



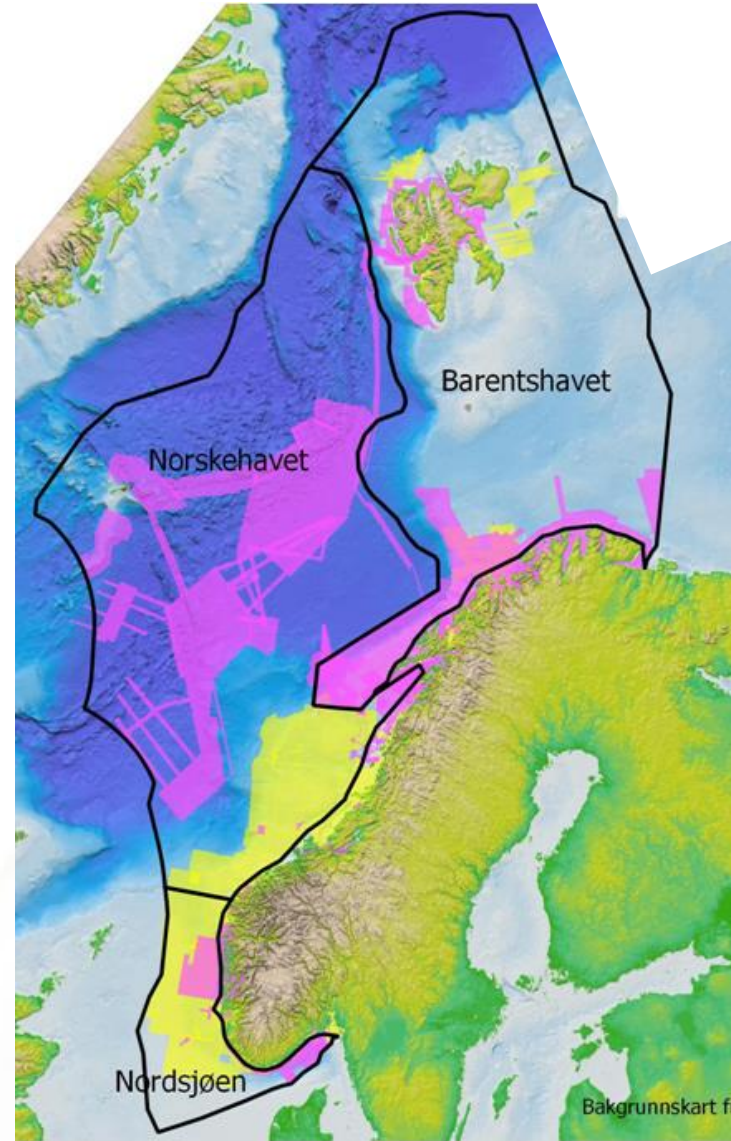
Utilization of geospatial information in Norway

Kåre KYRKJEEIDE, Norwegian Mapping Authority



Norway

- 5 million inhabitants
- 19 counties
- 428 municipalities
- 324 000 km² land territory
- 2 million km² sea territory
- 3 million properties
- 30 000 new properties per year
- 1,6 million property transactions per year



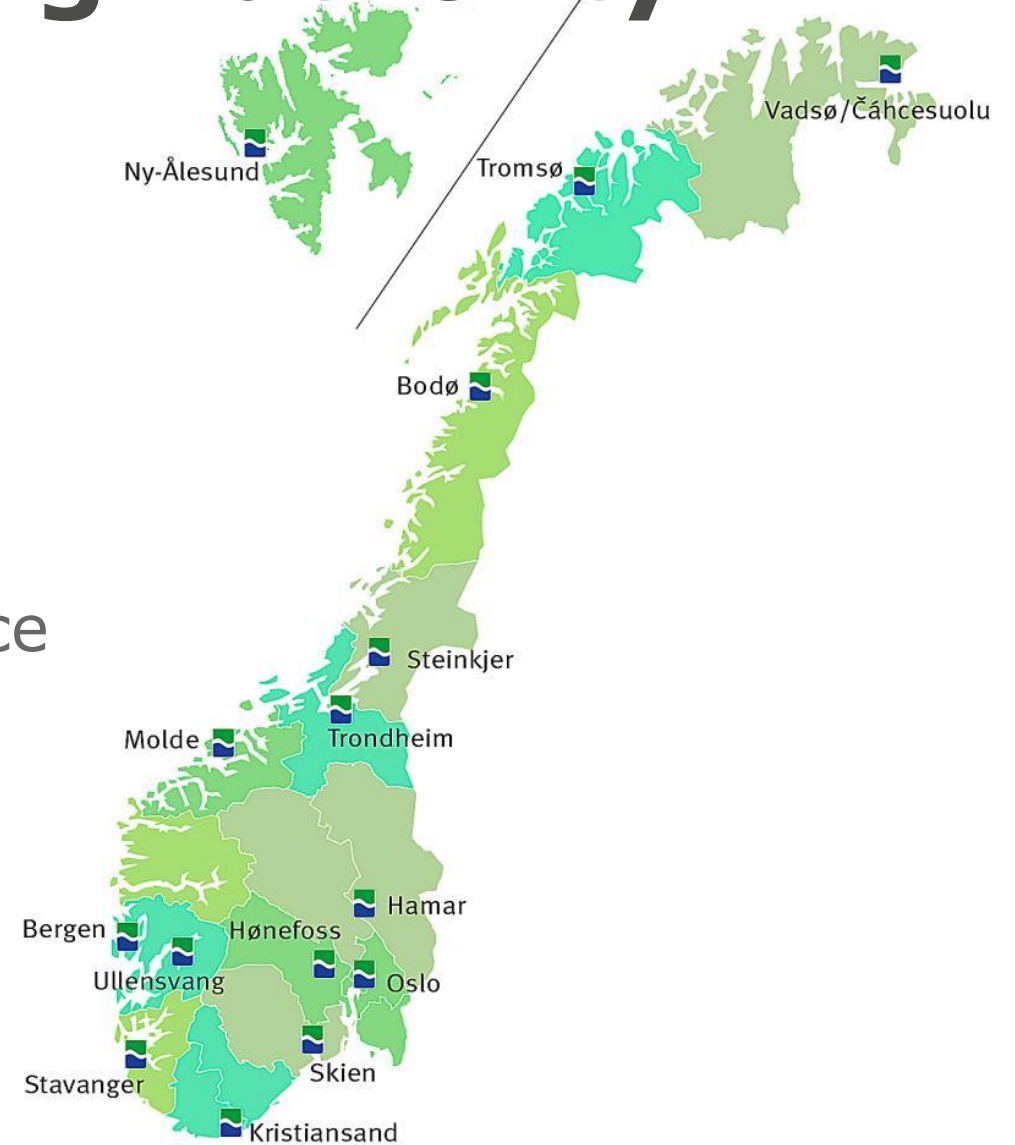
Outline

Norwegian Mapping authority
Background for our NSDI
Norway digital – 15 years of cooperation
Service oriented infrastructure
Geoportal – Geonorge.no
Some examples on use and benefits
Lessons learned



