# Highlight Report

Transport Research Arena 2018 Vienna A digital era for transport

October 2018

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#### Publisher

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October 2018

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# Foreword



#### Ingolf Schädler

Chair of the TRA 2018 Management Committee, Ministry for Transport, Innovation and Technology

#### **Evelinde Grassegger**

Vice-Chair of the TRA 2018 Management Committee, Ministry for Transport, Innovation and Technology Austria organised the Transport Research Arena in Vienna with great success. With more than 3,600 participants from 65 countries, a high presence of international industry and research as well as a multitude of interactive formats and demonstrations, a milestone was set in Vienna for the further positive development of this largest European transport research and technology conference. The main objective of this European platform is to foster exchange between European actors and to demonstrate European excellence in transport research.

In over 90 different political, technical and scientific sessions, researchers were able to present the crucial topics from various perspectives and to discuss different analysis and approaches. Since industry is playing a key role throughout the field, we were very happy to host an Industrial Round Table for the first time. Austria was able to position itself optimally within this framework. About 850 Austrian researchers took advantage of this platform to demonstrate their ability and to establish and expand valuable networks. Within the Interactive Zone, the Austrian Transport sector, a key sector in Austria with tremendous innovative potential, was able to successfully present itself to an international audience. In different formats, such as in the Competence Corner and the Start-up Zone, trendsetting solutions for tomorrow's mobility were showcased with a special focus on utilising the opportunities of decarbonisation and digitalisation.

This great success for Austria was only possible through the cooperation of all Austrian stakeholders, and the support of the European TRA Management and Programme Committees. Our thanks go to all our European and Austrian partners and especially to our cooperation partners AIT and AustriaTech. Their highly committed teams together with the Austrian Ministry for Transport, Innovation and Technology (BMVIT) have been responsible for the success of the TRA 2018.

Ingolf Schädler & Evelinde Grassegger



The TRA 2018 featured the theme 'A digital era for transport: solutions for society, economy and environment'. Digitalisation will drastically change the way we live, work and use mobility and transport in the future. Therefore, we have to organise this transition in order to enable the elements of the future transport systems to move forward together. The TRA provided the ideal environment to address these challenges and opportunities and discuss recent findings.

Promoting interaction and exchange was one of the key elements of this event. From the very beginning of the process we decided to integrate an Interactive Zone to allow hands-on demonstrations. We enabled hands-on experiences in various thematic areas and involved testing and interactive presentations. Diverse and innovative types of presentation methods facilitated exchange and fostered multidisciplinary research and cooperation in academia as well as in industry. The TRA encouraged debates and collaborations in order to provide the foundation for new technologies and solutions that will shape the mobility of the future. After all, only a unified strategy for research, innovation and policy will guarantee a smooth transition through the digital age.

We were proud to host the TRA 2018 in Vienna, Europe's largest transport research conference, to promote exchange between key actors and highlight the progress in European transport research. The TRA aimed to inspire and advance the regional, European and global dialogue on innovation, technology and science and identify new R&D potential and priorities.

It is of utmost importance to ensure a lasting impact of the TRA's findings and solutions. Since the transport sector is a main cause of greenhouse gas emissions it is even more crucial for the EU to guarantee that research continues. In order to achieve the targets of the Paris Climate Agreement and a low/zero carbon transport, it is imperative to develop solutions and to make the transport and mobility sector more environmentally friendly. Only by changing people's mobility behaviour and by using new and more energy efficient technologies, the target of a temperature rise of well below two degrees Celsius can be achieved. TRA provided an ideal setting to ignite debates and launch discussions which will hopefully continue until the TRA 2020 in Helsinki and beyond.

Our thanks goes to all the partners, sponsors, participants and above all the members of the committee and the organising teams that supported and contributed to TRA 2018.

Michaela Topolnik & Martin Russ

#### Michaela Topolnik

TRA 2018 Project Director, AustriaTech

#### **Martin Russ**

Chair of the TRA 2018 Organising Committee, AustriaTech

# The Austrian TRA 2018 Team

The TRA 2018 was hosted by the Austrian Ministry for Transport, Innovation and Technology (BMVIT), AustriaTech and the Austrian Institute of Technology (AIT). In order to organise the event, three committees for management, programme and organisation were established. AustriaTech was responsible for the overall Organisation of the TRA and its side events, marketing, promotion, sponsoring, exhibitions and demonstrations. AIT was responsible to organise together with the Programme Committee, CEDR and the European Technology Platforms the scientific conference programme.

## Organisational Structure of the TRA 2018

#### Management Committee (MC) Chair: Ingolf Schädler (BMVIT)

Vice-Chair: Evelinde Grassegger (BMVIT)
 Vice-Chair: Sabine Kühschelm (BMVIT)
 MC Secretary: Andrea Dapra (BMVIT)

# Programme Committee (PC)

Chair: Christian Chimani (AIT) Vice-Chair: Manfred Haider (AIT) PC Secretary: Veronika Prändl-Zika (AIT)

**Organising Committee (OC)** Chair: Martin Russ (AustriaTech) Vice-Chair: Katharina Schüller (AustriaTech) Project Director: Michaela Topolnik (AustriaTech)

»The European Commission was pleased to co-organise this TRA edition with the Austrian Ministry for Transport, Innovation and Technology. It will remain a memorable event with more than 3,600 European and international participants and has definitively set the direction for future development of transport research and innovation.«

Clara de la Torre
 Director for Transport,
 European Commission DG RTD



• Part of the Austrian Team with members of BMVIT, AIT and AustriaTech

#### AustriaTech Team

**Project Supervisor** Martin Russ

**Project Director** Michaela Topolnik

**Project Office** Lena Reiser Sandra Hudler Robert Scharnhorst

## Team\*

Hatun Atasayar Sarah Bimingstorfer Günther Edenharter Florian Hack Natasa Hodzic-Srndic Silvo Korez Christine Kosar Daniela Kraft Florian Kressler Katharina Leeb Julian Pöll Katharina Rieder Lorena Riegler Martin Russ Katharina Schüller Nora Spiegel Silvia Vertetics

## Interactive Zone Team

Interactive Zone Coordinator Lena Reiser

## Interactive Zone Team\*

Martin Dirnwöber Thomas Eberhard Michael Gidam Sandra Hudler Lina Moßhammer Tamara Strahner Michael Zakaria 7

\* in alphabetical order

Sophie Kast

# Background

Over the last decade, the Transport Research Arena (TRA) has established itself as the largest Transport, Research and Innovation conference in Europe. Since 2006, the TRA has been taking place every two years and is co-organised by the European Commission and supported by CEDR (Conference of European Directors of Roads), the European Technology Platforms ACARE (Advisory Council for Aviation Research and Innovation in Europe), ALICE (Alliance for Logistics Innovation through Collaboration) ECTP (European Construction Technology Platform) as well as ERRAC (European Rail Research Advisory Council), ERTRAC (European Road Transport Research Advisory Council) and WATERBORNE as well as ETRA (European Transport Research Alliance).

