



# First concepts for Mega Region Transport Systems in China – the Metrasys project

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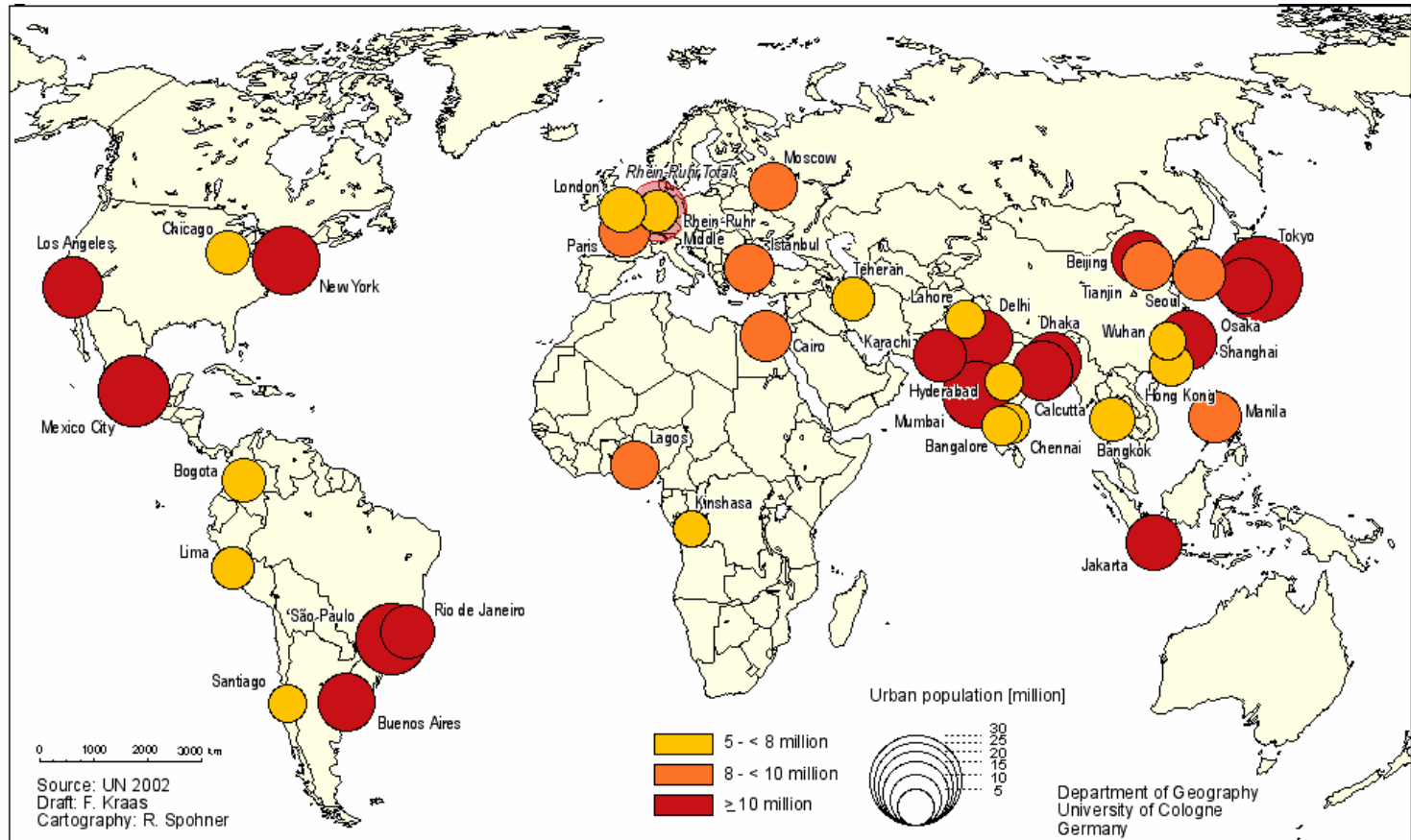
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DLR-VS

Internet: [www.metrasys.de](http://www.metrasys.de)

