

---

# ERAMAS



**Fraunhofer**

Institut  
Rechnerarchitektur  
und Softwaretechnik



---

# ERAMAS

---

## Environmental Risk Analysis and Management System

FIRST

Fraunhofer Institut für Rechnerarchitektur und  
Softwaretechnik

IBB

Ingenieurbüro Beger für Umweltanalyse und Forschung

DGC

Dresdner Grundwasser Consulting GmbH

---



---

# ERAMAS

ERAMAS

Environmental Risk Analysis and Management System

Simulation-based analysis and management system for environmental risks caused by dangerous substances

Problem

Release of carcinogenic and chemically toxic substances

Scenario

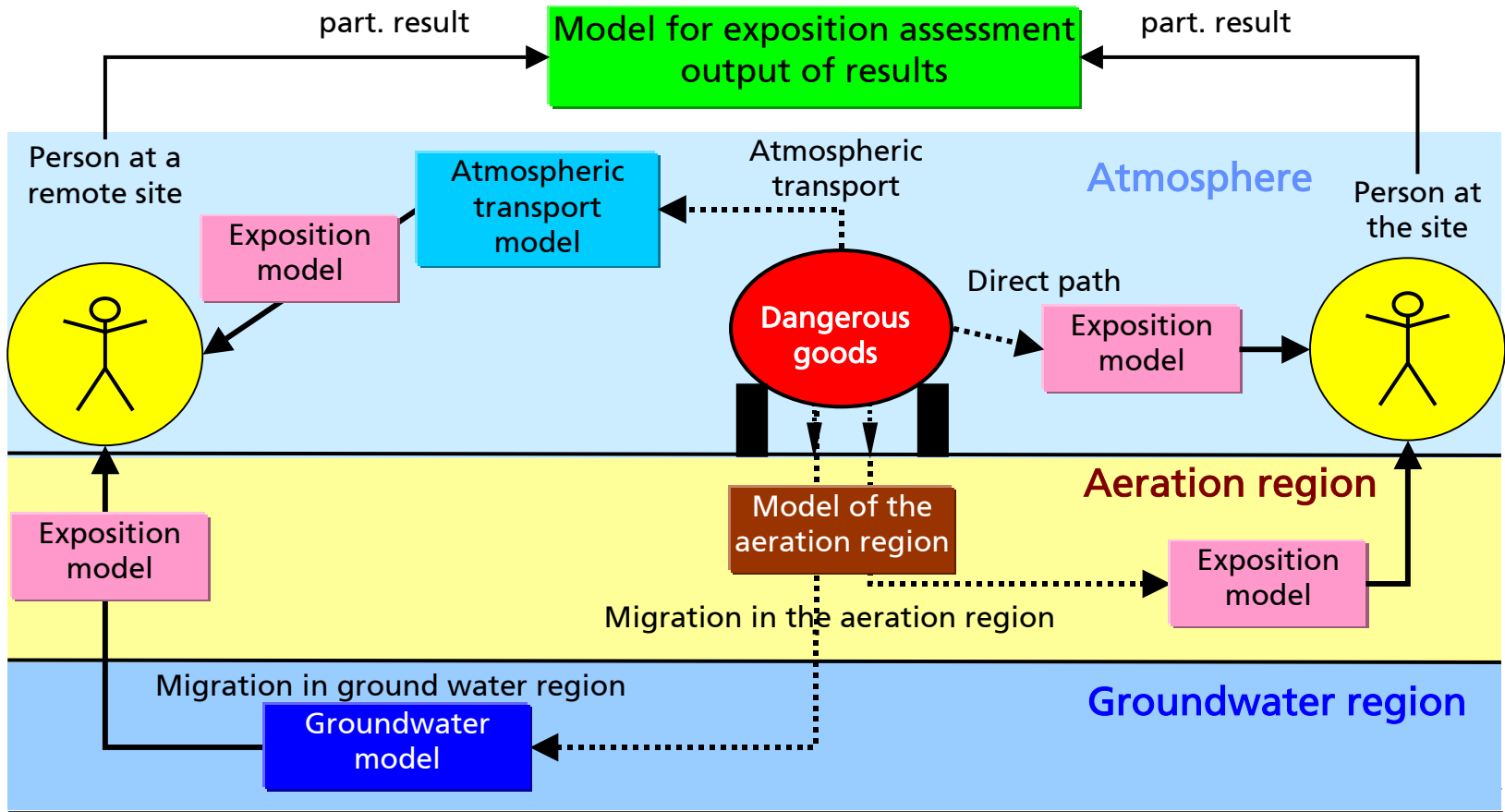
Accidents in industrial installations

Transport of dangerous goods

Terroristic attacks



# Problem



ERAMAS



---

# Objectives

Flexible	Consideration of varying conditions  Selection of the adequate model and system information for the solution of the problem
Adaptive	Dynamic adaptation to the developing scientific and technical state of the art
Accident management	Accident management under real-time conditions
Preliminary Studies	Authorizing procedures, action plans
Easy handling	Simple and intuitively controllable user interface