<sup>1</sup>https://www.wien.gv.at/ arbeit-wirtschaft/ tagungs-bilanz.html The transport sector plays a major strategic role in the European Single Market and in a fast-changing economic and societal framework. Policies, technologies and behaviours must be continually adapted to new constraints, such as climate change, the diminishing supply of fossil energy, economic crisis, the increased demand for mobility, safety and security.

TRA addresses the main challenges in transport and mobility for people and goods, with respect to energy, environment, security and economic issues and also takes human and societal factors into account. As it is the only research conference in Europe covering all modes of transports, it offers the opportunity for an intra- and intermodal discussion. Bringing together academia, research institutions, industry, NGOs, public authorities and policy makers, TRA is a melting pot to incubate innovative solutions. The TRA highlights the links between research and policy and shows the latest results of research activities in transport and mobility. The seventh Transport Research Arena featured the motto 'A digital era for transport: solutions for society, economy and environment'. Digitalisation has the potential to address major issues like climate change, shortage of ressources and new mobility patterns, and provides the opportunity to design sustainable mobility for the future.

»Digitalisation is happening day by day – this means a challenge for organising this transition. We need a bold vision on how the different elements of our future transport systems will better co exist and better move forward together to a more synergetic view on the transport system.«

#### Martin Russ

Chair of the TRA 2018 Organising Committee, Managing Director, AustriaTech

The intention of hosting TRA 2018 in Austria, was to increase the visbility of Austrian research in an international setting and position Austria and especially Vienna as a great congress location. In addition to the expenses for the conference itself (venue, exhibition etc.) each of the 3.600 conference guests spends on average of 538€ each day, TRA 2018 also contributed to the value added chain of Austria in general.<sup>1</sup>

TRA 2018 also ensured, through differnet settings and formats, that networking for national and international stakeholders from all different fields of mobility was possible and new collaborations could be found.

To make research tangible it was a goal of the Austrian hosts to put a special focus on showcases and hands-on demonstrations. With the interactive zone we wanted to show "Why showcasing matters!"

This report sums up the experiences and highlights from the AustriaTech point of view. For us, it was the most important event this year, and we put a lot of effort into organising this year's very successful TRA. Therefore, the main highlights of the conference sessions and some outputs and results of the Exhibition, the Interactive Zone and Side Events are summarised and addresses actors and stakeholder from all disciplines working in the field of mobility and transport.

# Remarkable TRA 2018

## Participants by Country >2% of all Participants

Austria 30%	<b>Germany</b> 12%	<b>Belgium</b> 9%	
	France 7%	Nether- lands 4%	<b>Spain</b> 4%
5%	Italy		
	5%	Sweden 3%	
	United Kingdom 4%	Finnland 2%	

The Austrian Federal Ministry for Transport, Innovation and Technology together with AustriaTech and the Austrian Institute of Technology (AIT) were proud to have exceeded the past numbers of attendees; in total we welcomed 3,600 visitors from 65 countries from all continents.

Of the 3,600 participants, 27% were female, which is an increase of 5% and the highest rate of female participants of all TRAs. For the Austrian host it was a main objective to focus on women in mobility. Therefore, the 'Declaration for Equal Opportunities for Women & Men in Transport' was initiated by Commissioner Bulc in November 2017, and signed during the TRA 2018 by the Austrian Federal Minister Hofer and 17 major Austrian companies in the mobility sector. In doing so, the companies committed themselves to act to increase the number of women in the sector and improve their prospects.

The rise in attendees and the wide international perception of TRA reflects the great importance of this year's thematic focus on major trends such as digitalisation, automation and decarbonisation. »With more than 1,200 submissions and an acceptance success rate of 54%, we received high quality papers in all sessions. The high level of satisfaction of the participants shows that very clearly.«

Manfred Haider

Vice-Chair of the TRA 2018 Programme Committee, Head of Competence Unit Transportation Infrastructure Technologies- Austrian Institute of Technology

Within the scientific conference the highlights of research were presented during four plenary sessions, 23 strategic sessions, 52 scientific and technical sessions and 18 invited sessions. On average, 70% of the participants were very satisfied with the quality of scientific conference and all kind of sessions, as a survey conducted by AustriaTech revealed. »The value of the conference is, on the one hand, to have the research results presented in papers and presentations and, on the other hand, to have applied research and the technical results visible. We can touch them and we can talk with the experts in the exhibition area.«

Christian Chimani,

Chair of the TRA 2018 Programme Committee, Head of Center for Low-Emission Transport, Austrian Institute of Technology

In addition to the classic exhibition and the scientific conference, the research results and initiatives should be experienced first-hand. In order to accomplish this aim, a special area was created: the Interactive Zone. For the first time such a comprehensive area was introduced. It included a Networking Zone, an area for innovative start-ups and the Demo and Showcase Zone with additional two outdoor areas.



 Neil J. Pedersen, Executive Director of the Transportation Research Board, the big American Brother of TRA, being interviewed during a short conference break. Since such an area has never been part of a TRA before, it was important for the Austrian Federal Ministry for Transport, Innovation and Technology to help it achieve success. Integrated into the exhibition area, the Interactive Zone proved to be a unique experience for exhibitors and participants with its more than 40 demonstrations. In addition to the indoor showcases, the outdoor showcases also benefitted from the perfect weather. The various exhibits were presented in a way that goes beyond conventional methods of research dissemination. »We need to become better at communicating new technologies and the options that these bring. Especially at a research conference with its many sessions, it is important to break away from the formats and learn things in a playful way.«

### Martin Russ

Chair of the TRA 2018 Organising Committee, Managing Director, AustriaTech

The Technical Tours represented another new format where participants had the opportunity to experience research in the field of mobility at different research institutes and companies in Vienna. In cooperation with six external partners, 26 tours were offered providing a great interactive experience. On average, the different areas of the Interactive Zone were rated to 80% excellent or very good, as the survey conducted by AustriaTech revealed.

»Congratulation to a very successful TRA, I was able to learn a lot during the conference. As the one responsible for the TRB annual meeting, I know about the complexity of this task and the commitment that has been shared by all involved. My admiration goes to the whole team that organised this event!«

 Neil J. Pedersen
 Executive Director, Transportation Research Board (TRB)

The classic exhibition hosted more companies and projects than ever before. On 7,000 m<sup>2</sup> of exhibition area more than 90 exhibitors presented their organisations, new projects and tasks, areas of operations, findings and prototypes. »The beginning of a new era of transport has already started and whatever the future will bring, we at ASFINAG will take part in the next generation of transport systems. The TRA was a great chance to discuss with all colleagues the current developments and the big aspects of digitalisation. We had some fruitful exchanges and open discussions during TRA 2018.«

Karin Zipperer
 CEO ASFINAG

One of the core objectives of the TRA is to connect industry, research and public authorities. A main goal is to exchange information, build networks and combine different ideas to new solutions and results. It is great to see that participants from all sectors, especially the research sector with more than 40%, were present.

