



Time	DAY #1, June 12 th			
14.00	On-site registration opens			
14.00-18.00	TUTORIALS			YOUNG PROFESSIONAL & STUDENT EVENTS
	<u>Tutorial 1</u> FAA PAVEAIR Workshop <i>Instructor: Albert Larkin - Federal Aviation Administration</i>	<u>Tutorial 2</u> Building a Successful Pavement Management Program <i>Instructors: Katie Zimmerman, Omar Smadi and Hamid Zarghampour</i>	<u>Tutorial 3</u> Challenges and Opportunities for Incorporating Sustainability into Pavement Management Program <i>Instructors: Gerardo Flintsch, Susan Tighe and Hamid Zarghampour</i>	IISIM-International Inter-University Symposium on Infrastructure Management
18.30-19.30	<i>Opening reception</i>			

Time	DAY #2, June 13 th			
8.30	On-site registration opens			
9.00-10.30	<i>Welcome and Opening Ceremony</i>			
10.30-11.00	INVITED LECTURE #1 To deliver the appropriate Road Infrastructure: a huge challenge at present and in the future - Thomas Linder			
11.00-11.25	Coffee break in the Exhibit hall			
11.30-13.10	Concurrent Technical Session 01			
	Podium session 01.a Data Quality and Monitoring	Podium session 01.b Economic, Political, and Environmental mng. strategies	Podium session 01.c Deterioration Models	Podium session 01.d Key performance indicators
13.10-14.15	Light Lunch & Poster Session			
14.20-16.00	Concurrent Technical Session 02			
	Podium session 02.a Data Quality and Monitoring	Podium session 02.b Economic, Political, and Environmental mng. strategies	Podium session 02.c PMS -Case Studies	Podium session 02.d Design and Materials
16.00-16.15	Coffee break in the Exhibit hall			
16.20-18.00	Concurrent Technical Session 03			
	Podium session 03.a Other Assets Management	Podium session 03.b M&R treatments	Podium session 03.c PMS -Case Studies	Podium session 03.d Design and Materials

Time	DAY #3, June 14 th			
8.30-9.20	INVITED LECTURE #2			
9.20-11.00	Concurrent Technical Session 04			WCPAM²⁰¹⁷ & ITALIAN OBSERVATORY ON AIRPORTS COMING SOON
	Podium session 04.a Data Quality and Monitoring	Podium session 04.b Design and Materials	Podium session 04.c PMS -Case Studies	
11.00-11.25	Coffee break in the Exhibit hall			
11.30-13.10	Concurrent Technical Session 05			WCPAM²⁰¹⁷ & ITALIAN OBSERVATORY ON AIRPORTS COMING SOON
	Podium session 05.a Data Quality and Monitoring	Podium session 05.b Design and Materials	Podium session 05.c PMS - Case Studies	



13.10-14.15	Light Lunch in the Exhibit hall			
14.20-16.00	Concurrent Technical Session 06			
	Podium session 06.a	Podium session 06.b	Podium session 06.c	WCPAM ²⁰¹⁷ & ITALIAN OBSERVATORY ON AIRPORTS COMING SOON
	Risk and Safety	LCA e LCCA	Deterioration Models	
16.00-16.15	Coffee break in the Exhibit hall			
16.20-18.00	Concurrent Technical Session 07			
	Podium session 07.a	Podium session 07.b	Podium session 07.c	WCPAM ²⁰¹⁷ & ITALIAN OBSERVATORY ON AIRPORTS COMING SOON
	Risk and Safety	Smart Infrastructures and IT	M&R treatments	

Time	DAY #4, June 15th			
9.00-10.40	Concurrent Technical Session 08			
	Podium session 08.a	Podium session 08.b	Podium session 08.c	Podium session 08.d
	Data Quality and Monitoring	Economic, Political, and Environmental mng. strategies	Deterioration Models	Design and Materials
10.40-10.55	Coffee break in the Exhibit hall			
11.00-12.40	Concurrent Technical Session 09			
	Podium session 09.a	Podium session 09.b	Podium session 09.c	Podium session 09.d
	PMS Case Studies	Economic, Political, and Environmental mng. strategies	Key Performance Indicator	Design and Materials
12.40-13.55	Light Lunch in the Exhibit hall			
14.00-15.40	Concurrent Technical Session 10			
	Podium session 10.a	Podium session 10.b	Podium session 10.c	Podium session 10.d
	Risk and Safety	LCA e LCCA	Bridge and Tunnel Management	M&R Treatments
15.40-16.00	Coffee break in the Exhibit hall			
16.15-18.30	Closing Ceremony Best Paper Awards WCPAM2017 meets the national and international Authorities and the media			
19.30	Gala Event			

Time	DAY #5, June 16th			
9.00-13.00	TECHNICAL TOUR			



TUTORIAL 1

Title	<i>WCPAM - FAA PAVEAIR Workshop</i>
Instructor	<i>Albert Larkin</i>
Day	<i>#1, June 12th</i>
Time	<i>14.00-18.00</i>

Contents

Session 1 (2 hours):

1. Introduction
2. What is a Pavement Management System?
3. FAA PAVEAIR Basics
4. Demonstration of FAA PAVEAIR Functions

Session 2 (2 hours):

1. Introduction of FAA PAVEAIR Version 3.0
2. Presentation on the FAA Extended Pavement Life Project
3. Questions & Comments



TUTORIAL 2

Title	<i>Building a Successful Pavement Management Program</i>
Instructors	<i>Katie Zimmerman, Omar Smadi, Hamid Zarghampour</i>
Day	<i>#1, June 12th</i>
Time	<i>14.00-18.00</i>

Contents

As a key part of a transportation asset management program, pavement management must use tools and processes that can adapt to new technology, new construction and design practices, and innovative ways of delivering a pavement program. This tutorial offers effective strategies for building a robust, comprehensive, and credible pavement management program that addresses your agency's needs.

The tutorial includes two 2-hour sessions that will cover the following topics:

Session 1: Data and Analysis Tools (2 hours)

1. Managing and coordinating data collection efforts.
2. Integrating data so it addresses agency needs.
3. Building performance models that reflect local conditions and practices.
4. Developing strategies to reduce the annual cost of system preservation.