---

# Realization

Fraunhofer FIRST

Pollutant transport in the atmosphere  
Basic IT-Technology  
System architecture  
System coupling

DGC

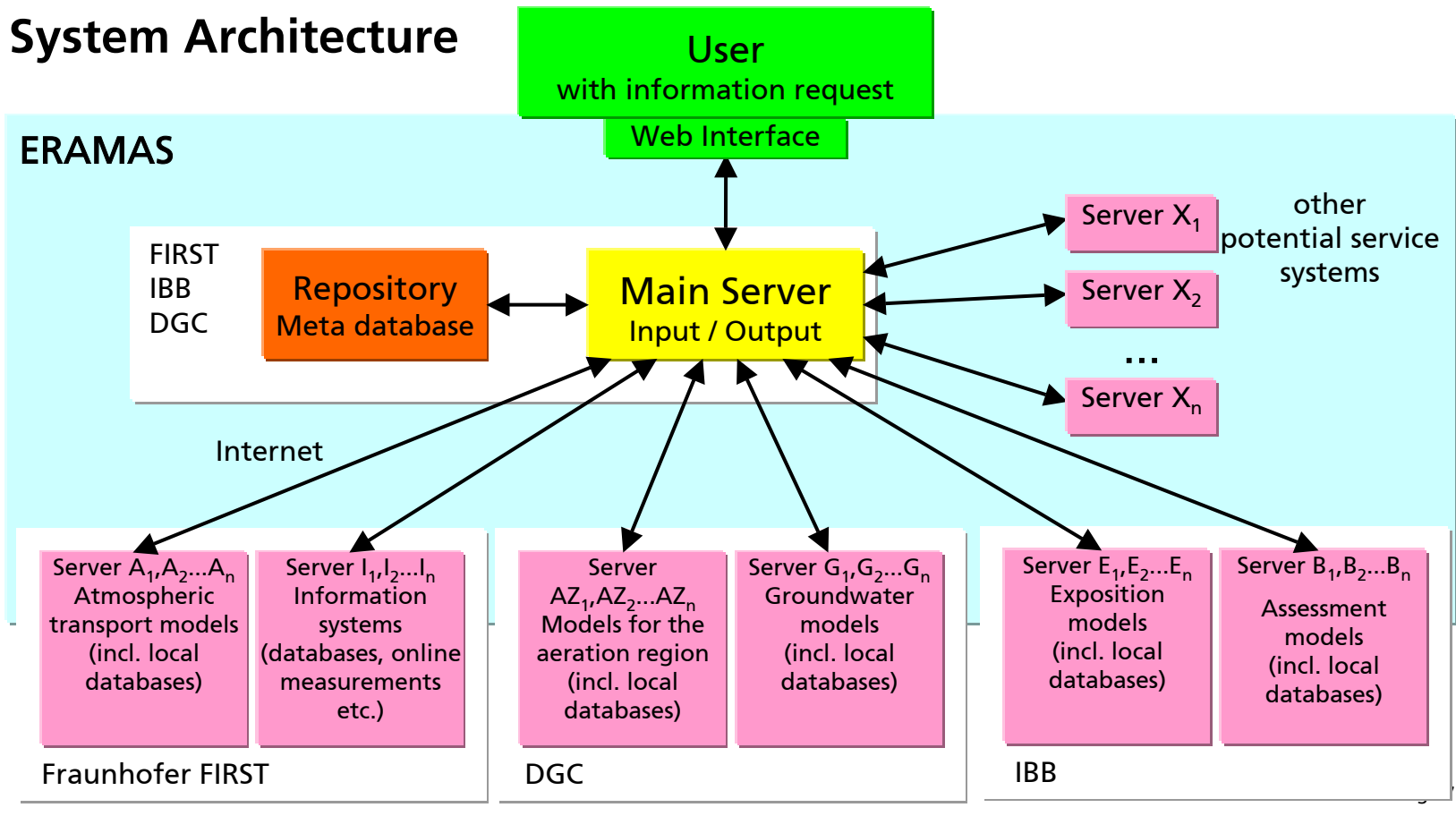
Pollutant transport in the soil and groundwater region  
System coupling

