

Establishing the National Spatial Data Infrastructure (NSDI) for Norway – a joint effort by many stakeholders



NORWEGIAN MAPPING
AUTHORITY

SPATIAL DATA – FOR THE BENEFIT OF SOCIETY

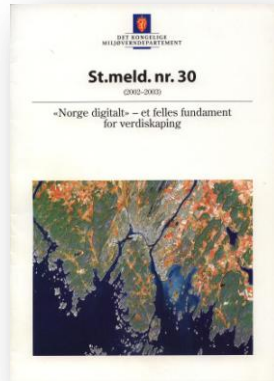


OUTLINE

- Political background
- Norway digital - The Norwegian NSDI
- Implementation of INSPIRE
- Benefits for the users
- Examples of use – integrated solutions
- Lessons learned
- Opportunities and Challenges



POLITICAL BACKGROUND



- Parliamentary White Paper (2002-2003) Norway Digital Message: Establishment of a national geospatial infrastructure

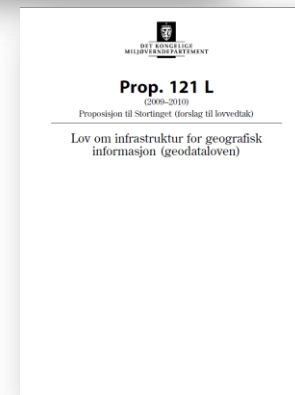
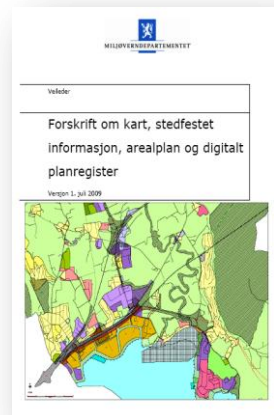
- eNorway 2009 Plan “the digital leap”



- Parliament White Paper on ICT (FAD)

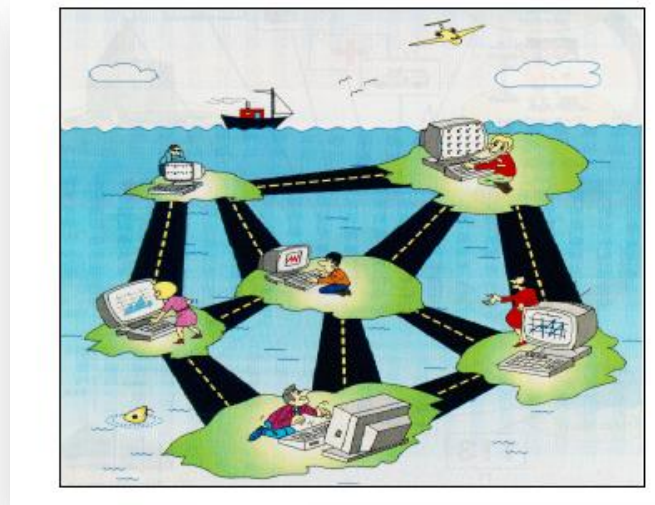
- Planning and building act (2009)

- Geodata act (3. sept 2010)



FROM THE ISOLATED SOLUTIONS TO A NATIONAL MANAGEMENT CONCEPT

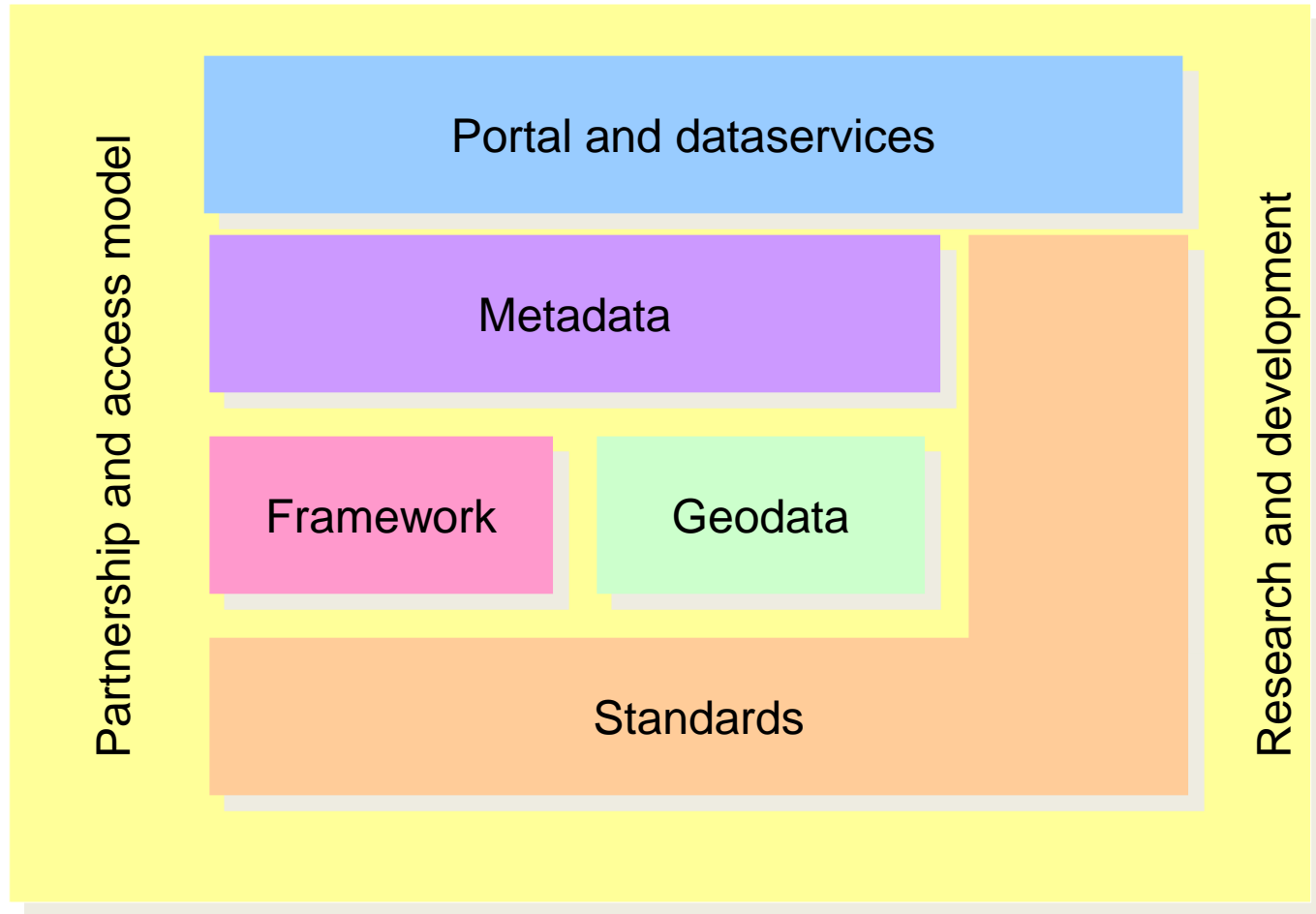
- More coordinated digital services across sectors and levels of administration
- Better exploitation of common basic data
- Cost-efficiency in public sector



eNorway 2009
– the digital leap

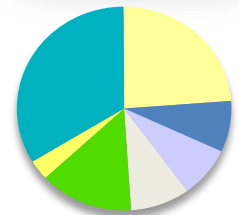
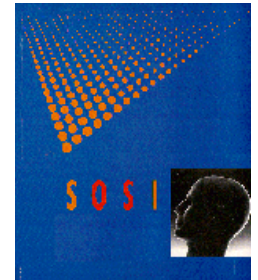