Session 2: Implementation and Results (2 hours)

1. Using modern tools for monitoring under a maintenance contract.
2. Build buy-in for pavement management recommendations among agency leadership and elected officials.
3. Identifying needed enhancements using a gap analysis.



TUTORIAL 3

Title	<i>Challenges and Opportunities for Incorporating Sustainability into Pavement Management</i>
Instructors	<i>Katie Zimmerman, Omar Smadi, Hamid Zarghampour</i>
Day	<i>#1, June 12th</i>
Time	<i>14.00-18.00</i>

Contents

The increased emphasis on achieving sustainability in all sectors of our society has created a series of important challenges and opportunities for pavement and asset management. The tutorial will cover the basic principles of sustainability, tools that can be used for making more sustainable pavement management decisions and examples of effort of road asset management for sustainable development in developed and developing countries.

The tutorial includes two 2-hour sessions that will cover the following topics:

Session 1: Basic Principles and Tools (2 hours)

1. Basic principles and dimensions of sustainability
2. Sustainability rating tools, including life cycle thinking.
3. Life cycle cost analysis.
4. Environmental and social safeguards

Session 2: Examples (2 hours)

1. Challenges and opportunities: The Canadian Experience.
2. Challenges and opportunities: Developing countries.
3. The impact of international collaboration: United States/ European Commission twinning program.



Podium session	01.a
Topic	<i>Data Quality and Monitoring</i>
Day	<i>#2, June 13th</i>
Time	<i>11.30-13.10</i>
Code	Title
01.a.01	Comparison of Different Visual and Automated Pavement Condition Survey Techniques <i>Brian Mulry, David O'Brien, Mark P. Gardner, Kieran Feighan</i>
01.a.02	Field Assessment of Three-Dimensional Surface Texture and Frictional Properties of Experimental Canadian Road Pavements <i>Qingfan Liu, Kamal Hossain, Hassan Baaj, Susan L. Tighe, Ahmed Shalaby</i>
01.a.03	High Speed Data Collection and Automatic Crack Mapping at the Network Level on the Bundaberg Region <i>Peter Jensen, Hennie Roux, Pedro Yarza, Ernesto Urbaz</i>
01.a.04	Development of Detection Technology of Potholes Using Infrared Radiation <i>Yuichi Nakamoto, Tetsuya Unotsu, Shigeaki Tsukamoto, Hiroaki Uenakada</i>
01.a.05	Damaged Flexible Road Pavement Inspection by Using GPR <i>Sandro Colagrande, Danilo Ranalli, Marco Tallini</i>



Podium session	01.b
Topic	<i>Economic, Political and Environmental mng. Strategies</i>
Day	<i>#2, June 13th</i>
Time	<i>11.30-13.10</i>
Code	Title
01.b.01	An Innovative Approach to integrate Economic Benefits of Existing Roadways into Asset Valuation <i>Juan Diego Porras-Alvarado, Cody Stone, Zhe Han, Taehoon Lim, Zhanmin Zhang</i>
01.b.02	My Road Rehabilitation Budget is Seed Funding. <i>Krishna Naidoo</i>
01.b.03	Valuing Road Maintenance Funding Alongside Wider Benefits <i>Thomas Buckland, Richard Abell, Philipp Thiessen, John Collins</i>
01.b.04	Recent Investments in Maintenance of Brazilian Federal Highways <i>Luiz Guilherme Rodrigues de Mello</i>
01.b.05	Airport Pavement Maintenance Planning Using a Genetic Algorithm for Global Cost Minimization <i>Inês do Ó, Luís Picado Santos</i>



Podium session	01.c
Topic	<i>Deterioration Models</i>
Day	<i>#2, June 13th</i>
Time	<i>11.30-13.10</i>
Code	Title
01.c.01	Defining Crack Growth on Chipseal Surfaces <i>Doug Brown</i>
01.c.02	The Influence of Maintenance on Unsealed Road Performance <i>Tim Martin, Lith Choummanivong, Thorolf Thoresen</i>
01.c.03	Validation of Pavement Remaining Service Interval Concept Using Highway Agency Models and Data <i>James Bryce, Gonzalo Rada, Senthil Thyagarajan, Nadarajah Sivanewaran</i>
01.c.04	The Application of Pavement Texture Depth in Pavement Maintenance <i>Wang Hao-yang, Chang Chengli, Deng Jie, Gao Xin</i>
01.c.05	Impact of Surface Discontinuities on Pavement Damage due to Water Infiltration <i>Syed W. Haider, Karim Chatti, Gopikrishna Musumuru, Pegah Rajaei</i>



Podium session	01.d
Topic	<i>Key Performance Indicators</i>
Day	<i>#2, June 13th</i>
Time	<i>11.30-13.10</i>
Code	Title
01.d.01	Framework for the Prediction Model for the Condition of the Underlying PCC Slab in Composite Pavement <i>Soojin Yoon, Kyubung Kang, Makarand Hastak</i>
01.d.02	CEDR-Project ISABELA - The Way to Integrate Social Performance Indicators into Asset Management <i>Alfred Weninger-Vycudil, Darko Kokot, Goran Mladenovic, Jelena Cirilovic, Julijana Jamnik, Philippe Lepert, Maria de Lurdes Antunes, Pedro Marcelino, Johann Litzka, Michael Wistuba, Rade Hajdin</i>
01.d.03	New Indicators of Riding Comfort from Vehicle Dynamics <i>Pertti Virtala, Juho Meriläinen</i>
01.d.04	Multivariate Statistics on Pavement Condition Indicators <i>Tim Blumenfeld</i>
01.d.05	Development of a Pavement Condition Index for Urban Pavement Management Systems <i>Edgar Arevalo Paez, Simone Becker Lopes, Jose Leomar Fernandes Jr.</i>



Podium session 02.a

Topic *Data Quality and Monitoring*

Day *#2, June 13th*

Time *14.20-16.00*

Code Title

02.a.01 **Characterization Road Surface by Means of Laser Scanner Technologies**

Maria Rosaria De Blasiis, Alessandro Di Benedetto, Margherita Fiani, Marco Garozzo

02.a.02 **Categorizing 3D Pavement Rut Shapes Using 3D Laser Imaging Technology**

