

GSDI
Global Spatial Data Infrastructure

GSDI Association Activities
Related to SDI Convergences

August 11th 2009
Bas Kok, GSDI Past-President

Ninth United Nations Regional Cartographic Conference for the Americas
10-14 August 2009 New York City



<http://www.gsd.org>

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GSDI
Global Spatial Data Infrastructure

- SDI Convergence
- Important conditions SDI development/
implementation
- Focus on Europe
- Strategic Alliances
- Opportunities for communities in Americas



<http://www.gsd.org>

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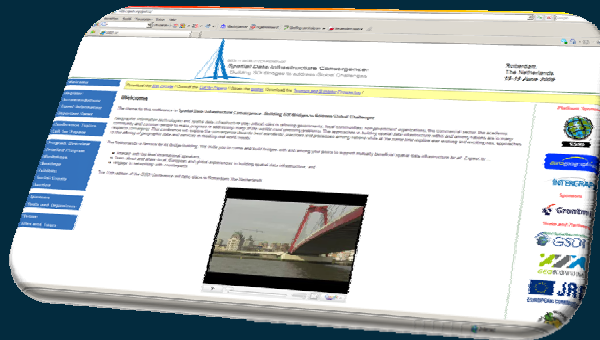
GSDI Capacity Building

- **Newslist** (news@gsdi.org - 1600 subscribers)
- **Monthly Regional Newsletters** - Africa, Latin America, Asia/Pacific (electronic)
- **Working Groups** - Technical, Legal & Economic, Standing Committees, etc.
- **Email Discussion Forums**
- **Small Grants Program**
- **Annual Meeting plus Training Workshops**
- **Affiliated Projects:** ESRI Global Map Grants, Intergraph Open Interoperability Grant Program

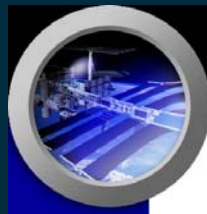


GSDI 11 Conference *SDI Convergence*

Rotterdam, The Netherlands
15 - 19 June 2009 (www.gsdi.org/gsd11)



Successful SDI Development USA



Goal -Make it easier, faster and less expensive to find and use geospatial data



Successful SDI Development Canada

1. National - geo experts
2. National - public
3. Regional - regional/local government
4. Regional - non-expert users



Successful SDI Development India

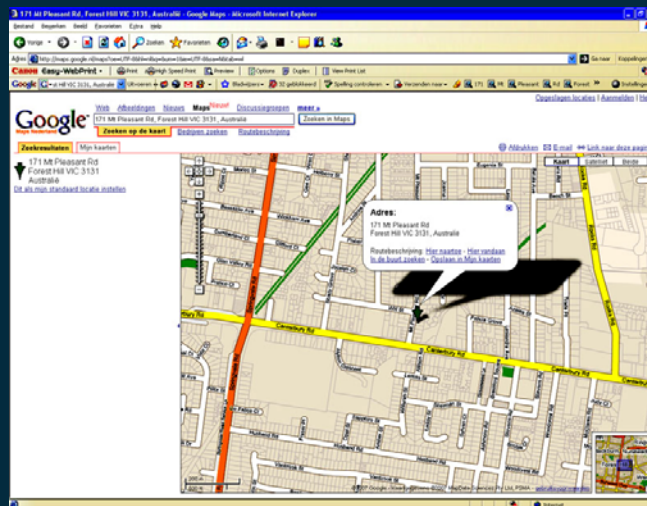
- India departments and public organisation use space observation data for SDIs.
- Minister of Science and Technology works on National GEO Authority.
- India industry and knowledge capacities grow and develop new media.



