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Marghera Venezia, 27th April 2017

DIGITAL ROADMAP AUSTRIA – Industry 4.0

ASSOCIATION INDUSTRY 4.0 AUSTRIA – THE PLATFORM FOR SMART PRODUCTION – Jasmina Schnobrich-Cakelja

INDEX

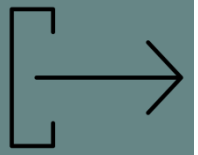
Status Quo: Austria‘s Digitization Level

Overview: Digital Roadmap Austria

Selected Initiatives

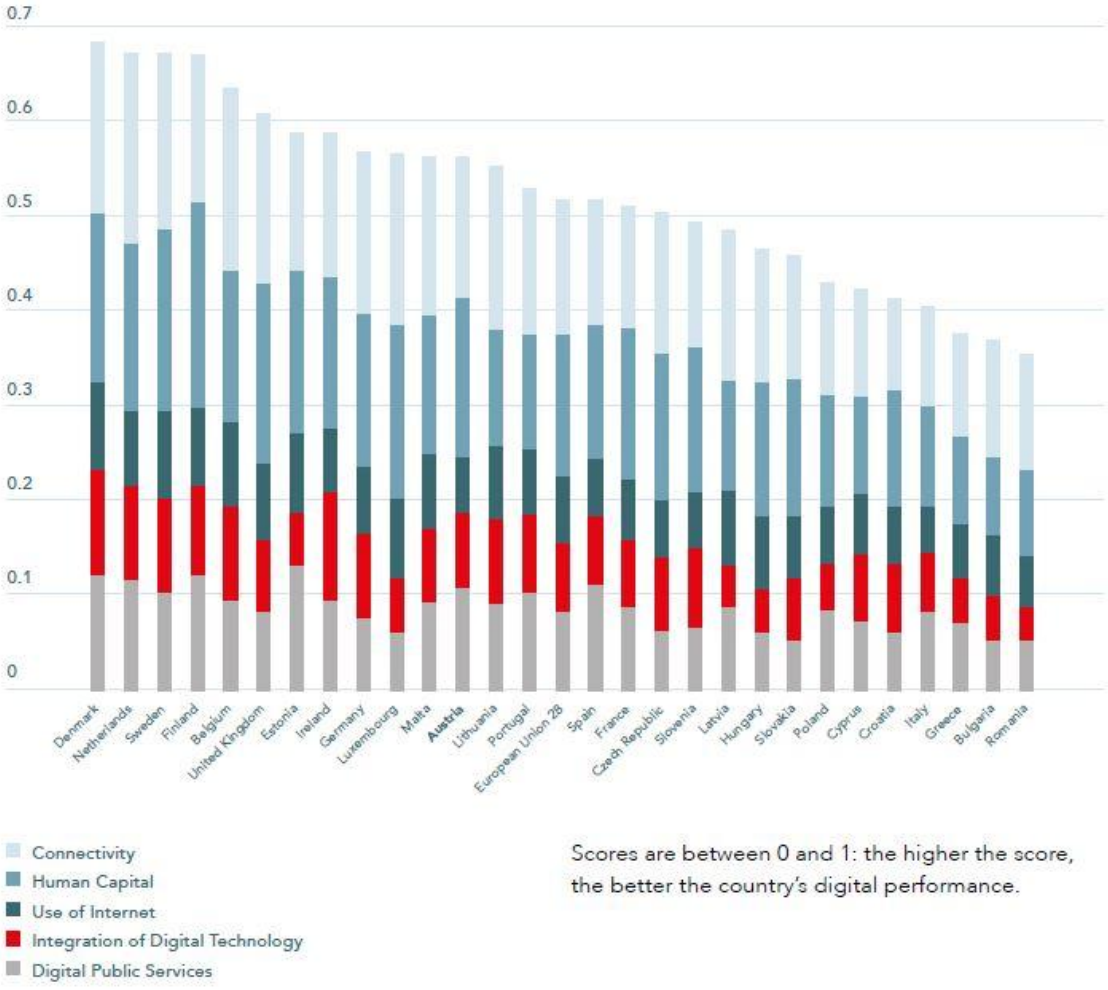
- Platform Industry 4.0 Austria
- Research & Innovation: Silicon Austria; Pilot Factories
- Education: Digital Skills
- Mobility & Transport: Autonomous Driving

