# German Emission Inventory

## Central System of Emissions

## CSE

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&

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- German Emission Inventory
  Goals & Demands
- Database System
  Dataflow & Structure, Databases of spatial distribution
- Software MESAP
  Databases CSE & Point Source (Mr. Schellmann)

# German Emission Inventory

## Goals

- Central data management (making of an inventory)
- Performance of the reporting obligations

## Demands

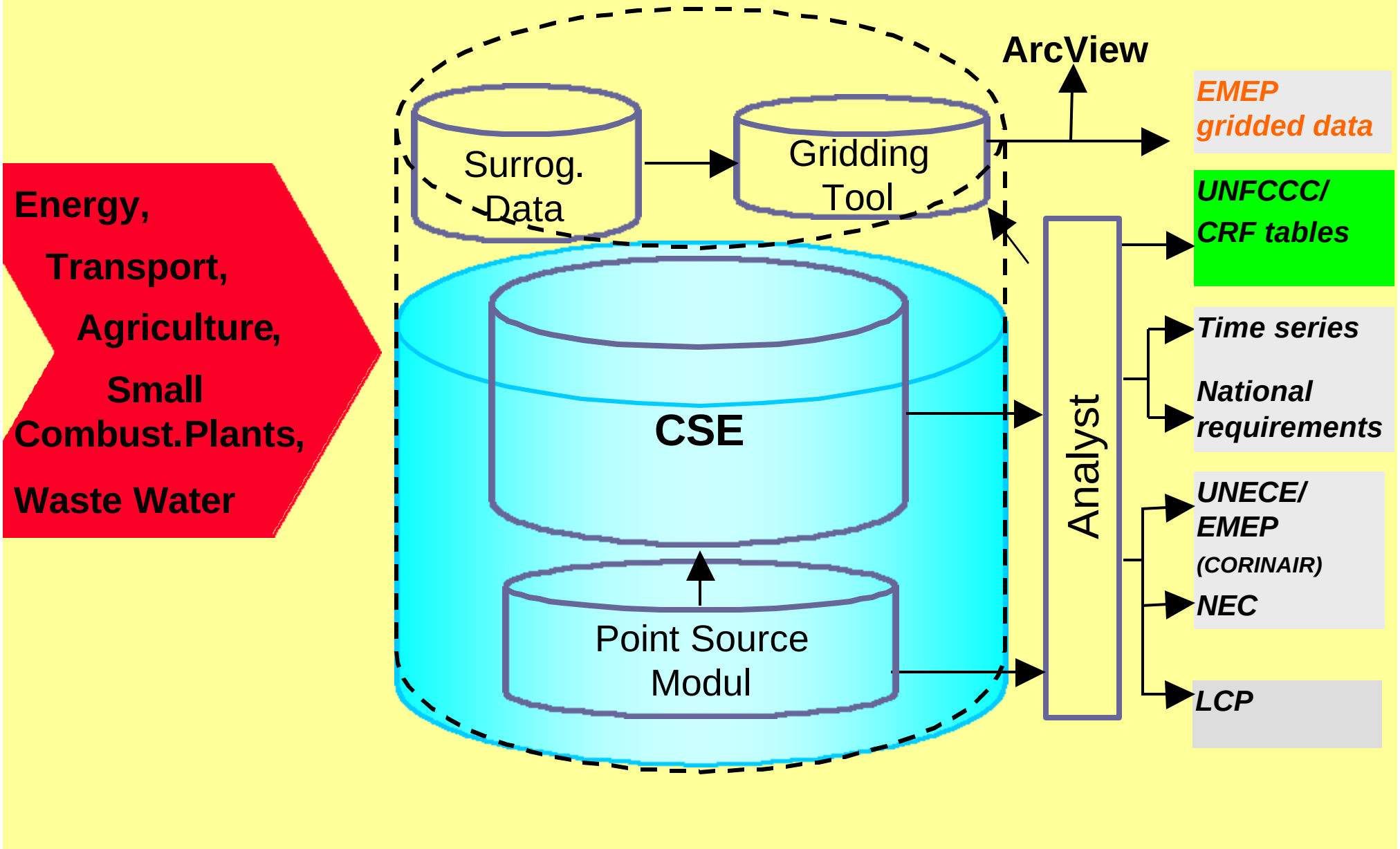
- Transparency
- Flexibility
- Efficiency
- Consistency
- Completeness

