eGovernment for eCitizens
NSDI as tools in good governance
Examples from Norway and Norway Digital

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Norwegian Mapping and Cadastre Authority

kari.strande@statkart.no

TS 2B NSDI and eGovernment, Stockholm, June 2008

WG 3.1: e-Government for e-Citizens

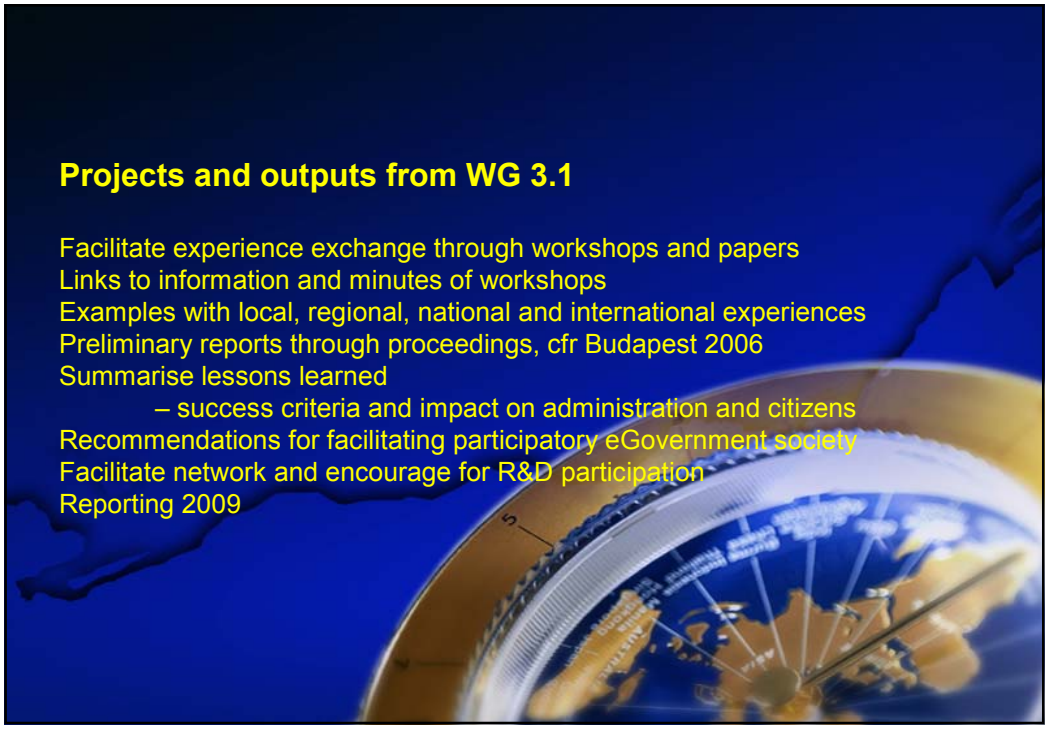
Interactive information flow and communication between providers, partners and customers Public Private Partnerships (PPP).

Services and workflows for decision makers and citizens in participatory democracy

Integration and cooperation in a distributed environment

Projects and outputs from WG 3.1

Facilitate experience exchange through workshops and papers
Links to information and minutes of workshops
Examples with local, regional, national and international experiences
Preliminary reports through proceedings, cfr Budapest 2006
Summarise lessons learned
– success criteria and impact on administration and citizens
Recommendations for facilitating participatory eGovernment society
Facilitate network and encourage for R&D participation
Reporting 2009



EXPERIENCES AND EXAMPLES

UN- Survey on eGovernment http://www.unpan.org/egovernment.asp

Developments in Europe http://www.epractice.eu

Global examples

- Disaster interactive portals
- Integrated Land Information System in Nothern Territory, Australia
- Web-Castle linking to more examples

SUCCESS CRITERIA

- Political support
- Inclusion and interaction
- data sharing and distribution
- equal opportunities
- broad and inclusive participation
- enthusiastic organisation
- clear strategy
- easy access to internet
- open, standard based technology
- distributed sources

Extensive value for the society

Within :

- **Municipal administration**
- **Transport**
- **Shipping and Fishery**
- **Agriculture and Forestry**
- **Telecommunications and Energy**
- **Defence**
- **Emergency management**
- **Imagery**
- **Environmental and Area resource management**
- **Property management**
- **Education**
- **Media**
- **Leisure**
- **Map production, only to mention some examples**

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NORWEGIAN MAPPING AND CADASTRE AUTHORITY

EXAMPLES FROM NORWAY

Value for society -participation - infrastructure

eGovernment - eNorway 2009

NSDI - Norway Digital and geoportals

My Page

Municipal Initiatives and examples

Spatial Planning,Risk and Environment management

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NORWEGIAN MAPPING AND CADASTRE AUTHORITY

eNorway 2009

Making everyday life more easy for the citizens
Knowledge society with participation from all
Contribute to value adding services
The needs of the citizens and the industry as driving force
Cross sector initiatives

Focusing
- *The citizens in the Norwegian digital environment*
- *Innovation and growth in the private industry*
- *A co-ordinated and user approached public sector*

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eNorway 2009

By 2007
- *All Geodata authorities shall be part of Norway Digital*
- *Management standards for data and document exchange*
- *eServices for everyone, also those that do not have internet access*
- *80% of public websites following Norway.no quality criteria*
- *Receive public communication and documents electronic*
- *PSI directive adapted*

By 2008 and 2009
- *Reuse of public data shall be based on the free of charge principle*
- *Interactive public services shall be available through the citizens portal My Page*
- *All new ICT systems in public sector shall be based on open source standards*

- *ICT integrated in all subjects through education plans*
- *Methods and tools to measure digital competence*
- *All non sensitive communication between public authorities shall be electronic*
- *All public institutions shall use electronic supported administrative systems and archives*
- *All public institutions shall use eID and eSignature for all relevant* services

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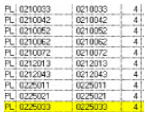
- *"eNorway2009 – the digital leap"*
- *In Norway all citicens have their own personal web page*

My house

My children



My cabin(s)

Our deliverables in the future, and more to come

My travel

My application

DEMOCRACY – to guarantee the data quality, data access for everybody

a challenging task !

My area of living

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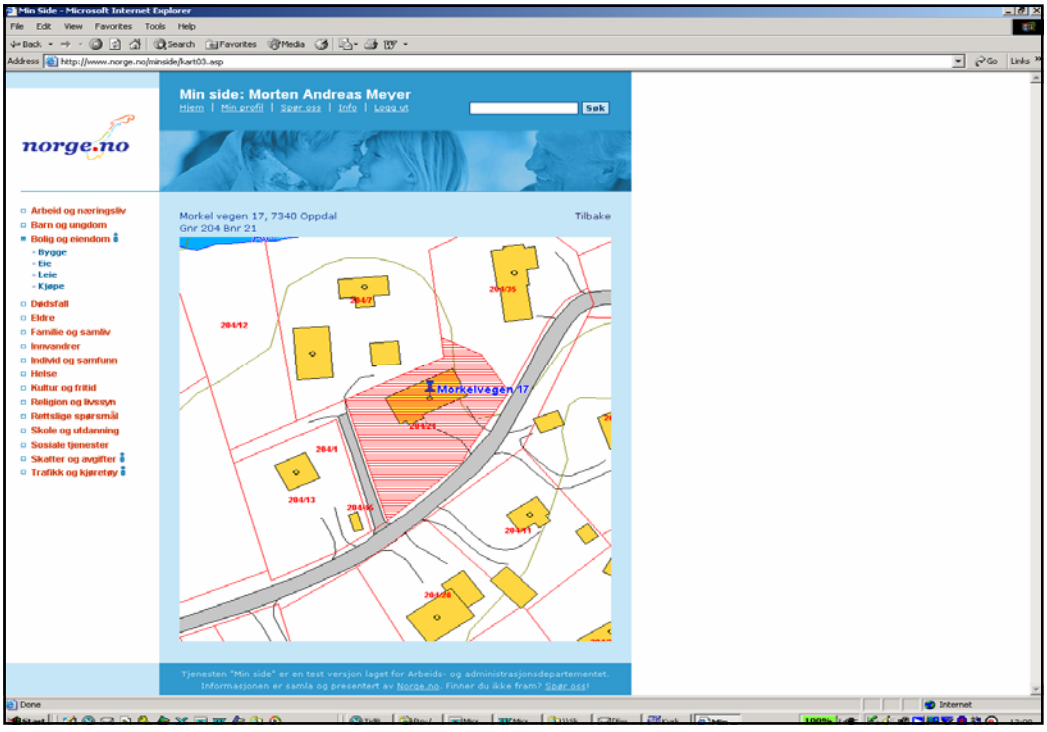
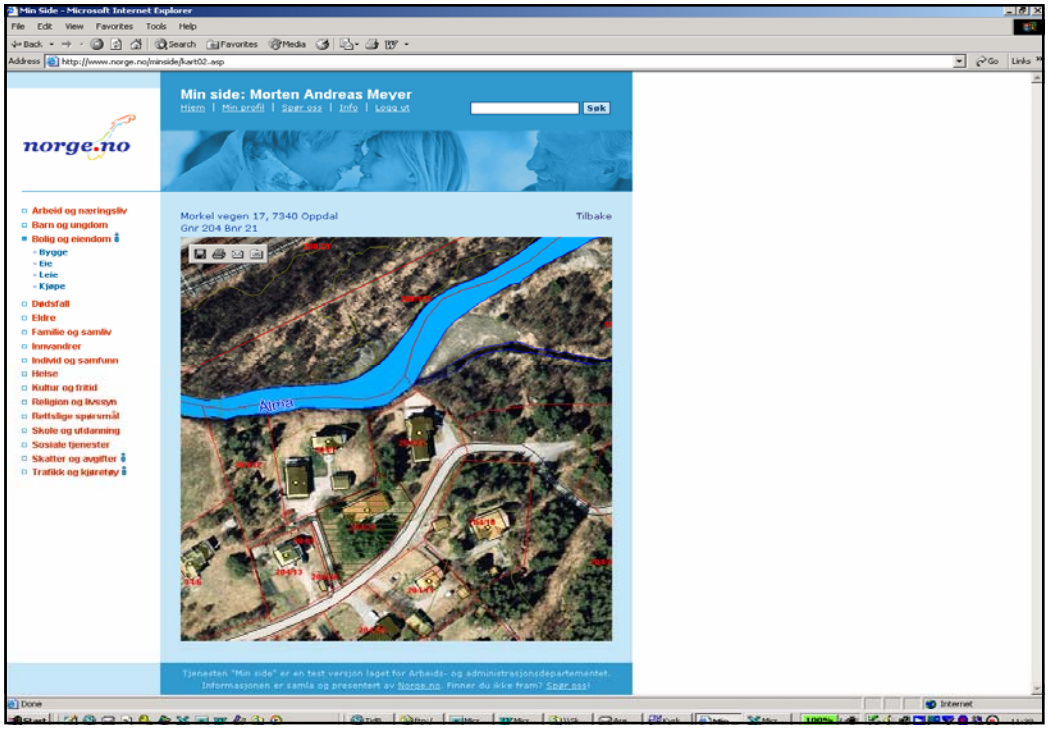
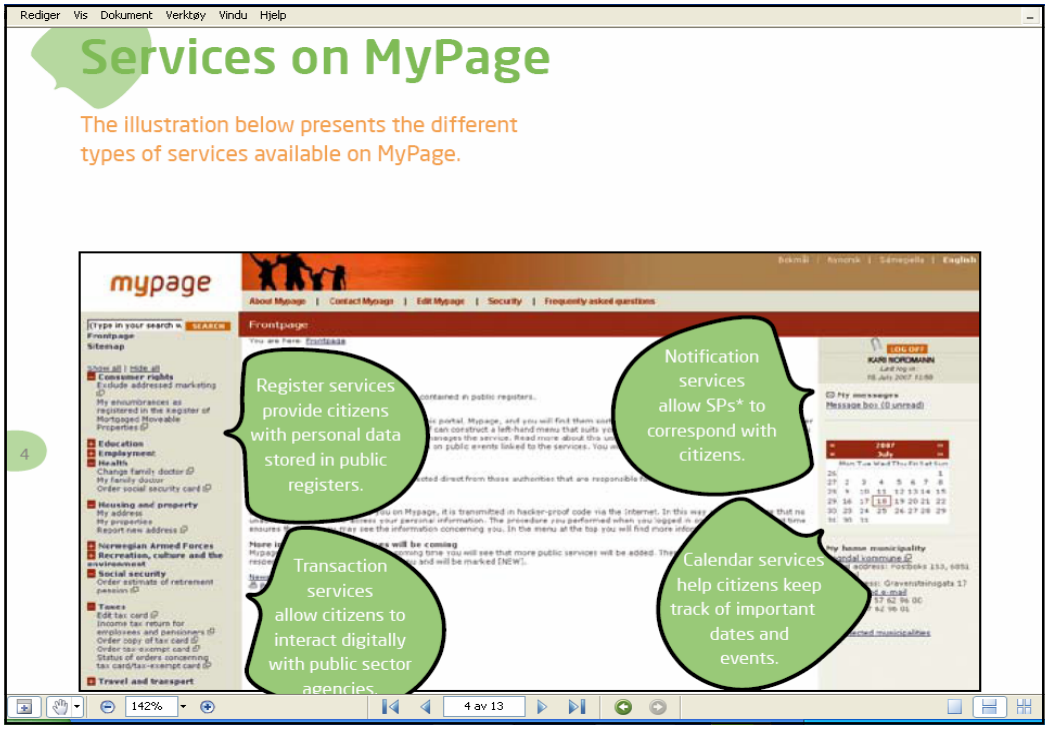
MyPage – initiative from MOD




Min Side - Microsoft Internet Explorer
Min side: Morten Andreas Meyer
norge.no
Arbeid og næringsliv
Barn og ungdom
Bolig og eiendom
Dødsfall
Eldre
Familie og samliv
Innvandrer
Individ og samfunn
Helse
Kultur og fritid
Religion og livssyn
Skole og utdanning
Sosiale tjenester
Skatter og avgifter
Trafikk og kjøretøy
Morkel vegen 17, 7340 Oppdal
Gnr 204 Bnr 21
Tilbake


Rediger Vis Dokument Verktøy Vindu Hjelp
Services on MyPage
The illustration below presents the different types of services available on MyPage.
mypage
Register services provide citizens with personal data stored in public registers.
Notification services allow SPs* to correspond with citizens.
Transaction services allow citizens to interact digitally with public sector agencies.
Calendar services help citizens keep track of important dates and events.
4
142%
4 av 13

- and "My page" won the eGovernment Awards 2007 !

