



## Transportation Research Board Annual Meeting

### MINUTES

#### Committee on Traffic Flow Theory and Characteristics (AHB45)

Monday, January 13, 2020 1:30 PM-5:30 PM, Marriott Marquis, Marquis Ballroom Salon 6,  
Washington, D.C.

Chair: S. Ahn

Minutes prepared by: L. Leclercq

*Please note that these minutes have a PowerPoint companion with more details included.*

#### Welcome and Call to Order

S. Ahn

#### Introductions – Members & Friends

All Attendees

- See sign-in sheet for full roster of attendance

#### Review and Approval of Minutes

S. Ahn

Committee Meeting of January 14, 2019  
Committee Meeting of July 23, 2019

- Both Minutes are approved without modifications.

#### Chair Report

S. Ahn

- TRB activities
  - Two committee-sponsored workshops on Sunday
  - Five lectern sessions
  - Five posters sessions
  - Two subcommittee meetings
  - A special lectern session has been organized about EU/USA joined effort to prepare for connected and automated vehicles – Event 1386
- The TFT committee has submitted a Centennial paper available on the TFT website.
- A special session will be organized in 2021 by the TFT committee in honor of the TRB 100th anniversary. For now, C. Buisson, H. Mahmassani and L. Leclercq have volunteers for the special call. More are welcomed.

#### TRB Report

R. Cunard/R. Bertini

- Operation section is merging with Safety section
- The TFT committee name will change: AHB45 -> ACP50
- The topic for next TRB is “Launching a new century of mobility and quality of life”
- A new committee about traffic simulation has been created and named: “Motor vehicle Highway Simulation”
- TRR subscriptions have increased a lot.

## FHWA Programs & Activities

J. Sturrock/R. James

- Update to Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software
  - Guide is Final and online
  - Develop Khan Academy Videos
  - Workshops
- National Capability Assessment in Traffic Analysis Fundamentals and Development of a Model Curriculum on Performance-Based Planning for TSMO (Request Material via email.)
- Guide on Evaluating Performance Objectives - *This is a Guide on how to evaluate objectives to meet performance goals. As agencies will be required to report on the performance of their transportation system and their performance goals, they will need to set their objectives to meet those goals. Currently, we develop methods and tools to evaluate alternatives and operational improvements. We need to start evaluating performance objectives, hence develop the methods to evaluate those objectives. These objectives may consist of solution packages and these packages need to be evaluated to meet the performance targets.*
- Role of Calibration in Quantitative Alternatives Analysis - *This project will develop a methodology/Framework by which agencies calibrated their analytical tools to ensure validity. Currently, transportation professionals calibrated their analytical tools to a base condition and then use those tools to predict performance of a future condition. A lot of times, these future conditions incorporate improvements or deployments that are different then the base condition used when the tools were calibrated, resulting in performance outcome that are either not trustworthy or are being questioned. Different calibration methods need to be developed so that the tools are calibrated to data that are reflective of what the future condition will be.*
- Reliability Analysis Guidance - TAT Toolbox Guidance Review/Update - TAT Guidance scan in coordination with TAT Team
  - Produce a TAT Reliability Analysis Reference Guide
  - Web-based Video Training Series
- Enabled AMS for CAV Applications - *Guidance on How Analysis, Modeling and Simulation Tools Can be Enabled to Evaluate CAV Applications*
- Data Analysis Workshops
  - Data Analytics
  - Multi-objective Trade-off Analysis
  - Using Empirical Data for Project Post Deployment Evaluation
- Transportation System Simulation Manual – *The document is now complete.*
- CAV AMS Framework – Phase 1
- CAV Applications and Case Studies – Phase 2.
- CAV AMS Data Collection Phase 3.
- Hardware in the Loop for AV Fleet
- Mining Naturalistic Data for AMS

## **TFTC Subcommittee Reports**

### **Joint Subcommittee on Traffic Simulation Models (AHB45(1) SimSub)**

**M. Hadi**

- Workshop sponsored by subcommittee held on Sunday: Traffic Flow Simulation: Persistent Challenges. A bigger room would be better next year.
- TSSM manual is about to get released. Online version with possibility for printed version will be proposed.
- Best paper award goes to a paper from Kaan Ozbay, Jorge Laval and Medhi Ekbatani
- A Lite-time award has been granted to Ken Courage
- SimSub and SimCap are collaborating
- Traffic Simulation Workshop will be held in Nov, 16-18th. Deadline for extended abstracts is March 30th.

### **Crowd Flow Dynamics, Modeling and Management (AHB45(2))**

**W. Daamen**

- PED2020 conference is announced (Sep, 28-30th)
- A book is in preparation about the basics for pedestrian flows and crowds
- No call of paper this year but intend to have one next year

### **Connected Automated Vehicles (AHB45(3))**

**S. Hamdar**

- 35 papers were submitted to the call of paper about CAV this year.
- One workshop has been organized on Sunday morning: “The Advancement of Modeling Connected and Automated Vehicles: Past and Future”
- Possible change of the name of this subcommittee to CATSub (Connected and Automate Traffic)
- Several call of papers in different journals will be launched this year on this topic