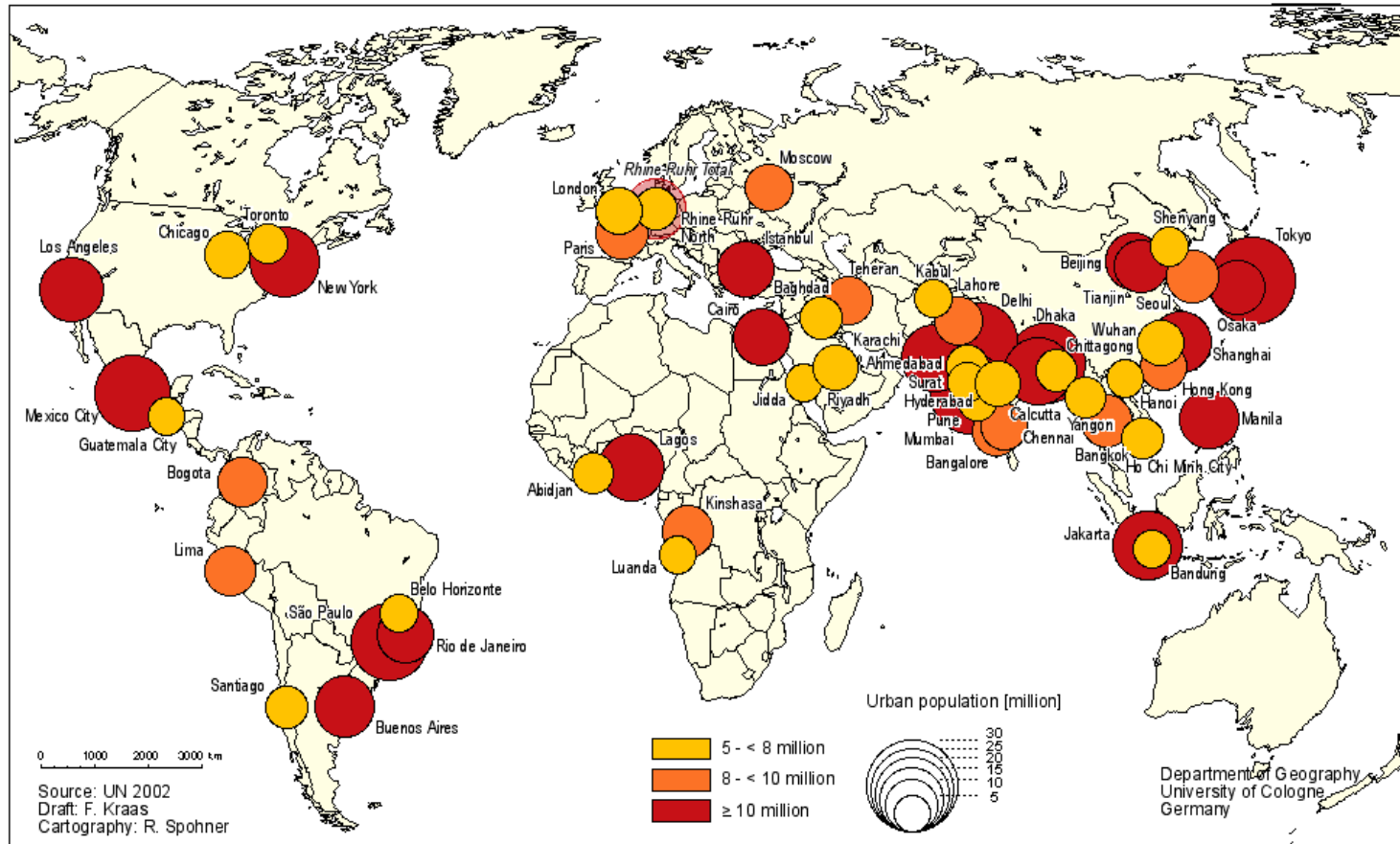
# Basic necessity – Present Megacities

## Megacities 2000



# Basic necessity – Futurities Megacities

## Megacities 2015



# BMBF



Federal Ministry  
of Education  
and Research

The German Federal Ministry of Education and Research (BMBF) funds several Framework Programs, including:

