

Meeting Minutes: ISIC Subcommittee SC7 Material Delivery Management System (MDMS) Update

Date: 03/02/2023
Minutes prepared by: Rebecca Embacher, MnDOT
Location: Microsoft Teams

Attendance

Andrew Cotter (Guest)	Embacher, Rebecca (DOT)	Masten, Maria (DOT)
Ashley Duinick	Garrity, John (DOT)	Matt Oman
Ashley Perkins	George Chang	matt wheatley
Backus, Heather	Glenn Engstrom	Matt Zeller
Barber, Kelly	Groshens, Charles (DOT)	Mayer, Perry M@DOT
Barry Honig	Henrich Chad Thomas	McNeil-Hardwick, Cecilia
Bautista, Emil (He/Him/His) (DOT)	Herbst, Matthew (DOT)	Mike Schulz
Bender, James E - DOT	Hewitt, Richard	Miller, Matthew
Blowers, Craig (DelDOT)	House, Tyler	Mokhtari, Ali@DOT
Brandon Brever (MAPA)	Jake Fleming (ITI)	Narsingh Laikram
Brendlinger, Sheri	Jason Dick	Nieves, Antonio (FHWA)
Cegla, Bradley (DOT)	Jill Ingalls	Opstedal, Toby
Christensen, David (DOT)	Jim Hutchins	Parr, Will
Clausen, Scott A.	Jim Preston	Patrick Icenogle
Cooper, Stephen.J (FHWA)	Joe Charlesworth (Guest)	Patrick Icenogle (DOTD)
Corrigan, Matthew (FHWA)	John Garee	Paul Chang
Dan Brayack	Johnson, Gregory D (DOT)	Pearson, Bryan
Dan Labo	Josh Cordell	Podolsky, Joseph (DOT)
Dongo, Joseph K@DOT	Katie Peabody (Guest)	Porr, Devin Z@DOT
DOT Teams 7166	Ken Talbot	Richard Willis
Drake, Jayson	Kevin Brink	Ruairi Charlesworth (Guest)
Dumonceaux, LuAnn (DOT)	Kevin Garcia (Guest)	Sadasivam, Suriyanarayanan
Dunn, Curt G.	Leingang, Keith	Samantha Primus
Dvorak, Dennis (FHWA)	Luis Angulo	Sean Ali
Ed Shappell - Trimble	Malek Elbatta	Selin, Mathew (DOT)
Eloka Kingsley Achebe (DC DOT)	Manahan Matthew	Stefani Gutierrez
	Marcus Utterodt	STENNETT Michael J * Mike

Sturgill, Roy [CCE E]
Sullivan, Amy (DOT)

Turgeon, Curt (DOT)
Withee, Jeff (FHWA)

Decisions Made

Decision: Future meetings will continue to be scheduled when updates are warranted.

Decision: The following items were selected as the next items to work towards inclusion into AASHTO MDM-1-UL Standard Practice for Material Delivery Management Systems:

- Environmental Product Declarations (EPDs),
- snow and ice, and
- millings.

Decision: Creation of another working group under ISIC Subcommittee SC7 for bi-directional data transfer.

Action Items

- Create a “Bi-Directional Data Transfer” working group under ISIC Subcommittee SC7 MDMS and schedule subsequent meetings. / Rebecca Embacher (MnDOT)
- Create a document to summarize AASHTO MDM-1-UL. / Rebecca Embacher (MnDOT) / Antonio Nieves (FHWA)
- Determine whether a working group is needed to determine data fields needed for connecting Environment Product Declarations (EPDs) to MDMS data. / Rebecca Embacher (MnDOT)

Agenda

- 11:00 - 11:10 a.m. / AASHTO MDM-1-UL publication update / Rebecca Embacher (MnDOT)
- 11:10 - 11:20 a.m. / Discussion: next material(s) to add to AASHTO standard / Rebecca Embacher (MnDOT)
- 11:20 - 11:25 a.m. / As-Built working group update / Nars Laikram (Voegle) / Rebecca Embacher (MnDOT)
- 11:25 - 11:30 a.m. / New working group: Bi-Direction Data Transfer / Rebecca Embacher (MnDOT)
- 11:30 - 11:45 a.m. / ISIC North American Chapter Updates / George Chang (Transtec Group)
- 11:45 - 11:55 a.m. / FHWA Updates / Antonio Nieves (FHWA)
- 11:55 – 12:00 p.m. / Future meeting frequencies / Rebecca Embacher (MnDOT)

Next Meeting

Date: TBD

Time: TBD

Location: Microsoft Teams

Agenda items: (submit proposed agenda items to Rebecca Embacher, Rebecca.embacher@state.mn.us)

Meeting Notes

See attached slides.