# »Due to our joint effort, all transport modes and relevant research institutions were represented at the TRA for the first time.«

Ingolf Schädler

Chair of the Management Committee, Austrian Federal Ministry for Transport, Innovation and Technology

# TRA as Green Events

For the first time in TRA history and because of the thematic orientation of the TRA, the general content and environmental protection goals outlined by BMVIT and AustriaTech, this event was set up as a green event. The TRA 2018 was one of the first green events of this size, which is characterised by higher energy efficiency, waste avoidance and environmentally-friendly travel of guests to and from the event. Other aspects pertaining to local added value and social responsibility were also considered such as local, seasonal food and eco-friendly giveaways. Therefore, the TRA made an important contribution to corporate social responsibility for such a large international event.



## Criterias for the Green Event certificate

- > Possibility to arrive without car
- Priority communication of
- climate-friendly arrival and departure > Information about CO<sub>2</sub> compensation
- Reduced ressource consumption for paper / printing
- Waiver of disposable beverage packaging as giveaways
- Printing units for the event certified with eco label
- Conference bags made of environmentally friendly materials

 The concept of TRA as green event was integrated in all areas, also the Lunch Zone.

# The Sessions

The Scientific Conference started with an Opening Session, where EU Commissioner for Transport Violeta Bulc and Austrian Federal Minister for Transport, Innovation and Technology Norbert Hofer welcomed all participants and emphasised on the importance of the TRA and the topic of 2018 'A digital era for transport'. To underline the visionary nature of this edition of TRA, Gerd Leonhard, futurist, humanist, author and CEO of 'The Futures Agency', gave a keynote at the opening session about the importance of new technologies and the role of humans in the digital world of mobility.



 Gerd Leonhard giving an inspiring talk at the plenary session »In order to meet the future transportation needs of urban centres, we need to organise the transport of people and goods more smartly, efficiently and sustainably. Networking, robotisation and artificial intelligence can all contribute significantly.«

 Gerd Leonhard
 Futurist, Humanist, Author and CEO of 'The Futures Agency' The keynote was followed by a special high-level industrial round table, where Europe's transport industry discussed ideas for meeting tomorrow's transport challenges. It was the first industrial round table held at a TRA and focused on how European industry can help create a sustainable transport system.

»Since the first event in Goteborg in 2006, AVL has been supporting the Transport Research Arena. The TRA represents the diverse research activities of the AVL and is a great opportunity to discuss about the future developments with different stakeholders.«

 Helmut List CEO AVL LIST GmbH

The sessions took place in various forms and settings. Each day of the TRA 2018 was dedicated to a specific topic with a multitude of plenary, strategic, technical and scientific and invited sessions, whereas the plenary session gave the motto of the day. To summarise the scientific conference with its various sessions, we give a comprehensive and short overview of the discussions and main findings of each day.

# Day 1: Shaping the New Mobility Landscape – a Vision for Transport & Mobility for Europe

Trends like sharing mobility, digitalisation, automation, e-mobility and multimodality will disrupt the existing transport systems and change individual mobility behaviour. Smart and connected services will be developed and integrated into encompassing Mobility as a Service (MaaS) platforms. Numerous sessions provided the opportunity to present new concepts and ideas and debate the opportunities and the potential of cooperation between the public and private sectors.

The sessions' panellists stressed the need for collaboration in the form of cross-sectoral partnerships and the responsibility of public authorities to initiate and coordinate this process. A clear guiding strategy is essential, while legislation has to be flexible and responsive to new challenges in order to foster innovation.

Emphasis was put on the fact that future mobility services needed to be user-centric and tailored to the requirements and demands of the people using them. The mobility providers need to be transparent and considerate of data security as people are becoming more sensitive to the privacy of personal information.

»We will have a seamless transport system which adapts to customer needs without the necessity of car ownership and easy to use for all citizens.«

 Antti Vuorela Helsinki Transport Authority HSL 2020 transport



The European Technology Platforms, industry and researchers discussed the way forward in working together to facilitate multimodality within a truly integrated transport system and addressed interoperability as the key challenge of the future. So far, individual industries have predominantly dealt with challenges of their own sector but seeing the bigger picture and working on win-win solutions to approach common problems throughout all sectors are key aspects. Therefore, cooperation in research and daily operations are essential as well as a structured form of continuous dialogue. Sector-focused thinking and planning need to make way for process-thinking.

The societal trends, the challenges of sustainable urban mobility and the potential of innovative governance were the focus. It was agreed that the mobility and transport problems and challenges arising in cities go hand in hand with threats to health and well-being as well as the risk of potential lock-in effects in the socio-economic and technical systems. These challenges can only be met by implementing a multi-stakeholder approach to foster innovation and actively shape the future of cities and urban mobility. More research and testing opportunities in the form of urban labs where legislation is suspended or limited to explore, validate and evaluate innovative concepts and demonstrations, were wished.  To get hold of a place in the main conference room, attendees had to be fast.

# Day 2: How Digitalisation is Transforming the Transport & Mobility System

Digitalisation is currently transforming the transportation sector; new digital infrastructures are being developed, new players are pushing digital business models and services onto the market which are affecting the whole sector. Expanding digitalisation will affect all modes of transport, carriers and operators, whether in motorised personal transport, public transport, logistics, shipping or aviation. Connected Automated Driving (CCAD) and Cooperative Intelligent Transport Systems (C-ITS) are key elements of digitalised systems and the necessary changes and adaptations of infrastructure and vehicle technology to enable their successful deployment were discussed in numerous sessions.

# »We need to provide information channels which allow the inclusion of groups who do not take part in the digitalisation process.«

Floridea Di Ciommo
 Universitat Politècnica de Catalunya,
 Co-founder cambiaMO - changing MObility

The attendees of all the discussions maintained that artificial intelligence, big data and blockchain technology will disrupt the existing systems, but the specific effects and ramifications are still unclear. These data-driven developments and technologies require that the issues related to data and cyber security need to be closely observed in the future. Here, the potential of blockchain technologies was emphasised.

At present, the extensive changes facing the economy, labour market and society cannot be assessed or estimated. For this reason, increased in-depth research is needed to identify the potential challenges and to test concepts to counter the negative effects of digitalisation. The panellists, speakers and audience repeatedly stated that people need to be at the central focus throughout these future developments.

# Day 3: Decarbonisation & Future Growth: How to Change Our Mobility System & Remain Competitive

Decarbonisation strategies for 2050 and potential pathways of adopting alternative fuels and increased energy efficiency in both personal mobility and freight transport were discussed in order to find solutions to reduce the transport sector's greenhouse gas emissions, which are still rising compared with other sectors.

Across all sessions, the urgency of decarbonisation was acknowledged and the potential of different developments and trends like e-mobility, sharing mobility and active mobility were discussed. Panellists, speakers and the audience emphasised the necessity of multimodal, seamless door-to-door travel within the concept of 'Mobility as a Service' through the establishment of all-encompassing mobility platforms. As a major tool for decarbonisation they also debated whether these platforms should be operated by public or private institutions.

