

## **IDEA LEAGUE**

# **MOBILITY SUMMER SCHOOL**

**Aachen, Germany**

**September, 17 – 21, 2012**

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# IDEA LEAGUE Summer School

- The **IDEA League**, founded in 1999, consists of:
  - Imperial College London (0 participant)
  - TU Delft (2)
  - ETH Zurich (1)
  - RWTH Aachen (7)
  - Paris Tech (7)
  - Invited university : Tokyo Institute of Technology (3)
- Theme: ***“Individual mobility vs. public transport – Can mobility still be individual or does the future belong to public transport?”***
- **Selection process:** essays, supervisor and university recommendation

# Schedule

- First day
  - Registration, Orientation
- Second day
  - Study trip and lecture
- Third day
  - Intensive lectures
- Fourth day
  - Lecture and group work
- Final day
  - Project presentation and competition



# Study Trip 1: Daimler Production Plant

- **Mercedes-Benz Sprinter** production plant in Dusseldorf
- Observations:
  - High automation
  - High precision quality control
  - Produce 700 units daily
  - Produce for Mercedes-Benz, Volkswagen, etc.



# Study Trip 2: RVK (Regionaler Verkehr Köln)

## • Hydrogen fuel-cell bus

- Project funded by EU and private organizations
- Operated by a public transport service provider (RVK)
- 38 seats, 18.5 m length, battery on the roof
- Operation in city and inter-city (15 kg H<sub>2</sub> for 250 km)

### Pros

- Null CO<sub>2</sub> (only water)
- Hydrogen fuel
  - Unwanted byproduct of Industry
  - Freely available



### Cons

- Initial cost is 5 times the conventional bus
- Limited infrastructure
- Special trained driver
- Heating problem (no combustion engine)
- Heavy weight battery

## Presentation

### **Renewable mobility**

Dr. Frank Geraets (DB)

### **Perspective of car mobility and public transportation in urban and rural areas**

Prof. Dr. Dirk Vallee. (ISB/ RWTH)

### **Urban transport**

Regina Poth (Stadt, Aachen)

## Observation

- Car ownership in the Germany
- Freight/ air will (or may) not be changed to battery driven engine
- Sustainability in rural transport
- Aging society and urban structure
- Public participation
- City transport mode selection

## Presentation

**Urban mobility cultures - How cities move on in a diverse world**

Dr. Peter Phleps (IFMO)

**Infrastructure electromobility**

Shirley Beul (HCIC)

**Car sharing - flexible car use in synergy with environmentally friendly transport modes**

Willi Loose, Geschäftsführer

(Gundesverband CarSharing e.v.)

## Observation

Transport network shape the city (hybrid city, transit city (Tokyo), Auto city (Atlanta), para-transit (Johannesburg))

Information, Communication, and Acceptance Issues in Emergency Telemedical Services

- New mobility innovation: car2go, ride sharing, car sharing
- Auto manufacturer

## Presentation

Individual mobility in 2030 -  
Challenges and opportunity for the  
automotive industry

Christian Burkard (Ika)

## Observation

- New vehicle concept: MIT city car, Honda 3RC, etc.
- New mobility concept: Connecting private and public transport
- New business model : car sharing





- Formation: 4 or 5 members (4 groups)
- **Assignment 1:**
  - Development of mobility concept for one of the IDEA League cities (including Tokyo)
    - What are the **mobility related requirements and issues** of the city? Which **requirements does a transportation system** have to comply with in 2025?
- **Assignment 2:**
  - Can mobility still be **individual** or does the future belong to **public transport**? Are there concepts in between? **Develop your own concept!**

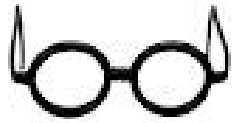
## Equity and Efficient Mobility for the Community of Tokyo (E<sup>2</sup>MC)

### Facts findings

1. Energy mix after Fukushima accident
2. Sharing right of way for pedestrians and bikes
3. Information readability
4. Peak hour saturation

### Solution

1. Encouraging home office
2. Car pooling integrated with public transport
3. Information dissemination through app
4. Time dependent fare



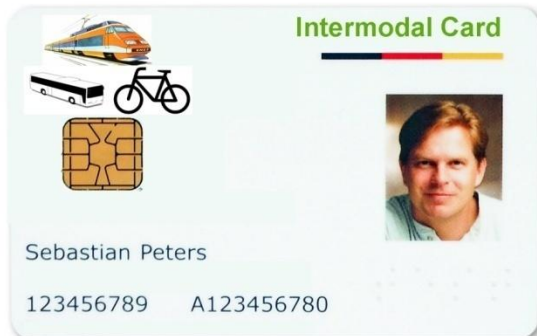
## • Aachen 2025: Inter-modal Culture

### Facts findings

1. Aachen as a medium-scale city; 30% population are students
2. Unreliable public transport, unpunctual and too crowded on peak hours
3. Bus, trains: different operators, different systems

### Solution

1. Integrated transport supported with advance information system (Intermodal Card)
2. Incentive to replace fossil fuel car with electric car
3. Encourage people to use bike (bike sharing)



# Pictures



**Thank you for listening**