CORE ELEMENTS OF NSDI



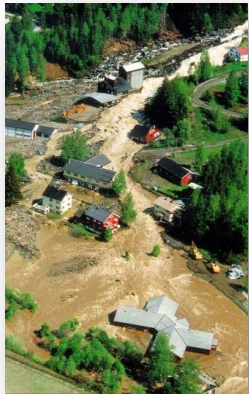
BACKGROUND

- In 1986 the first version of a national standard for data-exchange "SOSI" – was introduced
Ensures a common reference for an adaptation to international standards
- In 1991-92 NMA implemented the new "FKB- standard" - and at the same time the Geovekst co-operation for cost-sharing for establishment and updating of GI. NMA is coordinating the procurement-process.
- In 1996-2001 NMA managed a program for documentation of thematic information – followed up as "Arealis co-operation" until 2005
- From 2001 NMA accomplished several advanced R&D-projects – which has contributed to the development of the geoNorge portal and a wide range of services

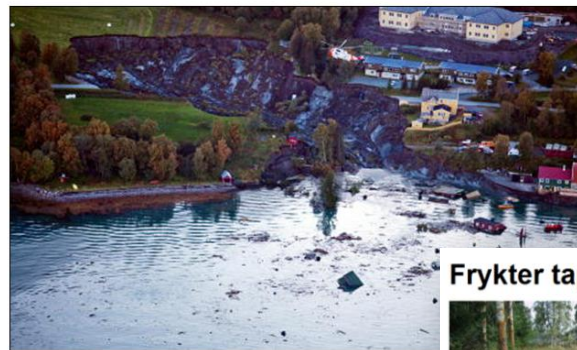
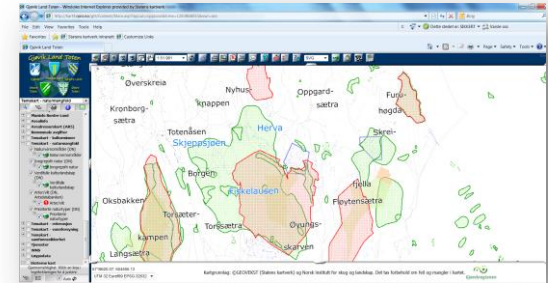




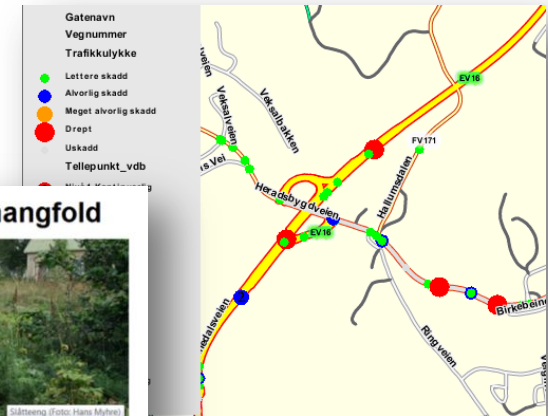
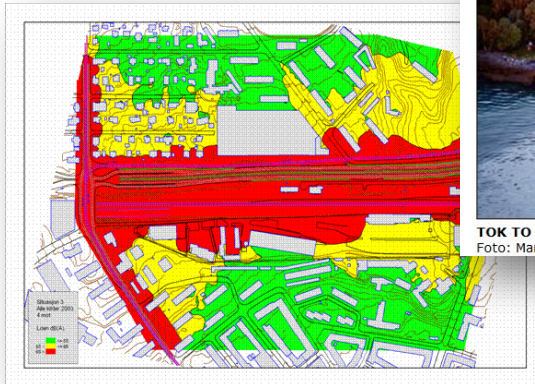
THE AREALIS PROGRAMME - OBJECTIVE



Establishing a nation-wide system making relevant high quality environmental spatial data and land use information available to politicians, planners and the public



TOK TO HUS: Raset i Lyngen tok med seg to hus. Bare flaks gjør det. Foto: Marius Fiskum / Nordlys



Frykter tap av biologisk mangfold



Dersom denne slåtteenga bygges ned, frykter SABIMA at flere rødlistede arter blir rammet. Foto: Hans Myhre

- Vestre Toten kommune kan ødelegge verdifulle slåtteeng med utryddingstruede arter, sier Rune Aanderaa i SABIMA.



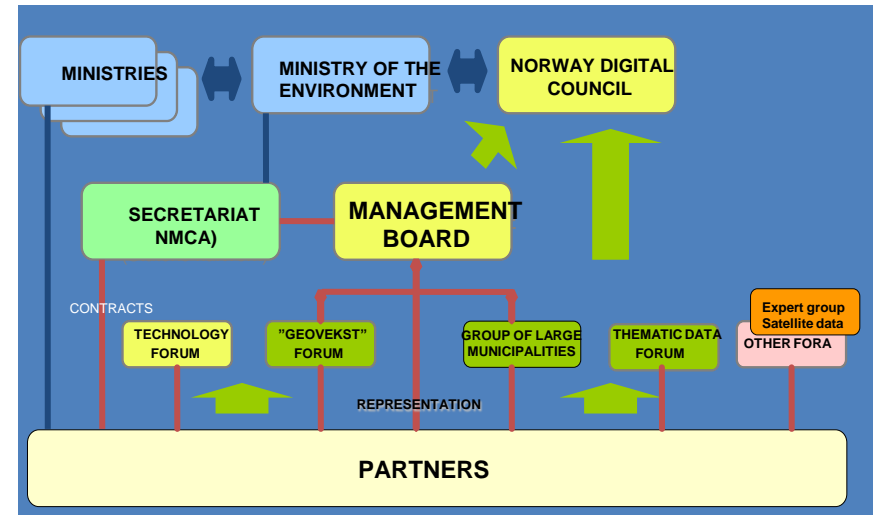
NORWAY DIGITAL - THE NATIONAL GEOGRAPHICAL INFRASTRUCTURE



- The Norway digital collaboration started in 2005
- More than 600 partners of Norwegian public authorities:
 - National (41)
 - Municipalities (429 - all except Oslo)
 - Counties (18)
 - Electricity companies (112)
 - Sami Parliament, the Finnmark Estate (2)
- This initiative enhances the availability and use of quality geographic information

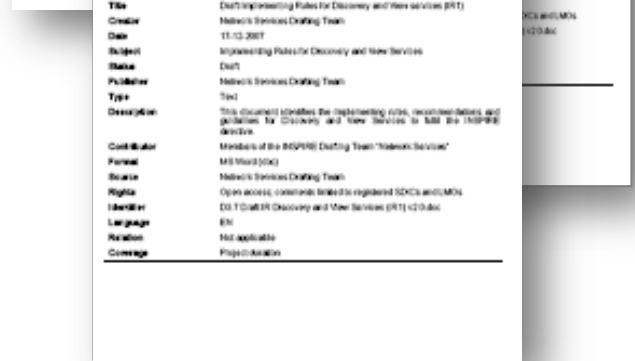
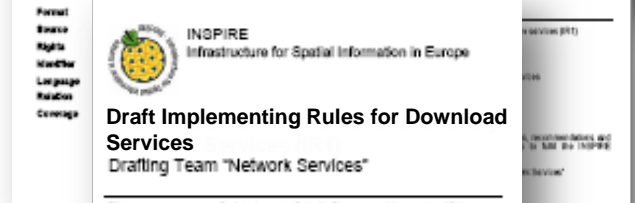
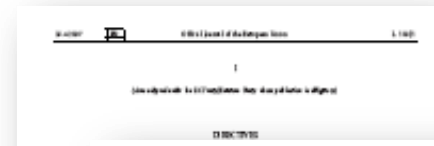
NORWAY DIGITAL - ORGANIZATION EXTRACT

- National Secretariat (NMA)
 - On national and regional level
- Management Board
 - the supreme body for co-ordination
- Forum for thematic information
- Technology forum
 - responsible for "Technology framework"
- Variety of interest groups
 - eg expert group on satellite data (preparing for GMES)
- NSDI Agreement with each partner based on general principles
 - Calculation of annual cost and share of funding according to a "calculator"
- Norsk Eiendomsinformasjon AS provides delivery services to non-partners



INSPIRE - COMMON APPROACH TO SHARE HARMONIZED DATA

- The **INSPIRE Directive** entered into force in May 2007, establishing an **infrastructure for spatial information in Europe** to support Community environmental policies, and policies or activities which may have an **impact on the environment**.
- INSPIRE is **based on the NSDI** operated by the Member States. The Directive addresses **34 datathemes** needed for environmental applications, with key components specified through **technical implementing rules**.



