

Presented at the FIG e-Working Week 2021,
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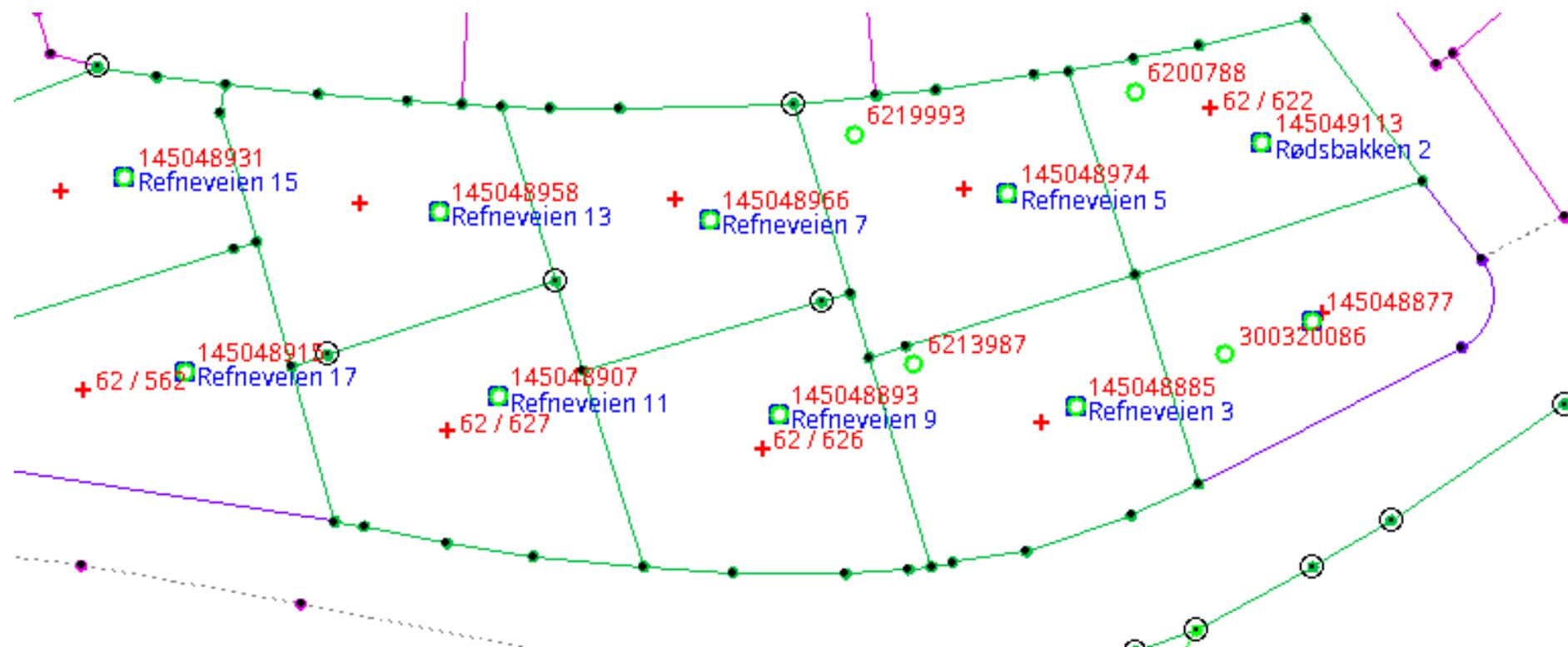


Kartverket

How to measure the quality of cadastral data in 5 minutes?

