TALL
SOM FORTELLER

HistGeoStat

REGIONAL DIVISIONS IN NORWAY BACK TO 1838

Nordic Forum for Geography and Statistics: Meeting 2024
Place : Nordregio, Holmamiralens Väg 10, Stockholm
Time : 11th to 13th of September 2024

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Division for population statistics
Department for personal and social statistics

Statistisk sentralbyrå
Statistics Norway

Content

- Background
- Goals and aims
- Data, metadata and modelling
- Methods
- Sustainability
- Future

Background

- Need to handle breaks time series / regional divisions
- Need to use API for changes in geography and statistics
- Need for long time series in e.g. climate, environment and health issues

Goals and aims

- Geo-enabling statistics across centuries
- Setting up an efficient geodata infrastructure for statistics, research and policy making
- Open and transparent solutions
- Handle breaks in time series
- Build use cases and communities

Data, metadata and modelling

- Codes
- Names
- Hierachies, levels and correspondance tables
- Versioning and time stamps
- Geographic accuracy

Data, metadata and modelling

A. REAL CHANGE

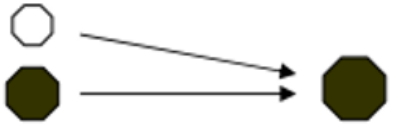
A.1. Deletion (1: 0)

A.2 CREATION (0: 1)

A.3 COMBINATION (N:1)

A.3.1 MERGER

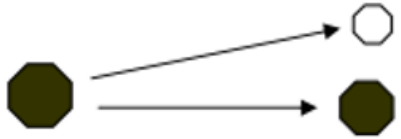
A.3.2 TAKE-OVER (N: 1)



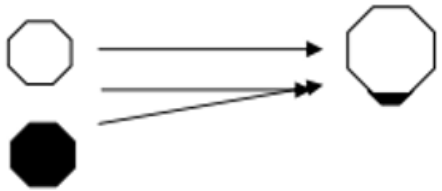
A.4 DECOMPOSITION (1: N)

A.4.1 BREAKDOWN

A.4.2 SPLIT OFF

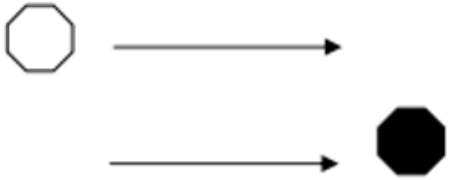


A.5 TRANSFER (M: N)



B. VIRTUAL CHANGE

B.1 CODE CHANGE[2] (1: 0; 0: 1)



B.2 NAME CHANGE (1: 1)

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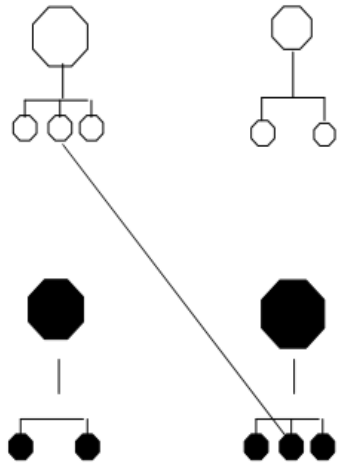
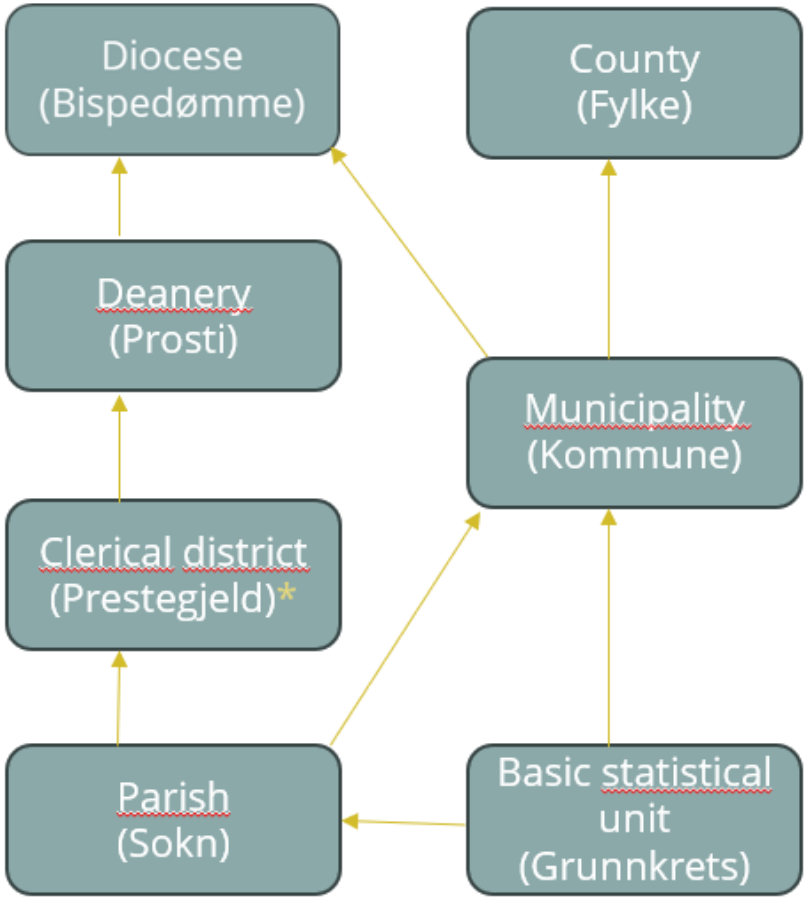
Data, metadata and modelling



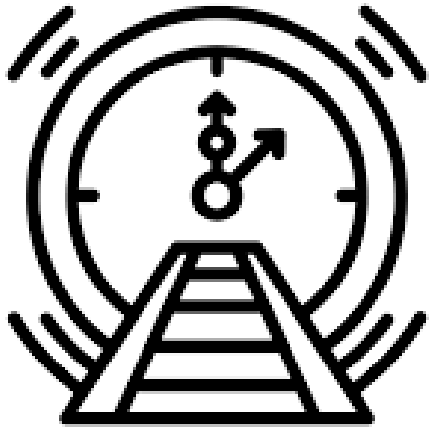
Regional hierachies and divisions



* gradually phased out from 2004

Data, metadata and modelling

	2024
NUTS 3 (Fylke)	15
LAU (Kommune)	357
ENU/BSU	14 000
MAIN FARM	48 000
PROPERTY	3 480 000



HISTGEOSTAT TIME MACHINE

Data, metadata and modelling

HISTGEOSTAT

1) Code lists API

2) StatBank API

3) Geodata API

HISTGEO

HISTMAT:
Historical matrikkel (cadaster)

- Identification of properties (knr/gnr/bnr|mnr/lnr)
- Property divisions and mergers
- 1820-2023

Kåre Bævre

NIPH
Norwegian Institute of Public Health

HISTADM:
Historical administrative units

- Full overview of changes in administrative units 1660-2023*
- Characterize adm. units by constituent properties
- Church, civil, juridical, cities

HISTABAS:
Historical administrative maps

- Maps of all administrative units in HISTADM
- HISTMAT + HISTADM gives list of properties affiliated with adm. units at all points in time
- Idea: Use envelope of modern borders
- Important: Envelope of gnr fixed
- Dissolve + further geoprocessing

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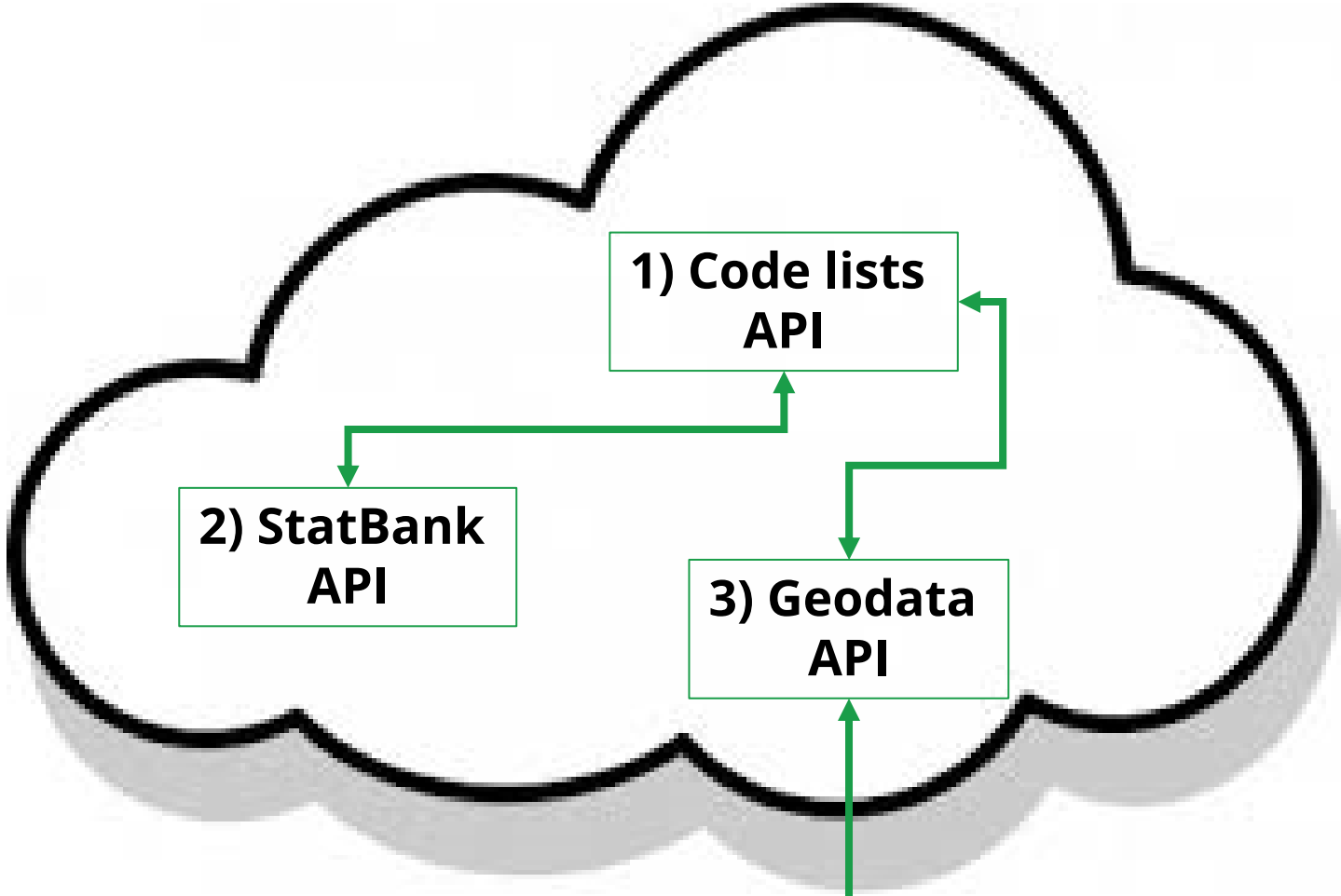
Data, metadata and modelling

