LANTMÄTERIET

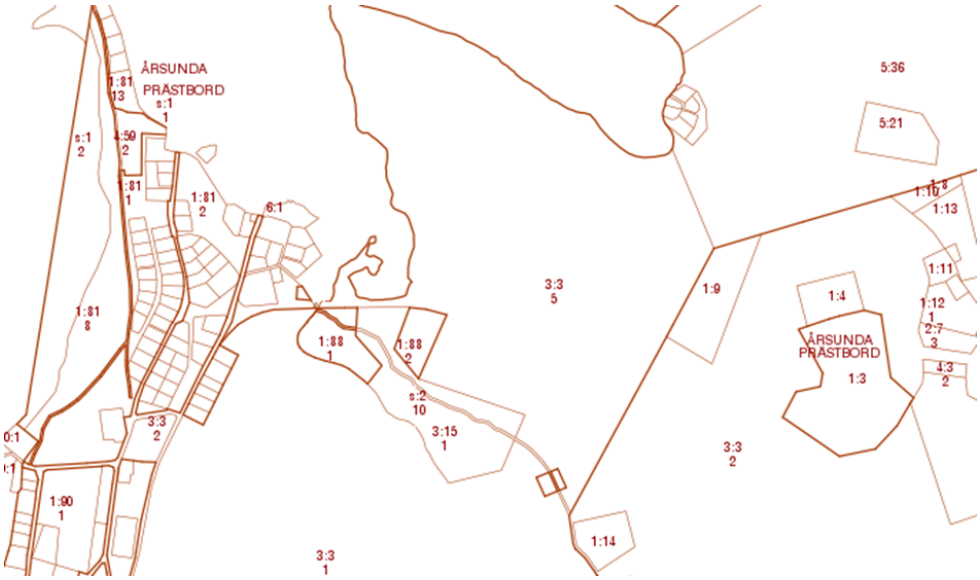
2020-10-27

PRODUCT DESCRIPTION

Cadastral parcel View service

DOCUMENT VERSION: 2.3
CONCERNING THE INTERFACE VERSION OF THE SERVICE: 1.2

Figure 1 Example on real property classification



Innehållsförteckning

1 General description

Cadastral parcel View service is one of the map and image viewing services provided by Lantmäteriet. The service displays information from Lantmäteriet's basic data layer.

Please note! The representation on the map has no legal effect. For more information refer to chapter 2 Quality description.

1.1 Contents

Cadastral parcel View service presents real property information in ten separate layers:

- Other administrative divisions
- Independent fishing
- Text
- Boundary point, text
- Boundary point
- Real Property boundary
- Boundary point, mean square error.
- Real Property boundary, mean square error.
- Boundary point, quality
- Real Property boundary, quality

The service allows the user to change the presentation style of the layers by selecting different styles (see section 3.2).

In the layers *Boundary point, quality* and *Real Property boundary, quality* the information is presented thematically based on the mean square error in the position. In the layers *Boundary point, mean square error* and *Real Property boundary, mean square error* the mean square error is presented as text.

The service also presents real property areas according to the EU-directive Inspire data specification for the theme Cadastral parcels (CP) in three separate layers.

- Cadastral parcel
- Cadastral zoning
- Cadastral boundary

1.1.1 OTHER ADMINISTRATIVE DIVISION

The layer *Other administrative divisions* are presented only with a standard style.

Civil parish division is a historical boundary for land register civil parish and lacks connections with other boundaries. The civil parish boundary is presented regardless of whether it lacks connection with other boundaries or not. The civil parish is presented with a civil parish boundary as a boundary line. Civil parish boundary should not be confused with civil parish name

boundary which is only presented on Gotland (see section 1.1.2). Civil parish names are only stated for enclaves.

The layer includes:

- Civil parish boundary
- Civil parish name, only on civil parish enclave (SN)

Figure 2 Example image in scale 1:7 500.

1.1.2 SEPERATED FISHERY

That fishing is separated means that it is separate from the ownership of the water.

The layer shows the different types of separated fishery as presented in the Cadastral Index Map: joint fishing and specific fishing lot.

Joint fishing is an area where the fishing is joint (the water can be joint or separate). Separate fishing parcel is an area that can belong to a real property that only has fishing or a real property that has both land and fishing.

If the fishing in the lake is owned in the same way as the water, it is called bound fishing. It can be bound individual fishing or bound joint fishing. Bound fishing is not presented on the Cadastral Index Map.

The layer includes:

- Fishing area boundary
- Line-presented joint fishing and separate fishing lot.
- Point-presented joint fishing and separate fishing lot
- Enclosing line for fishing.
- Register number for fishing.
- Fishing area.

Figure 3 Example image in scale 1:30 000, style for light background.

Figure 4 Example image in scale 1:30 000, style for light background.

