IHEEP 2025

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Workshop Title:

Digital Workflow from Design to Construction for Pavements

- Sponsored by the International Society for Intelligent Construction (www.IS-IC.org)

Workshop Agenda

Monday (October 6th, 2025) PM (EST)

Time	Topic	Speakers
3:00 PM – 3:05 PM	1 - Introduction and Overview	Dr. George K. Chang (Transtec Group, a Terracon Company)
3:05 PM – 3:35 PM	2 - Milling and Pavement Equipment and the Use of 3D Models	Laikram Narsingh (John Deere Wirtgen Group); Jim Preston (TOPCON)
3:35 PM – 4:05 PM	3 - Geometric and Material As-Built Data Collected by Road Construction Equipment	Laikram Narsingh (John Deere Wirtgen Group); Jim Preston (TOPCON)
4:05 PM – 4:35 PM	4 - Living Models in Asset and Pavement Management Systems with Updates from Machines	Chuck Hixon (Matt McDonald) Tim Kowalski (John Deere Wirtgen Group)
4:35 PM – 5:00 PM	5 - Contractor's Perspective on 3D Construction and Open Discussion	Scott Fernald (Granite Construction); Dr. George K. Chang (Transtec Group, a Terracon Company)
5:00 PM	Adjourned	

Abstracts

1 – Introduction and Overview

The introduction will cover what ISIC (www.IS-IC.org) is, including its mission, scope, and activities. It would also cover the overview of this workshop.

2 - Milling and Pavement Equipment and the use of 3D Models

This presentation focuses on using 3D models for milling and paving. The three-part presentations include 1) Machine Setup Best Practices – key dos and don'ts when configuring equipment to ensure accurate model execution. 2) Model Building - what goes into creating a constructible model, and 3) Field Execution – what's needed to successfully use 3D models on site, including equipment, data flow, and crew coordination.

3 - Geometric and Material As-Built Data Collected by Road Construction Equipment

This presentation covers the automatic documentation of data related to the pavement profile and paving parameters, as well as construction as-builts. It will also cover data format and storage, promoting data sharing between different equipment to provide operators with additional information for better management of the construction process.

4 - Living Models in Asset and Pavement Management Systems with Updates from Machines

This session highlights how technology built into modern construction equipment, such as machine control, compaction measurement, and onboard sensors, can collect valuable as-built data. This session will demonstrate how this data can be integrated into asset and pavement management systems, supporting the creation of "living models" that enable owners to make informed decisions for planning, maintenance, and lifecycle management. Real-world examples will be used to illustrate the benefits and opportunities.

5 - Contractor's Perspective on 3D Construction

This presentation will comprise a paving contractor's perspectives on 3D construction as it relates to items such as model creation, savings (e.g., cost, time, resources, fuel, etc.), lessons learned (what works and what doesn't), digital as-builts, and the practical value of digital as-builts—straight from the field.

Speakers' Bios

Dr. George K. Chang, Transtec Group, a Terracon Company – President, ISIC

George is a world-renowned expert in pavement smoothness and intelligent construction technologies. He is the founder and president of the International Society for Intelligent Construction (www.IS-IC.org) and the developer of industry-standard tools like ProVAL (www.RoadProfile.com) and Veta (www.IntelligentConstruction.com), used globally to advance pavement technologies and intelligent construction.

Laikram Narsingh (Nars), John Deere Wirtgen Group - Technical Application of ISIC North American Chapter

Nars joined the asphalt industry in 1990 as a project engineer with Ingersoll Rand's Paver Division, where he led the development of asphalt pavers. He held several other positions in the paving industry, such as Paving Applications Engineer, Product Support Manager, and Product Manager. Currently, Nars is employed by The Wirtgen Group as an application and technology specialist. His responsibilities include developing product specifications and providing support for paving applications and Intelligent Construction Technologies. Nars also holds the following industry roles: International Society of Intelligent Construction (ISIC) – North American Chapter: Technology & Application Coordinator; ISIC Technical Committee: Member; ISIC Sub-Committee 7 – Material Delivery Management Systems (MDMS): Technical Adviser; ISIC Sub-Committee 8 – Digital as Built (DAB): Technical Adviser; Roller Compacted Concrete Board of Directors: Member.

Jim Preston, TOPCON - Treasurer of ISIC North American Chapter

Jim is an Intelligent Paving Specialist at TOPCON. While attending Tri-State University and Ohio State University, Jim interned with civil engineering and Consulting firms, working with municipalities and DOTs on road and bridge applications. Jim found an interest in fieldwork and began engaging with the technology manufacturers. Over the last 28 years, Jim has worked with numerous technology companies and international markets in the fields of civil engineering, construction, and mining. Holding membership with the ISIC and NRRA technology committees, he continues to broaden the scope of solutions. Working with Topcon Positioning Systems, Jim is proficient in identifying the applications to support the current and future needs of the industry.

Chuck Hixon, Matt McDonald - Digital Delivery Coordinator of ISIC North American Chapter

Charles Hixon is the Chief Digital Officer for North America at Mott MacDonald, where he advances digital capability, innovation, and technology integration, driving digital adoption

to enhance business performance and client outcomes. He is nationally recognized for his expertise in the application of innovative design and construction technology, including Building Information Modeling (BIM), geospatial information systems (GIS), Laser Scanning, and Virtual Reality (VR).

Tim Kowalski, John Deere Wirtgen Group - Chair of ISIC North American Chapter, Vice President and Executive Committee of ISIC

Tim is an Applications Support Manager at John Deere Wirtgen Group. Tim has a Bachelor of Science Degree in Construction Administration and a minor in Business Management from the University of Wisconsin–Madison. He has been in the construction business for over 28 years, 17 of which have been spent working on the Quality Control of Asphalt, Aggregates, and concrete. Tim has taught courses, made presentations, and published articles on various topics related to equipment functionality and materials. He has served on numerous committees and task groups for NCAT, NAPA, and ASTM, as well as in the states of Wisconsin, Illinois, and Colorado, among others. Tim is the Applications Support Manager for Wirtgen America Inc., specializing in Hamm rollers. He works closely with their District Sales Managers, Dealers, & Customers throughout North America, helping them understand Hamm products and processes through mix design, equipment function, and material usage to become more efficient and competitive. Tim recently completed working with the FHWA and Transtec Group on a study of Intelligent Compaction (IC) rollers to determine the correlation between stiffness and density. He has been involved with all nine of the FHWA Demo projects over the last three years, extensively using this technology, and this will continue in the future.

Scott Fernald, Granite Construction - Automation Technology Coordinator of ISIC North American Chapter

Scott is a construction manager at Granite Construction, Inc. With a 26-year career in the construction industry, Scott Fernald has spent the past 23 years dedicated to Granite Construction. Beginning his tenure at Granite as a Project Engineer, later advanced to Project Manager and now serves as a Construction Manager overseeing asphalt paving operations for the Utah Region. Known for his strong passion for innovation, Scott also holds the role of Construction Technology Manager, where he leads efforts to integrate and advance construction technologies—always driven by a desire to "make things better."

Contacts

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