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The foundation of GDI NRW in 1999

History inspiring the future

9th GeoIT Wherecamp 2019

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"Life must be understood backwards,
but lived forwards."

-Soren Kierkegaard -

The times before GDI NRW

- Companies developed various GI systems and solutions
  - Few and weak standards in the GI world
  - Keen competition
- In NRW the responsibility for "cadaster" is on community level
  - Each municipality has its own system
  - Own peculiarities in the data
- No integrated use of data nor information

Common Manifesto for Interoperability

Northrhine-Westfalia is building together with its communities, the GIS industry and the GIS users the Geo-Data Infrastructure NRW (GDI NRW), in order to activate the geo-information market in NRW and to improve the administrative and private geo-data within the framework of existing legislation. In this process a freely accessible geo-data net for all the partners with a central clearing point giving access to all geo-data available in the net will be established.

GDI NRW in a nutshell

The GDI NRW initiative was started to **activate the market for geographic information** from the **public** and the **private sector**.

It aims at **identifying** the various **technical, legislative, socio-economic and logistical obstacles** and to **remove** them.

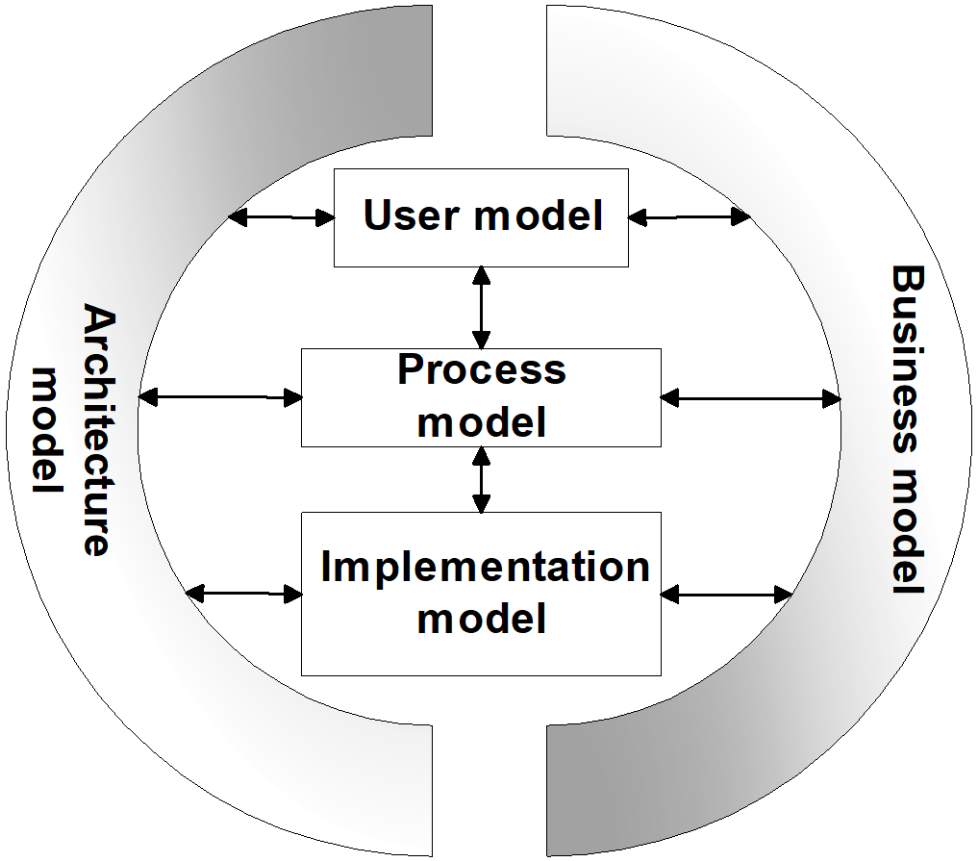
To facilitate this process **supporting measures** and **infrastructure projects** are part of the initiative.

