Public Chat Log Transcript: NFTA ITS4US Webinar - Enabling Indoor Navigation to Support Complete Trips (11-01-23)

Carlos Alban (ITS America): (11/1/2023 13:05) To our participants, if you have any questions for the NFTA/Buffalo team please feel free to provide those here

Darlene Magold, Etch: (11/1/2023 13:09) yes

Elijah Mark: (11/1/2023 13:09) Yes, no problem

Lisa Willetts: (11/1/2023 13:09) yes

Bern Grush, URF: (11/1/2023 13:09) ye

Bern Grush, URF: (11/1/2023 13:17) If we consider indoor navigation BOTH for complete human trips AND robotic trips along similar pathways, the potential of monetizing these signals/systems for the COMMERCIAL would provide funding for the ACCESSIBLE. We should seek ways to collaborate NOW before the robotic industry becomes entitled just as the automobile has done. Who can I work with? bern@urbanroboticsfoundation.org

Bern Grush, URF: (11/1/2023 13:23) To be clear I am referring to indoor-capable last-mile, security and maintenance robots. Bern

Polly Okunieff: (11/1/2023 13:25) Hi Bern. We welcome a conversation with you at a later time. There are different requirements that are needed for a robot vs. a human using a mobile app.

Cameron Shelley: (11/1/2023 13:26) What technology is used for the indoor positioning system? Ultra-wideband? Bluetooth? Other?

Nayel Urena Serulle (ICF): (11/1/2023 13:27) Bern, this is a great comment, one that warrants a deeper discussion than the one we can have at this time. At the end of the presentation you will see point of contacts for this project. Feel free to reach out to us and we can happily schedule a time for this discussion with all relevant participants.

Darren Weibler: (11/1/2023 13:27) Cameron, this will be discussed in more depth in a few slides. thank you!

Daniel Seijas: (11/1/2023 13:29) Hi Cameron, bluetooth is used for indoor positioning as Dana just mentioned (Bluetooth Low Energy or BLE)

Bern Grush, URF: (11/1/2023 13:30) @Polly and @Nayel. Yes, I meant "later". I just wanted to mark the issue of collaborating. @Polly there is much "in common" under the covers. I was not thinking about the user app, which would be very different, of course.

Sean P Fitzpatrick: (11/1/2023 13:52) Can the battery strength of the individual beacons be monitored remotely using the app?

John Wiens (Neaera): (11/1/2023 13:53) When connected to an individual beacon via the configuration application. The app provides battery lifespan estimates based upon broadcast rate and power.

Xu Liu: (11/1/2023 13:59) How does the SDK distinguish the user's movement path in different floors by references the Beacon's signal? SDK may think user is moving on upper floor, but actually, the user is moving downstairs.

Daniel Seijas: (11/1/2023 14:02) Hi Xu Liu, the UUID, Major and Minor will identify not only the horizontal position but also the vertical position (floor number)

Daniel Seijas: (11/1/2023 14:03) so the stronger beacons sensed by the phone will indicate what beacon is closer and hence what floor the user is in

Xu Liu: (11/1/2023 14:05) thank you for the explanation @Daniel. in that situation, if we want to present the user route, origin -from 1st floor, to destination - the 2nd floor. can the SDK tell us now, user has moved to the second floor? and we replace the first floor map to second floor map and show the route to the user for second floor?

Steve: (11/1/2023 14:06) Have you considered "dead reckoning" technology as a replacement for beacons or other hardware that can breakdown?

Daniel Seijas: (11/1/2023 14:06) to Xu Liu: yes that's how it is done, one of the fields returned by the ODP SDK is the floor number, so the floor number will be used with the method "showMap()" and the new floor will be presented

Daniel Seijas: (11/1/2023 14:08) To Steve: dead reckoning is already used when the user is moving. We have in the past removed the beacons and used only dead reckoning, the only thing that dead reckoning doesn't address is the initial position of the device, so what we did at that time is to ask the user to indicate its initial position (we can leverage QR codes around the building that the user can scan to automatically position the blue dot there) and then dead reckoning can take over

Polly Okunieff: (11/1/2023 14:08) @steve, we did consider dead reckoning, but we would need more power and would have varying results based on quality of the handsets. It was not our top choice.

Daniel Seijas: (11/1/2023 14:09) but as Polly just mentioned it is less preferred

Polly Okunieff: (11/1/2023 14:11) #steve, QR codes are also less desireable because we wanted a hands-free solution and a user needs to point to read the QR code

Steve: (11/1/2023 14:11) I have contacts on the dead reckoning side if needed. https://www.linkedin.com/in/steveczajka/

Xu Liu: (11/1/2023 14:17) To Daniel: thanks, that is very great, the SDK handles the floors for the developer. If user turns off Bluetooth, I assume SDK will use Wifi to scan and detect the reference location. As what I know, Scanning nearby WIFI SSID is not public allowed by apple, we need to apply special permission to get the function by apple, otherwise the app will be rejected by App Store. Did the SDK do WIFI Scanning? Do we need to start to apply special WIFIU Scanning use permit from apple when we integrate the SDK to our app?

Bern Grush, URF: (11/1/2023 14:19) THANK you!

Daniel Seijas: (11/1/2023 14:19) hi Xu Liu, bluetooth is necessary for location

Polly Okunieff: (11/1/2023 14:20) thank you!

Alyssa Meyer-Community Transit: (11/1/2023 14:20) Thank you!

Xu Liu: (11/1/2023 14:20) ok. got it. thanks. @Daniel

Whitney Shavers - Arcadis: (11/1/2023 14:20) Thank you