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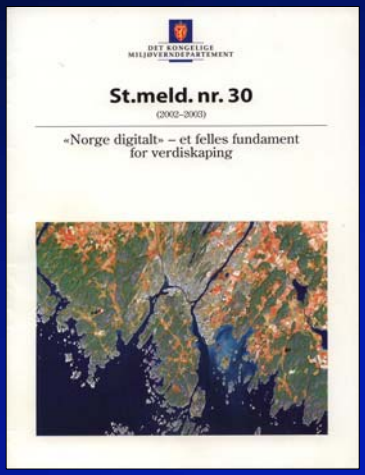
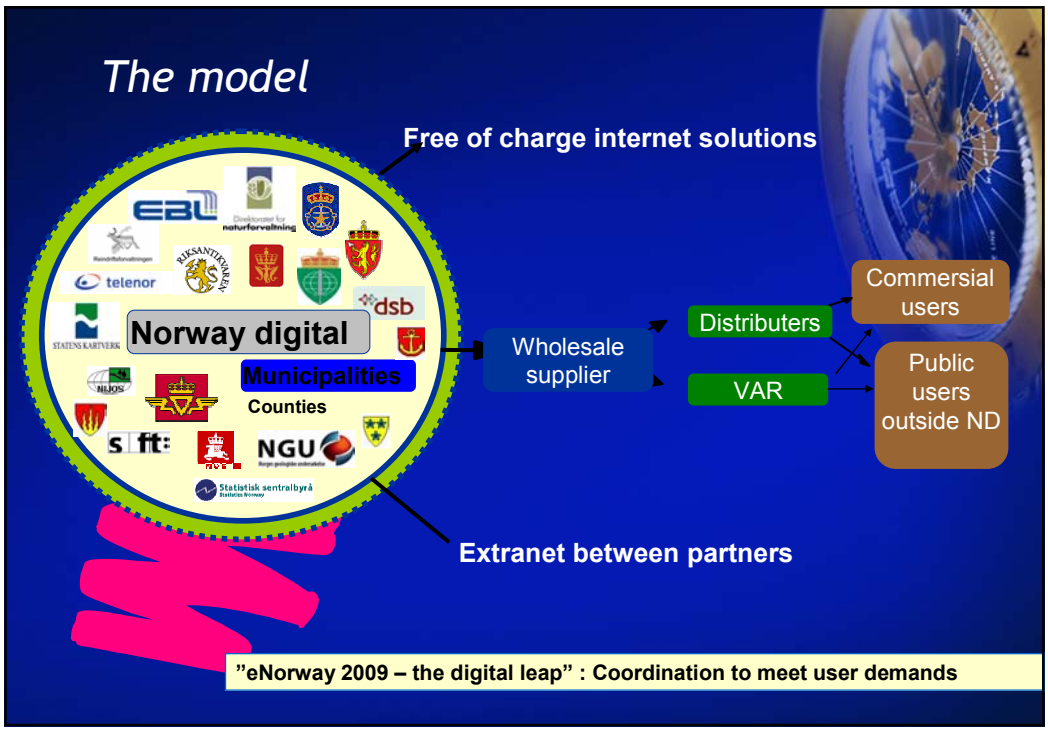


«Norway digital» - a common fundament for value adding

The Parliamentary White Paper presented by the Norwegian government and accepted by the Parliament on June 18, 2003

The major concept in the White Paper is the establishment of national geospatial infrastructure


The model
Free of charge internet solutions
Norway digital
Municipalities
Counties
Wholesale supplier
Distributers
VAR
Commersial users
Public users outside ND
Extranet between partners
"eNorway 2009 – the digital leap" : Coordination to meet user demands


Who can be «Norway digital» partner?
• Government authorities
• Municipalities and counties
– the partner rights is valid for all authorised tasks, also commercial activities as long as not separated to own legal body, also tasks outsourced as long as they are enforced by law
• Companies with national interests producing data of interest to the infrastucture
Norge digitalt

Partner status - 2008

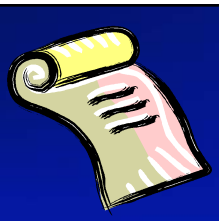
- 40 national agencies
- 17 (out of 17) county administrations
- 430 (out of 430) municipalities
- approx. 100 energy companies
- a few others

Partner benefits

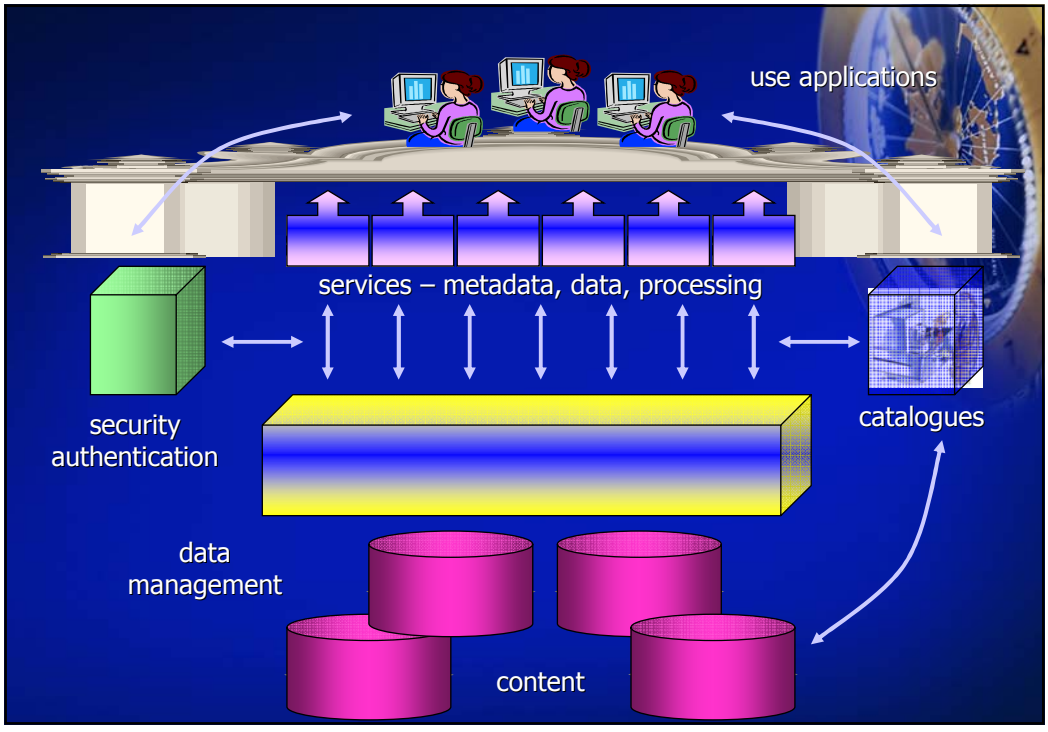
- Access to a broad variety of geographic information – data sets and services
  - downloadable datasets
  - web based services :
    - Map services, registers, adresses, placenames+++
  - quality control software
  - tools for developing product specifications
- access to the portal and all its services
- participation in the organisational structure
- participation in a variety of networks, e.g. technical and thematic

Norge digitalt

Partner contracts



- Principal agreement
- Specific partner contract
- Annex 1 - Organization and governance
- Annex 2 - The partner list (dynamic list)
- Annex 3 - Data content (datasets and services)
- Annex 4 - Requirements (data and services, incl. SLA - service level agreement)
- Annex 5 - Economy and funding



Technology framework

The «Norway digital» ”Implementing Rules”
Based upon the ISO 191xx-series
of standards and OGC specifications

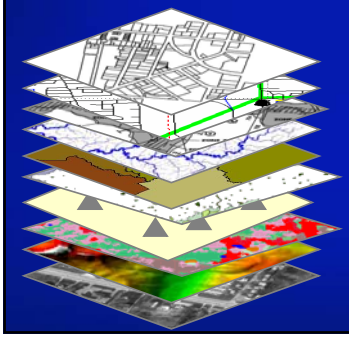
- ISO 6709:1983 Standard representation of latitude, longitude and altitude for geographic point locations
- ISO 19101:2002 Geographic information - Reference model
- ISO/TS 19103:2005 Geographic information - Conceptual schema language
- ISO 19105:2000 Geographic information - Conformance and testing
- ISO 19106:2004 Geographic information - Profiles
- ISO 19107:2003 Geographic information - Spatial schema
- ISO 19108:2002 Geographic information - Temporal schema
- ISO 19109:2005 Geographic information - Rules for application schema
- ISO 19110:2005 Geographic information - Methodology for feature cataloguing
- ISO 19111:2003 Geographic information - Spatial referencing by coordinates
- ISO 19112:2003 Geographic information - Spatial referencing by geographic identifiers
- ISO 19113:2002 Geographic information - Quality principles
- ISO 19114:2003 Geographic information - Quality evaluation procedures
- ISO 19115:2003 Geographic information – Metadata
- ISO 19116:2004 Geographic information - Positioning services
- ISO 19117:2005 Geographic information - Portrayal
- ISO 19118:2005 Geographic information - Encoding
- ISO 19119:2005 Geographic information - Services

++

An infrastructure support

the development addresses *all and any* potential application field for geospatial information !!

a variety of content, reference and thematic data



a rich set of functionality - services

Service A with interface

Service B with interface

Service C with interface

...

Service Z with interface

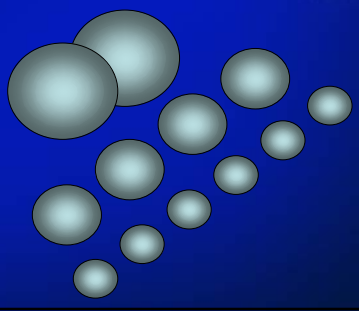
a variety of appli-cations

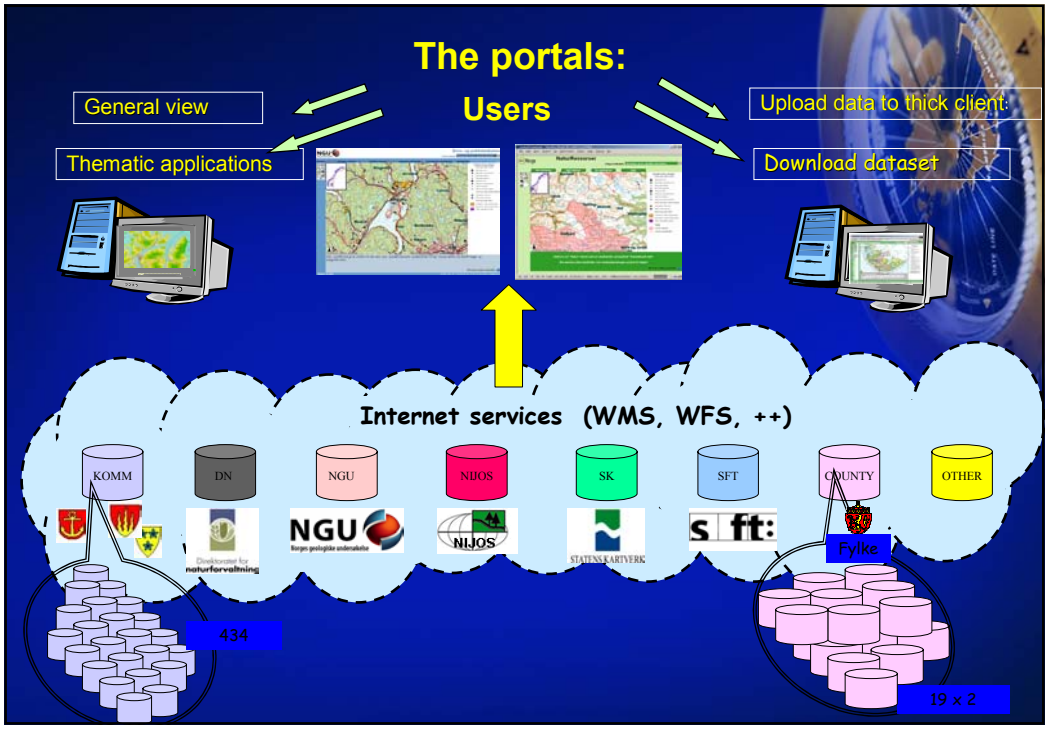
geoportal architecture

national components
WMS, WFS, WCS, …. , web services
regional and local components