The Story of GDI NRW – the beginning

- 1998/-99: Start of the initiative with sponsored projects (top down)
  - Result: pre-SDI (realization of OGC and ISO specs) [Simple Feature; no web services!]
  - Market study
  - Reference model

GDI NRW Reference Model

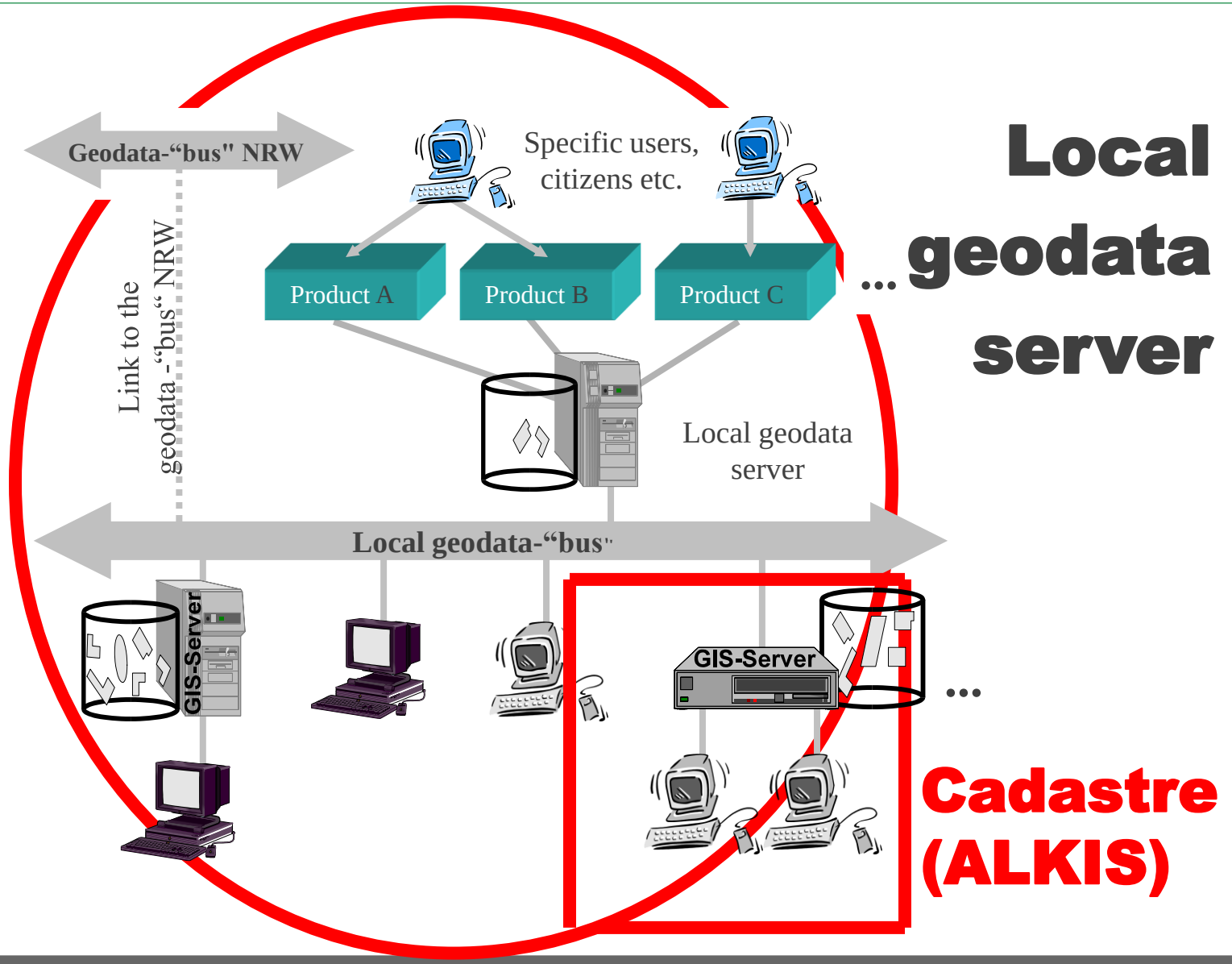
- Common foundation for all involved parties
- Take international experience into account
- Use standards when ever possible (OGC, ISO/TC 211, …)
- Intitiate and guide consensus processes