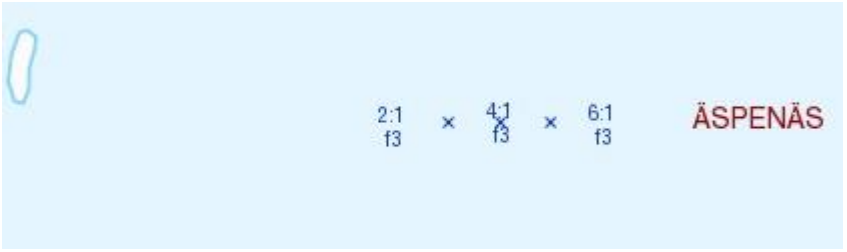
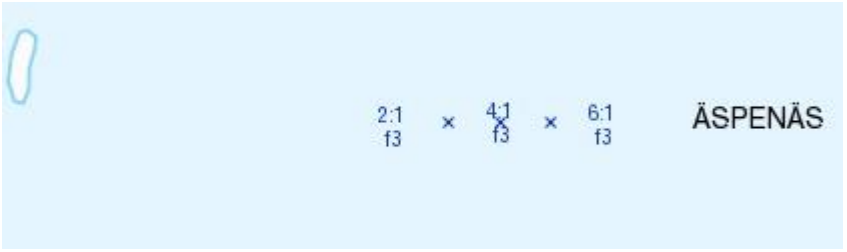


Figure 5 Example image in scale 1:30 000, style for dark background.

Figure 6 Example image in scale 1:30 000, style for dark background.

Figure 7 Example image in scale 1:30 000, according to the Cadastral Index Map's style.

Figure 8 Example image in scale 1:3 000, according to the Cadastral Index Map's style.



1.1.3 REAL PROPERTY DIVISION

Real Property division is displayed in four different layers:

- *Text*
- *Boundary point, text*
- *Boundary point*
- *Real property boundary*

The layers can be presented with three different styles. The first is a standard style adapted for a light background, for example the Topographic web map View service. The second is intended to be used against a dark background, for example, the Orthophoto View service. The third is according to the style of Cadastral Index Map.

TEXT

The layer shows cartographically placed register numbers and area numbers as well as cartographically placed administrative names.

The layer includes:

- Municipality name, only on municipality enclaves.
- District and precinct district names.
- Register numbers.
- Register numbers within square brackets (unofficially parcelled real properties).
- Register number within parentheses (real properties with uncertain location).
- Register number for three-dimensional space.

Figure 9 Example image in scale 1:3 600, style for light background.

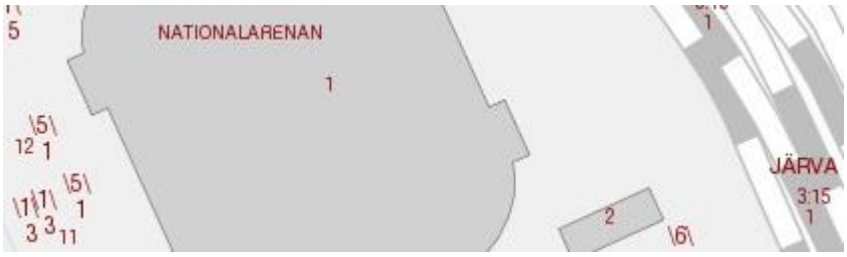


Figure 10 Example image in scale 1:3 600, style for dark background.

Figure 11 Example image in scale 1:3 600, according to the Cadastral Index Map's style.

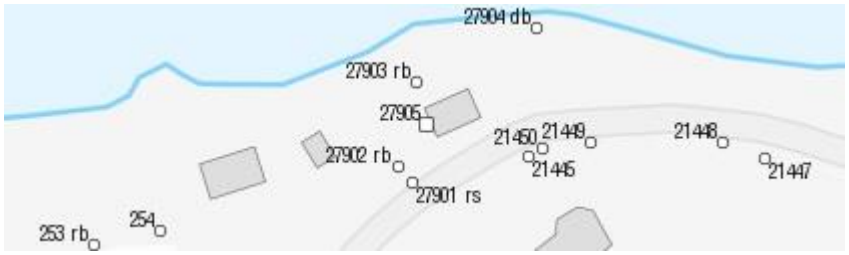
BOUNDARY POINT, TEXT

The layer shows serial numbers and marking type for real property boundary points and witness mark as well as "Rr" and serial number for national border markers.

Figure 12 Example image in scale 1:2 000, style for light background.

Figure 13 Example image in scale 1:2 000, style for dark background.

Figure 14 Example image in scale 1:2 000, according to the Cadastral Index Map's style.



In the table below, the different types of markings used are described.

Table 1. The various types of markings used for boundary points are listed and described.

