilions in real-time and making it easier to plan their visit in advance with reduced waiting times. Bear in mind that an additional user group are the international participant operated pavilions, who may also require visibility on footfall, queue management, heat maps, etc.

Problem Description

What are the problems you need to address?
Every day, there will be 150k visitors expected at Expo 2020 on a 4.38 km² area. They will arrive using various methods of transport, by car, bus and metro. The Expo organizers are looking for a way to effectively manage these crowds and minimize queues at the different pavilions and attractions. This requires full visibility of where crowds are at any specific time in real-time, as well as predictive functionalities. Visitors should be able to plan their visit with the help of an app and get real-time forecasted waiting times for queues and recommendations for a visit's agenda (i.e. Visitor would like to visit the pavilions of Germany, Italy, France and UAE. The app will tell the optimal schedule for the day based on walking distances and predicted waiting times at each pavilion)

How is the problem currently handled?
Expo 2020 will be operational in the year 2020, so far there is no crowd management systems in place. Given that the operators will have no baseline data until the start of the event, an ideal solution would be flexible to "learn" new methods over the six-month course of the event.

Who is affected by the problem?
Visitors to Expo 2020 as well as the operational team of Expo 2020 (dispatch of security staff, volunteers, transportation etc.)

How critical are these topics for you and your customers?
Effective crowd management is a crucial part of the visitor's experience and for the organizers it is a matter of operational efficiency and safety.

Is there any background information that would help to find a solution?
An example for such a crowd management app is the Disney app:
https://disneyworld.disney.go.com/plan/my-disney-experience/mobile-apps/

Siemens and Expo 2020:
https://www.siemens.com/mea/en/home/company/topic-areas/ingenuity-for-life/expo-2020-dubai.html?wcmmode=disabled

Expo 2020:
https://www.expo2020dubai.com

Please see pdf 'How Dubai Expo 2020 site becomes a future smart city'

Technical Provision

Type of machinery / plants?
People with wearable devices

Level of automation and digitalization?
From tickets to tech-enabled volunteers, to smart food ordering, to dynamic crowd management and everything in between, Expo 2020 Dubai is finding smart solutions that will create one of the most efficient and engaging events in the world. The "smart site" will deliver a unique and memorable experience for visitors, while also enabling business and raising public awareness of sustainability.

Expo plans to optimize the visitor's experience by digitally connecting them with their surrounding environment and enriching their interactions throughout the Expo journey. They will use technology to create awe-inspiring experiences, as well as ensuring a safe and secure environment, whether that's providing seamless ticketing and access, a painless commute and smooth movement around the site, or dynamic information on pavilions, F&B and other Expo destinations.

Questions?

MindSphere Forum
https://www.mindsphere.io/community/