

■ **Energy as a Key Element for the Sustainable Development of
the Urban Region of Gauteng**

- EnerKey -

**Development and Implementation of an Integrated Urban
Energy, Environmental and Climate Protection Concept**

Project concept for second phase 2007-2010

■ ***“Energy Demand and use in Transport and Mobility”***

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■ ***“Energy Demand and use in Transport and Mobility”***

Main Objectives of the module

- **Sustainable mobility concepts for the cities (Environmental and Noise)**
- **Enforcements of Public Transport (Train, Bus, Mini Taxi), further mobility sectors (Aircraft)**
- **Improvements of the air quality (Measurement of air pollutant, Inspection of Maintenance)**
- **Regulation of Transport (law, central traffic control systems) traffic control centre**

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Research objectives

- **Traffic flow (different day time and day)**
- **Emission and fuel behaviour (standards of technology)
different types of vehicles**
- **Model split (use of technology) private car, public
transport (Bus, Tram, subway)**
- **Behaviour of the inhabitant**

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Implementation objectives

- **Geographie Information System (GIS) EG
Umgebungsrichtlinie**
- **Traffic counting**
- **OBD for Individual transport**
- **Monitoring stations**

The research and the implementation of transport measurements will be reduce the air pollution in this area

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Work and tasks

- **Selection of the Pilot area (City centre, Stadium area)**
- **Analyse of the transport flow**
- **Emission factor of the fleet**
- **Integration at the GIS**

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Researches and Contact

- **Web GIS (digital geographic data of Joburg)**
- **Emission factor (typical vehicle emission factors)**
- **Contact to University Staff, Transport planning (ITP) and (AQA)**

Tools and Instruments

- **Emission inventory tool (ITM, TIMES)**
- **GIS WEB Software**
- **Data of the emission handbook (UBA)**

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Work for Emission Inventory Mobile Sources

1. **Contact with the responsible offices**
2. **Classification of emission sources in line- and area sources**
3. **Definition of type of source:**
 - line-sources* dependent on**
 - characteristic of the road**
 - number of traces**
 - paved or unpaved roads**
 - speed limits**

***area – sources* dependent on**

- dwelling characteristics**
- population and building density**
- distance from the city**

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Work for Emission Inventory Mobile Sources

4. **Digitizing the characteristics of the area under investigation, the line- and area-sources**
5. **Investigations about the traffic flows and the vehicle speeds**
6. **Complementary traffic investigations**

■ WEBGIS

■ Features Online WEB – Mapping

■ Online visual data of the space (Internet)

