



# 2024 ISIC International Conference

*Sustainability through Technologies*

DoubleTree by Hilton Orlando at SeaWorld  
Orlando, FL USA, September 10 – 12, 2024.

## At-A-Glance Agenda

Tuesday, September 10	
08:00 AM – 12:00 PM	NDT & ICT for Asphalt Pavement Construction Workshop
01:00 PM – 05:00 PM	Joint DPS and Stripping TPF TWG Workshop
06:00 PM – 08:00 PM	Ice-Breaker Reception
Wednesday, September 11	
07:00 AM – 08:00 AM	Breakfast (visit exhibits)
08:00 AM – 09:00 AM	Session 1 Welcome, Keynote, and Vendors Introduction
09:00 AM – 09:30 AM	Break and Visit Exhibits
09:30 AM – 12:00 PM	Session 2 Technologies and Sustainability - I
12:00 PM – 01:00 PM	Lunch Break and Visit Exhibit
01:00 PM – 03:30 PM	Session 3 Quality Monitoring and Sustainability - I
03:30 PM – 03:45 PM	Break and Visit Exhibits
03:45 PM – 05:30 PM	Session 4 Digital Twins and BIM - I
06:00 PM – 10:00 PM	Evening Activities (Gatorland) - Offsite
Thursday, September 12	
07:00 AM – 08:00 AM	Breakfast (visit exhibits)
08:00 AM – 10:30 AM	Session 5 Quality Monitoring and Sustainability - II
10:30 AM – 11:00 AM	Break and Visit Exhibits
11:00 AM – 11:50 PM	Session 6 Digital Twins and BIM - II
11:50 PM – 01:00 PM	Lunch Break and Visit Exhibit
01:00 PM – 02:40 PM	Session 7 Quality Monitoring and Artificial Intelligence
02:40 PM – 02:55 PM	Break
02:55 PM – 04:25 PM	Session 8 Sustainability through Technologies Open Panel
04:25 PM – 04:55 PM	ISIC Open Business Meeting
04:55 PM – 05:00 PM	ISIC 2024 Adjourned



**Tuesday, September 10**

**08:00 AM – 12:00 PM**

**NDT & ICT for Asphalt Pavement Construction Workshop**  
**Room: TBA**

**Moderator: Steve Cooper, FHWA, USA**

This is a 4-hour workshop to introduce Non-Destructive Testing (NDT) and Intelligent Construction Technologies (ICT) during asphalt construction. The purposes are to:

- Provide a broad overview of what Non-destructive Intelligent Construction is and the Non-Destructive technologies available for asphalt pavement.
- Summarize PMTP/IC/DPS/Veta technologies, their capabilities, shortfalls, and appropriate usage at the present time to support quality assurance while also meeting the Title 23 Code of Federal Regulations Part 637 Subpart B (CFR) compliance requirements.
- Encourage the attendees to implement NDT and ICT during asphalt construction to improve the quality of construction, safety, asset management/performance, and to reduce costs.

George Chang, Amanda Gilliland, and Subu Sankaranarayanan, Transtec Group

It is open to all ISIC 2024 registrants and anyone who may be interested in ICT.

**01:00 PM – 05:00 PM**

**Joint DPS and Stripping TPF TWG Workshop**  
**Room: TBA**

**Moderators: Kyle Hoegh and Eyoab Zegeye, MnDOT, USA**

The is a 4-hour workshop that includes a 2-hour Dielectric Profiling System (DPS) and a 2-hour Stripping Transportation Pooled Fund (TPF) Task Working Group (TWG) meetings.

**06:00 PM – 8:00 PM**

**Ice Breaker Reception**  
**Room: Exhibit hall**

It is a great networking opportunity to be held at the exhibit hall.  
All ISIC 2024 attendees and partners are welcome!