Type of marking	Description	Type of marking	Description
	No information	Mp	Target point (spire etc.)
db	Peg in rock	Ms	Brass screw
dg	Peg in concrete casting	Om	Unmarked boundary point
dh	Peg in building	Rb	Pipe in rock
dm	Peg in wall	Rg	Pipe in concrete casting
ds	Peg in earthbound stone	Rgd	Pipe in casting with cover
fr	Boundary mark (Five stone cairn)	Rm	Pipe in ground
fs	Fixed signal (photogramme-try)	Rmd	Pipe in ground with cover
gr	Glazed pipe	Rn	Hoar stone (border stone)
graf	Graphic point	Rs	Pipe in earthbound stone
hb	Drill-hole in rock	Sa	Spike in asphalt
hg	Drill-hole in concrete cast-ing	sb	Spike in rock
hs	Drill hole in earthbound stone	sg	Spike in concrete casting
jk	Iron bracket	ss	Spike in earthbound stone
js	Iron bar	st	Fence post
kv	Bracket for wall marker	tp	Wooden pole

BOUNDARY POINT

The layer contains national border markers, real property boundary point and witness mark. Boundary points have legal significance on the ground.

Figure 15 Example image in scale 1: 3 500, style for light background.

Figure 16 Example image in scale 1: 3 500, style for dark background.

Figure 17 Example image in scale 1: 3 500, according to the Cadastral Index Map's style.

REAL PROPERTY BOUNDARY

The layer contains the real property division found in the Cadastral Index Map. The boundary lines are hierarchically coded from national to real property boundary. Within the real property classification there are areas that are not investigated and therefore lacks register designation, for example uninvestigated joint properties.

When the real property division is partly unresolved enclosing lines may occur.

Real property shoreline is a type of enclosing line along the shoreline that is used when it is unclear if any water belongs to the real property/joint property.

Enclosing line for real property boundary according to Swedish Land and Cadastral Legislation (JB 1:5) is used when the real property/joint property has water but the boundaries in the water are not resolved.

The layer also includes line-presented joint properties that is shown in all styles.

Point-presented real properties and joint properties are also shown. Some of these are so-called share real properties which means that the location only indicates that the property has a share in the area (usually an unregistered joint property). Real properties and joint properties with an uncertain position and whose geographical coverage cannot be presented with boundaries are point-presented. Point-presented real properties and joint properties are shown in all styles.

The layer includes:

- Territorial waters, national, county, municipality, district, precinct, and real property boundary
- County, municipality, district, and real property boundary JB 1:5
- Boundary for three-dimensional space
- Real property shoreline
- Enclosing line for real property division
- Enclosing line for real property division JB 1:5
- Civil parish name boundary (Gotland)
- Civil parish name boundary JB 1:5 (Gotland)
- Line-presented joint property
- Point-presented real property and joint property
- Angle bracket symbol for real property, merging symbol.
- Angle bracket symbol for real property, small merging symbol

Figure 18 Example image in scale 1:15 000, style for light background.

Figure 19 Example image in scale 1:15 000, style for dark background.

Figure 20 Example image in scale 1:3 700, style for dark background.

Figure 21 Example image in scale 1:15 000, according to the Cadastral Index Map's style.

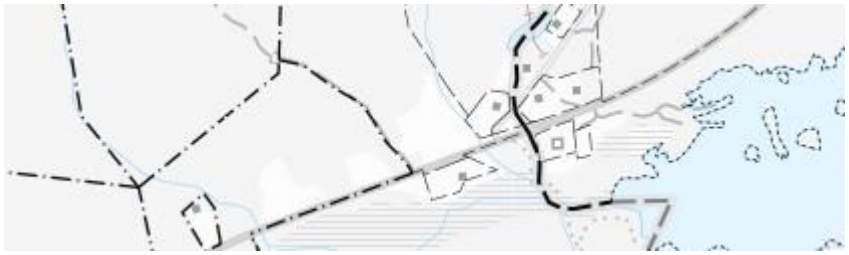


Figure 22 Example image in scale 1:3 700, according to the Cadastral Index Map's style.

1.1.4 REAL PROPERTY CLASSIFICATION THEMATIC

The real property classification is shown thematically in four different layers:

- *Boundary point, mean square error.*
- *Real property boundary, mean square error.*
- *Boundary point, quality.*
- *Real property boundary, quality.*

In the layers *Boundary point, quality* and *Real property boundary, quality* the real property boundaries and boundary points are thematically represented based on the accuracy (mean square error) of the positional information. The mean square error is estimated from the measuring methods used during data capture and can be used as an indication of how useful data is in different contexts.

In the layers *Boundary point, mean square error* and *Real property boundary, mean square error* the positional accuracy is presented as text and with a standard style.

The layer *Real property boundary, quality* is presented with a standard style in four levels and a style in six levels. The layer *Boundary point, quality* is

presented with four styles for quality; a standard style in four levels, a style with six levels and two different styles that highlights quality improved points in four and six levels, respectively.