The Story of GDI NRW – the beginning

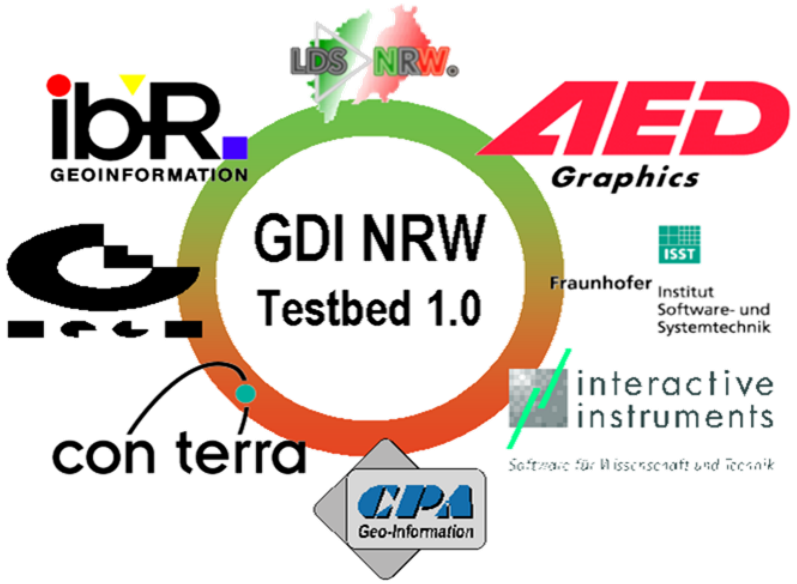
- 1999/2000: Setup of Special Interest Groups (bottom up)
  - SIG Architecture (30 participants) 28.6.2000
    - IT is in progress (e.g. SOAP, UDDI, …)
    - OGC Specs are under further development [Web Services are introduced]
    - Harmonization of ISO and OGC
  - SIG Metadata (5 participants)
  - SIG E-Commerce (10-15 participants)
  - Result: Concrete concepts for GDI NRW