<http://www.gsd.org>

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Successful SDI Development Australia



Source: PCGIAP

<http://www.gsd.org>

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GEO Earth Observations Summit IV

Cape Town, South Africa

30 November 2007

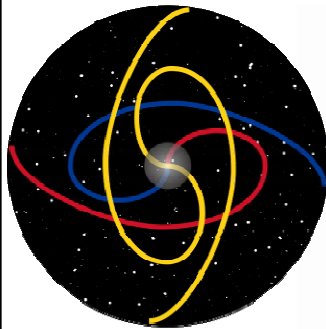


American SDI Symposium: Concepts, practices and projects



Colombian Space Commission and the Colombian Spatial Data Infrastructure - ICDE

DECREE 2442, 2006



**COLOMBIAN
SPACE
COMMISSION**



Ministerio de Relaciones Exteriores



Ministerio de Defensa Nacional



Ministerio de Educación Nacional



Ministerio de Comunicaciones

Ministerio del Interior y de Justicia



Ministerio de Agricultura y Desarrollo Rural

Ministerio de Transporte



November 6th and 7th
BOGOTÁ¹⁰ - COLOMBIA

Focus on successful SDI implementation in Europe

- Optimized use of accurate cadastral and topographic data.
- Legal frameworks created.
- Strong involvement professional communities.
- Optimized access to citizens and active involvement eGovernment.



Successful Mix in Europe

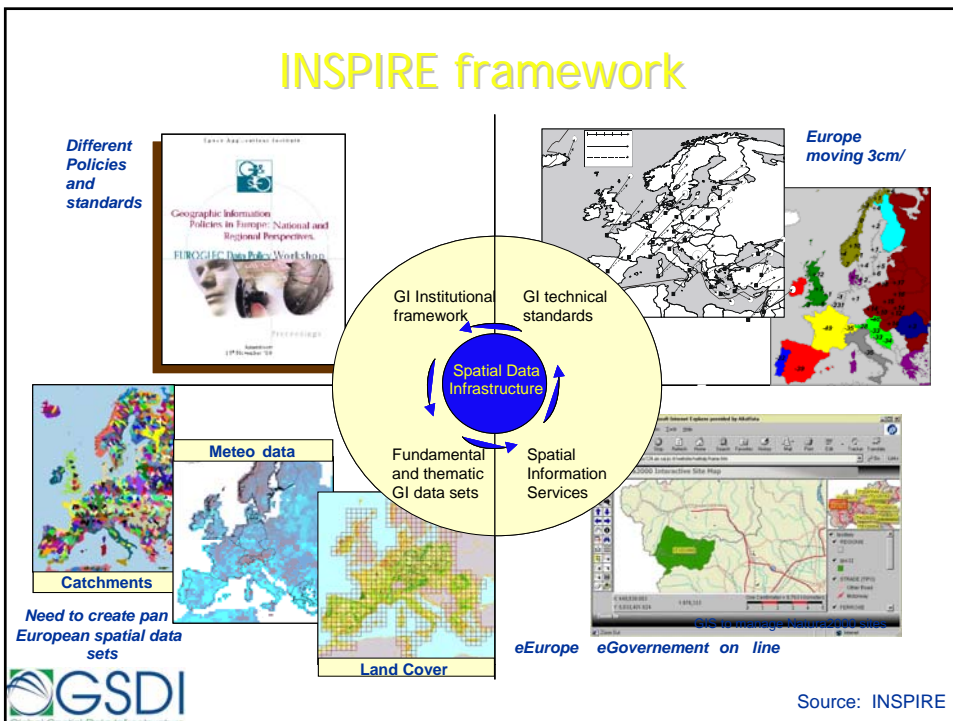
- INSPIRE
 - Excellent dialogue networks of policy makers and spatial interest communities
- National Mapping Agencies
 - Leading role in EU Member States towards SDI approaches
 - Availability of topographic core data sets
 - Essential tools for eGovernment participation