Chieh Ross Wang, Yichang James Tsai

02.a.03 **Field Evaluation of the Traffic Speed Deflectometer**

Samer W. Katicha, Gerardo W. Flintsch, Shivesh Shrestha

02.a.04 **High-Speed Road Measurement Systems: Integration of Pavement and General Mapping Laser Technologies**

Michele Mori, Enea Sogno

02.a.05 **Nondestructive Testing, Airport Pavement Evaluation Technologies - Cases of Study**

Ernesto Urbaez, Pedro Yarza



Podium session	02.b
Topic	<i>Economic, Political and Environmental mng. Strategies</i>
Day	<i>#2, June 13th</i>
Time	<i>14.20-16.00</i>
Code	Title
02.b.01	Establishing Optimal Long Term Funding Allocation Systematic Approach Based on Network Needs & Availability of Funds <i>Alan Roland, Mark Porter, John Yeaman</i>
02.b.02	Condition Related Keys for Allocation of Asset Maintenance Funds Between Road Networks <i>Slawomir Heller</i>
02.b.03	Championing Asset Management for Unpaved Roads: a Dynamic Mix of People, Strategy, Practice, Specifications and Gravel Resources <i>Mervyn G Henderson, Gerrie van Zyl</i>
02.b.04	Value for Money Model <i>Simon Hunt</i>
02.b.05	A Conceptual Approach to Evaluate Asset Management Trade-Off Decisions <i>Omar Smadi, Kathryn Zimmerman, Prashant Ram, Greg Duncan</i>



Podium session	02.c
Topic	<i>PMS Case Studies</i>
Day	<i>#2, June 13th</i>
Time	<i>14.20-16.00</i>
Code	Title
02.c.01	Putting Your Pavement Management System to Work <i>Kathryn A. Zimmerman</i>
02.c.02	Development of Innovative Asset Management Solutions for a Large Canadian City <i>Rahanuma Wafa, Susan L. Tighe, Gary Moore, Rico Fung</i>
02.c.03	Development of an Urban Pavement Management System <i>Aleli Osorio, Cristina Torres-Machi, Pablo Godoy, Alondra Chamorro, Claudio Mourgues, Susan Tighe, Carlos Videla</i>
02.c.04	Pavement Management Systems - Current Worldwide Practices <i>Pedro Marcelino, Maria de Lurdes Antunes</i>
02.c.05	A Simple Method for Monitoring and Comparing the Condition of Pavements on the Trunk Road Network, and Informing Maintenance Budgets, Using Proxy Datasets <i>Peter Scott</i>



Podium session	02.d
Topic	<i>Design and Materials</i>
Day	<i>#2, June 13th</i>
Time	<i>14.20-16.00</i>
Code	Title
02.d.01	TO BE DEFINED <i>TO BE DEFINED</i>
02.d.02	Structural Coefficient Calibration of Sustainable Asphalt Paving Materials <i>Cayce Dossett, David H. Timm</i>
02.d.03	Effect of Higher Axle Loads on Service Life of Bituminous Pavement <i>Satish Pandey, T.Harish Chowdary, Siddharth Rokade</i>
02.d.04	Preliminary Analysis for the Evaluation of Optimal Runway Pavement Design and Maintenance <i>D'apuzzo Mauro, Evangelisti Azzurra, Nicolosi Vittorio, Festa Bruna, Schibani Antonella</i>
02.d.05	A New Decision-Aid Tool for Simulation of Tire-Pavement Interaction and for Quantification of Energy Harvesting on Pavements <i>Francisco Duarte, Adelino Ferreira, Paulo Fael</i>



Podium session	03.a
Topic	<i>Other Asset Management</i>
Day	<i>#2, June 13th</i>
Time	<i>16.20-18.00</i>
Code	Title
03.a.01	Inclusion of Surface Drainage Features in Roadway Asset Management <i>Charles F. Gurganus, Nasir Gharaibeh</i>
03.a.02	Influence of Roadside Vegetation on Waveband Roughness Levels for Pavements Founded on Expansive Soils <i>MD Yeasin Ahmed, Robert Evans</i>
03.a.03	Management Methods for Drainage Asphalt Pavements Considering Local Damages <i>Daijiro Mizutani, Kengo Obama, Kiyoyuki Kaito, Naoki Susaki, Keisuke Yasumura</i>
03.a.04	Footway Management – New Developments in Ireland <i>Kieran Feighan, Brian Burke, Paul Fox, John McCarthy</i>
03.a.05	Case Study of Innovative Culvert Installation Techniques to Mitigate Pavement Roughness at Through-Grade Culverts in Cold Climate <i>Leonnie Kavanagh, Ahmed Shalaby</i>



Podium session	03.b
Topic	<i>M&R Treatments</i>
Day	<i>#2, June 13th</i>
Time	<i>16.20-18.00</i>

Code	Title
03.b.01	Optimized Treatment Selection Using Structural Data for Pavement Management Applications <i>Senthilmurugan Thyagarajan, Nadarajah Sivaneswaran, Gonzalo Rada, Katherine Petros, Gary Elkins</i>
03.b.02	Critical Assessment of the Consequences of Delayed Pavement Resurfacing and Rehabilitation Using 28-Years of Pavement Condition Evaluation Data <i>Yichang James Tsai, Yiching Wu</i>
03.b.03	Process of Developing Performance-related Specifications for Pavement Preservation Treatments <i>Syed W. Haider, Karim Chatti, Ronell Joseph Eisma</i>
03.b.04	Section-Level Optimization of Pavement M&R Activities with User Costs and Risk for Multiple Distress Types <i>Markus Hoffmann, Valentin Donev</i>
03.b.05	Recycling Bituminous Shingles in Cold Mix Asphalt for High-Performance Patching Repair of Road Pavements <i>Pasetto Marco, Pasquini Emiliano, Giacomello Giovanni, Baliello Andrea</i>



