MICHIGAN AUSTRALIA

EXCHANGE (MAX) IN MOBILITY

MAX MICHIGAN AUSTRALIA EXCHANGE IN MOBILITY

Mcity Shuttle – Left to right, Majid Sarvi, University of Melbourne,Huei Peng, Mcity, University of Michigan, Susan Harris, ITS Australia, Roland Pittar, Australian Department of Infrastructure, Cities and Regional Development, Susan Proctor, MEDC,Peter Sweatman, University of Melbourne, John Wall, Austroads

MICHIGAN AUSTRALIA EXCHANGE (MAX) ACTIVITIES

The Australian Government, represented by the Department of Infrastructure, Transport, Cities and Regional Development, and the State of Michigan, represented by Michigan's Department of Transportation, on behalf of the Governor, signed a Memorandum of Understanding (MOU)[1] in October 2018. The parties agreed to enhance cooperation between their respective government bodies, knowledge-based institutions, clusters and businesses in transport research, technology, entrepreneurship, and innovation, reflecting their desire to accelerate potential social and economic benefits for future generations and vulnerable sectors of society around the world.

Core Working Group – Michigan Australia Exchange (MAX)

A core working group, including the MOU signatories and partners, was convened shortly after the signing of the MOU to facilitate the activities set forth in the agreement. The group is known as the Michigan Australia Exchange (MAX). MAX includes key leaders from the Australian Department of Infrastructure, Transport, Cities and Regional Development,[2] The Michigan Economic Development Corporation (MEDC),[3] Austroads,[4] ITS Australia[5] and the University of Melbourne.[6] Other contributing partners include the Michigan Department of Transportation[7] and Austrade.[8]

The MAX Mission

To enhance cooperation between respective government bodies, knowledge-based institutions, clusters, and businesses in all areas of future transport research, technology, entrepreneurship, and innovation.

ACTIVITIES

In addition to periodic virtual planning meetings, the group has been engaged in the following activities since the signing of the collaborative agreement.

October 2018

Michigan/Australia joint symposium following the signing of the MOU in Melbourne. Read media release and thought leadership article to learn more.[9]

January 2019

The MEDC hosted an inbound delegation of MOU signatory organizations from Australia to the North American International Auto Show (NAIAS). The delegation met with Michigan's sitting Governor and participated in a panel discussion during Automobili-D, a future mobility event held during the industry and media days of the show. While in Michigan, the group toured the state's key mobility assets including the University of Michigan Transportation Research Institute (UMTRI), Mcity and the American Center for Mobility (ACM).

July 2019

Roads Australia led an inbound delegation to Detroit as part of a North American study tour. The tour included visits to ACM, Mcity and autonomous shuttle manufacturer NAVYA. Read the full report featuring the Michigan leg of the trip on page 24.[10]

August 2019

The MEDC led a small delegation of mobility leaders from Michigan to ITS Australia in Melbourne. Leaders from the UMTRI, ACM, and the MEDC also participated in a day-long MAX companion event led by the University of Melbourne. The event focused on identifying opportunities for joint activities between Australian and Michigan transport technology stakeholders, to accelerate and maximize the benefits of these technologies. The Michigan delegation visited the Australian Integrated Multimodal EcoSystem (AIMES)[11] in Melbourne. The University of Melbourne led the development of a communique document outlining a collaborative research program to be carried out under the MOU.

October 2019

The MEDC convened a joint event[12] with the UK Center for Connected and Automated Vehicles (CCAV) at ITS World Congress in Singapore. Over 70 participants from eleven countries participated in the event, which focused on the issues of safety and cybersecurity related to the deployment of mobility technologies. Participants included representatives from Michigan MOU partners including Australia, the Netherlands, and the UK. The session was moderated by Peter Sweatman, Enterprise Professor, Transport, University of Melbourne.

Inside Mcity - Left to right, John Wall, Huei Peng, Susan Harris, Roland Pittar, Peter Sweatman, Majid Sarvi

June 2020 – Present

Following the postponement of NAIAS in Detroit due to the global pandemic, the MAX team agreed to develop a series of monthly webinars on mobility topics of mutual interest to sustain the momentum of collaboration. The monthly series is ongoing and is produced by ITS Australia in partnership with the University of Melbourne. All sessions are moderated by Peter Sweatman:

EVENTS 2020

June 17/18

WHAT DOES COVID-19 MEAN FOR CAV AND EMERGING TECHNOLOGY DEPLOYMENTS?

Speakers: Carla Bailo, CEO, Center for Automotive Research (CAR); Jeevak Badve, Director of Strategic Growth, SUNDBERGFERAR; and Dr. Chen Cai, Research Group Leader, Transport Analytics, Data 61/CSIRO. View the session report and session recording to learn more.[13]

July 13/14

INFRASTRUCTURE READINESS FOR AUTOMATED VEHICLES.