Successful Mix in Europe

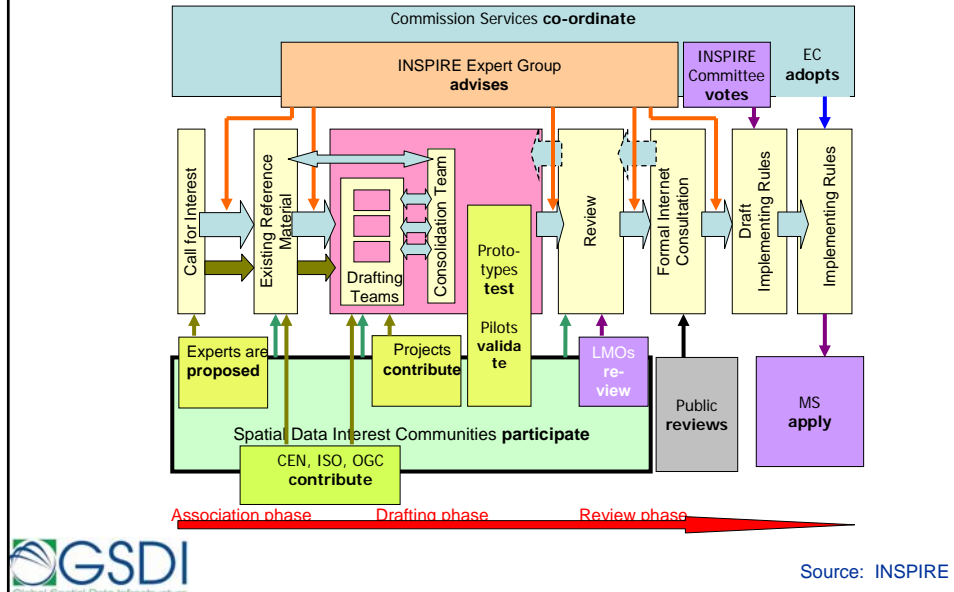
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INSPIRE framework



INSPIRE process



INSPIRE principles

- Data should be collected once and maintained at the level where this can be done most effectively
- Combine seamlessly spatial data from different sources and share it between many users and applications (the concept of interoperability)
- Spatial data should be collected at one level of government and shared between all levels
- Spatial data needed for good governance should be available on conditions that are not restricting its extensive use
- It should be easy to discover which spatial data is available, to evaluate its fitness for purpose and to know which conditions apply for its use

INSPIRE general provisions

- INSPIRE lays down general rules to establish an infrastructure for spatial information in Europe for the purposes of Community environmental policies and policies or activities which may have an impact on the environment.
- INSPIRE to be based on the infrastructures for spatial information established and operated by the Member States.
- INSPIRE does not require collection of new spatial data.
- INSPIRE does not affect existing Intellectual Property Rights.



Source: INSPIRE

Country	Transpose	Coordination			Implementation	
		NMA	ENV	Other	Centralised	Federated
Italy	☺		✓			✓
France	☺		✓		✓	
Latvia	☺			✓	✓	
Slovenia	☺	✓	✓		✓	
Hungary	✓		✓		✓	
Germany	☺		✓			✓
Lithuania	☺	✓	✓		✓	
Estonia	☺		✓		✓	
Spain	☺			✓		✓
UK	☺		✓		✓	
Austria	☺		✓			✓
Iceland	☺	✓			✓	
Finland	✓	✓			✓	
Netherlands	✓		✓		✓	
Cyprus	☺			✓	✓	
Denmark	✓		✓		✓	
Norway	☺	✓			✓	
Ireland	☺		✓		✓	

Source: INSPIRE



Successful Mix in Europe

- National Mapping Agencies
 - Leading role in EU Member States towards SDI approaches
 - Availability of topographic core data sets
 - Essential tools for eGovernment participation

- INSPIRE
 - Excellent dialogue networks of policy makers and spatial interest communities



Scope



Existing spatial data held by or on behalf of a public authority operating down to the lowest level of government when laws or regulations require their collection or dissemination.



Annex I

- Coordinate reference systems
- Geographical grid systems
- Geographical names
- Administrative units
- Addresses
- Cadastral parcels
- Transport networks
- Hydrography
- Protected sites

