German Innovation Package (GIP)
Traffic-Environment-Monitoring-System (TEMsys)
City growth 1950 - 2030

Challenges of today’s society


Source graphic :http://www.laenderdaten.de/bevoelkerung/urbanisierung.asp

2% landuse 50% population 75% Energy consumption 80% CO₂ Emissions

From research to application

Feasibility studies
Technological research and -innovation
Systems research, -development and -integration
Knowledge sharing
Integration into traffic management centers
Equipment of research intersections
Traffic light control demonstrations, environmental measurements
Simulations, Predictions
Equipment of technology parks - HighTech zones
System solutions for traffic management centers, municipalities, traffic planning departments, environmental authorities, police departments …

New cities – new partners
New challenges & requirements
New technologies – new systems

Research Projects
countries’ MOSTs

Piloting & Demonstration

Application / Financing

Expansion & Extension

Research in Germany
Land of Ideas

German Innovation Package, Ho Chi Minh City, March 2017
Focus areas

Traffic and mobility in interaction with:

- Environment
- Safety
- Logistics
- Urban systems
- Urban development
- Health
Network structure

• Cooperation and exchange in:
  • Science
  • Research
  • Education
  • Application
  • Development

• Common interests & projects
  • Comprehensive, demand-oriented analyzes
  • (Future) Scenarios development
  • Use of the latest technologies
Approach in China

Research Projects

- Metrasys – LCMM – Optimum – Intersection Monitoring - …

Piloting & Demonstration

- METRASYS results in Hefei
- LCMM in Zhengzhou
- Intersection Monitoring in Berlin, Brunswick & Hefei
- Analysis in the field, simulations, predictions
- Equipment - HighTech Zone Hefei

Application / Financing

- GIP for ITS – Huainan 2017 - 2019
- Setup an ITS
- Customer: city and police Huainan

Expansion & Extension

- GIP2China

- Ledong (0.5 Mio. E.)
- Bengbu (3.8 Mio. E.)
- Hefei (7.6 Mio. E.)
- Chengdu (14 Mio. E.)
German Innovation Package - GIP

TEM Sys
(Traffic Environment Monitoring System)

Online - realtime, green & safe Traffic Management
Traffic & Environment Monitoring Portal

Offline - longterm understanding of Traffic & Environment

New Huainan ITS at the Police

German Innovation Work Packages - TEMSys

WP1: FCD System
- Taxi - FCD
- BUS - FCD

WP2: Traffic Environmental Monitoring
- Environmental Model
- Environment Measurement System

WP3: Fleet Fuel Consumption Estimation
- BUS-Fleet

WP4: Intersection Monitoring System
- Microscopic traffic detection
- Trajectory Analysis

Traffic Similation SUMO - Offline Big Data Analysis
- Sustainable Benefit Analysis
- Optimization
- Scenarios Analysis

Traffic and Environment Monitoring Portal
- Traffic situation and prediction, Traffic Performance Index (TPi)
- Online Traffic induced Air Pollutions
- Fuel Consumption Monitoring
- Traffic Safety Detection

German Innovation Package, Ho Chi Minh City, March 2017
Characteristics of TEMSys - Online

• Combination of traffic- and environmental information
  – Traffic situation and prediction
  – Traffic environment monitoring (NOx, CO, SO2, PM2.5)
  – Fleet - fuel consumption optimization

• Intersection Monitoring
  - Trajectories and conflict-parameter (TTC ...)

German Innovation Package, Ho Chi Minh City, March 2017
Characteristics of TEMSys - Offline

- Longterm analyses of the traffic-performance with Big Data technology
- Analysis of longterm influences of ITS and scenario analysis
- Microscopic simulation with SUMO [www.sumo.dlr.de](http://www.sumo.dlr.de)
REMON – Real Time Monitoring of Urban Transport in Hanoi, Vietnam

- Development and construction of a traffic-detection and information system
- Basis technologies
  - FCD: taxi, bus (BinhAnh Electronics)
  - FPD: twowheeler (Remon APP)
  - Portal: Traffic Viewer and Traffic Viewer Expert
Possibilities in Vietnam

German Innovation Package goes to Vietnam

2012-2015 – REMON

Piloting & Demonstration

Application / Financing

Expansion & Extension

GIP

New Projects

Hanoi (6.5 m. p.)
DaNang (1 m. p.)
Ho Chi Minh City (8.2 m. p.)
Thank you for your attention!

German Aerospace Center (DLR)
Institute of Transportation Systems
Rutherfordstraße 2
12489 Berlin - Germany
http://www.dlr.de/ts/
alexander.sohr@dlr.de