Step by step towards a GDI NRW

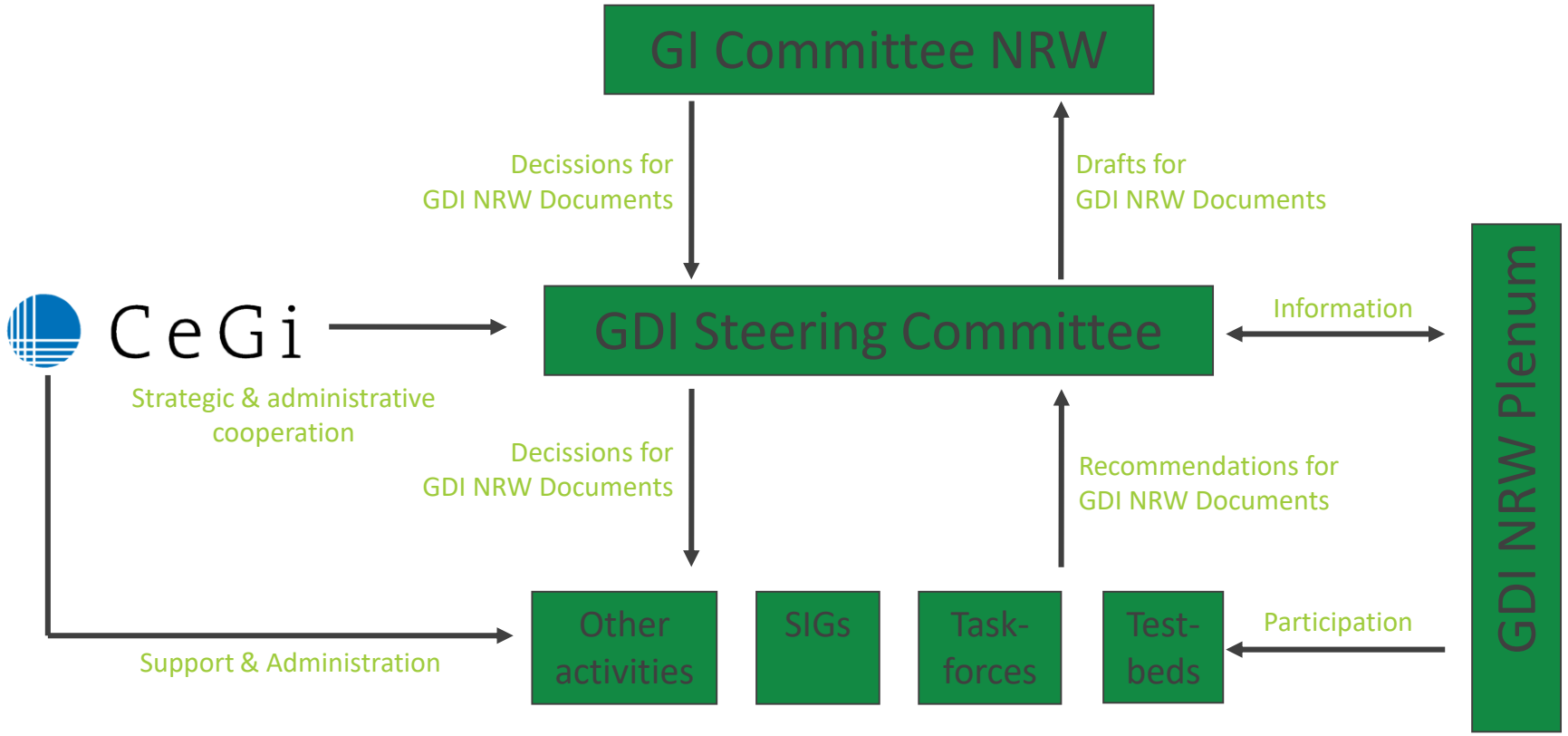


The Story of GDI NRW - Implementation

- 2001: Start Pilot / Testbed I
  - Result: first instance of GDI NRW
  - OGC-Pilot as a part of GDI NRW
    Integration of different sets of spatial data to realize a real world use case: “Baulandkataster” for the city of Cologne (KOGNIS-project)
  - Founding of CeGi as PPP company
  - Setup organization model