Podium session	03.c
Topic	<i>PMS Case Studies</i>
Day	<i>#2, June 13th</i>
Time	<i>16.20-18.00</i>
Code	Title
03.c.01	Pavement Management System on Croatian Motorways <i>Boris Kuvačić, Tatjana Rukavina</i>
03.c.02	Validation of Pavement Condition Metrics and Performance Measures for the US Interstate Highway System <i>Gonzalo Rada, Amy L. Simpson, Beth A. Visintine, Thomas Van</i>
03.c.03	Best PMS practices in Europe and implementation of PMS in Bulgaria <i>Denitsa Osichenko, Roland Spielhofer</i>
03.c.04	Road Pavement Management in Chile <i>Carlos Ruiz Trevizan, Miguel Valdes Flores</i>
03.c.05	Pavement Monitoring and Performance Assessment of Gravel Road Networks for Optimal Maintenance Interventions in Botswana <i>Adewole S. Oladele</i>



Podium session	03.d
Topic	<i>Design and Materials</i>
Day	<i>#2, June 13th</i>
Time	<i>16.20-18.00</i>

Code	Title
03.d.01	Influence of Mineralogical and Chemical Composition of Aggregate on Strength and Adhesion Property <i>H.R. Sachin, K.M. Mallesh, Mohamed Shareef</i>
03.d.02	Evaluation of Porous Asphalt RAP Aggregates for Recyclability in Porous Asphalt Mixes <i>Irina Holleran, Douglas J. Wilson, Glynn Holleran, Bruce Chappell, Lubinda F. Walubita</i>
03.d.03	Fine Aggregate Properties vs Asphalt Mechanical Behavior: an Experimental Investigation <i>Teresa Iuele, Filippo G. Praticò, Rosolino Vaiana</i>
03.d.04	Zero Shear Viscosity Evaluation of PMB Bituminous Binders with Different Levels of Polimer Modifications <i>Michele Agostinacchio, Donato Ciampa, Saverio Olita</i>
03.d.05	Laboratory Evaluation of Bio-Rejuvenated Asphalt Binders <i>Alessandro Borghi, Ana Jiménez Del Barco Carrión, Filippo Giustozzi, Davide Lo Presti</i>



Podium session 04.a

Topic *Data Quality and Monitoring*

Day *#3, June 14yh*

Time *09.20-11.00*

Code Title

04.a.01 A new Approach to Pavement Monitoring

Rainer Hess, Dirk Jansen

04.a.02 The Long-Term Observation Section on Motorway Bab A5 in Hesse as a Data Source for Research in the Field of Road Maintenance

Jürgen Bergmann-Syren, Wojciech Smęt, Christian Komma, Marek Skakuj

04.a.03 Pavement Condition Data Quality Verification Methods for Pavement Management System

Sui G. Tan, DingXin Cheng

04.a.04 A Novel Road Sectioning Technique for Pavement Management

Matthias Botzen, Frank Schiffmann, Rade Hajdin

04.a.05 A Robust Data Processing Method for Pavement Performance Models

Don Chen, Tara Cavalline



Podium session	04.b
Topic	<i>Design and Materials</i>
Day	<i>#3, June 14yh</i>
Time	<i>09.20-11.00</i>
Code	Title
04.b.01	TO BE DEFINED <i>TO BE DEFINED</i>
04.b.02	Characterization of Bituminous Mixtures Modified with Zero-Valent Iron Nanoparticles <i>João Crucho, José Neves, Silvino Capitão, Luís Picado-Santos</i>
04.b.03	Asphalt Binder Rejuvenation for Recycling Road Materials <i>Loretta Venturini, Luca Baccellieri, Filippo Giustozzi</i>
04.b.04	Durability and Strength Assessment of Pavement Materials Treated with Polyacrylamide-Based Additive <i>Romel Georgees</i>
04.b.05	Permanent Deformation Properties of Nylon Fiber Reinforced Asphalt Concrete <i>Hasan Taherkhani, Siamak Afroozi</i>



Podium session	04.c
Topic	<i>PMS Case Studies</i>
Day	<i>#3, June 14yh</i>
Time	<i>09.20-11.00</i>
Code	Title
04.c.01	A simple Decision Support Tool Method, for Identifying Long-Term Pavement Renewal Schemes on the Trunk Road Network, Using Proxy Datasets <i>Peter Scott</i>
04.c.02	A Network Level Approach for Pavement Management of Small Municipalities <i>D'apuzzo Mauro, Evangelisti Azzurra, Nicolosi Vittorio</i>
04.c.03	Total Cost Optimization for Public Transport System in Tumkur City <i>Waheed Khan A, Navaneetha Hombali B N, K M Mallesh</i>
04.c.04	Road Maintenance at Operative Level. Silesia Voivodship Case Study <i>Zbigniew Tabor, Marek Skakuj</i>
04.c.05	Road Asset Management - The European experience <i>Christophe Nicodème</i>



Podium session	05.a
Topic	<i>Data Quality and Monitoring</i>
Day	<i>#3, June 14yh</i>
Time	<i>11.30-13.10</i>
Code	Title
05.a.01	Advanced PMS. Consideration of the Pavement Bearing Capacity <i>Jose Antonio Ramos Garcia, Fernando Sanchez Dominguez</i>
05.a.02	Investigation of Vertical Pavement Deflection Velocity under Dynamic Moving Load <i>Mahdi Nasimifar, Senthilmurugan Thyagarajan, Nadarajah Sivaneswaran</i>
05.a.03	The Traffic Speed Deflectometer – Combining Structural and Functional Pavement Condition Evaluation in Australia <i>Richard Wix</i>
05.a.04	Bearing Capacity of Cement Concrete Pavement above a Cavity under the Road Surface <i>Kazunari Hirakawa, Shuichi Kameyama, Ryo Kishira, Masaru Shimazaki</i>
05.a.05	Investigation of the Permanent Deformation Properties of Open Graded Permeable Unbound Granular Materials <i>Mohammad Shafiqur Rahaman, Fredrik Hellman, Sigurdur Erlingsson</i>