AUSTRIA‘S INDUSTRY

AUT EU	Industry quota % related to GDP*	Companies in the production sector*	30.171
674.832 ***16,3%***	Employees in the production sector*	Export-quota*	***65,4 %*** 
3,07 % **€10.744 Mio.**	Research quota	DESI-Index EU 28	**12. Rank** **Value 0,56**

Source: WKÖ (2016): Austrias Industry Figures 2015 * (without construction industry)

AUSTRIA IN THE COMMISSION‘S DESI INDEX (2016)



Scores are between 0 and 1: the higher the score, the better the country's digital performance.

Connectivity: technological prerequisites for digitization, in particular level of development of the broadband infrastructure

Human Capital: digital competences and skills, from simple surfing to ICT specialists

Use of Internet: actual use of the Internet for online applications, communication and online shopping

Integration of Digital Technology: use of digital technology by businesses

Digital Public Services:
availability and use of eGovernment services

DIGITAL ROADMAP AUSTRIA

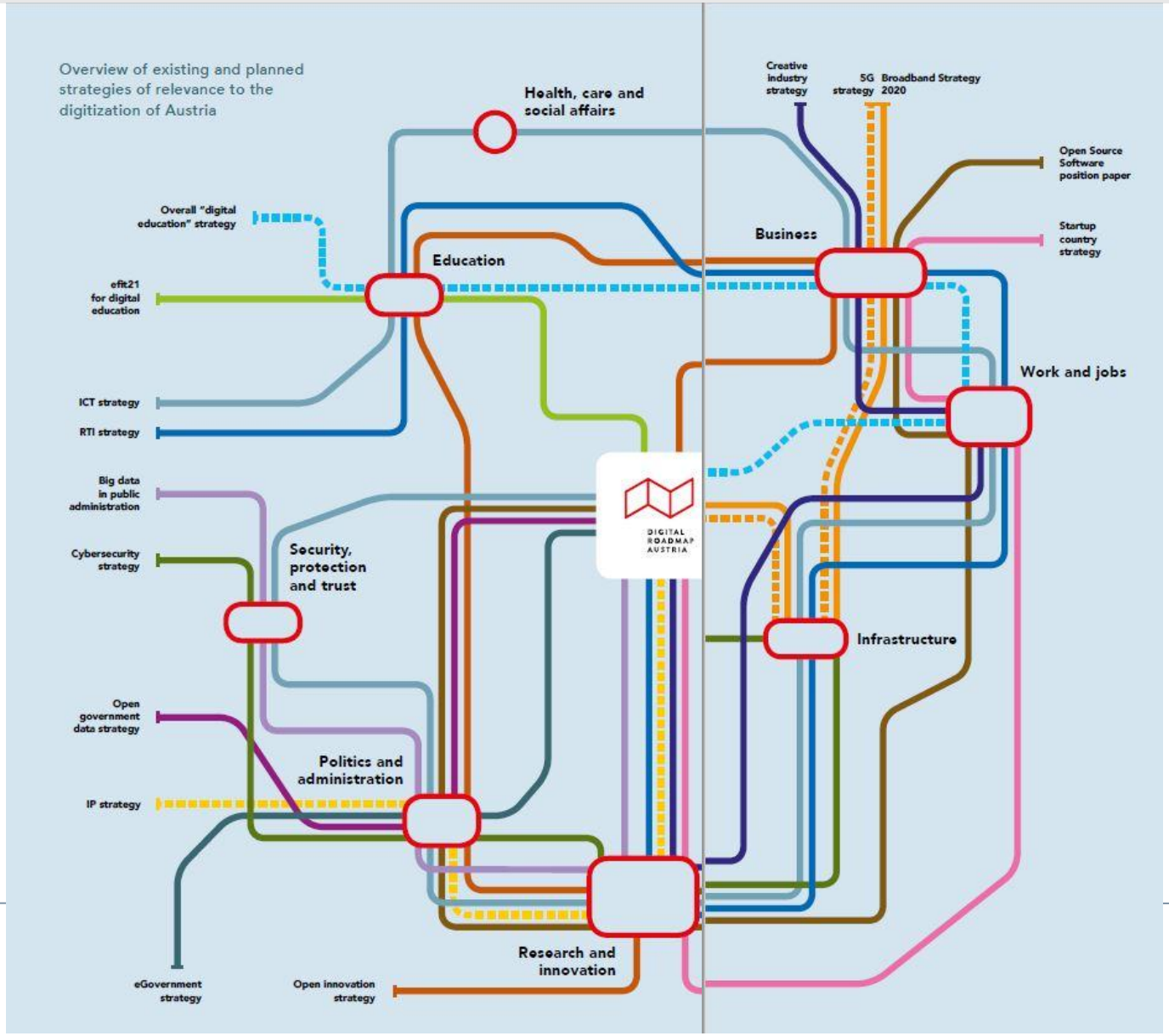
- Digitization plays a major role in the development of Austria‘s and Europe‘s innovative strengths.