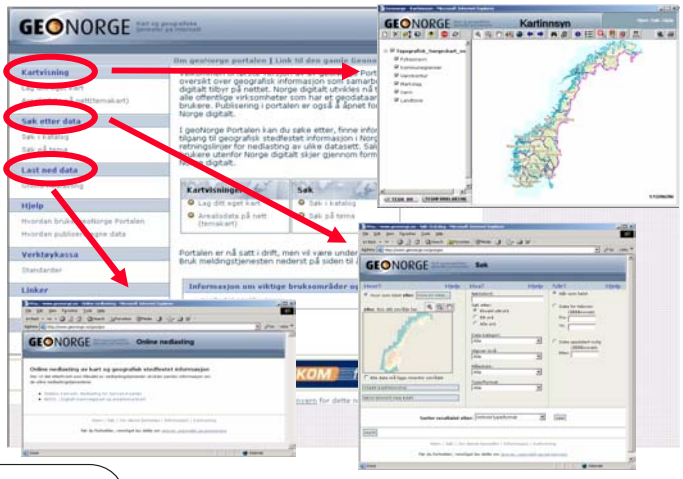
used to build:

national portal
regional and local portals
organisation specific portals





Geodata portal- geonorge.no



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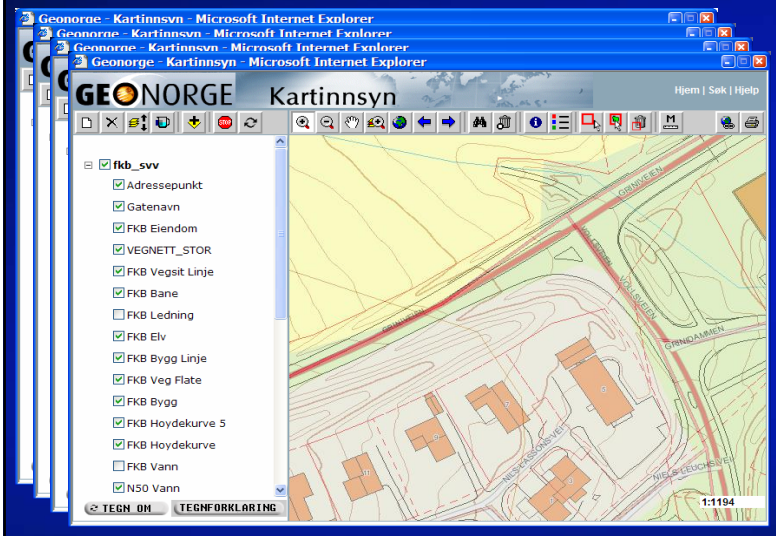
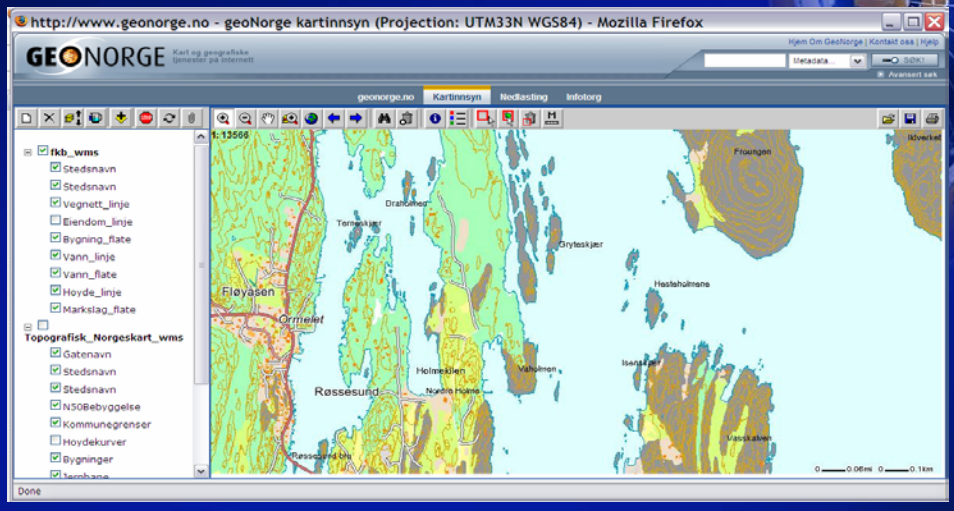
The general portal - map viewer …

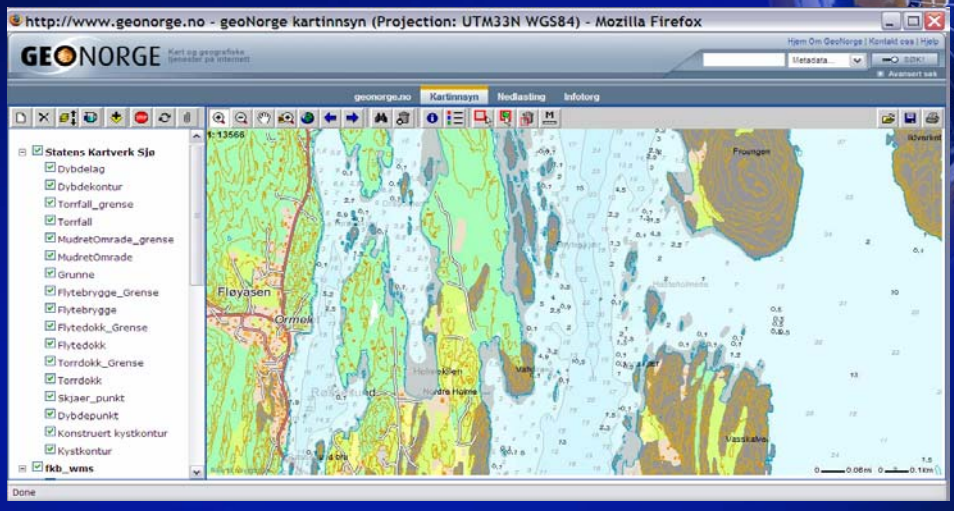


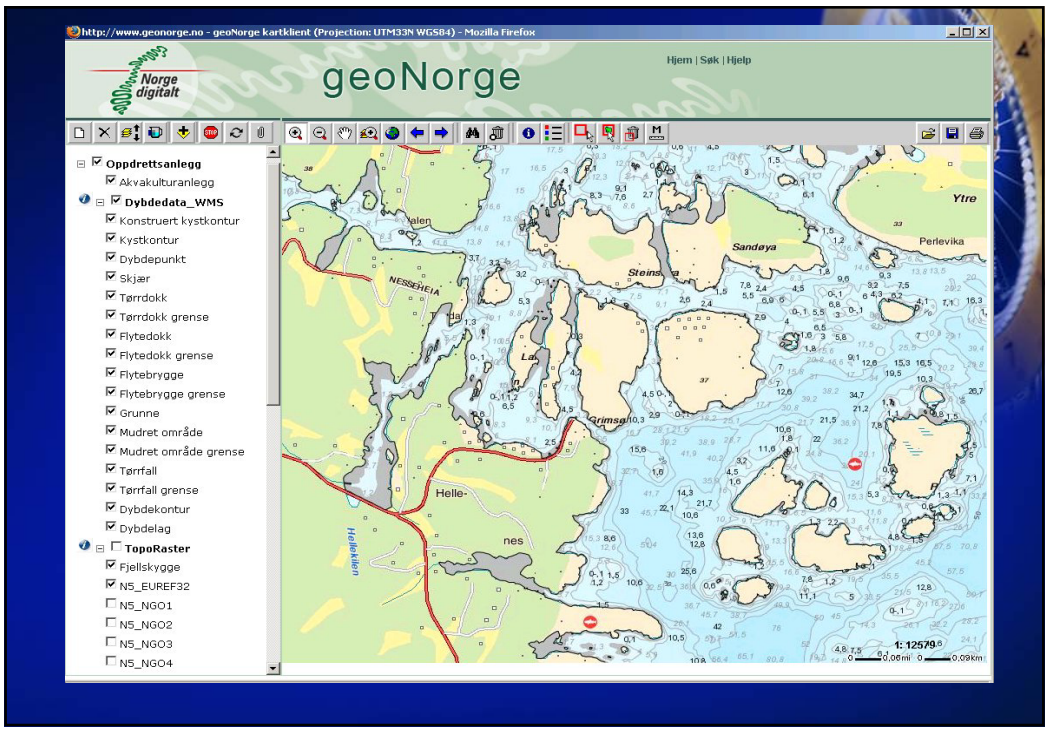
Overview
1:50 000 scale
1:5 000 scale
Detail

Integrating land and sea …



Integrating land and sea …




http://www.geonorge.no - geoNorge kartklient (Projection: UTM33N WGS84) - Mozilla Firefox
Norge digitalt
geoNorge
Hjem | Søk | Hjelp
Oppdrettsanlegg
Akvakulturanlegg
Dybdedata_WMS
Konstruert kystkontur
Kystkontur
Dybdepunkt
Skjær
Tørrdokk
Tørrdokk grense
Flytedokk
Flytedokk grense
Flytebrygge
Flytebrygge grense
Grunne
Mudret område
Mudret område grense
Tørrfall
Tørrfall grense
Dybdekontur
Dybdelag
TopoRaster
Fjellskygge
N5_EUREF32
N5_NGO1
N5_NGO2
N5_NGO3
N5_NGO4
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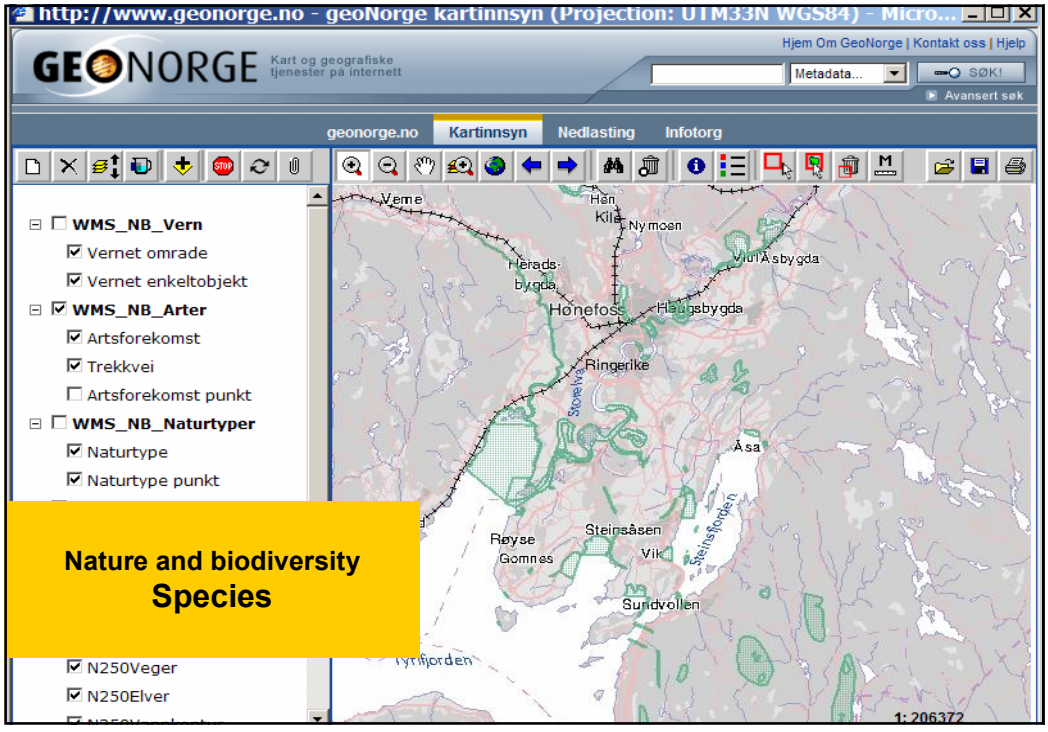
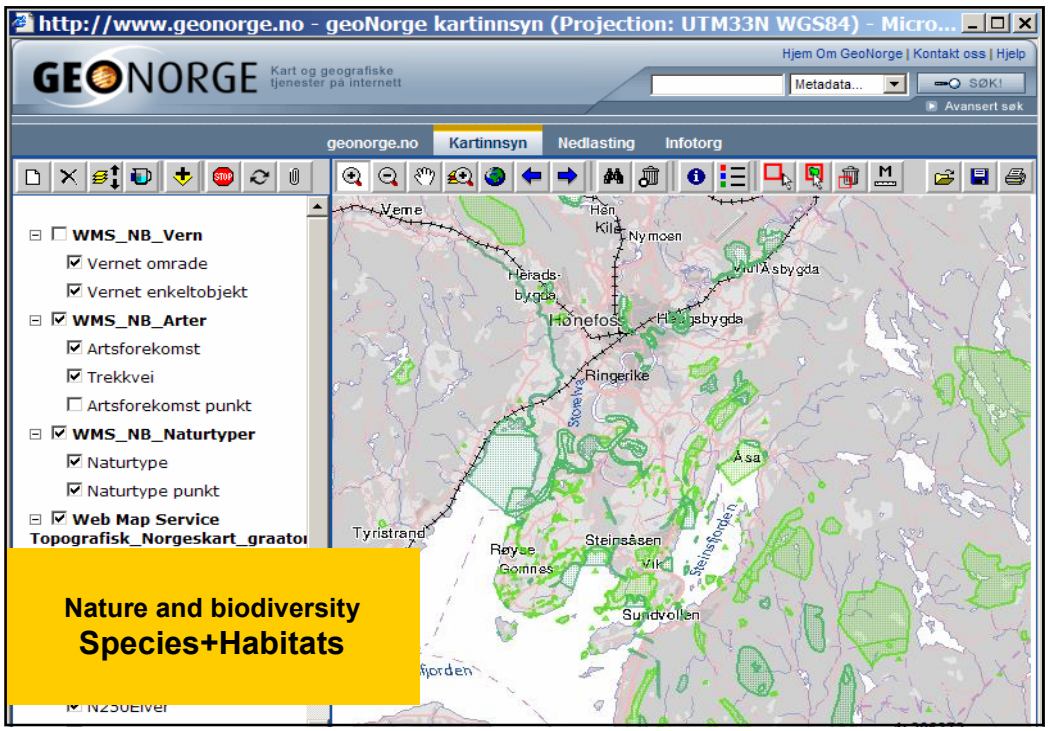

http://www.geonorge.no - geoNorge kartinnsyn (Projection: UTM33N WGS84) - Micro...
GEONORGE
Kart og geografiske tjenester på internett
Hjem Om GeoNorge | Kontakt oss | Hjelp
Metadata...
SØK!
Avansert søk
geonorge.no
Kartinnsyn
Nedlasting
Infotorg
WMS_NB_Vern
Vernet omrade
Vernet enkeltobjekt
WMS_NB_Arter
Artsforekomst
Trekkvei
Artsforekomst punkt
WMS_NB_Naturtyper
Naturtype
Naturtype punkt
N250Veger
N250Elver
Verne
Hån
Kila
Nymoen
Hønefoss
Ringerike
Åsa
Steinsåsen
Vik
Sundvollen
Røyse
Gomnes
1: 206372
Nature and biodiversity
Species