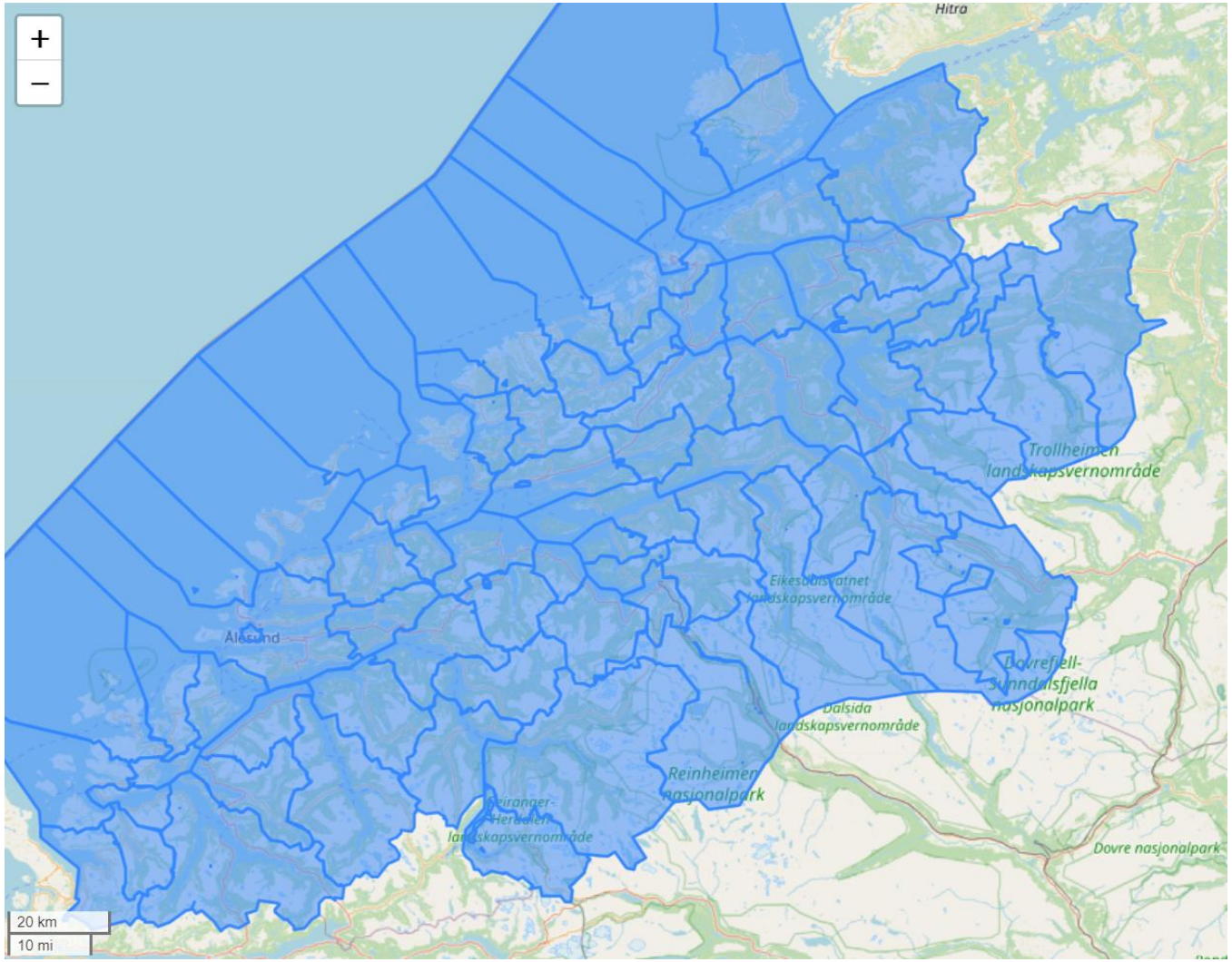
- Cloud based
- Common components
- Open solutions
- Open data
- Open services



4) HISTGEOSTAT TIME MACHINE

Data, metadata and modelling

Local Area Units in Møre and Romsdal county (NUTS3) 1886.



HISTGEOSTAT TIME MACHINE

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Data, metadata and modelling

1) Code lists (API)

https://data.ssb.no/api/klass/v1/api-guide.html

Regional divisions:
~500 000 downloads per year

API: Classifications and codelists.

REST API for Statistical Classifications and Codelists

→

Classification of ecclesiastical divisions

A diocese is the area a bishop leads. Diocese is our largest ecclesiastical unit and consists of entire parishes. Borders of dioceses do not completely match the county structure, see separate notes under each diocese. Since 1983, there have been eleven dioceses in Norway. They have a two-digit numerical code from 01 to 11. If the code is higher than 11, it is a fictitious historical code.

Current version: (Valid from January 2005)

Ecclesiastical divisions 2005

Codes | About the version | Changes | All versions | Correspondences | Variants

All versions of Classification of ecclesiastical divisions

Valid from	Valid to	Name
January 2005	Still valid	Ecclesiastical divisions 2005
January 1984	January 2005	Ecclesiastical divisions 1984
January 1969	January 1984	Ecclesiastical divisions 1969
January 1953	January 1969	Ecclesiastical divisions 1953
January 1948	January 1953	Ecclesiastical divisions 1948
January 1925	January 1948	Ecclesiastical divisions 1925
January 1919	January 1925	Ecclesiastical divisions 1919
January 1877	January 1919	Ecclesiastical divisions 1877
January 1864	January 1877	Ecclesiastical divisions 1864
January 1845	January 1864	Ecclesiastical divisions 1845
January 1805	January 1845	Ecclesiastical divisions 1805
January 1802	January 1805	Ecclesiastical divisions 1802
January 1683	January 1802	Ecclesiastical divisions 1683
January 1624	January 1683	Ecclesiastical divisions 1624
January 1537	January 1624	Ecclesiastical divisions 1537
January 1180	January 1537	Ecclesiastical divisions 1180
January 1154	January 1180	Ecclesiastical divisions 1154
January 1152	January 1154	Ecclesiastical divisions 1152
January 1125	January 1152	Ecclesiastical divisions 1125
January 1111	January 1125	Ecclesiastical divisions 1111
January 1106	January 1111	Ecclesiastical divisions 1106
January 1070	January 1106	Ecclesiastical divisions 1070

CONTACT

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Phone: 99852342

SUBSCRIPTION

Subscribe for changes in standard classification/codelist

E-mail

Subscribe

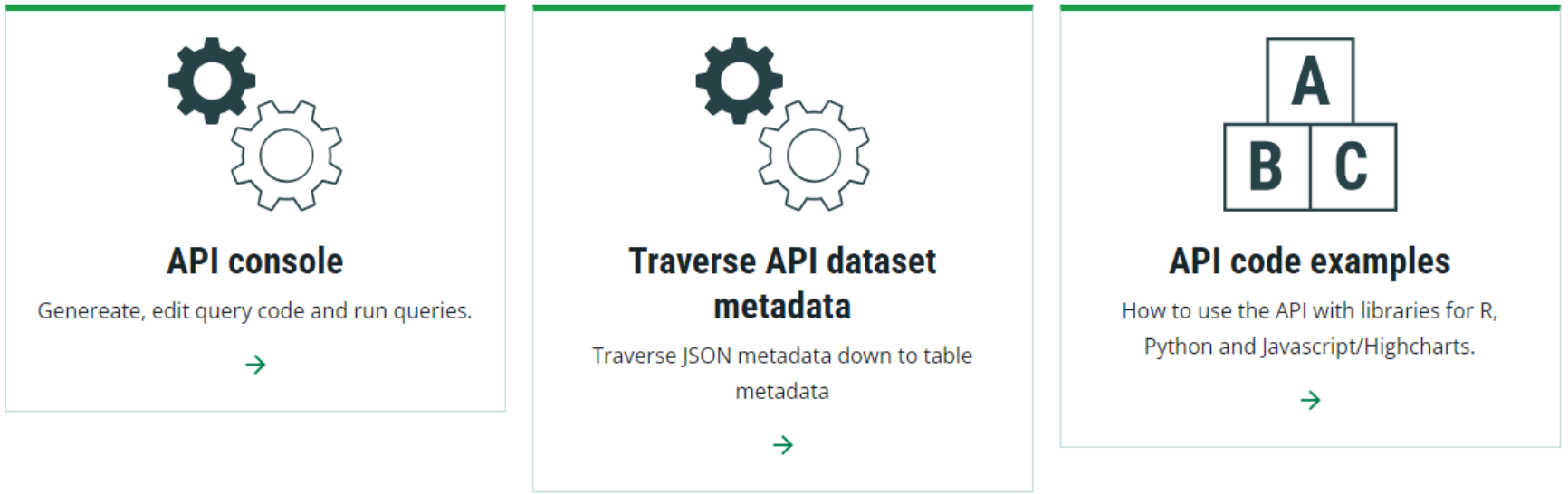
MORE ON SSB.NO

Klass API with JSON, XML and CSV

Data, metadata and modelling

2) StatBank(API)

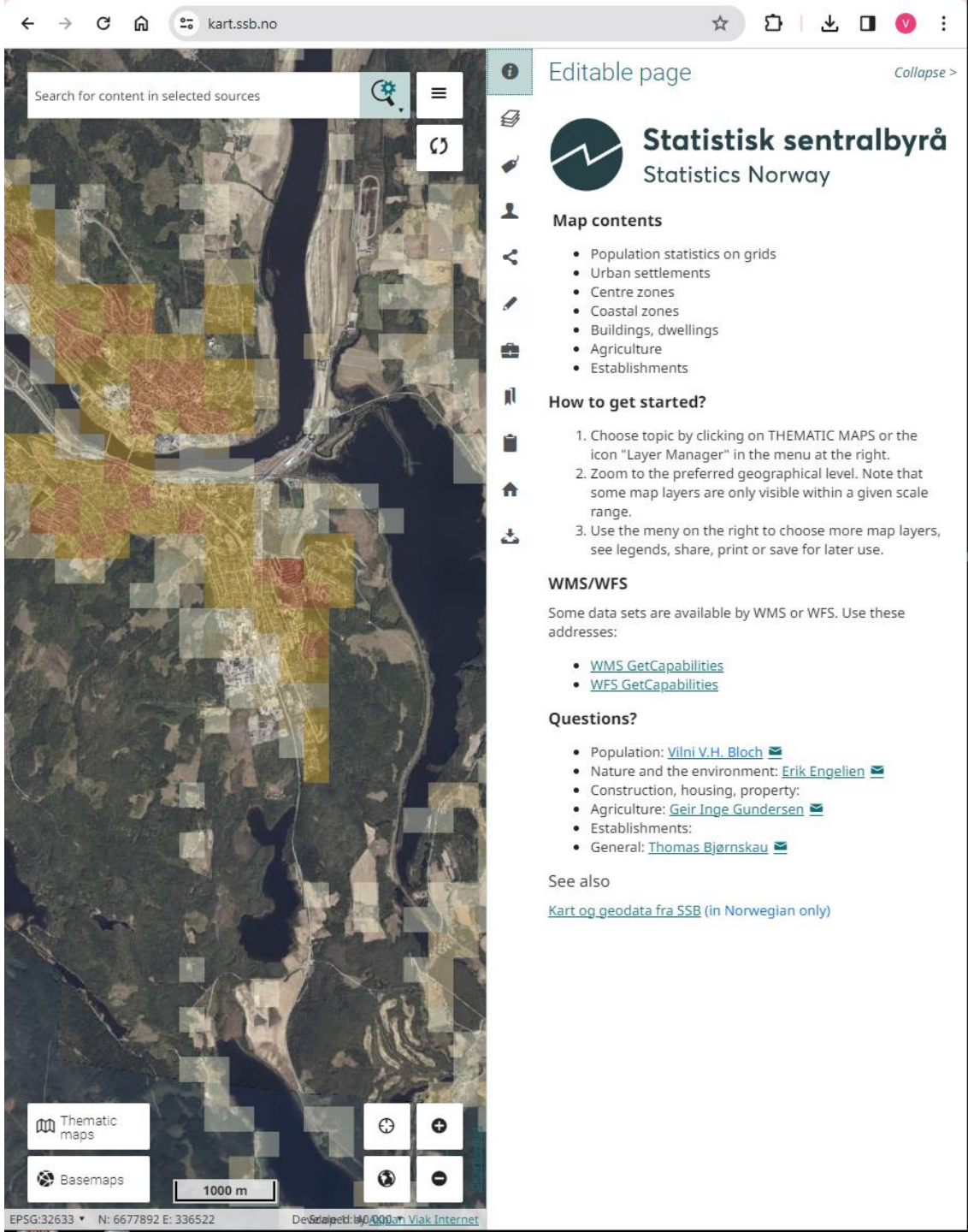
https://www.ssb.no/en/api



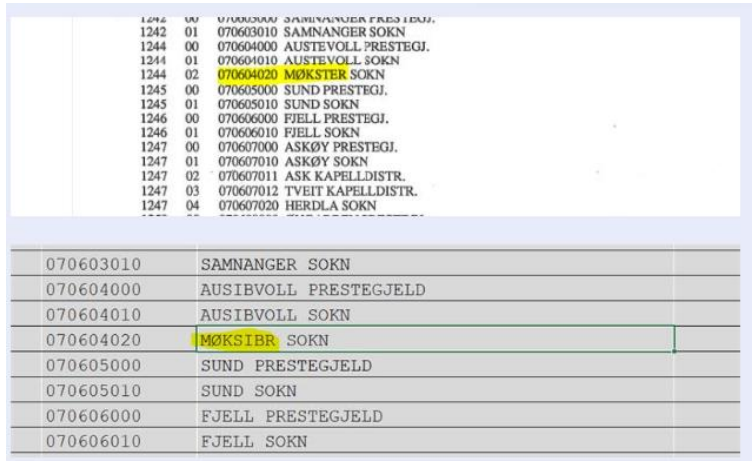
Data, metadata and modelling

3) Geodata (API)

