



ways2go

INTERIM INNOVATION REPORT



2011

EXECUTIVE SUMMARY





FFG

iv2splus

ways2go



www.ways2go.at

CREDITS

MEDIA OWNER AND ISSUER

Austrian Federal Ministry for Transport, Innovation and Technology (bmvit),
Unit for Mobility and Transport Technologies (III/I4)
Evelinde Grassegger

CONCEPT AND CONTENT PREPARATION OF THE EXECUTIVE SUMMARY BASED ON THE FULL-LENGTH VERSION OF THIS REPORT

Walter Wasner, bmvit
Alex Schubert, designas.at

RESEARCH AND ANALYSES FOR THE FULL-LENGTH REPORT

Herwig Schöbel, Schöbel - innovation for transport, 2010

GRAPHICS & PRINTING

Alex Schubert, designas.at
digiDruck GesmbH

PUBLICATION

Vienna, September 2011

DISCLAIMER

The information contained in this publication has been carefully researched. Nonetheless, no guarantees of any kind can be made as to the accuracy of this information.

The ways2go research, technology and innovation funding programme is a component of the "Intelligent Transport Systems and Services plus" programme framework (IV2Splus) and is conducted by the Austrian Research Promotion Agency (FFG).

Ways2go is a mission-oriented Austrian research, technology and innovation funding programme of the Austrian Federal Ministry for Transport, Innovation and Technology (bmvit) which addresses the topic of personal mobility in the scope of the strategic initiative „IV2Splus - Intelligent Transport Systems and Services plus“.

The ways2go programme serves transport policy objectives, such as fostering a barrier-free, safe and efficient as well as environmentally and socially sustainable transport system, while addressing technology-policy aims to strengthen the competitiveness of Austrian enterprises in the international arena. The programme thus serves as a driving force to stimulate essential innovations in the field of „mobility of the future“.

SOCIAL CHALLENGES

Social challenges necessitate new approaches in the form of innovative products and services in the mobility sector. Climate change, dwindling energy and natural and land resources along with increasing traffic volumes represent the main challenges by obtaining social equitable mobility solutions for all user groups. In this regard, personal physical mobility is strongly determined by socio-demographic, socioeconomic and spatial phenomena, all of which are subject to significant changes. Of particular relevance here are questions pertaining to age-adapted solutions, accessibility and affordability in the light of sustainable mobility for urban and rural areas.

OVERVIEW OF PROJECTS: PROJECTS A – I (see www.ffg.at/verkehr)

ABBREVIATED TITLE	FULL TITLE
3D-BIKE	3D acceleration measurement as an instrument for assessing comfort, evaluating: human-bicycle infrastructure
AUTOBAHN	Development of an autonomously driven railway as a transport solution for branch lines
BIKECOUNT	Technologies and methods to establish a Federal database for bicycle traffic volume
BUS STOP 3.0	Public transport stops as multifunctional centres for innovative urban and regional development
CARSHARING NETWORKS	Tools for decentralised carsharing projects in social networks and Smartphones as onboard units
CARUSO	Private carsharing within a living lab setting: Sustainable mobility through empowerment and its sociocultural determining factors
COM-ÖVER	Community-oriented transport service for optimised planning of driving routes and personalised information provision
ECCOMOB	Equal mobility opportunities in rural space. Planning-related contribution to ensuring safe and socially responsible mobility
EFM-ÖPV DWH	Electronic fare management - the transport data warehouse for innovative transport planning
ÉGALITÉPLUS	Equal rights in everyday traffic - Quantifying mobility-impaired groups of people
E-HIKE	Development of a concept for hitchhiking based on modern communication technology
EKOM	Emotional and cognitive mobility barriers and strategies to overcome them with multimodal traffic information systems
ELVIS	User experiences with the use of traffic and transport information systems
EMO MAP	Consideration of emotional perception of space in navigation systems for pedestrians
EXIT METERING	Exit metering of traffic from business sites - management of parking lots
FEM-EL-BIKE	Prospects of the e-bike as an environmentally friendly everyday transport alternative for women
FLEXBIKE	Bicycle dynamics study of a load-bearing bicycle concept with variable external dimensions
FLEXICOUNT	A flexible, person-counting mat for mobile indoor and outdoor use
FRESEAT 2	Future oriented services based on seat availability data in a public transport vehicle
GABAMO	Fundamentals for further development of training education measures in the field of disabled-accessible mobility
GEMMA	Walking starts in childhood: ways to and from kindergarten
GEMMA WEITER	Effects of mobility management in kindergarten on the mobility behaviour of parents and small children
HOLODECK	Measures and steps for the implementation of holistic planning technologies in transport and spatial planning
IANUS	Information recording and use under the effect of stress