Podium session	05.b
Topic	<i>Design and Materials</i>
Day	<i>#3, June 14th</i>
Time	<i>11.30-13.10</i>
Code	Title
05.b.01	Field Monitoring and Analysis of the Early Performance of Unbounded Concrete Overlay using Strain Gauge Readings <i>Qingfan Liu, Jian Zhong, Daniel Pickel, Yao Chen, Susan L. Tighe</i>
05.b.02	TO BE DEFINED <i>TO BE DEFINED</i>
05.b.03	Improving Properties and Performance of HMA With High RAP Content <i>Rayya Hassan, Binh Tran</i>
05.b.04	Environmental and Mechanical Benefits of Cold Recycled Bituminous Mixes with Crumb Rubber <i>G. Martínez-Arguelles, L. Fuentes, A. Castro, J. Santos, A. Bonicelli</i>
05.b.05	Influence of Production Temperature and Additive Dosage on Warm Mix Asphalt Performance <i>Francesca Frigio, Arianna Stimilli, Maurizio Bocci, Francesco Canestrari</i>



Podium session	05.c
Topic	<i>PMS Case Studies</i>
Day	<i>#3, June 14yh</i>
Time	<i>11.30-13.10</i>

Code	Title
05.c.01	Integrated Asset Management at CDOT and How It Directly Impacts Resource Allocation and Programming <i>Jeffrey L. Zavitski, William Johnson, JoAnn Mattson</i>
05.c.02	New City of Montreal's Intervention Plan for the Management of Municipal Assets <i>France Bernard</i>
05.c.03	Namibian Asset Management System a truly functional integrated system <i>Akli Ourad, Sophie Belete-Tekie</i>
05.c.04	Development and Deployment of Asset Management System for Ashghal (Public Works Authority of Qatar) <i>Yon Marcuerquiaga Ruiz De Alda</i>
05.c.05	Asset Management in Latin America and the Caribbean; Result from an inter-American Development Bank Sectorial Study <i>Karisa Maia Ribeiro, Luis Uechi, Ivan Corvacho Morales, Alejandra Medina, Gerardo Flintsch</i>



Podium session	06.a
Topic	<i>Risk and Safety</i>
Day	<i>#3, June 14yh</i>
Time	<i>14.20-16.00</i>
Code	Title
06.a.01	Incorporating Safety, Knowledge and Innovations as Quantifiable Assets in Pavement Asset Management <i>R. Haas, W. Ronald Hudson, Lynne Cowe Falls</i>
06.a.02	Risk-based Optimization Model to Determine Optimum Budgets for Managing Pavement and Safety <i>Khaled Ksaibati, Timothy McDowell, Promotes Saha</i>
06.a.03	Application of Road Safety Indicators in the Road Maintenance Planning. Warmia-Mazury Case Study <i>Tomasz Radzikowski, Agata Ciolkosz-Styk, Marek Skakuj</i>
06.a.04	Life-Cycle-Risk Assessment within Road Infrastructure Asset Management <i>Alfred Weninger-Vycudil, Barbara Brozek</i>
06.a.05	Probability Contour Map of Landing Overrun Based on Aircraft Braking Distance Computation <i>Misagh Ketabdari, Filippo Giustozzi, Maurizio Crispino</i>



Podium session 06.b

Topic *LCA and LCCA*

Day *#3, June 14yh*

Time *14.20-16.00*

Code Title

06.b.01 Conversion of Bituminous Surface Treatments (BST) to Asphalt Concrete on the Alaska (Alcan) Highway

Donaldson MacLeod, Chris Uchwat

06.b.02 Research Project PROMAT - A New Way of Improving Performance Prediction in Life-Cycle-Cost Analysis

Alfred Weninger-Vycudil, Michael Wistuba, Johann Litzka

06.b.03 Framework for Streamlined Life Cycle Cost Analysis for Low Volume Roads

Ashley Buss, Scott Schram

06.b.04 Material, Structural and Economical Aspects of Life Cycle Extension of Asphalt Concrete Surfacing

Jan Mikolaj, Lubos Remek

06.b.05 Consideration of Life Cycle Greenhouse Gas Emissions in Optimal Pavement Maintenance Programming: a Comparison Between Single-Objective and Multi-Objective Optimization Approaches

João Santos, Adelino Ferreira, Gerardo Flintsch, Véronique Cerezo



Podium session	06.c
Topic	<i>Deterioration Models</i>
Day	<i>#3, June 14yh</i>
Time	<i>14.20-16.00</i>
Code	Title
06.c.01	Mechanistic Design and Performance Prediction Modelling of Pavement Structures <i>Sigurdur Erlingsson, Abubeker Ahmed</i>
06.c.02	Prediction of Remaining Structural Service Life Using Traffic Speed Deflectometer <i>Sittampalam Manoharan, Gary Chai</i>
06.c.03	Pavement Rutting Prediction Models Developed for Asphalt Concrete Pavements Through Accelerated Loading Tests <i>Zheng Nanxiang, Ji Xiaoping, Li Ningyuan</i>
06.c.04	Skid Resistance Degradation Model of Asphalt Pavements with Natural Aggregates and Steel Slags <i>Bruno Crisman, Roberto Roberti, Giulio Ossich</i>
06.c.05	Limitations of Existing Pavement Performance Models and a Potential Solution <i>Alexander Paz, Mukesh Khadka</i>



Podium session 07.a

Topic *Risk and Safety*

Day *#3, June 14yh*

Time *16.20-18.00*

Code Title

07.a.01 Skid Resistance Strategy for a Road Network

Simon Hunt

07.a.02 Evaluation of Speed Control Cameras in Lisbon Network

Carmen Carvalheira, Luís Picado Santos, José Nuno Santos

07.a.03 Management of Skid Resistance in Ireland

Brian Mulry, Kieran Feighan, Edward Winterlich

07.a.04 Managing Skid Resistance and Friction on Asphalt Runway Surfaces

Greg White

07.a.05 Integrating Resilience Concepts with Pavement Management: Two Case Studies

Yuanchi Liu, Sue Mcneil, Gordana Herning



Podium session	07.b
Topic	<i>Smart Infrastructures and ITS</i>
Day	<i>#3, June 14yh</i>
Time	<i>16.20-18.00</i>