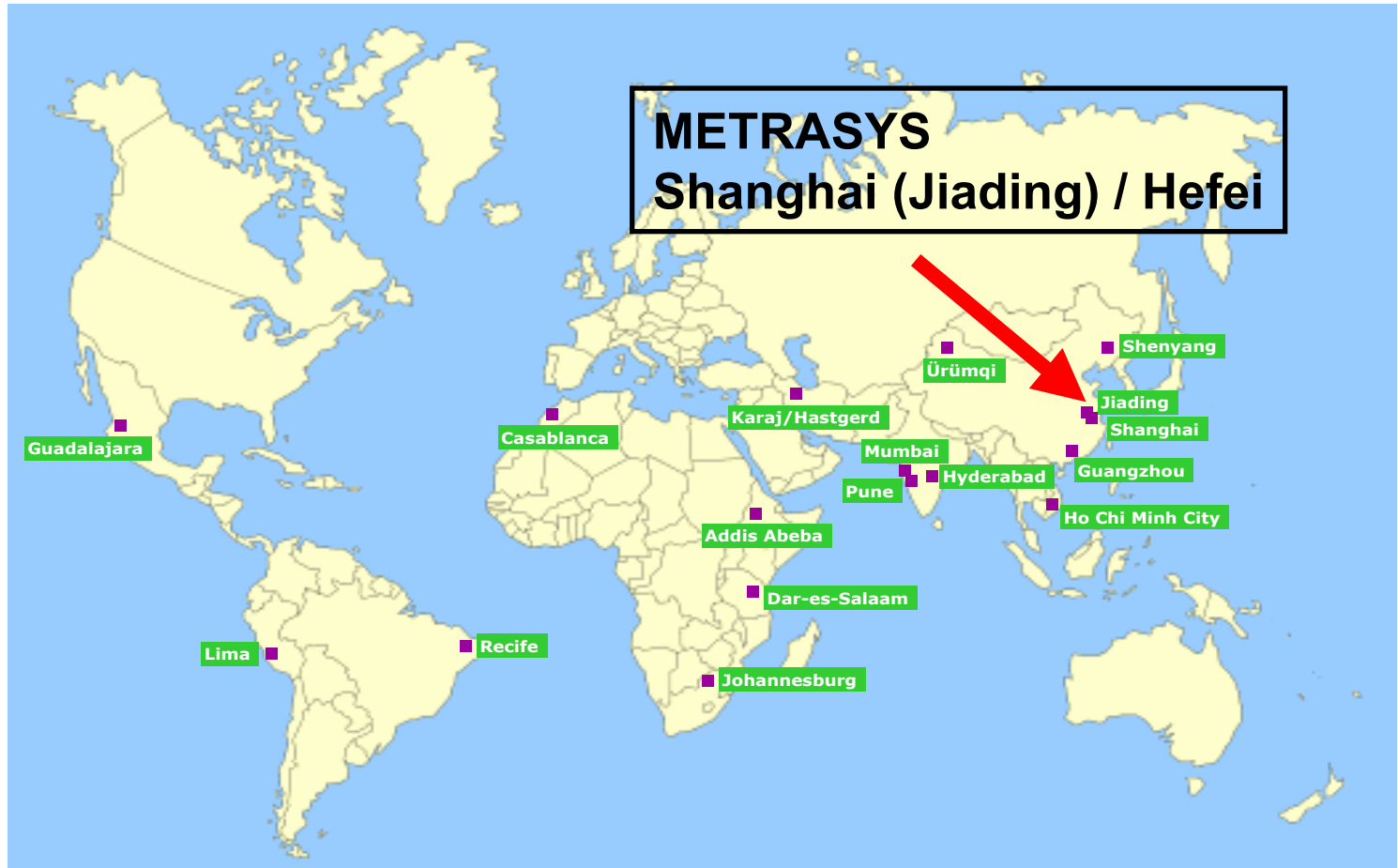
FONA – Research for Sustainability  
([www.fona.de](http://www.fona.de))



Early 2004, Dept. 622 „Global Change“ launched a new research program:

**„Megacities of tomorrow –  
Research for Sustainable Development“**

# Participating Projects all over the world



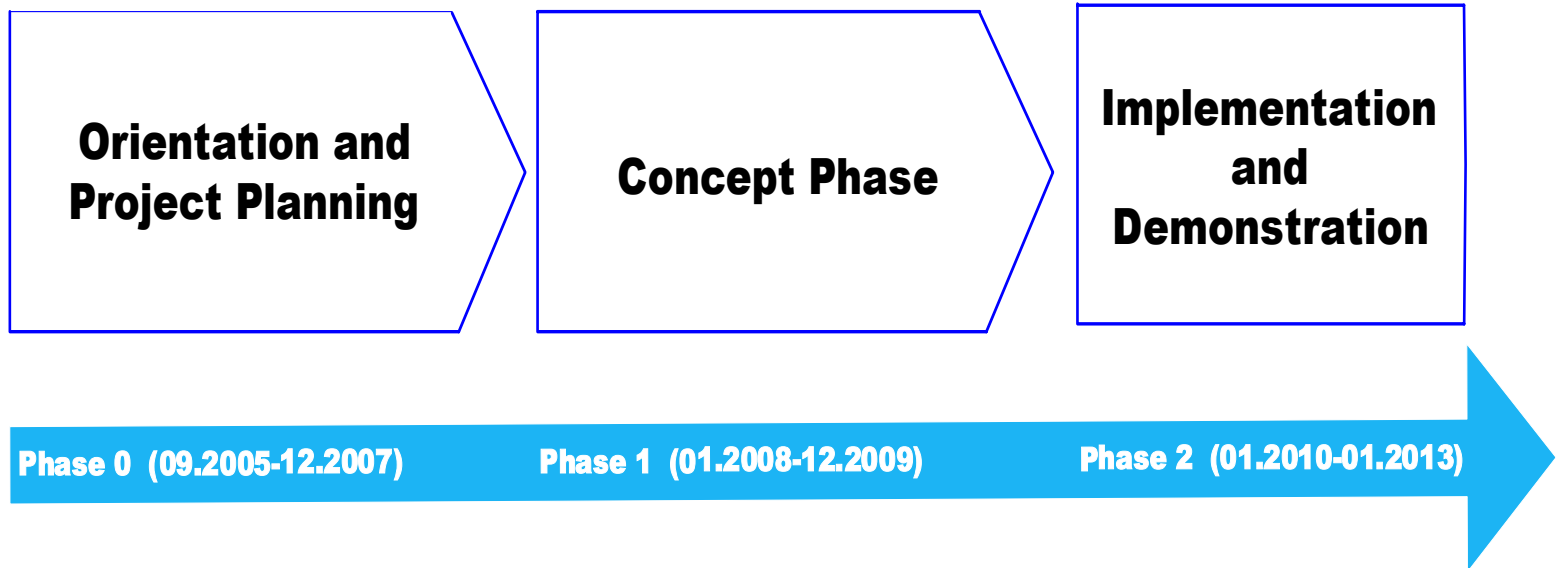
# Mega Region Transport Systems for China (METRASYS)

*General objective of the project: Developing and demonstrating solutions for sustainable mobility concepts in the conurbation Jiading and Hefei (Transfer city)*

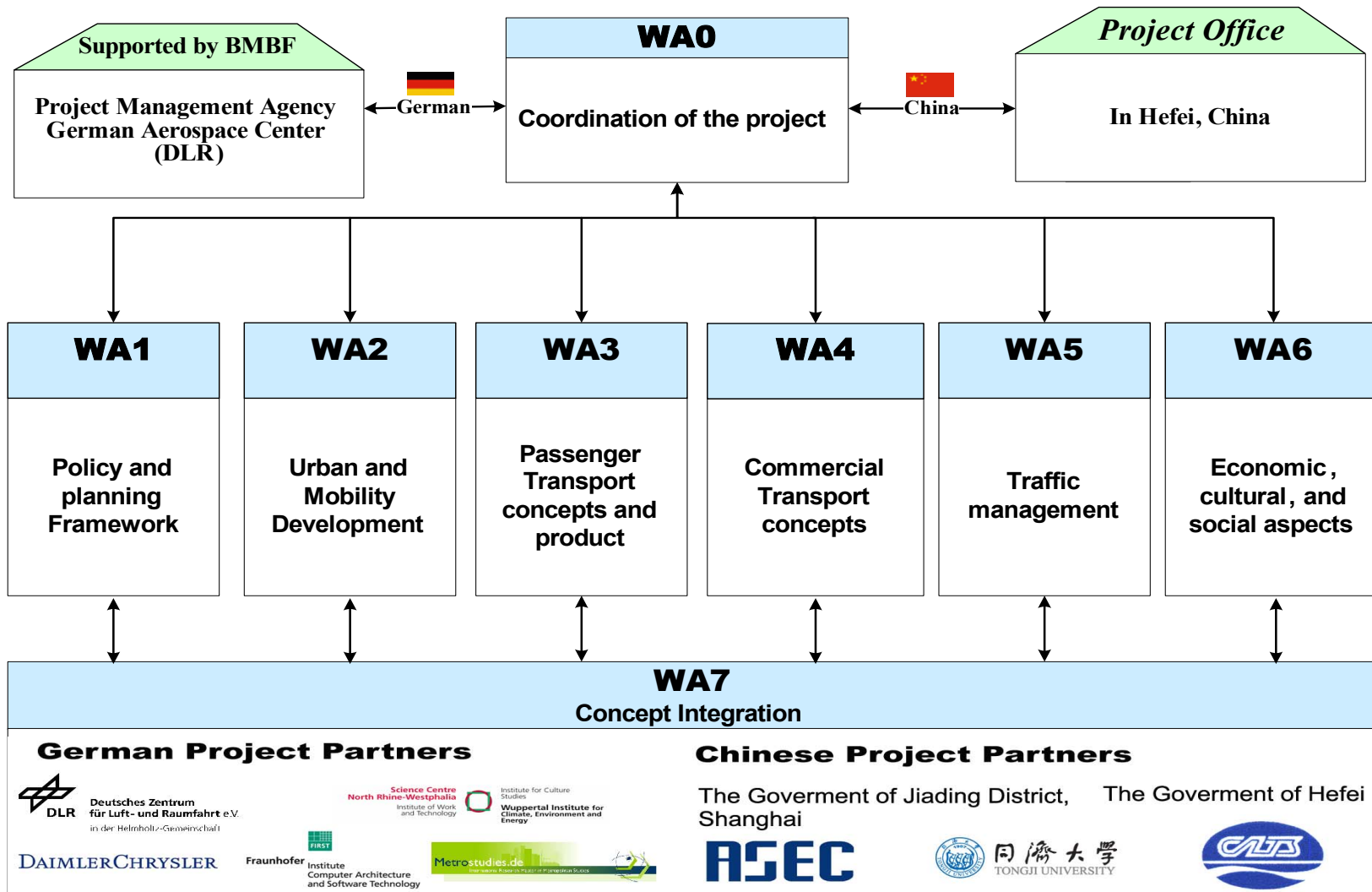
## **Specific goals are the following:**