https://kart.ssb.no/



Challenges



1242	01	070603010	SAMNANGER SOKN
1244	00	070604000	AUSTEVOLL PRESTEGJ.
1244	01	070604010	AUSTEVOLL SOKN
1244	02	070604020	MØKSTER SOKN
1245	00	070605000	SUND PRESTEGJ.
1245	01	070605010	SUND SOKN
1246	00	070606000	FJELL PRESTEGJ.
1246	01	070606010	FJELL SOKN
1247	00	070607000	ASKØY PRESTEGJ.
1247	01	070607010	ASKØY SOKN
1247	02	070607011	ASK KAPELLDISTR.
1247	03	070607012	TVEIT KAPELLDISTR.
1247	04	070607020	HERDLA SOKN

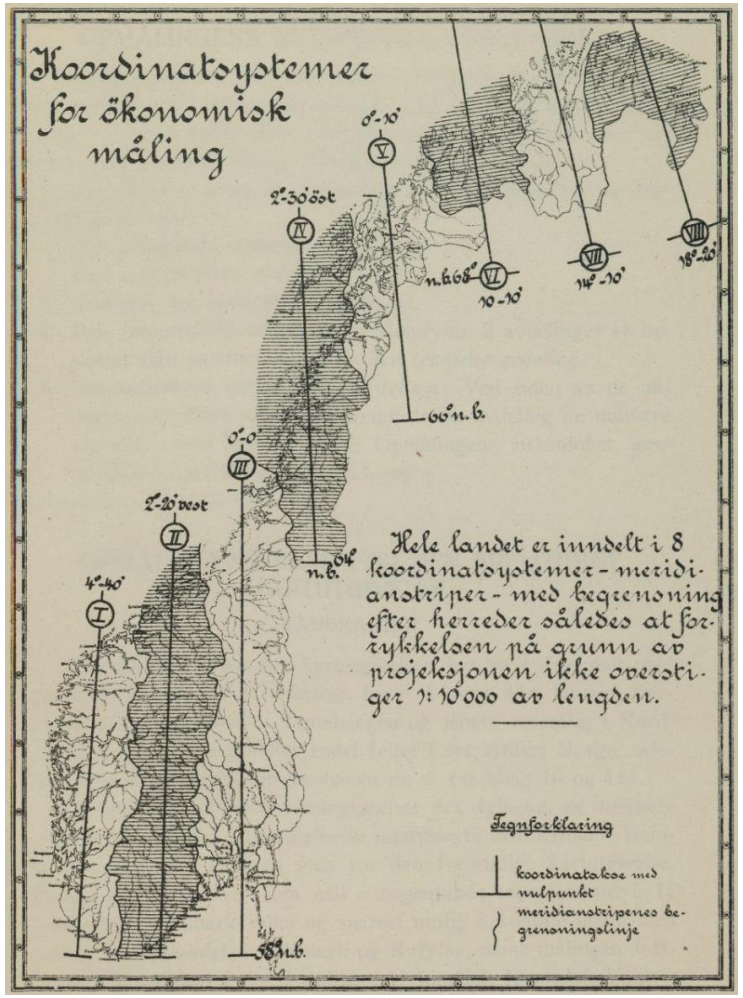
070603010	SAMNANGER SOKN
070604000	AUSIBVOLL PRESTEGJELD
070604010	AUSIBVOLL SOKN
070604020	MØKSIBR SOKN
070605000	SUND PRESTEGJELD
070605010	SUND SOKN
070606000	FJELL PRESTEGJELD
070606010	FJELL SOKN

- Scan flaws
- Different dates in different sources
- Manual errors or inconsistency in Church catalog
- Time consuming manual uploading to KLASS
- Missing information

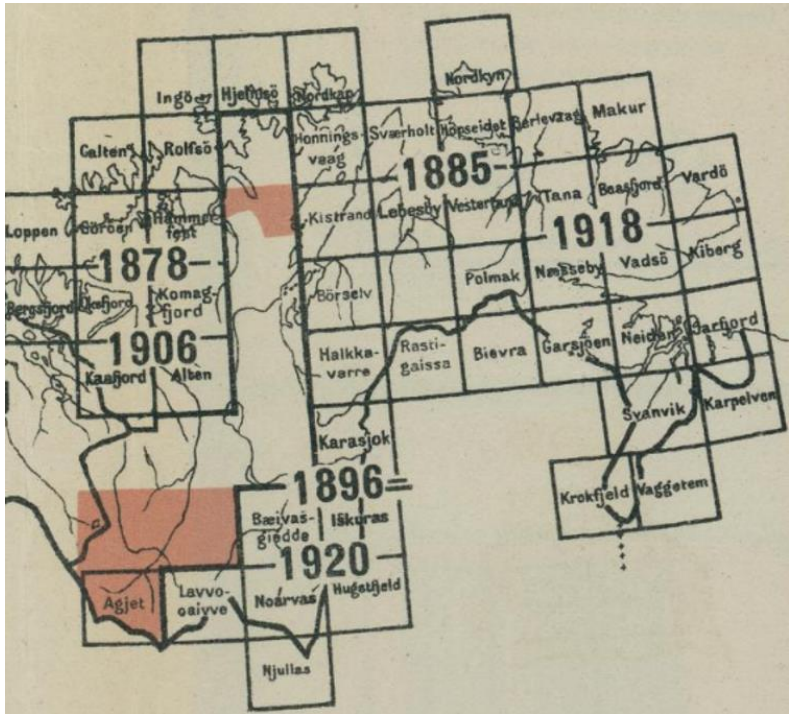
Navn	Overl_onr_geistlig	Overl_navn_geistlig	Overl_onr_geistlig 2	Overl_navn_geistlig 2	Overl_onr	Overl_navn_adm	KNr	FNr	Kommentar
BYÅSEN	974764407	NIDAROS BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		1601	16	Forsøksordning fra 2006 - 2009 men organisasjonsl
ØVRE TELEMARK	971551151	AGDER OG TELEMARK BI	972417866	KULTURDEPARTEMENTET	INGEN		0807	8	Har overtatt Aust-Telemark prosti sitt onr.
SØNDRE FOLLO	974760533	BORG BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		0214	2	Har overtatt Follo prosti sitt gamle onr.
SOLØR, VINGER OG ODAL	974761610	HAMAR BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		0402	4	Har overtatt onr til Vinger og Odal prosti
ØSTRE ROMERIKE	974760533	BORG BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		0236	2	Lagt ned 01.01.2020
LIER	974762498	TUNSBERG BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		0626	6	Lier prosti oppretta fra 1.1. 2000 med prestegjelde
BYÅSEN	974764407	NIDAROS BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		1601	16	Organiseringen av prostiet er bekreftet i telefonsa
RYFYLKE	974763222	STAVANGER BISPEDØMM	972417866	KULTURDEPARTEMENTET	INGEN		1130	11	Sammenslåing av "Søre Ryfylke prosti" og "Nordre F
BÆRUM	974761475	OSLO BISPEDØMME	972417866	KULTURDEPARTEMENTET	INGEN		3024	30	

Challenges

Coordinate systems. 1910.

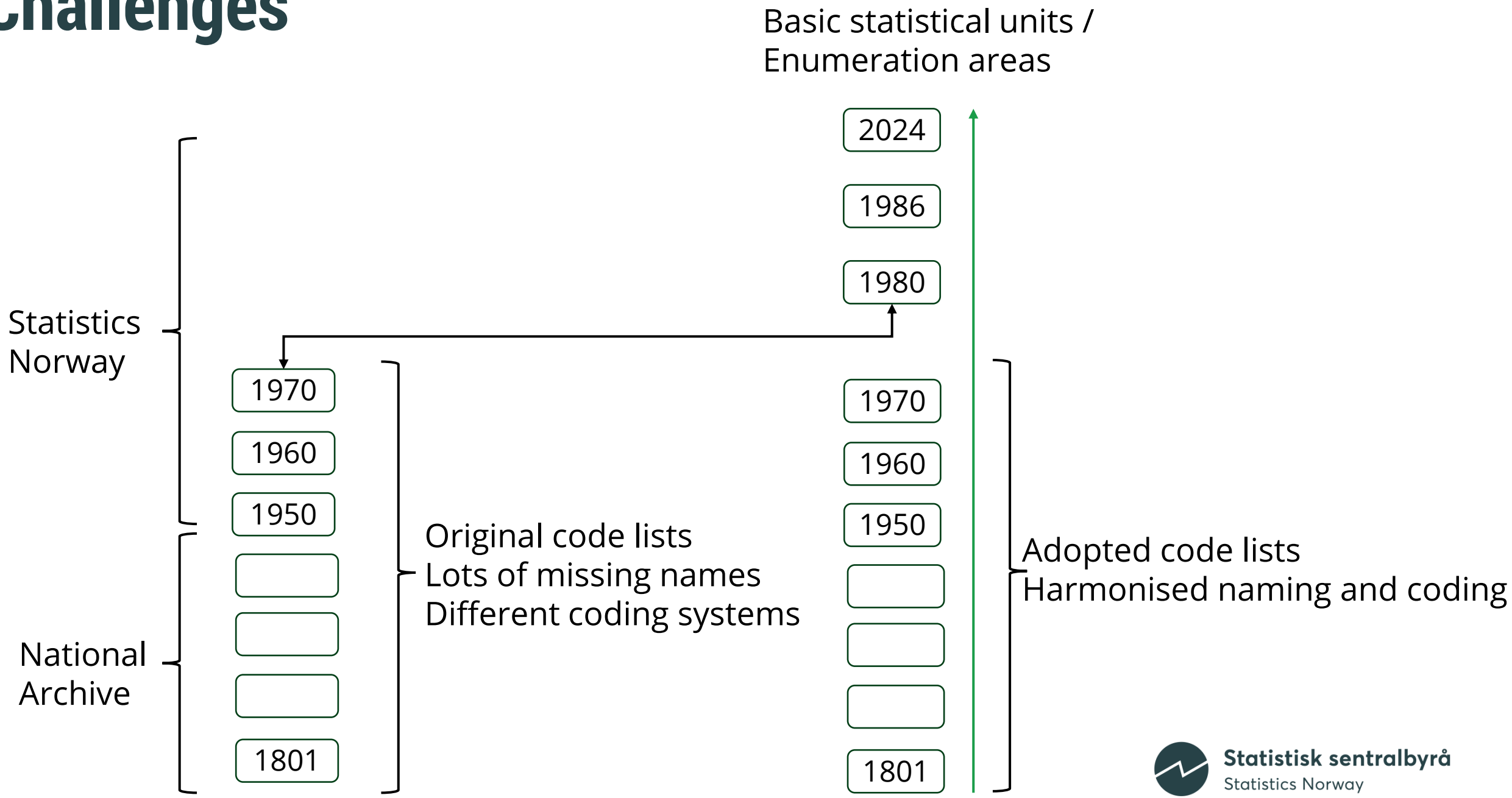


Status map sheets. 1923.