Code	Title
07.b.01	Roadway Pavement Anomaly Detection and Classification by Use of Smartphones and Artificial Intelligence <i>Charalambos Kyriakou, Symeon E. Christodoulou, Loukas Dimitriou</i>
07.b.02	The Development of an Information System to Support and Automate Linear Infrastructure Management <i>João Morgado, Emanuel Duarte</i>
07.b.03	Response Type Roughness and Cracking Measurement Method by Using Smartphone <i>Yagi Koichi</i>
07.b.04	Multi Lane Free Flow - Autostrada Pedemontana <i>Andrea Monguzzi, Giuseppe Bilancia, Mirco Agutoli, Giovanni Trezza</i>
07.b.05	Determination of Pavement Roughness with Data Collected by Smartphones <i>Danilo Rinaldi Bisconsini, Jose Leomar Fernandes Jr.</i>



Podium session	07.c
Topic	<i>M&R Treatments</i>
Day	<i>#3, June 14yh</i>
Time	<i>16.20-18.00</i>

Code	Title
07.c.01	Managing Reflection Cracking in Asphalt Pavements <i>Scott Shuler, Vittorio Ranieri</i>
07.c.02	Impact Assessment of Road Work Zones in Operating Conditions, Safety and User Costs <i>Bertha Santos, Luís Picado-Santos</i>
07.c.03	Network-Level Optimization of Pavement M&R Activities, Timing and Work-Zone Length for Multiple Distress Types <i>Valentin Donev, Markus Hoffmann</i>
07.c.04	Evaluation of the Behavior of Recycled Mixes with Portland Cement Addition in-site <i>Gislaine Luvizão, Glicério Trichês</i>
07.c.05	Long-Term Work Zone Planning for Highway Infrastructure <i>Frank Schiffmann, Rade Hajdin</i>



Podium session	08.a
Topic	<i>Data Quality and Monitoring</i>
Day	<i>#4, June 15th</i>
Time	<i>09.00-10.40</i>

Code	Title
08.a.01	Exact Localization of Damages on Concrete Slab Pavements <i>Marek Bukowicki, Karol R. Opara</i>
08.a.02	Performance Monitoring of Unbound Granular Layers in Pavement Constructions with Recycled Materials <i>Gudrun Golkowski</i>
08.a.03	Influence of Monitoring Frequency on Pavement Performance Prediction Model <i>Lei Yue, Di Zhu, Xiaoyang Jia</i>
08.a.04	Quality assurance of road traffic data <i>Karol R. Opara, Jan P. Zieliński</i>
08.a.05	A Multi-Scale Diagnosis Model for Cracking in Asphalt Pavements <i>Di Wang, Augusto Cannone Falchetto, Michael Wistuba, Yichang James Tsai</i>



Podium session	08.b
Topic	<i>Economic, Political and Environmental mng. Strategies</i>
Day	<i>#4, June 15th</i>
Time	<i>09.00-10.40</i>

Code	Title
08.b.01	The Evaluation and Visualization of Spatial Disparities in the Pavement Condition for the Purpose of Sustainable Development of Road Infrastructure <i>Agata Ciolkosz-Styk, Slawomir Heller</i>
08.b.02	Holistic Approach to Asset Management Delivery to Achieve Sustainable Efficiencies <i>Simon Hunt, Gordon Hart</i>
08.b.03	Implementation of Pavement Asset Management with Climate Change Aspects <i>Adam Zofka, Ewa Zofka</i>
08.b.04	Impact of Pavement Structural Response on Rolling Resistance and Vehicle Fuel Economy <i>Danilo Balzarini, Imen Zaabar, Karim Chatti, Massimo Losa</i>
08.b.05	The Importance of Investments in Rural Roads <i>Giorgi Japaridze, Hamid Zarghampour</i>



Podium session	08.c
Topic	<i>Deterioration Models</i>
Day	<i>#4, June 15th</i>
Time	<i>09.00-10.40</i>
Code	Title
08.c.01	Network Level Forecasting Models for Pavement Maintenance Analysis in Finnish Transport Agency <i>Vesa Männistö, Janne Junes, Lauri Suikki</i>
08.c.02	Statistical Sampling and Calibration of Deterioration Curves in Pavement Management Systems – a Case Study in Brazil <i>Rimon Rafiah, Haim Bonjack</i>
08.c.03	Modeling Roughness Progression in Mexican Roads Using Historical Data <i>Ricardo Solorio, Gerardo Flintsch, Paul Garnica, Francisco Moreno</i>
08.c.04	Prognostic Models for the Road Condition Indices in the Swedish Transport Administration’s Pavement Management System <i>Olle Eriksson, Thomas Lundberg, Peter Andrén</i>
08.c.05	Modeling Pavement Deterioration for Costa Rican Primary Road. Deterministic Approach 2014 - 2016 <i>Roy Barrantes Jimenez, Luis Guillermo Loria Salazar</i>



Podium session 08.d

Topic *Design and Materials*

Day *#4, June 15th*

Time *09.00-10.40*

Code Title

08.d.01 **Assessing the Bond Strength of Two Layer Roller Compacted Concrete (RCC) for Pavements**

Haneen Mohammed, Nick Thom and Andrew Dawson

08.d.02 **A Study on Performance of Roller-Compacted Concrete Pavement in Accelerated Pavement Test in Korea**

Chamroeun Chhorn, Seung Hwan Han, Seung Woo Lee

08.d.03 **Scaling Resistance of Concretes with Different Exposure Solution Concentrations**

Seungtae Lee, Seho Park, Kwangpil Park

08.d.04 **Use of Calcium Sulphoaluminate Cement for Paving Applications: Laboratory Test and Scale-Up Results**

Sergio Tortelli, Adriano Reggia, Maurizio Marchi, Giovanni Plizzari

08.d.05 **Cement-Bitumen Treated Materials Resistance: Evaluation by Means of Wheel Tracking Test Machine**

Monica Meocci, Francesca La Torre, Filippo Giammaria Praticò



Podium session	09.a
Topic	<i>PMS Case Studies</i>
Day	<i>#4, June 15th</i>
Time	<i>11.00-12.40</i>
Code	Title
09.a.01	Prioritising Maintenance and Rehabilitation Projects to Ensure Sustainable Pavement Preservation <i>Shaun Moodley</i>
09.a.02	Optimizing Maintenance and Rehabilitation Through Multi-Year Work Planning <i>Alex Galenko, Tonya Scheinberg, Pascal Laumet</i>
09.a.03	Gis Tools to Support Organization of the Operating and Maintenance Model of the Anas Road Network <i>Coppa Ilaria Maria, Bianchini Barbara, D'Armini Pier Giorgio, Fernandez Domanico, Ferrari Cristina</i>
09.a.04	Connecting the Dongle to the Shovel <i>Simon Hunt, Gordon Hart</i>
09.a.05	Managing Pavement Assets Through in-situ Monitoring <i>John Yeaman</i>