RESEARCH, DEVELOPMENT AND INNOVATION AS STIMULI

Activities in „Research, Technology and Innovation“ are rightly considered the hope for the future in order to make it possible to live up to the complex social challenges existing in terms of mobility. However, new methods are critical for developing the holistic approaches needed in the context of the extended interdependencies and influencing factors.

The ways2go programme actively fosters innovations at the particularly important juncture between users, transport infrastructures and vehicles in order to offer all groups of citizens suitable mobility options and innovative mobility services.

Moreover, the ways2go programme „researches“ products and services which encourage sustainable mobility styles and allow for improved planning and decision-making options in the fields of spatial and transport planning.

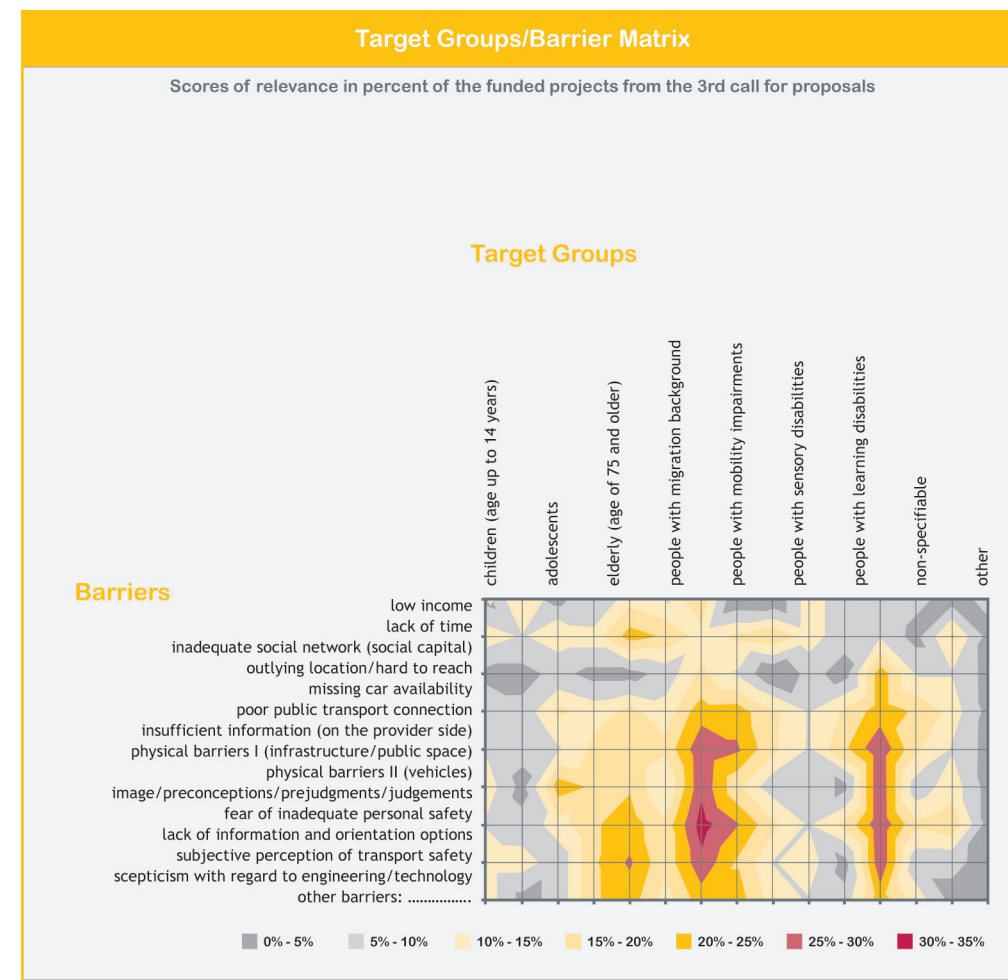


Figure 1: Target Group/Barrier Matrix (Source: FFG 2011)

THE INNOVATION PRINCIPLE OF WAYS2GO

In the frame of the ways2go programme funding is provided for research and development projects (R&D projects) addressing an enhanced knowledge base for questions regarding the future of mobility and transport and transforming this knowledge base into concrete paths of innovation.

ways2go is founded on a collaborative research approach by integrating all relevant stakeholders acting in the field of mobility (public agencies, transport operators, research institutions and technology providers, etc.).