The quality marking on the Cadastral Index Map includes origin and positional accuracy and is applied to each individual detail.

Mean square error is presented with the following interval and colouring.

Tabell 2 Description of colour coding for intervals of mean square error divided into 4 levels.

Mean square error (m) in 4 levels	Colour on boundary line and boundary point	Visualisation of the colour
0.001–0.050	Green	
0.051–0.200	Yellow	
0.201–0.500	Orange	
>0.500	Red	

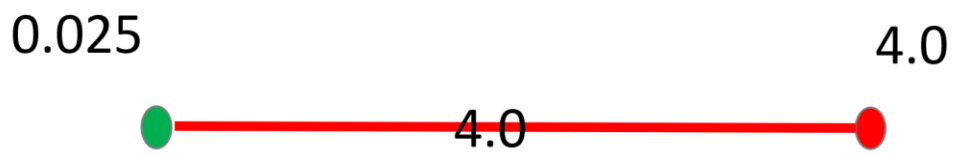
Table 3. Description of colour coding for intervals of mean square error divided into 6 levels.

Mean square error (m) in 6 levels	Colour on boundary line and boundary point	Visualisation of the colour
0.001–0.030	Green	
0.031–0.050	Light green	
0.051–0.200	Yellow	
0.201–0.500	Orange	
0.501–4.449	Red	
4.500–50.000	Black	

I general, boundary points presented with green colour (mean square error up to 0,05 m) are measured with geodetic methods. Those with yellow or orange colour (mean square error between 0.051 and 0.500 m) are digitalized from good source material, and those in red and black (mean square error worse than 0.500) are digitalized from poorer or more small-scale material, such as the Economic map at a scale of 1:10 000.

A property boundary that connects to boundary points with different quality levels will have its mean error based on the boundary point with the lowest positional accuracy, i.e., the highest mean square error.

Figure 23 Example image, merging boundary line gets the highest value of the two boundary points' mean square error.



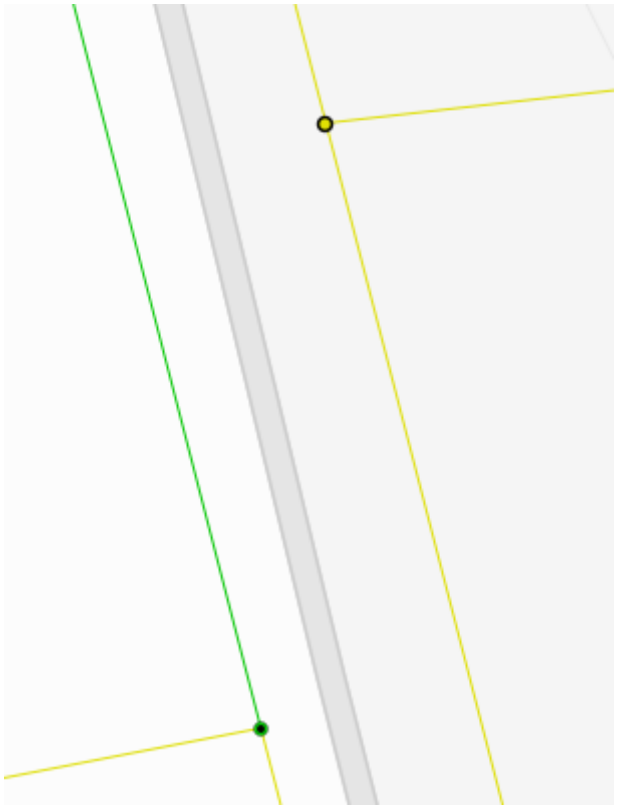
The layer *Boundary point, quality* can, as mentioned earlier, be presented with a style that clarifies which boundary points have had their positional accuracy improved through quality improving actions.

The actions can be:

a) The boundary point has had improved positional accuracy through a new measurement.
b) The boundary point has had improved positional accuracy through adjustment/transformation carried out using nearby boundary points with higher quality.

The new mean square error varies depending on the measurement method used and the mean square error resulting from the transformation. Generally, it cannot be predicted what value the mean square error will become after a quality improvement.

Figure 24 Example image shows two boundary points whose quality has been improved.

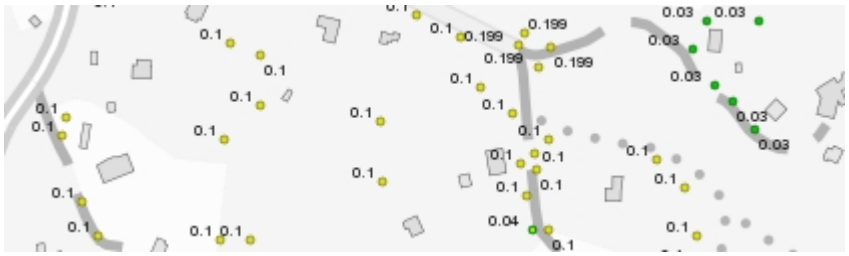


The green boundary point with a black dot inside represents a boundary point that has been re-measured using a measurement method resulting in a mean square error less than 0.031 m. It has improved according to point **a** above. The yellow boundary points with a thick black contour have had their quality improved through a transformation with a residual mean square error greater than 0.050 m and less than 0.201 m. It is improved according to point **b** above.

