

ABJ50 Information Systems and Technology Committee

2020 Action Plan

Steven Parker, Chair

Revised: February 28, 2020

Committee and Sub-Committees planned actions are organized below per key task areas, highlighting the objectives, leads, and timelines. Our effectiveness as a committee should be measured not only in terms of how successfully we implement this Action Plan but additionally to the extent that we maximize engagement of our Members and Friends towards that end.

Committee Scope

Recent advances in computing, data representation, and technology have had – and are continuing to have – a profound impact on all areas of transportation including but not limited to operations and safety, infrastructure monitoring, and emerging capabilities for connected and autonomous vehicles. Towards that end, the mission of the ABJ50 Committee is to provide strategic leadership within TRB to facilitate the advancement of technology to provide optimal transportation solutions and outcomes. This includes identifying relevant and compelling research needs, advancing those research needs through formal activities, and facilitating the adoption of applied research into practice. Due to the crosscutting nature of ABJ50's mission, working with other TRB committees and developing collaboration opportunities around transportation information systems and technology is increasingly critical to the success of the Committee. The Committee shall also encourage and support the participation of aspiring and diverse members and friends to participate in the life of the Committee in order to foster the next generation of leaders in this area.

Committee Structure

Maintain an active committee leadership structure.

- Committee Chair - Steven Parker
- Research Coordinator - Edgar Krauss
- Communication Coordinator - Shawn Blaesing
- Paper Review Chair - Guohui Zhang
- AASHTO Liaison - Mike Bousliman / April Blackburn
- Subcommittee Chairs
 - ABJ50 (1) Sensing Technologies Subcommittee - Colin Brooks
 - ABJ50 (2) Research Subcommittee - Edgar Kraus
 - AFH10 (1) Information Systems in Construction Management Subcommittee - Nora El-Gohary
- Young Member Liaison – Aaron Costin

2020 Action Plan Development (Steven Parker)

Develop an annual Action Plan (this document) for Committee and Sub-Committee planned activities up through the 2021 Annual Meeting.

- Committee Discussion – 2020 Annual Meeting
- Draft Action Plan to Committee – January 31, 2020
- Committee Comments back to Chair – February 17, 2020
- Final Action Plan to Section – February 28, 2020

2021–2023 Triennial Strategic Plan Development (Aaron Costin)

Develop an updated Triennial Strategic Plan (TSP) for the Committee, capturing the overall scope and defined goals for ABJ50 (AED30) and its Subcommittees. The TSP serves as the foundational document for annual Action Plan development. It should also define realistic measures to assess the effectiveness of ABJ50 (AED30) within the TRB / NASEM mission. This TSP update provides an opportunity to reflect upon and refine our mission within the context of the overall TRB realignment that will go into effect April 2020.

- Form TSP Working Group: (Lead: Aaron Costin)
- Milestones: Coordinate around quarterly and mid-year meetings
- Draft TSP to Section: December 2020
- Final TSP to Section: April 2021

2021 Annual Meeting Planning

Planning activities for the 2021 Annual Meeting. Teams are formed around each planned event and communicate regularly during the year to develop themes, identify speakers, and formalize the meeting events. Paper reviews represent a significant effort across the entire set of Committee members and friends.

- Workshops – June 1
 - Strategic Planning for Critical and Emerging Issues in Technology and Data (Kevin Green)
 - Next Generation Project Delivery Information Systems and Knowledge Networks (Organized by AFH10(1) Subcommittee; Co-sponsored with AFH10)
- Call for Papers – Early May
 - Proposed:
 - CAV Sensing Technologies for Safety (Richard Li)
 - Sensing Technologies – General (Colin Brooks), with GIS Committee
 - Emerging Technologies for Safer Work Zones (Nazila Roofigari-Esfahan)
 - In consideration of workload, we will need to decide on one or two, or co-sponsor with a lead committee
- Paper Reviews – September
 - Lead: Guohui Zhang
- Lectern Sessions – October 1
 - Lectern session based on Committee paper reviews, ideally centered around one of our call for papers (TBD)
- Poster Session – October 1
 - Lead: Guohui Zhang
- 2021 Committee Meeting
 - Rapid Fire Session (Kevin Green)

2020 Interim Activities Plan

The Committee will conduct three formal check-in meetings during the year to facilitate implementation of the Action Plan and to enhance the impact of the Committee through ongoing coordination, goal setting, and discussion.