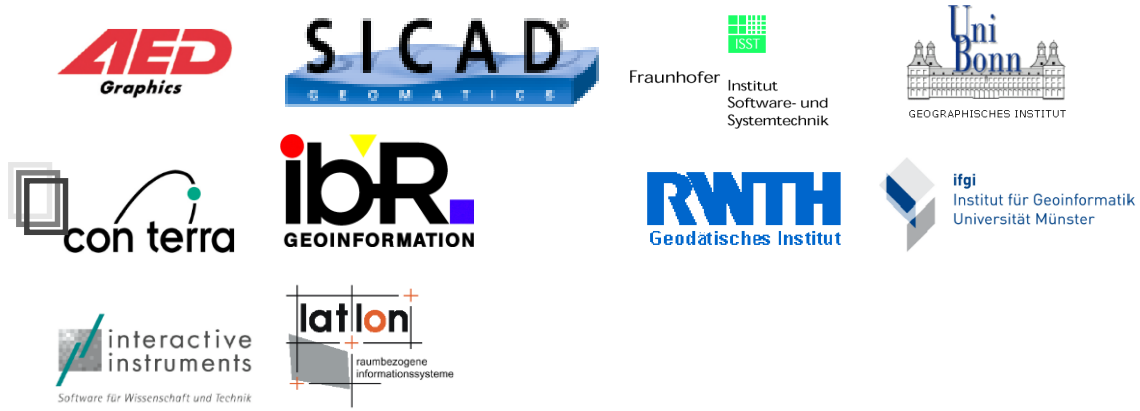


GDI NRW Organizational Model



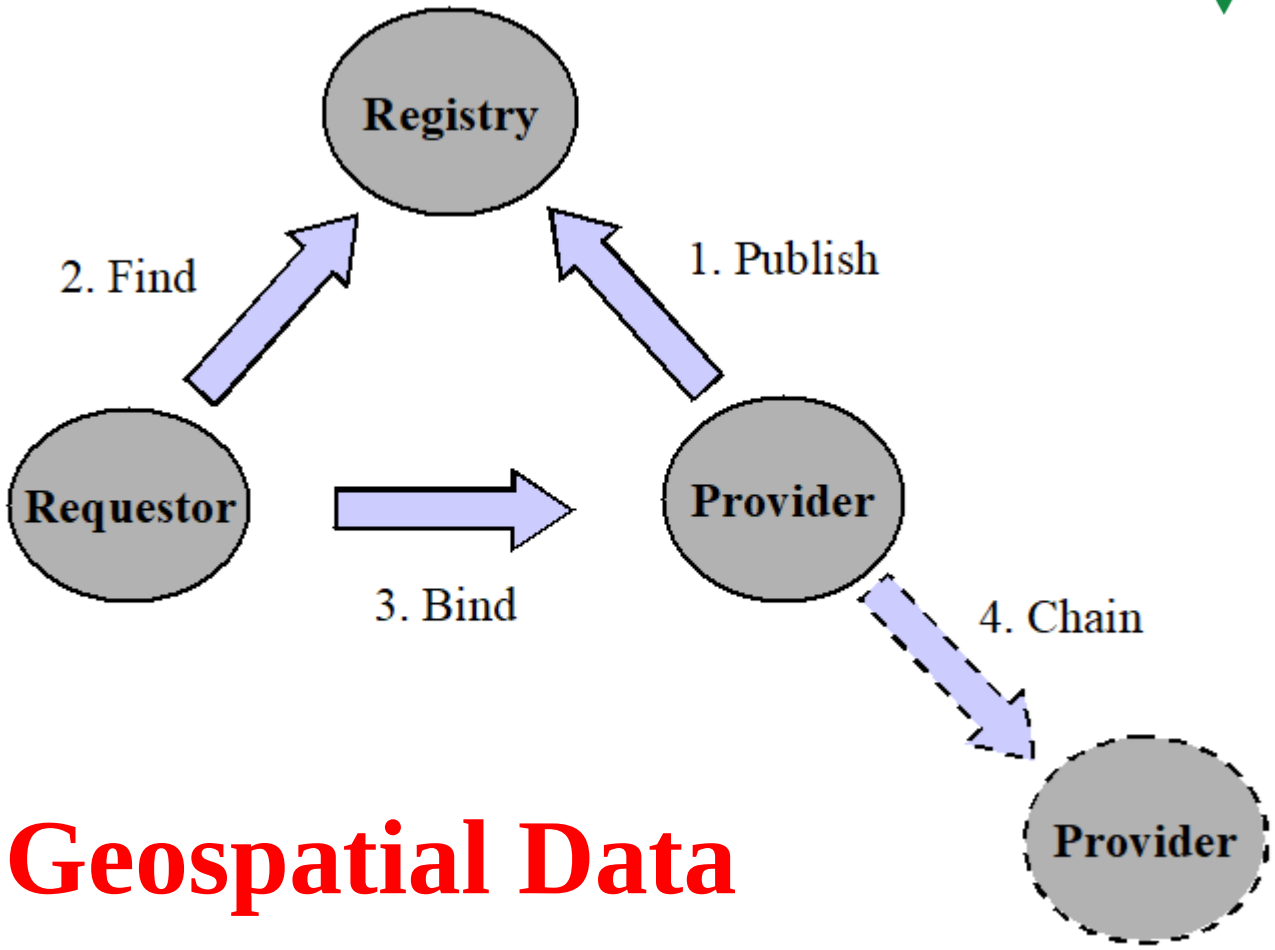
The Story of GDI NRW - Implementation

- 2002: Testbed II (Scenario storm „Lothar“)
  - Testbed II focussing on value adding by service chains
  - SIG Traffic & Transport (30 participants)
  - SIG 3D (60 participants 60)
  - SIG Agriculture & Forestry (20 participants)