BOUNDARTY POINT, MEAN SQUARE ERROR

The layer presents positional accuracy for boundary points. Mean square error in the positional information is displayed at each boundary point.

Figure 25 Example image in scale 1:4 000.



REAL PROPERTY BOUNDARY, MEAN SQUARE ERROR

The layer presents positional accuracy for boundaries. The mean square error in the positional information is displayed at each boundary line.

Figure 26 Example image in scale 1:4 000.

BOUNDARY POINT, QUALITY

The content of the layer is the same as in the layer Boundary point, but the information is presented thematically based on the mean square error.

Figure 27 Example image in scale 1:4 000, style quality.

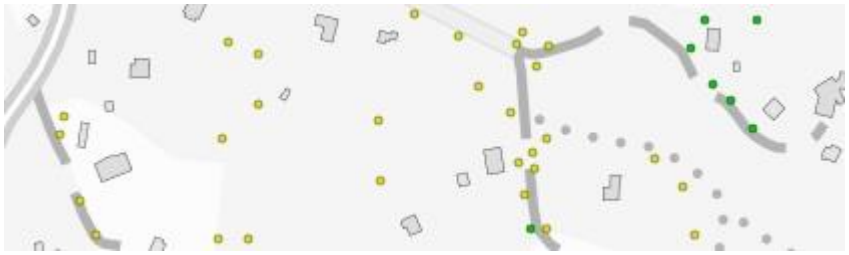
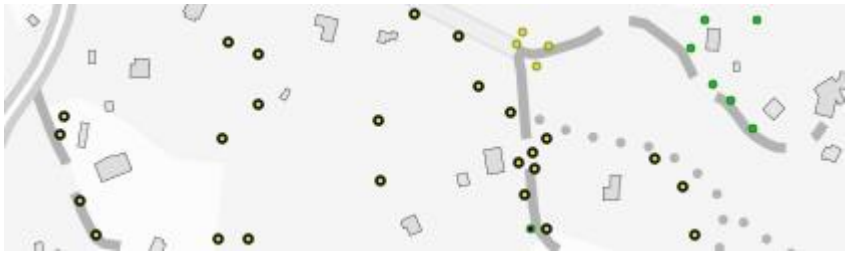


Figure 28 Example image in scale 1:4 000, style quality improved.



REAL PROPERTY BOUNDARY, QUALITY

The content of the layer is the same as in the layer *Real property boundary*, but the information is presented thematically based on the mean square error.

Figure 29 Example image in scale 1:4 000.

1.1.5 REAL PROPERTY CLASSIFICATION ACCORDING TO INSPIRE

Figure 1. Three images showing Cadastral zoning, Cadastral parcels, and Cadastral boundary.

The layers with Inspire themes include polygons for real property, district and municipality, property unit designation from base data and real property boundaries. The information is adjusted for display at a scale of 1:10 000. The content of the service is divided into three separate layers:

Cadastral zoning contains polygons for district and municipalities, as well as district names.

Cadastral parcels contain polygons for real property and municipalities, as well as property unit designations.

Cadastral boundary contains real property boundaries, precinct district boundaries, civil parish boundaries, district boundaries, municipality boundaries, county boundaries and national boundaries.

The cartography follows the specification for Inspire.

1.2 Geographic coverage

Cadastral parcel View service covers the entire Sweden.

1.3 Coordinate system

Plane: See the technical description

2 Quality Description

Lantmäteriet's Real Property Register contains information about all real property in Sweden. One part of the Real Property Register is the digital Cadastral Index Map (DRK), according to Section 37 of the Real Property Register Ordinance: the following is presented:

subdivision into counties and municipalities (administrative division)
the extent of real property and joint property areas (real property division)
subdivision into civil parishes (historical division)

The real property division in Cadastral parcel View service corresponds to the boundaries in the Cadastral Index Map. It is important to remember that the contents of the Cadastral Index Map do not have any legal effect. It is the cadastral dossier, along with decisions and protocols, that constitutes the legal documents. These documents are archived at Lantmäteriet.

If the real property information in this vector product is to be used as the basis for use or authority decision requiring the highest level of updating and positional accuracy, it is recommended to contact Lantmäteriet's customer centre to obtain access to the current plan decision documents. Refer to Lantmäteriets website for more information.

2.1 Purpose and utility

The real property division is suitable for obtaining an overview of the relationship between properties.

