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MORE ABOUT THE CENTER
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<https://www.ait.ac.at/mobilitysystems>



CENTER FOR MOBILITY SYSTEMS

Holistic, intelligent and sustainable:
Solutions for the mobility of tomorrow

ON THE PATH TO A HOLISTIC MOBILITY ECOSYSTEM



MOBILITY CONCEPTS FOR PEOPLE AND GOODS ARE SUBJECT TO FUNDAMENTAL CHANGES

The invention of the wheel was without doubt one of the greatest inventions of mankind. It is indisputably the origin of the subsequent revolution that began 6,000 years ago. It significantly shaped the mobility of persons and thus also society; mobility became the epitome of freedom.

To drive, fly, go to wherever you want to or have to, is both a desire and something we take for granted. Having everything available at all times is a demand of the globalised world with which we are confronted. For many years decision-makers in the economy and politics raced to advance their visions, products and services under the motto "faster-higher-further".

Today we are witnessing a paradigm shift: the mobility of persons and goods is undergoing a fundamental change. In addition to rapid technological progress, the deciding factors in this respect include primarily urban growth and demographic development, clearly defined ecological targets as well as changes in the working world. Trends such as the sharing economy and the desire for a socially just, secure and barrier-free mobility for everyone are gaining in importance.

The parallel existence of the mobility of persons, goods transport and its associated transport infrastructure is increasingly being replaced by an interaction between existing and future technologies and stakeholders. The mobility system must, however, at the same time meet the needs of people. Developments such as mobility as a service, synchromodality, automated driving, physical internet or intelligent roads are great challenges for us. The development of economically and socially viable solutions requires a holistic approach and close cooperation between all those involved.

Thanks to its interdisciplinary team of experts, the AIT Center for Mobility Systems has such a holistic view with regard to the mobility ecosystem and every single development as well as every single project. Convergence is part of every solution. Every solution is part of the convergent system.

Our intention with this folder is to give you an overview of the contributions we make to shaping tomorrow's world of mobility. The Center for Mobility Systems carries out its research independently – on behalf of science – and develops solutions – on behalf of the economic sector.

Arno Klamming

Head of Center for Mobility Systems



SCIENTIFICALLY INDEPENDENT – SOLUTION-ORIENTATED IN DEVELOPMENT

The AIT Austrian Institute of Technology is Austria's largest non-university research facility and a key solution partner for the economic and political sectors. The role played by AIT in Austria's innovation system arises from its public mission: basic funding enables independent application-orientated research in the key topics of the future. As a result of these scientific findings, AIT develops innovative solutions for industry and SMEs on a national and international level. The close collaboration between AIT and its partners ensures the decisive added value: technologies, products and services are developed in line with the market, comply with the latest scientific findings and therefore stand for sustainable success.

OUR MOBILITY EXPERTS – INTERDISCIPLINARY AND COMPETENT

More than 100 highly-qualified, specialised and international experts work at the Center for Mobility Systems. Our interdisciplinary team carries out research and development in the fields of mobility data collection and analysis, passenger flow analysis and impact assessment, mobility behavioural research, traffic planning, simulation and predictive models, structural dynamics and acoustics, road safety, road infrastructure and transport logistics and optimisation.

WE HAVE MORE THAN 100
HIGHLY SKILLED AND SPE-
CIALISED INTERNATIONAL
EXPERTS.

OUR SOLUTIONS – SMART OUTLOOKS ON THE MOBILITY OF THE FUTURE



01 SENSING TRAVEL BEHAVIOUR

The MODE software technology uses smartphones to automatically track the distances travelled and the mode of transport used by persons thus enabling the design of innovative mobility services and ticketing solutions. SMART SURVEY is our complete solution for mobility surveys using a smartphone app and web service.



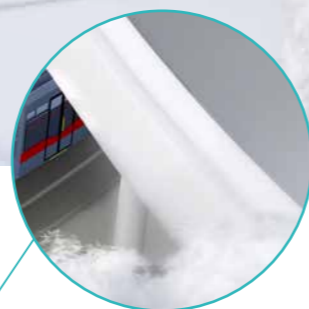
02 ROAD SAFETY

Using SAFE and TRAFFIC we assess the accident risk on existing and planned roads and develop measures for the reduction of accidents. The Mobility Observation Box, for example, measures the readiness of motor vehicle drivers to stop at zebra crossings and our intelligent road works management system and traffic flow analyses enable safe and efficient traffic management.



03 ACOUSTICS AND NOISE ABATEMENT

Within the scope of QUIET we carry out highly accurate noise measurements in traffic areas in order to model and analyse noise emissions numerically. Efficient noise protection measures are developed in collaboration with infrastructure operators and the manufacturers of infrastructure devices.



04 STRUCTURAL AND VIBRATION ASSESSMENT OF TRANSPORT INFRASTRUCTURE

We use ASSESS to assess the condition of buildings, their tolerance to dynamic loads and to evaluate the risk of natural hazards and develop preventative measures. With VIBES we measure vibrations and shocks, assess their impact on persons, buildings and the environment and use the findings to develop measures for vibration protection and building component optimisation.



08 ROAD CONDITION MONITORING

The high-performance ROADSTAR measurement vehicle is equipped with state-of-the-art sensors, satellite navigation and camera technology. It captures all relevant road surface properties and road mapping parameters. With the evaluation of the data captured in this way we ensure a higher level of road safety and effective traffic infrastructure maintenance.



07 IMPACT ASSESSMENT FOR TRANSFORMATIVE MOBILITY SYSTEMS

We use IMPACT to plan and optimise multimodal transport systems and to analyse the impact of measures before they are actually implemented thus providing a sound basis for deciding on their practical realisation.



06 ANALYSIS AND OPTIMIZATION OF PEDESTRIAN FLOWS

Based on the latest scientific findings and state-of-the-art technologies we offer customised, scalable solutions such as SIMULATE and EXPERIENCE for the simulation, analysis and planning of optimised passenger flows in urban areas.



05 TRANSPORT OPTIMIZATION AND LOGISTICS

Our PLAN solution ensures efficiency, economy and environmental compatibility in transport logistics, route planning and fleet management.

WE WORK ON MULTIMODAL MOBILITY SYSTEMS FOR PERSONS AND GOODS AND THEIR RESPECTIVE TRANSPORT INFRASTRUCTURE.

OUR PROJECTS – A SNAPSHOT



//01 „SMART JOURNEY“ THROUGH THE COUNTRY

Pilot project in Styria and Carinthia – we are creating the basis for a standard public transport ticket for the whole of Austria.



//03 „URBAN TRANSPORT“ IN TIFLIS

We are supporting the rapidly growing capital city of Georgia with its “Future City Project”.



//02 „SIMULATE“ IN SCHÖNBRUNN

We guide 2.5 million visitors a year smartly through the palace.



//04 RETHINKING LOGISTICS WITH “EMILIA”

The logistic concept “EMILIA” redesigns the urban transport system with a special focus on the last mile.



//06 NOTHING ESCAPES “ROADSTAR”

Exact capture of the condition of roads is the basis for optimised maintenance management in the service of safety.



//08 “ASSESS” EVALUATES TRAM TRACKS

We assess the condition of the tram network based on the sound and vibration of tracks.



//07 IN-SITU TESTING OF NOISE BARRIERS

We carry out accredited testing of noise barriers on site.