## Wednesday, September 11 (AM)

<b>08:00 AM – 09:00 AM</b> <b>Session 1 – Welcome, Keynote, &amp; Vendors Intro</b> <b>Room: TBA</b>		<b>Moderator: Tim Kowalski, Wirtgen America, USA (ISIC Vice President, ISIC NA Chapter – Chair)</b>
Welcome from ISIC NA Chapter		Tim Kowalski (Wirtgen America, USA)
Welcome from ISIC International		George Chang (Transtec Group, USA), Antonio Correia (University of Minho, Portugal), Soheil Nazarian (University of Texas at El Paso, USA)
Keynote Speech		Tom Yu (FHWA)
Sponsors and Exhibitors' Oral Introduction		All sponsors and exhibitors' representatives
09:00 AM – 09:30 AM Break and Visit Exhibits		
<b>09:30 AM – 12:00 PM</b> <b>Session 2 – Technologies and Sustainability - I</b> <b>Room: TBA</b>		<b>Moderator: Jim Preston, Topcon, USA (ISIC NA Chapter -Treasurer)</b>
Positioning Technologies and Sustainability		Jim Preston (Topcon, USA)
Paving Technologies and Sustainability		Laikram Narsingh ( Wirtgen America, USA), Todd Mansell (Caterpillar, USA)
Compaction Technologies and Sustainability		Tim Kowalski (Wirtgen America, USA)
How Can Construction Contribute to Sustainability		Kevin Garcia (Trimble, USA)
Incorporating 3D Ground Penetrating Radar in Pavement Project Scoping Efforts: Minnesota Department of Transportation Experience		Eyoab Zegeye ( MnDOT, USA), Thomas Calhoon, Steve Henrichs, Dai Shongtao, Jeff Brunner (MnDOT), Jacopo Sala (Kontur)
Autonomous Solutions in Construction		Kevin Garcia (Trimble, USA)
12:00 PM – 01:00 PM Lunch Break and Visiting Exhibits		



## Wednesday, September 11 (PM)

<b>01:00 PM – 03:30 PM</b> <b>Session 3 - Quality Monitoring and Sustainability - I</b> <b>Room: TBA</b>		<b>Moderator: Todd Mansell, Caterpillar, USA (ISIC NA Chapter – Vice Chair)</b>
Sustainable Road Construction: Harnessing Reclaimed Asphalt Pavement as Base Course		Jian-Shiuh Chen (National Cheng Kung University, Taiwan), Chin Hung Yang
Exploring the Environmental Footprint of Next-Generation Asphalt Pavement with Intelligent Compaction via Life Cycle Assessment		Yunpeng Zhao (FHWA, USA), Jennifer Aponte Rivera, Atish Nadkarni, Maryam Sadat Sakhaeifar, Migdalia Carrion
Use of Installation Data for Streamlined Rigid Inclusion Performance Verification		Mary Nodine (FHWA, USA)
Building Higher Quality Roads with Innovative and High-Speed Data Collection Using DPS/GPR Technologies		Bryce Wuori (Pavewise, USA)
A Case Study in Implementation of Intelligent Construction for Ultra-Thin Bonded Overlays in Connecticut and Development of Rapid Spatial Filtering in Veta		Alexander Bernier (UConn, USA)
Intelligent Highways: Missouri DOT's Success in Intelligent Compaction and Paver-Mounted Thermal Profiling (IC-PMTP) Deployment		Amanda Gilliland (Transtec Group, USA), George Chang, Subu Sankaranarayanan
03:30 PM – 03:45 PM Break and Visit Exhibits		
<b>03:45 PM – 05:00 PM</b> <b>Session 4 - Digital Twins and BIM - I</b> <b>Room: TBA</b>		<b>Moderator: Chuck Hixon, Mott McDonald, USA (ISIC NA Chapter – Digital Delivery Coordinator)</b>
The Value of Geotechnical Data Throughout the Project Life Cycle		Mary Nodine ( FHWA, USA), Derrick Dasenbrock, Benjamin Rivers
OpenBIM Approach for Integrated Design and Modular Construction: the R2U Project		Miguel Azenha ( University of Minho, Portugal), Manuel Parente, João Aleixo, Evgenii Ermolenko, Ricardo Dias, João Daniel Pereira, João Marcelo Silva, Raquel Silva, Bruno Figuei-redo, João Pedro Mendonça, João Pedro Couto, José Granja
BIM Models for Construction Risks and Benefits		Russ Tamblyn (Trimble, USA), Ed Shappell, Joseph Poskie
Evaluation and Optimization of Building Performance through Visual Programming, Leveraging BIM-Based Shading Coefficient		Thanasak Phittayakorn (Chulalongkorn University, Thailand)
<b>06:00 PM – 10:00 PM</b> <b>Evening Activities at the Gatorland</b>		
Offsite Activities		