Speakers: Paul Ajegba, Director, Michigan Department of Transportation (MDOT); and Dennis Walsh, Chief Engineer, Queensland Department of Transport and Main Roads. View the session report and session recording to learn more.[14]

August 8/9

TEST BEDS FOR THE FUTURE.

Speakers: Reuben Sarkar, President & CEO, ACM; and Prof. Majid Sarvi, Professor in Transport for Smart Cities, Chair in Transport Engineering AIMES Founding Director, "Transport Technologies," University of Melbourne. View session report to learn more.[15]

September 14/15

MOVING FREIGHT WITH INTELLIGENT VEHICLE SYSTEMS.

Speakers: Vicki Selva, Executive Director, Michigan Defense Center; and Mike Lenne, Senior Vice President, Fleet and Human Factors, Seeing Machines. View session report and session recording to learn more.[16]

October 2018

WORKFORCE OF THE FUTURE SUPPORTING SECURE VEHICLE SYSTEM TECHNOLOGIES.

Speakers: Trevor Pawl, Chief Mobility Officer, State of Michigan; and Nicholas Brook, Queensland Transport and Main Roads. View session report and session recording to learn more.[17]

November 9/10

DIGITAL VEHICLE OF THE FUTURE.

Speakers: Zack Bolton, Head of Innovation Management, Holistic Engineering and Advanced Technology Group, Continental North America; and John Wall, Program Manager, Future Vehicles, Austroads. View session recording to learn more.[18]

December 7/8

SENSING AND CONNECTIVITY THROUGH ROAD NETWORKS.

Speakers: David Bolt, Vice President Solution Consulting, Kapsch TrafficCom Australia, Rocco Zito, Professor in Civil Engineering, Flinders University and Michele Mueller, Senior Project Manager Connected and Automated Vehicles, Michigan Department of Transportation. View session recording to learn more.[19]

EVENTS 2021

March 7/8

ROLLING OUT SAFETY ADVANCES WITH C-ITS, OR V2X.
Speakers: Collin Castle, ITS Program Manager, Michigan Department of Transportation; Dr. Michael Shulman, Technical Expert for Commercial Vehicles, Ford Motor Company; Dr. Miranda Blogg, Director, Competitive Automated Vehicle Initiative, Queensland Department of Transport and Roads; and Mario Filipovic, Manager Intelligent Transport Systems and Advanced Vehicle Safety, Toyota Australia.

April 14/15

UNLOCKING MOBILITY OPPORTUNITIES IN MICHIGAN, AT THE ITS ASIA PACIFIC FORUM IN BRISBANE.
Speakers to include: Ford, Toyota, Seeing Machines, Codha Wireless, HMI Technologies, Data6, and AustRoads.

May 10/11

THE ROLE OF ELECTRIFICATION IN FUTURE VEHICLE AND INFRASTRUCTURE TECHNOLOGIES.

Going forward, MAX will seek out opportunities for face-to-face events, but continue to use virtual means to connect. To date, our collaboration has already resulted in many positive connections to advance both mobility and related initiatives in both of our regions.

RESOURCES
1. https://www.michiganbusiness.org/press-releases/2018/10/global-cooperation-australia-and-michigan-sign-transportation-mou/
2. https://www.infrastructure.gov.au/
3. https://www.michiganbusiness.org/
4. https://austroads.com.au/
5. https://www.its-australia.com.au/
6. https://eng.unimelb.edu.au/industry/transport
7. https://www.michigan.gov/mdot/
8. https://www.austrade.gov.au/
9. Media release: https://minister.infrastructure.gov.au/mccormack/media-release/safer-roads-and-vehicles-through-international-cooperation; Thought leadership: https://pursuit.unimelb.edu.au/articles/tackling-human-error-to-stop-vehicle-accidents
10. https://roads.org.au/Portals/3/FutureTransport%20SmartCities_Final%20Report.pdf?ver=2019-10-24-103121-610
11. https://eng.unimelb.edu.au/industry/aimes
12. http://www.dailynews-online.com/itswc2019/news/medc-aligns-the-planets/
13. Session report: https://eng.unimelb.edu.au/ingenium/transport/mobility-reimagined-for-a-new-normal; Session recording: https://its-australia.com.au/webinars/max-series-episode-1-pieces-of-the-new-normal/
14. Session report: https://eng.unimelb.edu.au/industry/aimes/news-and-events/the-roads-of-the-future-will-help-drive-our-cars; Session recording: https://its-australia.com.au/webinars/max-series-episode-2-infrastructure-readiness-for-automated-vehicles/
15. https://eng.unimelb.edu.au/industry/aimes/news-and-events/testbeds-build-confidence-in-transport-network-transformation
16. Session report: https://eng.unimelb.edu.au/industry/aimes/news-and-events/intelligent-freight-systems-moving-forward Session recording: https://its-australia.com.au/webinars/max-series-episode-4-future-freight/
17. Session report: https://eng.unimelb.edu.au/industry/aimes/news-and-events/an-epic-decade-ahead-for-transport-technologies Session recording: https://its-australia.com.au/webinars/max-series-episode-5-workforce-of-the-future-supporting-secure-vehicle-system-technologies/
18. https://its-australia.com.au/webinars/max-series-episode-6-the-digital-vehicle-of-the-future/
19. Session recording: https://its-australia.com.au/webinars/max-series-episode-6-the-digital-vehicle-of-the-future/