http://www.geonorge.no - geoNorge kartinnsyn (Projection: UTM33N WGS84) - Micro...
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geonorge.no
Kartinnsyn
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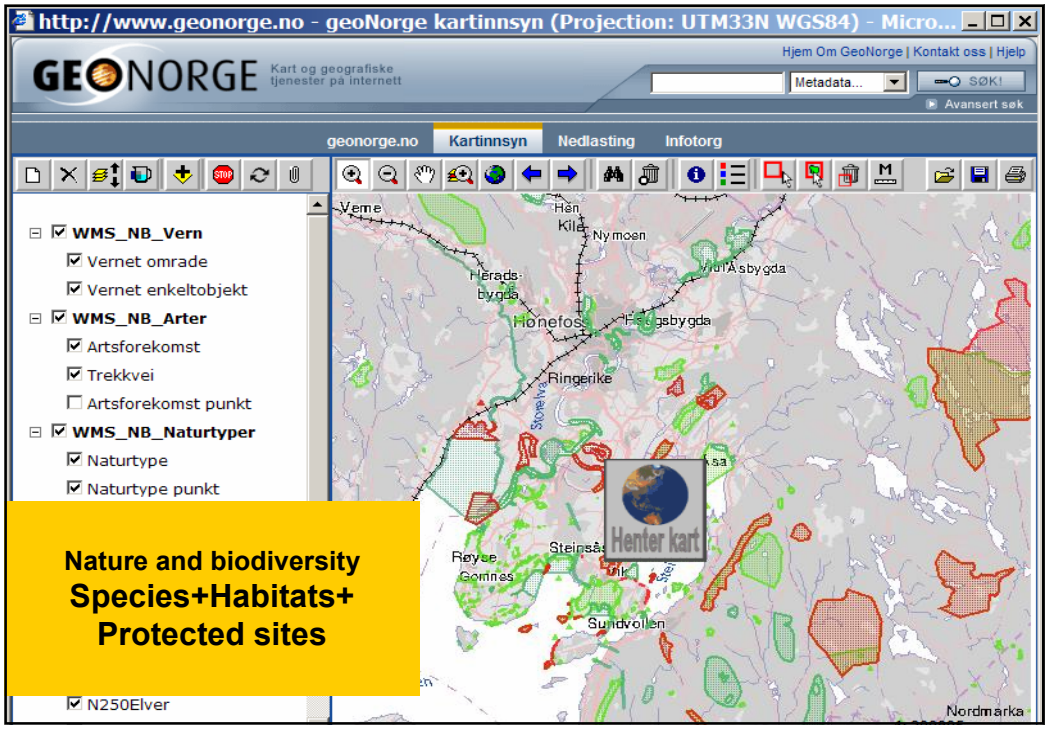
Infotorg
WMS_NB_Vern
Vernet omrade
Vernet enkeltobjekt
WMS_NB_Arter
Artsforekomst
Trekkvei
Artsforekomst punkt
WMS_NB_Naturtyper
Naturtype
Naturtype punkt
Web Map Service
Topografisk_Norgeskart_graato
Verne
Kila
Nymoen
Hønefoss
Ringerike
Åsa
Tyristrand
Steinsåsen
Sundvollen
Nature and biodiversity
Species+Habitats


http://www.geonorge.no - geoNorge kartinnsyn (Projection: UTM33N WGS84) - Micro...
GEONORGE
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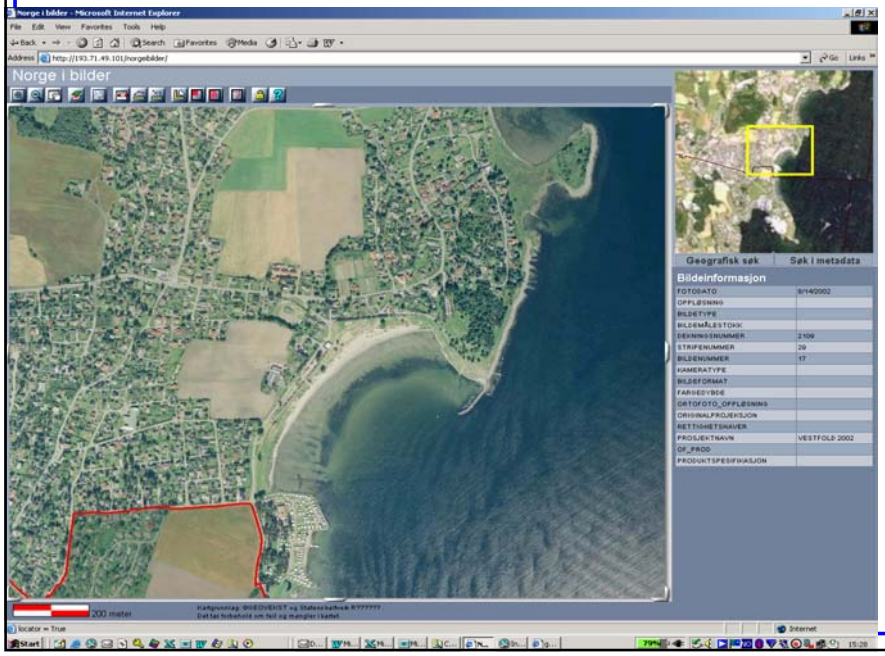
WMS_NB_Vern
Vernet omrade
Vernet enkeltobjekt
WMS_NB_Arter
Artsforekomst
Trekkvei
Artsforekomst punkt
WMS_NB_Naturtyper
Naturtype
Naturtype punkt
N250Elver
Verne
Kila
Nymoen
Hønefoss
Ringerike
Henter kart
Sundvollen
Nordmarka
Nature and biodiversity
Species+Habitats+
Protected sites

Orthoimagery – full national coverage



NORWEGIAN MAPPING AND CADASTRE AUTHORITY

Situation in geoNorge

(a) discovery services	– several metadata catalogues
(b) view services coverage	- >200 wms services with national
(c) download services	– 210 000 datasets with reference data, more than 50 000 datasets with thematic data
(d) transformation services	– available as web services

Some statistics …

Typical ***daily*** usage

- map service requests 150 000
- register services requests 20 000

- Download's 15 000 datasets

eKommune 2009

- strategies for surveying and spatial data
- cross border cooperation
- infrastructure and standardisation
- integration and interoperability
- ICT in local democracy
- participation from citizens

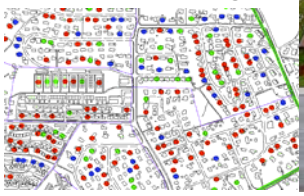
Conditions for the municipalities

User functionality must be as good as the solutions they run today
Good interface to various external registries
Demand for stable access to external WMS 24/7
Neighbouring municipalities accessible on the net
Simple catalogue acces to external WMS services
Quick communication
External WMS data delivered within the municipality's UTM zone
Good specifications for the national data sets
Integration with management tools and GIS tools
Good and relevant web-services
Good ordering and payment solutions
Electronic self service of data and applications from citizens

Better municipal planning and awareness

by using the properties, adresses and buildings register together with digital property maps

School planning



Fire emergency

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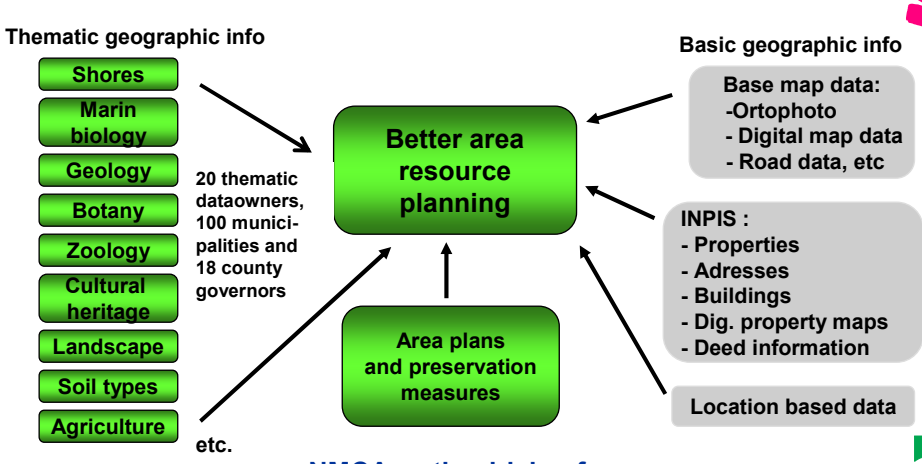
A National Area Resource Management Program as part of Norway Digital (AREALIS)



NMCA as the driving force

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NORWEGIAN MAPPING AND CADASTRE AUTHORITY

Environmental databases in all Norwegian Counties

- Supply relevant datasets to be used in local and regional planning
- Simplify existing detailed data and classification systems
- Mapping of new topics and land use assessment
- Identify valuable areas
- Ranking of areas according to biodiversity and other environmental values
- More sustainable land use - better management
- Affect communication between different sectors
- Reduce number and seriousness of land use conflicts

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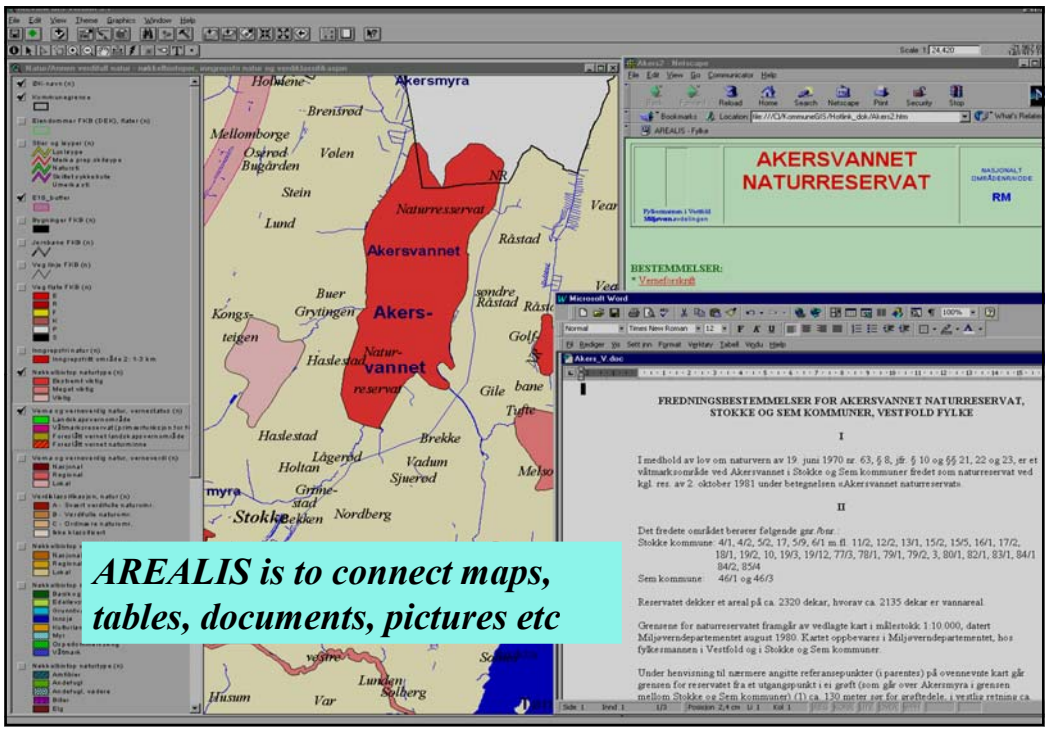
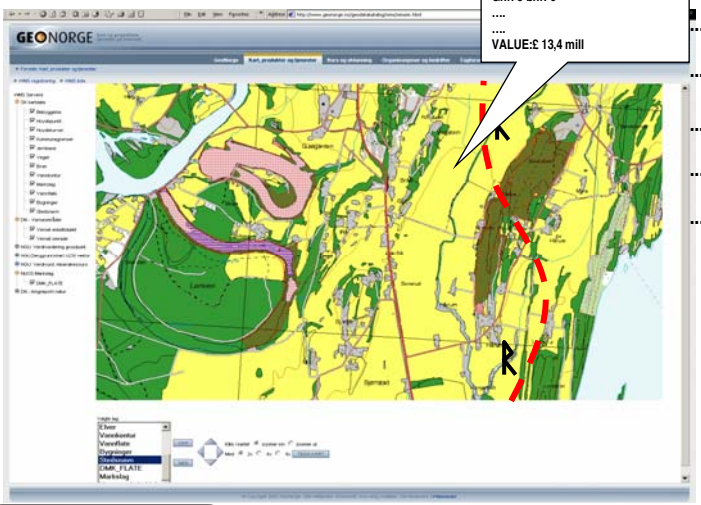
NORWEGIAN MAPPING AND CADASTRE AUTHORITY



Scenario – planning for a new main road

Examples



We start with a base map ...

... Potential road line

... What about cultural heritage ?

... Protected areas ? ...

... Farm land ?...

... Properties to be purchased ?

All this info only a couple of key - strokes away !!