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FUN FACTS ABOUT NORWAY

11 counties, **356** municipalities

More than **3.3 million** cadastral units

More than **2.4 million** addresses

More than **4.3 million** buildings

Two cadastral authorities

Norwegian Mapping Authority is the central cadastral authority

The municipalities are the local cadastral authority



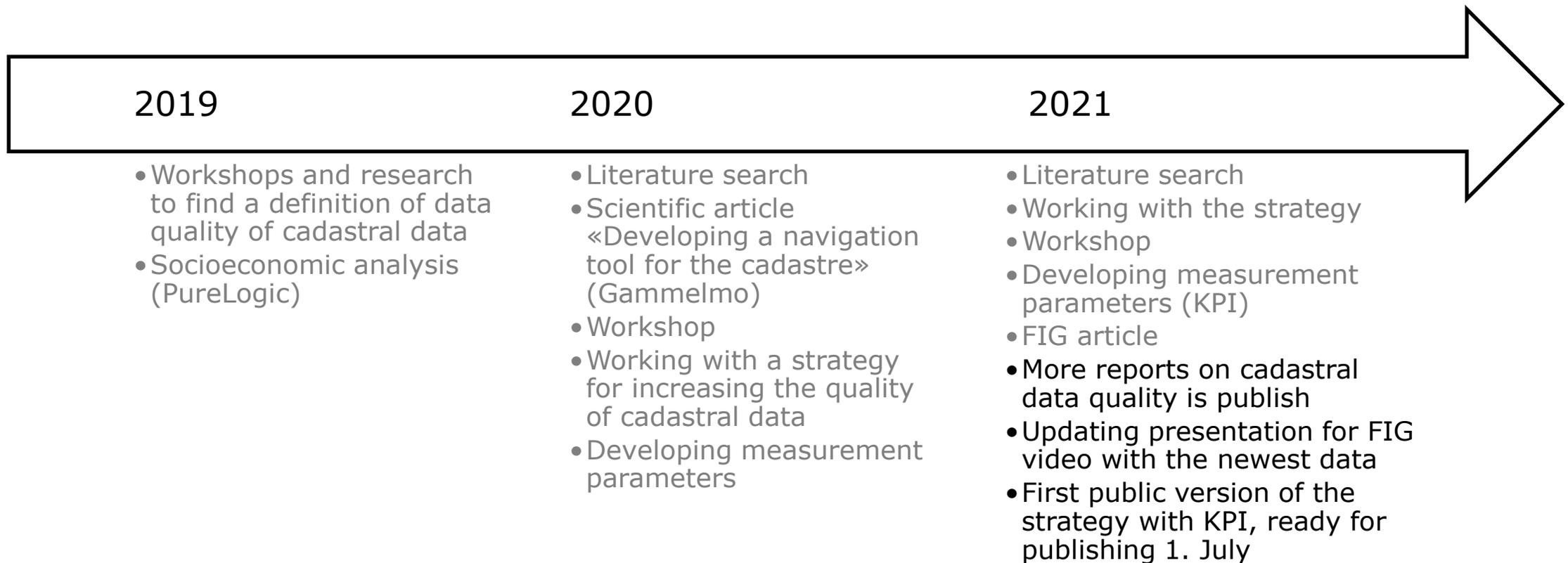
The aim of the FIG WW2021 paper is to shed light on three questions

- Why do we need to measure the data quality of cadastral data?
- What is a useful definition of data quality regarding cadastral data?
- How should the data quality of cadastral data be measured?

Paper: "Measuring Data Quality of Cadastral Data"

Research methodology

-what have we done after writing the FIG paper?



Cadastral data

- Boundary with
 - «poor» quality (orange)
 - «good» quality (green)
 - and fictitious (-----)

- Cadastral number

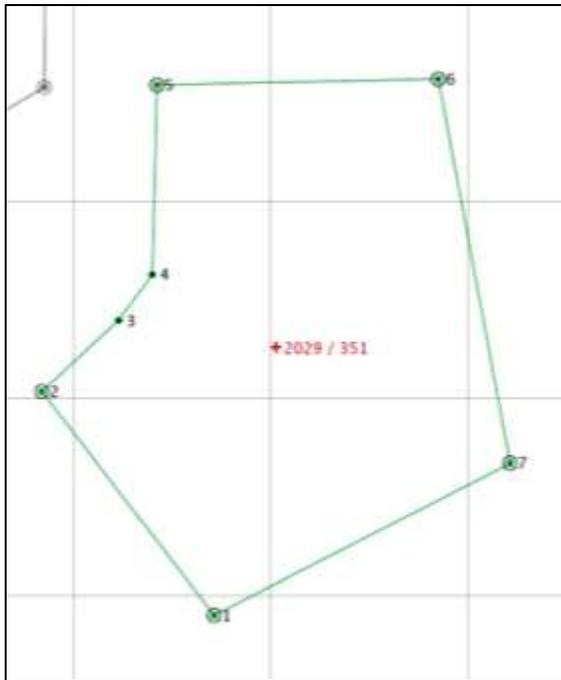
- Road address (blue text)