Within the innovation cycle, the entire spectrum from fundamental research for more profound knowledge in the context of „mobility – society – spatial development“ (social science-oriented mobility research for the preparation of „next-generation technologies“) all the way to the development and testing of prototypical applications, is addressed, thus filling a gap in the Austrian research landscape.

Interventions out of the programme are particularly justified in constellations, where anticipated products and services do, in fact, represent desirable and necessary goods or services, but would hardly be provided on the „transport market“ without public intervention. The requirements of differing user groups form the basis here for needs-based products and services, which in turn allows for sustainable incorporation of technological solutions in social systems.

OVERVIEW OF PROJECTS: PROJECTS I – M (see www.ffg.at/verkehr)

ABBREVIATED TITLE	FULL TITLE
IMITATE	Interactive testing environment for the evaluation of guidance systems in transport infrastructures
INFO-EFFECT	Target group specific effects of multimodal transport information on individual traveller behaviour
INNOVAT 1&2	Innovative and disabled-accessible ticket dispenser
INSEMOB	Ensuring local mobility in rural and suburban areas
ITSWORKS	Intelligent transport systems work!
JUGLEIST	User group-specific affordability and preference for means of transport
JUGMENT	Youth mentors
KNOWLEDGE4ALL	Automated utilisation of currently unused multilingual expertise in the transport and mobility field
KOFLA	Cooperative driver assistance system for optimised charge management of electric vehicles
KOMOD	Concept study on mobility data in Austria
KoRA	Coordination of traffic light signal systems for bicycle traffic
KOWIPMOVE	Component development for knowledge management platforms in the field of mobility and transport
LEDS2GO	Dynamic information and illumination systems to arrange pedestrian flows in mass transit
LF DATENSCHUTZ	Privacy aspects of transport data collection
LML	Last Mile Link
M2K	Mobility to know for ways2go
MAI	Mobility card for real estate for estimating the costs of mobility associated with a given location
MARIA	Mobile assistance for disabled-accessible transport of seniors, immigrants and illiterates
MASI-ACTIV	Mobile telephony based survey system for the activity planning process
MASIMO	Multi-agent simulation model for group-specific movement and direction behaviour of pedestrians
META-FORUM VERKEHR	Semantic document and file management systems for transport research
MIMISIM	Microscopic modelling of behaviour and movement processes in mixed traffic modalities
MIP	Mobile Information Point
MIXME	Mixed traffic microsimulation environment
MOBIFIT	Mobility survey based on intelligent technologies
MOBI-KID	Information suited for children for safe and sustainable use of public transport

Sustainable technological solutions, however, can only be achieved by considering reflexions and contributions from different points of view. As such, research projects have to be put into interdisciplinary settings, in which existing different disciplinary knowledge streams have to be incorporated and utilized towards common solutions for future challenges in the field of transport.

THE WAYS2GO INTERIM INNOVATION RESULTS

In the course of three programme calls for proposals between 2008 and 2010 251 project proposals with a total project volume of 54 million € were submitted by more than 800 organisations. 97 projects with a project volume of around 21 million €, submitted by more than 350 organisations, were selected for funding (funding volume of approx. 15.5 million €).

By means of a systematic analysis, the innovation impacts of the programme in the relevant thematic fields were presented in the form of an „interim innovation report“ and discussed and/or reflected upon by experts. Although many of the projects selected in the ways2go calls for proposals are still in progress until the