- Different coordinate systems
- Not all documented
- Maps with unknown references
- Unmapped areas
- Updates differs
- Age of mapping differs

Challenges



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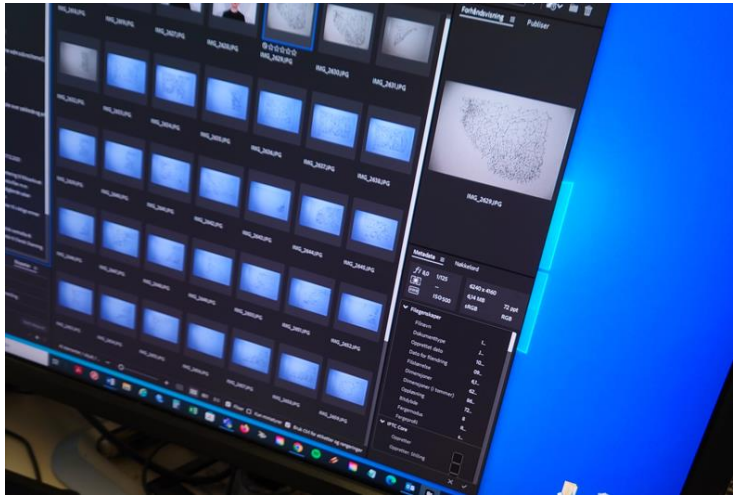
Example 1950 enumeration areas

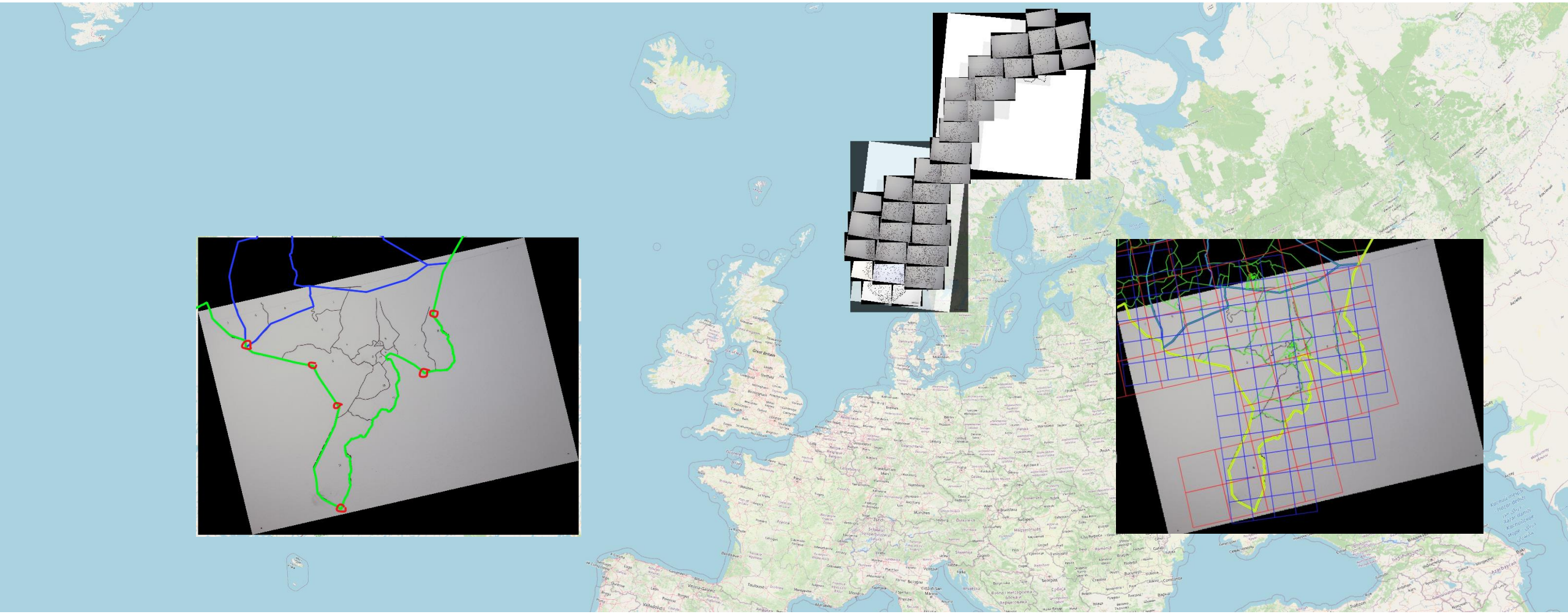
Found plast folios
- Undocumented
- No names