The Norwegian Mapping Authority

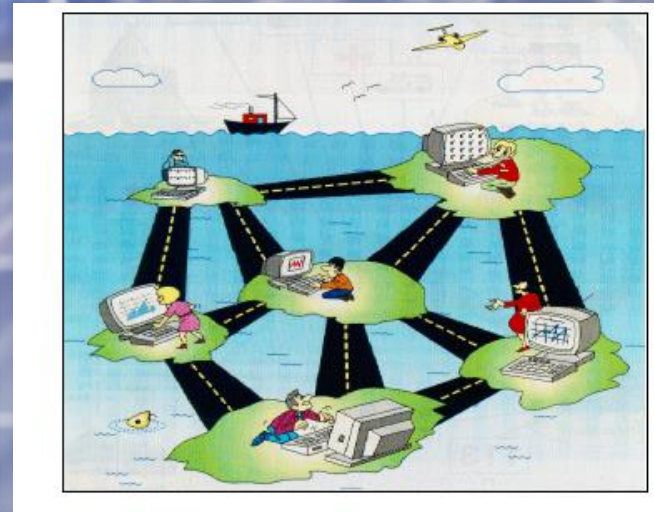
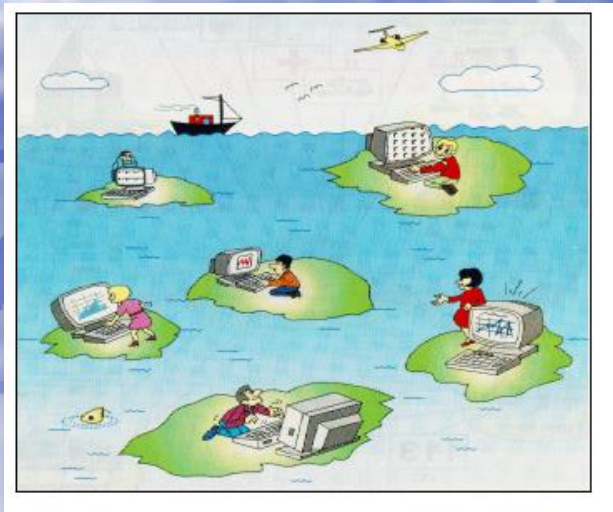
- 15 offices
- 882 man years
- Four divisions:
 - Geodetic Institute
 - The Land Registry
 - The Norwegian Hydrographic Service
 - Land Mapping
 - and the IT department



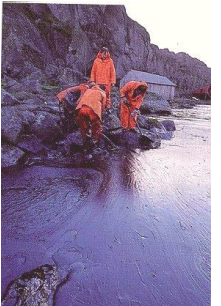


Our main task is to collect, manage and disseminate geographic data for our land and marine areas

Value creation through digital processes and building of infrastructure



Many stakeholders contribute and share their own data



The central image displays a grid of logos for various Norwegian government agencies and organizations. The logos are arranged in approximately 10 rows and 7 columns. Some of the visible logos include: KYSTVERKET, DEN NORSKE JURISTFORENING, ARTSDATABANKEN, MILJØ-DIREKTORATET, RIKSANTIKVARENE, Kartverket, Statens vegvesen, AVINOR, Meteorologisk institutt, DIREKTORATET FOR BYGGKVALITET, Statkraft, NIK, Norsk institutt for kulturminneforskning, Statens strålevern, difi, telenor, Nasjonal kommunikasjonsmyndighet, BANE NOR, KS, dsb, HAVFORSKNINGSINSTITUTTET, NVE, FORSVARET, FISKERIDIREKTORATET, Statskog, NORSK-POLARINSTITUTT, POLITIET, NORGES GEOLOGISKE UNDERSØKELSE, Direktoratet for mineralforvaltning med Bergmesteren for Svalbard, Finnmarksseiendommen, Statnett, STATSBYGG, Veterinærinstituttet, EnergiNorge, NIVA, SENTER FOR IKT I UTDANNINGEN, NIBIO, SÅMEDIGGI SAMETINGET, NINA, Fylkesmannen, Fylkeskommunene, Statistisk sentralbyrå, Landbruksdirektoratet, NyeVeier, DOMSTOL ADMINSTRASJONEN, and www.mattilsynet.no.

Norway digital - the Norwegian SDI - historic backdrop

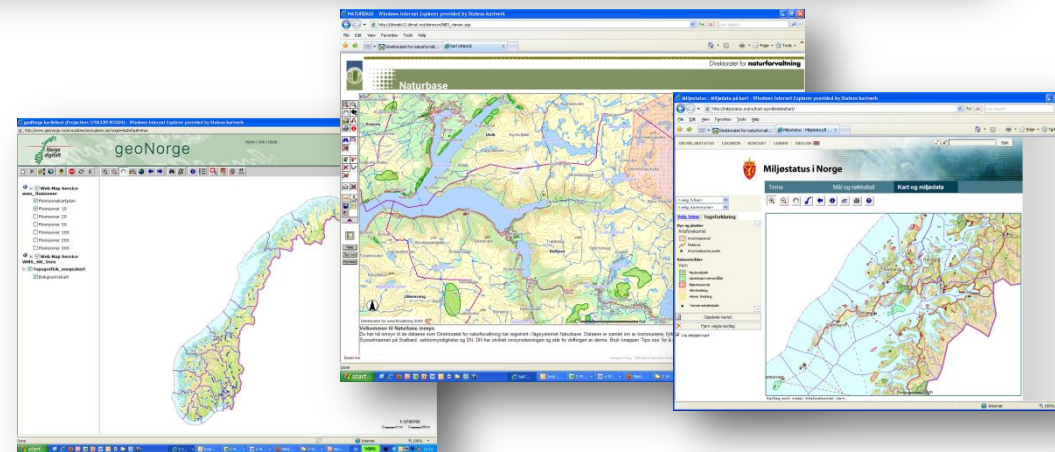
- National Spatial Data Standard for 30 years
- Cooperative data capture for 25 years
- "Norway Digital" – cooperation for 15 years
- Geodata act implementing INSPIRE for 10 years
- Today: More than 600 stakeholders from national to local level



