Time	Topic	Speaker
09:30 09:45	**Welcome Session** The ESRIUM Project	Matthias Rüther JOANNEUM RESEARCH Forschungsgesellschaft mbH – Institute DIGITAL
09:45 10:15	**Keynote** Monitoring Road Condition and Mechanism for Optimized Asset Management	Máté Verdes (Head of ITS Department) Magyar Közút Nonprofit Zrt./Hungarian Public Roads
10’ minutes break		
10:25 10:45	**The ESRIUM Business Case** Challenges and Opportunities	Wolfgang Schildorfer FH OÖ FORSCHUNGS & ENTWICKLUNGS GMBH
10:45 11:05	**Road Wear Detection** Data Collection and Training	Manfred Klopschitz JOANNEUM RESEARCH Forschungsgesellschaft mbH – Institute DIGITAL
11:05 11:25	**The EGNSS Implementation** Hardware and Software Tools	José Vallet Finnish Geospatial Research Institute of the National Land Survey of Finland
10’ minutes break		
11:35 11:55	**Test Scenarios** Storyboards and C-ITS Communications	Gottfried Allmer ASFINAGAutobahnen- und Schnellstraßen-Finanzierungs-Aktiengesellschaft
11:55 12:15	**In-Vehicle Validation** Test Setup for Automated Driving Functions	Selim Solmaz Virtual Vehicle Research GmbH
12:15	**Discussion and Closing Remarks** Interactive Discussion (open end)	Matthias Rüther JOANNEUM RESEARCH Forschungsgesellschaft mbH – Institute DIGITAL

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ESRIUM

SAFE AND EFFICIENT ROADS

EGNSS-enabled Smart Road Infrastructure Usage and Maintenance for increased energy efficiency and safety on European road networks

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Our challenge

Transportation becomes smarter by exploiting detailed **driving recommendations** received from the road operator in every automated and connected car.

Transportation becomes safer by allowing the vehicle to drive on **undamaged road surface.**

A longer paving lifetime makes **road operations** greener and more resource-efficient.

Our Mission

Our key innovation is an **EGNSS**-based **data platform**. Our innovative **digital road wear map** will generate **routing recommendations** in-lane and cross-lane based on

- Road damage locations
- Road damage type
- Recent repair interventions
- Prediction on temporal evolution of road damages depending on environmental and traffic conditions.

Our Solution

Our solution consists in an EGNSS-based digital map of road damages and safety risks that will allow for route adjustments through I2V communication free of charge. These recommendations will lead to a more balanced use of the road surface and to a longer lifetime of the road infrastructure.

ESRIUM regularly captures the status of the road surface. The system combines data coming from cameras, sensors and EGNSS-enhanced locatisation devices.

The ESRIUM platform operator extracts relevant info from the raw data to recognise, classify, georeference and integrate road damages into the digital road wear map. It automatically generates safety warnings.

Road operators can communicate driving recommendations to balance the road usage to better manage traffic and avoid safety risks. They can also optimise their maintenance planning.

Objectives

ESRIUM will demonstrate the sensor system, the EGNSS receiver, the digital road wear map and the relative processing platform and the C-ITS communication. The final goal is to set up a test vehicle which is able to receive routing recommendations and has enough autonomy to react accordingly.

Create a highly detailed EGNSS-referenced digital road wear map.

Create a new mid-priced sensor system for detecting road damage.

Implement EGNSS- localization system to provide accurate, authenticated yet low-cost position information in real-time.

Broadcast precision routing recommendations.

Broadcast potentially dangerous locations.

Provide road damage state and evolution to the customer.

Develop a business-case based on the ESRIUM services.

Demonstrate smart automated routing based on broadcasted information.