

ITS Midwest NEWSLETTER

Illinois, Indiana, Kentucky and Ohio

www.itsmidwest.org

President's Message

ITS Midwest has hit the ground running in 2019! Your Board of Directors has been busy arranging and holding events, conducting a membership renewal drive, participating in ITS America efforts, and increasing our social media presence.

First off: save the date! The 2019 ITS Midwest Annual Meeting will be held on September 26 & 27 at the Downers Grove, IL Doubletree hotel. There are several opportunities to volunteer for a conference subcommittee – please email conference co-chairs [Brian Plum](#) and [Justin Potts](#) to join the team. And stay tuned for the call for papers. With so many innovations underway in our industry, the event is sure to offer a packed program with topics that will matter to you.

Thanks to Secretary/President-Elect Scott Lee for initiating the new ITS Midwest Webinar Series. The first session, held on December 19, focused on dynamic mes-



sage sign deployments in Cincinnati. On January 10, a second webinar was held on “Combining Travel-Times and Connected Vehicles for Smart Cities – BlueTOAD Spectra RSU by TrafficCast”. The latest webinar, titled “Connected Vehicle Outlook: Pinning Jell-O to the Wall,” occurred on March 27. Stay tuned for details about future ITS Midwest webinars. Please [email Scott](#) if you would like to suggest a topic or volunteer to present.

On Tuesday, February 19, ITS Midwest joined up with the Lake County Division of Transportation and the Illinois Section of the Institute of Transportation Engineers (ITE) in organizing a [day-long seminar on Automated Traffic Signal Performance Measures \(ATSPM\)](#). Led by Lake County Traffic Signal Engineer Justin Effinger, the event provided an introduction to ATSPM, examples of the tools that it provides, and effective ways to apply those tools. Speakers participated from across the country, including Justin, Eddie Curtis with FHWA, Chris Day at Iowa State University, Samuel Harper at

the Georgia DOT, and vendors of several ATSPM products. With 52 attendees in the room and several more participating online, the session was a great success. We look forward to future collaborations with Lake County and ITE.

To continue on this theme, ITS Midwest is hosting a half-day training course on “Improving Highway Safety with ITS” in Cincinnati on May 22. We are also in the



Matthew Letourneau , President of ITS Midwest

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process of planning workshops related to Connected and Automated Vehicles later this year. As was done in 2018 and 2017, these events will be held in multiple locations within our member states. Event details and registration information will be released soon.

Our other big news is the establishment of a new ITS Midwest scholarship for students in the field of ITS and transportation technology. Our Awards Committee is developing the parameters for the award. Please email committee chair [Dan Shamo](#) if you would like to get involved with the process. More details will follow in future member outreach.

Thanks to the 71 members that have renewed for 2019! If you haven't already, please [renew online](#) – and encourage your colleagues to join as well.

As one of the largest chapters of ITS America, ITS Midwest participates in reg-



ular communication with ITSA through the State Chapters Council. We are currently working with ITS to improve chapter membership through ITSA, learn about ITS advocacy efforts in Washington like preserving the 5.9 GHz band, identify training opportunities, and support preparations for the 2020 ITS World Congress in Los Angeles.

Please be sure to follow ITS Midwest on social media to keep up with us! And, as always, please do not hesitate to bring an idea, encourage a colleague to join our membership, or offer your time to help make ITS Midwest even better. Please contact me if you would like to get engaged. Thanks!

A New TSMO Plan- Changing How ODOT Conduct Business

Bryan Newell, AICP, Gannett Fleming project manager

Todd Szymkowski, PE, PTOE, Gannett Fleming Transportation Systems Management and Operations manager



[Gannett Fleming](#), a global infrastructure and engineering firm, recently completed the Ohio Department of Transportation (ODOT) Transportation Systems Management and Operations (TSMO) Plan, setting a new standard for the industry.

This new [ODOT TSMO Plan](#) is a guiding foundational change in the way ODOT conducts business. The comprehensive level of detail and internal ODOT collaboration that went into this plan allowed ODOT to keep pace with evolving technology and begin implementing recommendations before completion of the plan.

Providing a Roadmap

The plan provides ODOT with a roadmap to rapidly transition from a collection of activities, functions, and initiatives into an organized, streamlined TSMO program. The new plan includes specific, measurable actions in seven different technical briefs.

The Goals and Objectives Brief presents the background on how the process started, including an overview of committees, meetings, staff interviews, and workshops. Through collaboration with ODOT staff, Gannett Fleming created the brief to serve as the preliminary policy framework that now serves as the bedrock for guiding ODOT to efficient management of a safe and reliable transportation system for the state.

