CARL VON OSSIETZKY universität OLDENBURG
FAKULTÄT II
INFORMATIK, WIRTSCHAFTS- UND RECHTSWISSENSCHAFTEN

Taverna

VERY LARGE BUSINESS APPLICATIONS

Carl von Ossietzky
Universität Oldenburg

Transportation systems with Automatic VEhicles in Rural North sea Areas

North Sea Conference 2017
29 June 2017, Göttingen

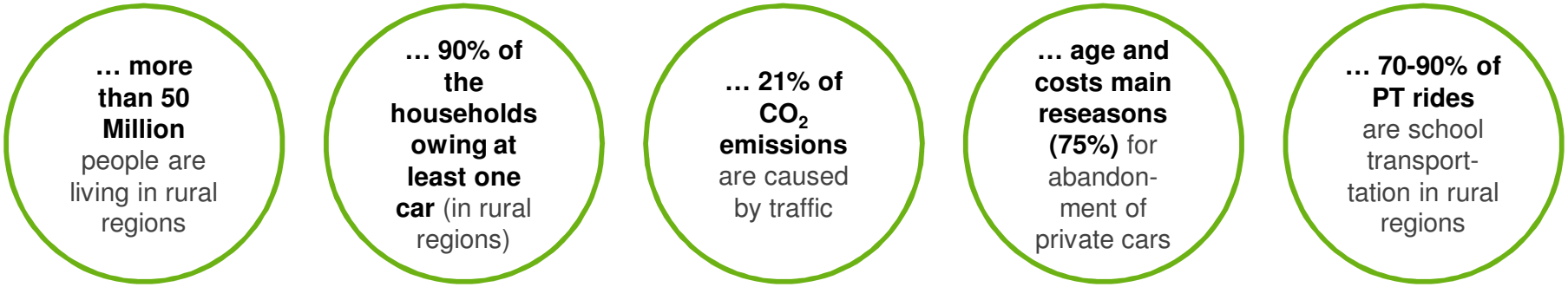
Dirk Harmsen
Marius Wybrands

Carl von Ossietzky Universität Oldenburg
Fakultät für Informatik, Wirtschafts- und Rechtswissenschaften
Abteilung Wirtschaftsinformatik I
Very Large Business Applications
Ammerländer Heerstr. 114-118
26129 Oldenburg
Tel. (0441) 798-4470
Fax (0441) 798-4472
www.wi-ol.de

Problem Definition

- Weak supply of sustainable mobility services in rural areas
- Huge challenges in public and freight transport
- Weak social inclusion in rural areas
- Aging population
- Inefficient use of transport modes
- Special requirements in rural context

- Massive deployment of new smart technologies
  - Challenge for innovators, policymakers, investors, citizens



PT: Public transport, MIT: Motorized individual transport

NEMo
Mobilität. Von uns, für uns.

Niedersächsisches Ministerium für Wissenschaft und Kultur

VolkswagenStiftung

Sustainable satisfaction of mobility demands in rural regions

www.nemo-mobilitaet.de

CARL VON OSSIETZKY universität OLDENBURG

Technische Universität Braunschweig

LEUPHANA UNIVERSITÄT LÜNEBURG

Which are the central research questions?

How can we satisfy mobility needs in rural areas on the basis of social structures under consideration of sustainability and purpose-orientation?

Social

How it is possible to increase the community idea from a sociological and psychological perspective?

Organizational

Which organizational concepts are suitable for sustainable mobility models for social self-organization?

Research dimensions

Economical

Which business models are suitable for supporting sustainable mobility and prosumer relationships?

Technical

How can flexible, intelligent and heterogeneous ICT services supporting rural mobility?

What are the main outcomes?

NEMo
Mobilität. Von uns, für uns.

Project results

Action	Objective
Communication Platform for self organization (ICT-supported)	Barrierefreie und effiziente Mobilitätsgestaltung
Usage instead of possession “Shareconomy“	Reduction of resource consumption and emissions
Mobilization of all population strata (Community-Model)	Social Participation
Innovative Business Models	Enabling Prosumer-transactions relations

Methods

Workshops
Pilot project
Consulting
Publicationen

Prototypes
Civic forum
Education
Simulation

Project impact

trough …	on …
Awareness and inclusion	Consumers, Citizen, Companies, Associations, Municipalities
Prototypical Implementation/ Evaluation	Consumers, Citizen, Companies, Associations, Municipalities
Scientific distribution	Universities, Research institutions
Consulting	Legislator, Municipalities, Companies

