



Expanding the National Surface Observing Network: Realizing the Potential of Vehicle-Based Observations

An AMS Annual Partnership Topic

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7th Clarus Initiative Coordinating Committee

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Background

- In January 2009, the AMS Board on Enterprise Planning (BEP) approved a proposal to develop an Annual Partnership Topic (APT)
 - Focused on the application and utilization of future vehicle-based surface weather and road condition observations
- The request to develop this APT originated with Ms. Shelley Row, Executive Director of the Intelligent Transportation Systems Joint Program Office (ITS/JPO) within the USDOT's Research and Innovative Technology Administration (RITA)
- The DOT wireless vehicle technology development program is now called IntelliDriveSM
- Co-chairs of the APT's "Vehicle-Based Observations Committee" were approved in April:
 - Bill Mahoney, NCAR Weather Systems and Assessment Program Director
 - Jim O'Sullivan, NOAA Surface Weather Program Manager



APT Justification

- The potential availability of millions of surface observations from passenger vehicles and fleets represents a huge opportunity for the weather community
- Success will depend greatly on the weather community's technical understanding and eventual adoption of these unique datasets, and their level of participation with vehicle-based observations
- APT will provide an opportunity for deliberate discussions among stakeholders about:
 - Potential
 - Customer needs
 - Technical challenges
 - Research needs
 - Implementation strategies
 - Other issues



Vehicle-Based Observations



- **Timeliness**

- Vehicle testbeds began in 2005; more planned
- 2009's NRC Report: *Observing Weather and Climate from the Ground Up: A Nationwide Network of Networks*
- Decision expected in 2013 on requiring vehicle-based technology for safety purposes (vehicle-to-vehicle)
- Widespread vehicular wireless communication expected by 2015

- **Breadth of Interest**

- Private weather/transportation sectors providing new products and services
- Public weather agencies using data to improve weather analyses and predictive services
- Public transportation agencies using data for traveler advisories, operational and maintenance decisions



Vehicle-Based Observations



- **Impact**

- Potential improvement to weather detection and prediction
- Improved capability to sense lower atmosphere and the meso- and microscales
- Improved decision support from road maintenance to the road user
- *Travelers and industry making more informed decisions*

- **Linkages**

- AMS Intelligent Transportation Systems and Surface Transportation Weather Committee (ITS/ST)
- Intelligent Transportation Society of America (ITSA) Surface Transportation Weather Committee
- American Association of State Highway and Transportation Officials (AASHTO)



Committee Membership



- Bill Mahoney, *co-chair*
- Jim O'Sullivan, *co-chair*
- Ed Boselly, Chair, AMS ITS/Surface Transportation Committee (*ex-officio*)
- Art Handman, Chair, ITSA Surface Transportation Weather Committee (*ex-officio*)
- Bob Baron, WxWorks, Inc. Baron Group
- Jim Block, Telvent
- Richard Clark, Millersville University
- Sheldon Drobot, NCAR
- Gina Eosco, AMS
- Dave Helms, NOAA/NWS
- Michael Hooper, XM Radio
- Robert Koeberlein, Idaho DOT
- Greg Krueger, Michigan DOT
- Ben McKeever, DOT/RITA
- Leon Osborne, Meridian Environmental Technologies and U. of North Dakota
- Kevin Petty, Vaisala
- Paul Pisano, DOT/FHWA
- Jim Sayer, University of Michigan Transportation Research Institute
- Jud Stailey, NOAA/OFCM
- Andrew Stern, NOAA Local Forecasts and Warnings Program Manager
- Jon Tarleton, Quixote Transportation Technologies
- Awaiting word from Auto Industry Representative(s)



Work Plan

- **Work plan developed by Bill Mahoney and Jim O’Sullivan while attending the Intelligent Transportation Society of America (ITSA) Annual Meeting in Washington, D.C., in June 2009**
 - 1) Develop APT Committee member candidate slate completed
 - 2) Have candidate slate approved completed
 - 3) AMS Summer Partnership Meeting, August 2009 completed
 - 4) First telecon – introductions, charter/vision (8/24) completed
 - 5) Second telecon/webibar – concepts October 2009
 - 6) Submit BAMS highlight (e.g., sidebar) on IntelliDriveSM Fall 2009
 - 7) Schedule “Town Hall” type meeting at Annual Meeting January 2010
 - 8) Develop and conduct community web survey on topic Thru Spring 2010
 - 9) Prepare APT Summary Report for BEP Summer 2010
 - 10) Full BAMS article on IntelliDriveSM weather program Fall 2010
 - 11) Present findings at AMS Annual Meeting, Seattle January 2011



Vehicle-Based Observations Committee Points of Contact



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