- Whole of Government Approach, key stakeholders involved

- Coordinators:
  - Muna Duzdar, State Secretary in the Federal Chancellery
  - Harald Mahrer, State Secretary in the Federal Ministry of Science, Research & Economy

- Three areas that are essential for successful digitization:
  - Improve the education system to prepare everyone for digital opportunities
  - Provide first-class digital infrastructure
  - Strengthen research & innovation policy that promotes Austria‘s strenghts

DIGITAL ROADMAP AUSTRIA



SELECTED INITIATIVES

Association Industry 4.0 Austria

Education: Industry 4.0 Skills

Research & Innovation: Silicon Austria, Pilot factory

Mobility & Transport: Autonomous Driving

INDUSTRY 4.0 AUSTRIA

Established in 2015 as a membership-based not-for-profit organisation

Membership is open to companies, academic institutions, research organisations and NGOs that are leading in the field of Industry 4.0

FOUNDING MEMBERS:

- Austrian Federal Ministry for Transport, Innovation and Technology
- Austrian Federal Chamber of Labour
- Association for the Electrical and Electronics Industries
- Association of the Austrian Metaltechnology Industries
- Federation of Austrian Industries
- Austrian Manufacturing Workers Union

THE MISSION

- To foster collaboration among all stakeholders
- To find sustainable solutions to challenges faced by companies, research institutions and society as a whole
- To secure and create highly innovative industrial production and thus strengthening Austria's future competitiveness
- To sustain and create high-quality jobs