Annex II

- Elevation
- Land cover
- Ortho-imagery
- Geology

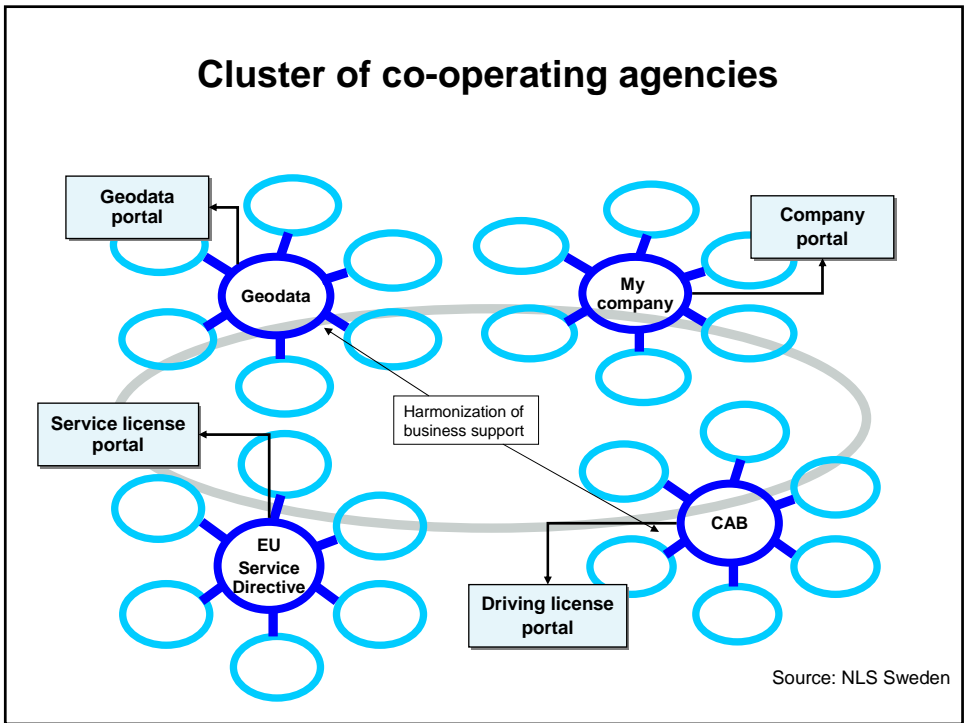
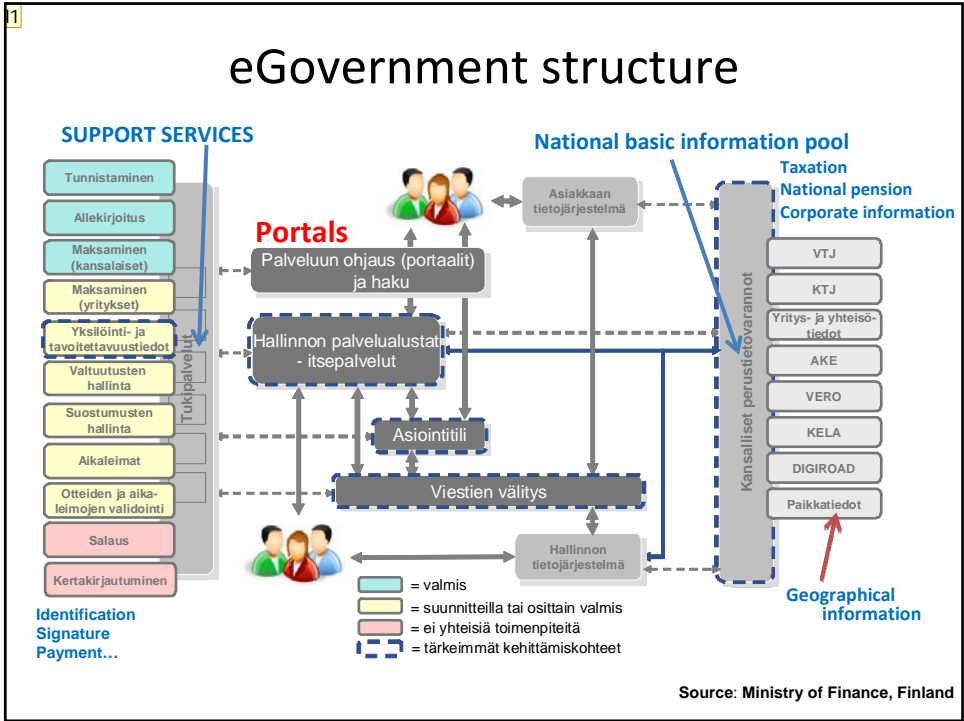
Annex III

- Statistical units
- Buildings
- Soil
- Land use
- Human health and safety
- Utility and governmental services
- Environmental monitoring facilities
- Production and industrial facilities
- Agricultural and aquaculture facilities
- Population distribution - demography
- Area management/restriction /regulation zones & reporting units
- Natural risk zones
- Atmospheric conditions
- Meteorological geographical features
- Oceanographic geographical features
- Sea regions
- Bio-geographical regions
- Habitats and biotopes
- Species distribution
- Energy Resources
- Mineral resources