Photographing
- No flatbed skanner large enough

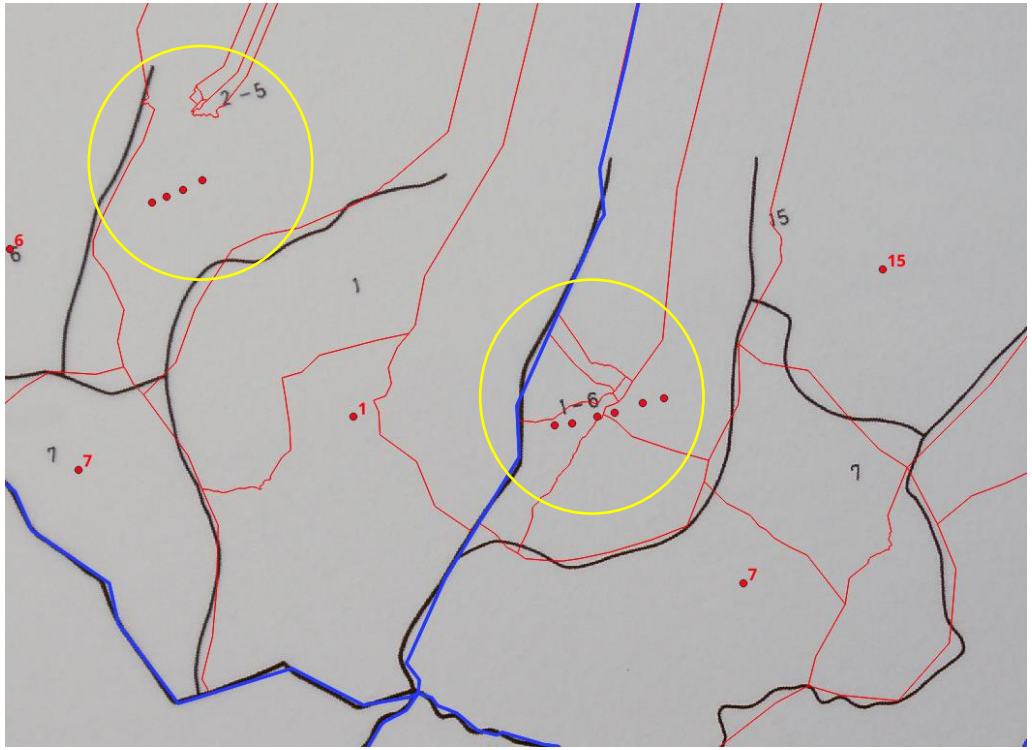


Manual editing
- AI and machine routine does not work

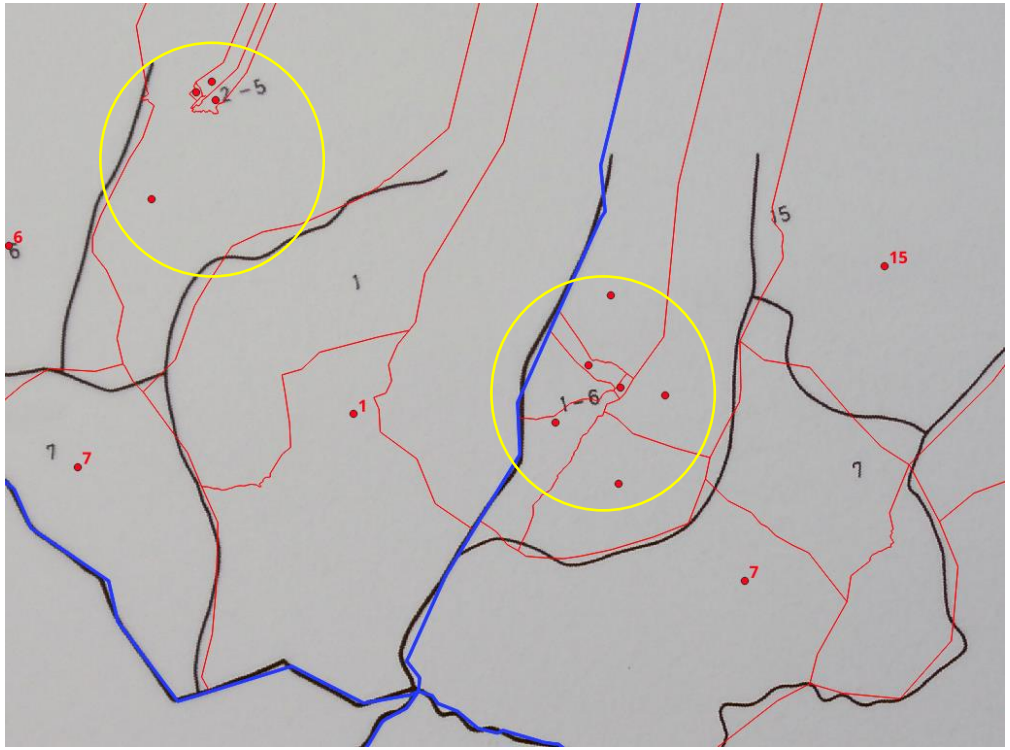
Example 1950 enumeration areas



Example 1950 enumeration areas



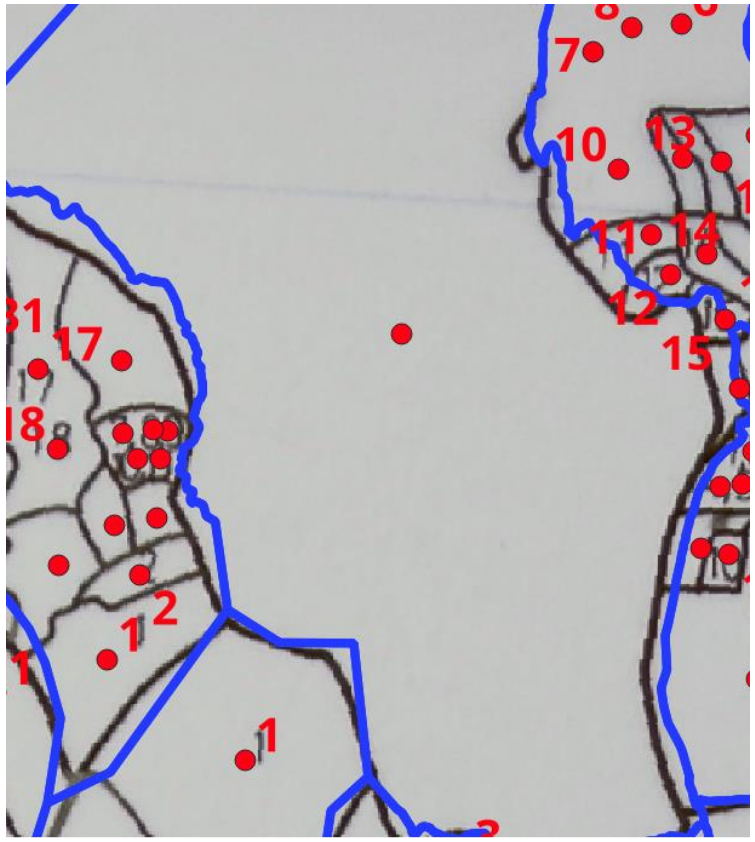
Lack of positioning



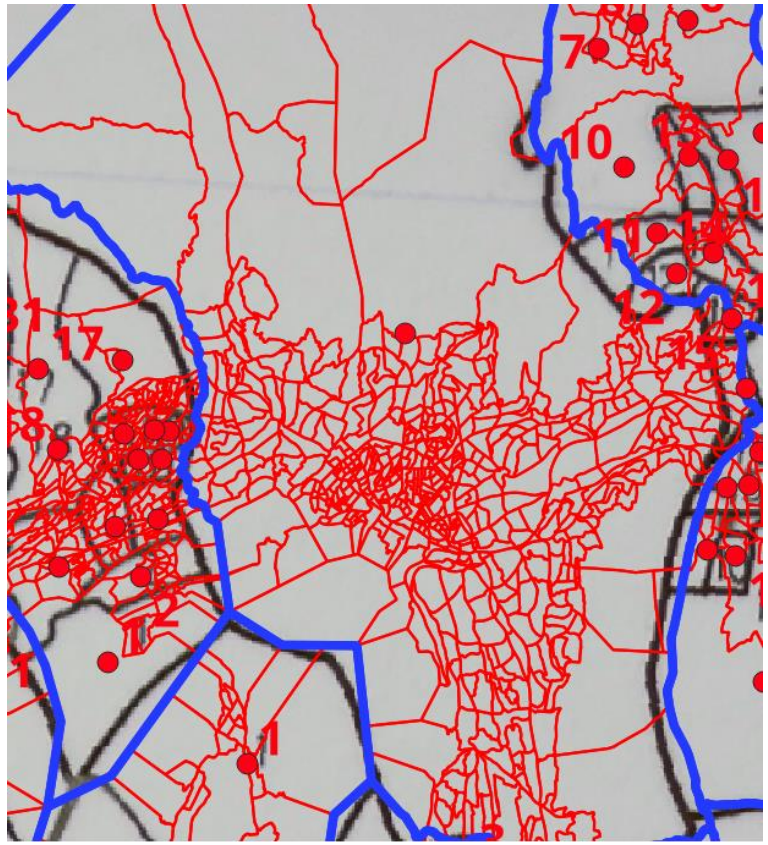
Use basic statistical units

Example 1950 enumeration areas

Oslo municipality



No points in map
But have list of enumeration codes
List does not contain names



Regenerate enumeration areas
from micro data

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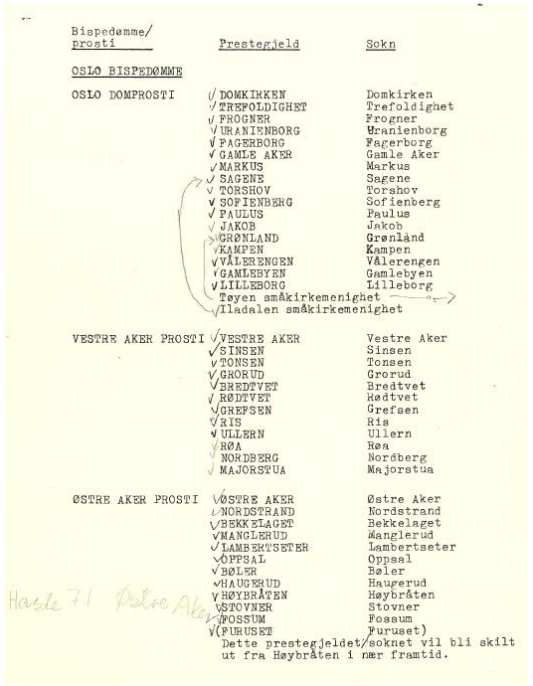
Example of AI use

– digitalisering av Church catalogue 1979

Scan of paper version → Copy sendt to MS word → Output from AI with mistakes → Manually corrected by machines with brains (Dana and Gjermund)

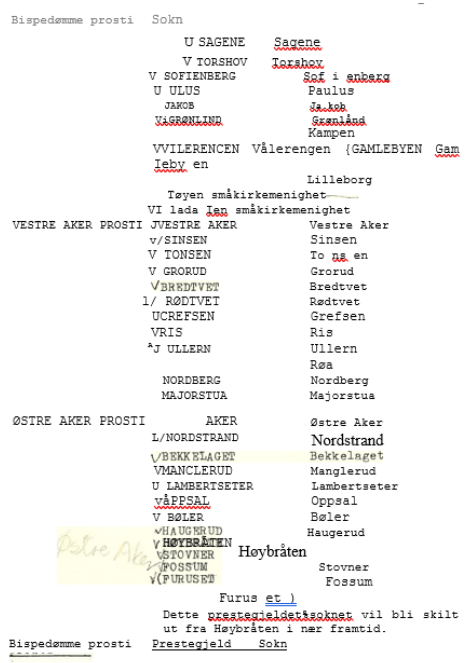


Bispedømme/ prosti | Prestegjeld | Sokn

OSLO BISPEDØMME

OSLO DOMPROSTI	DOMKIRKEN	Domkirken
	TREFOLDIGHET	Trefoldighet
	FROGNER	Frogner
	URANIENBORG	Uranienborg
	FAGERBORG	Fagerborg
	GAMLE AKER	Gamle Aker
	MARKUS	Markus
	SAGENE	Sagene
	TORSHOV	Torshov
	SOFIENBERG	Sofienberg
	PAULUS	Paulus
	JAKOB	Jakob
	GRØNLAND	Grønland
	KAMPEN	Kampen
	VÅLERENGEN	Vålerengen
	GAMLEBYEN	Gamlebyen
	LILLEBORG	Lilleborg
	Tøyen småkirkemenighet	
	Iladalen småkirkemenighet	
VESTRE AKER PROSTI	VESTRE AKER	Vestre Aker
	SINSEN	Sinsen
	TONSEN	Tonsen
	GRORUD	Grorud
	BREDTVET	Bredtvet
	RØDTVET	Rødtvet
	GREFSEN	Grefsen
	RIS	Ris
	ULLERN	Ullern
	RØA	Røa
	NORDBERG	Nordberg
	MAJORSTUA	Majorstua
ØSTRE AKER PROSTI	ØSTRE AKER	Østre Aker
	NORDSTRAND	Nordstrand
	BEKKELAGET	Bekkelaget
	MANGLERUD	Manglerud
	LAMBERTSETER	Lambertseter
	OPPSAL	Oppsal
	BØLER	Bøler
	HAUGERUD	Haugerud
	HØYBRÅTEN	Høybråten
	STOVNER	Stovner
	FOSSUM	Fossum
	(FURUSET	Furuset)

Dette prestegjeldet/soknet vil bli skilt ut fra Høybråten i nær framtid.



Bispedømme prosti | Sokn

	U SAGENE	Sagene
	V TORSHOV	Torshov
	V SOFIENBERG	Sof i enberg
	U ULUS	Paulus
	JAKOB	Ja.kob
	VGRØNLIND	Grønland
		Kampen
	VVILERENCEN	Vålerengen (GAMLEBYEN Gam Ieby en
		Lilleborg
	Tøyen småkirkemenighet	
	VI lada Ien småkirkemenighet	
VESTRE AKER PROSTI	JVESTRE AKER	Vestre Aker
	v/SINSEN	Sinsen
	V TONSEN	To ns en
	V GRORUD	Grorud
	VBREDTVET	Bredtvet
	1/ RØDTVET	Rødtvet
	UCREFSEN	Grefsen
	VRIS	Ris
	ªJ ULLERN	Ullern
		Røa
	NORDBERG	Nordberg
	MAJORSTUA	Majorstua
ØSTRE AKER PROSTI	AKER	Østre Aker
	L/NORDSTRAND	Nordstrand
	VBEKKELAGET	Bekkelaget
	VMANCLERUD	Manglerud
	U LAMBERTSETER	Lambertseter
	VÅPPSAL	Oppsal
	V BØLER	Bøler
	VHAUGERUD	Haugerud
	VHØYBRÅTEN	Høybråten
	VSTOVNER	Stovner
	V(FOSSUM	Fossum
	V(FURUSET	Furuset

Furus et l

Dette prestegjeldet/soknet vil bli skilt ut fra Høybråten i nær framtid.

Bispedømme prosti | Prestegjeld | Sokn

Her er en oppdatert tabell med "Oslo Bispedømme" fylt ut i alle rader:

Bispedømme	Prosti	Prestegjeld	Sokn
OSLO BISPEDØMME	OSLO DOMPROSTI	DOMKIRKEN	Domkirken
OSLO BISPEDØMME	OSLO DOMPROSTI	TREFOLDIGHET	Trefoldighet
OSLO BISPEDØMME	OSLO DOMPROSTI	FROGNER	Frogner
OSLO BISPEDØMME	OSLO DOMPROSTI	URANIENBORG	Uranienborg
OSLO BISPEDØMME	OSLO DOMPROSTI	FAGERBORG	Fagerborg
OSLO BISPEDØMME	OSLO DOMPROSTI	GAMLE AKER	Gamle Aker
OSLO BISPEDØMME	OSLO DOMPROSTI	MARKUS	Markus
OSLO BISPEDØMME	OSLO DOMPROSTI	SAGENE	Sagene
OSLO BISPEDØMME	OSLO DOMPROSTI	TORSHOV	Torshov
OSLO BISPEDØMME	OSLO DOMPROSTI	SOFIENBERG	Sofienberg
OSLO BISPEDØMME	OSLO DOMPROSTI	PAULUS	Paulus
OSLO BISPEDØMME	OSLO DOMPROSTI	JAKOB	Jakob
OSLO BISPEDØMME	OSLO DOMPROSTI	GRØNLAND	Grønland
OSLO BISPEDØMME	OSLO DOMPROSTI	KAMPEN	Kampen
OSLO BISPEDØMME	OSLO DOMPROSTI	VÅLERENGA	Vålerenga
OSLO BISPEDØMME	OSLO DOMPROSTI	KAMPEN	Kampen
OSLO BISPEDØMME	OSLO DOMPROSTI	GAMLEBYEN	Gamlebyen
OSLO BISPEDØMME	OSLO DOMPROSTI	LILLEBORG	Lilleborg
OSLO BISPEDØMME	OSLO DOMPROSTI	TØYEN	Tøyen
OSLO BISPEDØMME	OSLO DOMPROSTI	ILA	Ila

