TS 32 – SDI - Developments

TS32.1 Mr. **Keith Murray** and Dr. **Andrew Trigg** (United Kingdom):
Local to European SDI – "Mash up" or Professional, Industry Strength Infrastructure? (0484)

TS32.2 Mr. **Jens Hollaender** and Mr. **Thorben Brigsted Hansen** (Denmark):
The Map Supply – An Element in the National Spatial Data Infrastructure (0829)

TS32.3 Ms. **Hanna Lauhkonen** (Finland):
What Challenges You Face When Taking in Use a Wide LIS System? (0750)

TS32.4 Dr. **Martin Scheu** and Dr. **Andreas Rose** (Germany):
Monitoring of Spatial Data Infrastructures (SDI) (0673)

TS32.5 Ms. **Teija Tarvainen** and Ms. **Tarja Myllymäki** (Finland):
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TS32.6 Dr. **Çetin Cömert** and Mr. **Halil Akıncı** (Turkey):
Implementing SDIs with SOA: The Current Status and Future Directions (0657)

TS 32 – SDI - Developments

Monitoring of Spatial Data Infrastructures (SDI)

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OGC: Web Map Service WMS

- The Open Geospatial Consortium, Inc (OGC) is an international industry consortium of 314 companies, government agencies and universities.
- OpenGIS® Specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT.
  - *GetCapabitilies* >> XML-Data
  - *GetMap* >> Raster (PNG/JPEG)
  - *GetFeatureInfo* >> Dokument (XML, HTML)

WMS: GetMap request

http://geoservice.geobasis-bb.de/ows/dop.php?SERVICE=WMS
&REQUEST=GetMap
&VERSION=1.1.1
&SRS=EPSG:25833
&BBOX=3450000,5730000,3460000,5740000
&WIDTH=580
&HEIGHT=580
&FORMAT=image/png
&LAYERS=dop5
&STYLES=default

WMS: GetMap request

- Results:

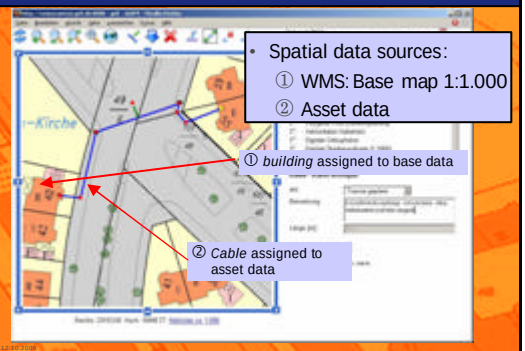
Source: LGB Brandenburg, 2006

Digital Orthophoto res. 5 meter

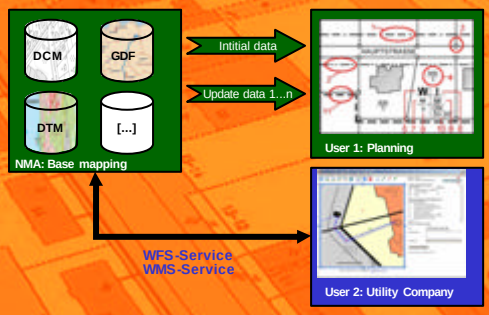
Source: LGB Brandenburg, 2006

Navigation dataset 1:25.000

Looking at the users viewpoint



OGC-Services



What do we expect from a SDI?

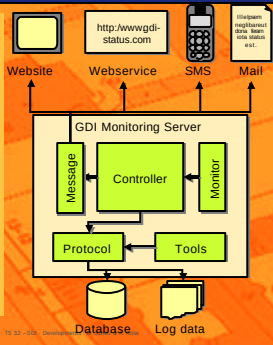
- It is a big step from a Web Map Service towards a Spatial Data Infrastructure (SDI)
- It has to work everywhere and at any time.
- No one will rely on infrastructures which work at one moment and is out of function at another.
- In many cases service breakdowns are reported by the customers, surely the worst method to monitor an infrastructure.

What is the idea?

- Put up an automat (monitor) which constantly watches a Web Map Server and alerts the system administrator in case of any malfunction.
- It should...
  - work continuously and in the background,
  - notify problems immediately,
  - provide extended log files,
  - and help to minimize failure down times.

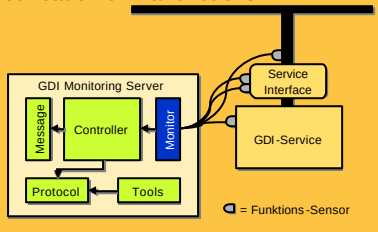
Notification and logging

- Push-procedure
  - Mail
  - SMS
  - Language (optional)
- Pull procedure
  - Log data
  - Website
  - Status service



Sensors of GDI-Monitoring ...

- ... permanent verification of the system
- ... active notification of malfunctions



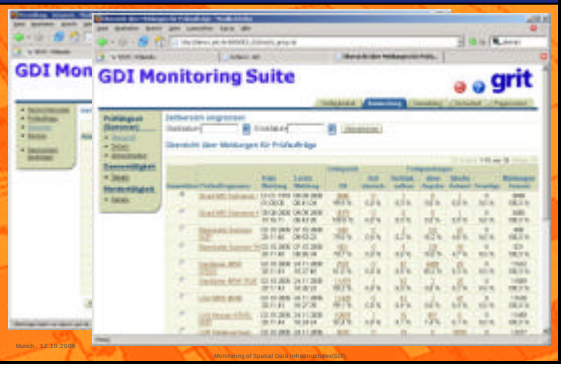
Sensors: Permanent control of GDI

- Each sensor has a specific task, is dedicated to a specific system functionality.
- System availability
  - Control of guaranteed features, e.g. 24x7 (SLA)
  - Logs of downtimes

Permanent control of GDI

- System security
  - Simulation of hack-attacks
    - Access (forgery, abuse)
    - Secure communication
  - Tests of backup mechanisms
    - Regularity
    - Completeness
  - Logs of failed attacks
    - Login attempts

Monitoring Suite: GUI



Monitoring Suite: GUI

Conclusions

- Digital spatial information can be used everywhere but is far from being ubiquitous.
- The basic property of an infrastructure – reliability – has be assured and it's monitoring is one important task.
- Without sustainable monitoring Spatial Services are subject to undetected.
- failures and will not be accepted in business workflows of public and industrial customers.