- Spring Conference Call – April 2020 (Steven Parker)
- Mid-Year Meeting – TBD (Murali Rao, Cassie Jordan)
- Fall Conference Call – October 2020 (Steven Parker)

Ad-hoc opportunities for informal ABJ50 roundtable activities, e.g., in conjunction with an existing conference, arise from time to time and will be pursued based on interest and available leadership.

ABJ50 Centennial Paper Plan (Lead: Christine Baglin)

A draft ABJ50 Centennial Paper was submitted for review to the Section in 2019 with comments returned in late October. Final papers for the Data Section will be posted after the 2020 Annual Meeting.

- Final ABJ50 Centennial Paper to Section – end of January (Chris Baglin, Steven Parker)

Subcommittee Planning

Subcommittees carry out the core administrative and topical research programs for the Committee. Overall research goals are derived from the Committee TSP and from the specific mission statements of the respective sub-committees. This section should identify specific planned activities, research needs statements that will be developed, and funded research goals for the coming year.

- ABJ50 (2) Research Subcommittee - Edgar Kraus
 - Subcommittee action plan milestones:
 - Submit Synthesis Statement – Title: Data as an Asset – Best Practices to Move from Talking About Concepts to Implementing Concepts (Nikola Ivanov, Ken Yang, Vinod Wishwanata), submitted on 2/17/2020.
 - Review the list of active Research Needs Statements and identify next steps for each.
 - Organize a Research Needs Discussion for the ABJ50 Midyear Meeting.
 - Organize additional Research Subcommittee “roll call” conference calls during the year to move the Research Needs agenda forward.
 - Participate in the TSP working group to ensure that research goals promote the mission of the Committee and needs of TRB/NAS.
 - Coordinate ABJ50 (AED30) research needs development with cross-cutting issues for the Section.
- ABJ50 (1) Sensing Technologies Subcommittee - Colin Brooks & Zhong-Ren Peng (Co-Chairs)
 - Subcommittee action plan milestones:
 - Continue leading an annual call for papers.
 - Turn leading papers into poster session
 - Support a periodic webinar

- Help share information on sensing technologies with increasing capabilities: GPR, LiDAR, multi/hyperspectral, thermal, drones, and their applications
 - Support development of at least one RNS per year. Example topics:
 - Safety applications of sensors
 - Using sensor data to feed into BIM processes
 - Atmospheric challenges to sensors
 - Air quality sensors for roadside environments
 - Big data management
 - Digital transformation through AI
 - Look for synergies with other committees and subcommittees
- AFH10 (1) Information Systems in Construction Management Subcommittee – Co-Chairs: Nora El-Gohary & Ed Jaselskis
 - Specific planned activities
 - Submit Synthesis Statement – Title: Data Collection Usage, Value, and Challenges for Transportation Asset Management (Aaron Costin, Amlan Mukherjee, Nora El-Gohary; Submitted to TRB on 02/17/2020)
 - Hold “Midyear” Subcommittee Meeting on March 09, 2020 at CRC Conference, Tempe, Arizona
 - Organize 18th Annual Workshop at the 2021 TRB Annual Meeting – Tentative title: Next Generation Project Delivery Information Systems and Knowledge Networks (Nora El-Gohary, Aaron Costin, Kaijian Liu, Amlan Mukherjee; Suggestion form due March/April 2020)
 - Organize 6th Annual Webinar – Title: Evolution of Project Delivery Information Systems: Where We Were and Where We are Headed (Aaron Costin; suggestion form due 03/15/2020)
 - Develop/revise the following research needs statements and find sponsors from AASHTO and other agencies/committees
 - RNS-3: A Guide to Automate Project Progress Control by Leveraging LiDAR and 3D/4D information models (Yelda Turkan, Yongwei Shan)
 - RNS-4: How to Integrate and Enhance Existing Project Management Systems in Managing Construction Field Data for Different Project Delivery Methods (David Jeong, Chad Shafer)
 - RNS-7: A standardized information model to accurately represent the majority of construction management tasks (Aaron Costin, Amlan Mukherjee, Danny Kahler)
 - RNS-8: Big Data Analytics: How to turn the collected data into insights (Nora El-Gohary, Amlan Mukherjee, Aaron Costin)
 - RNS-9: Effective BIM for Infrastructure Execution Plan (Jiansong Zhang, Chuck Jahren, and Nora El-Gohary)
 - RNS-10: Creating Collaboration between Public and Private Sectors on Requirements for Digital Project Delivery Products (Ron Perkins, David Unkefer, Chad Schafer, Richard Duval)
 - RNS-12: How are DOTs currently managing their operational technologies (IT vs. OT) as well as their data? (Aaron Costin)