- Adaptation and/or development of modern approaches and technologies always oriented towards the mobility needs of the population (usability, acceptability) and taking into account the socio-economic and regulatory conditions (political and public awareness)
- Scenario simulations and analysis of impacts on sustainability dimensions
- Realisation of effective concepts, demonstration and implementation of technologies and tools
- Accompanying the planning process in the region
- Capacity building (education, processes, institutions, participation in the transformation process of the Chinese society)
- Establishing international co-operation and economic and scientific relation

# METRASYYS preliminary course of action



# Schema of METRASYS





# WAO Coordination of the project & Project office



# **WA1** Policy and planning Framework & **WA6** Economic, cultural and social aspects

## **WA 1:**

- Analysis of the local, regional and national planning legislation and regulatory framework
- Identification of stakeholders in the planning process
- Establishment of a planning stakeholder forum

## **WA 6:**

- Analyses of economical, cultural and social aspects
- Analyses of involvement of public representatives (see WA 1)
- Identification of participatory approaches and opportunities

# WA1 Policy and planning Framework & WA6 Economic, cultural and social aspects

## **Literature review:**

- ▶ SEA principles and experiences
- ▶ China's administrative structure and planning system

## **Field observations:**

- ▶ Field notes
- ▶ Audiovisual material

## **Qualitative research**

### **Metrasys Kick-off Meeting:**

- ▶ Presentations
- ▶ Group interviews
- Jiading authorities
- Chinese research institutes
- Professionals and academics