The public sector needs to take the initiative and define a coherent legal framework and determine clear emission targets. The private sector requires a coherent framework for strategic decisions, so it can provide the technology and develop the processes to meet these targets and contribute to the decarbonisation of transport.

However, relying on technological solutions and efficient vehicles alone will not suffice: socio demographic factors need to be considered, and mobility behaviour needs to change. This particular aspect was emphasised in numerous sessions.

It was generally agreed that adhering to a strict decarbonisation path is necessary if the goals of the Paris Agreement are to be met. Starting this process is very urgent, as the decarbonisation goals can only be met with very disruptive measures if we wait until 2025. Therefore, the focus in the upcoming research programmes and administrative agendas has to be set on decarbonising transport and the economy.

# »If decarbonisation does not fully start before 2025, it will be literally impossible to meet the goals of the Paris Agreement.«

 Hans Joachim Schellnhuber
 Director of Potsdam Institute for Climate Impact Research

# Day 4: Shaping Future Transport Research in Europe

Debates focused on how to improve the coherence between the different European research programmes and how to maximise the positive impact of the research projects for society. The lessons learned from Horizon 2020 and the potential of the upcoming Framework Programme (FP9) were discussed.

Experts emphasised that research has to identify the positive effects of future mobility services and their implementation for society and promote win-win solutions by focusing on the project outcomes and long-term added value. The panellists agreed that Europe is going to need cooperation in various forms (e.g. PPP- Public Private Partnership) and across different modes of transport to withstand global competition. Numerous speakers advocated product research and development by the private sector and public research funding to generate and disseminate knowledge and provide expertise.

Further research into the effects and impacts of societal trends and innovative mobility services is vital. Data analytics, machine learning and artificial intelligence, in particular, are key fields of future research. The vast amount of data being generated automatically should be used to implement the optimal mobility services while ensuring personal data security. Meanwhile, examples of best practice and lessons learned from previous research or test areas need to be examined and translated into applicable and helpful results.



It was emphasised that particularly urban areas are going to be the centre of future research where new and unconventional research instruments and approaches could increasingly be utilized. Urban mobility labs, living labs or areas for testing automated and connected driving are being established to advance innovation and accelerate the implementation of new technologies and services. Open Innovation will be essential to explore and test innovative solutions and new concepts. To generate the best outcomes of these innovative research settings, flexible and supportive infrastructure and legislation are crucial.

# »Keep the instruments as simple as possible.«

 Stephan Neugebauer
 Director Global Research Corporation at the BMW Group

A common understanding was that the future of European research needs to be guided by one common vision and be open to new concepts, ideas and developments. Funding should be technology and concept neutral to foster innovative research which can compete with research worldwide.  Proud guest of the TRA: Hans Joachim Schellnhuber stating his points of view on how to shape the future of transport research.

# Interactive Zone

Complementary to the scientific conference and the classic exhibition, European and Austrian research results, projects and initiatives could be experienced first-hand in the Interactive Zone. The Interactive Zone was an innovative new setup, supported by the Austrian Ministry for Transport, Innovation and Technology (BMVIT) and gave the possibility to experience research and innovation in an interactive format. The Interactive Zone has been a unique experience for exhibitors and visitors with its more than 40 exhibits. For the first time another form of knowledge transfer and the marketing of science and research results have been carried by all the different projects and demonstrations.

## What's the Interactive Zone?

- Demonstrations and Showcase Zone 500 m<sup>2</sup> curated exhibition for research and innovation showcases
- Start-up Zone

   a special area dedicated to selected
   Austrian start-ups
- Networking Zone

   a generous networking area with a
   stage and an exciting programme
   and different formats



- A Playground for grownups: The Interactive Zone showed how research and development lead to hands-on products and materials.
- > Networking Zone

»For us as hosts it was important that research results and initiatives could be experienced first-hand. With the six different thematic fields- from aviation to traffic management, we could provide a great experience.«

 Evelinde Grassegger
 Vice-Chair of the TRA 2018 Management
 Committee, Austrian Ministry for Transport, Innovation and Technology



The Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) has created a new programme initiative in 2015 to fund a set of real-world laboratories designed to complement its research and innovation funding activities and to leverage their impacts. Visitors to the TRA 2018 had the chance to gain better insight into the work of the Urban Mobility Labs. Interactive games, ranging from card games up to technically equipped city maps, and virtual driving exhibits with an electric truck gave an impression of the laboratories' toolboxes. Furthermore, two technical tours where offered to aspern mobil lab and thinkport Vienna, two of the five labs.



Moreover, for the first time the field of aviation was included. In Austria, nationally promoted research, technology and innovation in the area of aviation have seen a remarkable upsurge over the last decade, to which the funding technology and innovation programme Take Off, initiated by BMVIT and managed by the Austrian Research Promotion Agency (FFG), has contributed greatly. With an interactive simulation tool, visitors could take a flight over Vienna, which was definitely a highlight for many attendees.

»With the Interactive Zone we wanted to provide space to show projects, results, ideas and visions. The participants were really interested in using all the exhibits and taking part in the development of the mobility of the future.«

 Michaela Topolnik
 TRA 2018 Project Director, AustriaTech, Head of Business Unit Mobility Innovtion





- r Information Desk
- Especially for Start-Ups and young researchers to be seen and to get in touch with representatives from economy might be the key element for a successfull career.

# Demonstration & Showcases Zone

The Demo and Showcase Zone provided a great opportunity for research and innovation projects to be made visible. The thematic areas showed the diversity of solutions and approaches in research and innovation in the individual areas. The setup of this exhibition concept drew visitors in, increased visibility and facilitated the exchange between researchers and other professions to form new collaborations and discuss results and ideas.





- Augmented Reality was one of the many highlights that connected scientific approaches with tangible and playful elements
   © Arch. Baumgartner, Trecolore
- Infrastructure & Asset Management and Multimodal Mobility & Services

»The Interactive Zone was very well received. We asked the participants if the Interactive Zone should be a permanent element of future TRAs and the overwhelming majority favoured including it at future TRAs.«

Katharina Schüller
 AustriaTech, Head of Communications &
 Public Affairs and Vice-Chair of the TRA2018
 Organising Committee









As a part of the Interactive Zone, two generous outdoor areas provided additional space to exhibit larger objects and vehicles and test drive two automated shuttles on public roads.

- A small step for the traveller, but a great step for the future of mobility. Automated Driving with the Digibus Austria.
- Interactive Zone Info Desk
- Riding an e-scooter

# **Demonstrations & Exhibitors**



- Flight simulators, Automated Vehicles, Electronics and Tunnels. We got all modes and technologies covered.
- Minister Norbert Hofer and Jost Bernasch in front of the virtual vehicle



- ASFINAG presented their sensors and technologies used for traffic data collection.
- CODECS promotes the idea of cooperative road traffic and C-ITS roll-out across Europe
- The VR presentation of the C-Roads platform provided a glimpse into the C-ITS Services that will be on the road in 2019.