SDI in Finland

- **The national geoportal** (developed by the National Land Survey) will be the main entrance to national and local spatial datasets and services
 - the pilot of geoportal will be launched in May 2009
 - The development of spatial data infrastructure and geoportal is a huge task for cooperation among the Finnish GI community.
- **The National Council for Geographical Information** will be formed according to the GI Law
 - Secretariat by National Land Survey of Finland
- In addition: National INSPIRE-network (voluntary based, open to all)
 - To help the implementation of SDI
 - Best-practice networking
 - Voluntary participation in development of the National Geoportal
 - Development of conditions for use of spatial data

Source: NLS Finland



DANISH MINISTRY OF THE ENVIRONMENT
National Survey and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE

National Survey and Cadastre, Denmark

- Denmark's central public source of geographic data
- National coordinator of surveying, mapping & registration of spatial information
- National authority for NSDI, surveying, mapping, charting, cadastral data and licensing surveyors

National Survey and Cadastre, Denmark

is responsible for implementation of the INSPIRE directive in Denmark

The law creates connections to eGovernment

LOCATION - a gateway to e-Government

Infrastructure for Spatial Information Act

Passed by the Danish Parliament 9 December 2008

DANISH MINISTRY OF THE ENVIRONMENT
National Survey and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE



The Spatial Data Service Community

Since 2002, the [Spatial Data Service Community](#) chaired by the National Survey and Cadastre has promoted Denmark's ambitious visions for eGovernment in the geodata sector.

The members ensure that geodata is effectively used as the central infrastructure of Denmark's eGovernment.


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Key registers

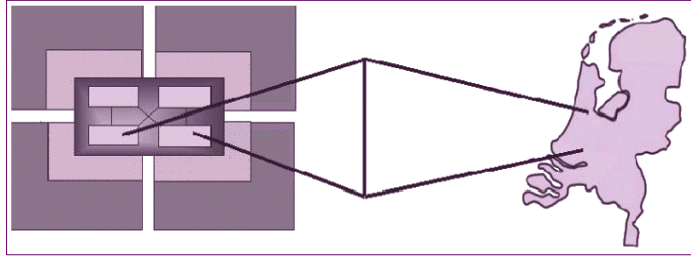
- Personal Records Database
- Trade Register
- Buildings and Addresses
- Cadastre
- Topography (1:10,000 and smaller)
- Large scale topography
- Vehicles
- Wage, Employment and Benefit Relationships
- Income and Assets
- Property values.

Separate law for each key register

no law for overall system



Successful SDI Development - The Netherlands



2003 SDI Part of eGovernment Legislation Authentic Registers

- Cadastre
- Buildings
- Enterprise
- Population
- Addresses
- 1:10.000 topographic set
- 1:1000/2000 topographic set

Bron: RAVI

kadaster

<http://www.gsd.org>

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Kadaster information hub in eGovernment

- Key register cadastre
- Key register topography
- Distributor building and address information



(Possible) future tasks:

- Distributor large scale base map
- Distributor planning/zoning information
- Distributor valuation information
- Distributor sub-soil information



