GFZ POTSDAM

GIB Geodaten-Infrastruktur Brandenburg

User-oriented provision of geoinformation in disaster management

Potentials of Spatial Data Infrastructures considering Brandenburg/Germany as an example

Petra Köhler, March 22, 2005

Agenda

Introduction: geoinformation, information technology and Spatial Data Infrastructures

Disaster management: requirements and barriers

Methods of resolution in Brandenburg/Germany

- SDI Brandenburg
- Special Interest Group Disaster Management
- Current Works

Conclusions

GI and IT as resources in disaster management

- Geoinformation as raw material providing content
  - Reference data vs. thematic data
  - Information retrieval and decision support
- Information Technology as driving engine
  - Increasing storage and processing capacity
  - Communication via internet
  - Spatial technologies: GIS, geo databases, internet mapping services, mobile mapping tools etc.
- International Standardisation of data, systems, services

Spatial Data Infrastructure

„base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general“ (NEBERT 2001)

SDI components

- Organisational level: organisational structures, responsibilities, interactions
- Political and legal level: integration in overall “institution”, access and usage conditions, pricing models etc.
- Data level: integration and harmonisation, transparency, standards
- Technological level: standards, interoperability

Disaster Management: Requirements

- Operational disaster management (mitigation, preparedness, response, recovery):
  - application-oriented methods, data, information and technologies as foundation for decision making
  - embedding in effective organisation and coordination structures
- Disaster research:
  - High-quality data base, open and interoperable IT solutions

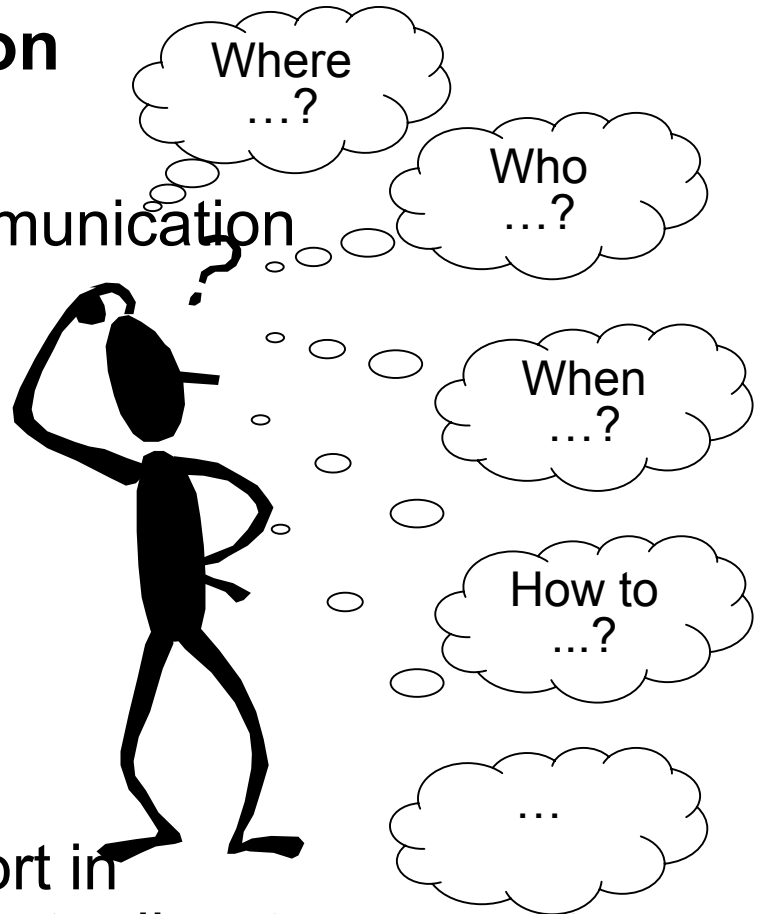
Barriers (I)

- Intransparent and hardly traceable offer of data and information products
- Non-uniform data formats, qualities, access and usage conditions
- Pure technological application development instead of involving users (clients!) in a comprehensive way
- Incompatibility of systems and solutions, development of isolated applications for fulfilling complex requirements and scenarios

Barriers (II)

- Lack of dialog between actors in disaster management
- Competition and conflicts because of federal structures and manifold (sometimes: disordered) responsibilities (Germany)
- R&D: lack of transfer of valuable results from fundamental research and development of methods into application, lack of user involvement

Methods of resolution



- Fostering coordination and communication between all participants
- Exploring SDI potentials
- Providing the right information
  - at the right time,
  - at the right place,
  - in the right format

as foundation for decision support in effective mitigation and response to disastrous events