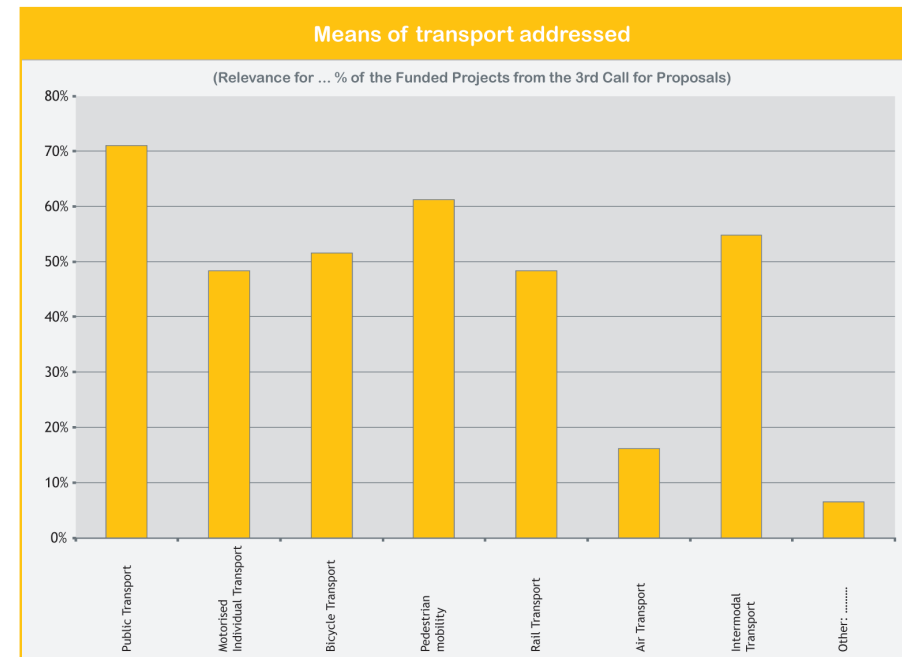


Figure 2: Means of transport addressed (Source: FFG 2011)

end of 2012, important new findings have already been made, from which specific innovation and product paths have been developed in the following thematic areas:

- Needs-based and barrier-free mobility solutions for specific user groups
- Mobility information and navigation systems for all user groups
- Innovative vehicle concepts and new mobility services

- Instruments to support sustainable mobility behaviour
- Technology based planning tools

Many of these paths of innovation have already resulted into prototypical applications and technology demonstrations. The interlinking of the individual projects has also generated synergistic and thus integrative solutions.

The breadth of the programme topics reflects the need for action in the thematic field „mobility needs of the future“ and at the same time provides the requisite latitude for far-reaching innovation effects in the domain of everyday mobility. For the most part, the projects deal with innovations for environment-friendly modes of transport (public transport, bicycle and pedestrian traffic) and provide concrete solution paths for specific target groups such as senior citizens, persons with disabilities, children and teenagers, etc. within the framework of the transport system as a whole.

Suggestions and solutions for how to eliminate significant mobility barriers and how to overcome barriers for innovations are being developed in the course of accompanying studies. These include e.g.

- Potential of technology-based planning tools and methods in designing the transport systems of the future.
- Enhanced data quality in the field of mobility through the design of a future-proof, technology-based, federal mobility survey.

OVERVIEW OF PROJECTS: PROJECTS M - R (see www.ffg.at/verkehr)

ABBREVIATED TITLE	FULL TITLE
MOBILITY_MIDDLEWARE	Intermodal inter-service brokerage platform in motorised urban transport
MOBILITY_TECHTRENDS	Key technologies for mobility in 2030
MOBILITYXCHANGE	Market-based incentive system for optimisation of mobility management in companies
MODE	Methods for automatic identification of motorised means of transport by using technology-based generated mobility data content
MOFA	Mobility for all - Mobility in public spaces
MOTION_55+	Future mobility for the 55+ generation - Mobility scenarios for active participation in transport systems drawing on all necessary transport technologies
MOTION-FF	Analysis of GPS-based mobility data for detection of trips and means of transport for cyclists and pedestrians
MOVH	Mobility for the visually and hearing impaired persons in public transport
MPED+	Flexible simulation framework for modelling pedestrian flows in public transportation networks
MYITS	My personal intelligent mobility service
NAHMOBIL	Innovative local provision concepts in rural areas from a gender perspective
NAVCOM	Navigation and communication in and with public transport, specially designed for persons with special needs
NEMO-PHONE	New models for mobility surveys with smartphones
NRT	Non-Routine Trips – Mobility styles of the future challenges for public transport
OPENTRAVELTIMEMAP	Concepts and technologies for a worldwide, open travel time map following the Wiki principle
OPTIBUS	Demand-oriented optimisations in bus route networks
PARTICIPATIONSTOOL	Participation tools to overcome process-dependent barriers in mobility relevant infrastructure projects
PENDO	Effects of innovative technology on commuters in Austria's Eastern Region
PUBLICTRANSPORT SCREENER	Demographic-oriented assessment and planning model for accessibility and supply quality in public transport
RADPENDLER	Use of innovative information systems to increase bike traffic amongst commuters to improve local mobility
REGINNOBIL	Regional innovative mobility solutions: perspectives of technically and financially feasible, socially and ecologically sustainable systems
RELTELEWORK	The relevance of telecommuting in the current environment consisting of altered requirements for the structure of Austrian mobility
RODEM	Development of a planning tool for optimal land-use with minimal emissions