kadaster



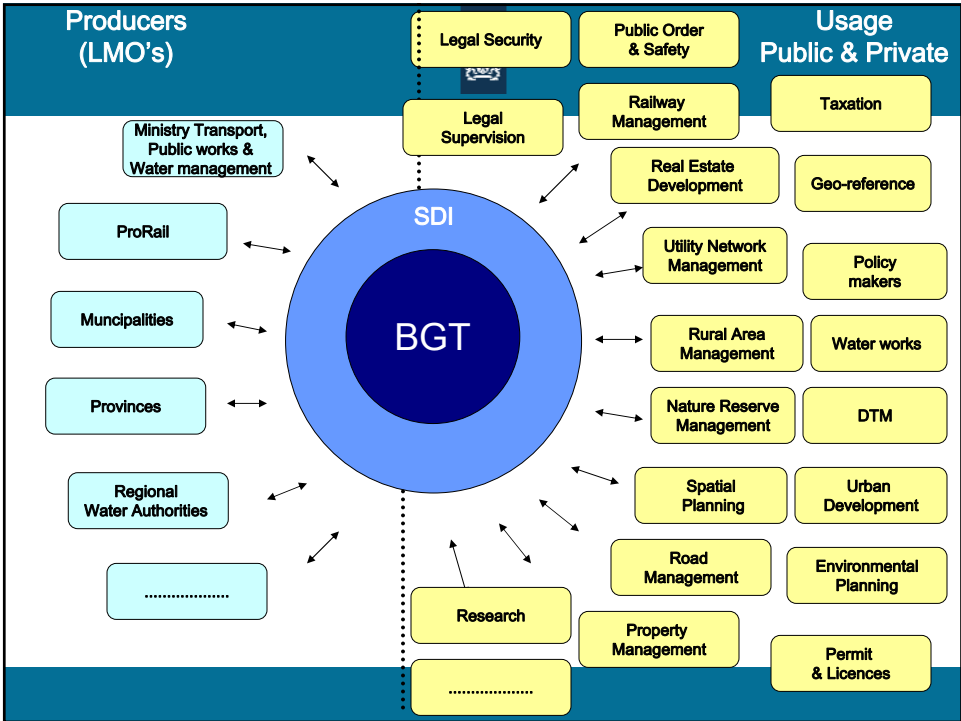
Ministerie van Volkshuisvesting
Ruimtelijke Ordening en
Milieubeheer

Key Geo-Register Large Scale Topography-BGT

Transition team BGT
Martin Peersmann
M. Meijer
H. van Eekelen



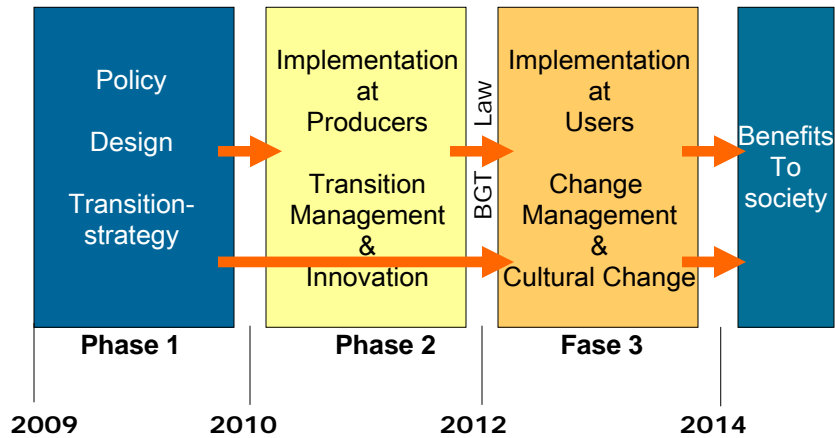






Overall BGT Programme Management

Ministry of Housing, Spatial Planning and the Environment



Legal Framework BGT-Law

Public-Private Partnership LSV GBKN → Key Geo-Register Large Scale Topography-BGT

Mandatory usage of National uniform Information Model for Topography (IMGEO)

Data production & Maintenance by legally mandated public service organizations →2012

Mandatory data usage by public service organizations →2014

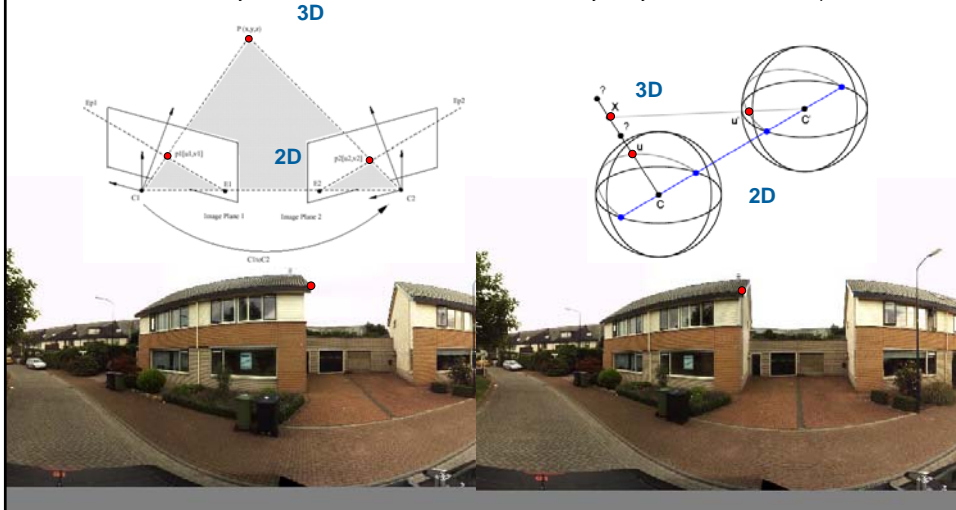
Publicly-funded → Free access & data usage