SDI Brandenburg/Germany

- Generation of suitable organisational structures and establishment of a formal framework while involving the users and analysing there tasks
- Ensuring of transparency in data and services supply
- Introduction of common architectures and standards
- Design and validation of application-oriented prototypes and fostering of transfer from R&D to praxis

Organisation GIB

Business development

GIB Committee

GIB Working Group

Networks of users and suppliers

Special Interest Groups

GIB-Forum

Information and communication platform

Workshop „GIS and spatial data in disaster protection in Brandenburg“

- Participants: GFZ Potsdam and Ministry of Interior (organisers), responsible players of local disaster management, GIS experts, data and technology suppliers
- Goal:
  - Bringing together the local community
  - Demonstration of GI, GIS & SDI potentials
  - Discussion of gaps and demands
  - Discussion of concepts of resolution

Recognitions and necessary actions

- Organisational needs: Introduction of organisational structures and unified information flows
- Data relevant needs: unification of data and information management, creation of data catalogues, simplification of access and usage conditions
- Technological needs: Implementation of application-oriented and standardised systems and services providing disaster-relevant data and information and supporting work flows

SIG Disaster Management

- Goal: Optimisation of access to and usage as well as exchange of spatial data and information for operational disaster management
- Tasks:
  - Examination of “disastrous” scenarios including actors, interactions and used data and technologies
  - Formulation of catalogues of requirements
  - Deduction of optimising strategies
  - Realisation of pilot projects and testbeds

Framework: Following the SDI principles

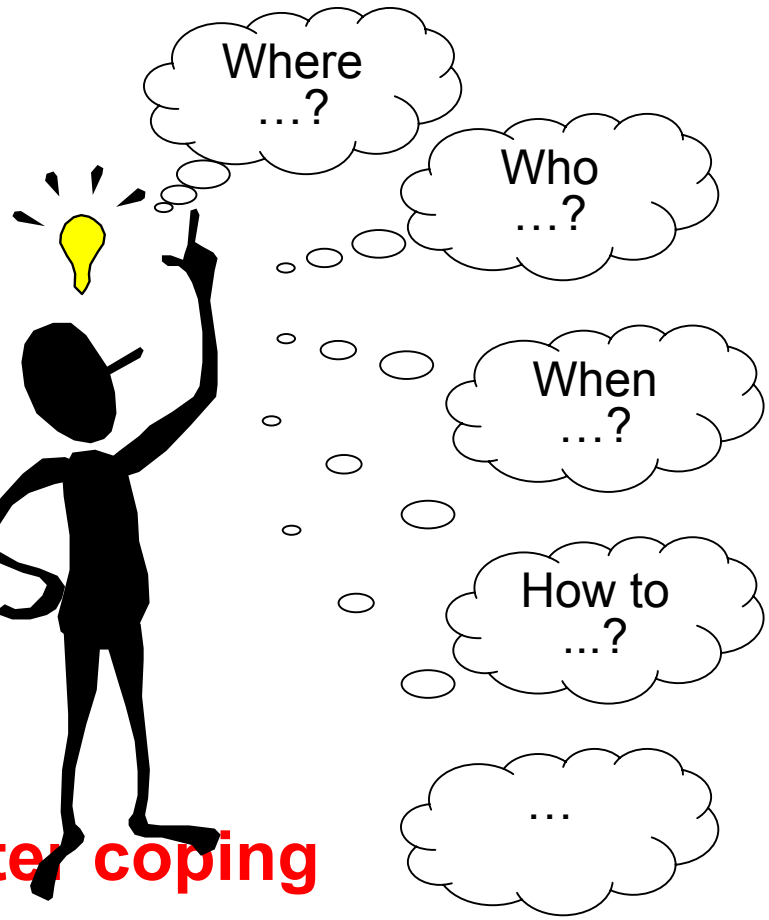
- Usage of internet technology and approved standards for (meta)data and interfaces: OGC, ISO etc.
- Orientation on and participation in SDI activities on local/national/international level: GDI-DE, INSPIRE etc.
- Results:
  - Transferability of solutions because of openness and compatibility (interoperability)
  - Contribution to optimised availability and usability of spatial data and information

Current steps

- Analysis of user requirements:
  - Workshop results
  - Survey on data and technologies in disaster management authorities, fire departments etc.
- Presentation of existing systems and services for data dissemination and exchange
- Pilot projects: example implementation of GIS-based solutions and web services in cooperation of selected communities, cities and Berlin

Conclusions

- Networking and bundling of the actors‘ specific skills
- Initiation of pilot projects and transfer of R&D to application
- Optimisation of processes and workflows



Efficient disaster coping

Contact and further information

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