



Fundamentals of Intelligent Transportation Systems

Online Training
July 6-16, 2020



Online Training

16 Professional Development Hours



Fundamentals of Intelligent Transportation Systems & Adaptive Traffic Management

**July 6 - July 16, 2020
Online Workshop**

Background

Transportation agencies are in increasing need of additional tools to expand capacity utilization of the highways, roadways and public transport under their management. ITS offers the promise of this increased capacity with compelling benefit/cost ratios, and demonstrated contributions to sustainable development objectives.

In order to fully achieve these benefits and leverage ITS investments, and prepare for the rapid shifts in the vehicle fleet, it is critical for managers and planners to have a firm grasp of standards, systems architecture, lifecycle management (“designing for maintenance”), as well as best practices in the field of fully adaptive traffic management & control systems (“cooperative ITS”).

Why Online?

- Earn 16 Professional Development Hours
- Expert training by professionals for Professionals: access IRF’s unique curriculum and lectures developed by world-class specialists
- Accelerated learning processes: get up to speed and gain new insights in less time and with no travel constraints
- Full access to learning materials and session recordings
- Small classrooms & scheduled One-on-One sessions with instructors
- Self-paced options available
- Interactive group projects and case studies
- Receive IRF Certification

Format

The lectures will be taught over a two-week period with live 2-hour on-line sessions held Monday, Tuesday, Wednesday and Thursday. 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 with a certificate verifying their successful completion of the course.

Learning Objectives

This course designed by the International Road Federation covers the main principles, concepts, elements, technologies and full range of benefits arising from the successful deployment of ITS & Cooperative-ITS.

Upon completion of the course, participants will be able to:

- ✓ Identify and understand the fundamentals of ITS
- ✓ Recognize how ITS can enhance and improve overall transport infrastructure projects in urban settings
- ✓ Visualize how the framework and principles of ITS relate and fit into their agency's projects and objectives
- ✓ Visualize the framework and principles of effective traffic management
- ✓ Understand the basics of the systems engineering & integration processes
- ✓ Understand the importance and benefits of real-time traffic information
- ✓ Recognize the role and importance of ITS standards and their impact on interoperability
- ✓ Measure and benchmark Key Performance Indicators
- ✓ Assess the value of utilizing big data to establish accurate traffic predictions
- ✓ Anticipate emerging opportunities to deploy Cooperative ITS

Target Audience

The course materials are designed for both professionals who intend to pursue specializations in the area, and other civil and transport engineers whose responsibilities and tasks would be enhanced by fundamental knowledge of ITS.

Instructors



Richard Harris (Week 1 Lead Instructor) is an experienced, highly motivated and results-orientated project director, project manager, thought leader and business builder in the Intelligent Transport Systems industry with a proven record of delivery. Extensive UK and international experience including European Commission supported research and development, implementation, policy and best practice projects. Used to working independently with stakeholders ranging from C Level executives and Government Ministers to “the man in the street”. Recognised as someone able to make things happen and take ownership of events and who finds opportunities and solutions rather than difficulties or problems. A bright, creative and insightful thinker who brings understanding and vision to transportation issues. An adaptable and capable multitasker with sound business knowledge, good written, oral communication and people skills and a strong level of personal and business integrity.



Robert Rausch is a Vice President and Chief ITS Systems Engineer with TransCore. His expertise includes more than 45 years in the design and implementation of Integrated Transportation Management Systems, Freeway Surveillance and Management Systems, Tunnel Control Systems, Centralized Traffic Control Systems, Traffic Management Centers, Communications Systems and Equipment [for traffic control], Traffic Controllers and related street level systems, Changeable Message Signs and Systems, and Video Surveillance Systems. In his position he provides technical oversight to several projects and has been participating in the “Connected Vehicle” (CV) program through JHK’s role with DSRC, ISO’s cooperative ITS Working Group

(18) and active participation in the USDOT sponsored workshops and development efforts. He was the Concept Development Lead for New York City’s Connected Vehicle Deployment Project and is now the Program Deployment Lead as the City moves forward with deployment. He has been a frequent speaker for CV technology at ITS and ITE events and an instructor in CV and ITS technology and standards internationally for the IRF.



Paul Kompfner has a BA Physics (and Philosophy), University of California, San Diego, USA and undertook post-graduate research in Astrophysics, University of Oxford, UK. He is a Fellow at The Institution of Highways and Transportation.