Bispedømme	Prosti	Prestegjeld	Sokn
OSLO BISPEDØMME	OSLO DOMPROSTI	DOMKIRKEN	Domkirken
OSLO BISPEDØMME	OSLO DOMPROSTI	TREFOLDIGHET	Trefoldighet
OSLO BISPEDØMME	OSLO DOMPROSTI	FROGNER	Frogner
OSLO BISPEDØMME	OSLO DOMPROSTI	URANIENBORG	Uranienborg
OSLO BISPEDØMME	OSLO DOMPROSTI	FAGERBORG	Fagerborg
OSLO BISPEDØMME	OSLO DOMPROSTI	GAMLE AKER	Gamle Aker
OSLO BISPEDØMME	OSLO DOMPROSTI	MARKUS	Markus
OSLO BISPEDØMME	OSLO DOMPROSTI	SAGENE	Sagene
OSLO BISPEDØMME	OSLO DOMPROSTI	TORSHOV	Torshov
OSLO BISPEDØMME	OSLO DOMPROSTI	SOFIENBERG	Sofienberg
OSLO BISPEDØMME	OSLO DOMPROSTI	PAULUS	Paulus
OSLO BISPEDØMME	OSLO DOMPROSTI	JAKOB	Jakob
OSLO BISPEDØMME	OSLO DOMPROSTI	GRØNLAND	Grønland
OSLO BISPEDØMME	OSLO DOMPROSTI	KAMPEN	Kampen
OSLO BISPEDØMME	OSLO DOMPROSTI	VÅLERENGEN	Vålerengen
OSLO BISPEDØMME	OSLO DOMPROSTI	GAMLEBYEN	Gamlebyen
OSLO BISPEDØMME	OSLO DOMPROSTI	LILLEBORG	Lilleborg
OSLO BISPEDØMME	VESTRE AKER PROSTI	VESTRE AKER	Vestre Aker
OSLO BISPEDØMME	VESTRE AKER PROSTI	SINSEN	Sinsen
OSLO BISPEDØMME	VESTRE AKER PROSTI	TONSEN	Tonsen
OSLO BISPEDØMME	VESTRE AKER PROSTI	GRORUD	Grorud
OSLO BISPEDØMME	VESTRE AKER PROSTI	BREDTVET	Bredtvet
OSLO BISPEDØMME	VESTRE AKER PROSTI	RØDTVET	Rødtvet
OSLO BISPEDØMME	VESTRE AKER PROSTI	GREFSEN	Grefsen
OSLO BISPEDØMME	VESTRE AKER PROSTI	RIS	Ris
OSLO BISPEDØMME	VESTRE AKER PROSTI	ULLERN	Ullern
OSLO BISPEDØMME	VESTRE AKER PROSTI	RØA	Røa
OSLO BISPEDØMME	VESTRE AKER PROSTI	NORDBERG	Nordberg
OSLO BISPEDØMME	VESTRE AKER PROSTI	MAJORSTUA	Majorstua
OSLO BISPEDØMME	ØSTRE AKER PROSTI	ØSTRE AKER	Østre Aker
OSLO BISPEDØMME	ØSTRE AKER PROSTI	NORDSTRAND	Nordstrand
OSLO BISPEDØMME	ØSTRE AKER PROSTI	BEKKELAGET	Bekkelaget
OSLO BISPEDØMME	ØSTRE AKER PROSTI	MANGLERUD	Manglerud
OSLO BISPEDØMME	ØSTRE AKER PROSTI	LAMBERTSETER	Lambertseter
OSLO BISPEDØMME	ØSTRE AKER PROSTI	OPPSAL	Oppsal
OSLO BISPEDØMME	ØSTRE AKER PROSTI	BØLER	Bøler
OSLO BISPEDØMME	ØSTRE AKER PROSTI	HAUGERUD	Haugerud
OSLO BISPEDØMME	ØSTRE AKER PROSTI	HØYBRÅTEN	Høybråten
OSLO BISPEDØMME	ØSTRE AKER PROSTI	STOVNER	Stovner
OSLO BISPEDØMME	ØSTRE AKER PROSTI	FOSSUM	Fossum

READY FOR CODING

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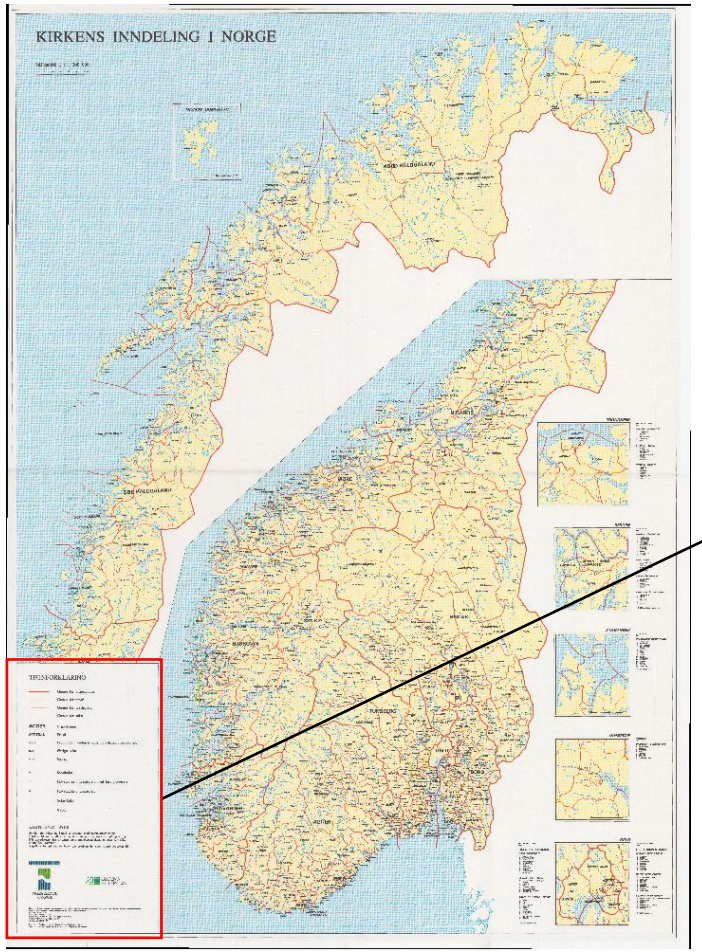
Statistics Norway

Example. Church map. 1994.



TEGNFORKLARING

- Grense for bispedømme
- Grense for prosti
- Grense for prestegjeld
- Grense for sokn

AGDER — Bispedømme

OTREDAL — Prosti

VALLE — Prestegjeld, vanligvis også hovedsokn i prestegjeld

Byklø — Øvrige sokn

Hovden — Kapell

- Domkirke
- Hovedkirke i prestegjeld med fast prostesete
- Hovedkirke i prestegjeld
- Soknekirke
- Kapell

KARTUTSNITT BYER

Symbol for kirker og kapell er erstattet med nummerhenvisning.
I listene til kartutsnittene er hvert prestegjeld og sokn ført på egen linje.
Når hovedsoknet har et annet navn enn prestegjeldet, er dette ført slik:
NORDÅS Søreide
Kapell er ført på samme linje som prestegjeldet eller soknet det hører til.

LEGEND

Ecclesiastical divisions (delineations)

Ecclesiastical divisions (names)

Ecclesiastical divisions (churches)

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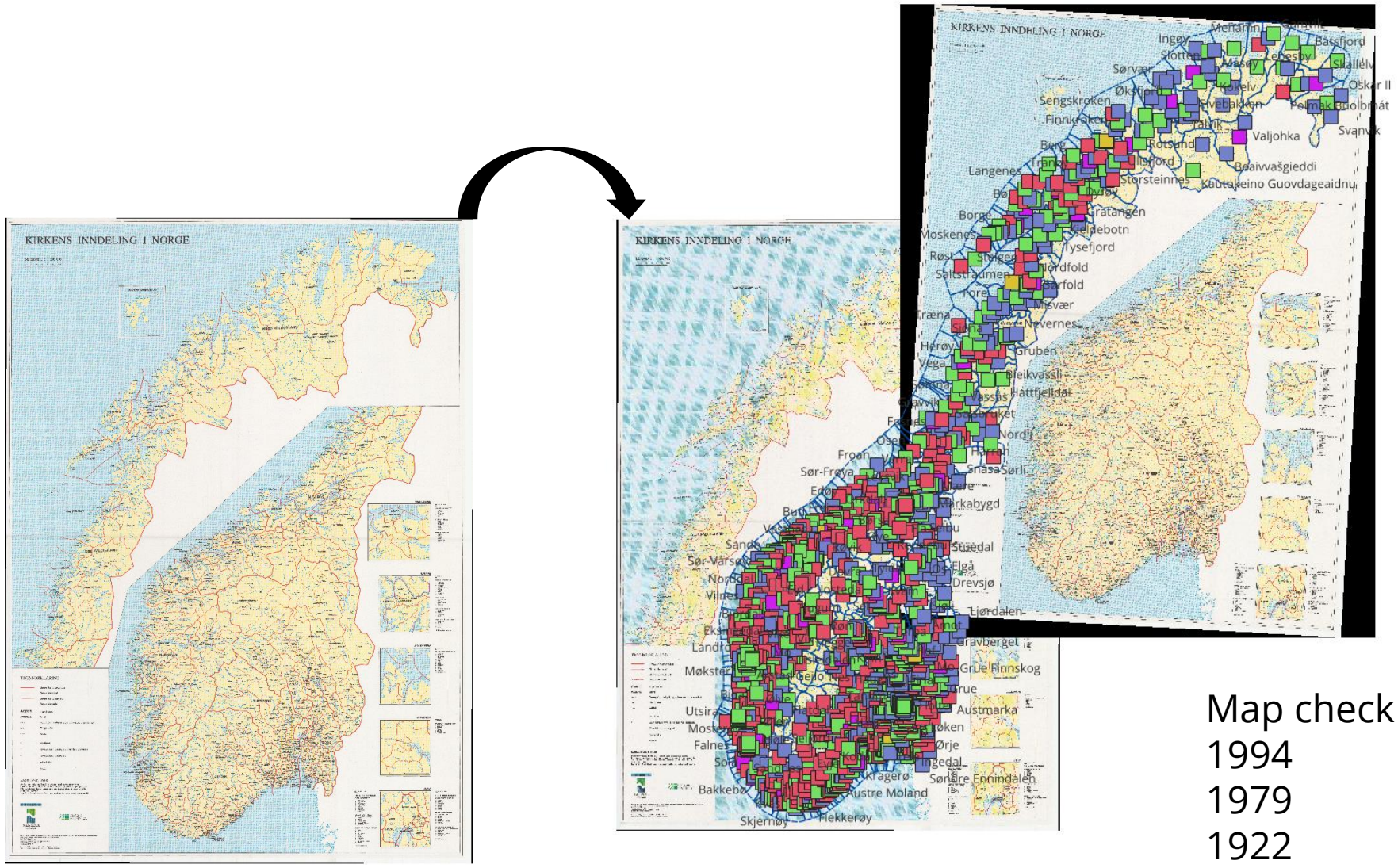
Statistics Norway

Example. Church map. 1994.