Topographic web map service from NMA

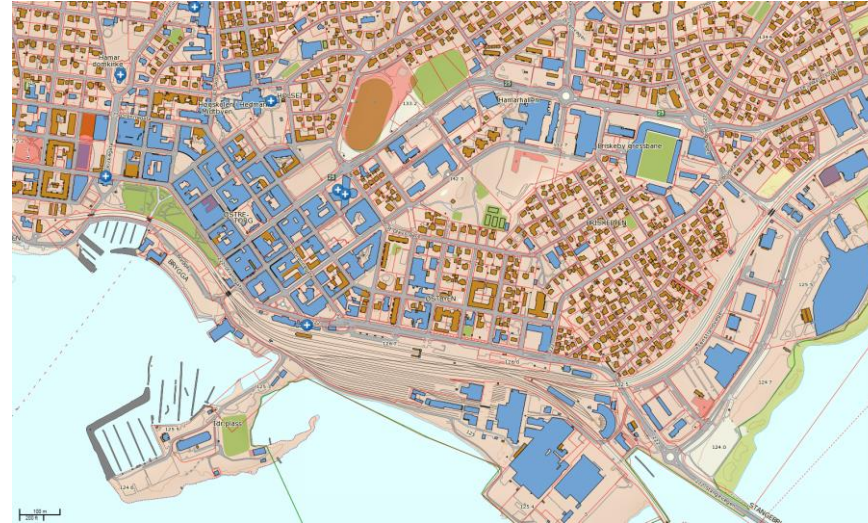
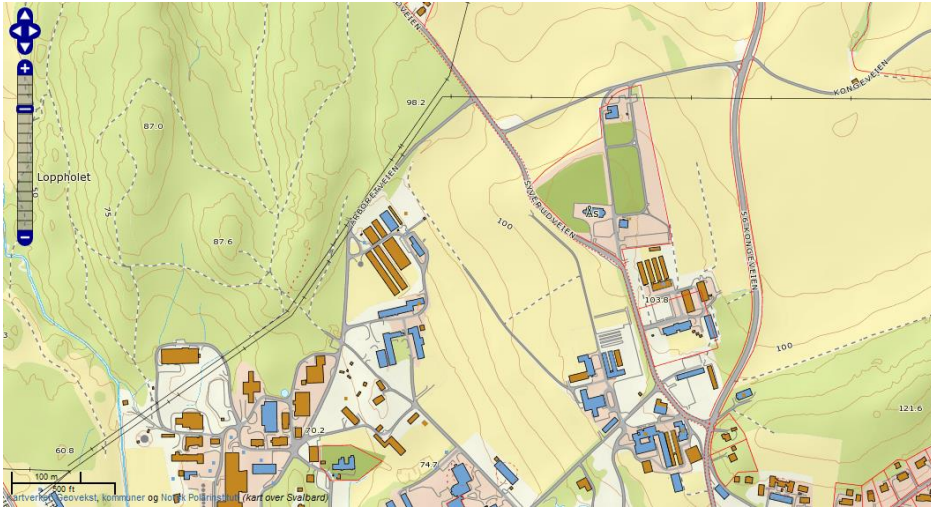


- Data lager: PostGIS
- Vektordata
- Datavolume: 260 GB
- Response time: ca 1.5 seconds

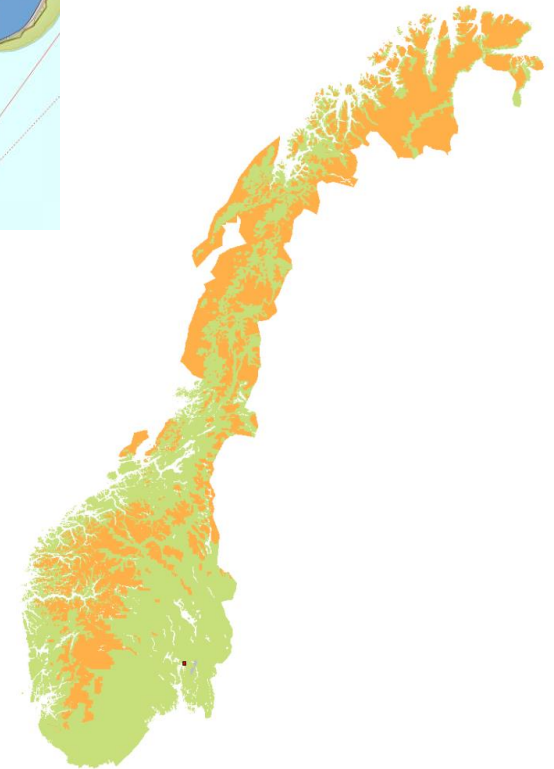


FKB - Most detailed Map database

Main database for geographic data in scales (1:500 - 1: 5,000)

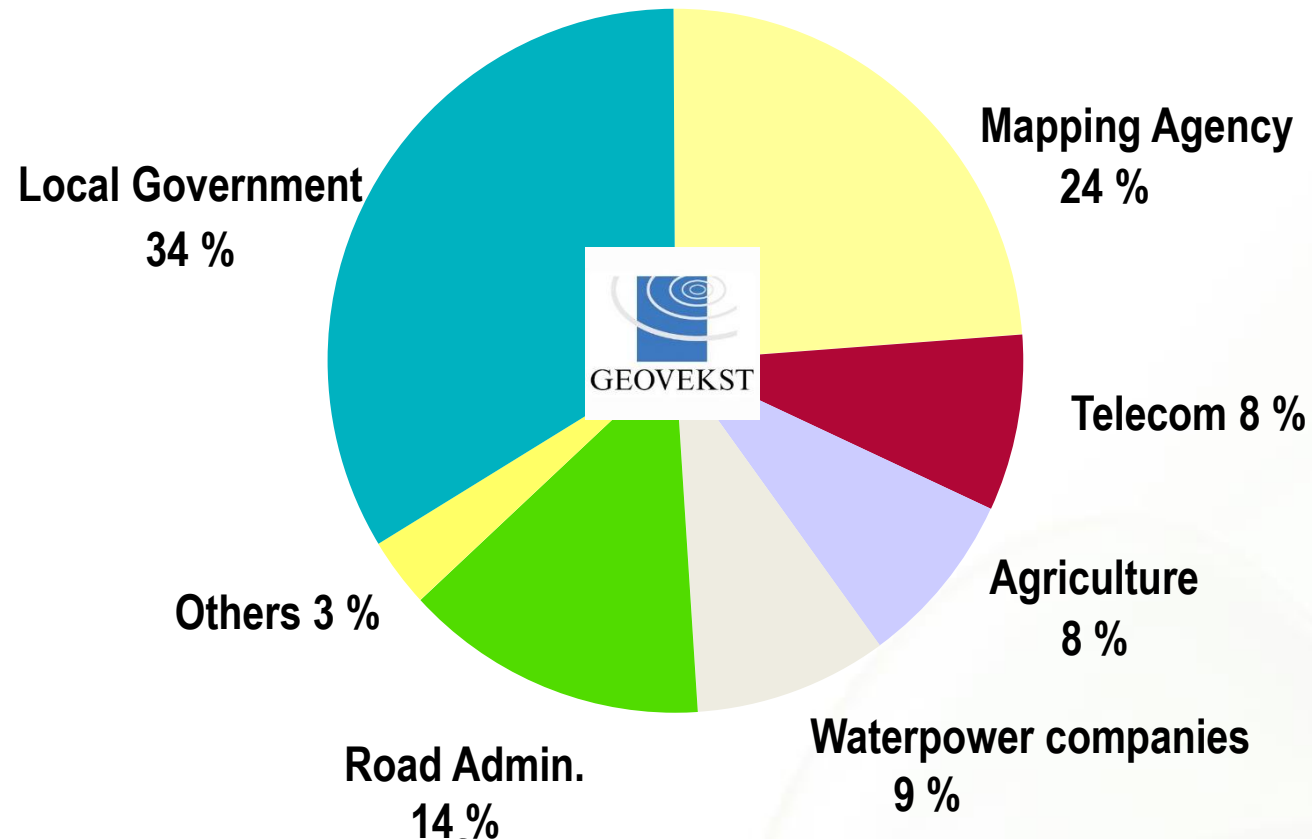


- Cover approx. 60% of the country (not the mountain area)
- The data sets are maintained in a co-operation between the local authorities, NMA and other public companies



