
IRF
GLOBAL
Pavement Management
Online Training
September 5-28, 2022
Online Training
16 Professional Development Hours

Pavement Management

September 5-28, 2022

Online Workshop

Background

Pavement Management systems have been designed to provide information on the functional and structural condition of roads so that road owners can offer a smooth and safe ride to road users at the lowest possible cost. They also provide reliable information to decision makers about the condition of the road network for maintenance and rehabilitation planning and funding. However, the problem with PMS systems has traditionally been that they have supported reactive maintenance whereby the road is repaired by mainly standard methods after a specified amount of visible damage has occurred on the pavement.

In recent years, advances in digitalization, survey techniques, as well as better understanding of the road deterioration mechanisms and root cause of pavement failures, have made it possible to move towards proactive maintenance policies. Using these policies the root causes of problems are identified before repairs commence and remediation is then focused on eliminating them. In the future new technologies will allow pavements to be repaired before there is visible damage. In this case, the annual paving cost will be clearly lower than if it had been repaired after damage.

The goal of the on-line training workshop will be to help those working with PMS systems better understand the damage mechanisms that affect the lifetime of paved and gravel road networks and how they can be monitored with different technologies. Theoretical and practical examples will be given on how organizations adopt more economical proactive maintenance policies. The contents will be based on the latest research results as well as the hands-on experiences of the course instructor.

Format

Lectures will be taught over a four-week period with live 2 hour on-line sessions held on Monday, Tuesday and Wednesday of each week. Upon completion of the training program, the IRF will administer an on-line knowledge test. Participants with a score of 80% of the exam will be awarded a certificate verifying their successful completion of the course.

Learning Objectives

- ✓ Understanding the role of Pavement Management in Road Asset Management
- ✓ Better understanding the pavement deterioration mechanisms and root causes of road damages
- ✓ Learning about old and new road survey techniques and their outputs
- ✓ Understanding the important role of daily maintenance in economic pavement management
- ✓ Understanding the economic and other benefits of moving towards proactive maintenance

Target Audience

- Road Authorities & Operators
- Road Design Consultants
- Road Contractors
- Maintenance Personnel
- Pavement Design Engineers
- Pavement Management System Providers
- Academia

Instructor

Dr. **Timo Saarenketo** is the managing director of Roadscanners Oy. He also works as an Adjunct Professor at the Tampere University. He is internationally known “Road Doctor” specialized in Non-Destructive Testing based road and bridge and other traffic infrastructure asset diagnostics and management. He has specialized and made innovations in Ground Penetrating Radar (GPR) and other Non-Destructive Testing based road and bridge and other traffic infrastructure analysis and diagnostics, pavement design, rehabilitation design, road material surveys and site investigations. A special interest is also low traffic volume road condition management in cold climate areas. Since 1998 Saarenketo has been working in different roles in ROADEX projects, which focuses on road condition and pavement management policies and technologies of low volume roads in Northern Europe.

During recent years, Dr Saarenketo has been working intensively on how modern technologies can be implemented in intelligent asset management processes and how they can improve the productivity of asset management that further leads to cost savings in annual paving costs. Another research task has been the effect of autonomous vehicles and super heavy trucks on pavement structure performance. Since 2015 he has been working in Finland in PEHKO project that has successfully implemented digitalization and new road diagnostics technologies and proactive maintenance in the management of paved road in three areas in Finland. This project has been awarded by IRF in 2018 by Global Road Achievement Award in the category of Asset Preservation & Maintenance Management.

Schedule

8:00 AM– 10:00 AM US EST / 13:00 – 15:00 PM GMT)

WEEK ONE: September 5-7	
Session 1: September 5 **Pavement Management: Past, Present and Future**	Session 1 learning objectives: • The history of pavement management • The future challenges in pavement management systems • Selling Pavement Management results to decision makers
Session 2: September 6 **Pavement Performance Mechanics** **Elastic behavior, Permanent deformation** **Rutting classification**	Session 2 learning objectives: • Basic principles of loading induced stresses and strains and permanent deformations in the pavement structure • Thermodynamics and material performance
Session 3: September 7 **Pavement Distress, Survey Techniques,** **Distress Types and Their Root Causes**	Session 3 learning objectives: • Pavement distress monitoring techniques • Pavement distress types and their root causes
WEEK TWO: September 12-14 (NO CLASS – CLASS PROJECT TIME)	
WEEK THREE: September 19-21	
Session 4: September 19 **Pavement Survey Methods and Diagnostics I**	Session 4 learning objectives: • Monitoring traffic and loading • Functional condition survey techniques and their analysis • Structural condition survey techniques and their analysis
Session 5: September 20 **Pavement Survey Methods and Diagnostics II** **Materials, Sampling, Testing,**	Session 5 learning objectives: • Structural condition survey techniques (cont.) • Sampling techniques • Material testing methods
Session 6: September 21 **Drainage,** **Seasonal Changes,** **Winter maintenance**	Session 6 learning objectives: • Drainage structures and their maintenance • Moisture monitoring techniques • Seasonal changes, frost and freeze-thaw cycles • Winter maintenance and pavement lifetime
WEEK FOUR: September 26-28	
Session 7: September 26 **Gravel/Aggregate Road Condition Management**	Session 7 learning objectives: • Gravel road condition management principles • Gravel road structures and materials • Seasonal changes and load management
Session 8: September 27 **Pavement Design Principles,** **Solutions,** **Construction and QC/QA**	Session 8 learning objectives: • Economics how to define design pavement lifetime • Diagnostics based pavement design solutions • Construction and quality control / quality assurance in PMS
Session 9: September 28 **Proactive Pavement Maintenance,** **Case Histories,** **Summary**	Session 9 learning objectives: • Benefit of the proactive maintenance • Moving towards proactive maintenance, Case PEHKO Finland • Summary of the training course

Registration

- **1,400 USD IRF Members or Groups of 3 or more**
- **1,700 USD Non IRF Members**
- **1,000 USD IFIs, SARF, Canadian/ US State DOTs & City Officials**

Registration: https://www.irf.global/event/pvmt22-sep-online-training
For any support, please contact melabyad@irf.global

System Requirements

Computer Requirements

Operating System
Windows 7 - Windows 10, Mac OS X 10.9 (Mavericks), macOS Catalina (10.15), Linux, Google Chrome OS, Android OS 5 (Lollipop) - Android 9 (Pie), iOS 10 - iOS 12, Windows Phone 8+, Windows 8RT+

Web browser
Google Chrome (most recent 2 versions)
Mozilla Firefox (most recent 2 versions)
Internet Explorer v11 (with Adobe Flash if running Windows 7)
Apple Safari (most recent 2 versions)
Microsoft Edge (most recent 2 versions)

Internet connection
1 Mbps or better (broadband recommended)

Hardware
2GB of RAM (minimum), 4GB or more of RAM (recommended)
Microphone and speakers (USB headset recommended)

GLOBAL

KNOWLEDGE • ADVOCACY • EDUCATION
BEST PRACTICES • BUSINESS OPPORTUNITIES

Better Roads. Better World.

IRF GLOBAL

International Road Federation

GLOBAL HEADQUARTERS & SECRETARIAT
Madison Place
500 Montgomery Street, Fifth Floor
Alexandria, VA 22314 USA
Telephone: +1 703 535 1001 Facsimile: +1 703 535 1007

REGIONAL OPERATIONS
Brussels, Belgium | Accra, Ghana
Nairobi, Kenya | Kuala Lumpur, Malaysia | Chicago, IL USA

TRAINING INSTITUTES
Alexandria, VA USA | Dubai, UAE | Zagreb, Croatia

www.IRF.global