During the development of the plan, the project team looked at ODOT's current TSMO practices and compared them to several nationally established best prac-

tices. The findings documented in the Setting the Stage Brief includes four different areas of focus: ODOT TSMO efforts to date; a review of nationally recognized innovative department of transportation (DOT) plans from Colorado, Iowa, and Maryland; national best practices that fit ODOT's needs; and a resource catalog.

To support ODOT TSMO functions, the Resource Alignment Brief presents recommendations for organizing and aligning resources to make the plan work effectively. ODOT leaders provided their input, seeking to improve and assist program implementation while maintaining current relations throughout ODOT. This stage revealed additional other requirements including operations planning, funding, staffing, managing data, and measuring TSMO functions. This amplified the need for long-term support with a commitment to resources for this plan to continue to be on the cutting edge.

The Policy Action Brief is the heart of

the ODOT TSMO Plan. It is a culmination of inputs garnered from staff interviews, workshops, meetings, analysis of business plans, staffing plans, organizational charts, and ODOT recommendations. The Policy Action Brief is a collection of one-page information and action sheets that provide an individualized implementation plan to move ODOT up the Capability Maturity Model. The primary function of providing the policy framework is to guide ODOT's TSMO program development. The Policy Action Brief contains 39 recommended policy actions, organized into three different tiers.

The first tier is for actions already underway or that can begin immediately. The second tier is for those that will happen after the first tier or after completion of the ODOT TSMO Plan, and the third tier is for actions considered longer-term by TSMO standards.

The Performance Measures Brief is one of the most important phases of the plan. This highly transparent phase allows for identifying problem areas, guiding investments based on data, and evaluation. By providing an ongoing analysis of the plan, constant measurement of performance allows ODOT to adapt and overcome their successes and challenges in real-time and adjust their defining measurable objectives accordingly. The outcome includes acknowledging, positioning, and tracking the most economical and top-priority objectives.

Drawing on subject matter from other TSMO plan guiding documents, the Early Action Implementation Plan Brief provides a clear path for deployment during the plan's initial rollout. The brief describes preliminary activities, actions, and tools critical in making this plan work. Information and guidance from the Policy Action Brief, Resource Alignment Brief, and Per-



formance Measurement Brief provided the background guidance needed to create and implement this phase of the plan.

The TSMO Council, an ODOT executive leadership group, further refined the Early Action Implementation Plan Brief, into a yearlong, one-page action plan that became the first step in formalizing a TSMO program at ODOT.

The final brief is the Plan Summary Brief which is a collection of data from the six previous briefs including technical documents and supporting reports, to move the ODOT TSMO Plan forward. This includes a communication plan to ensure all ODOT stakeholders are aware of the new TSMO plan and their roles within it. The result of this is the communications toolkit that includes an informational video and training for the new TSMO coordinators. Additionally, this phase provides an overall implementation timeline of how recommendations should start and shows how each document – from the start of the project to the end – fits in and relates to the plan.

Moving Forward

The finalized ODOT TSMO Plan included recommendations that helped create the ODOT TSMO Council and TSMO coordinator positions. Council members provide overall leadership, grant authority to move the plan forward, and ensure inclusion of TSMO in Ohio's long-range transportation plan. Each district and



central office now have TSMO coordinators assigned to lead specific initiatives as directed by the TSMO Council.

Plan development also led to assistance in forming an ODOT Office of Traffic Management which created a tool for determining operationally sensitive highway segments. Known as the Traffic Operations Analysis Systems Tool (TOAST), it will allow ODOT to prioritize, plan, and program TSMO strategies.

Finally, Gannett Fleming updated the Ohio Traffic Incident Management (TIM) Manu-

al, a tool used by ODOT, local and state law enforcement agencies, fire departments, the Emergency Management Agency, and towing and recovery services to carefully and effectively clear traffic incidents on the heavily traveled Ohio roadways.

Created through the collaboration of Gannett Fleming and more than 175 ODOT personnel, from all levels, the 186-page ODOT TSMO Plan helps ODOT emerge as a national TSMO leader while improving the lives of its citizens through more efficient travel and improved traffic safety.

How advanced video detection enabled the World's Smartest Intersection

Matthew Trushinski
Director of Marketing at Miovision

Along the Larned corridor, in the heart of Detroit, Michigan, lies a groundbreaking technology showcase: the World's Smartest Intersection. Created by Miovision – a leader in traffic data and smart cities – the World's Smartest Intersection is actually made up of 5 intersections, all powered by the Miovision TrafficLink platform.

The World's Smartest Intersection puts the safety of citizens first, communicates with the world around it, and completely transforms the way traffic engineering teams operate. With all of this technology available in one intersection, we can begin to explore the potential of how one smart intersection can lead to many, and ultimately end with the creation of a fully interconnected, smart city.