Cost-sharing

- data capture funded by public partners



Large scale geographic information, line maps, land cover, ortophoto, lidar

«Give a little - get a lot»



FKB - Further development

Full 3D data model to support new use cases

**Centralized national original dataset hosted by NMA
- synchronized with the municipalities**

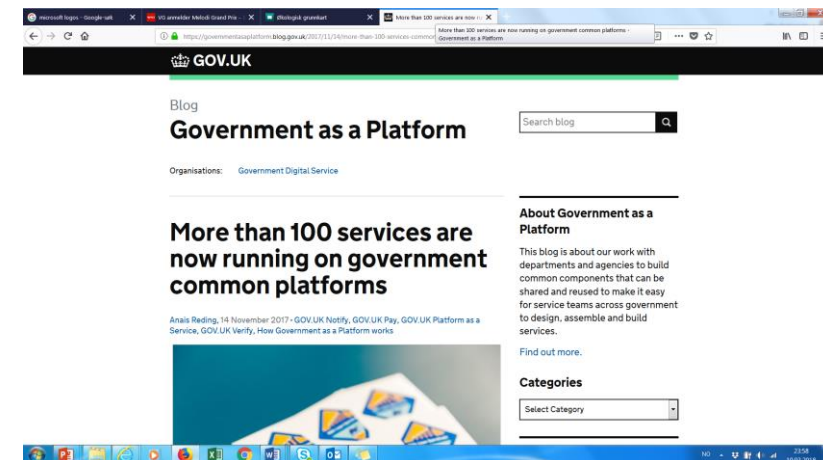
Structure and content



Digital platforms and ecosystems

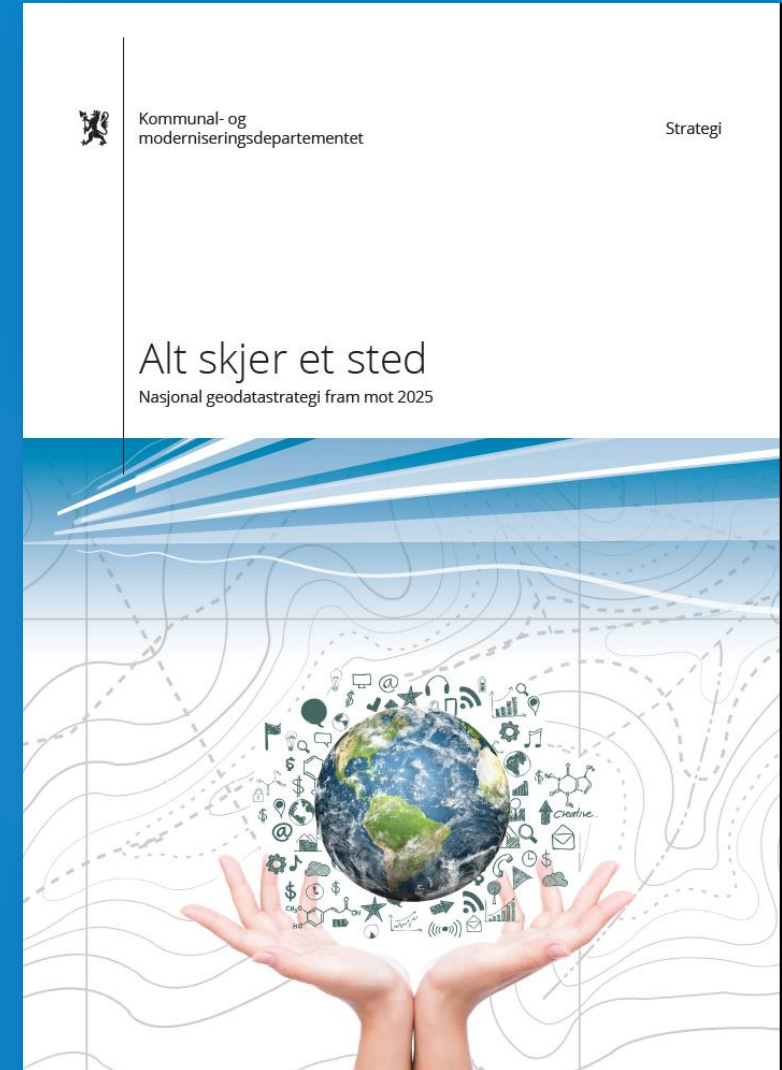
- Increased complexity in society - need for knowledge
- Pressure on public sector to provide data as a resource for society
- Innovation for a more automated public sector
- User orientation becomes crucial
- We have to pursue the benefits of digitization

- Our goal is to offer open platforms for innovation
- Example UK: "**Government as a platform**"