Sarah Tennant, MEDC

STAGES OF INNOVATION IN MOBILITY SYSTEMS

Through several workshops and reciprocal visits, the MAX partners (Partners) have identified a unique footprint for collaboration, based on partner strengths, a quest for global best practice and examination of current knowledge gaps.

The August 2019 Melbourne summit focused on the grand challenge of new-generation, on-demand multimodal transport services enabled by connected and automated technology. Such mobility systems, envisaged for people and freight, combine several hot topics in transport, including connected and automated vehicles (CAV), data gathering and sharing, mobility as a service (MaaS), shared mobility, and multimodality. System fundamentals require the higher levels of vehicle automation and connectivity operating as part of an overall transport system that has the citizen at its center. The Partners term this bundle of enabling technologies CAV 2.0. The growth of CAV 2.0 mobility services is expected to occur via several avenues, including professionally managed CAV fleets that provide rides and deliveries on-demand, and first and last mile solutions interfacing with mass transit. CAV 2.0 is not seen to represent a new era of privately-owned automobiles.

The tremendous CAV developmental effort is evidenced by generational disruptions in the worldwide automotive industry. It is essential for manufacturers to assure safe operation at the higher levels of automation, leading to large testing programs. For much of this effort, public roads are being used, and governments are playing an assistive, rather than a prescriptive, role. This collaborative approach to the rollout of the CAV 2.0 ecosystem is made possible by a commonly held belief in pre-emptively safe roadway operations. Safety at an otherwise unattainable level is an indisputable driving force behind CAV 2.0.

Therefore, MAX will continue to focus primarily on higher levels of CAV deployed in mobility services. Nevertheless, the Partners include the lower levels of vehicle automation - currently being marketed in an incremental manner by the automotive industry – because they offer immediate, but more modest, safety improvements.

In recognition of the primacy of the manufacturer of the Automated Driving System (ADS) in CAV 2.0 safety evaluation – and the multi-faceted global effort underway – MAX will avoid duplication and will direct attention to critical adjacent issues. These include the collection and sharing of data, the availability of public domain data, workforce capacity, and workforce development, especially for cybersecurity. The Partners will also work to raise awareness of the impact of AV 2.0 on traffic efficiency – currently receiving much less attention worldwide than safety evaluation.

CAV 2.0 is in its early stages of development, and multiple strands of its development lack transparency to important parts of the CAV 2.0 ecosystem. While the ADS industry is taking on major responsibilities, the public and academic sectors lack clarity with respect to impactful roles they should play.

The road to CAV 2.0 is long, with many issues and decision points. Given the longevity and complexity of the effort, there is tremendous value in illuminating stages of progress with stories from all sectors. MAX has an excellent opportunity to shine a bright light on CAV 2.0 progress in diverse environments. MAX has identified the following aspects of "CAV 2.0 probing" as appropriate to MAX's interests and abilities.

1. **More insight into world-wide progress with CAV 2.0 safety assurance**

   What are the expectations? What are the roles? What are the available indicators? What will make sense to public agencies?

2. **More structured thinking on the impact of CAV 2.0 on traffic and transport efficiency**

   How is this issue being approached in different jurisdictions? What will our future network need to look like?

3. **Better articulation of data systems for public agencies**

   What will be the early indicators of CAV 2.0 in action?

4. **Impactful roles for public agencies**

   How will public agencies create the appropriate enabling environment (given the likely benefits the technology will deliver) while also ensuring that society's expectations are met around safety, cybersecurity, data privacy, etc? How are public agencies engaging with ADS manufacturers? What are they seeking? What do they have to offer?

5. **Collecting CAV 2.0 stories of user experience**

   What are the early uses of CAV 2.0? What are the users saying?

6. **Emerging needs for public sector workforce capacity**

   As the public sector role clarifies, what new workforce needs arise?

Communique of the August 30, 2019 University of Melbourne Summit

Transformational Technology for Cities and Regions

Prepared by

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