It was ultimately the introduction of deep neural networks (DNN) and computer vision processing algorithms that took the intersection from smart, to smartest in the world. Advances in the DNN and computer vision processing algorithms that power Miovision TrafficLink have enabled the collection of data that was not previously possible through traditional detection technologies, such as the detection and classification of other modes of traffic, like pedestrians and cyclists, and real-time incident detection.

The technology behind World's Smartest Intersection

Miovision TrafficLink is built around open architecture principles and is made up of the SmartLink data hub, SmartSense to enable edge computing, and the Smart-

View 360 camera. The SmartLink data hub works with existing controllers and systems, securely connecting them to the Miovision Cloud through a cellular telecommunications (e.g., 3G, 4G/LTE) network, exchanging information with the controller, and linking to other Miovision elements. Miovision SmartSense provides the edge computing to process the SmartView 360 video in real time, and to execute logic that links conditions to actions. The Miovision SmartView 360 camera enables advanced use cases with live visual monitoring and provides a visual confirmation of what's happening at an intersection in real time or in the past. Unlike single-purpose proprietary camera

systems, cities can let other departments (e.g., police) use their SmartView 360 network – making much more efficient use of limited municipal funds and keeping intersections free of unnecessary clutter.

SmartLink enables traffic engineers to connect their signals and manage traffic more efficiently by monitoring and managing their signals remotely, so they can prioritize resources and solve issues before they escalate. Together, SmartSense and SmartView 360 facilitate the measurement of intersection performance with ATSPMs (Automated Traffic Signal Performance Measures) that enable a data-driven approach to traffic man-

SmartLink SmartSense SmartView 360



The Miovision TrafficLink platform enables the World's Smartest Intersection and uses deep neural networks and computer vision processing algorithms to collect data that was not previously possible through traditional detection technologies.

agement, as well as DNN and computer vision processing algorithms for continuous multimodal detection.

Making intersections more intelligent with deep neural networks

Deep neural networks are computational algorithms that attempt to mimic how a brain's neurons work together to solve complex problems. One example of a problem that's easy for humans but hard for machines is image processing: we know a vehicle when we see one, but only advanced algorithms running on powerful hardware can achieve this feat.

In TrafficLink, DNN powers the computer vision processing algorithms within SmartSense that

identify the presence, location, and movement of vehicles, cyclists, and pedestrians from the SmartView 360 camera's video stream.

The DNN and computer vision processing algorithms have enabled the detection and classification of other modes of traffic such as pedestrians and cyclists.



The World's Smartest Intersection technology showcase took place at five intersections along the Larned Corridor, in the heart of Detroit Michigan.

This advancement opens a completely new opportunity to quantify and observe pedestrian-related performance in crosswalks. Within the World's Smartest Intersection, Miovision and the City of Detroit explored different methods of combining pedestrian detection at signalized crosswalks with high-resolution signal status data and proposed methods to visualize them in order to provide a more comprehensive understanding of the pedestrian

behavior and pedestrian facility performance. These metrics aim to quantify and visualize the crosswalk performance in terms of clearance, ped signal compliance, usage profiles, and density heat-maps.

You can learn more at www.smartestintersection.com or reach out to Melissa Cupovic (mcupovic@miovision.com), Market Development Executive at Miovision

HAAS Alert

Noah Levens - HAAS

Collisions, injuries, and deaths among roadside personnel are rising at an alarming rate. HAAS Alert, a Chicago-based company, provides a real-time collision prevention service with solutions available today.

National Emergency Declared

This February, the International Association of Fire Chiefs (IAFC), through its Safety, Health and Survival Section and in cooperation with the Emergency Responder Safety Institute (ERSI), issued an Emergency Safety and Survival Alert to all Fire Chiefs and Officers.

In just the first three months of 2019, at

least 25 emergency responders and road operators have been struck and killed by passing motorists on American roadways. Non-fatal collisions are occurring more frequently and on a near-daily basis across the country. With collisions, injuries, and fatalities on the rise, the numbers don't suggest a slow-down anytime soon.

A Chicago-based company called HAAS

Alert was created in 2015 with the mission of eliminating preventable collisions for emergency responders and roadside crews. Over the last few years, the team spent thousands of hours in the field learning from and working with first responders to create the world's most reliable real-time collision prevention service. Today, the company is deploying similar solutions tailored for ITS, DOT, mainte-

nance, utility, towing, and other municipal operations.

Cities, public safety officials, and emergency services are now turning their attention to Digital Alerting as a means of warning drivers about on-scene emergency, roadside, and rapid response vehicles. By delivering safety messages to road users via smartphone navigation apps and in-car screens, drivers receive notifications in a way they can't miss. Alerts are sent in advance and provide road users ample time (~10-20 seconds) to proactively make safer driving maneuvers and comply with Move Over laws before encountering roadside crews.