### **In-depth interviews: local stakeholders**

#### **Jiading authorities**

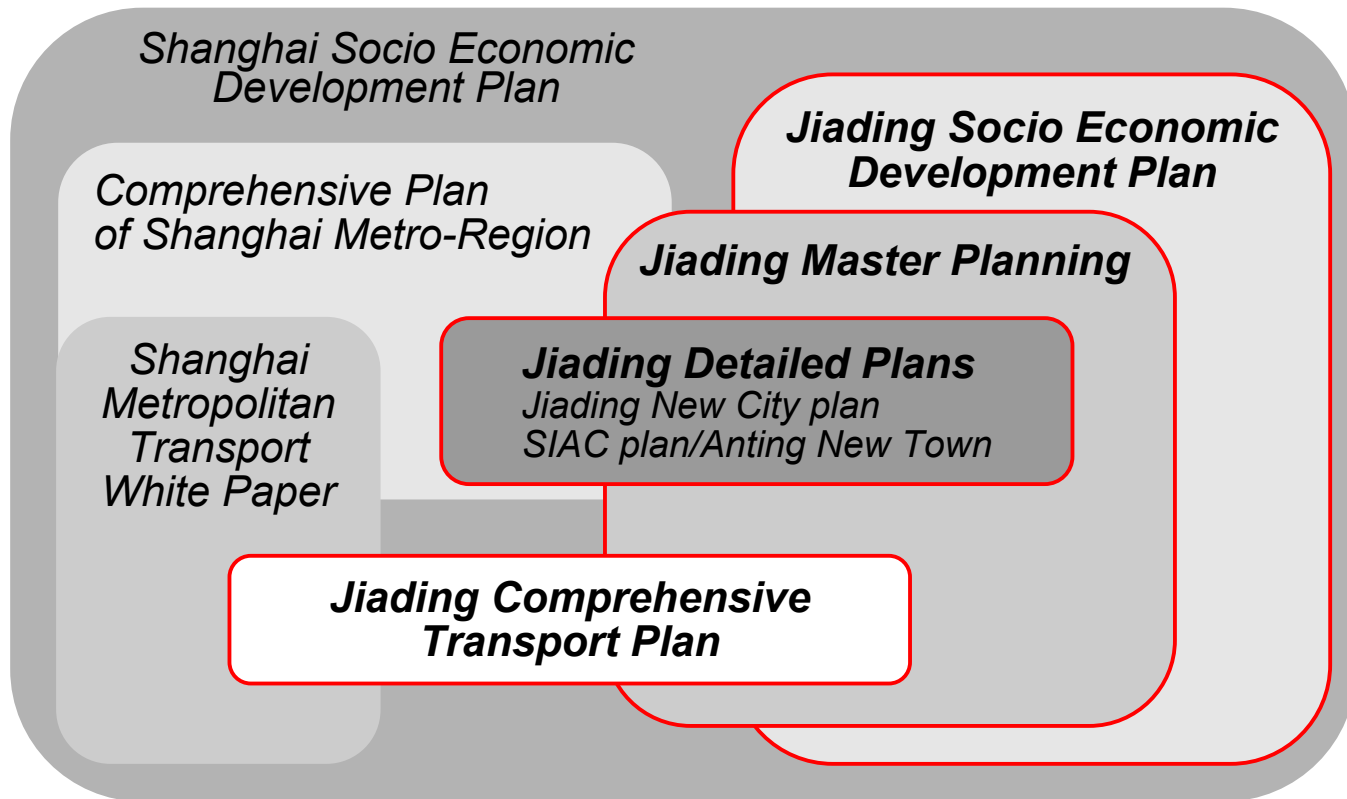
- Development and Reform Commission
- Planning Administration Bureau
- Environmental Protection Bureau
- Communications Administration Bureau

#### **Experts**

- School of Transportation Engineering
- Shanghai Urban Construction Design and Research Institute

# WA1 Policy and planning Framework & WA6 Economic, cultural and social aspects

## Planning Instruments of Jiading



# WA1 Policy and planning Framework & WA6 Economic, cultural and social aspects

## Output and Perspectives

- Documentation of the stakeholder-dialog
- “Strategies to Integrate Environmental Concerns into Transport Policies and Plans in Jiading District - China”; Vivan de Souza
- Discussion process with Chinese partners about:
  - Integrated planning system
  - Strengthening of public participation
  - Implementation of SEA as an integrated planning instrument
- Preparation of potential pilot projects: e.g. financial budgets for transport projects, implementation of SEA, implementation of a CDM-transport project

## WA2 Urban and Mobility Development

### Aim:

- Inventory of data bases as foundation for monitoring future development and discussion/evaluation of prospective scenarios

### Current Studies in Jiading:

- Inventory of data bases as foundation for monitoring future development and discussion/evaluation of prospective scenarios
- Inventory and evaluation of available data on the Shanghai/Jiading area
- Designing and establishing a monitoring framework to determine suitable, accessible and reliable sources of data and information
- Literature review (historical development / Scientific discussion on mega cities especially on Shanghai) – compiling a working paper. Focus: The constitution of the modern china (since ~1900)

# WA3 Passenger Transport concepts and product

## Aim:

- Concepts for a mega region passenger transport system
- Development of alternative passenger transport services for the investigation area