# Aviation – winglet, flight simulator, bionic surface, VR in manufacturing

- The TopSky Air Traffic Management System from Austro Control was shown
- Bionic Surface presented their rotor blade with industrial optimised shark skin in order to show the effect of drag reduction.
- Furthermore FACC AG, Diamond Aircraft and Pear Technology showed their expertise in the field of aircrafts, structures and parts
- For manufacturing and engineering AMTEQ and INTALES presented their new findings
- Evolution#4 presented innovative production processes via a VR walk through the production plant.
- PRIME Aerostructures demonstrated the use of augmented reality in the development of aerospace components.



- SCE SystemEngineering and The Institute for Psychology at the University of Graz gave an insight in training and flight simulation Frequentis AG and The Aerospace Research group of the University of Salzburg exhibited new solutions in air traffic management and control
- For Unmanned Aerial Systems experts from The Institute of Aerospace Engineering of the University of Applied Sciences Wiener Neustadt, Carinthia University of Applied Sciences, AIT - Austrian Institute of Technology and Drone Rescue Systems, presented their showcases and findings

## **Automated & Connected Transport**

- The Automated Drive Demonstrator of Virtual Vehicle gave insight into the car's perception of reality.
- Digibus the Austrian flagship project for research and testing of automated driving in public transport
- Silkroad 4.0 exhibited their motorcycles, smart helmets and other useful gadgets for long distance travel were presented



## On Track

- TRA participants could drive a train in the VTI rail simulator.
- The Austrian Federal Railways (ÖBB) brought a broad range of projects, among others the research project 'Greenlight' dealing with high-accuracy positioning of trains, iMobility an intermodal routing & ticketing app, different projects towards a zero emission mobility, Train checkpoints and opeon innovation customer-centered innovation

### Infrastructure & Asset Management

- The model of a tunnel from 'Research@ZAB

   Zentrum am Berg' demonstrated latest research projects in tunnel construction and tunnel safety.
- VVAC+ The virtual vehicle Austria Consortium+ in Shift2Rail



#### **Multimodal Mobility & Services**

- The Urban Mobility Labs Austria presented an electric truck with virtual driving exhibits and gave demonstrations of the toolboxes the laboratories work with.
- The showcase Accessibility & Usability from Ways4all, WayKey and Transport Buddy demonstrated their Transport Buddy, an autonomous vehicle in development that can transport small goods or freight.
- Healthy Mobility from Gismo and Routine who were facilitating holistic holistic approaches through cross-domain research on active and healthy mobility
- Bikealayze, Mobility Optimizer and Smart Survey presented their research and findings on participatory mobility planning
- Social Car is a user-oriented platform for planning and booking for public transport and carpooling

- Tunnel demonstration from Zentrum am Berg
- ÖBB pantograph

# **Networking Area**

The Networking Area provided a generous open space with flexible seating and a stage to host various events. In addition, different activities took place in advance of and during the TRA 2018 to spark the interest of the next generation in mobility and transport research. »It was really amazing what kind of ideas the students had, both on the technology side as well as social aspects of mobility of the future.«

 Gertraud Oberzaucher Senior Expert



TRA 2018 gave highschool students the chance to outline a means of transport for the mobility of the future. During the conference, 120 students presented their solutions and discussed their visions and ideas with national and international experts in mobility research. »In order to interest young people in the topic of mobility and transport research, there were various activities in advance and on site. Workshops were held at five Viennese grammar schools in the run-up to the conference, during which pupils designed the means of transport of the future.«

Michaela Topolnik

TRA 2018 Project Director, AustriaTech, Head of Business Unit Mobility Innovation



»The students were quite enthusiastic about talking with experts and the current and future-near topics in mobility- and transport research. Especially the hands- on demonstrations in the Interactive Zone and the direct contact with specialist from economy and research made the event really special for the students.«

Start-Up Lunch PitchNetworking Zone: dis-

from left to right)

cussions with Christian

Klemm from eQuenture,

Lehka Thailayil from aws

Gründerfonds and Georg List from AVL (front row,

Barbara Streicher & Mathieu Mahve-Beydokhti
 Verein ScienceCenter-Netzwerk

# Start-Up Zone

The Start-up Zone was a small exhibition area, dedicated to Austrian start-ups. The exhibiting and presenting start-ups were selected by aws – Austria Wirtschaftsservice and AustriaTech. In addition to the exhibition area, two specific start-up events were hosted in the Networking Area in order to connect the start-ups with industry stakeholders, policy makers and participants.

## Highlights of the Networking Area

- ERTRAC Presentation of the new ERTRAC Strategic Research Agenda for FP9
- Women's Reception hosted by the Austrian Ministry for Transport, Innovation and Technology and the Climate and Energy Fund
- Smart City Hopping The smart cities game from the Climate and Energy Fund
   Start-up events hosted by aws – Austria Wirtschaftsservice:
   Startups Lunch Pitch: Austrian mobility start-ups pitch their ideas
- Startup meets Industry: Austrian mobility start-ups pitch their business in front of industry stakeholders in order to foster new cooperation and partnerships



## The exhibiting Start-Ups

Cryoshelter GmbH

- (www.cryoshelter.com) > Ad[e]Drive GmbH
- (www.adedrive.com) > DiniTech
- (www.nrgkick.com)

  Kontrol GmbH
- (www.kontrol.tech)

  Innovatio Engineering
- (www.innovatio-engineering.com) Insider Navigation
- (www.insidernavigation.com)
   FerRobotics Compliant Robot
- Technology GmbH (www.ferrobotics.com) IOVAVUM Business Software
- (www.iovavum.com)
   Parkbob GmbH
- (www.parkbob.com)
   CARGOMETER GmbH
- (www.cargometer.com)

Startup Zone

# Exhibition

On 7,000 m<sup>2</sup> more than 90 exhibitors form different fields presented their innovations, solutions and projects and seized the opportunity to host technical tours and side events. The variety of organisations was substantial – public authorities, non-governmental organisations, research institutions, EU projects and companies from the transport industry and economy were part of the exhibition. The full list of exhibitors shows the wide range and variety of the key actors in the future of transport. Innovation occurs where different professions with varied backgrounds get together. Thus, the Exhibition at the TRA 2018 was the perfect place to look for ideas and become inspired. The exhibition was located next to the registration and hosted the lunch area as well as the mentioned Interactive Zone and other areas with several attractions during the event. The idea was to create a room where participants will come regularly and have different opportunities to network and experience versatility presentations and open discussions.

A total of 28% of exhibitors were associated with EU projects, 20% came from industry and economy, 26% from research, 4% from transport infrastructure management/operation and 22% from other sectors. This shows the wide variety of the solutions, ideas and demonstration.



- Visitors at the Kapsch booth
- Overview of the Exhibition Space
- Commissioner Bulc at a model ship at the Waterborne booth





➤ A new driving experience: The electronic scooters of BMW could be tested in an parcour in the outdoor area.