Geo-registry Supervisory Agency



3D from 2D Cycloramas with photogrammetry

- Photogrammetry: Corresponding image points = Intersecting spatial directions
- Location of Cycloramas is known at dm-level & Geometry of Cyclorama is known at pixel-level



3D Cycloramas

3D from 2D Cycloramas with photogrammetry

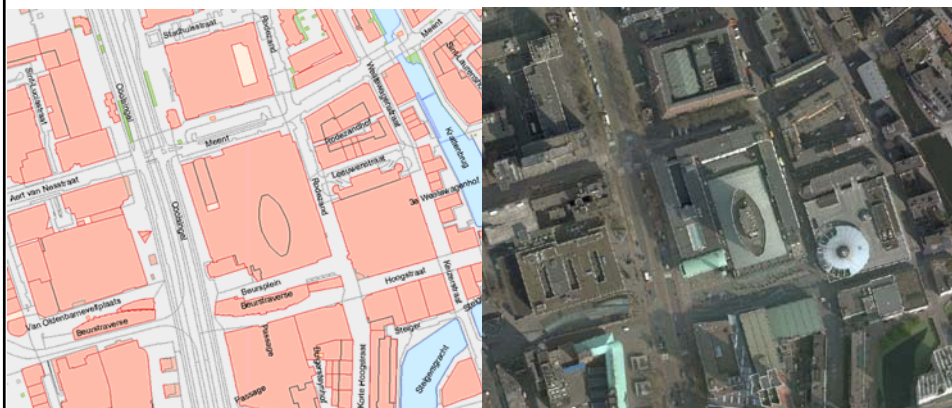




Innovation of Data Presentation / Visualisation Projection of Utilities network



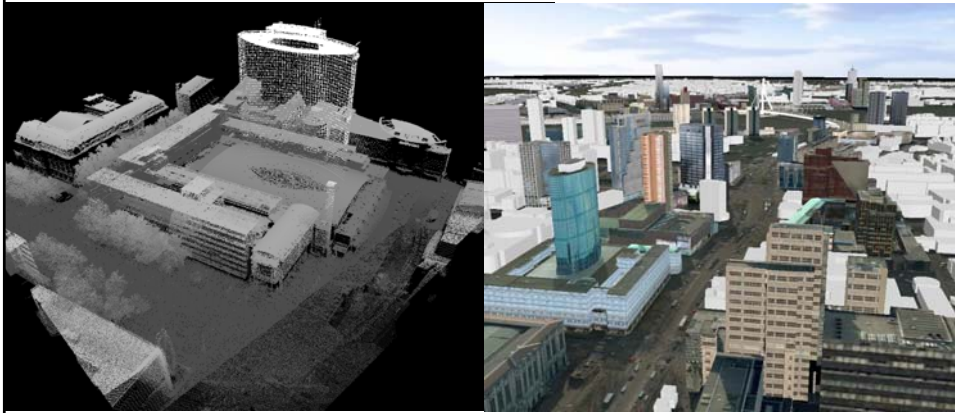
Future National Large Scale Topography BGT object dataset - WTC Rotterdam





Future National Large Scale Topography

BGT object dataset – 3D WTC Rotterdam



3D model met texturen



From IMGeo → Top10NL

Automated Generalisation

IMGEO 1:1000



TOP10NL 1:10.000



In Summary

Experiences in Europe show:

- NMAs play an important role in SDI development and implementation.
- Some SDIs are currently essential tools in national E-government processes.

Next steps:

- Strategic alliances and partnerships between SDI communities, NMA's and GEO GEOSS as part of SDI convergence process in coming years.
- Opportunities for American Community to take part in this partnership and SDI convergence process.
- GSDI Association facilitates this process in the coming years.
- Convergence process needed for optimized decision making on global level.