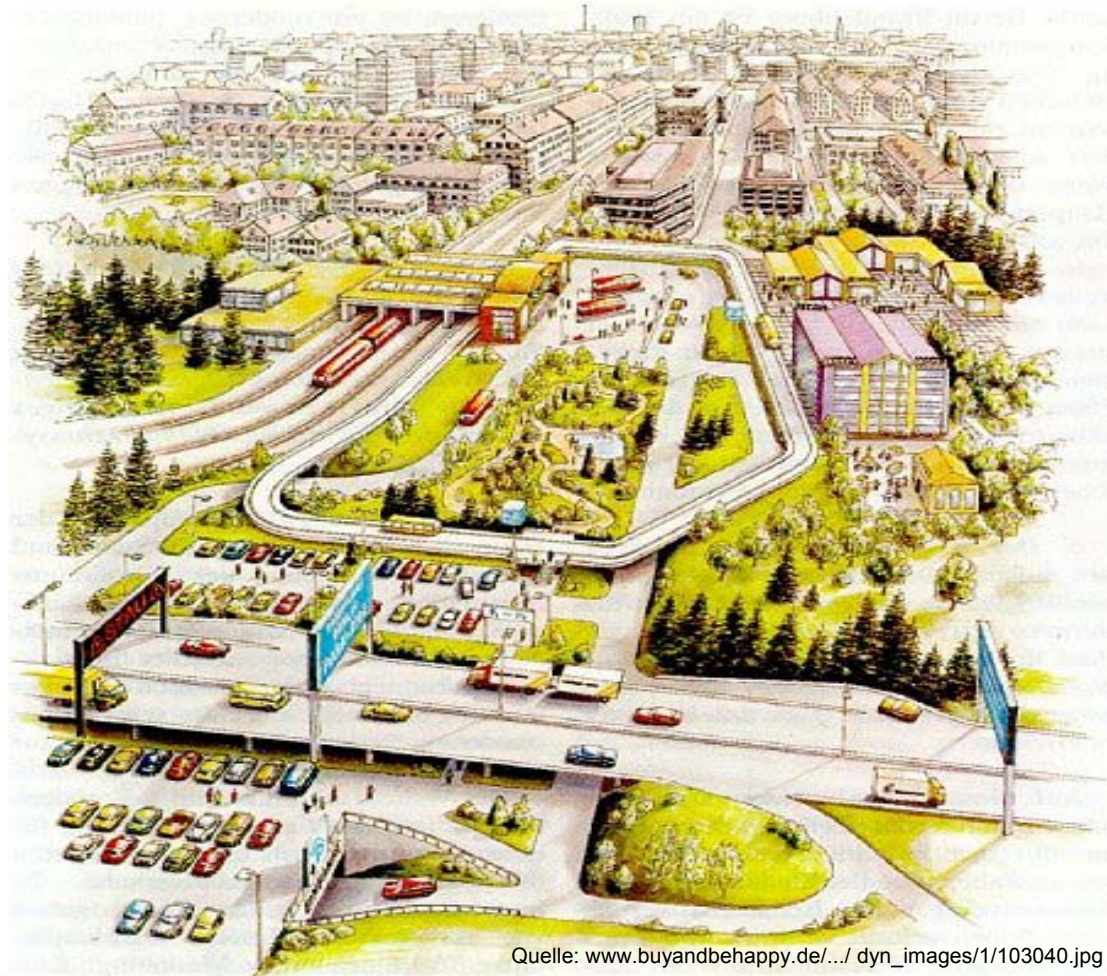
## Current Studies in Jiading:

- Research on Anting Transport Station
- Research on the applicability of modern Tram & light rail transit
- Research on TOD (Transit-Oriented Development) mode of the transportation junction in Jiading area and the method of raising capital

# WA3 Passenger Transport concepts and product

## *Example: Anting Railway Station*

- **Combination of Railway, Metro and Bus Station**
- **Definition of Functions**
- **Definition of Services**
- **Examples of P&R**
- **Organisation of Feedertraffic**



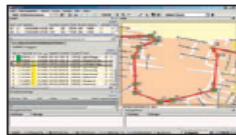
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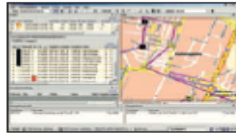
# WA4 Commercial Transport concepts

## Aim: Concepts for sustainable logistic solution

- Vehicle Concepts
- Propulsion technologies
- Fleet management
- Loading technologies