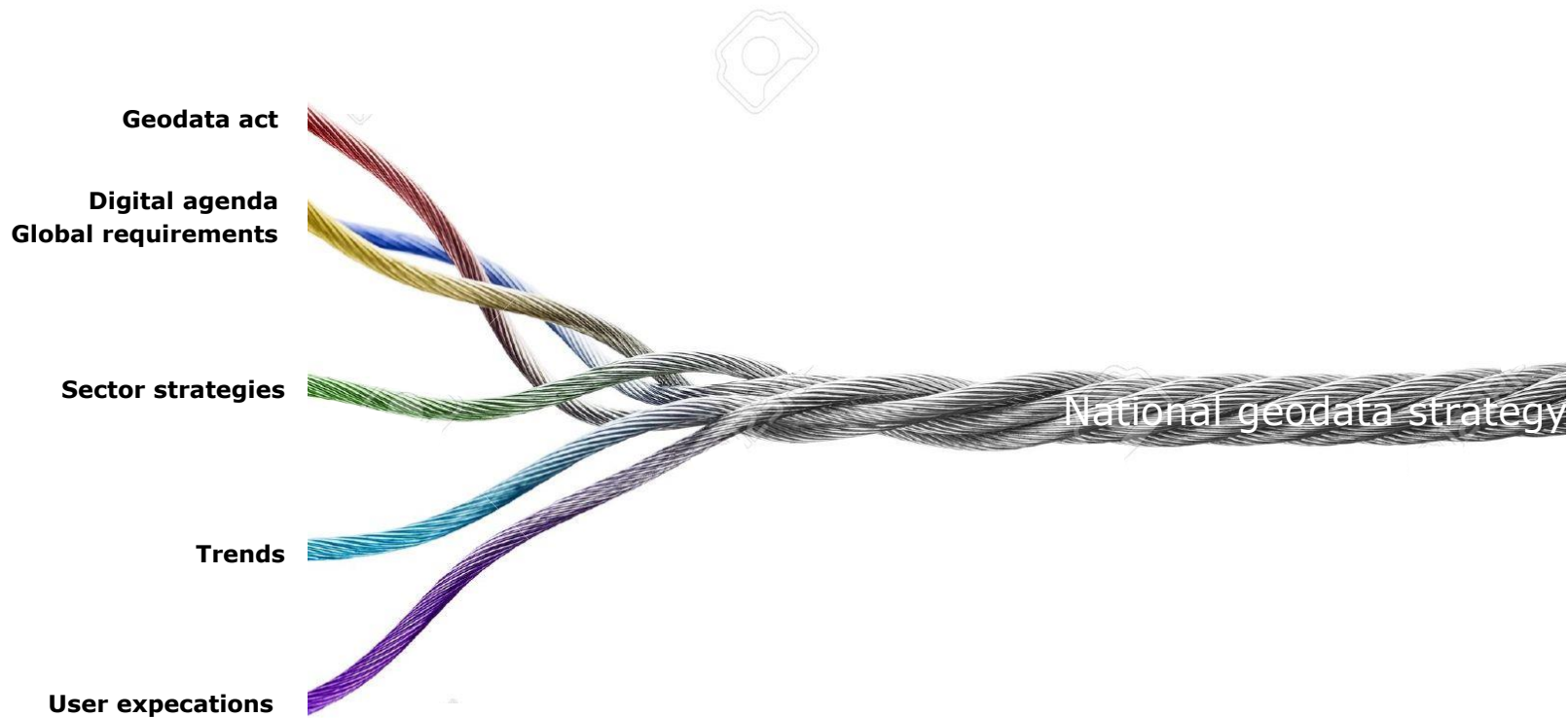


National Geospatial Information Strategy

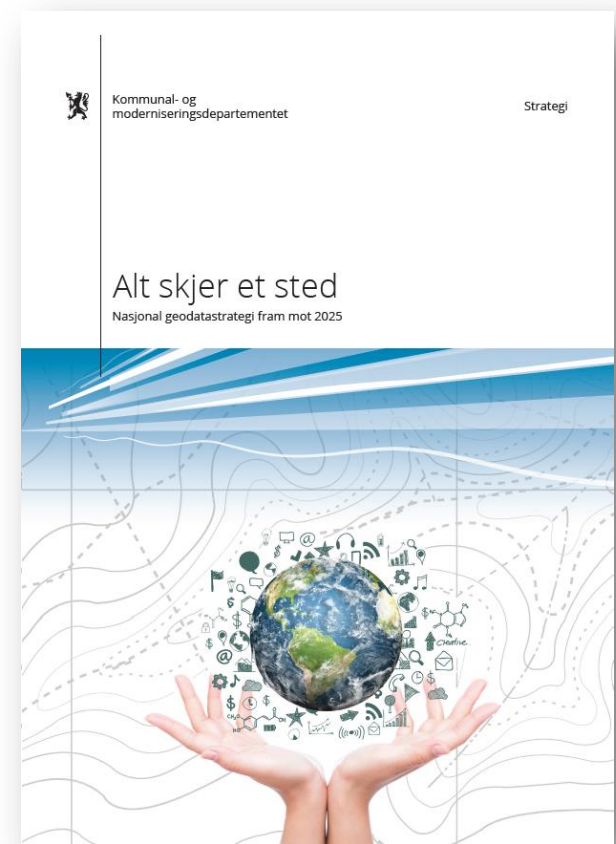
Stakeholder involvement



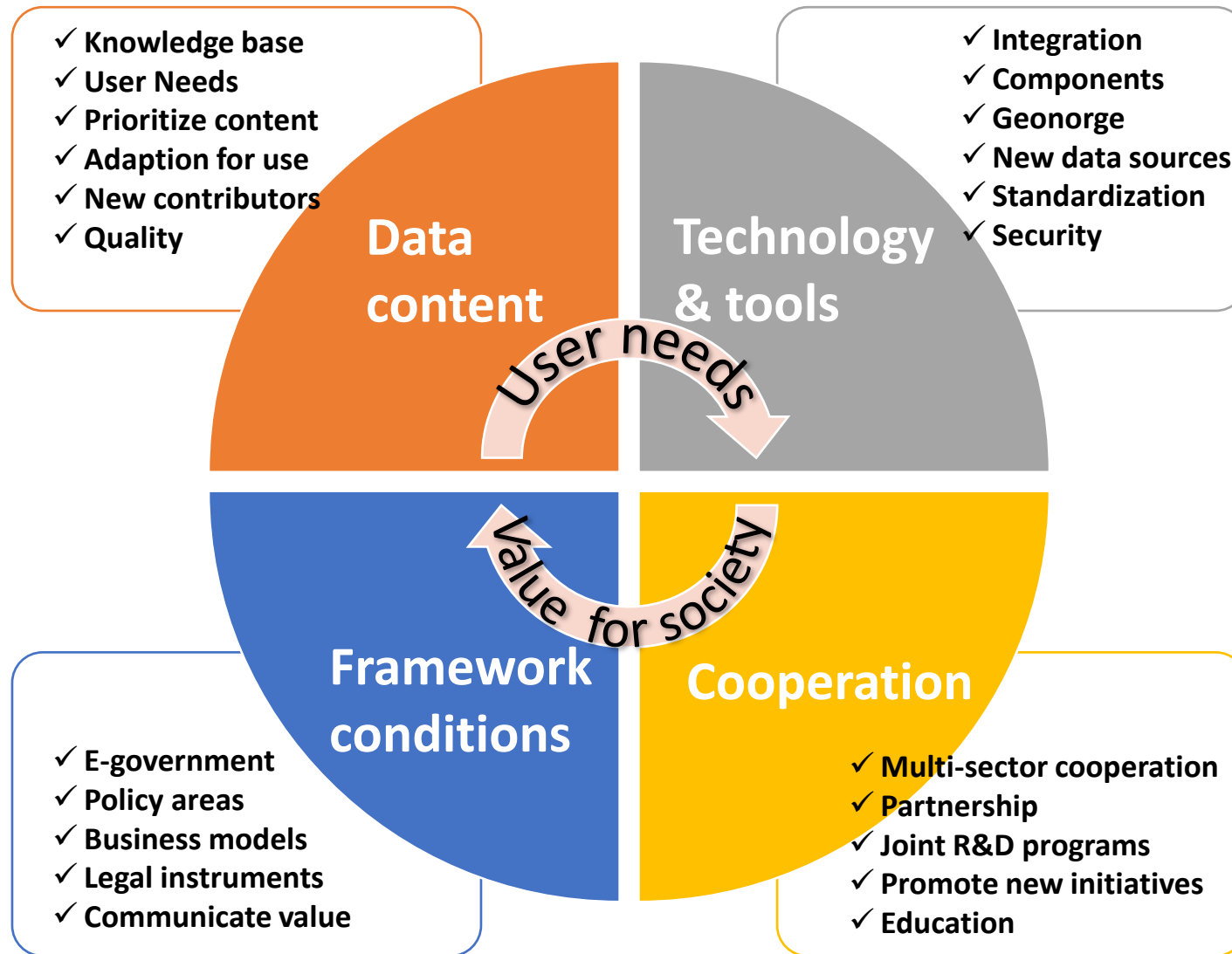
National Geospatial Strategy - to benefit for society