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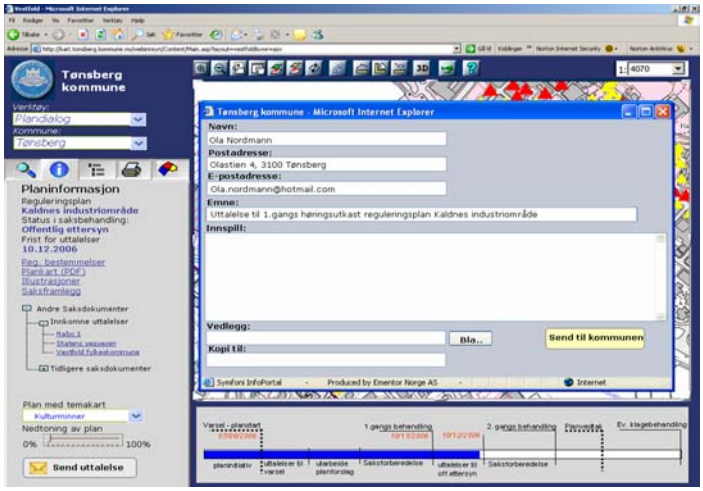
Digital Planning Dialogue



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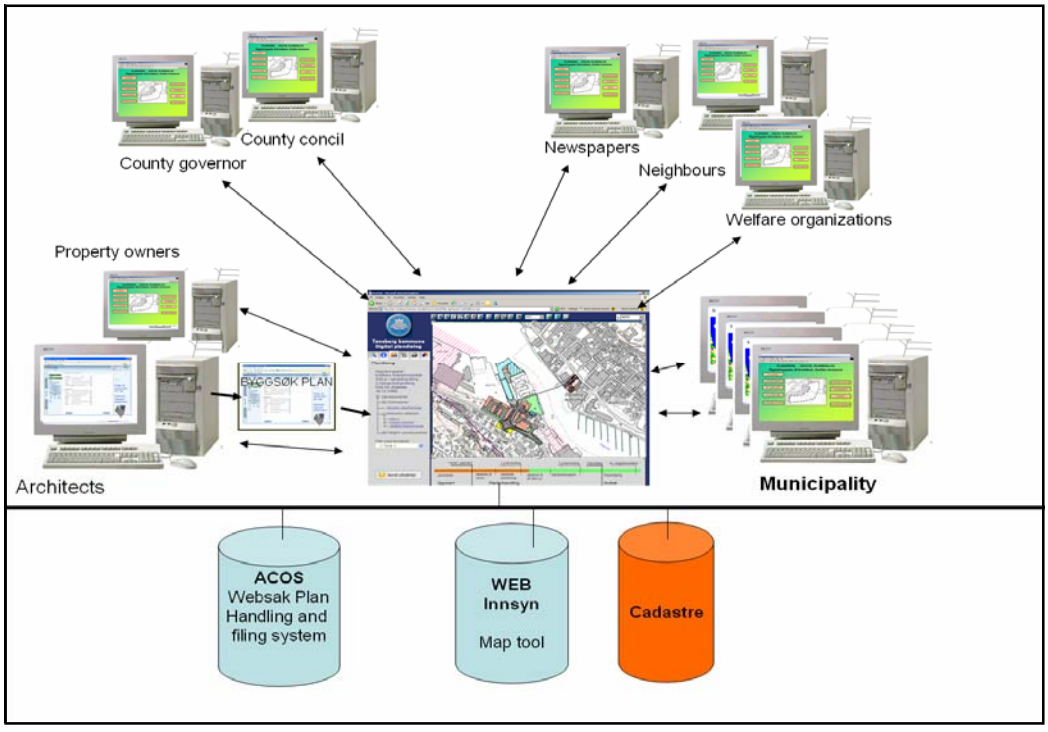
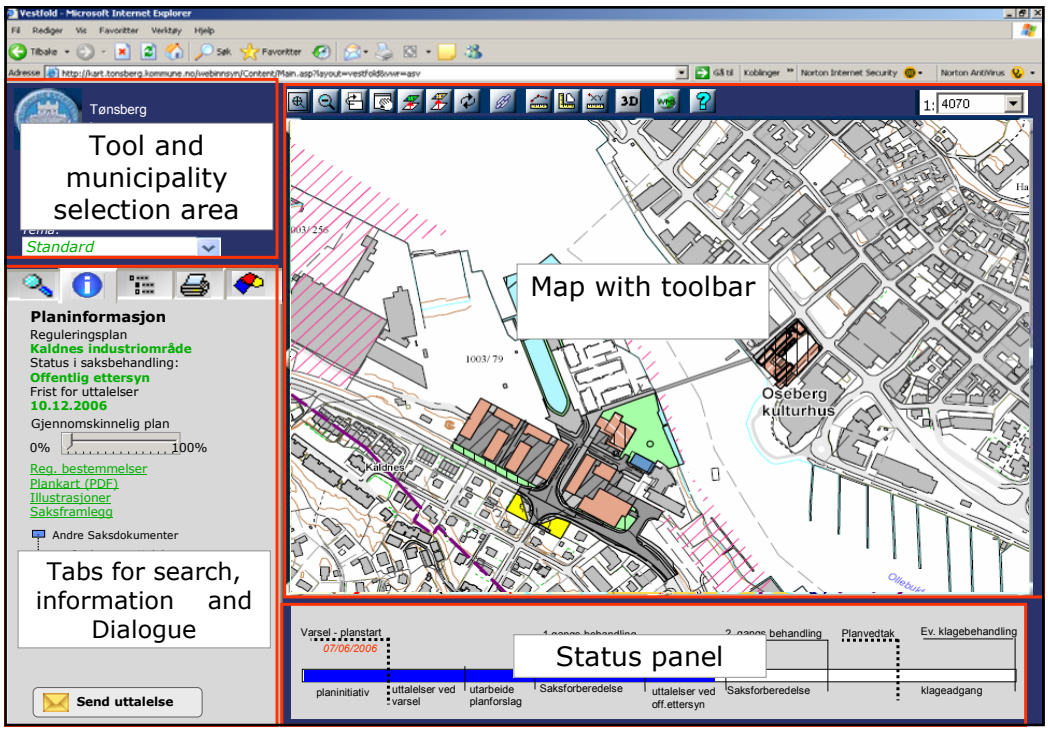
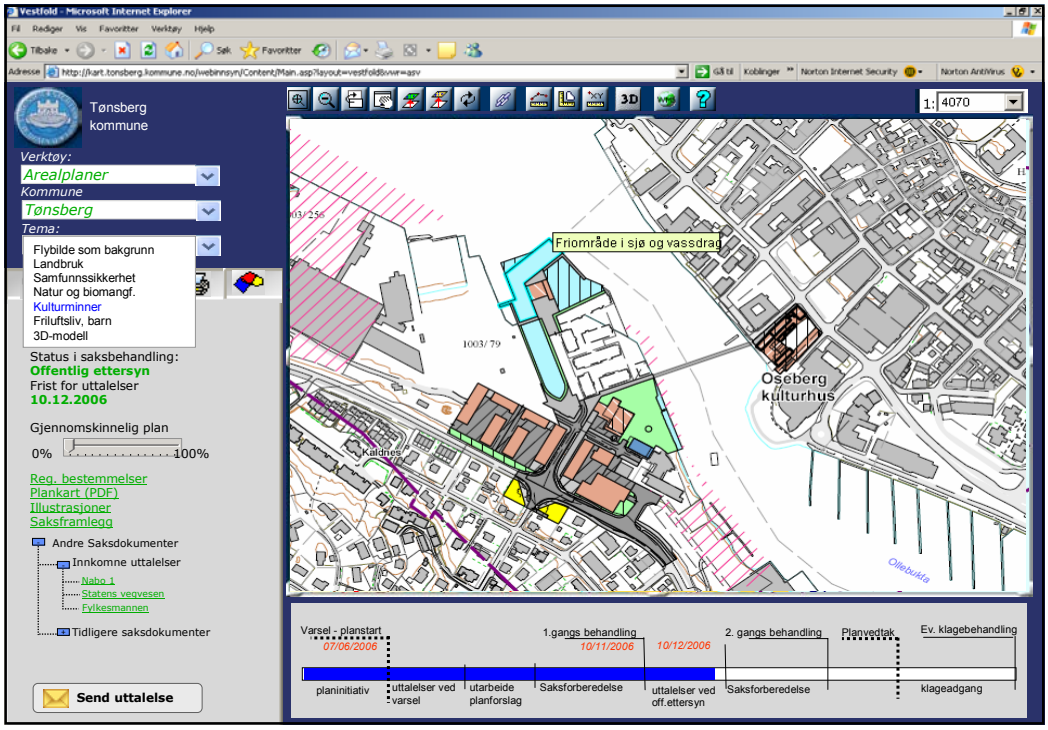



Tool and municipality selection area
Map with toolbar
Tabs for search, information and Dialogue
Status panel
Tønsberg
Standard
Planinformasjon
Reguleringsplan
Kaldnes industriområde
Status i saksbehandling:
Offentlig ettersyn
Frist for uttalelser
10.12.2006
Gjennomskinnelig plan
0%
100%
Reg. bestemmelser
Plankart (PDF)
Illustrasjoner
Saksframlegg
Andre Saksdokumenter
Send uttalelse
Varsel - planstart
07/06/2006
planinitiativ
uttalelser ved varsel
utarbeide planforslag
Saksforberedelse
uttalelser ved off.ettersyn
Saksforberedelse
Planvedtak
Ev. klagebehandling
klageadgang
Oseberg kulturhus
Kaldnes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Verktøy:
Arealplaner
Kommune
Tønsberg
Tema:
Flybilde som bakgrunn
Landbruk
Samfunnssikkerhet
Natur og biomangf.
Kulturminner
Friluftsliv, barn
3D-modell
Friområde i sjø og vassdrag
Status i saksbehandling:
Offentlig ettersyn
Frist for uttalelser
10.12.2006
Gjennomskinnelig plan
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100%
Reg. bestemmelser
Plankart (PDF)
Illustrasjoner
Saksframlegg
Andre Saksdokumenter
Innkomne uttalelser
Nabo 1
Statens vegvesen
Fylkesmannen
Tidligere saksdokumenter
Send uttalelse
Varsel - planstart
07/06/2006
1.gangs behandling
10/11/2006
10/12/2006
2. gangs behandling
Planvedtak
Ev. klagebehandling
planinitiativ
uttalelser ved varsel
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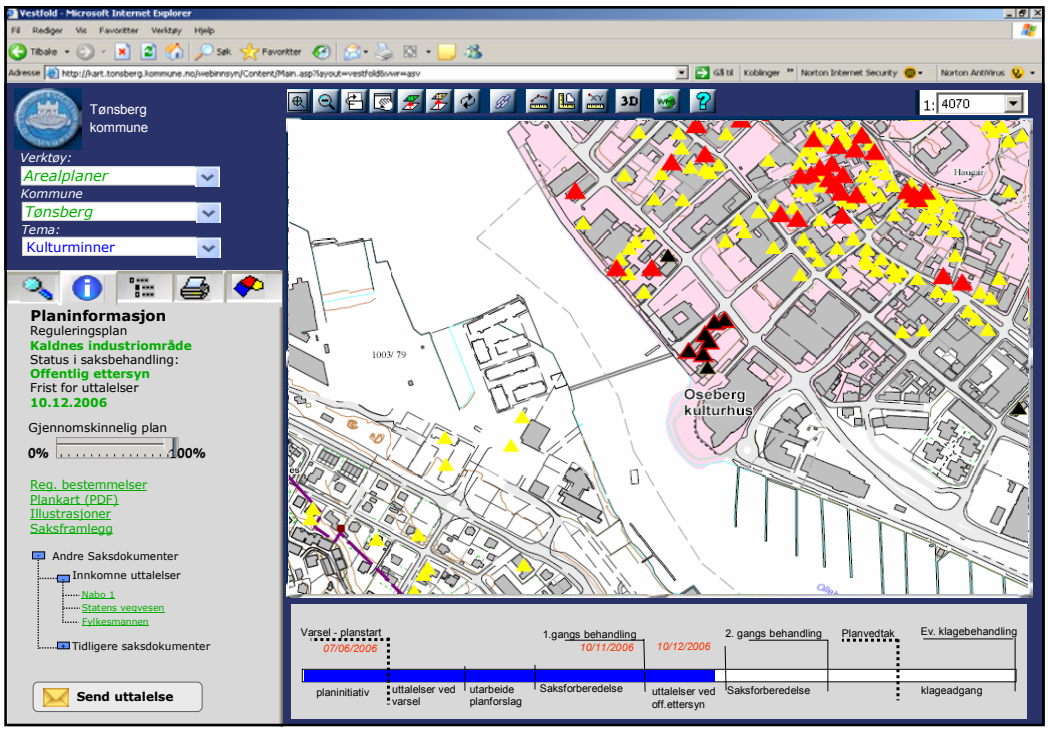
Saksforberedelse
klageadgang
Oseberg kulturhus
Kaldnes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Kommune
Tønsberg
Tema:
Kulturminner
Planinformasjon
Reguleringsplan
Kaldnes industriområde
Status i saksbehandling:
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Frist for uttalelser
10.12.2006
Gjennomskinnelig plan
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Andre Saksdokumenter
Innkomne uttalelser
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Fylkesmannen
Tidligere saksdokumenter
Send uttalelse
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Oseberg kulturhus
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10/12/2006
2. gangs behandling
Planvedtak
Ev. klagebehandling
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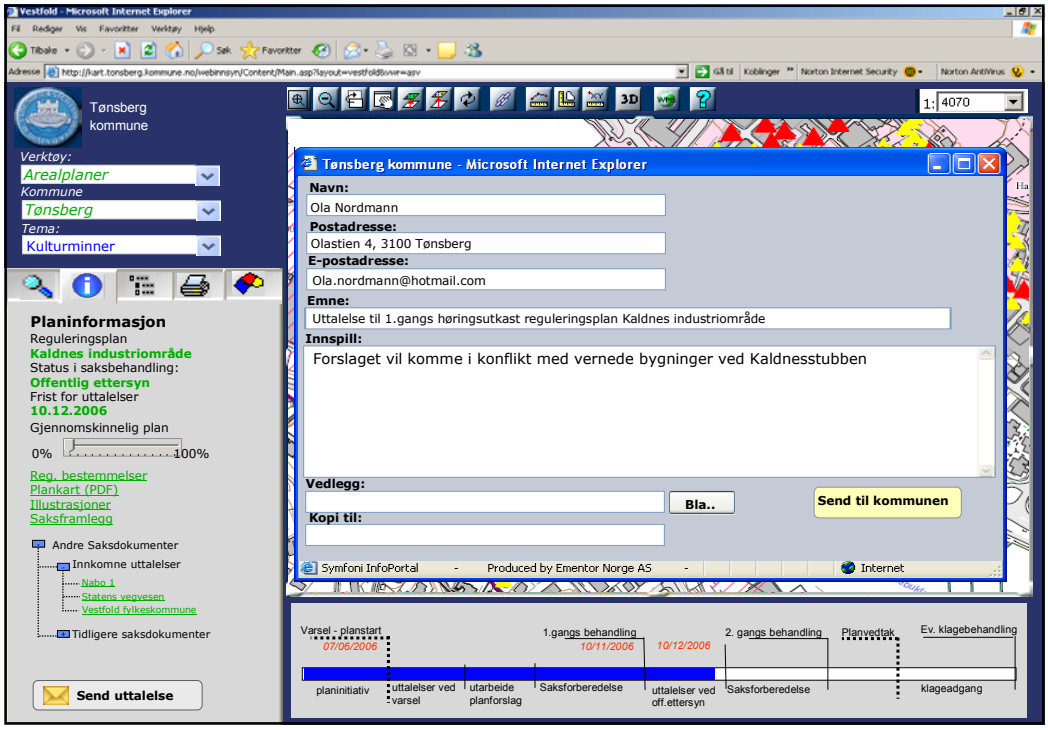
utarbeide planforslag
Saksforberedelse
uttalelser ved off.ettersyn
Saksforberedelse
klageadgang