IBB

Exposition  
Risk assessment  
System structure  
System coupling



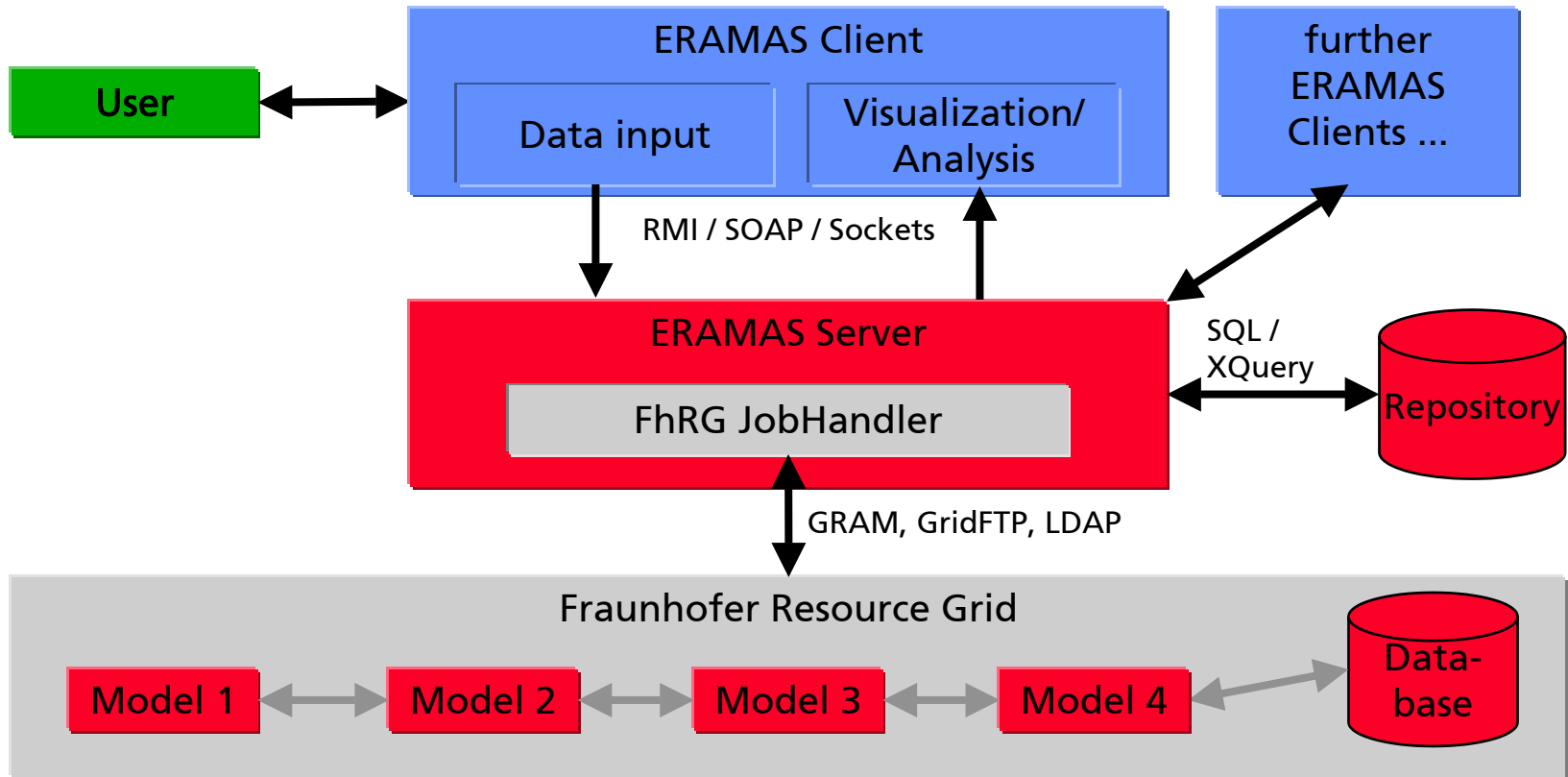
# System Architecture



ERAMAS



# ERAMAS as Grid Computing Application



ERAMAS