ENVIRONMENTAL PHENOMENA DO NOT STOP AT NATIONAL BORDERS



Natural Hazards - Floods

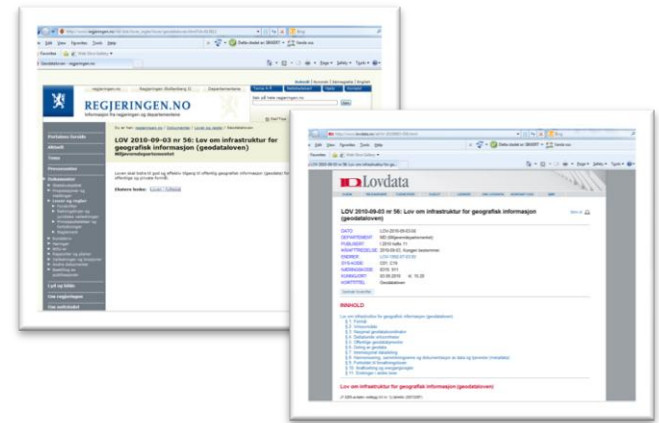


- In the period 1998-2002 floods comprised 43% of all disaster events in Europe
 - 100 major floods
 - 700 dead
 - Half a million displaced people
 - 25 billion Euros uninsured economic loss
- Along the Rhine, 10 m people live in areas liable to extreme flooding, potential damage estimated at 165 bn. Euros
- 101,000 kms of coastline, population doubled in last 50 years. Assets within 500 mt of coast = 500-1000 bn euros.



GEODATA ACT – OBJECTIVE

(sanctioned 3rd Sept)



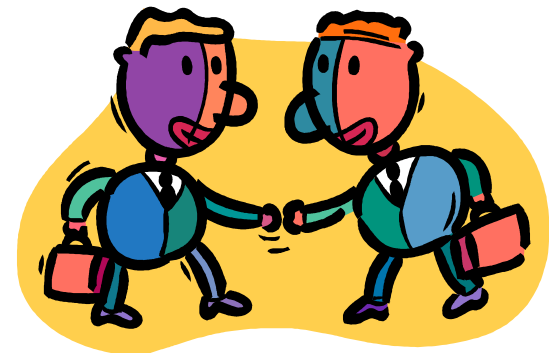
- promote good and effective access to government geographic information (spatial data) for public and private purposes
- strengthen cooperation on the sharing of spatial data between agencies with public duties
- ensure further development and operation of the national infrastructure for geographic information
- contribute to the sharing of spatial data in Europe
- implement INSPIRE Directive



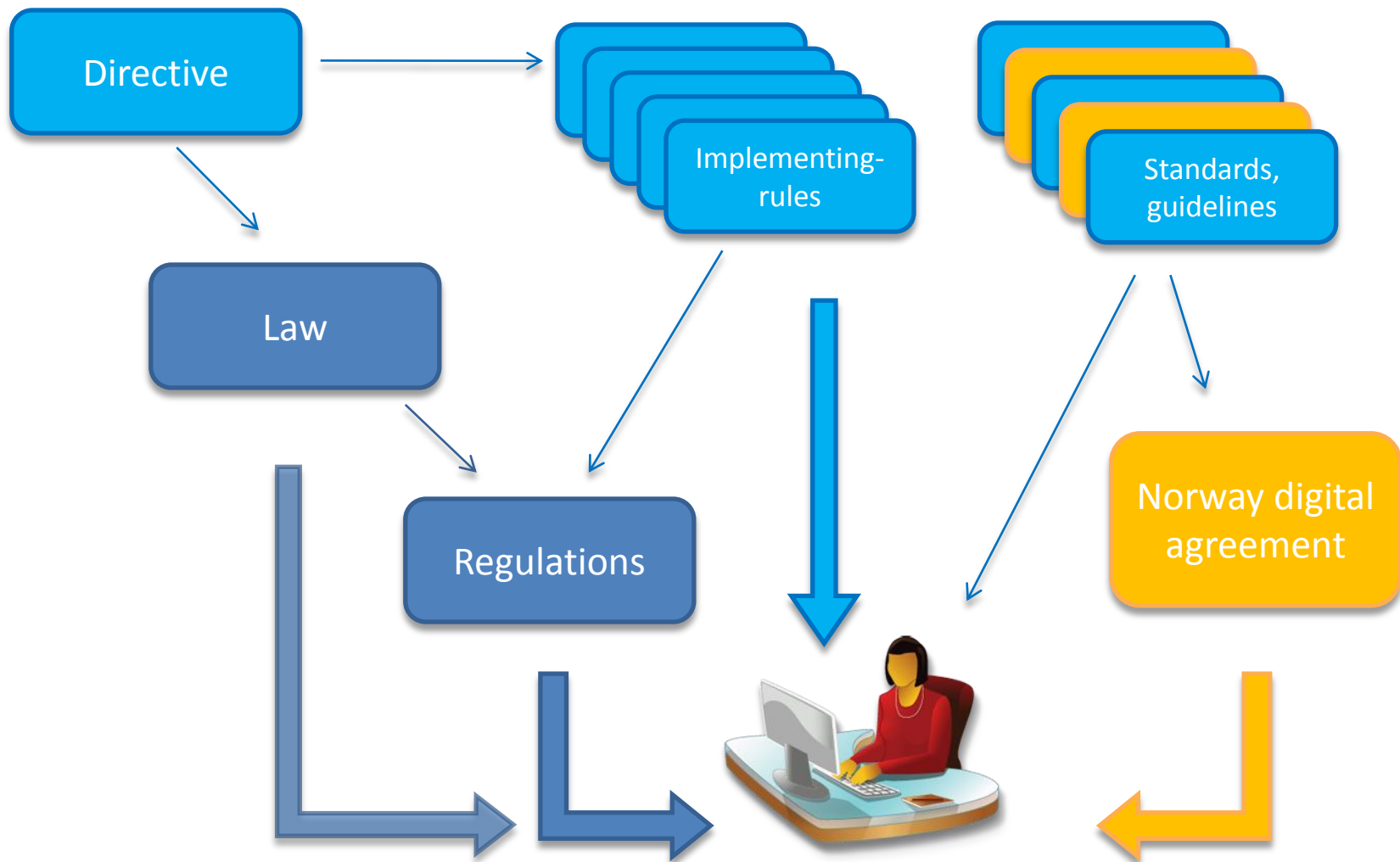
GEODATA ACT

CONTINUING THE DIGITAL NORWAY COOPERATION

- The law is based on a continuation of the Digital Norway as a voluntary partnership regulated by agreements
- Local and state governments should
 - establish and operate a public network of spatial services
 - make data available in an harmonized form
 - establish and maintain metadata



GEODATA ACT – WITH REGULATIONS



NMA'S ROLE AS NATIONAL COORDINATOR

The Norwegian Mapping Authority will follow up and coordinate activities.