# Database System

- Dataflow & Structure

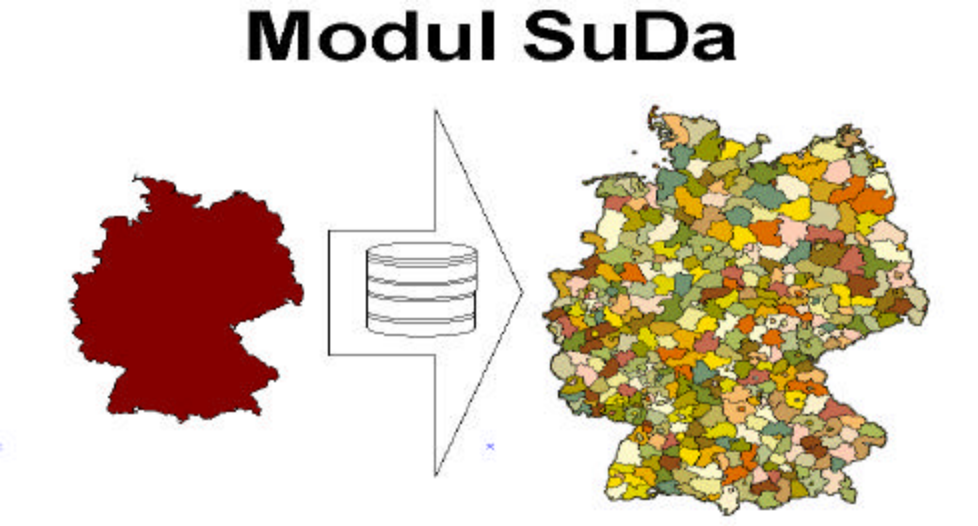
- Databases of spatial distribution

pert Information National Database System Reporting Obligati



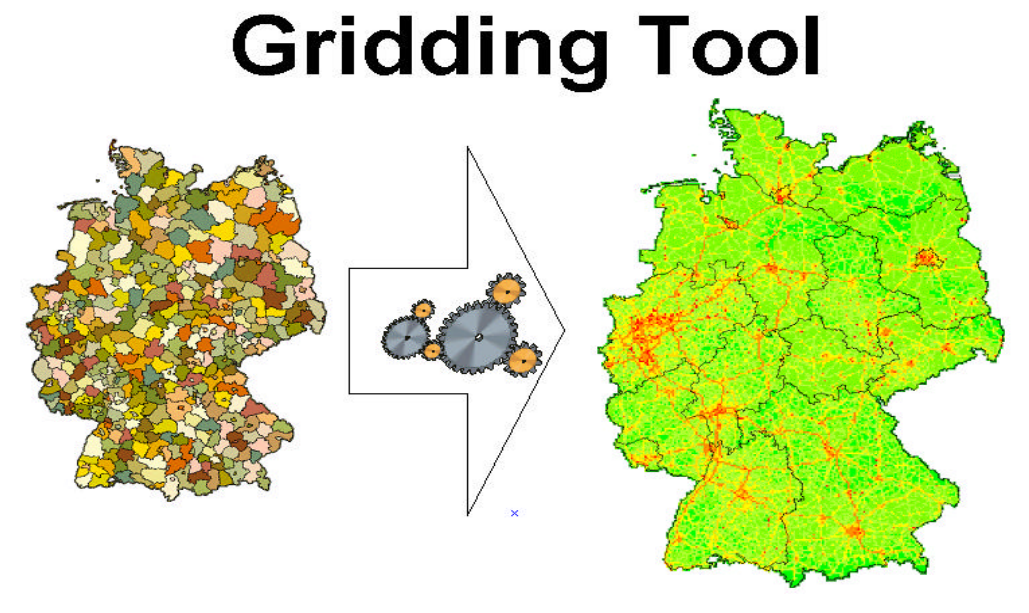
# Database System

- Dataflow & Structure
- Databases of spatial distribution




## Compilation of Distribution Parameters

- Statistical data (e.g. number of inhabitants)
- Calculated data of emissions
- Use of areas for agriculture
- Information on coal mining, air traffic




## Gridding of Emissions

- Determination of any grid cell in EMEP-coordinates
- Calculation of emissions of district areas according to the distribution information of SuDa
- Distribution of emissions to grid cells