Everything happens somewhere

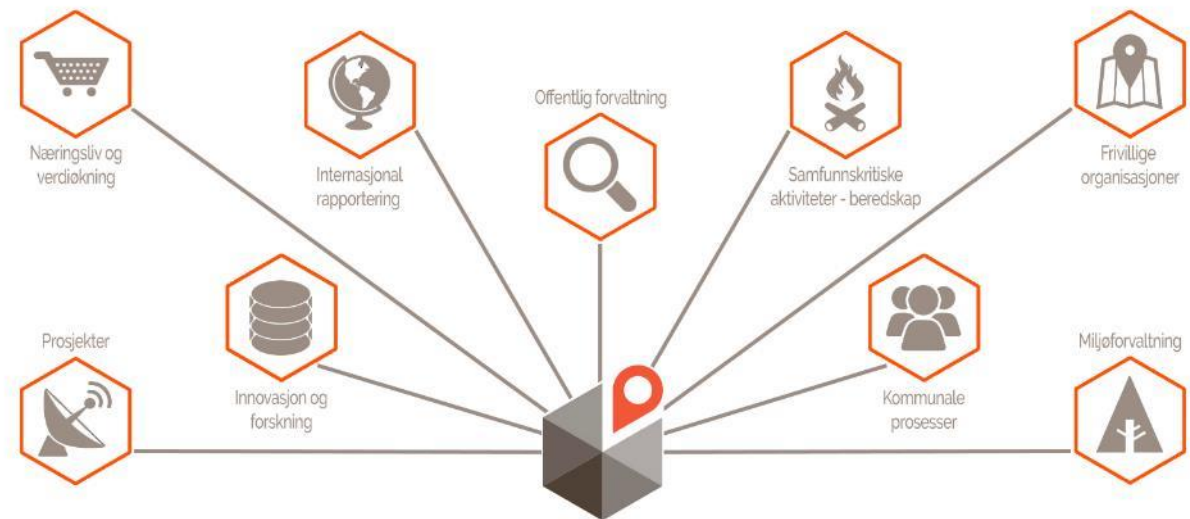


National Geospatial Strategy



Geonorge - Vision

«All geographic information published and available through a single site»

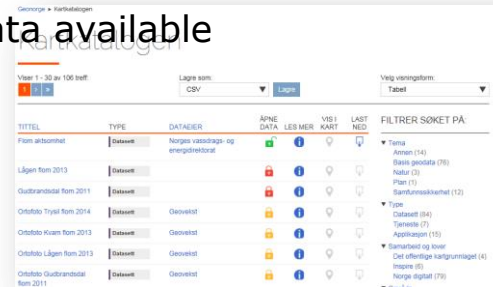


Tools available in the Geoportal

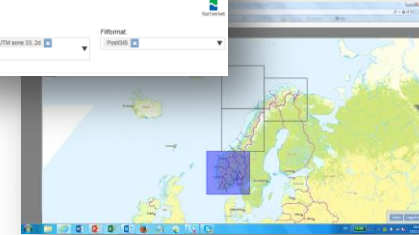
Delivery management



Data available



Download



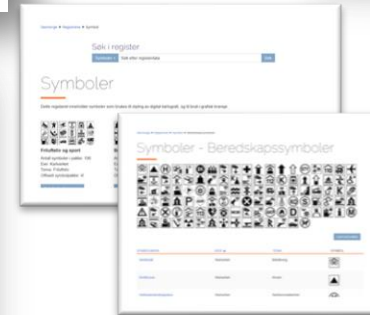
Metadata



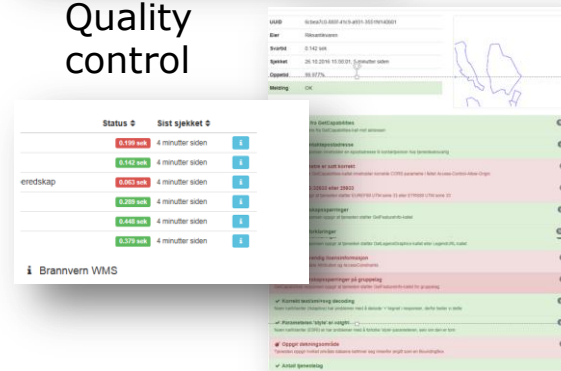
Monitoring of response time



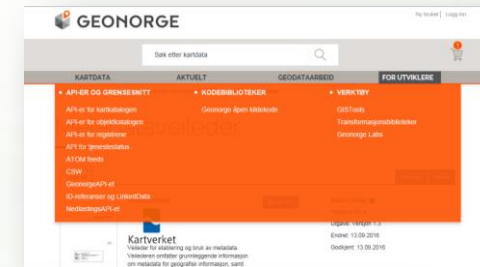
Symbols/ Pictograms



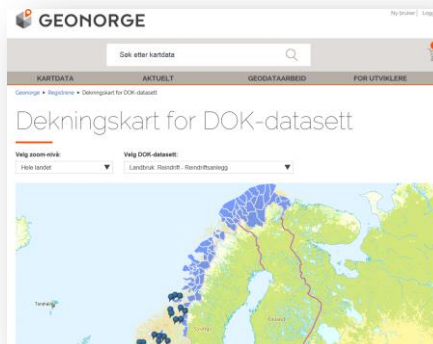
Quality control



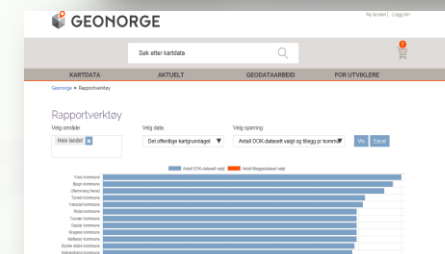
API



Data coverage



Reporting tools



Open and free access



Topographical maps
Place names
Admin units



Transport,
Addresses



Terrain models
Lidar data
Bathymetry



Thematic maps
and data

- **2013 - >2019
rapid
development**

- **Several
hundred data
sets**

Search register

DOK-Status - official data layers of the NSDI ▾

Search for register content

Search

DOK-Status - official data layers of the NSDI

The table gives an overview of performance and quality of deliverables from the different Norwegian public organisations delivering data according to the Norwegian Planning and Building Act. The law defines a broad set of data suitable for processes on land use planning, building permits, environmental assessments, risk assessments etc. The Norwegian Mapping Agency has the duty to assess these data sets.