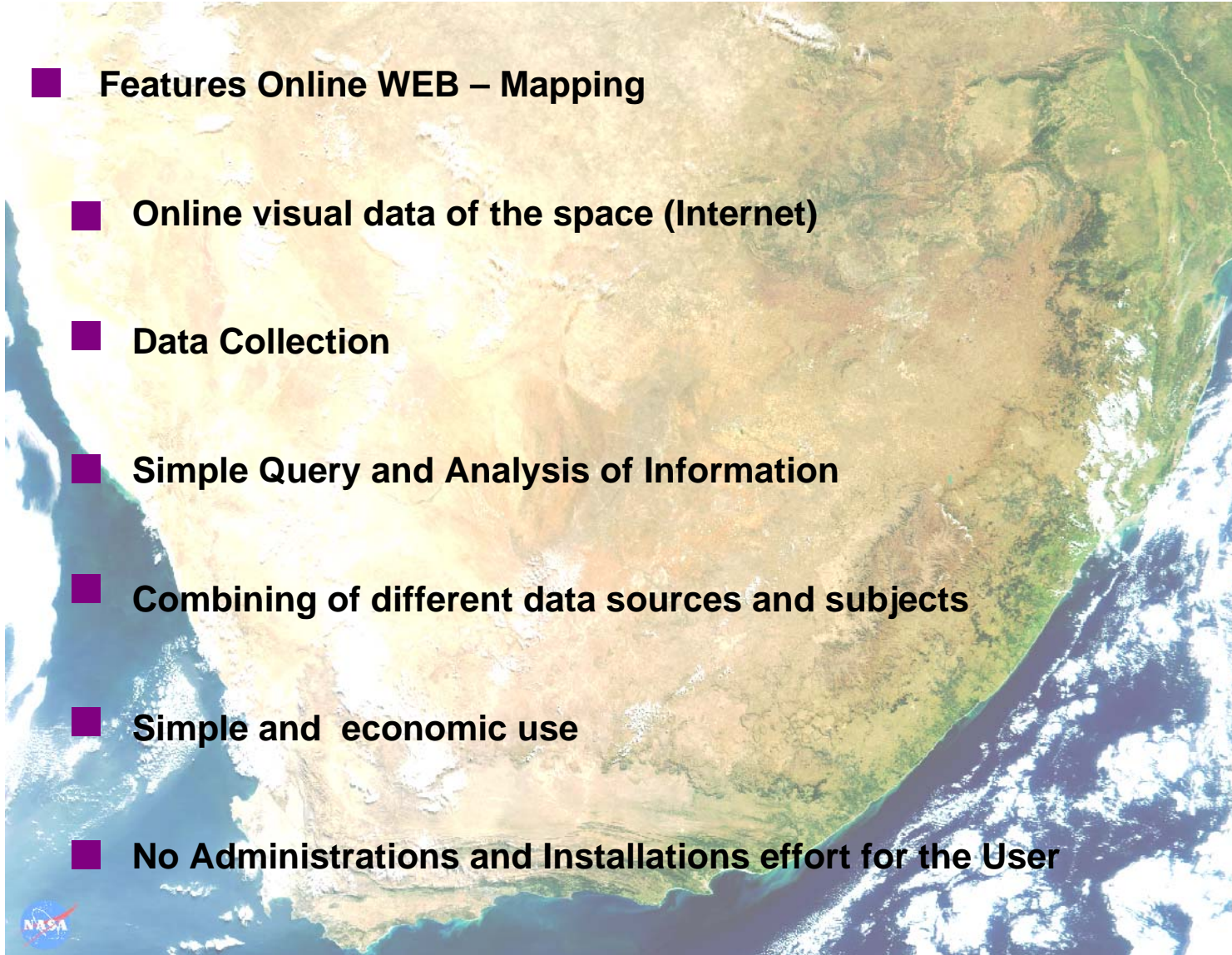
■ Data Collection

■ Simple Query and Analysis of Information

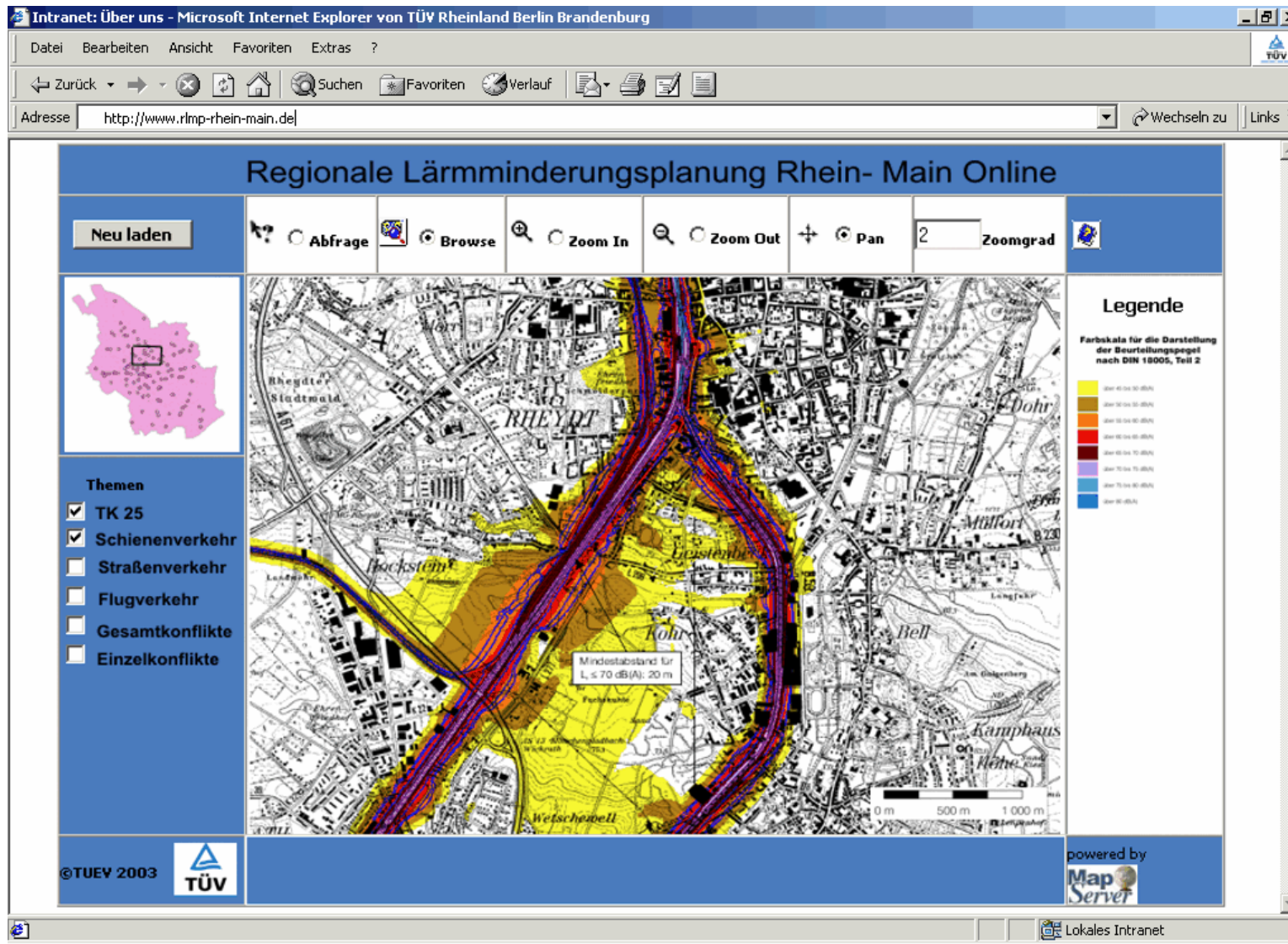
■ Combining of different data sources and subjects

■ Simple and economic use

■ No Administrations and Installations effort for the User



WEB GIS Example Traffic Noise



WEB GIS Example Asian Games Qatar

The screenshot shows a web GIS application running in Microsoft Internet Explorer. The browser title is "MB2 - doha_2006 - Microsoft Internet Explorer". The address bar shows the URL: http://tuv-doha2006.dyndns.org/mapbender21/frames/index.php?&gui_id=doha_2006.

The application interface includes the following elements:

- Statistics:** A bar showing four categories with values and percentages: 2173/2745 (79.2%), 321/2745 (11.7%), 04/2745 (7.4%), and 47/2745 (1.7%).
- Map:** A central map showing an aerial view of Doha, Qatar, with a red bounding box highlighting a specific area. The word "CORNICHE" is visible on the map.
- Left Panel:** Contains a logo for "15th ASIAN GAMES DOHA 2006 the games of your life", a small map of Qatar, and a "Gazetteer Locations" dropdown menu. The dropdown menu is open, showing a list of locations including "Al-Duhail Shooting Range".
- Right Panel:** Contains a list of "All Tasks" with various task IDs such as "SDP_SDM_L00_2116_236", "ARP_ARH_L00_1661_633", etc.
- Bottom Panel:** Contains a "Personal Task" section.

■ CDM-Capacity Building

Initiating of Pilot Projects for Clean Development Mechanism (CDM) in SA and attract foreign investment

Project Objective:

Overcome barriers for initiating implementation of CDM in the areas :

- + Low Awareness on CDM among public**
- + Lack of institutional mechanism on CDM**
- + High transaction cost**

Collection of potential projects for bundled CDM projects.

■ CDM-Capacity Building

- Screening Bilingual Brochure
 Promotion on Webpage
 Collection of materials => Market survey 1
- Awareness - Building Initial Workshops, Seminars Training courses w.
 case studies Bilingual Brochure
 Promotion on Webpage
 Training courses w. case studies
- Project Identification Analyzing different sectors => Market survey 2
 Site visits and negotiations
 Identification of feasible CDM projects
- Investment Workshops for Investors Promotion and CER-Buyers
- Dissemination Bilingual handbook as CDM-guidelines with case studies