#### List of Exhibitors

- A3PS Austrian Agency for Alternative Propulsion Systems
- ADVANTAGE AUSTRIA
- AIT Austrian Institute of Technology GmbH
- ALICE A.I.S.B.L.
- ALP.lab
  - Ansaldo STS SpA
- ANTAREX
- ARTEMIS IA
- ASFINAG Autobahnen- und
- Schnellstraßen-Finanzierungs AG Austrian Federal Ministry for Transport, Innovation and Technology
  - AustriaTech
- AVL List GmbH
- Beak Consultants GmbH
- **Bionic Aircraft** •
- BMW Austria GmbH
- CAPITAL Stand
- CEDR
- City of Vienna, Administrative Group for • Urban Planning, Traffic & Transport, Climate Protection, Energy and Public Participation
- . Clean Sky 2 CS2JU
- DLR German Aerospace Center
- DORA Stand
- DownToTen
- DYNATEST A/S .
- E-ferry Stand: E02
- EARPA (European Automotive Research Partners Association aisbl)
- eCAIMAN
- ECTRI European Conference of Transport **Research Institutes**
- EfficienSea2
- ELSEVIER Ltd
- EMBERS
- ERTICO ITS Europe •
  - ERTRAC Road Transport Research Council
- . ESPRIT
- . EU-LIVE
- . EUCAR – European Council for Automotive R&D
- European Commission
  - European Inland Barging Innovation
- Platform Federal Ministry of Transport and Digital Infrastructure, Germany
- FEV Europe GmbH
- FFG Austrian Research Promotion Agency .
- FiveVB
- Forschungsgesellschaft

- Greenrail
- Holding Graz
- Hungarian Public Road Nonprofit PLC
- Indra Sistemas
- InnaLabs
- interACT
- International Transport Forum
- IT4Innovations
- ITS Vienna Region
- ITS World Congress Copenhagen 2018
- Joint Research Centre
- Kapsch AG
- Klima- und Energiefonds
- LOWBRASYS
- Lynceus2Market
- MAGNA STEYR FAHRZEUGTECHNIK AG & CO KG
- MMTech
- ÖBB-Holding AG
- PARSIFAL
- Pavemetrics •
- PEMs-4-Nano
- Plasser & Theurer
- Prominent
- RESOLVE
- SENIORS
- SESAR S
- Shift2Rail Joint Undertaking
- Siemens AG Österreich
- Smart Eye AB
- SMS
- SocialCar
- SPICY
- Springer
  - STC Group SUREAL-23
  - SWARCO
  - Sygic
  - Telereal
  - TRA2020
- TransformingTransport Tritem Microsystems GmbH
- Ubimet
- UITP
- UNIFE
- Urban Innovation Vienna
- viadonau Österreichische Wasserstraßen-GmbH
- voestalpine1
- Volkswagen Aktiengesellschaft
- WATERBORNE TP
- Wiener Linien

Straße – Schiene – Verkehr

# The Austrian Village

The Austrian Village was a special area in the Exhibition Hall dedicated to Austrian companies and institutions. Within the Austrian Village, Austrian companies, universities, technical colleges and research institutes had the ideal platform to present themselves and outstanding Austrian developments in the transport sector. A special area in the Austrian village hosted ten Austrian organisations which demonstrated their solutions to transport challenges and scientific and experimental findings. The Austrian Village provided the possibility to showcase the importance of the transport and infrastructure sector in Austrian industry and the excellent work that is being done in this field to a broad audience.

»The Austrian Village was a great opportunity for Austrian companies to present the highlights of Austrian research and innovation in the mobility and transport sector. This part of the exhibition provided an ideal chance to showcase and present what makes mobility in Austria so special.«

 Andrea Dapra
 Austrian Ministry for Transport, Innovation and Technology





- Full Scale Austrian competence showcased in the Austrian Village.
   © Arch. Baumgartner, Trecolore
- The Austrian Village Information Cubes
- from left to right: Andrea Dapra (BMVIT), Evelinde Grassegger (BMVIT), Christian Pecharda (FFG)



Vehicle Techn esearch funding f n reducing emission di pollutants ai taribi a automoti entri o whicles, a nro, light weight orra, barth weight i comated whicle ents and their w

# n meneri yarak, balik valamen have hormande depender for henvy goods traffic

#### Transport Infrastructure Research

Iransport Infrastructure Research is one of five pillars within the Austrian programme Mobility of the Future. The main topics are design & operation, envitoronment & energy, safety and mobility & digitaliaation. A troad cooperation on the supplier side, public authorities and operators, as well as with our neighbour countries Germany and Switzerland is a good start for ambitus research.

# **Competence Corner**

Additionally, within the Austrian Village an Austrian Competence Corner has been set up, a place to meet, present and discuss Austrian mobility and transport highlights. This area was also used to present newly established initiatives or to collectively sign the European Declaration for Equal Opportunities for Women & Men in Transport. Research and projects addressing gender issues like 'play UC! Playing with urban complexity, Mobility Safari Vienna' and 'Gendered Mobility Patterns of Careers in Austria' were presented and discussed. Also, a project from tbw research and the women's-logistics-network were presented there.

# The Marketplace

The Marketplace, supported by the European Commission, presented from Monday to Thursday numerous Marketplace Posters (MPP). Researchers and scientists seized the opportunity to submit their work to a specific call. The accepted posters showed innovations and solutions with high market relevance and implementation potential. Furthermore, the 'SME - Instrument - Business Acceleration Service Event' took place, which organised a pitching and networking session for world-class innovation companies and new financial and business partners. Additionally, the 'ETNA2020/EEN Networking and Brokerage Event' focused on networking and bringing relevant stakeholders together with a special focus on topics covered by the Horizon 2020 Transport Work Programme 2018–2020.









- Market Place
- r Competence Corner
- AustriaTech was an active exhibitor at TRA 2018
- from left to right: Silvo Korez and Michaela Topolnik at the AustriaTech booth

# > Technical Tours

The Technical Tours offered a great opportunity for all participants of the TRA 2018 to get to know Austria and Vienna and provided an interactive experience. Innovative research, scientific experiences, findings and best practice examples from Austria were shown in a different setting. The tours covered a wide range of subjects, from research in the mobility sector to smart urban mobility and further on to topics linked to aviation and tunnel construction. In addition, some projects currently in the planning stage and innovative future strategies were presented.

In cooperation with all our partners we were able to offer six different tours which took place at different times during the four conference days. More than 320 people registered for the 26 offsite technical tours reflecting the great interest in the topics as well as the locations. These six tours significantly contributed to the success of the conference and enabled new ways to experience research and new technological findings in the mobility sector. Therefore, we owe a great debt of gratitude to our partners who organised the tours.







 In Seestadt Aspern, Viennas flagship planning quarter, attendees could experiences first hand quarter management in a playful way.