MEMBERS & PARTNERS

Status February 2017

EXPERT GROUPS

Pilot Factory

Norms & Standards

R&D

Human in the Digital Factory

Qualification

Smart Logistics

Regional Strategies

Communication

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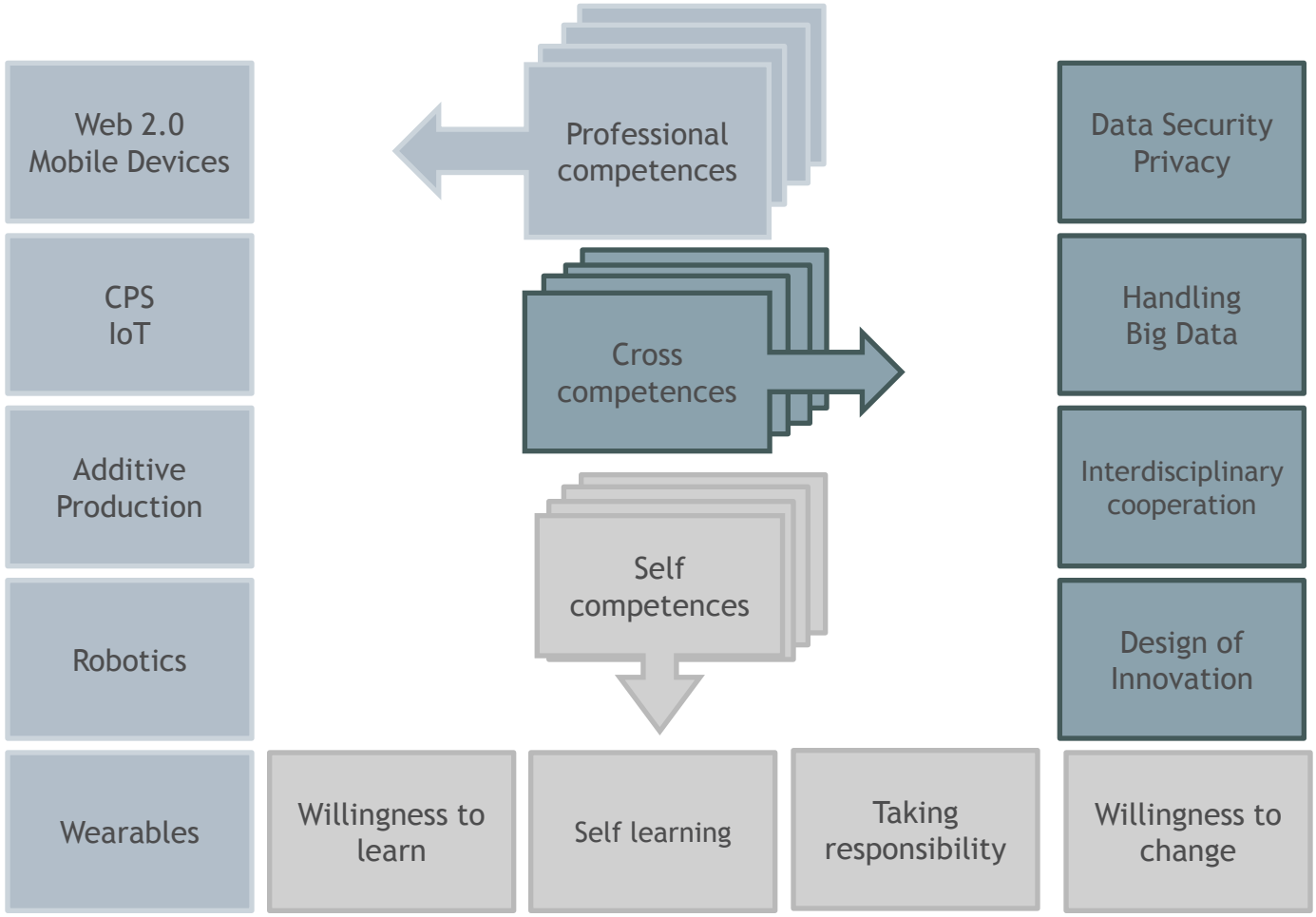
EDUCATION & DIGITIZATION

- Activity profiles change -> changes required skills.
- Preferred competences go beyond “qualification” -> disposition to self-organization, situation & context adequate action, problem-solving, cognitive abilities.
- Digital competences are required at different levels.
- Important: Understanding of processes and their context -> process skills (company training)
- Leadership 4.0 -> change in required competences: competence development of all employees as a central task, framework of working environment for new ideas, lifelong learning and implementing of an error culture to deliver innovation.

INDUSTRY 4.0 KEY COMPETENCES

„THE“ Industry 4.0 competence is not existing, but a bundle of competence



Source: S. Pfeiffer, 2016, W. Bliem, 2016, T. Hausegger, 2016, adapted

EXAMPLES IN EDUCATION

- Teach digital skills at schools in line with digi.komp model (www.digi.komp.at)
- Use of Digital media and e-Learning: virtual college of education MOOCs
- Develop peer learning models
- Introduce digital and interactive school books (open educational resources OERs)
- Provide Wi-Fi and broadband at schools
- Etc.

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SILICON AUSTRIA

- Silicon Austria is a joint initiative of the Federal Ministry of Transport, Innovation and Technology (bmvit), Austrian companies and research institutions to strengthen Austria as an attractive and leading location for the electronics industry (Electronic Based System, EBS).

- For the first time in Austria:
  - R&D center, building upon existing expertise of research institutions
  - Pilot Factory
  - Microelectronic Cluster: Silicon Alps
  - Endowment Chair

- 110 Mio. public investment

SILICON AUSTRIA

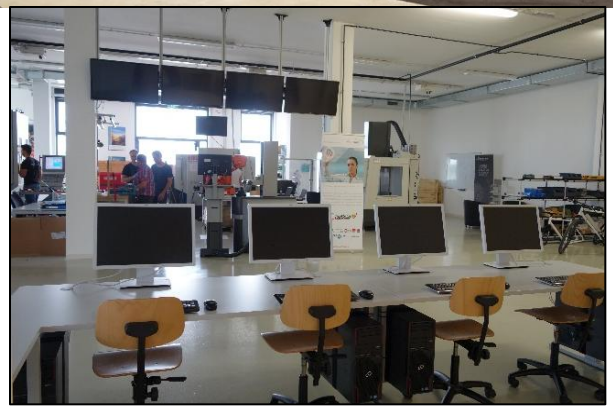
SILICON AUSTRIA Letter of Intend by Austrian EBS-Stakeholder
Up to August 2016 33 companies have documented their profound support for Silicon Austria in written form.