This includes:

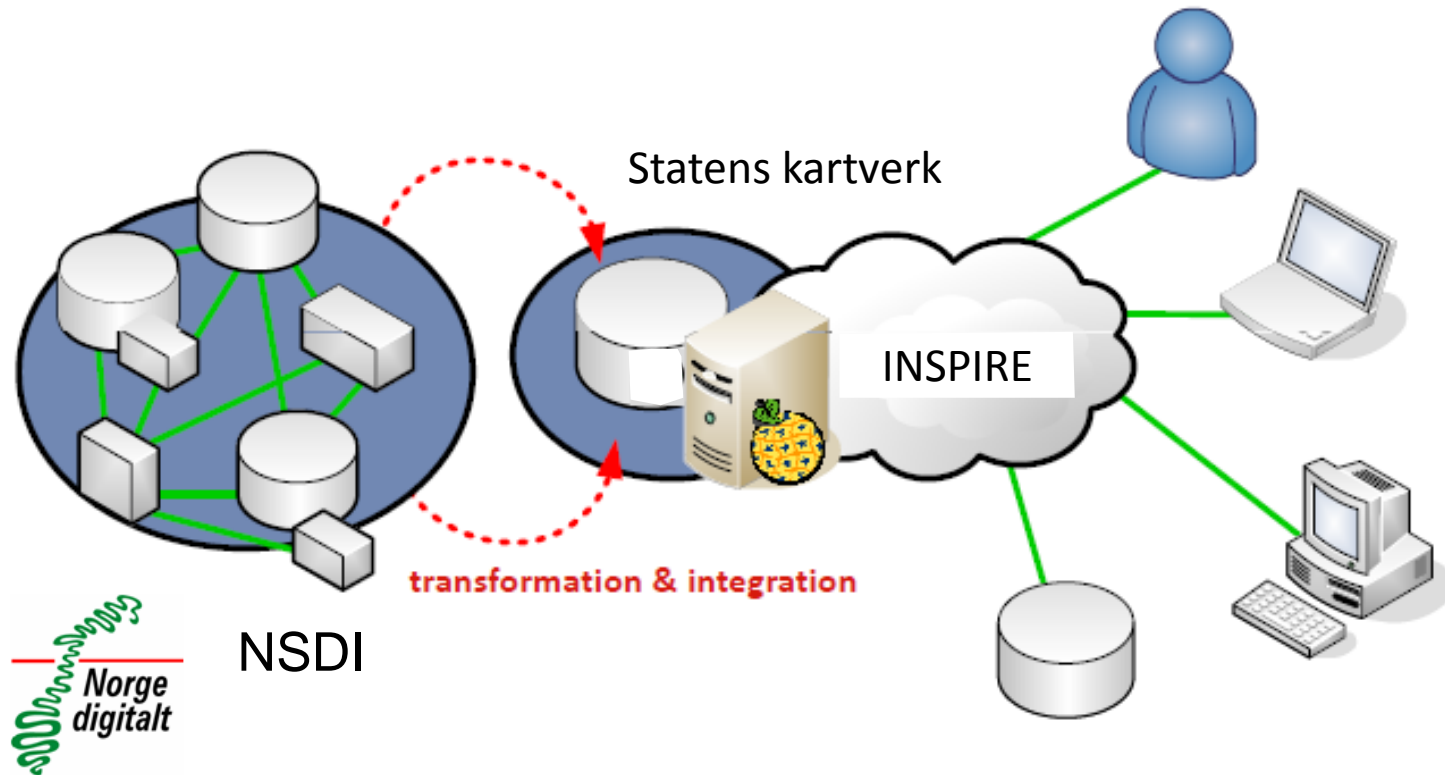
- information activities on the website
- host information and consultation meetings
- coordinate feedback on consultations from INSPIRE
- recruitment of national experts
- to participate with experts in the development of INSPIRE

Furthermore, in cooperation with the Norway Digital partners, to develop and implement solutions for data sharing:

- establish metadata services
- Prepare national distribution bases with services for datadissemination
- monitoring and reporting



HOW TO MOVE FROM NATIONAL DATA TO HARMONIZED DATA FOR INSPIRE



BENEFITS FOR THE PARTNERS

- Access to a variety of geographic information – data sets and services
 - downloadable datasets
 - web based services (wms, wfs, ---)
 - web services
 - tools for quality control
 - transformation software and services
 - tools for developing product specifications
- access to the portal and all its services
- participation in the organizational structure
- participation in a variety of networks, e.g. technical and thematic



SOME RESULT FROM THE 2010 INSPIRE REPORTING

- Reported from Norway
 - Datasets – from 18 partners
 - Services - from 16 partners
- Dataset - total 222
 - Annex I – 67 dataset
 - Annex II - 29 dataset
 - Annex III - 126 dataset
- Services – total 96
 - Discovery services – 1
 - Download services – 10
 - View services – 76
 - Transformation services – 1
 - Other services – 8
 - Invoke services - none

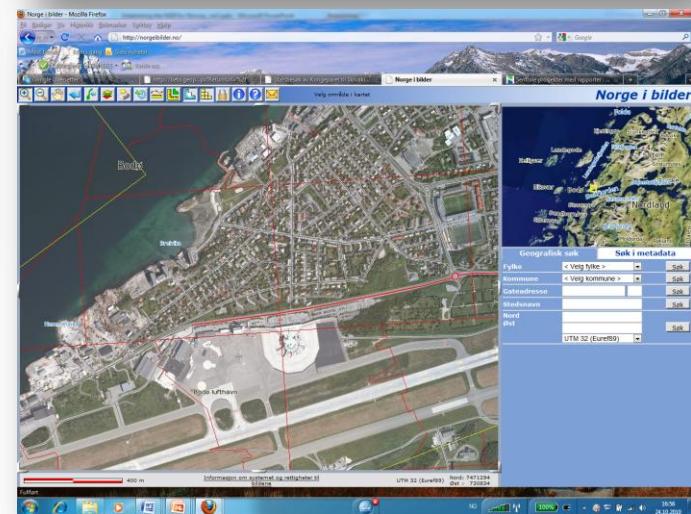
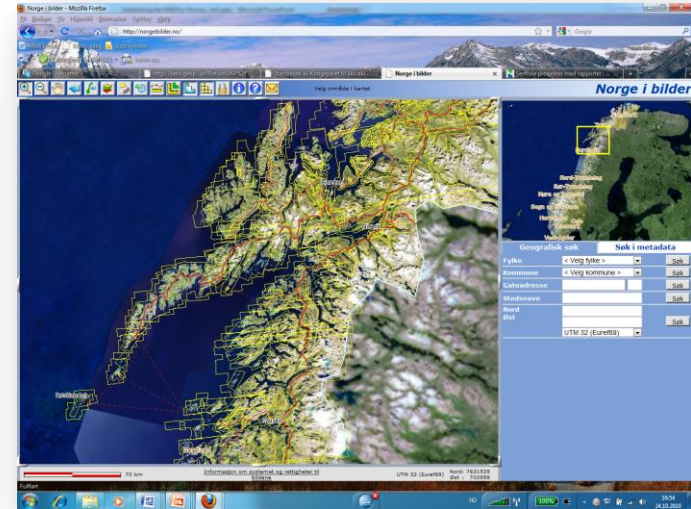
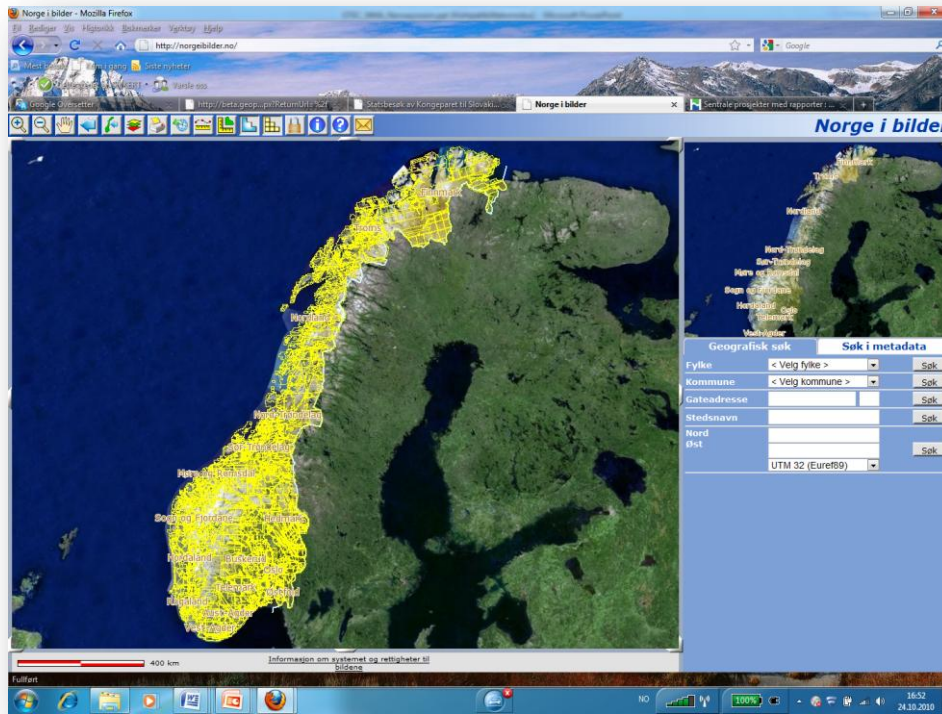
Theme	Antall
1. Coordinate reference systems	3
2. Geographical grid systems	11
3. Geographical names	7
4. Administrative units	9
5. Adresses	2
6. Cadastral parcels	2
7. Transport networks	11
8. Hydrography	14
9. Protected sites	8