Updated: 22/05/2019

Showing 1 - 50 of 146 hits

1 » »»

Save As:

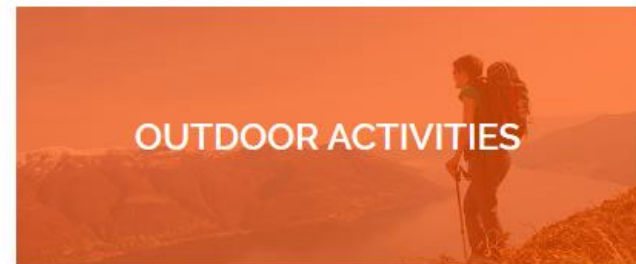
CSV



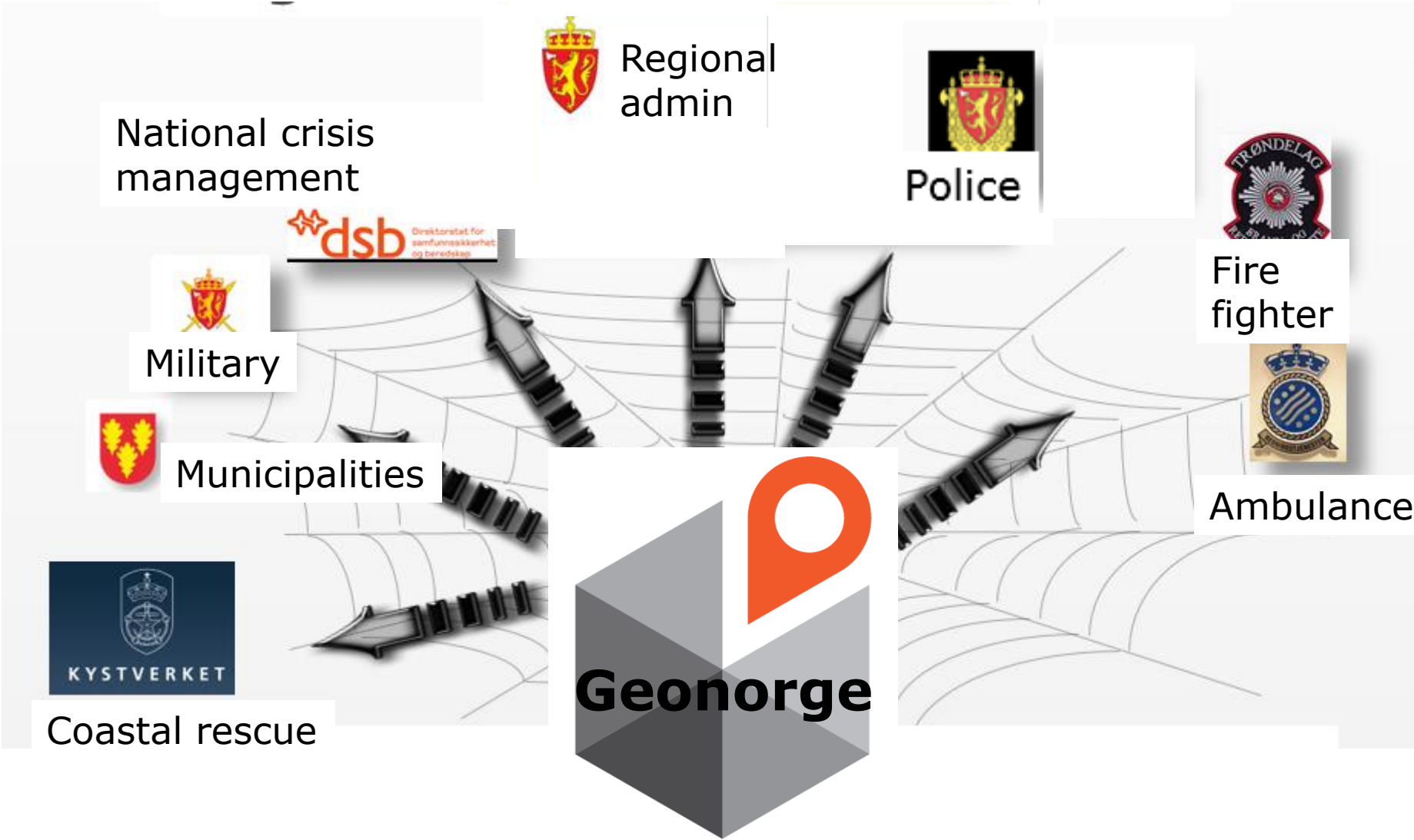
Save

TITLE	OWNER	THEME	
Accessibility – populated areas	Norwegian Mapping Authority	Demography	
Accessibility – recreational areas	Norwegian Mapping Authority	Demography	
Administrative units municipalities	Norwegian Mapping Authority	Base maps	
Aquaculture locations	Norwegian Directorate of Fisheries	Marine activities	
AR50 (Land Resource Map 1:50 000) - Land types	Norwegian Institute of Bioeconomy Research	Agriculture	
Arable land (1:5 000)	Norwegian Institute of	Agriculture	

Content – cross-sectoral themes collection



User needs – e.g. crisis management



Crisis management

-

flooding



- Secure investment in data
- Secure availability



Services available from Geonorge.no



høydedata



Menu



Geonorge ▶ Map Catalogue

Søk etter 'høydedata' gav 14 treff

Here is an overview of data sets in Geonorge with information about available formats, associated services and APIs.

All map data 965

Dataset 949

Service 14

Application 2

Articles 0

TITLE	TYPE	DATA OWNER	OPEN DATA	URL	SHOW IN MAP
Height DOM 1 metre WMS	Service	Norwegian Mapping Authority			
1 m skyggemodell av DTM	Service layer	Trondheim kommune			
Height DTM 50 metres (UTM35) WMS	Service	Kartverket			
Height DOM shadow relief WMS	Service	Norwegian Mapping Authority			
Height DOM projects WMS	Service	Norwegian Mapping Authority			
Height projects WMS	Service	Norwegian Mapping Authority			
Height DOM shadow relief seamless WMS	Service	Norwegian Mapping Authority			
Height DTM projects WMS	Service	Norwegian Mapping Authority			
Height DOM projects point density WMS	Service	Norwegian Mapping Authority			
Height DTM gradient percentage seamless WMS	Service	Norwegian Mapping Authority			

FILTER SEARCH ON:

- ▶ Topic
- ▶ Cooperation and laws
- ▶ Area
- ▶ Distribution form
- ▶ Organization
- ▶ Access to data

PAGES

- Map Catalogue - main page
- Departmental overview
- What is in municipality/county?
- Open data