Map check point years
1994
1979
1922

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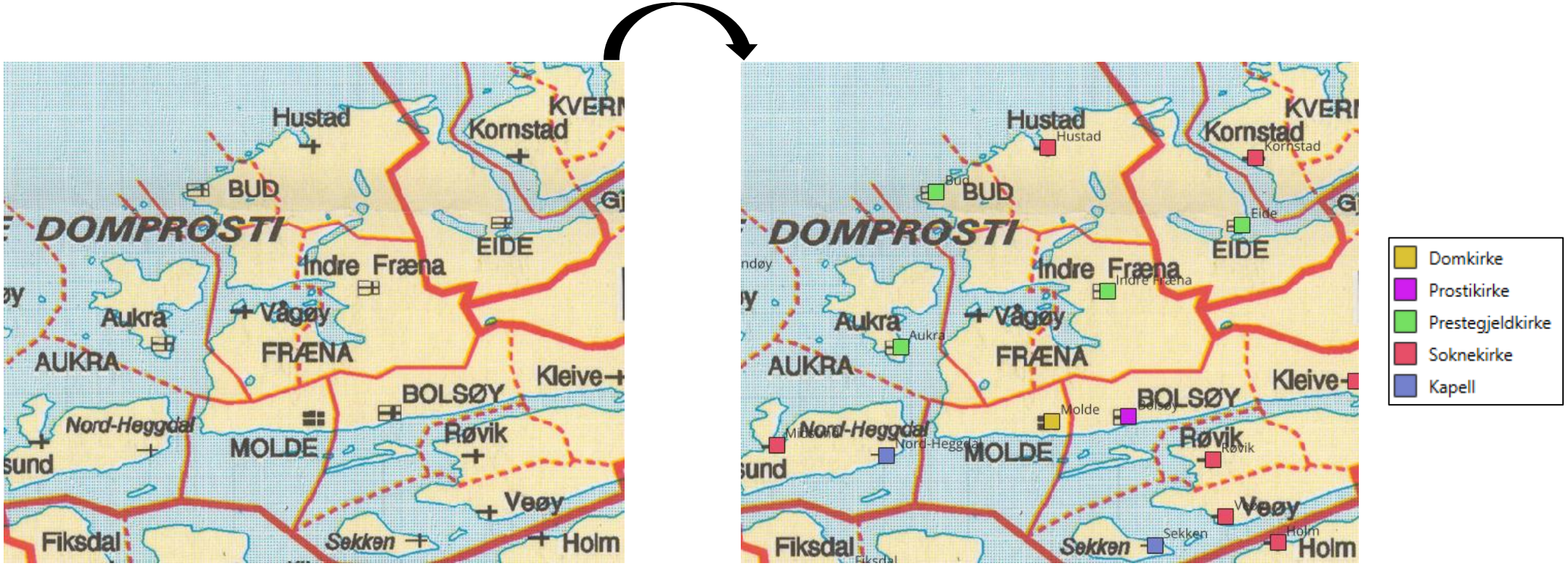
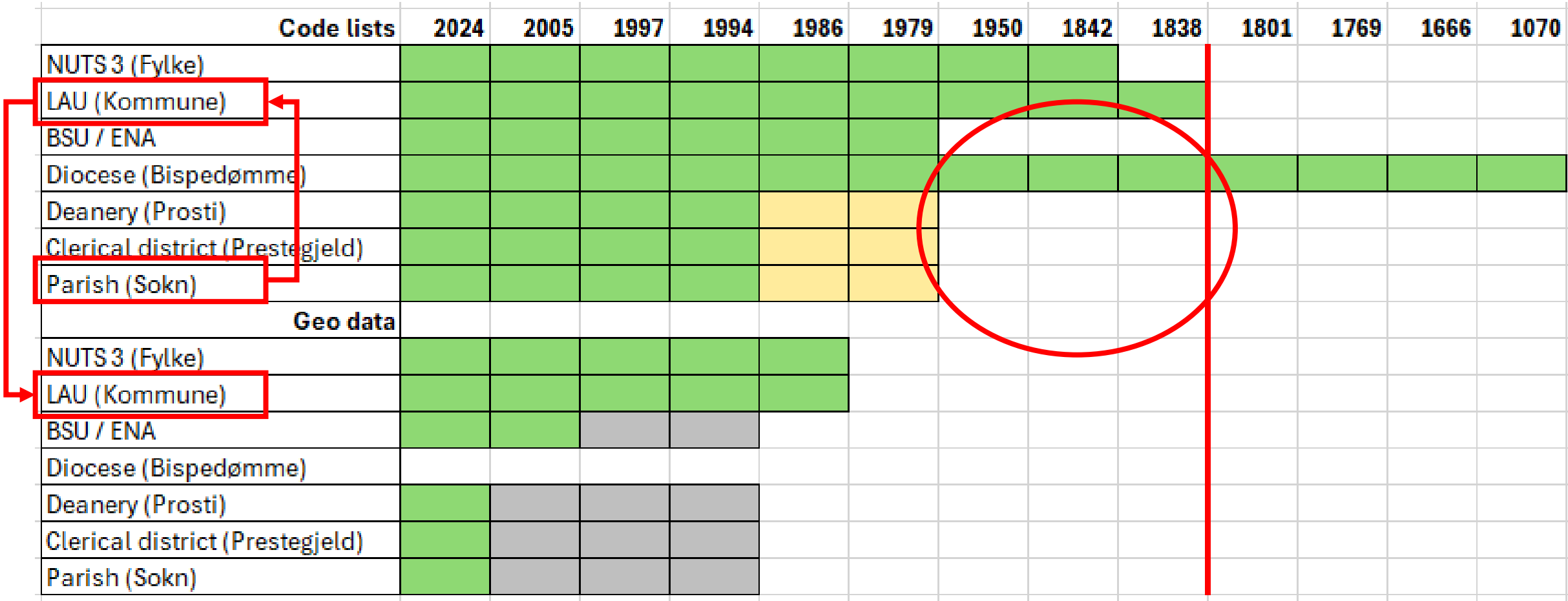
Statistics Norway

Example. Church map. 1994.



Because each building has different types, we use colors and codes to separate the different types. Here is an example that shows all the different types of buildings.

Status code lists and geo data



Code lists precondition for making geo data

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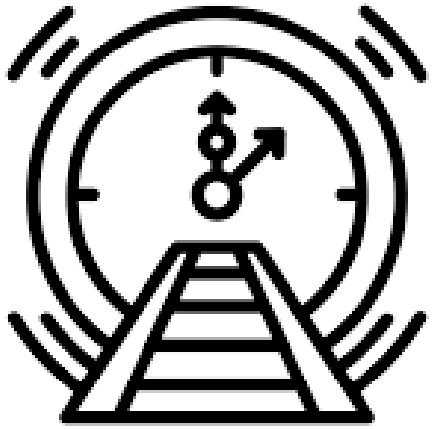
Statistics Norway

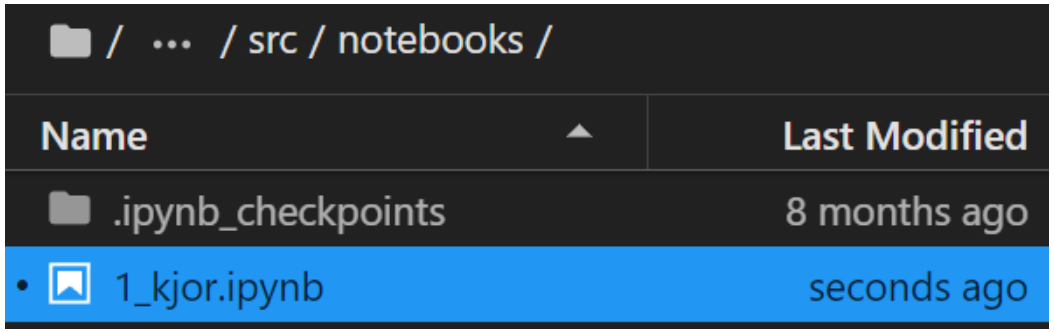
Status modelling

- ArcView 3.1(under a dinner table) >
- ArcGIS >
- Python, GeoPandas, Google Cloud



HISTGEOSTAT TIME MACHINE

jupyterhub



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Status modelling

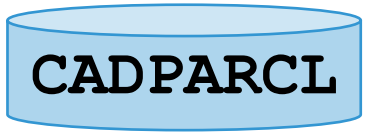
```
MAIN_BUCKET = "ssb-prod-histgeostat-data"
PRODUKT = f"{MAIN_BUCKET}-produkt"
KILDE = f"{MAIN_BUCKET}-kilde"
DELT = f"{MAIN_BUCKET}-delt"
SYNKOPP = f"{MAIN_BUCKET}-synk-opp"
SYNKNED = f"{MAIN_BUCKET}-synk-ned"

root = Path(f"{PRODUKT}/histgeo")
root
```


```
sg.check_files(root)
```

	kb	mb	name	child
2023-10-24 09:49:28	0	0.0	histgeo	ssb-prod-histgeostat-data-produkt
2023-10-24 12:00:40	80405803	80.4	addresse_p2023_v1.parquet	histgeo
2023-10-24 12:05:05	183906917	183.9	areatype_p2023_v1.parquet	histgeo
2023-10-24 12:05:05	54222107	54.2	bas_unit_p2019_v1.parquet	histgeo
2023-10-24 12:05:05	106009908	106.0	cadastre_p2023_v1.parquet	histgeo
2023-10-24 12:05:06	3285730535	3285.7	cadpatch_p2022_v1.parquet	histgeo

Status modelling

cadpatch_p2022_v1.parquet

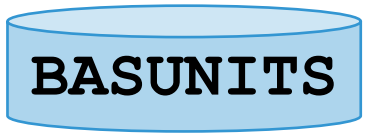


CADPAR (Teigm23)
Polygons for cadastre parcels

cadastre_p2023_v1.parquet

CADUNI (m23m)
List of all cadastre units (matrikkelenheter)

bas_unit_p2019_v1.parquet



BASUNI (gk2019)
Basic statistical units (NO: Grunnkretser) from 2019 (better/easier to use before many changes in kommuner 2020)

addresse_p2023_v1.parquet

ADRESS (adresser)
Adress points from GeoNorge

areatype_p2023_v1.parquet

AREATY (area_type)
Area types land, ocean, lake

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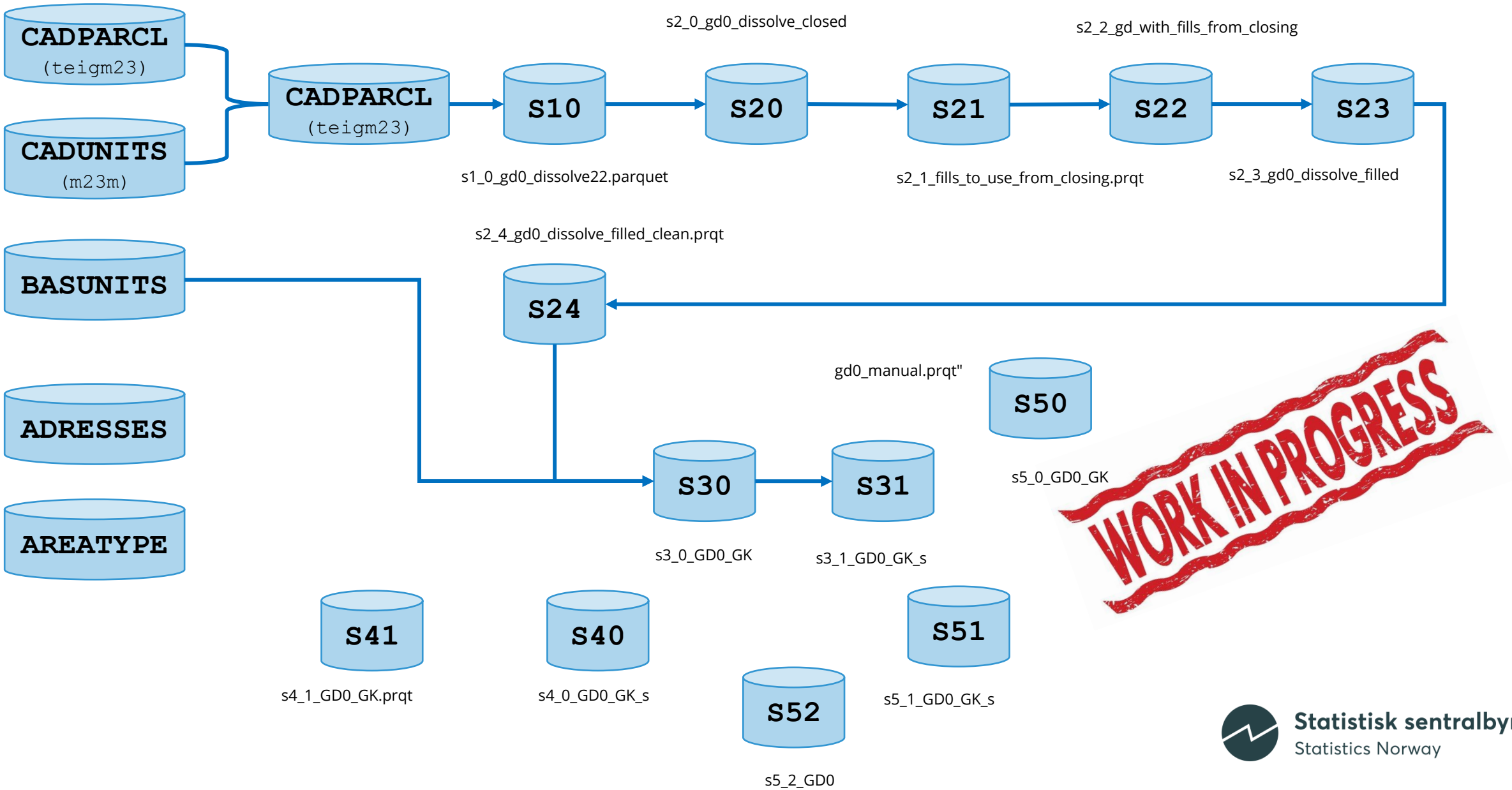
Statistics Norway