Vestfold - Microsoft Internet Explorer
Tønsberg kommune
Verktøy:
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Saksframlegg
Andre Saksdokumenter
Innkomne uttalelser
Nabo 1
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Vestfold fylkeskommune
Tidligere saksdokumenter
Send uttalelse
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Tønsberg kommune - Microsoft Internet Explorer
Navn:
Ola Nordmann
Postadresse:
Olastien 4, 3100 Tønsberg
E-postadresse:
Ola.nordmann@hotmail.com
Emne:
Uttalelse til 1.gangs høringsutkast reguleringsplan Kaldnes industriområde
Innspill:
Forslaget vil komme i konflikt med vernede bygninger ved Kaldnesstubben
Vedlegg:
Bla..
Kopi til:
Send til kommunen
Symfoni InfoPortal - Produced by Ementor Norge AS - Internet
Varsel - planstart
07/06/2006
1.gangs behandling
10/11/2006
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2. gangs behandling
Planvedtak
Ev. klagebehandling
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uttalelser ved varsel
utarbeide planforslag
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uttalelser ved off.ettersyn
Saksforberedelse
klageadgang

Gains

More efficient executive work
- *Faster processes in case handling of plans and building applications*
- *Better action data*
- *Strengthened information services*

Transparency in the planning process (e-democracy)
- *Increased contact and more predictable processes for Land owners and other business*
- *increased citizen influence on municipal planning.*
- *Increased accessibility of information from municipal planning*

Realise gains from ICT- investments
- *Web-based handling and filing system*
- *Geodata cooperation on Geodata*
- *Web-based GIS tools*

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Risk management

Norway is exposed for natural disasters like landslide, stoneslide, snowslide, underwaterslide and slide as a cause of flood or tsunami

2000 killed by natural disasters the last 150 years

It is expected 10 bigger slides in the coming 50 – 100 years, each with 10 – 100 persons dead

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Can we reduce the risk

There is little to do to prevent the natural hazards
However, we can be prepared for situations

Modelling potential sceniarios, and risk assesment for localisaton of high exposed risk areas

Riskredusing actions, including warning systems

Decitions made today will influence the future vulnerability of the society

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NGU

Society security – slide risk

Municipalities – responsibility in build up areas

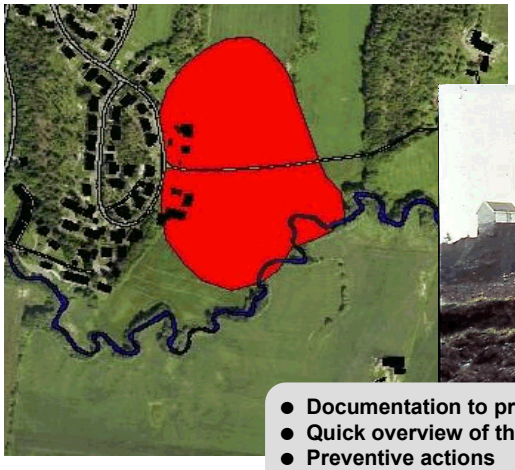
Risk management and actions

Planning/ construction

Actions

Watch, warning, prepareness

Land slide disposed areas



- Documentation to predict future slides
- Quick overview of the situation
- Preventive actions
- Lives and properties saved

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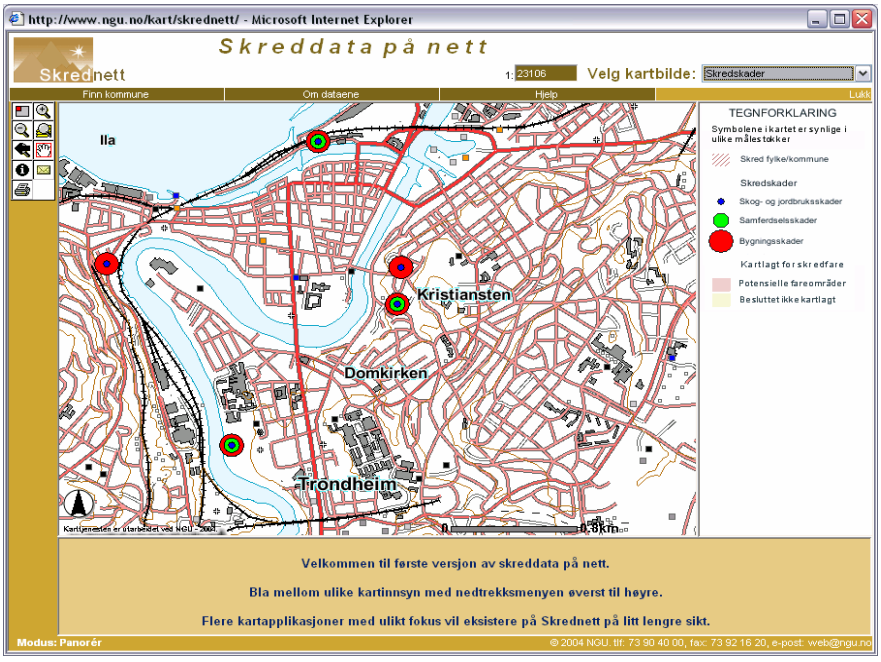
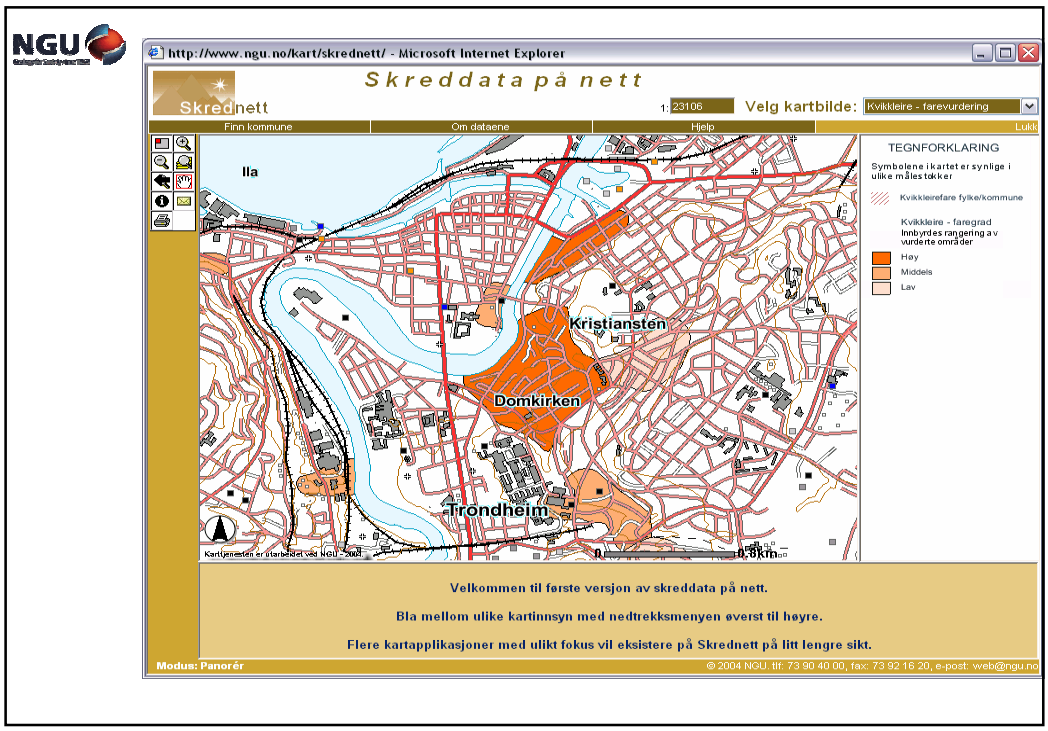
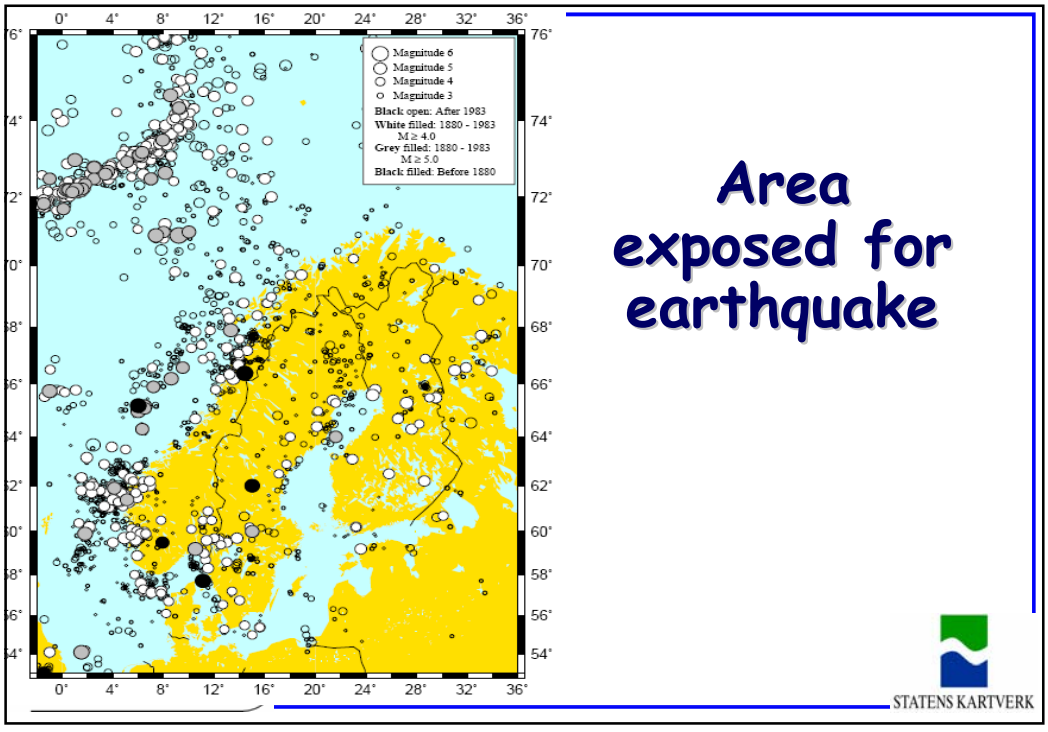
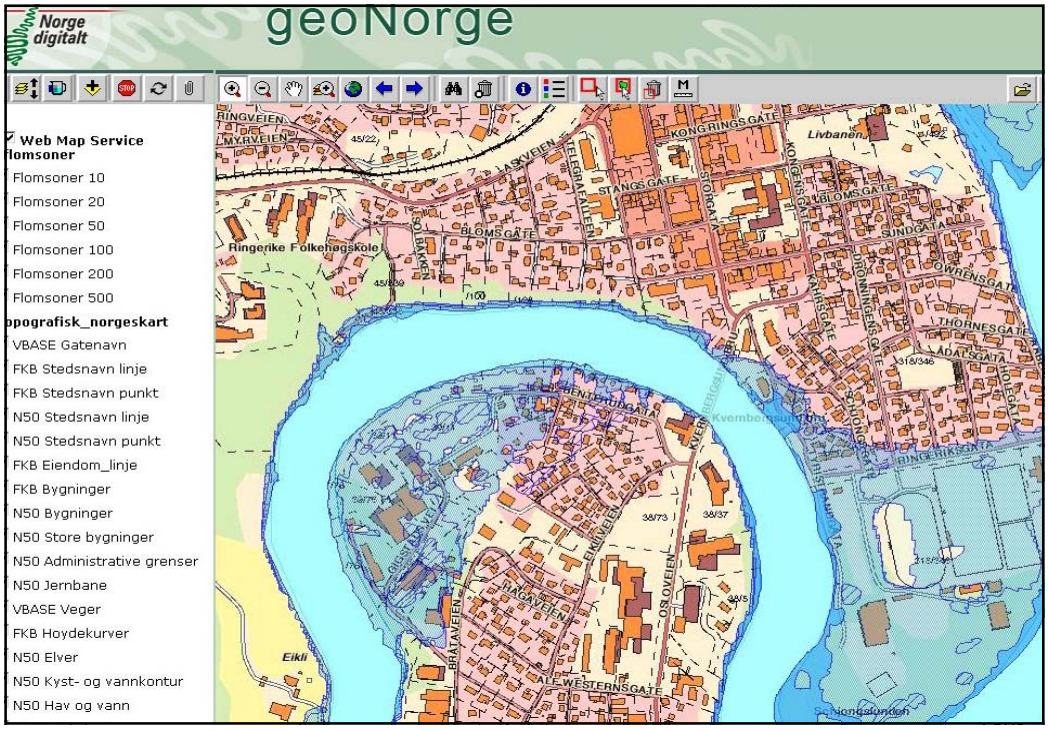