AASHTO MDM-1-UL publication update

- See attached slide 3.
- AASHTO Committee on Data Management and Analytics (CDMA) has approved the MDMS provisional practice for publication.
- AASHTO publications anticipates publishing the standard by the end of June 2023.

Next material(s) to add to AASHTO MDM-1-UL standard

- See attached slide 4.
- Used slide 4 to start brainstorming discussions on possible material(s) to add to the provision next. The following items were chosen as the next items to work towards adding to MDM-1-UL:
 - Meta data to allow for connection with Environmental Product Declarations (EPDs) and possible needed calculations,
 - snow and ice, and
 - millings.

As-built working group

- See attached slide 5.
- At next meeting, working group will be re-assessing mission to determine if it should move beyond MDMS technology to include other intelligent construction technologies.
- Please let Rebecca Embacher (Rebecca.Embacher@state.mn.us) know if you would like to take part in this working group. It is just getting started and has only met a couple of times to date.

Bi-directional data transfer working group

- See attached slide 6.
- A new working group is being formed to address MDMS industry panel discussion that occurred at the EDC-6 national workshop in Savannah, Georgia in December 2022. Discussions during this panel were about the need to also allow suppliers to receive feedback about the deliveries. The following are examples of data that suppliers/contractors would like to receive response data: rejected loads, partial rejected loads, wasted material, work stoppage, and why the given event occurred.
- Industry thought discussions should also be included as to whether there is other meta data, currently being collected, that would be of interest to industry members to pull into their platforms as part of the BIM environment for their customers.
- Please let Rebecca Embacher (Rebecca.Embacher@state.mn.us) know if you would like to take part in this new working group. Meetings will be scheduled in the upcoming months after working group members are established.

ISIC – MDMS updates

- The International Society for Intelligent Construction (ISIC, website: www.IS-IC.org) founded a new subcommittee on MDMS for highway construction with the materials, including asphalt, concrete, aggregate, etc., to integrate with other ICT to realize the Digital Twins of the physical highway systems (<https://www.is-ic.org/committees/sub-committees/>)
- The MDMS expert task group (ETG) will now be incorporated under this subcommittee, since the provisional practice was approved for publication and continuing to move forward.

ISIC – MTC&E track updates

- The International Society for Intelligent Construction (ISIC) North America Chapter will sponsor an ISIC track during the Minnesota Transportation Conference and Expo (MTC&E) from May 15 to May 16th, 2023, in Minneapolis, MN, USA. The ISIC Track's theme is "Digital Workflow from Design to Construction", packed with hot topics by great speakers. Further information is on this webpage (<https://www.is-ic.org/mtce-2023-isic-track-open-for-registration/>).

NRRA – Veta MDMS updates:

- The National Road Research Alliance (NRRA) pooled fund supports the Veta MDMS project to implement a web-based standard platform to support the implementation of the AASHTO MDMS, Intelligent compaction (IC), Paver-mounted Thermal Profilers (PMTP), Dielectric Profile Systems (DPS) specifications, and 2D/3D Ground-Penetrating RADAR data for pavement thickness data (<https://www.intelligentconstruction.com/projects/veta-mdms-and-web/>).
- The progress of Veta MDMS is as follows:
 - The test web server is set up. The Veta Center API (Application Programming Interface to be consumed by MDMS vendors and AASHTOWare) and the Veta Center Web SPA (Single Page Application at VetaCenterTest.com to be used by users, such as DOTs, Contractors, etc.) applications are functioning as expected.
 - The beta test user IDs and passwords were created for the Transtec research team to test the VetaCenterTest.com site.
 - A quick user guide is being created for using the Veta MDMS website.
 - After the research Team has used the site for a while, and if there are no glaring issues, the user permissions will be given to TAP (Technical Advisory Panel) team. The TAP members include Aaron Chamberlin, Caltrans; Cecilia McNeil-Hardwick, WashDOT; Curt Dunn, North Dakota DOT; Devin Porr, Caltrans; Ed Collins, New York State DOT; Jacob Walker, Georgia DOT; James Schneider, Minnesota DOT; Jonathan Varner, Missouri DOT; Rebecca Embacher, Minnesota DOT; Mathew Selin, Minnesota DOT; Michael Johnson, Minnesota DOT; Paul Chang, Caltrans; Perry Mayer, Caltrans.
 - After the TAP team has reviewed and tested the site, we'll start beta testing with selected vendors on the APIs. The current candidate vendors include: Fleet Watcher, Haulhub, Command Alkon, and Granite Construction. Another vendor (TruckPay) also volunteered during this meeting.

- We expect a full-functioning MDMS by the end of 2023.

FHWA update

There are no FHWA updates at this time.

Meeting frequency

Discussed preferences for meeting frequency of this subcommittee.

It was decided to continue meeting as needed and not to follow a pre-established schedule.

ISIC Subcommittee SC7 Material Delivery Management System (MDMS) Update Meeting

Rebecca Embacher | Advanced Materials and Technology Engineer
March 2, 2022 | Microsoft Teams

Agenda

- 11:00 - 11:10 a.m. AASHTO MDM-1-UL publication update
- 11:10 - 11:20 a.m. Discussion: next material(s) to add to AASHTO standard
- 11:20 - 11:25 a.m. As-Built working group update
- 11:25 - 11:30 a.m. New working group: Bi-Direction Data Transfer
- 11:30 - 11:45 a.m. ISIC North American Chapter Updates
- 11:45 - 11:55 a.m. FHWA Updates
- 11:55 – 12:00 p.m. Future meeting frequencies

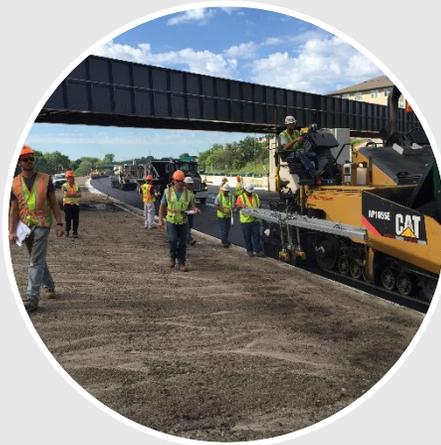
MDMS Provisional Practice Publication

AASHTO Committee on Data Management and Analytics

Aggregate



Asphalt Paving



Concrete Paving



Ready-Mixed Concrete



Balloting Complete = Approved for Publication

What should we add next?

Environmental Product Declaration
(EPD) Data

e.g., mix design designation, expiration
date, green house gas (GHG)

Snow and Ice:

Salt / Sand / Deicing mixtures

Millings

Prefabricated Concrete

Structural Steel

Other bulk materials

Pipes

Tack

Geotextiles

As-built working group

Re-evaluating “mission” statement for this working group

- What can we do now? What technology (as-built measurements) are currently available on concrete and asphalt pavers?
- What would need to be added to pavers to provide beneficial information? Would it be cost effective to do so?
- What should be tied to current MDMS data, if anything?
- Possible focus areas:
 - 2D projects: Length, width, paving distance
 - 3D projects: surface models
- Next meeting: Friday, March 3rd

New working group: Bi-Directional Data Transfer

- Request to create new working group
- Bi-directional data = allow data (electronic communication) to also be sent back to contractor / supplier
- Examples
 - Rejected load
 - Partial rejected load
 - Wasted material
 - Work stoppage
 - Why / comments
 - To other vendors (i.e., allow vendors to pull information)
- Interested? Send e-mail to: Rebecca.Embacher@state.mn.us

International Society of Intelligent Construction (ISIC) Update

<https://www.is-ic.org/>

FHWA Update

Future meeting frequency?

Thank You!

Rebecca Embacher

Rebecca.embacher@state.mn.us

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