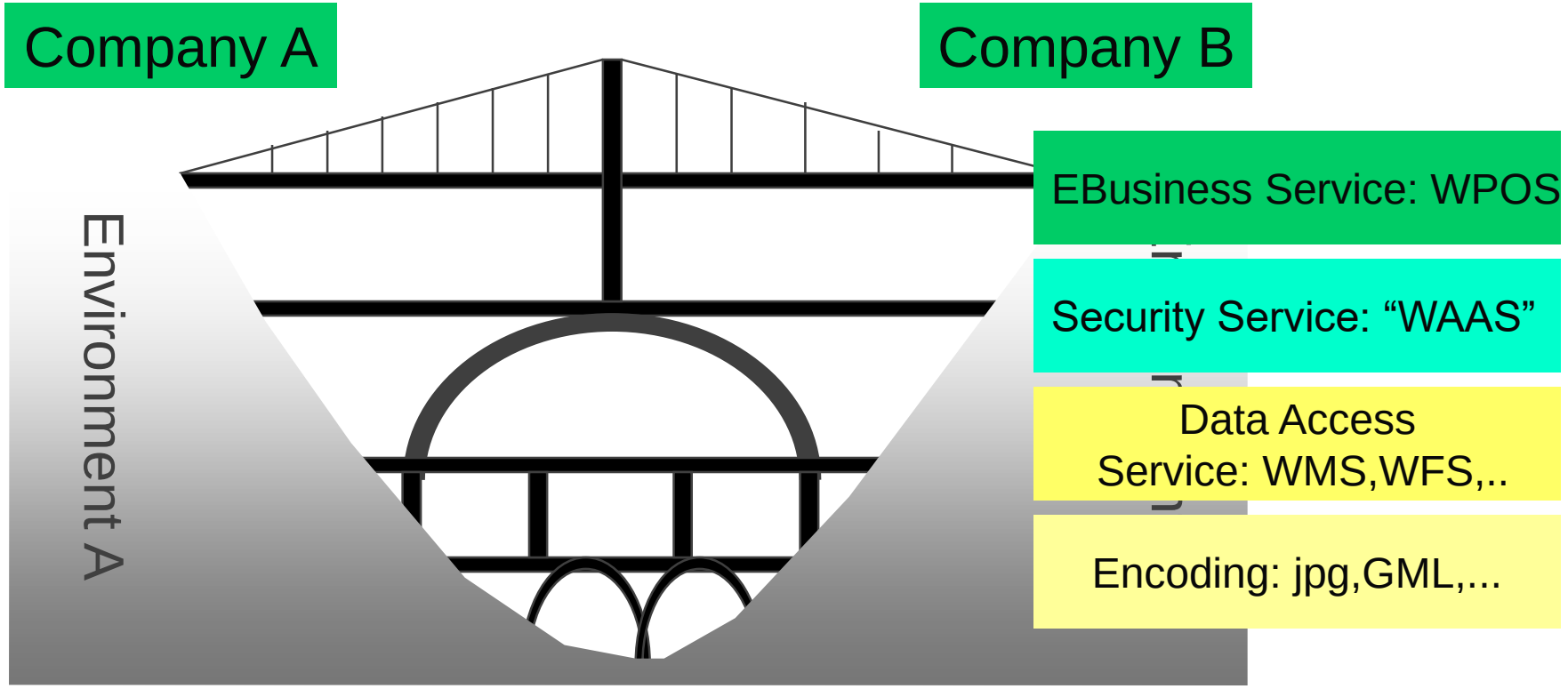
Testbed II focus: Web-Services

- Search and Discovery
- Access and Retrieval
- Portrayal and Presentation
- Ordering and Payment
- Security
- Authentication



Geospatial Data Infrastructure

SDI is infrastructure or “bridge building”