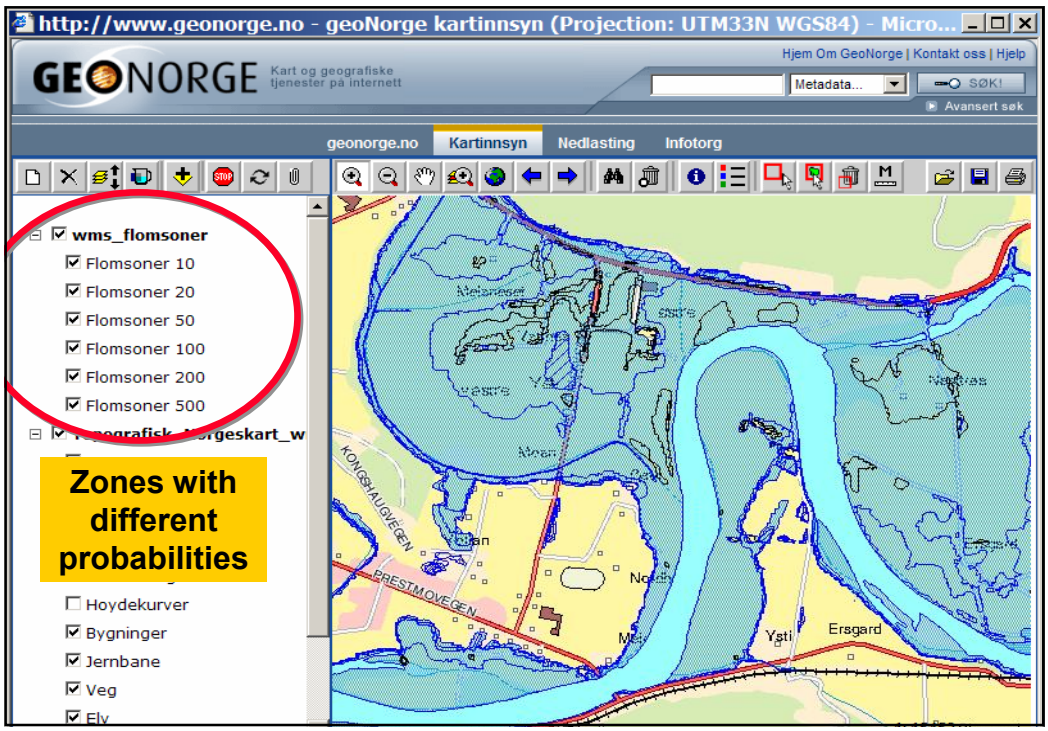

NGU
http://www.ngu.no/kart/skrednett/ - Microsoft Internet Explorer
Skreddata på nett
Skrednett
1: 23106
Velg kartbilde:
Kvikkleire - fårevurdering
Finn kommune
Om dataene
Hjelp
Lukk
TEGNFORKLARING
Symbolene i kartet er synlige i ulike målestokker
Kvikkleirefare fylke/kommune
Kvikkleire - faregrad
Innbyrdes rangering av vurderte områder
Høy
Middels
Lav
Ila
Kristiansten
Domkirken
Trondheim
0.5km
Velkommen til første versjon av skreddata på nett.
Bla mellom ulike kartinnsyn med nedtrekksmenyen øverst til høyre.
Flere kartapplikasjoner med ulikt fokus vil eksistere på Skrednett på litt lengre sikt.
Modus: Panorér
© 2004 NGU. tlf: 73 90 40 00, fax: 73 92 16 20, e-post: web@ngu.no


Magnitude 6
Magnitude 5
Magnitude 4
Magnitude 3
Black open: After 1983
White filled: 1880 - 1983
M ≥ 4.0
Grey filled: 1880 - 1983
M ≥ 5.0
Black filled: Before 1880
Area exposed for earthquake
STATENS KARTVERK

NVE Data Bases

- Catchments DB (REGINE)
- Lake DB
- River Network DB (ELVIS)
- Water Power Production DB
- Hydrological Gauging Stations
- Annual Water Runoff
- Protected River Systems
- Flood Inundation Map
- Bathymetric Maps of Lakes
- Wind Power Plants
- Mini/Micro Water Power Stations
- Thematic Maps



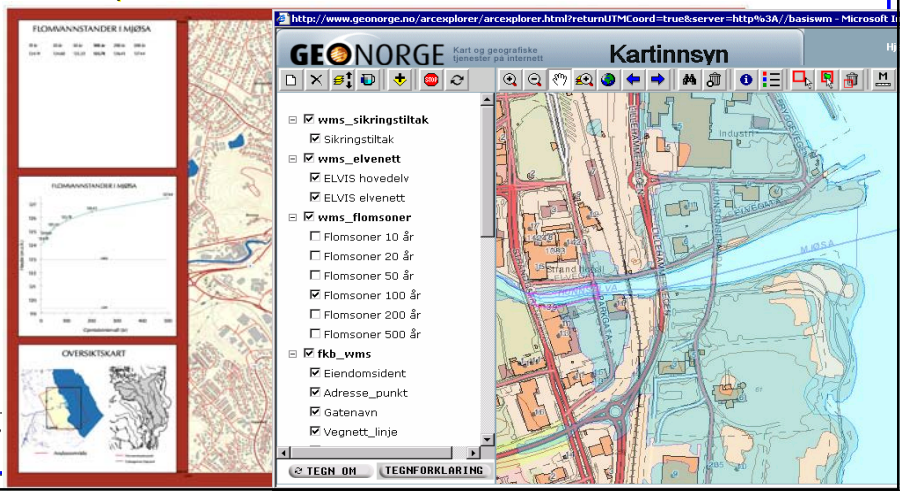


Flood Inundation Map

Flooded/ Inundated areas made available at NVE Atlas – and as Web Map Service (WMS) for Authorities & Public

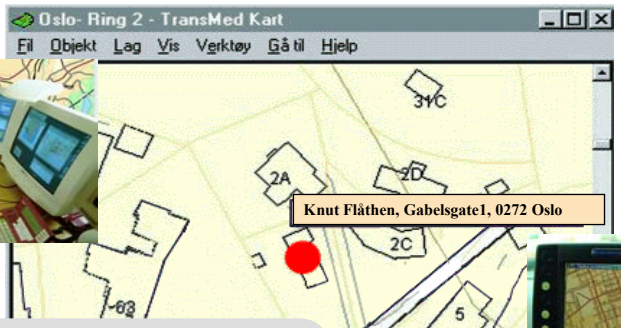
- **Flood estimation**
- **Hydraulic simulation**
- **GIS- analysis - identifying inundated areas**
- **Flood inundation map**

map presentation
report
digital data for all calculated floods



– value for

More efficient ambulance services



- Position of all ambulances are displayed
- Position of adresse to patient is displayed
- Navigation system in ambulance
- Fastest route presented on screen
- Lives are saved

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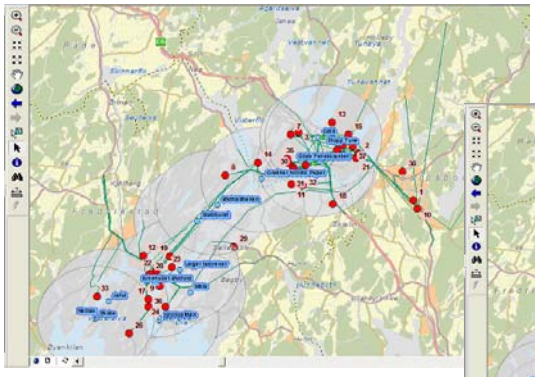
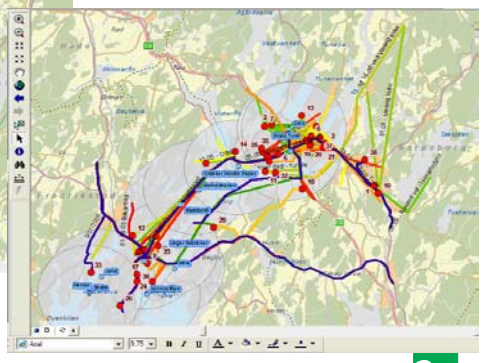
Locating infection source

Legionella-epidemic 2005



Adresses for the pasients and possible infection sources with a 3 km buffer



Movements of the pasients

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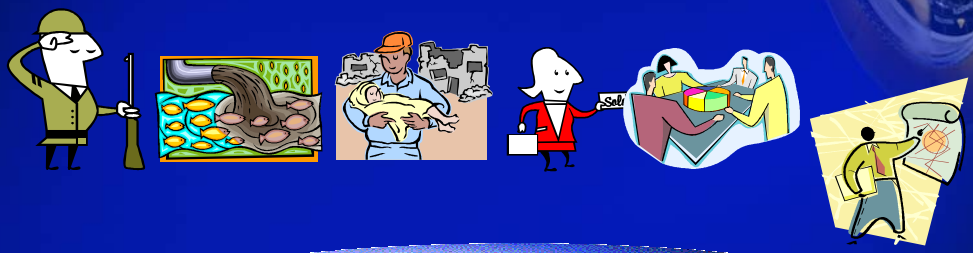
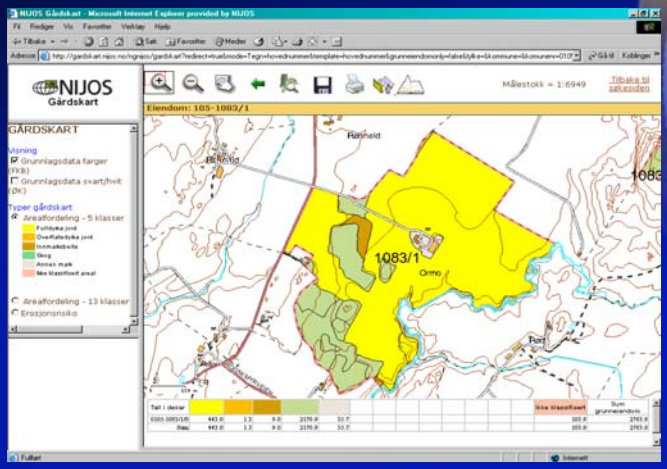
We have to integrate with eGovernment activities

the geospatial sector must try to become
as mainstream as information technology itself





Farm with crop classification
Application for the farmer – agricultural funding support

web based application overlaying land inventory
with cadastral parcels

Trust and confidence – to make the SDI work in an eGovernment environment …

we must be able to *trust* the information

- updated, accurate, best available

we need to have *confidence* in the services

- available, capacity, service level agreements

Conclusions ...

political support is essential

- *the Ministry of the Environment*
- *the Ministry of Government Administration and Reform*

based on support and involvement from the user community

- *national agencies*
- *regional authorities*
- *local authorities*
- *the geospatial industry*

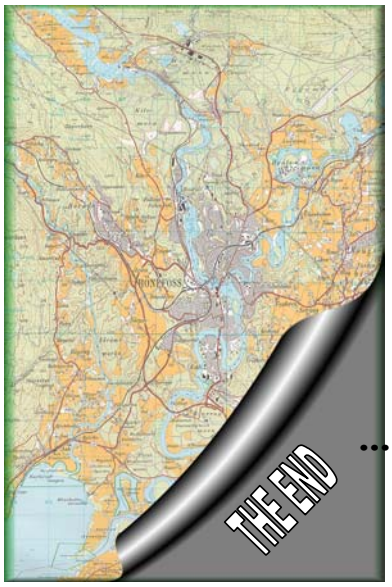
conclusions , ...

the technology must be based on standards

but a framework for implementation is necessary

technology and standards are available today to build infrastructures and portals

basic technical interoperability is not a major obstacle



Thank you for your attention!

... from

... to

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Building distributed systems for use in case of emergency, such as natural or man-made disasters

SmartRap
A pilot program developed by the

National Food Security Agency
NMCA
Gecko
NorKart

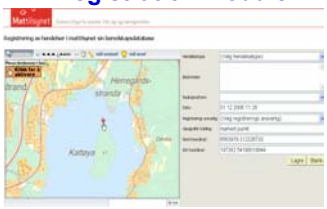
Main Objective

- ✓ *To design and build a system where all information is collected in real time by different Web Services and Geospatial Services directly from official databases.*
- ✓ *To design and build a system with the capability to produce notification lists with names and addresses inside a defined buffer zone and send warnings by SMS and voice mail directly to the people, companies or farmers inside this buffer (notification zone)*
- ✓ *To design and build distributed components that communicate with commercial GIS*
- ✓ *To work with services chaining technology and model driven architecture.*

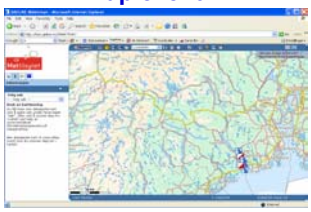
Building distributed Systems for Use in case of Emergency

This system consist of three different modules, that communicate with each other and with several Web Services in real time.