- Building number

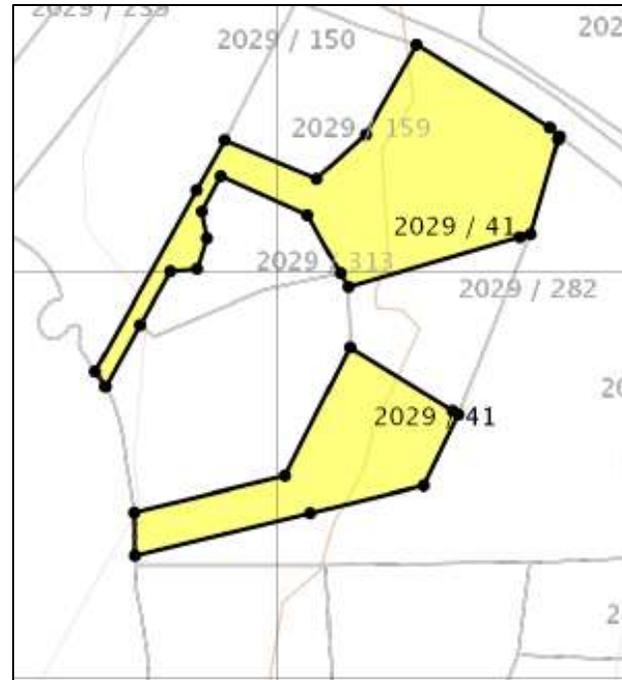


Examples of cadastral units

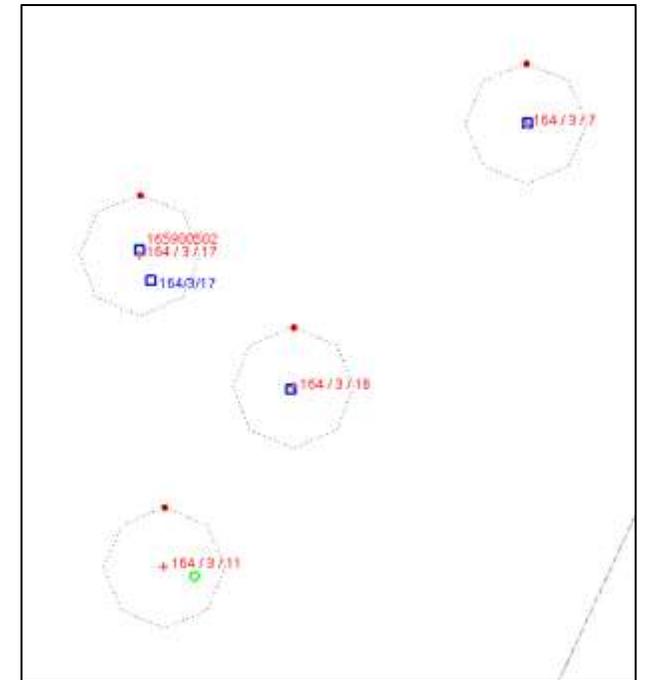
Cadastral unit with one parcel



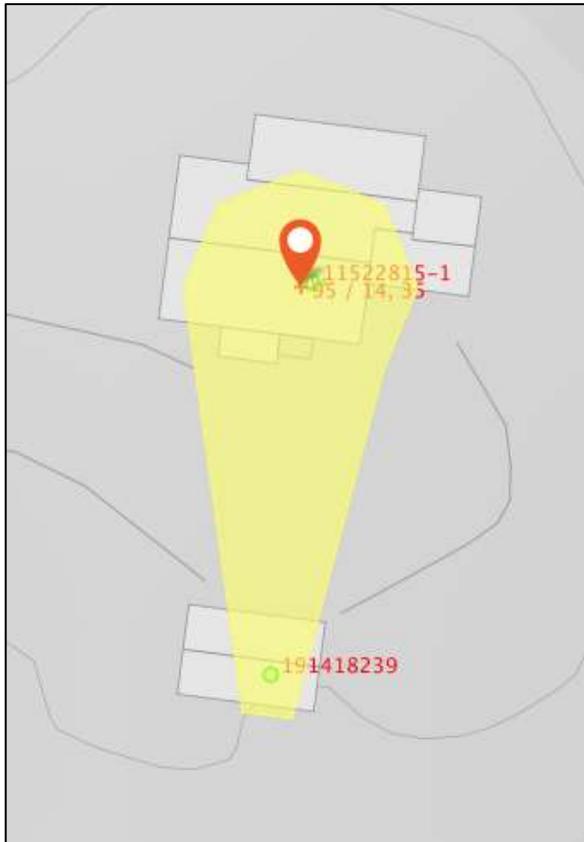
... with two parcels



... marked as a circle
(e.g. leased land without an area)