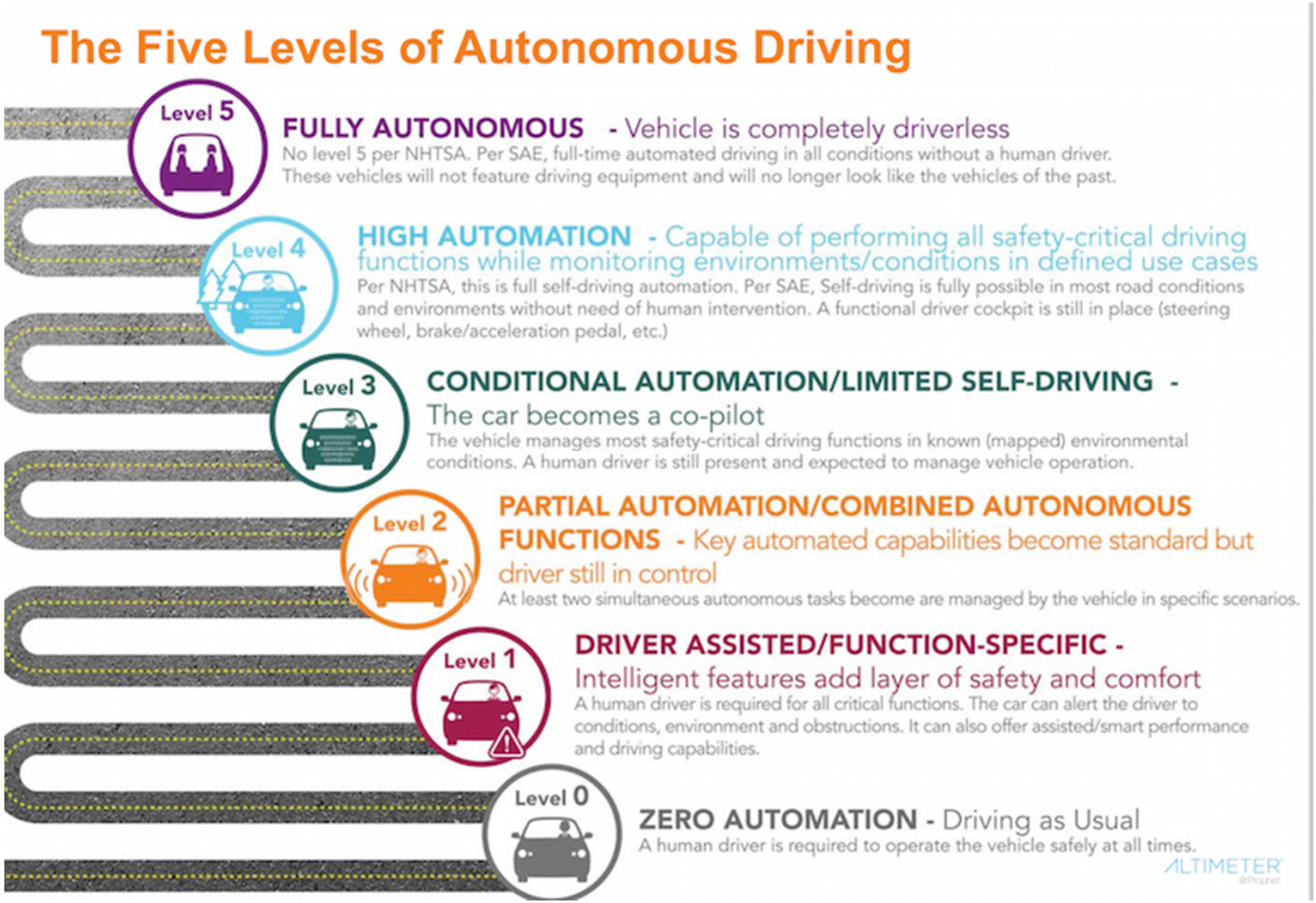
- Business models, incentive systems, software design, case studies, ICT prototype, recommendations for new regulations, guidelines, legislative initiatives…
- ICT-based Mobility Platform for the Pilot Region Oldenburg and Wesermarsch

What are the main outcomes?