- Identification of key technologies for the future of mobility (fore-sight).
- Support for innovation and technology development in the context of data privacy requirements.
- Measures designed to reinforce the field related knowledge base, leverage required skills and to enhance opportunities for involving probands in user-centred innovation projects.

THE WAYS2GO RESEARCH COMMUNITY

As a result of the ways2go programme activities, a specific, diversified re-

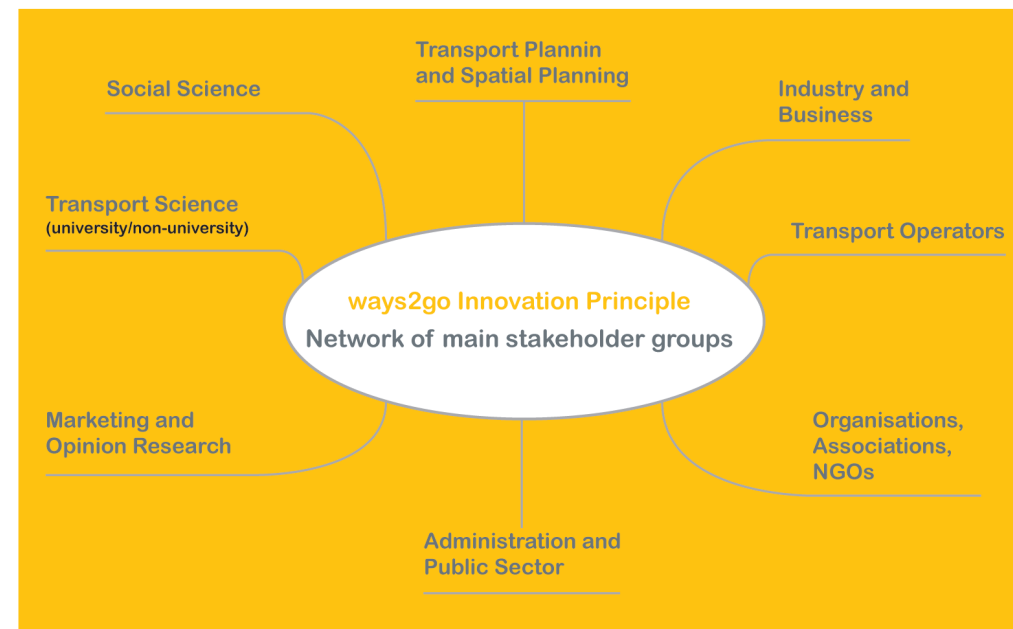


Figure 3: Network of main stakeholder groups in ways2go

WAYS2GO IN FIGURES (Programme calls for proposals 1-3)

- 97 funding projects with a project volume of 21.4 million € (average project volume: 220.000 €).
- Funding volume: 15.5 million €, of which approx. 70% for cooperative R&D projects in applied research (industrial research, experimental development).
- Degree of cooperation and partnerships: More than 350 organisations (3.6 project partners per research project, 95% of the funding in cooperative projects).

search community has emerged which encompasses not only all the essential stakeholder groups in the Austrian transport landscape, but also important actors from other disciplines and fields. Companies make up the largest share of the ways2go community.

Characteristic of ways2go is the large percentage of small and medium-sized enterprises (SME) which – due to the economic structure – play a significant role as a driving force for innovations in Austria (SME account for 78% of the companies and 85% of the project-relevant costs). Nearly one third of the stakeholders are made up by academia, in roughly equal proportions, of university and non-university research institutions (approx. 50% of the total project-relevant costs).

Although solid research and cooperation networks have evolved which can be expected to endure in the future, the ways2go community is characterized by a high degree of permeability and openness in order to continuously enrich its innovation activities with new impetus.

