ABJ50(1) Sensing Technologies Subcommittee Meeting Agenda
Monday, Jan. 13th, 2020, 12:15 – 1:15 pm, Marriott Marquis Liberty Salon K room
99th TRB Annual Meeting, 2020

Co-sponsored by ABJ50, Information Systems and Technology and ABJ60, Geographic Information Science and Applications.

1. Past year activities:
    a. Helped organize TRB 2019 Sunday workshops – "Unmanned Aircraft Systems (UASs): The Impacts of New Capabilities and New Rules on Integrating UAS into Day-to-Day Use" – 13 presentations, ~40 attendees
    b. Helped with organizing TRB 2020 Sunday workshop – "Data Governance Issues for Transportation Issues" – working with ABJ50(2) Research Subcommittee to turn ideas into research needs statements
    c. New call for papers issued – "Implementing Sensing Technologies to Meet Critical Transportation Agency Data Needs" with help from Zhong-Ren Peng, Richard Li, Guohui Zhang, Steven Parker
        i. Guohui Zhang, U.Hawaii managed paper reviews – 40 papers for TRB 2020 with 15 for presentation only. 20 selected for presentation & 12 papers recommended for publication.
        ii. 20 papers selected for presentation used to create Information Systems & Technology poster session (#1139, 8-9:45 am Monday morning – see https://annualmeeting.mytrb.org/interactiveprogram/Details/13646)
        iii. 58 papers for 2019, 47 for 2018, 46 for 2017.
    d. Supported webinar to be held February 25, 2020, 2:00-3:30 pm: "Successful Approaches for the Use of Unmanned Aerial Systems by Surface Transportation Agencies" - https://webinar.mytrb.org/Webinars/Details/1342 - presenters: James Gray, FHWA; Basil Yap, NCDOT; Colin Brooks, MTRI. Moderated by Emanuel Banks, Arkansas DOT. This webinar draws on research from the NCHRP Domestic Scan Program, Project 20-68A, Scan 17-01 - http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-68A_17-01.pdf
    e. 80 members in Google group (32 in Jan. 2014).
    f. Web page was updated in early 2019 (UAS workshop info listed) at http://www.abj50.org/subcommittees/sensing-technologies/
2. This year's Sensing Technologies Subcommittee meeting, Jan. 13, 2020 – 16 attendees
    a. Reviewed last year's discussion summary: What is our niche?
        i. NDT technologies / remote sensing
        ii. Embedded sensors
        iii. Connected vehicle sensors
        iv. UAS-enabled sensing
        v. Traffic monitoring
        vi. Help share information on new technologies (GPR, LiDAR, multi/hyperspectral, thermal, drones, applications)
    b. 2020 discussions:
        i. Poster session –
            1. did not include connected vehicle sensors this year – would be good to have papers on these too
            2. LiDAR investigations prominent
            3. Traffic parameters from video including trajectories also prominent
        ii. Research ideas we want to turn into Research Needs Statements soon:
            1. Safety applications of sensors – Richard Li, University of Louisville, richard.li@louisville.edu

a. LiDAR, cameras, radar
b. Intersection safety

2. Using sensor data to feed into BIM processes – Basak Keskin, Syracuse University – bkeskin@syr.edu - ABJ95 – airport BIM example
3. Atmospheric challenges to sensors - Kevin Salzer – Kevin.Salzer@myhealthdriv.org
4. Air quality sensors for roadside environments – inc. connecting sensors (Zhong-ren Peng, University of Florida - zpeng@ufl.edu

iii. Other research areas discussed:
1. Smart cities & sensors inc. sensor management
2. 5G impacts (on sensor capabilities, etc.)
3. Data quality assurance frameworks
4. Digital transformation through AI. Ex: Easier creation of trajectory data – major advancement
5. Benefits & limitations for different types of sensors & their applications – such as solid state sensors (easier maintenance, can be self-powered)
6. How to combine different sensors for infrastructure assessment
7. Integration between sensing technologies & information systems – such as GIS & BIM

iv. How turn ideas into Research Needs Statements?
1. Peer exchange – get everyone in the room to talk about what's needed
2. RNS - > AASHTO Problem Statement process to become NCHRP RFP – need transportation agencies' support
3. Can work with other committees – we work with ABJ60 GIS frequently
4. Work through subcommittees – good place to generate RNS & feed through full committee

v. Other themes from meeting:
1. "Sensing is everywhere" – bringing in real-time data into decision processes
2. Think more largely – beyond just particular platforms
3. We should look for synergies with other committees / subcommittees – AFF40 NDT, SHM Joint Subcommittee AHD30(3) – they are better connected into needs & opportunities that related to our sensing technologies interests

vi. Generate new RNS by spring 2020 (Friday, March 20th)
1. AASHTO August meeting
2. NCHRP 20-05 Feb. 17 Synthesis Program
3. Main NCHRP program Oct. 15th
4. NCHRP 20-07 August
5. Transportation Pooled Funds – "varies"