The HAAS Alert Safety Cloud™ is the connective backbone that now provides service to personnel and fleets from over 80 departments in the U.S. and Canada with more joining weekly. HAAS Alert delivers real-time safety in the form of digital alerts to motorists before they approach nearby and "on-scene" maintenance, emergency, rapid response, and other critical roadside and municipal vehicles. Service is cellular-enabled, low cost, and compatible with any type of fleet vehicle.

Driver distraction from smartphones, in-car connectivity and in-dash infotainment systems continues to persist and is one of the most toxic epidemics of our modern and technology-fueled world. Automakers now tout sound-proof cabins that shield drivers from the sirens and



other sounds that once informed them of the outside environment. Emergency vehicles boast brighter flashing lights and louder sirens that are only proving more and more ineffective.

The University of Minnesota published a study demonstrating that collisions with First Responders were potentially reduced upwards of 60%-90% when drivers received preemptive alerts directly inside their vehicles. Read more on the study [here](#).

Because the HAAS Alert service utilizes existing cellular connectivity, it is available almost everywhere and is attainable for any fleet wanting to increase crew safety and protect vehicle assets. HAAS Alert service heightens overall awareness and commands road users' attention of the road ahead.

"Increasing the safety of road operators, emergency responders, motorists, and all roadway users is our mission," said Cory Hohs, CEO of HAAS Alert. "As smartphones and connectivity into vehicles is now ubiquitous, HAAS Alert becomes more valuable by delivering real-time alerts to enhance overall road safety, prevent collisions, and save lives."

Solutions

HAAS Alert provides multiple solutions to connect fleets of any size. Vehicles can get outfitted for service without leaving their base stations, eliminating the potential down-time that typically come with equipment upgrades and installations. The company's service includes a real-time situational dashboard for fleet managers available on any desktop, tablet, or mobile device, along with monthly safety and performance metrics. Fleet access to Safety Cloud™ data is now even easier with the introduction of HAAS Alert FleetFusion, a real-time streaming feed that integrates with systems already being utilized by fleets (e.g., ESRI, ArcGIS). By making information directly accessible within existing toolsets, managers can make faster and more informed operational decisions.



Services for fleets include:

- Traffic incident management
- Work zone management
- Freeway management
- Traffic signal coordination

About HAAS Alert

HAAS Alert C-V2X (Cellular Vehicle-to-Everything) service delivers awareness of road operators, emergency vehicles, and

other municipal fleets to connected and autonomous cars, enabling motorists and vehicles to make safer and smarter driving decisions. The company streams vital safety information in the form of real-time digital alerts to drivers and connected cars via in-vehicle systems and smartphone apps when roadside crews are nearby in the road. Drivers, emergency crews, and roadway workers use the alerts to prevent collisions and reduce traffic delays. HAAS Alert is currently

working with the U.S. Department of Homeland Security on advanced roadside alerting solutions and is supported by leading safety organizations including NSC (National Safety Council), Firstnet, FAMA (Fire Apparatus Manufacturers' Association) and NFPA (National Fire Protection Association). To learn more, visit www.haasalert.com, and to learn about acquiring service email sales@haasalert.com.



September 26-27, 2019

Doubletree Suites by Hilton Hotel & Conference Center

2111 Butterfield Rd., Downers Grove, Illinois, 60515

SAVE THE DATE!



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Annual Meeting 2019



JOIN US FOR OUR 2019 ANNUAL MEETING!

The 2019 ITS Midwest Annual Meeting will be held on September 26-27 at the Doubletree Suites by Hilton Hotel & Conference Center Chicago-Downers Grove. The Doubletree Suites will also serve as the meeting hotel, with rooms at a special group rate.

This two-day event will consist of roundtable panel discussions, technical sessions, a vendor showcase and an exhibitor open house (featuring over 30 exhibitors), a social event and technical tour.

More information to follow at:

www.itsmidwest.org/2019-Annual-Meeting/



See you this fall in Illinois!

Let's shape the future of ITS together

Co-chairs: Justin Potts & Brian Plum

Phone: 847 705-4008 (Justin)

Email: 2019meeting@itsmidwest.com

Web: www.itsmidwest.org/2019-Annual-Meeting/

 @ITS_Midwest #itsmw19

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Staff and Editors:

Editors:

Heng Wei, Ph.D., P.E.

Professor

University of Cincinnati

heng.wei@uc.edu

Zhuo Yao, Ph.D.

University of Cincinnati

yaozo@mail.uc.edu

Staff:

Claudia Goddio