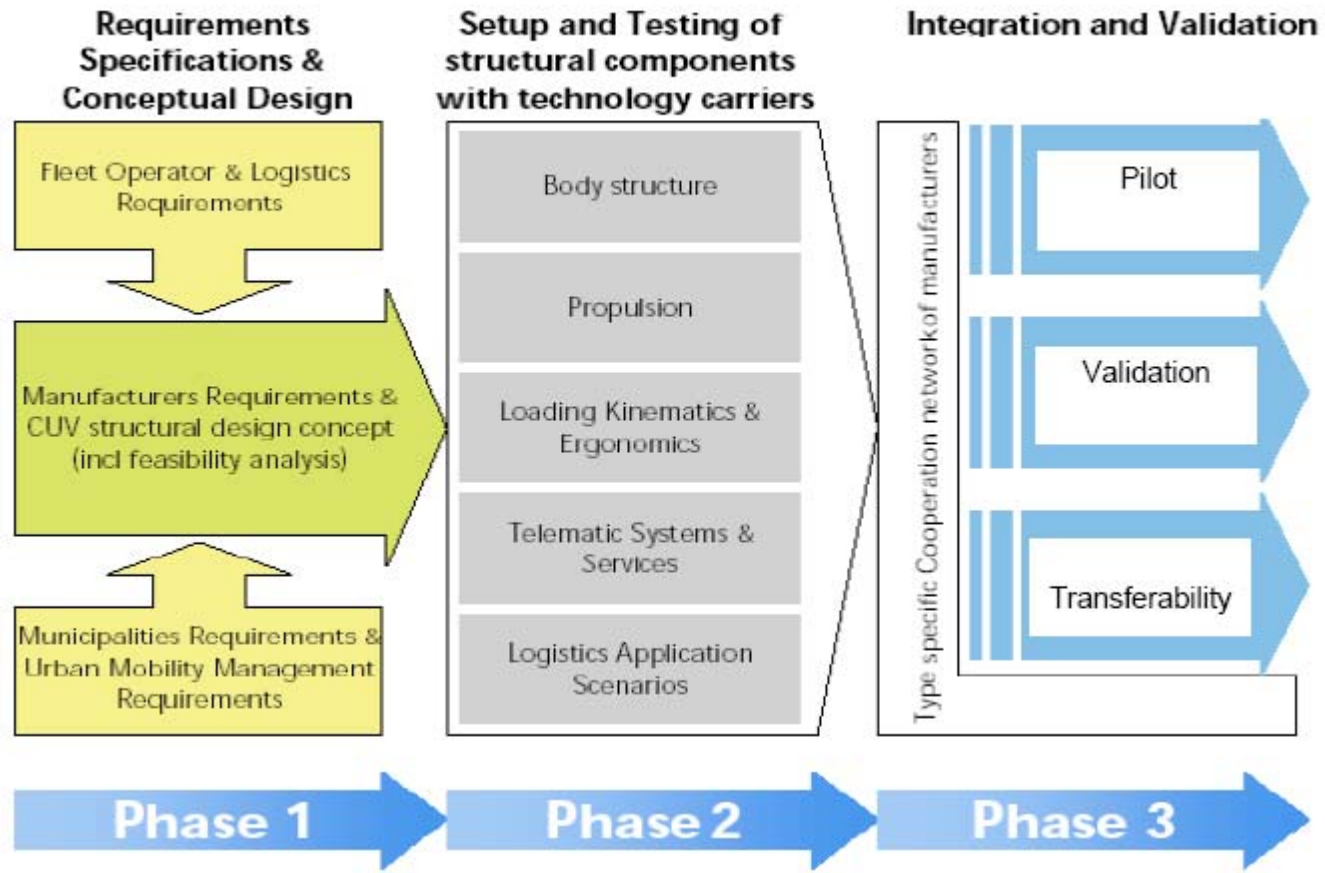


Eine aktuelle Staumeldung geht ein und die Auswirkungen auf den weiteren Verlauf der Tour werden berechnet und visualisiert. Der Disponent wird aktiv gewarnt, so dass er entsprechend reagieren kann.



Reaching high efficiency by employing sophisticated technologies!

# WA4 Commercial Transport concepts



# WA5 Traffic Management

## VISION I:

### Sustainable Traffic Management based on Advanced Information Technology

- assessment of traffic induced environmental impacts (e.g. air pollution) for urban planning as well as traffic management
- sustainable development of transportation systems in urban areas
- area-wide examination and determination of the traffic situation and short-term prediction
- simulation of timetables for public transportation systems:
  - conflict-free plans with minimized waiting times
  - energy load balancing of the transport system.



# WA5 Traffic Management

## VISION II:

### Real Time Traffic Information based on Digital Data-Casting Technologies

- Real Time Traffic Control
  - large event management
- Driver Information
  - Dynamic, Adaptive and Prognostic Routing and Navigation, Driving Time
  - Parking Guidance System (Park & Ride)
- Traveler Information:
  - Real Time Schedules for public transport
  - Traveling Time (inter modal)
- Tourist Information:
  - Location Based Information Services
  - Personalized City-Guide



# Team – METRASYS at work



Abb2: Working in Hefei



Abb3: Working in Jiading



Abb1: Kick-Off meeting 22-24.02.2006 in Jiading

# Result: Huang Shan (Yellow Mountain) Friendship Award 2006



# Thank you for your attention!



## German Project Partners



DLR Deutsches Zentrum für Luft- und Raumfahrt e.V. in der Helmholtz-Gemeinschaft

Science Centre North Rhine-Westphalia Institute of Work and Technology



Institute for Culture Studies Wuppertal Institute for Climate, Environment and Energy

BMW CHRYSLER

Fraunhofer



Institute Computer Architecture and Software Technology

Metrostudies.de



## Chinese Project Partners

The Government of Jiading District, The Government of He Shanghai



同济大学 TONGJI UNIVERSITY