Data quality examples

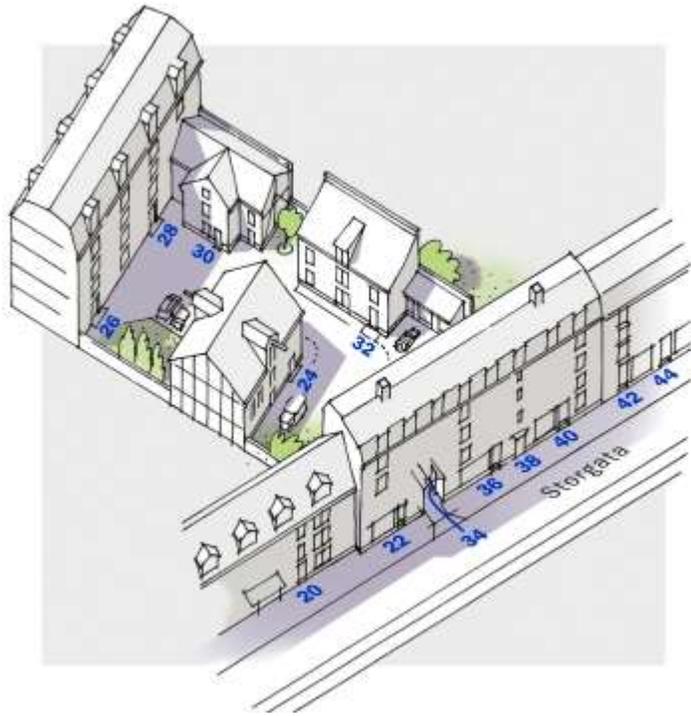


Dimension	Measurement parameters	Status
Accuracy	Cadastral units with one or more fictitious boundaries	June 2021: 116,229
Completeness	Cadastral units without a parcel in the cadastre map	June 2021: 81,501



Parcel registered with two or more cadastral number

Official addresses



Address name: Road- or street name and address code

Address number: Own Address number to every main entrance, at street level

Dwelling number: Apartment blocks, unique address for all dwellings

Dimension	Measurement parameters	Status
Completeness	Units with cadastral number as the address	May 2021: 67,467

Buildings

Egenskap	Verdi
Bygning	157378538
Kommune	3054 LUNNER
Bygningstype	111 - Enebolig
Næringsgruppe	Bolig
Bygningsstatus	Tatt i bruk
Opprinnelseskode	Massivregistrering
Bruksenheter	
-Taubanen 22	H0101
-[Mangler adresse]	
Etasjer	
-H01	
-Antall boenheter	1
Bruksareal bolig	94,0
Bruksareal annet	0,0
Bruksareal totalt	94,0
Bruttoareal bolig	0,0
Bruttoareal annet	0,0
Alternativt areal	0,0
Alternativt areal 2	0,0
-K01	
-Antall boenheter	0
Bruksareal bolig	48,0
Bruksareal annet	0,0
Bruksareal totalt	48,0
Bruttoareal bolig	0,0
Bruttoareal annet	0,0
Alternativt areal	0,0
Alternativt areal 2	0,0

- Each building are given a 9 digit unique identification number, Building identification number (BID). The BID are given coordinates.
- BID and coordinates are linked with the address of the property
- Then we record different datafields, e.g. areas

Area data field in buildings registered from 2010 → Percentage shows the share without the data fields (may 2021)

BRA – usable area	7 %
BTA – gross area	84 %

Strategy to improve the data quality

The ambition is for the cadastre to have the right data content and data quality necessary for processes that use cadastral data and for user needs.

Goal 1: A common practice for cadastral registration in all municipalities.

Goal 2: Improving the quality of priority areas or data fields.

Goal 3: Streamlining the processes for collecting and updating cadastral data.

Key Performance Indicators (KPI)

We now provide a set of key performance indicators. They must be seen and used together.

KPI	Quality dimension	Where we want to be at the end of 2025
	CADASTRAL UNIT (MATRIKKELENHET)	
M1	Completeness: Parcel with two or more cadastral numbers linked to it	In 2021/2022 a downgoing trend We need more experience.
M2	Completeness: Cadastral units without a parcel	Real property: 99 % Leased land: 95 % Farm commons: 100 %
M3	Completeness: Area missing cadastral number (divided into land and water area)	We have started to measure but need more experience.
M4	Accuracy: Recording cadastral units without fulfilling the cadastral survey within the given deadline	In 2021/2022 a downgoing trend Possible maximum: 1,500
	ADRESSE	
A1	Completeness: Road/street addresses	2022: 98 %
A2	Accuracy: Recording addresses	Giving and recording addresses according to the addressprinciples
	BUILDING	
B1	Completeness: Statutory data fields are recorded <ul style="list-style-type: none"> Area in buildings recorded after 2010 Area in buildings recorded after 2022 	BYA (built-up area): 90 %, BRA (usable area): 95 % BTA (gross area): 90 %
B2	Accuracy and Compliance: Building data recorded within the five-day deadline	90 % within the five-day deadline

Thank you for your attention!