Autonomous Vehicles

CC BY 2.5 AU: Gnangarra https://commons.wikimedia.org/wiki/File:Bus_220916_gnangarra-1004.JPG

Autonomous Vehicles



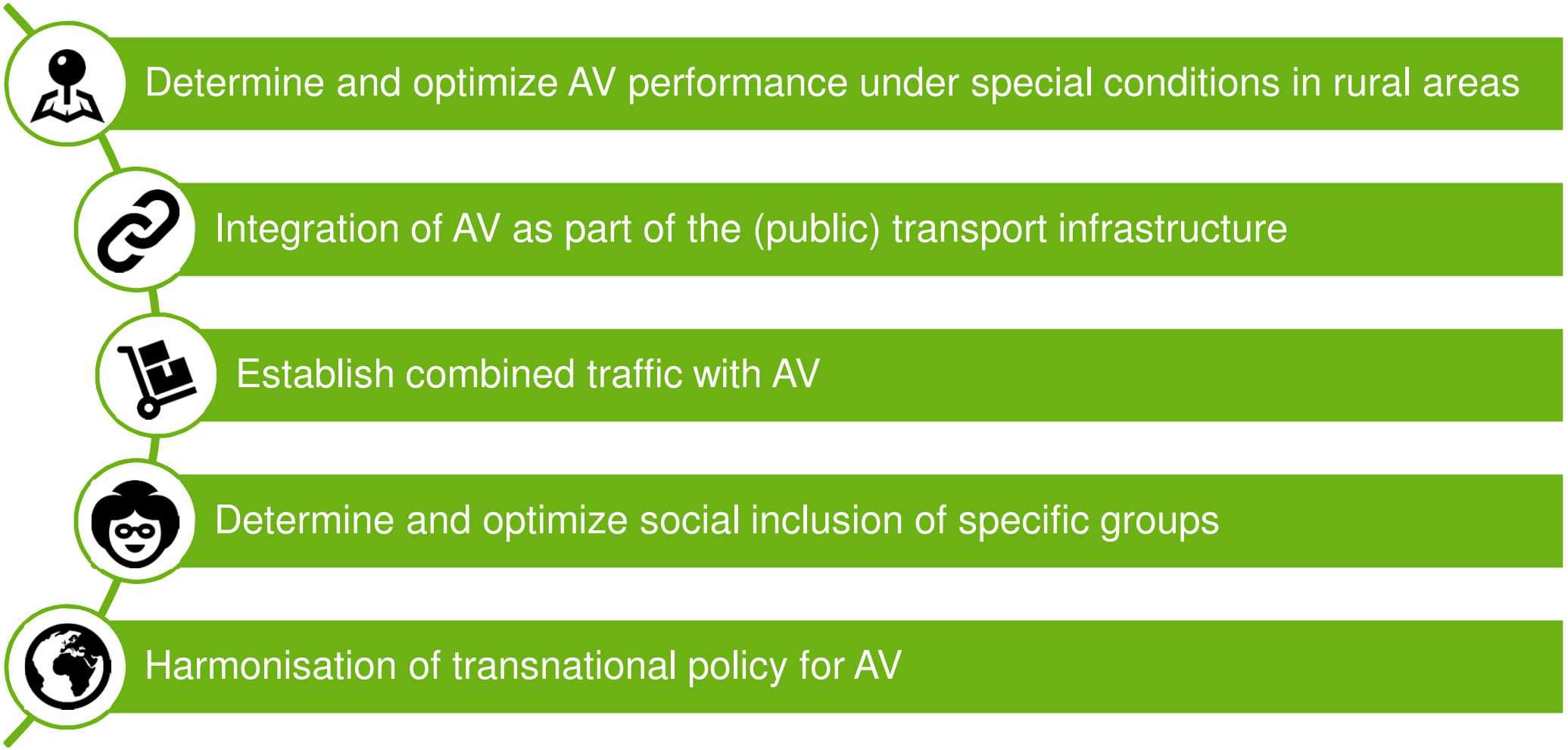
http://boingboing.net/2017/03/03/the-six-official-levels-of-au.html

Project‘s Approach

Autonomous vehicles (AV) in (combined) transportation of freight and people

- Cloud-based management and distribution system
- Integration guidelines for autonomous vehicles for rural areas
- Scenario based evaluation and communication in field trials
- Evaluate innovative services
- Integrate and sensitize policymakers, planners, innovators and citizen

Research Topics



Project Indicators

- Improve mobility supply/accessibility for rural citizens
- Minimize amount of cars
- Minimize/avoid deadheads
- Reduce carbon by increased vehicle utilization

Consortium

- Carl von Ossietzky University, VLBA
- University of Applied Science Bremerhaven
- The Highlands and Island Transport Partnership
- City of Oldenburg
- Robert Gordon University
- Terra Nordica
- Frauenhofer IFAM
- TU Delft

Why we need a transnational approach?

- Different conditions and similar demands in EU countries
- Highly cross-linked road networks
- Transnational information exchange
- Need for a European AV-Strategy