Podium session	09.b
Topic	<i>Economic, Political and Environmental mng. Strategies</i>
Day	<i>#4, June 15th</i>
Time	<i>11.00-12.40</i>
Code	Title
09.b.01	Development and Application of Adapted Road Maintenance Planning Tools in Public-Private-Cooperation: the Successful Case Study from Departement De La Somme <i>Pierre Gourlin, Ashkan Ashoori</i>
09.b.02	A Dynamic Optimal Model For Pavement Asset Management And Public Private Partnership Projects <i>Zaid Alyami; Daijiro Mizutani; Kiyoyuki Kaito; Susan Tighe</i>
09.b.03	A Methodological Framework for Implementation of Transportation Asset Management in Public Private Partnership Projects <i>Zaid Alyami, Susan Tighe</i>
09.b.04	Asset Management Under Public Private Partnerships – Lessons Learnt from 3 Developing Countries <i>Rimon Rafiah, Haim Bonjack</i>
09.b.05	Optimizing Operation and Management in Public-Private Partnership Projects <i>Mikkel Bruun, Pascal Laumet</i>



Podium session	09.c
Topic	<i>Key Performance Indicators</i>
Day	<i>#4, June 15th</i>
Time	<i>11.00-12.40</i>
Code	Title
09.c.01	Quality Insurance of Visual Inspections for Pavement Management of Communal Road Networks <i>Carl Van Geem, Tim Masssart</i>
09.c.02	Pavement KPIs at Strategic and Tactical Levels on the Irish National Roads Network <i>Kieran Feighan, Tom Casey, Andrew O'Sullivan</i>
09.c.03	Key Performance Indicators for a Strategic Maintenance Planning on Urban Road Networks <i>Alexander Buttgereit, Slawomir Heller</i>
09.c.04	Key Performance Indicators for a Professional Asset Management of Motorways in Germany <i>Tanja Kessel, Arne Speer</i>
09.c.05	An Easy to Implement Sustainability Index for Flexible Pavements <i>Gregory Kelly, Gary Chai, Deborah Delaney</i>



Podium session	09.d
Topic	<i>Design and Materials</i>
Day	<i>#4, June 15th</i>
Time	<i>11.00-12.40</i>

Code	Title
09.d.01	Laboratory Performance of Dry Process Fine Crumb Rubber Asphalt Mixtures <i>Luís Da Silva, Agostinho Benta, Luís De Picado Santos</i>
09.d.02	Laboratory Investigation on Resistance of Asphalt Mixtures Containing Hydrate Lime and Portland Cement Against Moisture Damage <i>Mahmood Khadem, Ali Moniri, Ali Roudaki, Ronak Farahi</i>
09.d.03	Permeability Flow Measurement for Open-Graded Friction Courses <i>Vanessa Senior-Arrieta, Carlos Graciano, Carlos Vega-Posada</i>
09.d.04	Investigation of Cold Mix Asphalt Behavior under Simulated Compaction <i>Ehsan Ghafoori Roozbahany, Manfred Partl</i>
09.d.05	Performance of Bitumen Stabilised Materials Bsms - Laboratory Technology Developments and Implementation With LCC <i>Kj Jenkins</i>



Podium session	10.a
Topic	<i>Risk and Safety</i>
Day	<i>#4, June 15th</i>
Time	<i>14.00-15.40</i>

Code	Title
10.a.01	Integrated System of Accidents <i>Teresa Gamarra, Lisa Lugo</i>
10.a.02	Incorporating Livability Principles in the Development of Transportation Asset Management Plans <i>Carlos M. Chang, Marketa Vavrova</i>
10.a.03	Vulnerability Assessment of the Chilean Road Network to Natural Hazards <i>A. Chamorro, H. De Solminihac, T. Echaveguren, J. Dagá, F. Baratta</i>
10.a.04	Establishing a Method for Identifying and Managing High Crash Locations <i>Ross McCarthy, Gerardo Flintsch, Edgar de León Izeppi, Samer Katicha</i>
10.a.05	Road Design Measures and Strategies for the Prevention and Suppression of Forest Fires in Spain <i>Ana María Rodríguez-Alloza, Juan Gallego</i>



Podium session	10.b
Topic	<i>LCA and LCCA</i>
Day	<i>#4, June 15th</i>
Time	<i>14.00-15.40</i>

Code	Title
10.b.01	Augmenting the LCCA Objective Function to Improve Economic Equity in Network Optimisation of the Western Cape, South Africa <i>Eben De Vos, Mervyn G Henderson, Ileen Wolmarans</i>
10.b.02	Life Cycle and Cost Effectiveness of Special Urban Areas <i>Andreas Grossmann, Lena Pauli</i>
10.b.03	Asset Management in Major Projects - Achieving Least Whole of Life Costs for Pavements <i>Simon Hunt</i>
10.b.04	Integrated LCA and LCCA Network Level Pavement Maintenance Model <i>Jelena Cirilovic, Goran Mladenovic, Cesar Queiroz</i>
10.b.05	Sustainable Pavement Design - Delivering Sustainable Options Considering Existing Materials and Pavement Lifecycle <i>Scott McIntyre, Trent McDonald</i>



Podium session	10.c
Topic	<i>Bridge and Tunnel Management</i>
Day	<i>#4, June 15th</i>
Time	<i>14.00-15.40</i>
Code	Title
10.c.01	Bridge Model Validation at Indiana DOT <i>Gary Ruck, Kate Francis</i>
10.c.02	An Evaluation Methodology on Fatigue Durability of Repairing Materials for Pothole Damages of Bridge Pavement <i>Koji Utsunomiya, Takagi Kinoshita, Hiroshi Higashiyama, Futoshi Nakanishi</i>
10.c.03	Future Oriented Life Cycle Approach on Bridges in Austria <i>Alfred Weninger-Vycudil, Christoph Antony, Christian Honeger</i>
10.c.04	Autostrada Pedemontana Highway, Tunnel safety system <i>Giuseppe Bilancia, Mirco Agutoli, Andrea Monguzzi, Giovanni Trezza</i>
10.c.05	Risk Level Evaluation of Transport of Dangerous Goods Through Road Tunnels <i>Ciro Caliendo, Maria Luisa De Guglielmo</i>