Status modelling



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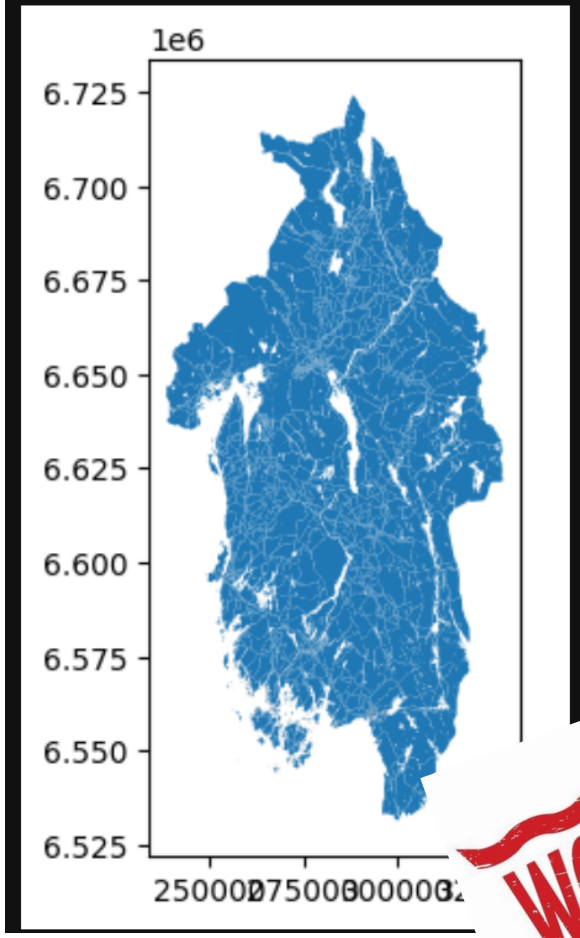
Statistics Norway

Status modelling

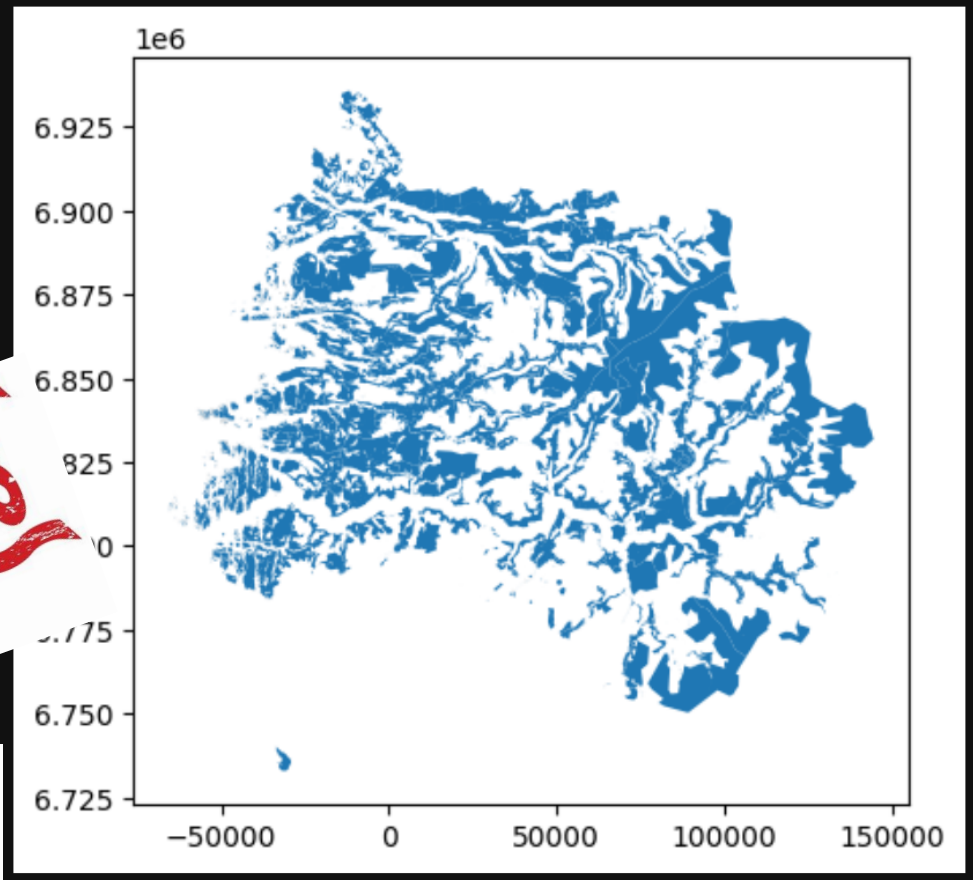
```
# In some areas the naive dissolve works reasonably well
s1_0_gd0_dissolve[s1_0_gd0_dissolve["GEODEL0"].str.contains(r"^0[123]")].plot()
```

```
<Axes: >
```




```
# NB: In parts of the country large (remote) areas are not registered with
# digital property polygons. Blank areas have gnr=0, bnr=1, while lakes,
# rivers etc have gnr=0, bnr=0
s1_0_gd0_dissolve[s1_0_gd0_dissolve["GEODEL0"].str.contains(r"^1[34]")].plot()
```

```
<Axes: >
```

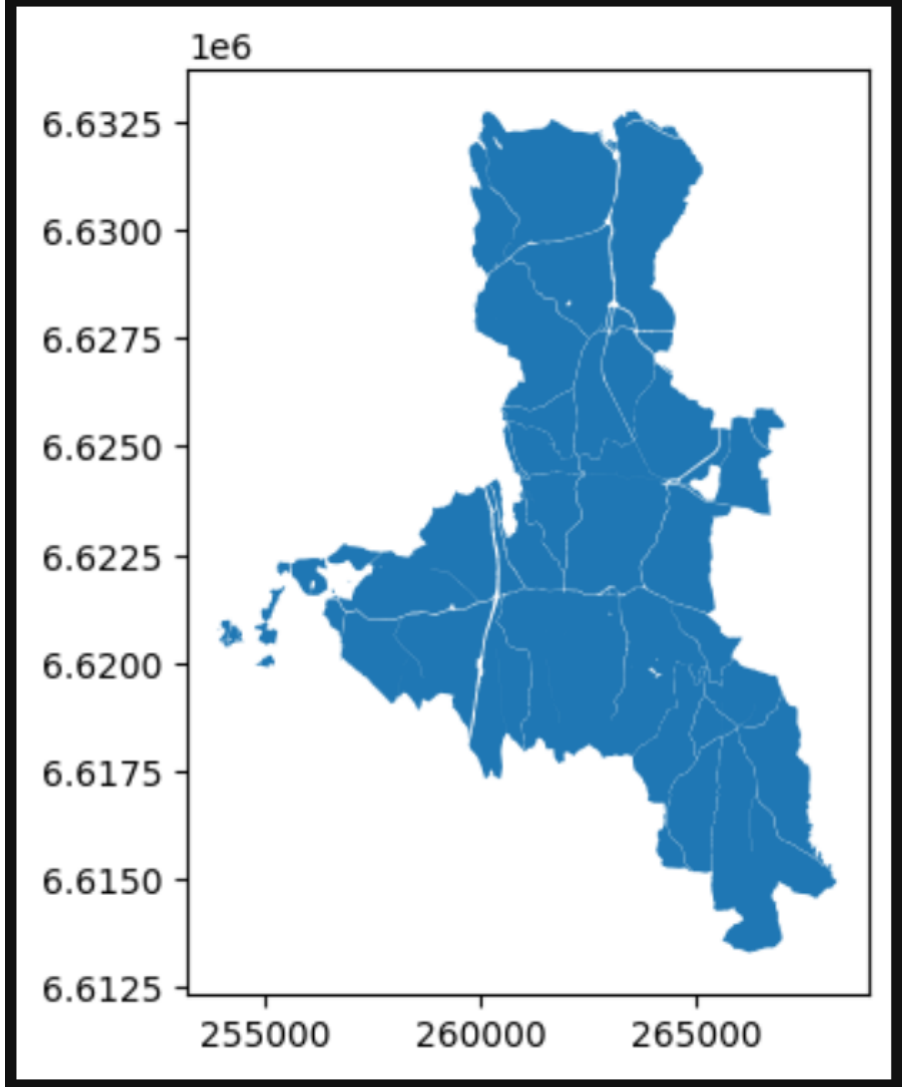


WORK IN PROGRESS

Status modelling

```
s1_0_gd0_dissolve[s1_0_gd0_dissolve["GEODEL0"].str.contains(r"^0214")].plot()
```

```
<Axes: >
```



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Status modelling

```
# Painfully slow (45 min)! Can not be run in parallell unless units from the
# two layers are matched. That should be feasible with first sjoin
```

```
# Area types land, ocean, lake ['Land','Havflate','Innsjø']
# Constructed from dissolve of N250_ArealdekkeFlate (?),
# interseced by SSB100km squares to make polygons more managable
# Innsjø only if area of individual polygon > 3000000
# Rivers not included, possible but does not seem relevant for use here
```

```
# -------1---------2---------3--------4---------5---------6---------7------PEP
# Dirty trick, adjust this marginally avoids topological problem below.
# Totaly unknown why a problem
```

```
# Too slow, but not straighforward to run in paralell
```

```
# overlaps_c= overlaps.copy()
# Needed for numerical reasons(?), dirty trick
```

```
# Kind of a dirty trick to get knr, but just for manual filtering/inspection
# Should overlay with GK???
```

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ay

Status modelling – to do list

1. Documentation (input, functions used, output)
2. Enhance speed
3. Enhance quality descriptions

D2.1 Quality assesments

HistGeoStat

Statistics Norway

Division for population statistics

GRANT AGREEMENT NO:
101113052 — 2022-NO-GEOS-HistGeoStat

Contents

Border lines by accuracy intervals and type. Mainland Norway. 2024.

	Accuracy intervalls (cm)	In all	In all (%)	Country border (NO: Riksgrense)	County border (NO: Fylkes-grense)	Municipality border (NO: Kommune-grense)	Territorial border (NO: Territorial-grense)	Agreed demarcation line (NO: Avtalt avgrensnings-linje)
Line segments (N)	In all	26 791	100	319	3 990	22 155	308	19
	A : 0	36	0		1	35		
	B : 1 - 9	875	3	6	145	724		
	C : 10 - 99	4 964	19	150	661	4 136		17
	D: 100 - 999	14 966	56	148	2 342	12 474		2
	E : 1 000 - 9 999	5 900	22	6	840	4 746	308	
	F : 10 000 - 30 000	21	0		1	20		
	G : Blank	29	0	9		20		
Line segments (m)	In all	35 243 621	100	2 566 649	4 427 613	25 552 051	2 566 381	130 927
	A : 0	9 692	0		3	9 688		
	B : 1 - 9	302 304	1	29 787	55 745	216 772		
	C : 10 - 99	3 140 475	9	1 199 413	310 131	1 522 050		108 880
	D: 100 - 999	11 970 039	34	1 023 429	1 689 093	9 235 471		22 046
	E : 1 000 - 9 999	19 407 026	55	18 661	2 370 860	14 451 123	2 566 381	
	F : 10 000 - 30 000	18 169	0		1 779	16 390		
	G : Blank	395 917	1	295 360		100 557		

Next

- Complete code lists and geodata
- Discusion on infrastructure
- Involve and communicate with users
- Develope use cases
- Crowd sourcing in next chapter?

TALL SOM FORTELLER

Thanks!

Vilni Verner Holst Bloch

Andreas Østhus

Dana Moe

Statistisk sentralbyrå
Statistics Norway