Theme	Antall
1. Elevation	12
2. Land cover	7
3. Orthoimaginery	2
4. Geology	8

Theme	Antall	Meta-data	MD-accesses	View	Down-load
1. Elevation	12	11	11	6	10
2. Land cover	7	5	5	4	6
3. Orthoimaginery	2	1	1	1	1
4. Geology	8	6	6	7	3

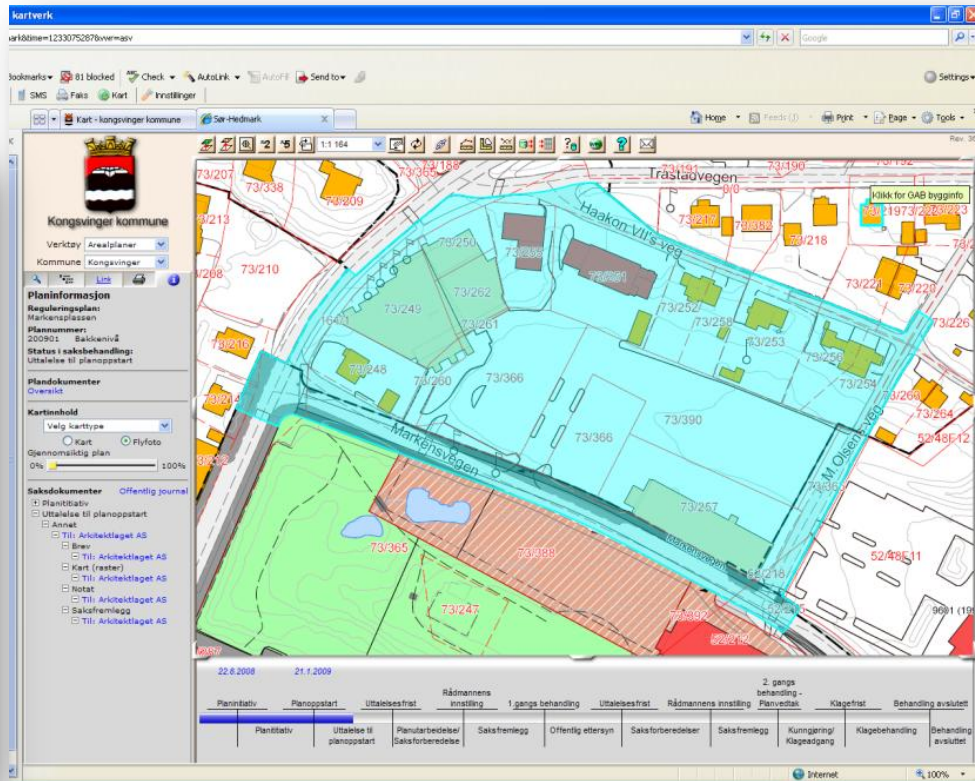
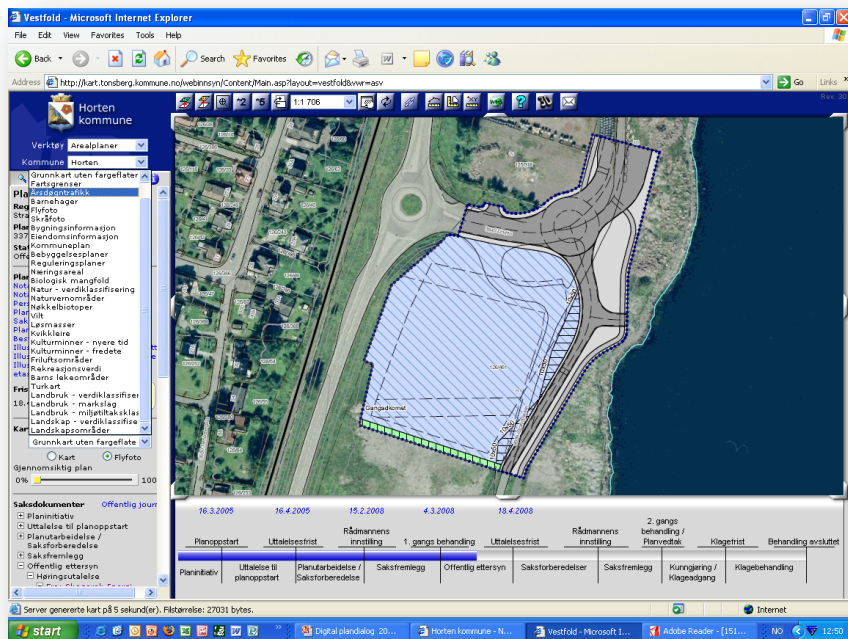