## Highlights Technical Tours

- Zero Emission Locomotives- TEMO GmbH with friendly support of ÖBB Infrastruktur AG and Rail Cargo Austria AG
- Aspern. Mobile LAB
- Climatic Wind Tunnel RTA Rail Tec Arsenal Fahrzeugversuchsanlage GmbH
- VIRTUAL VEHICLE Automated Driving Experience Research Center- Das Virtuelle Fahrzeug Forschungsgesellschaft mbH
- > thinkport VIENNA smart urban logistic lab Port of Vienna
- Smart Mobility Vienna, Smart City Vienna



- The so called 'Lilliput-Bahn'. A fully hydrogen driven mini railway at the Wiener Prater. Cute and sustainable.
- open car boot at the virtual vehicle technical tour

# > TRA Visions Awards & Gala Dinner

The European project TRA VISIONS 2018, supported by the European Commission, invited both junior and senior researchers from all over Europe to submit their scientific papers for smart, sustainable and integrated transport and mobility of people and goods to the competition.



- The future of European Transport Research: With the TRA Visions Young Researchers Awards honourable achievements of young and uprising researchers have been awarded.
- TRA Visions Award Trophies
- Clara de la Torre and Charlotte Ehrler from DLR, winner of the senior Researcher Competition for Cross-Modality





- Helmut List (AVL) Welcome Speech at the Gala Dinner
- The historic viennesse town hall set the right tone, to sit back and enjoy a good dinner and a great show. After the first couple of days this was the right opportunity to recharge energy.





A total of 169 young researchers from 56 different European universities participated in the TRA VISIONS 2018 Student Competition and submitted 122 ideas. During the opening ceremony on Monday, the best ideas for the transport modes road, rail, waterborne and cross-modal were awarded. The TRAVISIONS 2018 Senior Researcher Competition received a total of 121 entries from researchers coming from 91 institutions, universities or companies. At the Gala Dinner prizes were awarded to the winning projects of the four transport modes. The Gala Dinner took place on Tuesday Evening in the City Hall of Vienna was hosted by AVL and provided a unique opportunity for networking in an impressive environment. More than 700 attendees enjoyed a great cultural programm and a great dinner.

# >Women in Transport

<sup>2</sup> https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/people/ women-public-transport\_en With only 22%<sup>2</sup>, women are still underrepresented in the European mobility sector. To overcome this inequality, national as well as European initiatives have been launched; for example 'Women in Transport- EU Platform for change' will substantially contribute to this mission. In the US, the political network 'Women's Issues in Transportation' has already reached a high level of consideration. To also reach a higher visibility for women in transport in Europe, it is vital for women to actively take part and demonstrate activities at highlevel conferences like the TRA 2018.



 Declaration on equal opportunities for women and men in the transport sector »I am very proud that seventeen major companies and networks in the mobility sector signed the "Declaration on equal opportunities for women and men in transport" at the TRA in Vienna. I am pleased that we also managed to include the topics gender imbalance and challenges for women in the transport sector in different scientific sessions.«

Evelinde Grassegger

Vice-Chair of the TRA 2018 Management Committee, Austrian Ministry for Transport, Innovation and Technology The EU Commissioner for Transport, Violeta Bulc, initiated this process in November 2017 and promoted the platform 'Women in Transport' further at the TRA in Vienna. Right after the opening ceremony, the Austrian Federal Minister Hofer and seventeen major Austrian companies in the mobility sector signed the 'Declaration on Equal Opportunities for Women & Men in Transport'. In doing so, the companies commit themselves to increasing the number of women and improving the vocational perspective for women in the sector. The companies who signed the declaration, like ÖBB, ASFINAG, via donau, SCHIG, AustroControl, AVL, Kapsch, Wiener Hafen and many more, represent more than 80,000 employees and therefore rank among the important players of the whole industry.

Gender imbalance and the challenges of an underrepresentation of the female perspective in the transport sector were also subject of discussion in the Invited Sessions. The session 'Inclusion, you said?' addressed the challenges of providing mobility services to the general public while considering diverse needs and requirements, for example of migrant women and vulnerable road users. Furthermore, the imbalance of women in the transport and mobility sector was discussed in the session 'Digitalisation- Opportunities for start-ups?!' in particular in the rapidly growing start-up community.

In the context of gender imbalance and the challenges of an underrepresentation of female perspective in the transport sector, the research study 'Occupational profile and chances for employment in an automated and digitalised mobility sector 2040' organised by the BMVIT and conducted by the AIT was presented. The discussion focused on the optimal mechanisms and impacting factors to encourage and support foundresses.

The panel included international and Austrian founder and Maja Bakran, Deputy Director-General of EC's DG MOVE. The session was moderated by the Women in Mobility & Energy, Environment Network (WIMEN) association chairwoman Susanne Wolf-Eberl.

# Female Pioneers in mobility

The reception 'Let's network! Success criteria for the establishment of sustainable networks' especially dedicated to women showed female pioneers in the mobility sector. The event was launched by a performance by Anita Zieher portraying Hedy Lamarr. Lamarr, the inventor of the frequency hopping technique, was born in Vienna and is primarily known as a Hollywood actress but not for her work as an inventor.

After this performance, the women's reception with a focus on creating sustainable, successful networks for women took place. More than 100 women conversed with different representatives of already existing networks like the American network 'Women's Issues in Transportation', a representative of Commissioner Bulc from the European Commission and representatives from the networks sorority and WIMEN. The hosts of the reception Evelinde Grassegger from BMVIT and Theresia Vogel from Klima- und Energiefonds (KLIEN) welcomed the participants and were impressed to see the great interest.

## Gender Distribution among Participants

Even though the transport and mobility sector is far from an equal gender balance, the rate of female participants could be increased by 5%, up to 27%, reaching the highest rate ever measured at any TRA before.







# Communication & Marketing

A big part of the communication measures have been put in marketing material, as printed and online information, promotion material as well as supporting material for speakers, exhibitors, sponsors and journalists. Numerous promotion and information flyers were only provided online to fulfil the criteria of a green event.

The website provided all the necessary information for potential speakers, and a link to the conference tool as well as information for exhibitors, sponsors, the media and press. A newsletter was set up and sent regularly to the subscribers. In total 12 newsletters have been sent out.

In advance of the conference, official promotion material was produced and during the event, daily videos as well as a summary videos were produced.



- Press-Tours and VIP-Tours through the exhibition as highlight
- Federal Minister Norbert Hofer together with representatives of Austrian Research and Industry at the Press Conference before as official opening.



# **Press Activities**

Press activities made up an inevitable part for the promotion of the Transport Research Arena 2018. International press activities were focused on reasons to participate and additional values for conference participants, speakers and exhibitors. All of the activities were fully supported by the members of the Organising Committee.

To reassure a good coverage in special interest magazines as well as daily press, the host together with the members of the organising committee managed to conclude 18 media partnerships – a mix of national and international media representatives. The media partners were:

Cities Today, European Transport Research Review, Fondazione CS Mare, Forum Nachhaltig Wirtschaften, Intelligent Transport, International Railway Journal, ITS International, International Transportation, Kommunal, Railway Gazette International, Railway Pro, Scitech Europa, Ship2Shore, Terra Mater, Traffic Technology International, Umweltjournal, Verkehr, World Highways

 Martin Russ (AustriaTech) beeing interviewed on site



#### **Press Releases and Press Events**

In total, more than 20 press releases were sent out by the organisers and supporting partners. Selected ones were distributed additionally via international PR networks in four different languages. Daily press releases highlighting each conference day were sent out in addition to the press conferences during the event.