Podium session	10.d
Topic	<i>M&R Treatments</i>
Day	<i>#4, June 15th</i>
Time	<i>14.00-15.40</i>

Code	Title
10.d.01	Effect of Preservation Treatments on Pavement Performance <i>James Bryce, Gonzalo Rada, Gary Hicks</i>
10.d.02	Long-Term Pavement Performance Under the Use of Asphalt Reinforcement Interlayers <i>Frank Schiffmann, Christiane Raab, Martin Arraigada</i>
10.d.03	Hot Sealing <i>Massimiliano Rizzi, Elisabetta Colombi Manzi</i>
10.d.04	Grinding Surfaces on Concrete Pavements <i>Jens Skarabis, Tim Alte-Teigeler</i>
10.d.05	Performance Assessment of Rehabilitated Highway Pavement <i>Andreas Loizos, Vasilis Papavasiliou</i>



Session	POSTER
Day	<i>#2, June 13th</i>
Time	<i>13.10-14.15</i>
Code	Title
PSR.01	Study on the Filling Ability of Cement Grout in Semi-Flexible Porous Asphalt Pavement <i>Susumu Shimizu, Hiromi Fujiwara, Shuichi Fujikura, Masanori Maruoka, Huizhu Xie</i>
PSR.02	Influence of Aggregate Particle Shape Indexes on Moisture Sensitivity of Bituminous Mixes <i>P. Preethi, K.M.Mallesha, Mohammed Ilyas Anujm</i>
PSR.03	Asphalt Concrete Mixtures Lightened with Expanded Clay for High-Grip Wearing Course Layers <i>Michele Agostinacchio, Donato Ciampa, Saverio Olita</i>
PSR.04	Prediction of Top-Down Cracking in Sustainable Asphalt Materials Using Energy Ratio Testing <i>Nathan D. Moore, David H. Timm</i>
PSR.05	Impact on the Asphalt Mixture due to the Evolvement of the Weather Condition in Romania <i>Canino Pier Luca, Del Mistro Fabrizio, Pizzo Salvatore</i>



PSR.06	Maintenance Management of Grooved Runway Pavement <i>T. F. Fwa, Calvin Yeung</i>
PSR.07	New Additive in Bituminous Mixtures for Use in Lightened Embankment <i>Giuffre' Tullio, Morreale Marco, Tesoriere Giovanni, Trubia Salvatore</i>
PSR.08	Integrating Historical-Truth Aircraft Traffic Data Into a Pavement Management System <i>Boudreau, Watkins, Richard L. Boudreau</i>
PSR.09	Improving Design of Bituminous Mixture through Service-Oriented Specifications <i>Dinis Gardete, Luís Picado-Santos, Silvino Capitão</i>
PSR.10	Bridge Weigh-in-Motion as tool for Road Damage Remediation <i>Bajko Kulauzović, Julijana Jamnik</i>
PSR.11	A Review of State Airport Pavement Management Practices and Airport Pavement Conditions in the United States from 2003 through 2016 <i>M. R. Covalt, L. Raczkowski, M. Fisher</i>
PSR.12	Maximization of the Amount of Reclaimed Asphalt Pavement (RAP) and by-Products in Asphalt Mixtures



*Israel Rodríguez-Fernández, Pedro Lastra-González, Daniel Jato-Espino,
Irene Indacochea-Vega*

PSR.13

Effect of Freeze-Thaw Cycles on Fatigue Cracking of Asphalt Pavements

Chun-Hsing Ho, Junyi Shan, Anas Almonnieay, Amal Abdelaziz

PSR.14

Laboratory investigation on the use of recycled industrial fillers into bituminous mixtures for road pavements

Dario Topini, Emanuele Toraldo, Luca Andena, Edoardo Mariani

PSR.15

The Local Sand as Heavy Pavement Construction Material, the Experience and Tests Done into Genova Port

Fulvio Bolobicchio

PSR.16

Polyfunctional Polymeric Systems for Improving Asphalt Pavement Performance Through Recycling

Loretta Venturini, Sergio Carrara, Filippo Giustozzi

PSR.17

Data Collection Methodology to Assess Airport Pavement Condition using GNSS, Laser, Video Image and GIS

Débora Lima, Bertha Santos, Pedro Almeida

PSR.18

Evaluation of Polymer-Based Dust Suppressant Mixed With Sandy Soil in Unpaved Road: Lab Experiment

Junxin Huang, Chun-Hsing Ho, Yijie Gao, Yuzhi Zhang



PSR.19	Laboratory Evaluation of the Flexural Properties of Membrane-Reinforced Asphalt Systems <i>Pasetto Marco, Pasquini Emiliano, Antunes Ines</i>
PSR.20	Challenges for Managing Australian Airport Pavements <i>Greg White</i>
PSR.21	A Decision Support Tool (Dst) for Asset Management of Airfield Pavements <i>Richard Moore, Cinzia Maggiore</i>
PSR.22	Risk Management in Infrastructure Companies <i>Maurizio Crispino, Francesco Capalbo</i>
PSR.23	Evaluating the Effect of Freeze-Thaw Cycles on the Resistance to Thermal Cracking of Asphalt Mixtures <i>Cristina Pilar Martin Linares, Chun-Hsing Ho</i>
PSR.24	Investigation on the Compaction Temperature Effect on Reactivating Aged Bitumen of 100% RAP Mixtures <i>Ehsan Ashouri Taziani, Emanuele Toraldo, Edoardo Mariani, Maurizio Crispino</i>
PSR.25	Discussing the Feasibility of Improving Fatigue Performance of Asphalt Mixtures by Incorporating High Recycled Asphalt Pavement



Ehsan Ashouri Taziani, Emanuele Toraldo, Filippo Giustozzi