The purpose of providing a viewing service with information on positional accuracy is to enable users to gain a comprehensive understanding of the quality of property boundaries and boundary points within an area. Examples of possible use cases include:

- Lantmäteriet - cadastral operations, archive investigations
- Municipalities – detailed development plan work, building permit processing.
- Government agencies - infrastructure planning, GIS analyses
- State-owned companies – forestry, property management
- Forestry companies – GPS and machine guidance
- Private companies – construction and infrastructure projects, real estate agency, forestry, etc.

2.2 Data Capture

2.2.1 LINEAGE

The real property classification corresponds to the boundaries in the Cadastral Index Map. The Cadastral Index Map's property boundaries have been established over a long period and are created using various methods, resulting in highly varied data quality. There are boundaries in rural areas originating from land reforms in the mid-19th century, and these boundaries may have a margin of error of several meters. Today, new properties are surveyed using satellite positioning which can have an accuracy of a few centimetres.

2.3 Maintenance

The changes are completely controlled by the cadastral procedure carried out within Lantmäteriet and Municipal cadastral authorities (KLM).

2.3.1 MAINTENANCE FREQUENCY

The real property division in the Cadastral Index Map is continuously updated by Lantmäteriet and Municipal cadastral authorities (KLM), in connection with real property information. In some KLMs, updates occur periodically, meaning they submit the changes monthly.

After the information update is completed in the Cadastral Index Map, it takes approximately one hour before it is displayed in the service.

2.4 Data Quality

2.4.1 COMPLETENESS

Sweden's real property information is not fully investigated. This means that there are objects that only exist in the dossiers but are not presented in the Real Property Register.

There are also real properties and joint properties presented with incomplete (part of a polygon) or a simplified geometry (point or line).

There are areas that are not investigated and therefore lack information in the Real Property Register's textual section, these are presented in the map and have an identity. Here, there are completely investigated areas and areas that are known to be joint properties but have not been registered.

There are also older joint properties which are registered but lack geometry. These are not included in the Cadastral parcel View service.

Many boundary points are missing in the Cadastral Index Map. This especially applies to older boundary points which have not been stored in the database. These can be found in dossiers and old registers. Efforts are under way to supplement the database, partly with boundary points from municipalities and partly by transforming older boundary points into the correct coordinate system. Thus, completeness is continuously improving.

The text for boundary points sometimes has a marking type indicating the type of marking on the ground.

This attribute exists for approximately 35% of boundary points.

2.4.2 LOGICAL CONSISTENCY

There can be deficiencies in logical consistency, meaning that the data structure is not correct. Logical consistency is continuously checked and corrected. Some errors are due to insufficient synchronization between databases cannot be avoided. However, they are corrected within a few days.

The coordinates of the boundary point and the coordinates of the breaking points on the boundary line should correspond.

2.4.3 THEMATIC ACCURACY

Isolated errors may occur, for example, a misclassification where a municipality boundary has been coded incorrectly and become a property boundary., but in general the thematic accuracy is high.

2.4.4 TEMPORAL QUALITY

In Cadastral parcel View service, the information that is currently up to date is shown according to the updates made in Lantmäteriet's databases.

2.4.5 POSITIONAL UNCERTAINTY

The boundaries have their origin over a long period and have been established with widely varying methods. The positional accuracy of the boundaries can vary from a few centimetres to several metres.

The positional accuracy depends on the measurement method used during data capture and describes how well a given position corresponds to the actual position in the terrain for the chosen object.

Positional uncertainty is stored in the form of a mean square error. The mean square error is specified with millimetre accuracy and refers to the positional uncertainty in relation to the coordinate system, e.g., SWEREF 99 TM, in which it is presented. In cases where the boundary points of a real property are correct positioned in relation to each other, i.e., high internal positional uncertainty, they may still be incorrect positioned in relation to the principal coordinate system, i.e., lower external positional uncertainty.

The mean square error is almost always calculated or estimated based on the measurement methods used in data capture. The value may be considered as an assumed value for the applied measurement method. The value may be better or worse, but it provides a certain understanding of the positional uncertainty of boundaries and boundary points.

For all line and point objects, a value for positional uncertainty is provided. If surveyed boundary points exist, the boundary lines are assigned a mean square error derived from those boundary points. The principle is that the

mean square error of the lines originates from the surveyed boundary point with the highest mean square error.

In the work of quality improvement an area is examined, and for certain points a new measurement is made with higher positional accuracy. See chapter 1.1.4.

3 Layout and plotting of data

For detailed information about how data is displayed, refer to the separate symbol legend. For easy access to the symbol legend directly in the service , use GetLegendGraphic, see technical description.

3.1 Plotting in different scales

The table below describes the rendering of real property information in various scales.

The scale intervals are approximate and depend partly on the client where the map is displayed.

Table 4. The table illustrates the rendering of real property information at different scales.