PILOT FACTORY 4.0 – ASPERN, VIENNA

- Pilot Factory is an instrument to strengthen research capacity
- Investment into R&D infrastructure
- Transfer of R&D results to industry
- Relevant for SME

- Objectives:
  - Joint development of new products (prototypes) and processes
  - Test facility for complex, modern manufacturing systems
  - For interdisciplinary research (e.g. mechanical engineering, mechatronics, electrical engineering, informatics, work sciences)
  - As an education and training center and an industry-oriented learning environment as well as a classic research infrastructure.

PILOT FACTORY 4.0 – ASPERN, VIENNA



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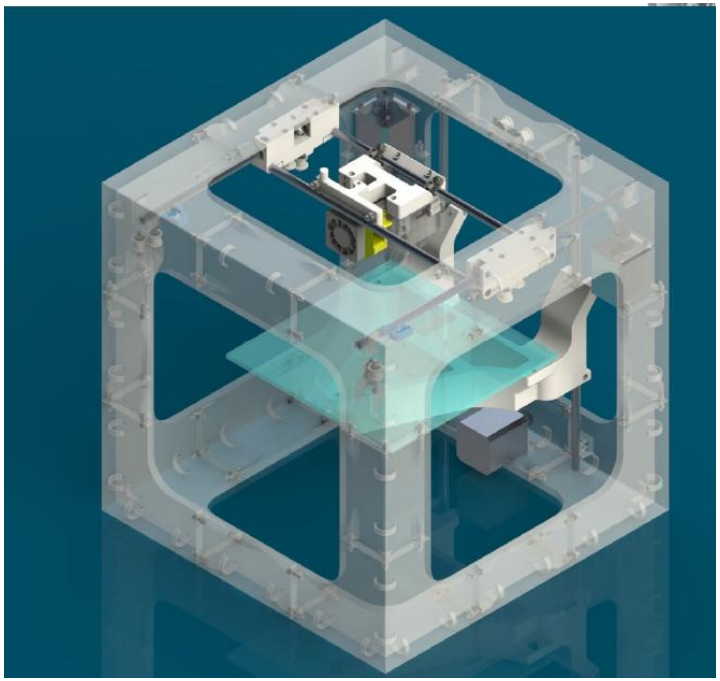
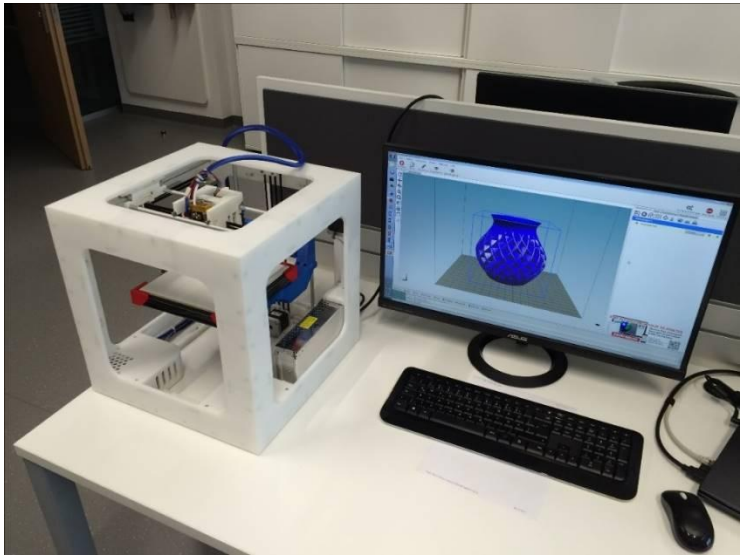
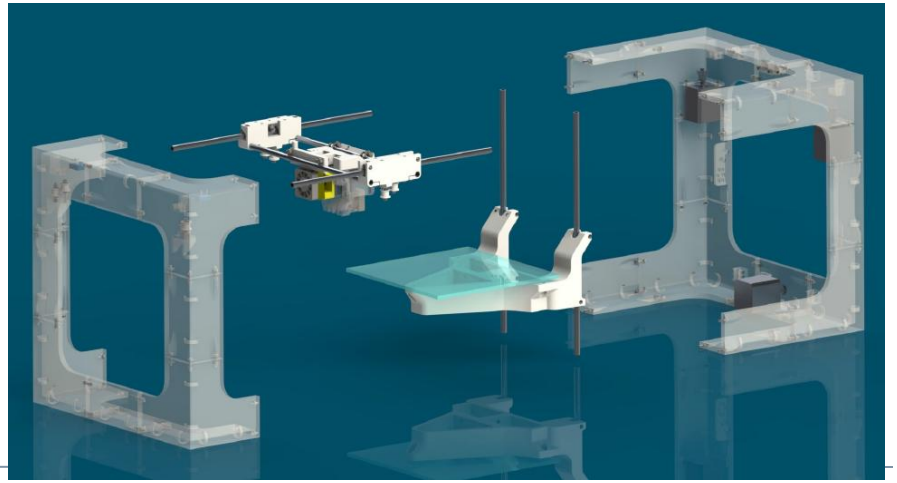
3D PRINTER AS DEMO PRODUCT