During the event, various focal points were considered and included in the different press conferences on site. About 30 press representatives participated. Aside from representatives from all the main national TV and radio stations, many journalists from Austrian daily newspapers and editors of special interest media were present.

The electronic press room was established as an additional media service and functioned as a hub for all press-related activities during the conference. Representatives from the press had the opportunity to gain access to additional material from the host and sponsors for their articles.

## Press Conferences

Monday 16<sup>th</sup>

Austrian opening press conference given by Federal Minister Norbert Hofer and several national experts from industry and research.

> Monday 16<sup>th</sup>

Press conference of the European Commission, led by Commissioner Violeta Bulc. This press conference functioned as a fitting transition to the official opening of the exhibition with a tour led by Commissioner Bulc and Minister Hofer.

> Tuesday 17th

Press breakfast in the Interactive Zone. A press breakfast in the Interactive Zone on Day 2 allowed press representatives to get an in-depth look into all the exhibits and prototypes presented in this special area of the exhibition.

#### **Outreach & Press Coverage**

In total, around 400 press clippings were recorded of which 275 were analysed as being very positive and 102 as neutral. In 221 of the positive evaluated clippings, the TRA 2018 was the main topic of the article. Some of these 102 clippings were not directly related to the topic such as schedule notes or other deadlines, which explains their classification. Almost half of the clippings were generated in the month of the conference.

The following table shows an excerpt of press clippings from major Austrian newspapers and magazines, emphasising the mentioned focus on national press activities. The *Tiroler Tageszeitung* is the leading newspaper in the coverage of Transport Research Arena 2018 and made nationwide access to stakeholders possible with a circulation of approximately 90,000.

#### Press Clippings

Medium	Clippings
Tiroler Tageszeitung	28
Der Standard	12
Wiener Zeitung	7
Gewinn	7
Trend	4
Kurier	4
Salzburger Nachrichten	4

# Social Media

Based on the communication strategy a social media concept was developed. The focus was on few specific channels and to consider their individual characteristics and make it easier to find the best practices to address existing stakeholders and find new ones.





- One of the social media campaign was called 'Voices of TRA' and featured highlevel speakers and international experts.
- To involve potential participants at an early stage, social media activities were spread over several channels.

The following social media channels were used before, during and after the conference for all communication and networking activities online:

- Twitter
- Facebook
- Instagram
- LinkedIn
- Youtube

In total over 4,800 tweets and re-tweets were sent using the hashtag #tra2018, of which 1,200 were sent from the TRA channel.

The most intense phase of the social media campaign was three months before the TRA, because this is when people started to put the event in their agenda. At this time there was also enough news like new speakers, side events, exhibition updates etc. to promote.

## Developement of the channels

Channel	Followers start 2017	<b>Followers</b> April 2018
Facebook	490	825
Twitter	820	1550
Instagram	0	182
YouTube	5	46
LinkedIn	0	545



## Social media followers from December 2016 to Mai 2018



# Facts & Figures

The following Diagramms illustrate the most important facts of TRA 2018. Moreover they give an overview of the highlights of the suvey, conducted by AustriaTech and show the great level of satisfaction of the participants. Generally the attendees were highly satisfied with the various areas, panels and sessions of TRA 2018.

Number of Participants at TRA's
 4000
 3000
 2000
 2000
 2000
 Paris 2014
 Warsaw2016
 Vienna2018

As the survey showed, the audience was very satisfied and the expectations of the conference were generally met. Given that, more than 80% are definitely or probably planning on visiting the TRA 2020 in Helsinki.



The TRA 2018 in Vienna exceeded the past numbers of attendees. In total, 3,600 visitors from 65 countries from all continents were welcomed.

## TRA 2018 Survey Participants by Field of Work



# Survey: Level of Satisfaction by Exhibition Area



The results of the survey also indicate a highly positive response to the Interactive Zone. All areas received high ratings – especially the exhibits as well as the two outdoor areas were named as essential parts of the exhibition by the visitors.

One of the core objectives

of the TRA is to connect industry, research and public authorities. A main goal is to exchange information, build networks and combine different ideas to new solutions and results, so it is

great to see that participants from all sectors were

present.

## Survey: Level of Satisfaction with Session Type

The TRA in Vienna provided the ideal setting to discuss current issues of the transport sector, to specify the future of transport research and present a vision for transport and mobility of the future. During more than 8,500 minutes of scientific discussions representatives of industry, policy and science debated about the digital era for transport. The surveyed audience assessed the value and quality of the sessions and was highly satisfied with the scientific and technical sessions, followed by the plenary sessions and the strategic sessions.



## ✓ Level of Satisfaction by Plenary Session



The participants surveyed in the plenary sessions remarked on the sessions' high quality and awarded mostly excellent and very good/good ratings. Particularly, plenary session 2 'How Digitalisation is Transforming the Transport & Mobility System' was reported to have been very interesting by numerous participants.

## Exhibitors by Field of Work

EU Project 28%	Others 22%	
Research 26%	Industry & Economy 22%	Transport Infrastrucutre Management/Operator 4%

## Twelve topics covering all modes of transport



- Transport Infrastructure
- 7 Enviroment & Energy Efficiency
- 9 Safe, Secure & Resillient Transport Systems
- 75 People Mobility Systems & Services
  - 2 Connected & Automated Transport
  - Freight Transport & Logistics
- 48 Socio-Economics, Innovation & Policy
  - 6 Human Dimension in Transport
  - 2 Digital Infrastructure fpr Transport
  - 7 Smart Urban Mobility & Logistics
  - 5 Vehicles & Vessels Design, Development & Production
  - Advanced Propulsion Systems

A total of 12 topics, covering all modes of transport, with more than 650 scientific and technical papers were presented as podium presentations and posters by authors from more than 40 different countries. Exceeding 1,000 submissions and with an acceptance ration of 54%, we can guarantee that only the best work with great scientific relevance and impact was chosen.

# >Acknowledgements

During the organisation phase, 12 national and international sponsors were acquired. They were very committed because they were not only present during the event, but they functioned as multipliers during the whole organisational phase. With their support, the TRA was able to reach new target groups and raise the visibility in national and international media. They provided the organising team with materials for promotion and were also partly active as speakers during the conference.

The host and the organiser of the 7th edition of the Transport Research Arena conference wish to express their gratitude to the sponsors. Only with their support and subsidies could the TRA 2018 reach this level of quality and become a conference of superlatives. Therefore, we want to thank:

~	Platinum Sponsors				
	AVL 🔅				
<u>~</u>	Gold Sponsors				
Ě	Silver Sponsors				
~	VOLKSWAGEN				
	SIEMENS Ingenuity for life Vienna Region Plasser Theurer				



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