### **Research Problem Statements**

**V. Gayah**

- Vikash Gayah is the new coordinator for this action
- One action is to write research needs statements that can eventually be turned into a project (deadline, Nov, 1<sup>st</sup>), e.g. NCHRP project. Such statements should be submitted by State office / Governors executive board member / NHSTA.
- Email Vikash Gayah to help! In particular from people that have good relation with their DOT.
- It is important to focus on problems that state agencies are currently experiencing and clearly explain how to fix them.
- One RPS has been submitted last year about development of models of mixed connected and autonomous vehicle traffic for transportation planning purposes (Xiapoeng Li and Vikash Gayah).
- Note that after submission of an RPS, a follow-up is to contact Ray Derr at NCHRP
- One good idea is to submit ideas for NCHRP Synthesis topics. This is a state of practice review that includes literature review and survey of agencies. Can be very useful to identify research gaps for future research needs statements
  - Deadline for this is Feb 17, contact Vikash if interested

### **Paper Review**

**S. Ahn**

- The paper review committee is pleased to welcome a new member this year: Samer Hamdar
- Two special call of papers have been proposed this year. Both got a lectern session:

- Calibration and validation of CAV
- Improved Flow Modeling and Advanced Control Strategies for Large-scale urban traffic networks
- Papers received: 194 including 93 for presentation only. 25 were accepted for lectern sessions and 86 for posters. 32 were transferred to TRR over 101 submitted to publication.
- A discussion arises about the new TRR process. The main points will be conveyed to TRR Editorial Board meeting on Tuesday, 14<sup>th</sup>.
  - The main issue is that authors do not have feedbacks about their paper if they have been recommended to TRR;
  - The process should be clarified and it is important to keep as much as possible the swift process that is usual for TRR
- Some attendees wish the proceedings (papers) are still available because a presentation / poster is not sufficient to get information about the research. The problem was that TRB was receiving too many requests from authors about paper removals because of copyright issues. The reviewers may no longer spend times on paper if the papers appear nowhere.

## **Awards**

**L. Leclercq**

- Five award decisions to be made annually: two internal to committee and three recommendations to TRB
- Please mention award eligibility status on title page of paper to help the process; papers must be submitted for publication to qualify
- 2019 Mickle nomination made but no award received
- 2019 Burggraf award presented to 19-05932 - Influence of autonomous vehicles on car-following behavior of human drivers
- 2019 Cunard award presented to 19-01197: Estimating and comparing response times in traditional and connected environments
- There is no 2019 Greenshields award by decision of the committee.
- 2018 Best Paper on Traffic Flow Theory presented to 19-05914: Analysis of a two-regime Stochastic Car-Following Model: for explaining capacity drop and oscillation instabilities
- Best reviewer award presented to Hwasoo Yeo

## **Mid-Year Meetings**

- The next mid-year meetings will be held in:
  - 2020 Amsterdam, the Netherlands
  - 2021 ISTTT Beijing, China
- A call is opened for the 2022 meeting with a decision to be made during next TRB meeting

## **Outreach and Diversity**

**S. Hamdar/A. Talebpour**

Committee Communications

S. Hamdar

- The Newsletter is going to transform into a website (traffic news channel)
- Youtube channel: interviews for TFT expert are planned and will be posted
- An idea is to ask all poster presenters to create a 3 min voice record about their posters that can be listened by attendees during the poster sessions and also later

Committee Website

R. Bertini/A. Zockaie/R. Aghamohammadi

- The committee website will go on including the list of all papers presented during TRB and published during TRR. ISTTT list will also be updated.
- The committee recommends a group photo of each TRB meeting being published

**Liaison with other Committees  
Young Members Council**

**All Attendees  
E. Gonzales**

- Supports opportunities & development for young
- Mentoring Program - linking experienced and new participants
- Sunday: 3-minutes thesis workshop :22 speakers, 8 invited judges, was well attended
- Congratulations for Blue Ribbon Committee Awards

**Highway Capacity Quality of Service Committee (AHB40)**

**J. Sturrock/M. Hadi**

- The Highway capacity manual will be published online with print option.
- New chapters are coming in a short timeframe
- Merge, Diverge and Weave methodology are being updated
- Vehicle highway automation committee is currently working on their strategic agenda.

**Task Force on System Simulations (AHB80T)**

**R. Bertini**

- The main objective is the release of the TSSM (Transportation System Simulations Manual)

**International Liaison**

**International members and attendees**

- Two projects about open trajectory data collection are presented:
  - Traffic Monitoring with a Swarm of Drones by N. Geroliminis
    - This data is in urban environment. 99% of the vehicle trajectories were reconstructed. Data will be available soon the community. Type of the vehicles have been identified.
    - Open-traffic.epfl.ch
  - Trajectory Data Collection by X. Li
    - Sponsored by FHWA. 5 sites have been selected and aerial footage have been taken by drones or helicopters.
    - VIRTUAL Toolbox has been designed to analyze the footage and derive the trajectories. Same data format as NGSIM is used.
    - VIRTUAL trajectory data are openly accessible.

**Announcements and Future Meetings**

**All Attendees**

MFTS2020, July 6-8, 2020, Luxembourg

F. Viti

TFTC Midyear Meeting, August 12-16, 2020 (Amsterdam, the Netherlands)

W. Daamen

ISTSC conference will be hold late June, 24-26 in Ann Arbor

Y. Yin

DTA2020 in Seattle, 27-29, June

J. Ban

ISTTT24 Beijing, China, July 24-26, 2021

H. Huang

**New Business**

**All Attendees**

2021 Annual Meeting Calls for Papers  
Special TFTC Session in 2021

All Attendees

**Adjourn**

**All Attendees**