## Thursday, September 12 (AM)

<b>08:00 AM – 10:05 AM</b> <b>Session 5 – Quality Monitoring and Sustainability - II</b> <b>Room: TBA</b>		<b>Moderator: Amanda Gilliland, Transtec Group, USA (ISIC NA Chapter – Communication Coordinator)</b>
AASHTO Dielectric Profile System (DPS) Implementation		Kyle Hoegh (MnDOT, USA)
AASHTO Material Delivery Management System (MDMS) Implementation		Rebecca Embacher (MnDOT, USA)
Improving Asphalt Paving Construction Quality and Efficiency with Technology		Bryce Wuori (Pavewise, USA)
Advancing Quality Control in Asphalt Construction: An FHWA and MATC Initiative Utilizing Pave Mounted Thermal Profiler and Dielectric Profiling Systems		Ram Kumar Veeraragavan (FHWA, USA), Leslie Myers, Derek Nener-Plante
Bender Element Field Sensor for Quality Assessment of Pavement Construction		Erol Tutumluer (University of Illinois at Urbana-Champaign, USA)
The Use of Carbon Nanomaterials in Cement Stabilized Sand and Its Practical Usage in Health Monitoring of Railways		Mohammad Jawed Roshan (University of Minho, Portugal), António Gomes Correia, Raul Fanguero, Mohammadmahdi Abedi
10:05 AM – 10:30 AM Break and Visit Exhibits		
<b>10:30 AM – 11:50 PM</b> <b>Session 6 – Digital Twins and BIM - II</b> <b>Room: TBA</b>		<b>Moderator: Chuck Hixon, Mott McDonald, USA (ISIC NA Chapter – Digital Delivery Coordinator)</b>
Multi-Objective Optimization of Excavation Pits Using a Geotechnical Digital Twin		Johannes Beck (Helmut Schmidt University, Germany), Sascha Henke
Vessel Berthing Monitoring using Digital Twins		Joao Manso (National CE Laboratory, Portugal), Martin Figueiredo, Rúben Santos, Liliana Pinheiro, João Marcelino, Nuno Marques
11:50 PM – 01:00 PM Lunch Break and Visiting Exhibits		



## Thursday, September 12 (PM)

<b>01:00 PM – 02:40 PM</b> <b>Session 7 – Quality Monitoring and Artificial Intelligence</b> <b>Room: TBA</b>	<b>Moderator Soheil Nazarian, University of Texas at El Paso, USA (ISIC International – Vice President)</b>
<p>Implementation of Intelligent Compaction in Australia</p> <p>Synchronizing AI and Unsaturated Soil Mechanics: A Leap Forward in Ground Assessment</p> <p>BIM-based Digital Twin Framework and Architecture for Building Environment Monitoring</p> <p>Artificial Intelligence-Enabled Pipeline Integrity Management for Detection and Prediction of Corrosion Defects</p>	<p>Sam Afkar (ARRB-NTRO, Australia), and Arooran Rajah (TMR, Australia)</p> <p>Jayantha Kodikara (Monash University, Australia), Javad Ghorbani</p> <p>Taewook Kang (Korea Institute of Civil Engineering and Building Technology), Jin woo Cho, Yunjeong Mo</p> <p>Hao Wang (Rutgers University, USA), Bingyan Cui</p>
02:40 PM – 02:55 PM Break	
<b>02:55 PM – 04:25 PM</b> <b>Session 8 – Sustainability through Technologies Open Panel</b> <b>Room: TBA</b>	<b>Moderator: Dave Johnson, Asphalt Institute – AI, USA (ISIC NA Chapter – Secretary)</b>
<p>This is an open panel to wrap up this conference that focuses on sustainability through technologies. We'll share different perspectives from the government and the industry to achieve sustainability goals, such as the Environmental Product Declaration (EPD) through innovative technologies.</p>	<p>ISIC Executive Committee</p> <p>TBA (FHWA)</p> <p>TBA (DOTs)</p> <p>TBA (contractors)</p> <p>TBA (manufacturers)</p>
<b>04:25 PM – 04:55 PM</b> <b>ISIC Business Meeting</b> <b>Room: TBA</b>	<b>Moderator: George Chang, Transtec Group, USA (ISIC International – President)</b>
<p>The ISIC Open Business meeting will cover the ISIC finance report, the near-term plan, committee rotations and elections, the candidate host for the next ISIC conference, etc.</p>	<p>George Chang (Transtec Group, USA), Antonio Correia (University of Minho, Portugal), Soheil Nazarian (University of Texas at El Paso, USA), Patte Hahn (National Center for Pavement Preservation - NCPP, USA), Tim Kowalski (Wirtgen, USA)</p>
<b>04:55 PM – 05:00 PM</b>	<b>Moderator: Tim Kowalski, Wirtgen America, USA (ISIC Vice President, ISIC NA Chapter - Chair)</b>
<p>Goodbye, and see you at the next ISIC conference!</p>	