Scale from	Scale to	Layer	Information type	Selection
1:1	1:60,000	Other administrative division	Line	All content.
1:1	1:60,000	Separated fishery	Line and polygon	All content.
1:1	1:60,000	Text	Text	Municipality name.
1:1	1:60,000	Boundary point	Point	National border marker.
1:1	1:60,000	Real property boundary	Line	All content except angle bracket symbol for real property and point-presented real property and joint property.
1:1	1:60,000	Real property boundary, quality	Line	All content.
1:1	1:30,000	Separated fishery	Text	Register number, except for point-presented fishing.
1:1	1:30,000	Text	Text	District names and precinct district names as well as register numbers

Scale from	Scale to	Layer	Information type	Selection
				outside urban area or for larger areas and areas within urban area.
1:1	1:15,000	Separated fishery	Point	Point-presented fishing
1:1	1:15,000	Real property boundary	Point	Point-presented real property and joint property.
1:1	1:11,000	Real property boundary	Line	Angle bracket symbol for real property.
1:1	1:7,500	Separated fishery	Text	Register number for point-presented fishing.
1:1	1:5,600	Boundary point, text	Text	National border marker text.
1:1	1:5,600	Boundary point	Point	All content.
1:1	1:5,600	Boundary point, mean square error	Text	All content.
1:1	1:5,600	Real property boundary, mean square error	Text	All content.
1:1	1:5,600	Boundary point, quality	Point	All content.
1:1	1:3,700	Boundary point, text	Text	Serial number.
1:1	1:3,700	Text	Text	Register number within urban areas or for smaller areas and areas outside urban areas.
1:1	1:2,800	Boundary point, text	Text	Marking type.
1:1	1:1,800	Text	Text	Register numbers for areas and spaces, e.g., condominium and terraced house lots.

Scale from	Scale to	Layer	Information type	Selection
1:1	1:19,500	Cadastral zoning	Polygon and text	District, municipalities, and district names.
1:1	1:19,500	Cadastral parcels	Polygon, line, and text	Real property, municipality, and property unit designation.
1:1	1:19,500	Cadastral boundary	Polygon and line	Real property boundaries, precinct district boundaries, civil parish boundaries, district boundaries, municipality boundaries, county boundaries and international boundaries

3.2 Description of presentation styles

The information in the Cadastral parcel View service, as previously described, is divided into different layers. For each layer, there are one or more predefined presentation styles. By changing the style for a layer, the user can influence how the information in that specific layer should be presented.

For all layers included in the service there is a default style designed to be used against a light background.

For the layers *Separated fishing; Text; Boundary point, text; Boundary point* and *Real property boundary* there are two additional predefined styles, one adapted to be used against a dark background and one according to the Cadastral Index Map's style.

For the layer Boundary point, quality, in addition to the default style, there is a style that highlights quality-improved points.

In the tables below, the various predefined styles are described, along with their content, for each layer in the service.

Table 5. The table illustrates layers, styles, and their descriptions.

Layer	Style	Description
Other administrative division	Lantmäteriet's civil parish classification	Default style
Separated fishery	Lantmäteriet's fishing boundaries etc.	Default style adapted for light background
	Lantmäteriet's fishing boundaries etc. adapted for dark background	A style adapted for dark background
	Lantmäteriet's fishing boundaries etc. with Cadastral Index Map's style	A style with Cadastral Index Map's style
Text	Lantmäteriet's real property text	Default style adapted for light background
	Lantmäteriet's real property text adapted for dark background	A style adapted for dark background
	Lantmäteriet's real property text with Cadastral Index Map's style	A style with Cadastral Index Map's style
Boundary point, text	Lantmäteriet's boundary point text	Default style adapted for light background

Layer	Style	Description
	Lantmäteriet's boundary point text adapted for dark background	A style adapted for dark background
	Lantmäteriet's boundary point text with Cadastral Index Map's style	A style with Cadastral Index Map's style
Boundary point	Lantmäteriet's boundary points	Default style adapted for light background
	Lantmäteriet's boundary points adapted for dark background	A style adapted for dark background
	Lantmäteriet's boundary points with Cadastral Index Map's style	A style with Cadastral Index Map's style
Real property boundary	Lantmäteriet's real property boundaries	Default style adapted for light background
	Lantmäteriet's real property boundaries adapted for dark background	A style adapted for dark background
	Lantmäteriet's real property boundaries with Cadastral Index Map's style	A style with Cadastral Index Map's style
Boundary point, mean square error	Mean square error for boundary points	Default style
Real property boundary, mean square error	Mean square error for real property boundaries	Default style
Boundary point, quality	Boundary points, quality in 4 levels	Default style with quality in 4 levels
	Boundary points, quality in 6 levels	A style with quality in 6 levels
	Boundary points, quality-improved in 4 levels	A style indicating if a point has been quality-improved in 4 levels.
	Boundary points, quality-improved in 6 levels	A style indicating if a point has been quality-improved in 6 levels.

