

ABJ50(1) Sensing Technologies Subcommittee Meeting Minutes – Jan. 9th, 2017.

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

1. Held on Monday, Jan. 9th, 2017, 10:15 am – 12:00 pm in Marriott Marquis Liberty O M4.
2. Discussed past year activities:
 - a. 10th Sensing Technologies for Transportation Sunday workshop – 10 presentations – at TRB 2016
 - b. 11th Sensing Technologies for Transportation workshop organized – coming up on Thursday, January 12th, 2017, 8 am – 12 noon, 103B Convention Center. 8 presentations, including topics: UAS, smart rocks, bridge inspection, lessons learned, imaging radar, railroad bridges, fine scale damage, post-disaster access restoration.
 - c. Call for papers submitted with help from Co-Chair Zhong-Ren Peng (UFL) – “Sensing Technologies for Effective and Efficient Transportation Data Collection.” 46 papers were submitted (up significantly from last year when we didn’t put one in).
 - d. Submitted Research Needs Statement on UAS capabilities – submitted & posted July, 2016.
<https://rns.trb.org/dproject.asp?n=40981> “Increasing Understanding of Unmanned Aerial System (UAS) Capabilities to Address Transportation Infrastructure Issues”.
 - i. How do we move this towards being selected as a funded RFP? State DOT demand?
 - e. 75 members in Google Group (up from 62 in Jan. 2016, 47 in Jan. 2015 and 32 in Jan. 2014). Used to discuss call for papers, invite presenters to 2017 workshop, share info on workshop & sub-committee meeting.
 - f. Web page continued to be updated (workshop presenters listed) at
<http://www.abj50.org/subcommittees/sensing-technologies/>
3. This year’s Sensing Technologies Subcommittee meeting – 13 attendees, 1/9/17 – active discussion. We need to get more transportation agencies involved in the subcommittee.
4. Presentation: Rhett Cecil, PrecisionHawk - “web-based UAS (Unmanned aerial system) data processing and analysis services” (cancelled, unable to come to TRB, but will try again)
5. Spent most of our discussion on “What next?” as a sub-committee
 - a. Do we want to do another call for papers vs. having a gap year to let “demand” build up? Helps provide opportunities to submit papers (always looking for reviewer help!). Agreement was to do another one, not wait.
 - b. Research Needs Statement (RNS) generation discussion
 - i. Agreement on doing another one. Our way as a research community to get RFPs generated to be issued by NCHRP, ACRP, etc.!
 - ii. Agreed to discuss topics and then decide if they fit best as a RNS vs. webinar vs. workshop
 - c. Webinar – topic - examples of sensing technologies made available through UAS. Discussed in 2016 with Jarlath O’Neil-Dunne UVM & Keith Cunningham Mobile Mapping/MTRI. Next topic submission due March 15, 2017.
 - d. 11 workshops, 10 organized by me... – time for something new! I suggested for ABJ-50 to co-sponsor a lectern session with a call for papers for the 2018 TRB Annual Meeting on implementing sensing technologies into day-to-day transportation agency operations. Shorter presentations, more time for a panel discussion.
 - e. Discussed topics for RNS or webinar or workshop. Topics could be:
 - i. Other sensors & platforms (not just UAS)
 - ii. InSAR (interferometric synthetic aperture radar) for condition / pavement / construction monitoring

- iii. Sensing tech for pavement condition monitoring – saving money – big focus for DOTs
- iv. Bridging the gap between sensors & data visualization – communicating for risk management
- v. Going from collection to organization to analysis (cost-efficiently) – using data within decision making process – opportunities to work together with other committees/subcommittees – AFH10(1)
- vi. Applications of UAS (Unmanned aerial systems)
- vii. New technologies about to start getting implemented
- viii. Barriers to adoption in DOTs (involves social science) – what are these?
 - 1. Data volume
 - 2. Clarity of regulations
 - 3. Resistance to new technologies
 - 4. Consistent with legacy data – quality, processes, workflows
 - 5. Cost-effectiveness – studies are rare
 - 6. Need better understanding on how data will be used
 - 7. Comparison with other new technologies that have been adopted – mobile LiDAR, 3D GPR as example that have gone from research to implementation in recent years.
- f. We should have more focus if we're going to move to a lectern session – for example, have a focus on one main topic, such as UAS applications. If so, we need to find appropriate co-sponsorship, such as Aviation Committee – Co-Sponsor with ABJ50 & ABJ60, UAS Subcommittee (and more)
- g. Volunteers for organizing actions –
 - i. Call for papers (that would become a lectern session) – Richard Li (U.Louisville) & Zhong-Ren Peng (UFL) – will work together. Possible focus: sensing technologies for traffic data collection. Try to get more “best practice” papers.
 - ii. RNS – I'll work with Amlan Mukherjee (Michigan Tech) – Possible focus: collection to organization to analysis on a cost-efficient basis (getting data used for analysis efficiently) - work with AFH10(1) subcommittee. Other RNS topics & volunteers are very welcome!!
 - iii. Webinar topics –
 - 1. Sensing technologies made available through UAS for transportation agency applications (J.O'Neill-Dunne – U.Vermont - will take the lead)
 - 2. InSAR for condition / pavement / construction monitoring – Brian Bruckno (VDOT), Linbing Wang (Virginia Tech), Ed Hoppe (Virginia Tech) have materials that can be adapted to a TRB Webinar