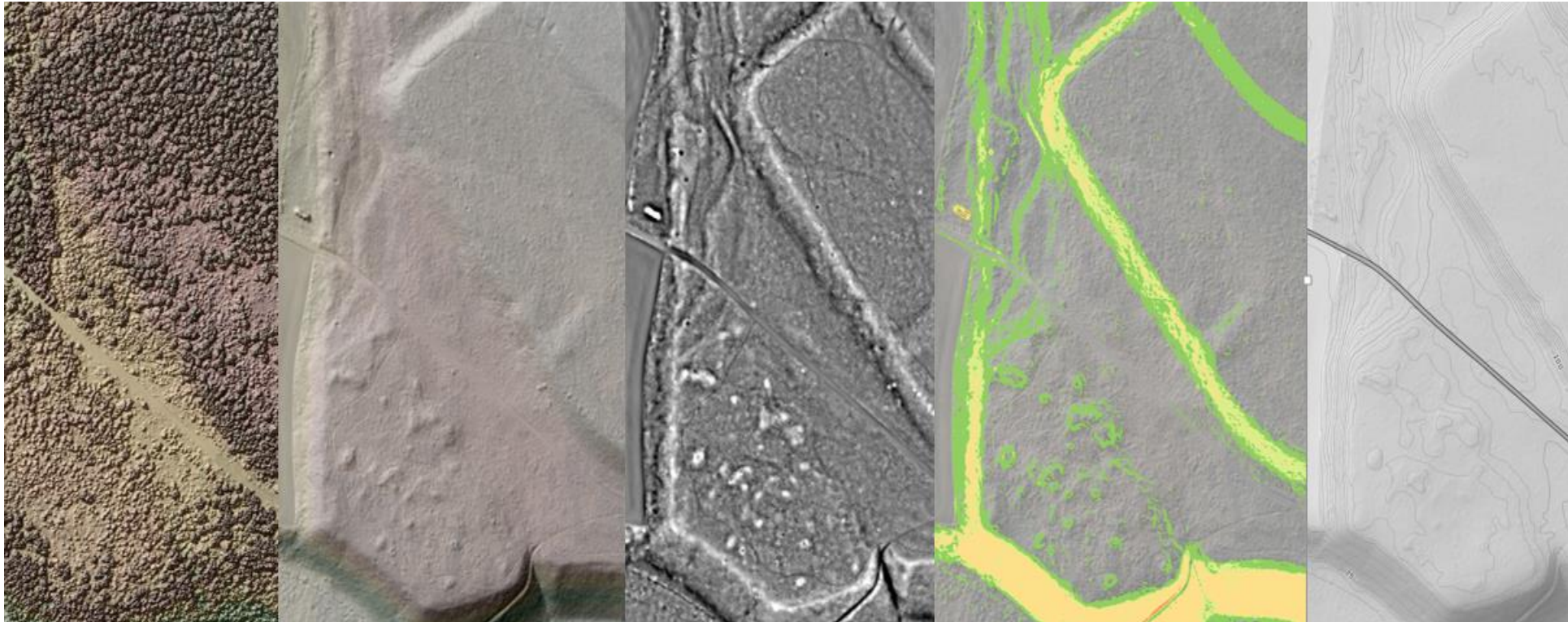
SAVE AS:





Terrain models and Ortophotos

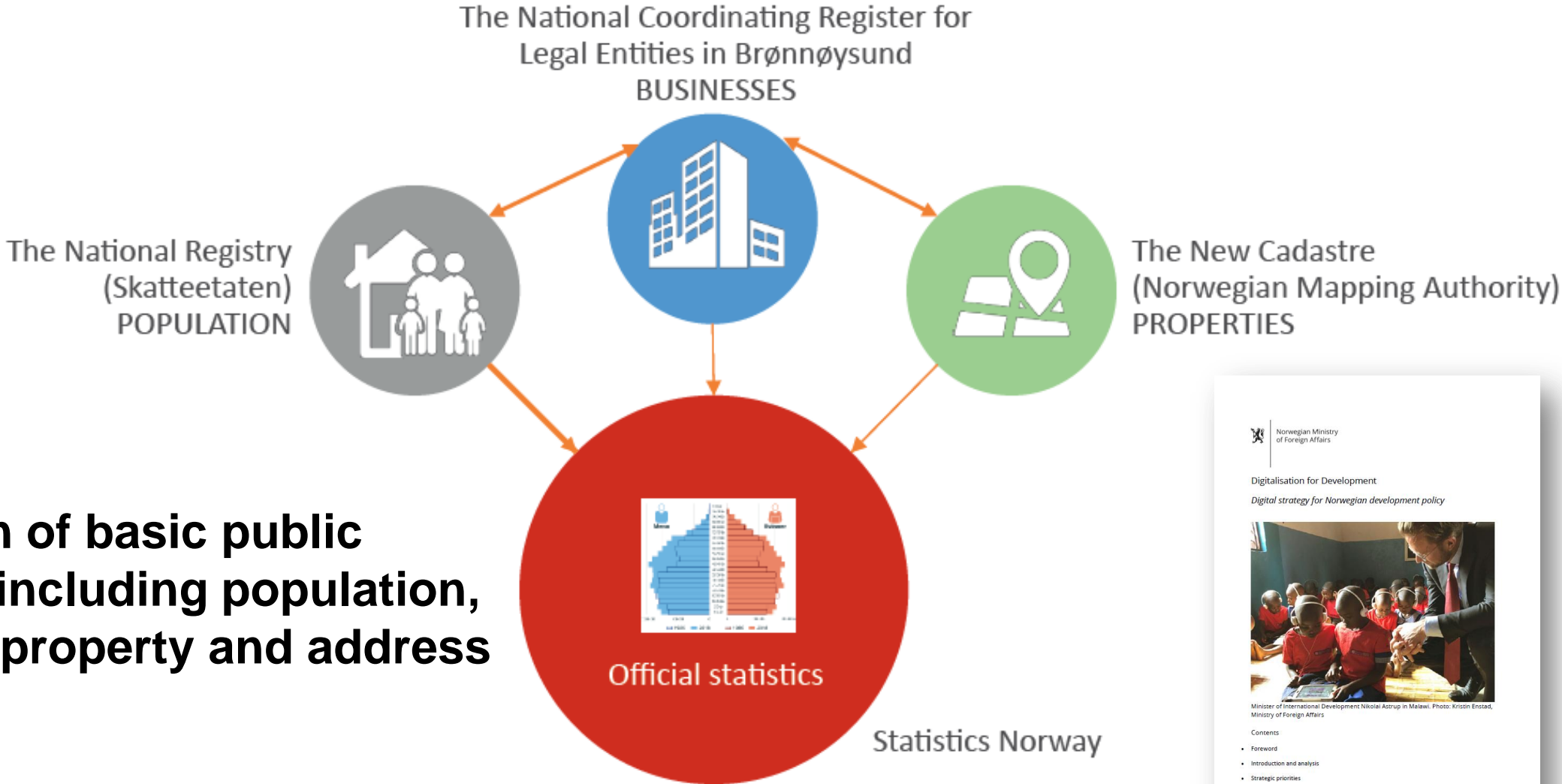
Detailed elevation data can prevent loss of lives and values, and will give socioeconomic profit



*A cost-benefit analysis made on a broad basis – Concludes that the new national elevation model has a positive value calculated to be about 3 times the investment
(Cost ~ NOK 420 Mill benefit NOK 1,5 billion)*



Public-sector digitalization



Integration of basic public registers, including population, business, property and address registers.



Report once and then share information



NSDI and geoportal – lessons learned

- A voluntary cooperation works – supported by legislation and regulations
- Importance of common understanding for the value of sharing open data
- There is a need for a cross sector approach and involvement – and across levels of administration
- Technical framework and geoportal supporting interoperability and integration of authoritative data and services
- There is a need for a national strategy connecting the geospatial ecosystem with other policy areas in society

Thank you for your attention!



STATENS KARTVERK