Testbed II results: standards and specifications

1. **WMS 1.1.x** (with some little further regulations)
2. **WRS & Service Metadata** (Web Registry: publish, find, bind; today WCS) according to 19115, 19119 → *OGC WG*
3. **WFS** (non transactional & transactional) based on GML 2.x
4. **WMS SLD**
5. **WAAS (**Web Authentification & Authorization Service)
6. **WPOS** (Pricing & Ordering) → *OGC Discussion Paper*
7. **WFS-G** (Gazeteer) → *OGC Discussion Paper*
8. **WCTS** (Coordinate Transformation) → *OGC Discussion Paper*
9. **ALKIS** & **NAS** based on GML 3.0 & WFS & FE → Advices on adaptions of "Katastergesetz" (cadastral law)

The Story of GDI NRW – Spreaden Success

- National und International Cooperations, i.e. XBorderProject
- Cooperation with DDGI and EUROGI
- Initiating and advising State Initiatives, i.e. „Verbundprojekt“
- Strong cooperation with OGC/ISO and OGC-E
- INSPIRE
  - Pushing GDI NRW ideas on european level
  - Presentation on european conferences
  - Cooperation with JRC in preparing INSPIRE process
  - Working active in INSPIRE specification process

X-Border GDI
The Netherlands - North-Rhine/Westphalia

GDI NRW
Geodateninfrastruktur Nordrhein-Westfalen

in Kooperation mit:

DDGI	Deutscher Dachverband für Geoinformation e.V.
D21	Initiative D21
GeoMV	Verein der Geoinformationswirtschaft Mecklenburg-Vorpommern e.V.
IKGIS	Institut für Kommunale Geoinformationssysteme e.V.

GDI Verbundprojekt 2005

Networking Business

Patterns for success

- Transform problems to challenges to build leadership
- Sponsored projects as Initiator – money is key
- Co-operation of public and private sectors (PPP)
- Initiative open for everybody who is willing to actively contribute – no closed shop
- Find the right people who share the vision and realize it
- Add cooperation to competion resulting in „cooopetion“ – together we are stronger!
- Consensus based standardization (SIGs)
- Focus on Usability: from infrastructure development to real world use cases (Testbeds & Pilot Projects)
- Cooperation of SIGs (standardization process) and testbeds (real world experience)
- Founding (and funding) of CeGi for managing the GDI NRW (for a limited time frame)
- Ensure sustainability
  - Make documentation available for everybody
  - Organisational and political Frameworks
  - Legal framework

Thank you!

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Your Take-Away – besides the success patterns

"Life must be understood backwards,
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-Soren Kierkegaard -

Prof. Dr. Thomas Kolbe, TU München

Yeah, time, it's running. I like to recall the joint activities in the GDI NRW; **it laid many foundations for today's concepts, but also learned something the hard way** (which probably could not be avoided).

In the context of Smart Cities, but also of Smart Rural Areas, numerous basic principles of GDIs are used, although there is still a lot missing (in recent years we have worked hard on the integration of 3D city and landscape models, IoT, catalogues and especially safety federations).

Prof. Dr. Lars Bernard, TU Dresden

Yes - the time was certainly **very formative** and for all of us a **great opportunity** to do something about this topic.

Who would have thought at that time that **authority data are really once freely available**, ☺

And it's exciting to see what's going on right now....

Clemens Portele, CEO interactive instruments

The time at that time was both in OGC (with WMS/WFS/GML from the WMTs) and in NRW with **GDI.NRW formative for many further developments of the last 20 years**. In the last ten years some things have reached their limits and it is good to see that since about two or three years **a lot of new dynamic has come in**.

Prof. Dr. Albert Remke, Uni Muenster, CEO 52°-North

In retrospect, one of the most interesting experiences for me was that - and how - **Coopetition can work**.

At the end of the day, it once again depends on the **prudence of the people involved** whether the opportunities for cooperation can also be exploited in a competitive environment.

It is nice that this experience can be used again and again...

Jens Fitzke, CEO lat/lon

When I think back to "this time" about 20 years ago, I am first and foremost filled with gratitude. There was such a spirit. Of departure. Of cooperation.
Creating something new and great together.

That was formative, for me at least.

I learned a lot back then. And I still try to pass on a lot of it today.

Old stuff, one would think.
But: **That sometimes works surprisingly well**
☺