Registration module



Map client



Notification module

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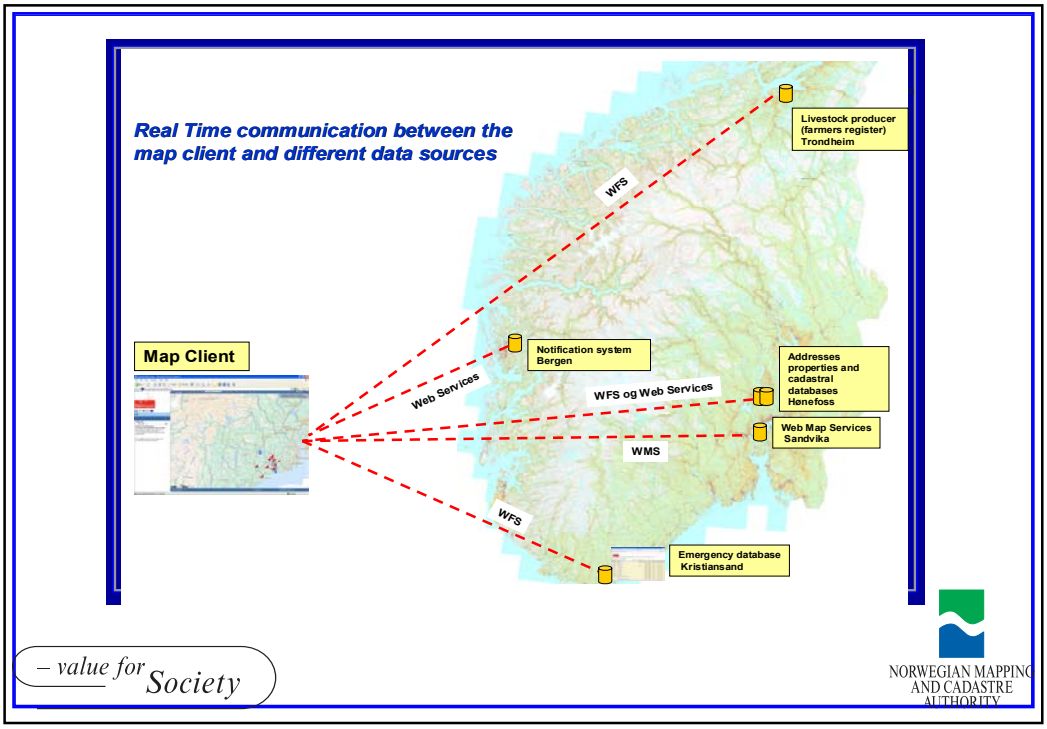
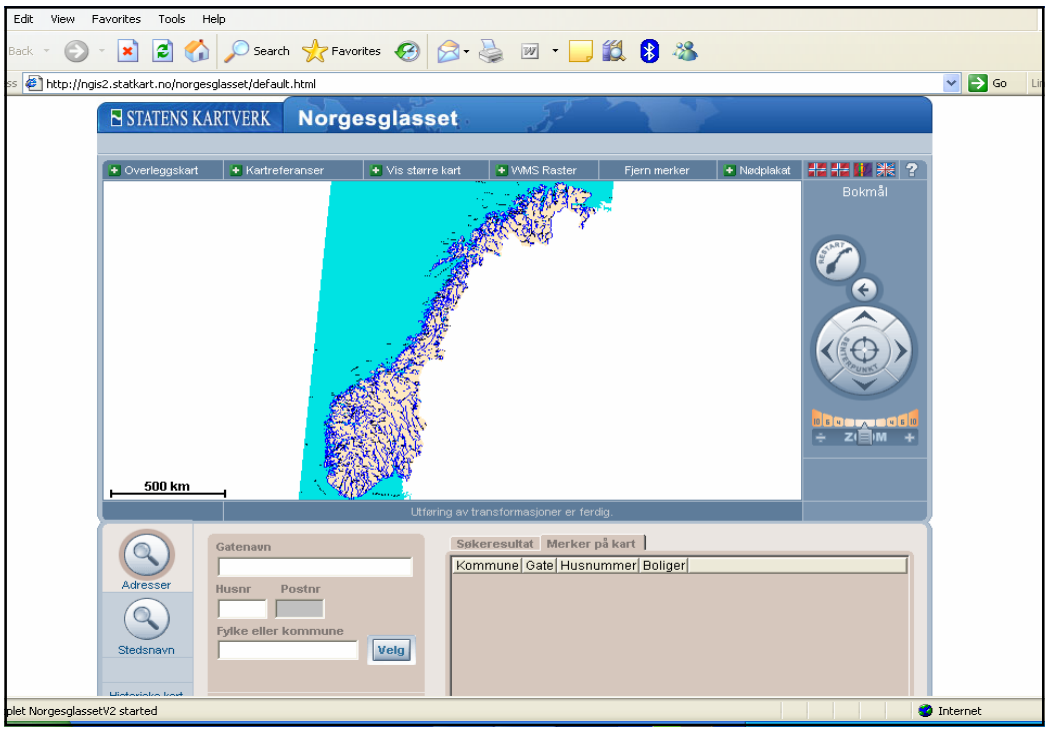


The Emergency Placard

Rescue Services do frequently experience that people

in emergency can't give an exact explanation of where they are

This is mostly related to people in cabins or places without address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Search Favorites
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STATENS KARTVERK
Norgesglasset
Overleggskart
Kartreferanser
Vis større kart
WMS Raster
Fjern merker
Nødplakat
Bokmål
500 km
Utføring av transformasjoner er ferdig.
Adresser
Stedsnavn
Gatenavn
Husnr
Postnr
Fylke eller kommune
Velg
Søkeresultat
Merker på kart
Kommune
Gate
Husnummer
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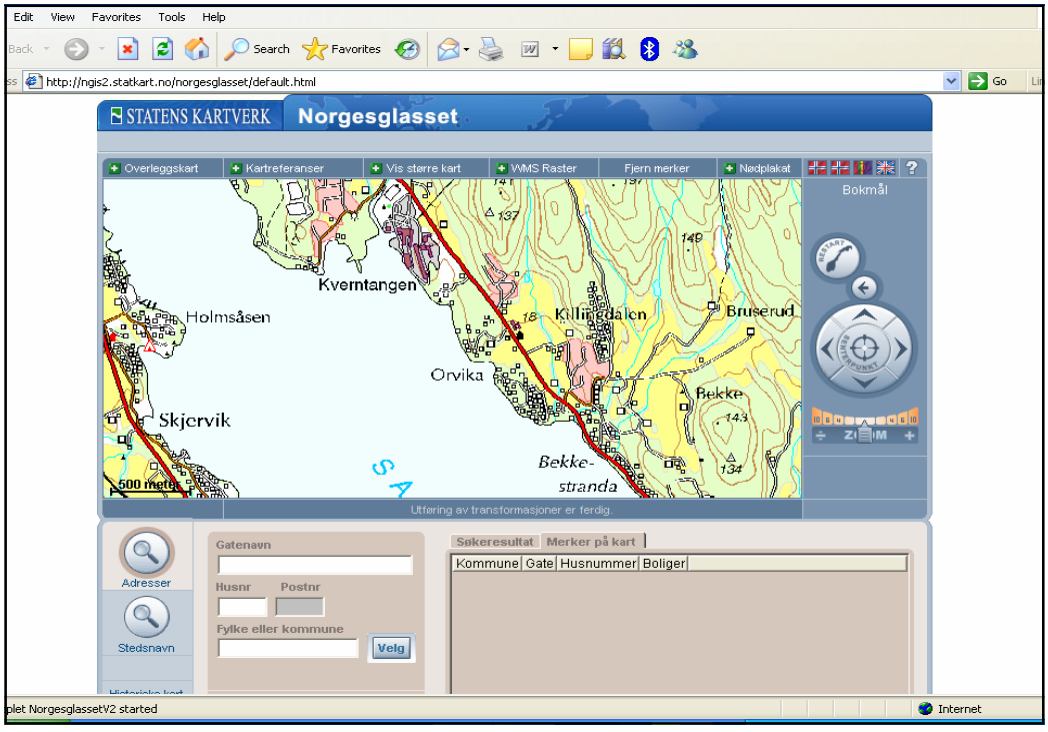
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STATENS KARTVERK
Norgesglasset
Overleggskart
Kartreferanser
Vis større kart
WMS Raster
Fjern merker
Nødplakat
Bokmål
Kverntangen
Holmsåsen
Killingdalen
Bruserud
Orvika
Bekke
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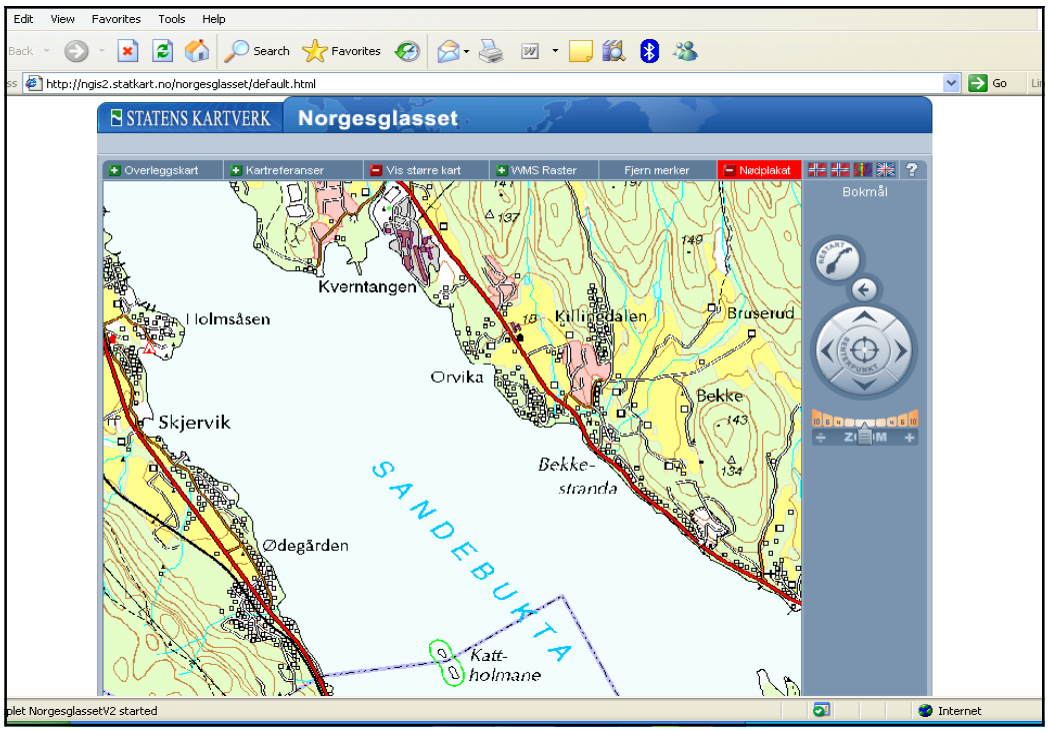
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Bokmål
Kverntangen
Killingdalen
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stranda
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Ødegården
Katt-
holmane
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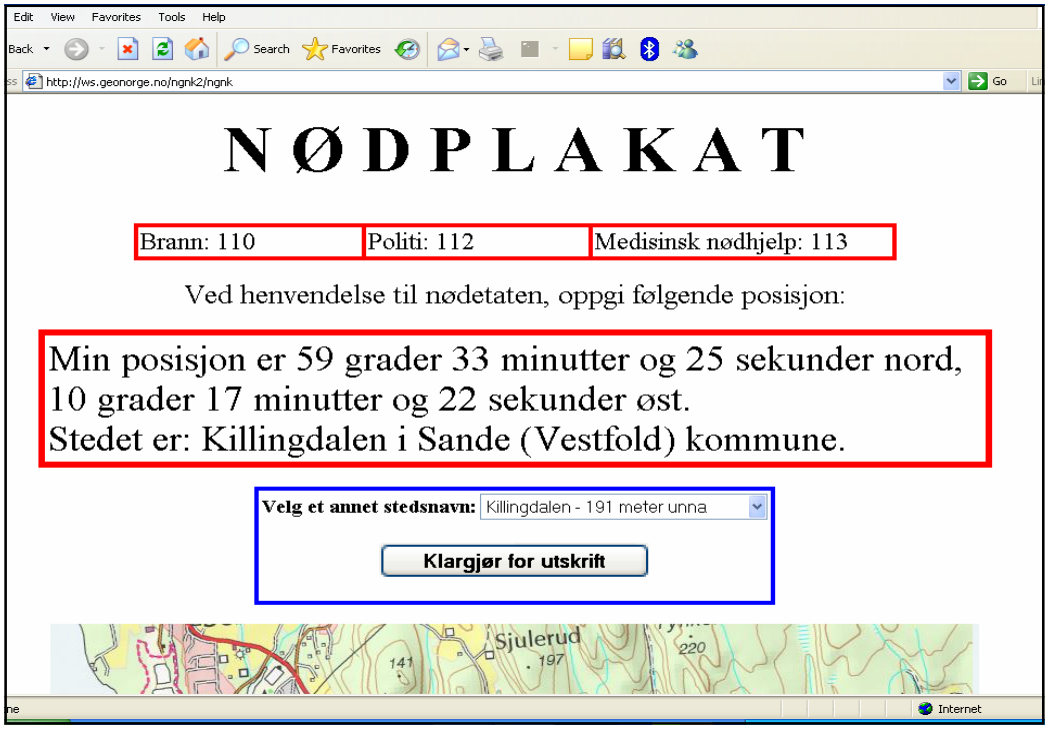
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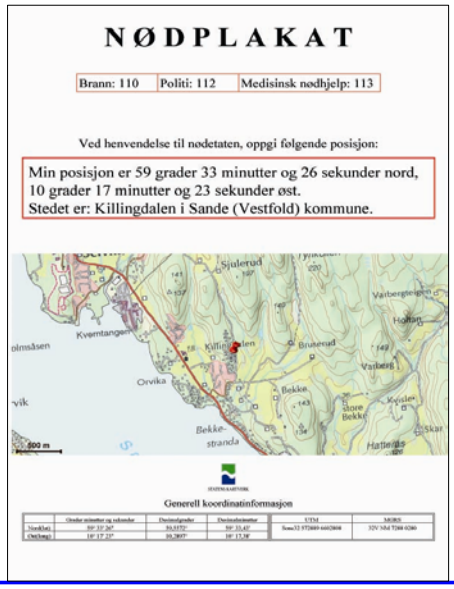
http://ws.geonorge.no/ngnk2/ngnk
NØDPLAKAT
Brann: 110
Politi: 112
Medisinsk nødhjelp: 113
Ved henvendelse til nødetaten, oppgi følgende posisjon:
Min posisjon er 59 grader 33 minutter og 25 sekunder nord,
10 grader 17 minutter og 22 sekunder øst.
Stedet er: Killingdalen i Sande (Vestfold) kommune.
Velg et annet stedsnavn:
Killingdalen - 191 meter unna
Klargjør for utskrift
Sjulerud
Internet

The Placard



NØDPLAKAT

Brann: 110	Politi: 112	Medisinsk nødhjelp: 113

Ved henvendelse til nødetaten, oppgi følgende posisjon:

Min posisjon er 59 grader 33 minutter og 26 sekunder nord,
10 grader 17 minutter og 23 sekunder øst.
Stedet er: Killingdalen i Sande (Vestfold) kommune.

Generell koordinatinformasjon

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