Vincent Blervaque (Week 2 Lead Instructor) has an extensive 20 years’ experience in ITS. He worked at ERTICO ITS Europe from 2001 to 2014 as Director of Development and Deployment where he was responsible for European research and innovation projects and ITS deployment initiatives. He was the Chairman of the European Program Committee for ITS Congresses worldwide. From 2014 to 2018 he worked as independent consultant based in Brussels. He was member of the C-ITS Platform led by the European Commission and the coordinator of the C-The Difference large scale C-ITS urban pilot. His expertise include also international cooperation on connected and automated driving, especially with US and Japan. He is currently running consultancy activities in ITS including research, innovation, piloting and deployment activities, business and strategy development, international cooperation, and training.



Dr. Bill Sowell has been involved worldwide with Intelligent Transportation Systems and the development of ITS standards for more than 30 years. He has managed ITS-related firms, large and small, both publicly traded and privately held in the United States, United Kingdom, Latin America and Asia. He holds three Doctoral degrees and two Master’s degrees from the US. He played a key role in the early development of the Saudi ATVAM project, and the Mohd. Bin Zayed City Project in Abu Dhabi, and the adoption of the NTCIP systems open communications protocol.



As the Director of Nevada’s Freeway and Arterial Systems of Transportation (FAST) Center, **Brian Hoeft** is leading efforts with private-sector partners including Aptiv, Audi, Trafficware, and Waycare. Hoeft has a Bachelor of Science degree in Civil Engineering and a Master’s degree in Engineering Management from Brigham Young University. He also has taught a graduate-level Intelligent Transportation System course at the University of Nevada, Las Vegas. In 2014, under Hoeft’s direction, FAST was recognized by U.S. Department of Transportation Secretary Anthony Foxx as a winner in the Data Innovation Challenge for the FAST Dashboard, a performance measurement and reporting tool, that has recently been expanded to assist the Federal Highway Administration in its industry-leading traffic signal

performance measures.

Schedule

Monday through Thursday (09:00 AM– 11:00 AM US EST)

Monday, July 6	ITS Definitions & Benefits General introduction <i>This session will present a structured overview of the ecosystem of ITS applications, including their formal definitions, historical background and socio-economic benefits</i>
Tuesday, July 7	Emerging Mobility Challenges & ITS Responses <i>This session will address how ITS is being successfully leveraged to accompany these trends as part of coordinated mobility policies. The emergence of Mobility as a Service (MaaS) applications will also be discussed here.</i>
Wednesday, July 8	ITS Standards, Architecture & Security <i>This session will recall key aspects of ITS design with reference to international communication protocols and mitigating security risks (tampering, spoofing, hacking, etc.). A particular focus will be placed on designing open, scalable, interoperable solutions with references to good and bad practices.</i>
Thursday, July 9	ITS Project & Lifecycle Management <i>ITS projects are complex to manage and procure due to many interacting components and significant volumes of data to be analyzed. This session will provide a high-level understanding of tools and processes designed to mitigate deployment risk, including how to anticipate maintenance needs in the design of ITS applications.</i>

<p>Monday, July 13</p>	<p>Introduction to Cooperative Mobility Services <i>The current ecosystem of ITS applications will undergo spectacular changes with the rapid emergence of Connected Vehicles. Incremental interventions on the physical and digital road network are required to adjust to mixed vehicular traffic and optimize traffic guidance functions. This session will present an overview of current steps being taken in a selection of countries to cooperative ITS.</i></p>
<p>Tuesday, July 14</p>	<p>Adaptive Traffic Management in Practice <i>Smart traffic management helps improve traffic signal operations, reduce incident clearance times, and deal with exceptional situations. Working through case studies, this session will highlight proven traffic system applications and the organization of traffic management centers.</i></p>
<p>Wednesday, July 15</p>	<p>Traffic Data Capture & Analysis <i>The development of ITS has given rise on new ways to collect & analyze real time and historic road traffic data. Traffic information collected from fixed detectors can now be blended with in-vehicle and GPS data to provide accurate real-time information over a large road network and improve the quality of forecasts.</i></p>
<p>Thursday, July 16</p>	<p>Meeting Sustainability Targets with ITS <i>Transport currently accounts for almost a quarter of greenhouse gas emissions worldwide. Given the scale of this impact, smart mobility solutions will play a key role in improving the environmental credentials of transport. This session will present how ITS provides building blocks for cleaner mobility by increasing the efficiency of transport, reducing emissions, tackling congestion and accidents, making it easier for people to make greener travel choices and making freight and logistics more efficient.</i></p>

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