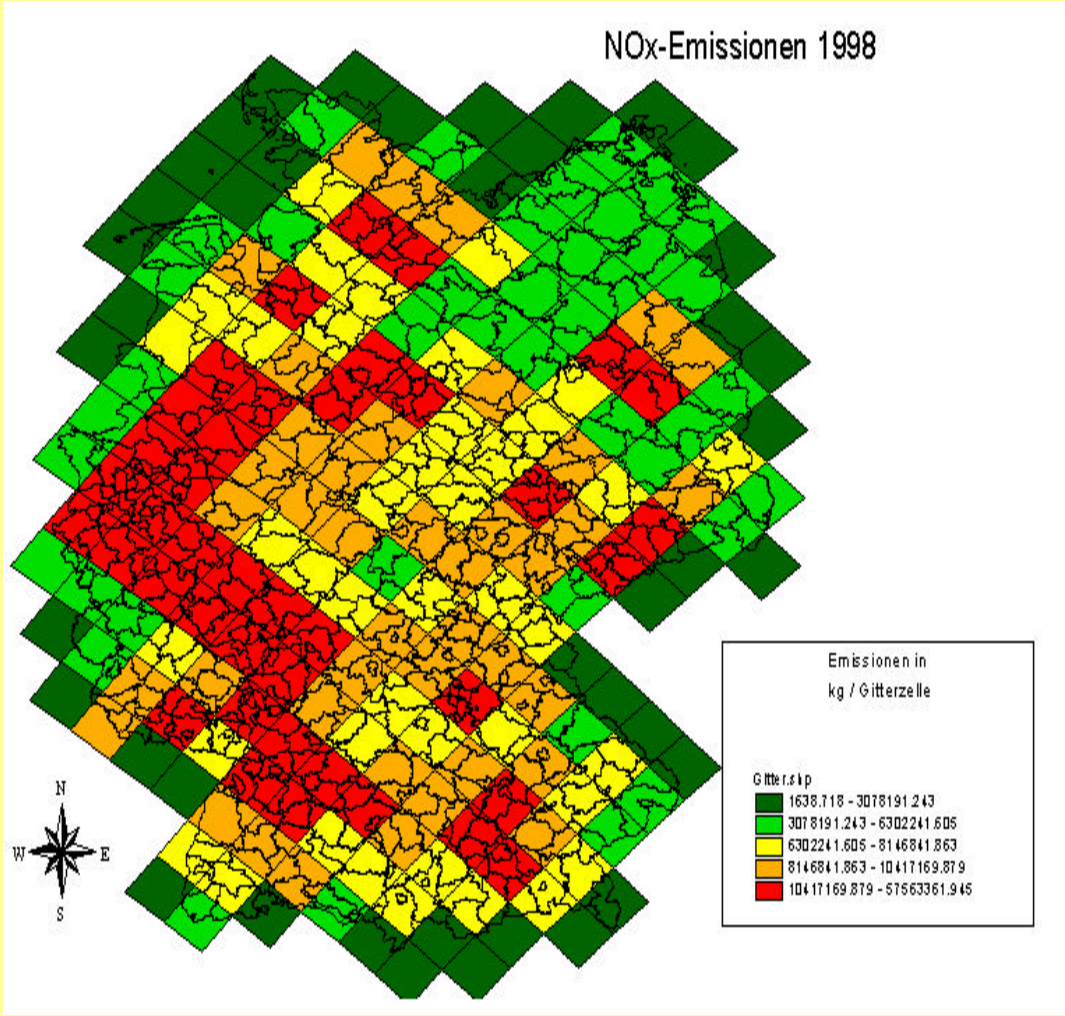
# Distribution of Emissions on Grid Cells:

## Area sources

$$Emi_{grid} = Emi_{district} * \frac{area_{grid}}{area_{district}}$$

## Line sources

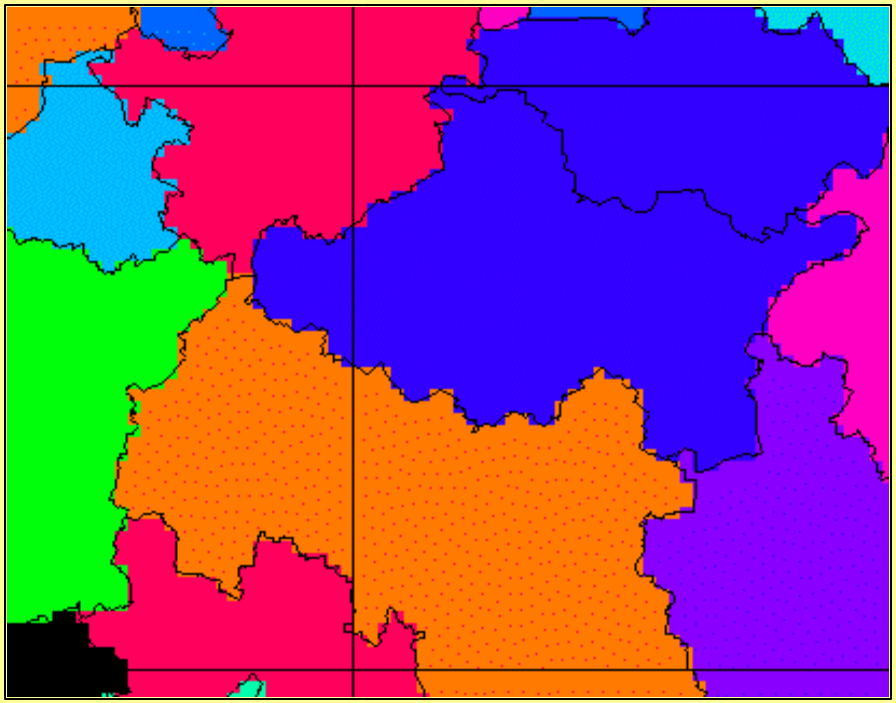
$$Emi_{grid} = Emi_{DE} * \frac{DTV_{grid}}{DTV_{DE}}$$



# Gridding of Emissions on EMEP50-Grid Cells

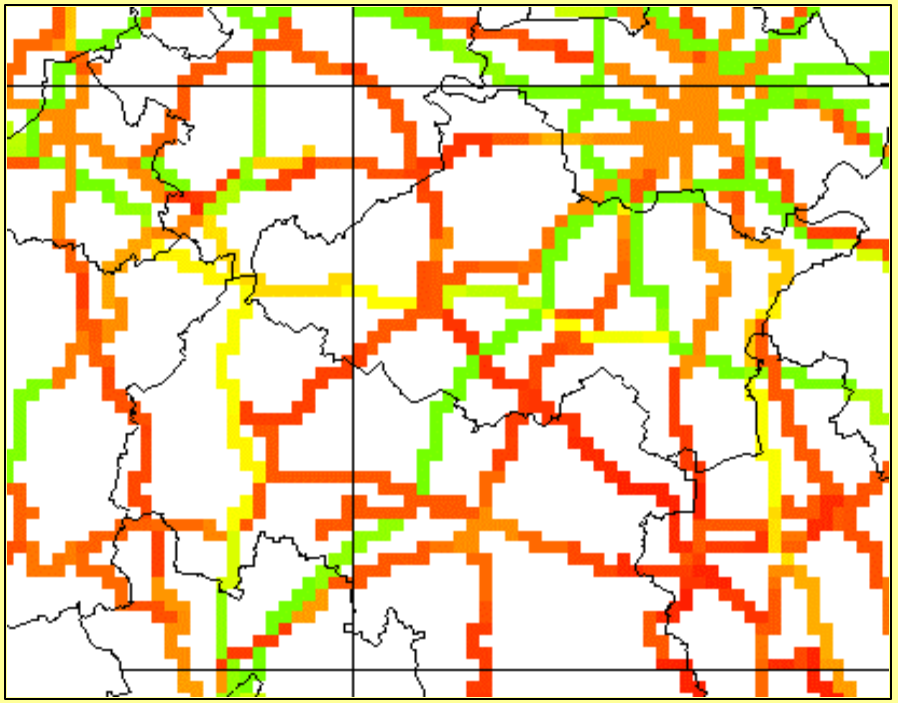
**Composition of EMEP50 grid cells out of the 1 km * 1 km grid**

Basic principle: boundaries of districts gridded on 1 km * 1 km grid cells



**Distribution of the Daily Traffic Volume (DTV) on the EMEP50 grid cells**

Basic principle: DTV on 1 km * 1 km grid cells



# Example of Datapool SuDa (**Su**rrogate **Da**ta)

## Regionalisation of emissions of passenger car traffic on motorways

**1990:** Activities of emission register

**1995:** Daily Traffic Volume (DTV)

**1991 - 1994:** linear interpolation of the ratio of the national totals

**1996 - 1999:** Regionalisation with the data material of 1995

# Calculation of emissions of district areas:

$$Emi_{district} = Emi_{DE} * \frac{DP_{district}}{DP_{DE}}$$

For each SNAP the appropriate distribution parameter (DP) is used.

Accumulation of the emissions after specification.

## $NO_x$ Emissions 1998