Meeting Minutes: ISIC Subcommittee SC7 Material Delivery Management System (MDMS) – As-Built Working Group Update

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

Working Group Members

Matt Miller, IA DOT
Ashley Perkins, Astec Industries
Michael Cremin, MN DOT
Rob Golish, MN DOT
Barry Honig, TruckPay
Magdy Mikhail, Trimble
Lindsey Renner, MI DOT
Michael Skurdalsvold, MN DOT
Matt Wheatley, Highway Data Systems
Joe Charlesworth, Highway Data Systems
George Chang, Transtec
Josh Cordell, Rochester Sand & Gravel
Curt Dunn, ND DOT
Kevin Garcia, Trimble
Tyler House, North Star Materials
Mike Johnson, MN DOT
Nars Laikram, Wirtgen Group
Todd Mansell, Caterpillar
Maria Masten, MN DOT
Skip Powe, ALRBA
Jim Preston, TOPCON
Kristen Reyes, MN DOT
Jim Schnedier, MN DOT
Curt Turgeon, MN DOT
Dave Unkefer, FHWA
Matt Valle, HaulHub
Marcus Utterodt, TOPCON
Roy Sturgill, Iowa State Univ.
Jim Hutchins, Earthwave
Matt Selin, MN DOT
Nick McRaae, Meta-ct
Kyle Grathwol, Astec
Curtiss Dorr, TOPCON
Greg Johnson, MN DOT
Nicole Madison, MN DOT
Ruairi Charlesworth, MN DOT
Daryl Robinson, Competer

Meeting Attendance

The listing of attendees did not download correctly from Teams, and therefore, the listing of attendees is not available for this meeting.

Decisions Made

Decision: The mission of the as-built working group will expand beyond ISIC subcommittee SC7 Material Delivery Management System and focus on other intelligent construction technologies.

Action Items

- The International Society for Intelligent Construction (ISIC) will discuss whether to move forward with creation of a new subcommittee for as-builts (SC8) and provide direction on how this working group will proceed.

Agenda

- Re-evaluate focus / objectives of this working group

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

Please note that during the past as-built working group meetings, this working group was originally focused on adding data to supplement the yields (quantities) included on E-Tickets through the capturing of length, width and paving distance from asphalt pavers instrumented with the needed sensors. A table of possible data fields that could be collected and calculated was generated. However, it was decided that today's meeting would focus on re-evaluating the mission of this working group.

The following summarizes the comments made during this meeting:

- It was noted that most pavers are not instrumented, or could be instrumented, with the needed technology to record length, width and paving distance, however, there is some information that can be collected from 2D systems.
- As-built surface models can be recorded by pavers instrumented with 3D technology. The as-built surfaced model can be overlayed with the milled surface model (or in-place) to calculate volumes, etc. Depths (thickness) are not as easy to extract from these comparisons and would require more effort.
- Discussed material and geometric assets that are collected by other intelligent construction technologies and questioned whether this group's focus should be a 'holistic' approach and not just focus on the needs of the MDMS (even though the request was original generated from the MDMS expert task group [SC7])? The following lists a few of the technologies referenced:
    - Geometric Assets
        - AMG Milling
        - AMG Paving
        - AMG Grade Control

        - AMG Excavation
        - Ground Penetrating Radar
    - Material Assets
        - Ground Penetrating Radar
        - Intelligent Compaction
        - Paver Mounted Thermal Profiling
        - Dielectric Profile System
        - MDMS
        - Spot Tests (e.g., both lab and field testing with known material placement locations)
- Dave Unkefer provided a reminder stating that there are a large number of other asset management initiatives (committees, pooled funds, etc.) and that this working group should not silo from those efforts but ensure that they are working collaboratively together.
    - All agreed.
    - Participants iterated that these other groups have been more focused on data captured using LiDAR scanning devices, robotic total stations, and other "spot test" type devices (conventional devices) and have not focused on data being collected by intelligent construction technologies and heavy construction equipment, live during construction. All believe there is still a need to focus on these assets as well through this working group.
- All agreed that this as-built working group should continue having meetings but move away from solely focusing on the MDMS and include all intelligent construction technologies. Consequently, this would no longer be a working group under ISIC SC7, but potentially a new subcommittee (e.g., ISIC SC8). ISIC will discuss this further and report back with how to proceed.
- First action items of this as-built group would be to gather representatives from other committees/pool funds and get updates on whether their focuses have included geometric and material assets generated from intelligent construction technologies. It is anticipated that they have not, and that this group will be starting from scratch with respect to the relevant data to pull. However, care is needed to ensure that efforts match the standardization being developed by these other entities for the other data types and allow connection accordingly.