- RNS-13: Model as a Contract (Amlan Mukherjee)
- RNS-14: Modeling Soil Characteristics in BIM model (Ed Jaselskis, Don Chen)
- Technology Strategic Leadership. The Committee agreed upon moving forward with the creation of a new Technology Strategic Leadership Subcommittee.
 - Establish Committee / Appoint Chair (Steven Parker)
 - Hold first subcommittee meeting in conjunction with the ABJ50 midyear meeting.
 - Subcommittee action plan milestones: TBD

Collaboration and Liaison Plan

The Committee shall maintain an active list of liaisons to peer committees to enhance coordination and collaboration on research goals and event planning.

- ABJ00 – Data Section Cross Cutting Issues – Frances Harrison
- Update Liaison List to align with new TAC structure – April 2020
 - Cyber Security - Doug Couto
 - Critical Infrastructure - Doug Couto
 - ABJ70 - Standing Committee on Artificial Intelligence and Advanced Computing Applications - Colin Brooks
 - AHD35 - Bridge Management - Colin Brooks / Nora El-Gohary
 - AV060(1) - UAS Subcommittee - Colin Brooks
 - AFH10 - Parent Committee - Nora El-Gohary
 - ABJ95(1) - BIM - Nora El-Gohary
 - AFH30 - Emerging Technology - Nora El-Gohary
 - AHB10 - Regional TSMO - Steven Parker / Shannon Barnes
 - ABJ60 - Geographic Information Systems and Applications- Shawn Blaesing
 - AHB15- Intelligent Transportation Systems - Shannon Barnes / Mike Bousliman
 - Data Privacy, Security, and Protection Policy - Robert Shultz
 - Task Force on Knowledge Management - Frances Harrison
- Evaluate the role of ABJ50 in relation to the Cybersecurity Committee (Doug Couto)
- Support active collaboration between ABJ50 and AHB10 (TSMO) to tackle issues around data and technology governance. This may appropriately fall within the mission of the new subcommittee on Technology Strategic Leadership (Les Jacobson)

Communications Plan

The Committee shall maintain an active online repository of documents, minutes, and other Committee resources. The Committee Chair and Communications Coordinator shall also work together to provide regular communication to Committee Members and Friends regarding planned activities and items of relevance to the ABJ50 Committee.

- Annual and quarterly meeting minutes shall be provided within three weeks of each meeting.
- Future Abj50.org website
 - Fix existing Wordpress bug (Steven Parker). Completed.
 - Move hosting of website to UW-Madison (Steven Parker)

- New domain name: AED30.org
 - Retain ABJ50.org as a redirect to the new site.
- Content Manager: Shawn Blaesing
- ABJ50 Box folder? – help with file exchange
- Other social media – LinkedIn page?

Recruitment Plan

The ABJ50 Committee shall maintain a roster of active committee members reflecting the structural and diversity goals set by TRB.

- Fill remaining Committee member vacancies – April 2020 (Steven Parker)

Barriers to Success and Ways to Address Them

- Build more member engagement
 - Utilize email correspondence, website and social media to improve communication
 - Work with the new Young Member Liaison to promote participation and engagement of young members and Friends.
- Limited participation of membership in committee activities. - Publish opportunities and be specific about what is needed and the time commitment
- Additional help needed with turning ideas into Research Needs Statements and funded opportunities.