# Control and Data Flow as a Petri Net



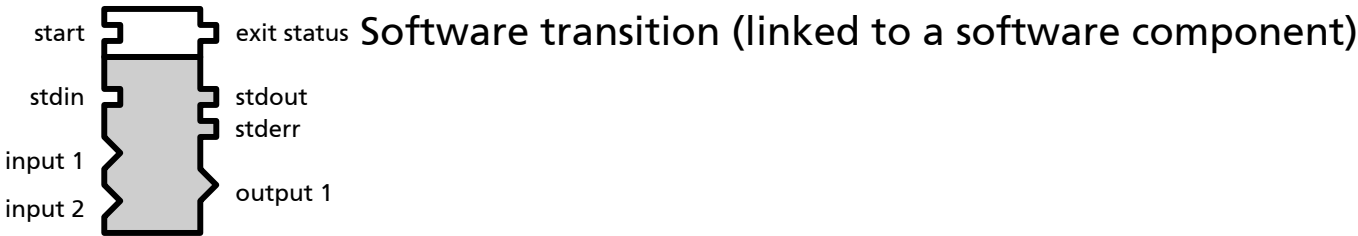
Control place



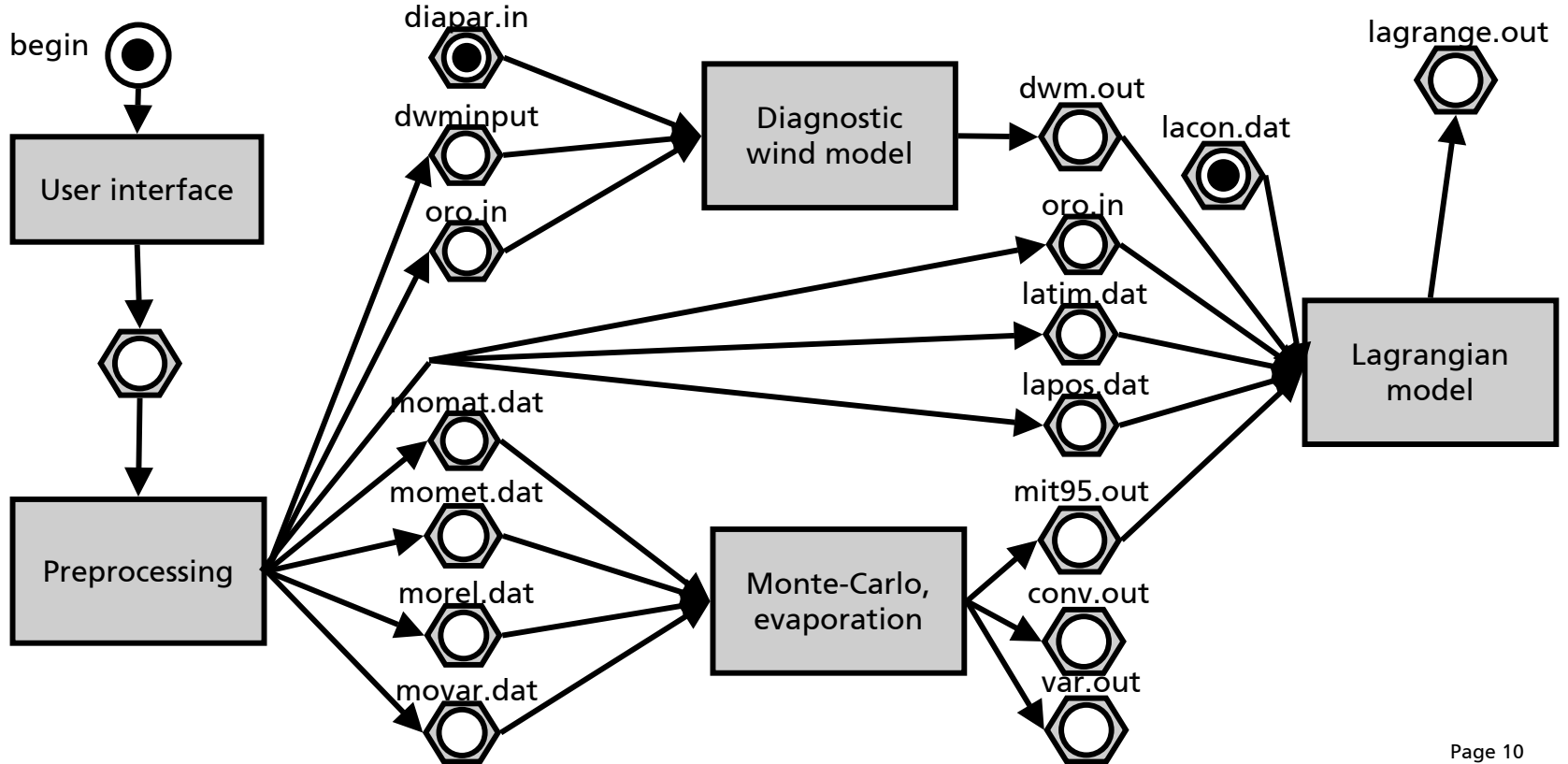
Control transition



Data place (linked to a file)



# Pollutant Transport in the Atmosphere



ERAMAS