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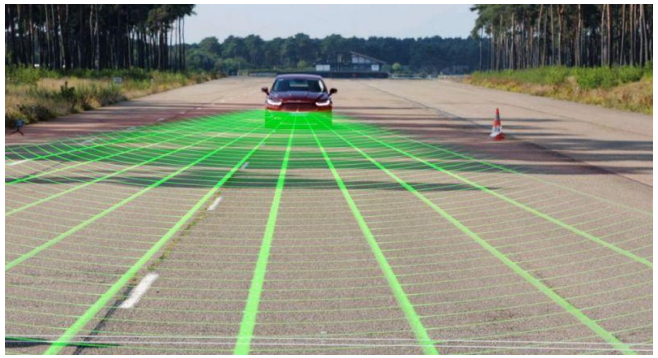
AUTONOMOUS DRIVING

- Various synergetic initiatives:
  - Call „Mobility of the Future“: Autonomous Driving
  - Austrian Motorways as test tracks
  - Competence Center Virtual Vehicle in Graz: strong industrial and academic partners
  - Cooperation of companies (Magna, AVL, Audi, Siemens, VW, MAN, etc.); Public Research organizations PROs (Joanneum Research; Universities/Applied Studies (TU Graz, FH Joanneum, TU Wien, University of Genova etc.)
  - Pilot projects



© Virtual Vehicle, H.Henninger

SELF-PROPELLED MINIBUS

- Self-propelled Minibus Salzburg: a test permit in public transport and for the testing of a test region in the province of Salzburg.

- Possibilities for making the public transport more attractive with the help of self-propelled vehicles will be explored and tested. accessing the “last mile” – the journey from the stop to the destination or home.

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THANK YOU

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AUSTRIA'S STRENGTHS & WEAKNESSES (DESI 2016) - ANNEX

Building on strengths

Sub-indicators where Austria is in the top ten

SUB-INDICATOR	RANK
Enterprises sending eInvoices	1
Online services offered by public administration	2
Affordability of fixed broadband	3
Number of STEM graduates	3
Open data in public administration	5
Use of RFID technologies by enterprises	7
Use of ERP software	8
Basic digital skills	9
Use of online shopping by individuals	9

Overcoming challenges

Sub-indicators where Austria is in the bottom 10 countries

SUB-INDICATOR	RANK
Individual usage of social networks on the Internet	25
Individual usage of the Internet for music and video	24
Individual usage of the Internet for video calls	24
Individual usage of the Internet for messages	21
Households that subscribe to fast broadband (over 30 Mbit/s)	23
Households that use a fixed broadband connection	19

Source: European Commission, Digital Scoreboard

INDUSTRIE 4.0 ÖSTERREICH