ORTHOFOTO – NORGEIBILDER.NO

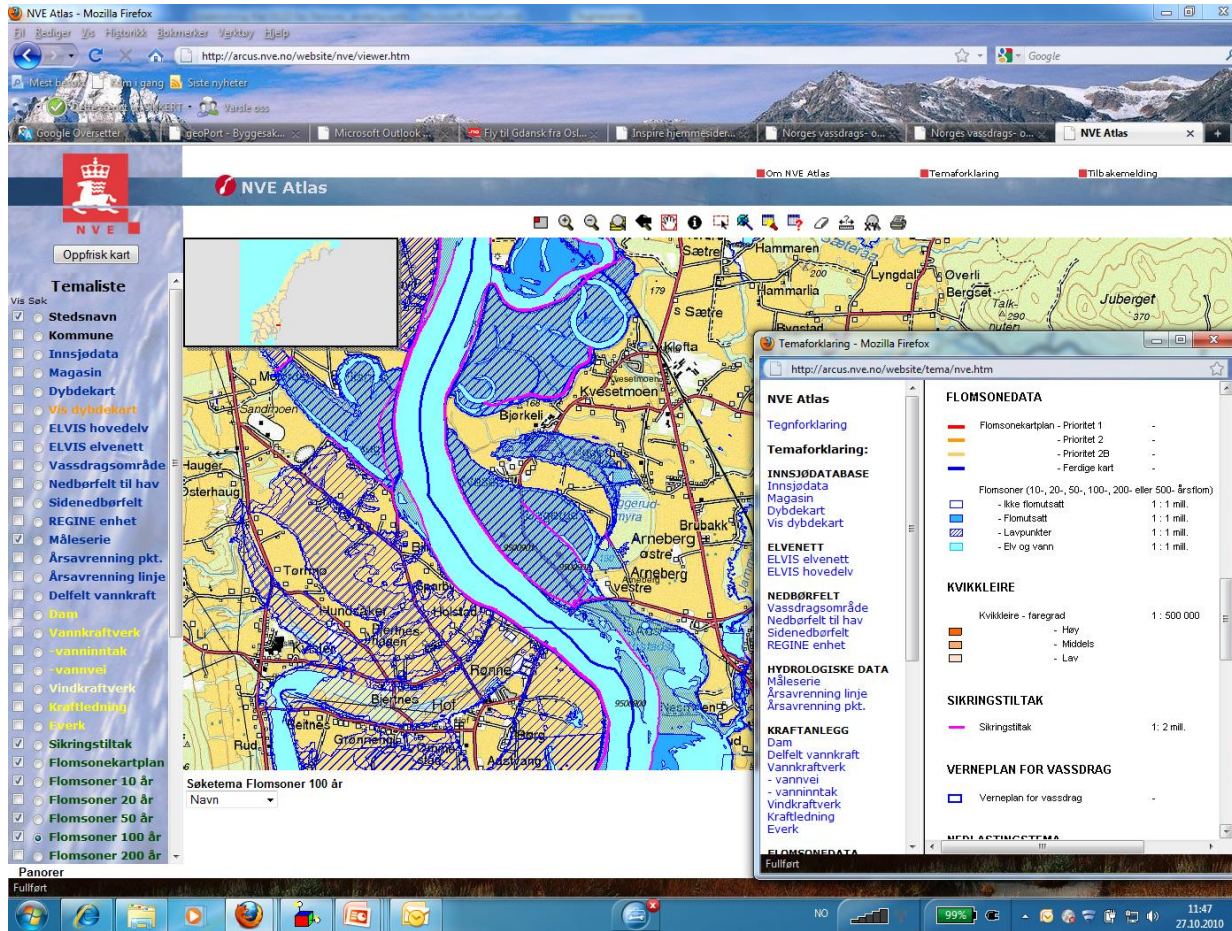


SUPPORT DIALOGUE IN LAND USE PLANNING

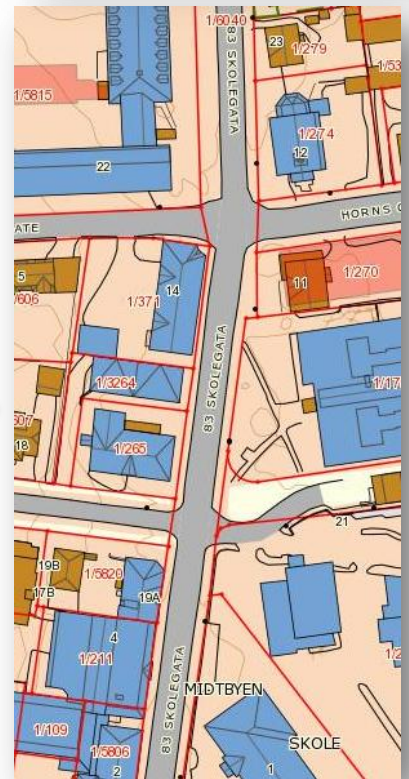
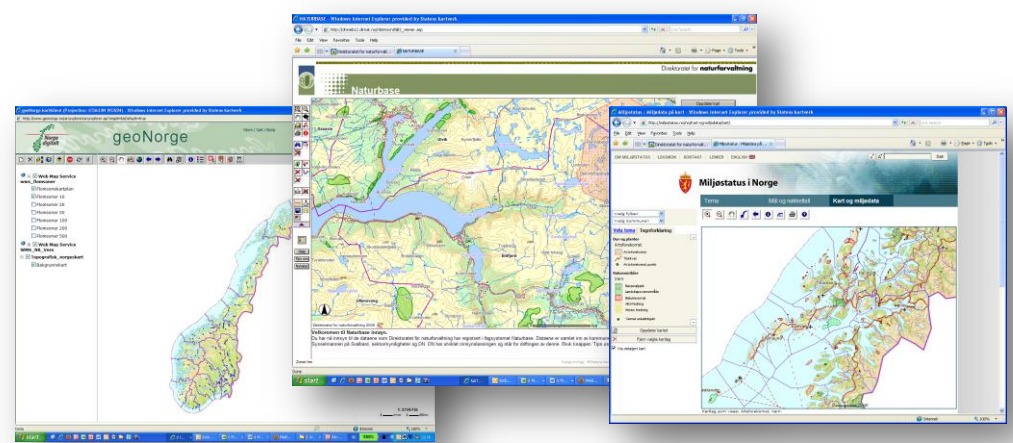
- Allows for greater transparency in the planning process - for both the public and other consultative bodies



FLOOD AREAS RISK MAPPING, SPATIAL PLANNING AND WARNING

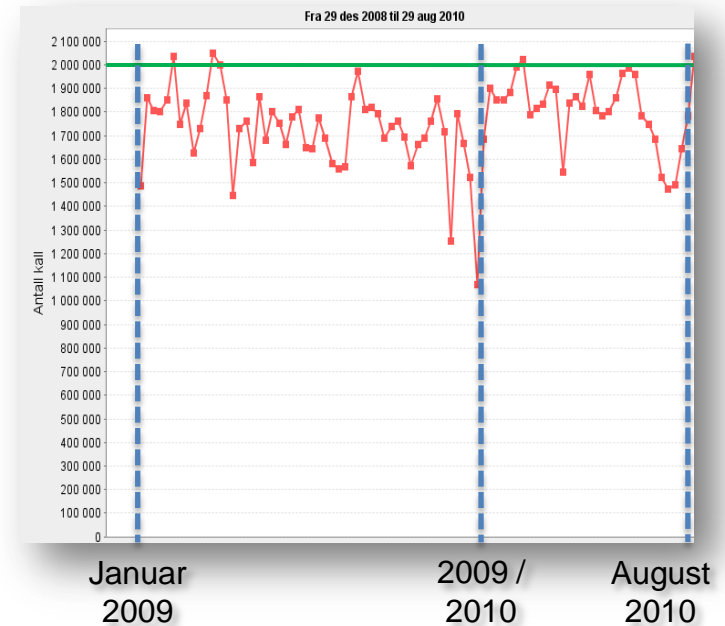
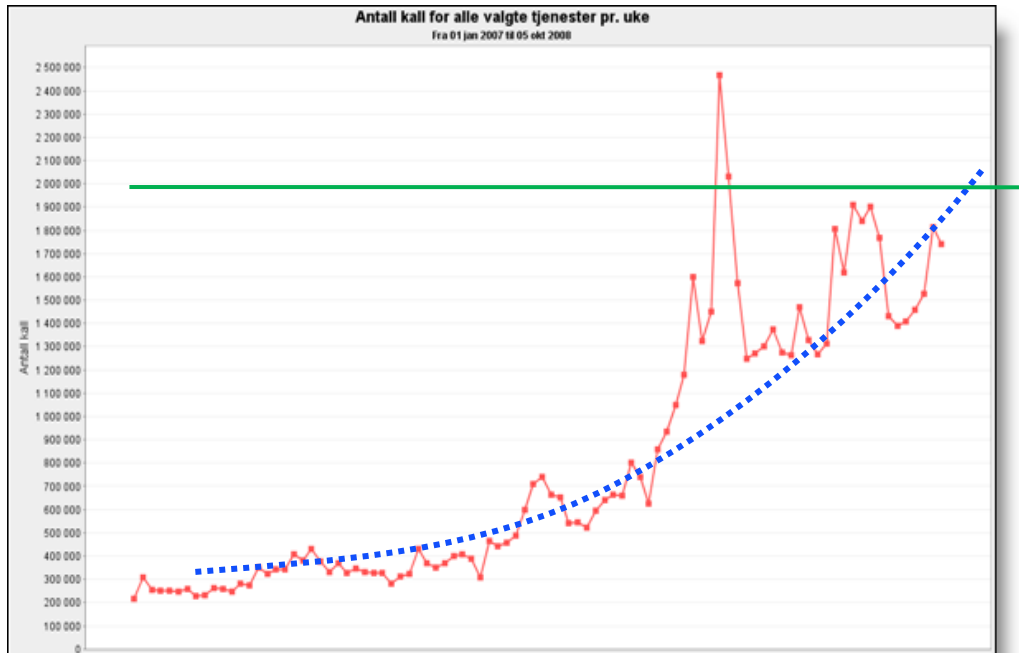
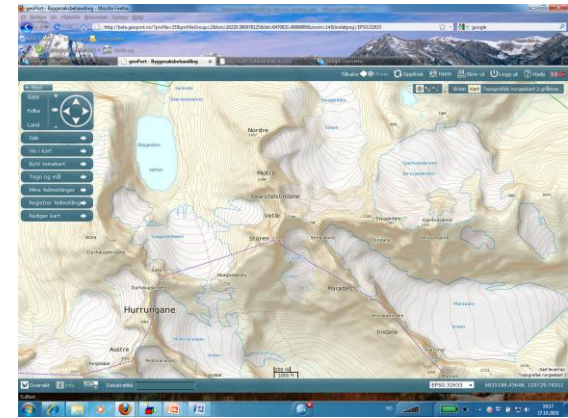