The incubator function of ways2go is abundantly clear when one looks at the high percentage of „newcomers“ in the area of transport and mobility research. Every fifth proposal submission came from an organisation which had not previously been active in the thematic field of transport and mobility research. Indeed, with regard to the successful projects selected for funding, more than one-third of the submissions can be traced back to new stakeholders.

OVERVIEW OF PROJECTS: PROJECTS R - Z (see www.ffg.at/verkehr)

ABBREVIATED TITLE	FULL TITLE
ROBANA	Influencing transport behaviour with regard to route choice through flexible road charges in order to achieve sustainable mobility development
ROUTE4YOU	User-specific online route planning
SMARTCOUNTPLUS	Automatic outdoor counting and modelling of non-motorised individual transport
SMARTMO	Smartphone mobility survey tool
STEP BY STEP	Group-specific behaviour and simulation model based on telematic surveys
STORE&GO	Barrier-free luggage storage system for train stations and transportation hot spots
SU:B:ICITY	Integrated approach toward increasing the share of bike traffic in transport between cities and their suburban areas
SZENAMO	Scenarios of future mobility for the elderly
TICKET4ALL	Ticket for all
TECHNOVEP	Practical relevance of technology-based planning instruments and methods to encourage innovative transport technologies
TELLMETHEWAY	A mobile, voice-based companion for travellers using public transport
TP4DP	Traffic platform for disabled people
TRAFFICCHECK.AT	An online platform developed through user innovation to rate traffic-signal controlled intersections
VEGIS	Tools for connectivity between transport and traffic models and geographical information systems
VERMOBIL	Use of cell data generated by mobile phones as a basis for transport models
VIATOR	Transport infrastructure for a general, intermodal transport and location-based travel information system
WAYS2DAT	Recommendations on inclusion of and central access to probands in „mobility of the future“ projects
WAYS2DAT II	Design and prototypical implementation of a pool of data for improved integration of probands in mobility-relevant projects
WAYS2GETHER	Target group-specific use of Augmented Reality and Web 2.0 technologies in participatory transport planning processes
WAYS2KNOW	An innovative tool for ways2go's knowledge management
WAYS2NAVIGATE	Digital map, voice, Augmented Reality: Analysis of new forms of information dissemination in pedestrian navigation
WAYS4ALL	Accessible mobility for all! Explicit blind navigations adapted to the special requirements of public transport!
WAYS4ALL COMPLETE	Accessible travel for all - Supporting people with special needs in public transport



Transport Research
BOKU Vienna



UNIV.-PROF.DR.
GERD SAMMER

„Research promotion should be more geared to fundamental research. Therein lays the key for developing user-needs based technological applications.“

„Future urban transport and mobility concepts must include diversified mobility services. In this regard, ways2go is closing a gap in the mobility research landscape.“

Institut DIGITAL / JOANNEUM
Research ForschungsgesmbH



DR.
LUCAS PALETTA

„The results of the pure research conducted in the frame of project MARIA – where technology development was closely tied to the user groups – made it possible to lay the thematic groundwork for a continuous EU research project.“

„ways2go generated and intensified important planning and technology development contacts for the Austrian Working Group for Rehabilitation. Contacts, which will be enduring for the sake of efficient collaboration in the future.“



KATJA
SCHECHTNER

AIT - Austrian Institute
of Technology



MARIA ROSINA
GRUNDNER

Austrian Working Group
for Rehabilitation

Fluidtime Data
Services GmbH



MICHAEL
KIESLINGER

„Knowledge of specific user requirements is the basic prerequisite for an efficient technology development process.“

„ways2go provides the Vienna Transport Authority with an extra impetus for early realisation of projects aimed at increased accessibility for all user groups and fosters cooperation with associations for persons with disabilities on a solid base.“

German
Aerospace Centre



PROF.DR.
BARBARA LENZ

„ways2go is setting a milestone in the European research landscape and making an important contribution to interdisciplinarity in mobility and transport research.“

„ways2go is making a crucial contribution to sustainable, environmentally responsible mobility for all groups of people. The projects promoted have enabled Austria to achieve a top international position, both in technological research and development and in the implementation of needs-based and barrier-free mobility.“



ROLAND
KRPATA

Vienna Transport
Authority



PROF.DR.
JÜRGEN KRIMMLING

Technical University
of Dresden