TOPOGRAPHIC WEB MAP SERVICE FROM NMA



USE OF VIEW SERVICES (WMS)

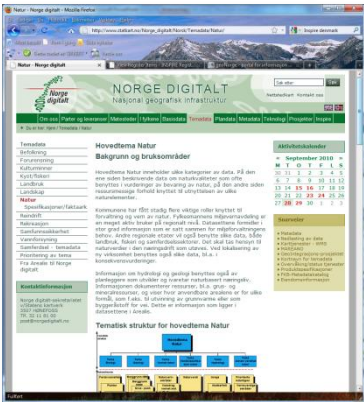
- Number of map-images - "Getmap-requests" pr. week
- Januar 2007 - august 2008
- Nearly 2 million maps every week



INFORMATION AVAILABLE ON THE WEB



Ministry of environment



Norway digital

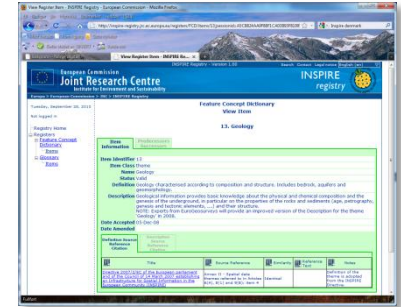


Reference catalog

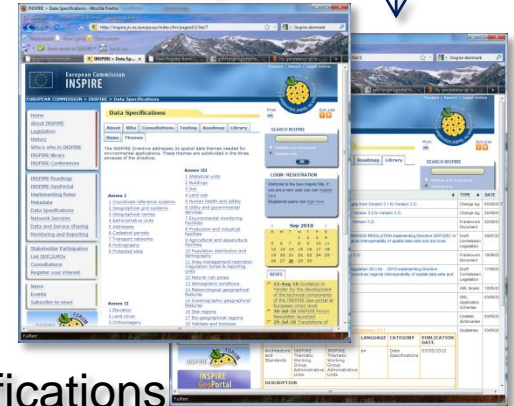


Metadata catalog

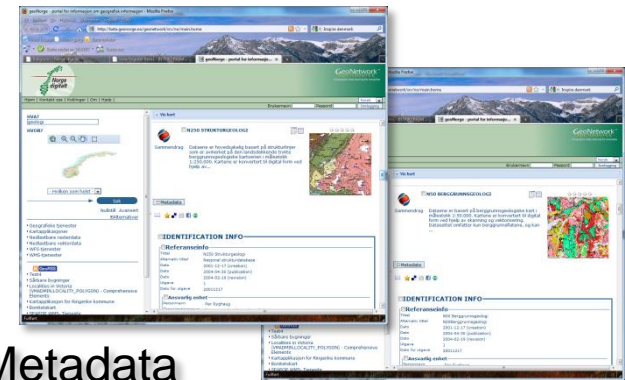
Participating agencies



Thematic description



Specifications



Metadata

LESSONS LEARNED - THE IMPORTANCE OF :

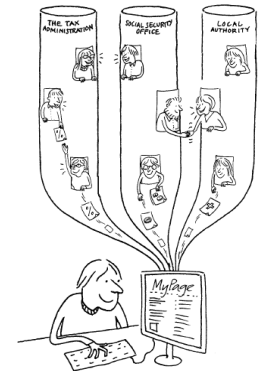
- Political support for a shared eGovernment architecture
- Cooperation and involvement from the user community
 - national agencies
 - regional authorities
 - local authorities
 - the geospatial industry
- A clear strategy
 - Tasks have to make sense – ”need to have”
 - Clear implementation guidelines that support the obligations
- An open standards based technology
 - Allowing on-line integration from distributed sources
 - A framework for implementation is necessary

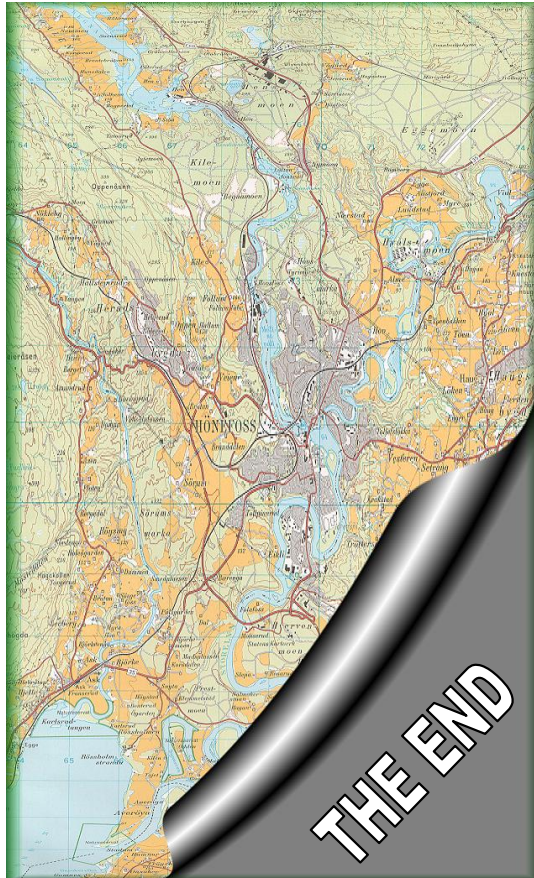


OPPORTUNITIES AND CHALLENGES FOR INSPIRE STAKEHOLDERS

- a common technical framework opens for better collaboration across Europe
- more focus on use and quality of geographic information
- a push to better integration of NSDI into public authorities
- increased cross-sectoral collaboration on NSDI by merging with eGovernment in a shared architecture
- improvement of common components within the NSDI
- increased skills and ability in the public authorities
- a business opportunity across Europe

A coordinated and user-adapted public sector





Thank you for
your attention!

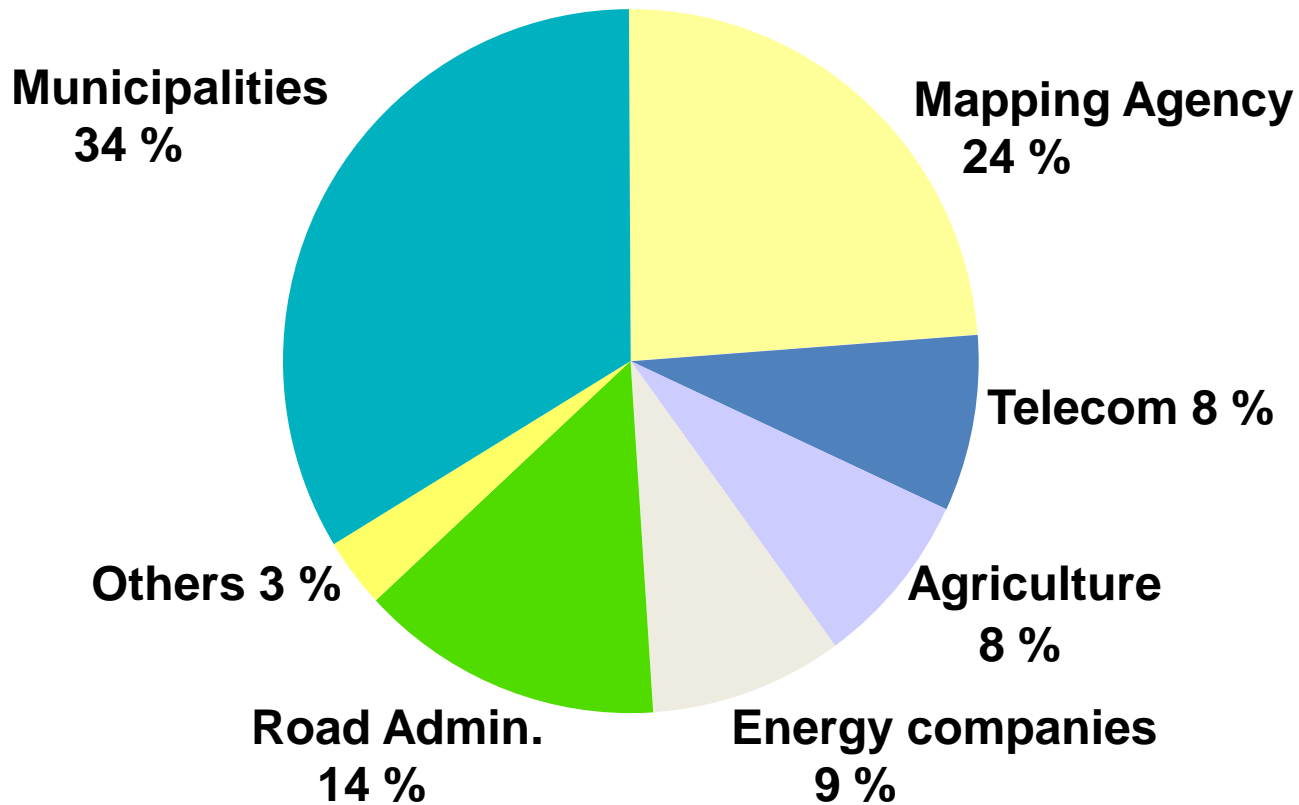
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Welcome to Norway Digital !



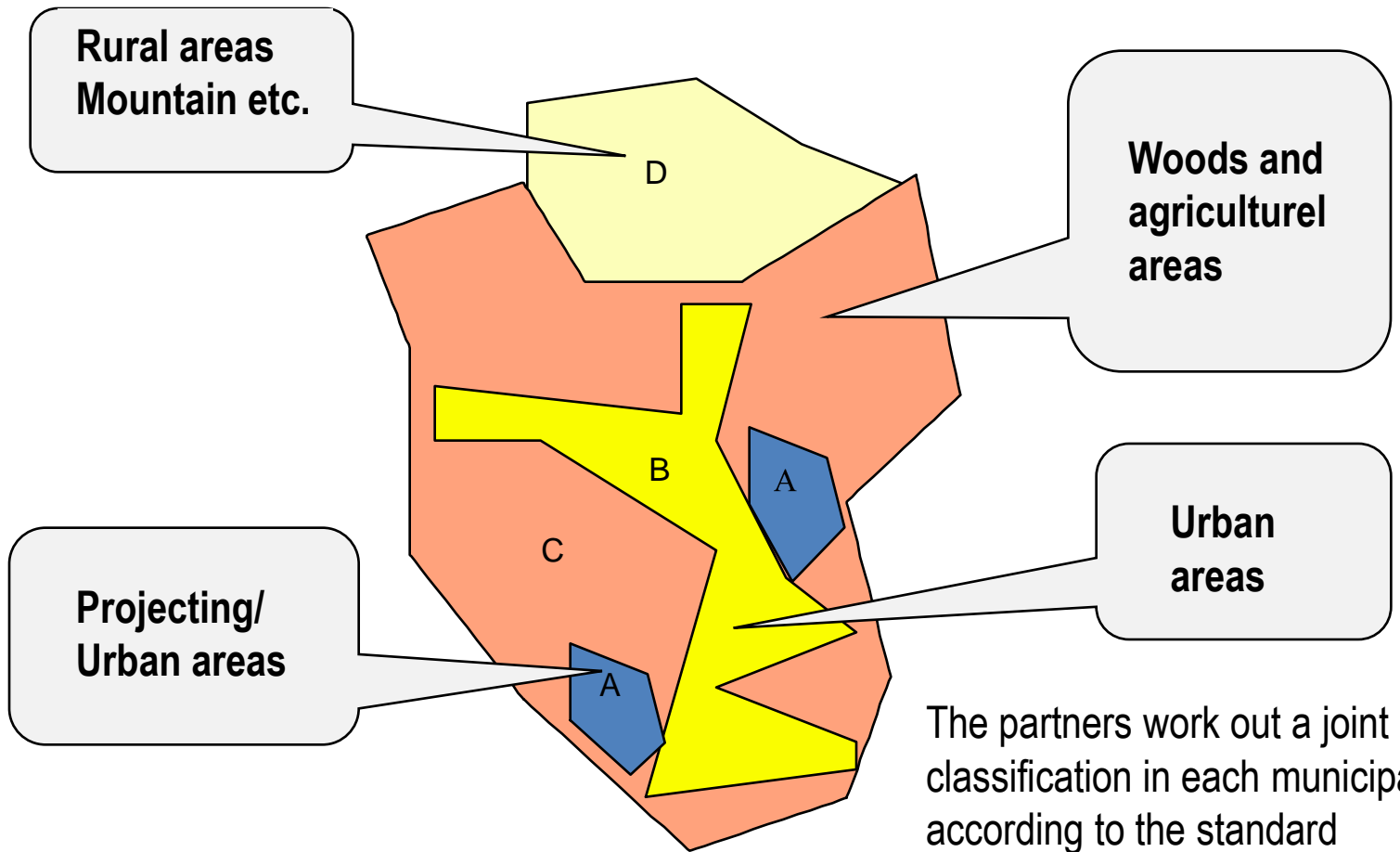
STARTING POINT : GEOVEKST COOPERATION FROM 1992 COST-SHARING FOR ESTABLISHMENT AND UPDATING OF GI



Large scale geographic information



GEOVEKST / FKB – PRINCIPLES : MAP DATA - “CLASSES”



The partners work out a joint classification in each municipality according to the standard

GOOD PRACTICE IN DATA AND SERVICE SHARING



Norway Digital



Good practice in data and service sharing

Title	Good practice in data and service sharing
Creator	Drafting Team - Data and Service Sharing, European Commission
Date	2010/01/01
Subject	INSPIRE guidance document - Data and Service Sharing
Status	Final
Publisher	European Commission
Type	Text
Description	Examples of good practice in data and service sharing from various countries.
Contributor	Drafting Team - Data and Service Sharing, European Commission
Format	PDF
Source	Not applicable
Rights	Public
Identifier	GoodPractice_DataServiceSharing_v1.doc
Language	En
Relation	Not applicable
Coverage	Not applicable

Criteria	
Fewer obstacles at the point of use	Yes. Agreements and shared services give direct access to staff or organisations in the Agreement
Licences have become more harmonised	Yes. Common licensing terms across the Agreement
Reduced effort to put licences in place	Yes. Licences are negotiated annually for all parties
Clear processes for making decisions relating to the Agreement	Yes. The Agreement provides clear processes for governance
Provision of a forum for exchange of information	Yes. Several forums are provided for the exchange of information

June 2010

INSPIRE Conference, Krakow, Poland



THE NSDI AGREEMENT

- Specific partner contract
- General principles
 - Organization and governance
 - The partner list (dynamic list)
 - Data content (datasets and services)
 - Requirements (data and services, incl. service level agreement)
 - Economy and funding
- Appendixes
 - Calculation of annual cost and share of funding
 - Precautions / restrictions on use of datasets/services
 - Changes to original contract

Dataset	Interest factor	Base Value	Value
Primary data	3	NOK1	3*NOK1
N50	2	NOK2	2*NOK2
Sea charts	1	NOK3	1*NOK3
...
SUM Partner A			NOK A