Layer	Style	Description
Real property boundary, quality	Boundaries, quality in 4 levels	Default style with quality in 4 levels
	Boundaries, quality in 6 levels	A style in 6 levels
Cadastral Parcel (Inspire)	Polygons for real property and municipality with property unit designations	Default style
	Property unit designation	Only text for real properties
	Real property boundaries	Only real property boundaries
	Central point for the real property	Only central point
Cadastral Zoning (Inspire)	Polygon for district and municipality with district name	Default style
Cadastral Boundary (Inspire)	Real property boundaries, precinct district boundaries, civil parish boundaries, district boundaries, national boundaries, municipality, and county boundaries	Default style

Table 6. Style for other administrative division and scale range for display.

Other administrative division	STYLE	SCALE
Description	**Light background**	
Civil parish boundary	X	1:1 - 1:60,000
Civil parish names, only on civil parish enclaves	X	1:1 - 1:60,000

Table 7. Style for separated fishery and scale range for display.

Separated fishery	**STYLE**			**SCALE**
Description	**Light back-ground**	**Dark back-ground**	**Cadastral Index Map**	
Fishing area boundary	X	X	X	1:1 - 1:60,000
Line-represented joint fishing and separate fishing parcel	X	X	X	1:1 - 1:60,000
Enclosing line for fishing	X	X	X	1:1 - 1:60,000
Fishing area	X	X	X	1:1 - 1:60,000
Register number for fishing	X	X	X	1:1 - 1:30,000
Point-represented joint fishing and separate fishing parcel	X	X	X	1:1 - 1:15,000
Register number for point-presented fishing	X	X	X	1:1 – 1:7,500

Table 8. Style for register text and scale range for display.

Text	**STYLE**			**SCALE**
Description	**Light background**	**Dark back-ground**	**Light back-ground**	**Dark back-ground**
Municipality names, only on municipality enclaves	X	X	X	1:1 - 1:60,000
District names	X	X	X	1:1 - 1:30,000
Precinct district names	X	X	X	1:1 - 1:30,000
Register number outside built-up areas or for larger areas and spaces within built-up areas. Exceptions are texts that cannot be displayed due to space constraints.		X	X	1:15,000 – 1:30,000

Text	STYLE			SCALE
Description	**Light background**	**Dark back-ground**	**Light back-ground**	**Dark back-ground**
Register number outside built-up areas or for larger areas and spaces within built-up areas		X	X	1:1 – 15,000
Register number outside built-up areas or for larger areas and spaces within built-up areas. Exceptions are texts that cannot be displayed due to space con-straints.	X			1:7,500 – 1:30,000
Register number outside built-up areas or for larger areas and spaces within built-up areas.	X			1:1 – 7,500
Register numbers inside built-up areas or for smaller areas and spaces outside built-up areas.	X	X	X	1:1 – 1:3,700
Register numbers for areas and spaces, e.g., condominium and terraced house lots.			X	1:1 – 1:1,800

Table 9. Style for boundary point text and scale range for display

Boundary point, text	STYLE			SCALE
Description	**Light background**	**Dark back-ground**	**Light back-ground**	**Dark back-ground**
”Rr” and serial number for national boundary marker	X	X	X	1:1 – 1:5,600
Serial number for boundary point	X	X	X	1:1 – 1:3,700
Serial number for witness mark	X	X	X	1:1 – 1:3,700
Marking type for boundary point	X	X	X	1:1 – 1:2,800
Marking type for witness mark	X	X	X	1:1 – 1:2,800

Table 10. Style for boundary points and scale range for display

Boundary point	**STYLE**			**SCALE**
Description	**Light background**	**Dark back-ground**	**Light back-ground**	**Dark back-ground**
National boundary marker	X	X	X	1:1 – 1:60,000
Property boundary point	X	X	X	1:1 – 1:5,600
Witness mark		X	X	1:1 – 1:5,600

Table 11. Style for real property boundary and scale range for display

Real property boundary	**STYLE**			**SCALE**
Description	**Light background**	**Dark back-ground**	**Light back-ground**	**Dark back-ground**
Territorial waters boundary	X	X	X	1:1 – 1:60,000
National boundary	X	X	X	1:1 – 1:60,000
County boundary	X	X	X	1:1 – 1:60,000
County boundary, JB 1:5	X	X	X	1:1 – 1:60,000
Municipality boundary	X	X	X	1:1 – 1:60,000
Municipality boundary JB 1:5	X	X	X	1:1 – 1:60,000
District boundary	X	X	X	1:1 – 1:60,000
District boundary JB 1:5	X	X	X	1:1 – 1:60,000
Precinct boundary	X	X	X	1:1 – 1:60,000
Real property boundary	X	X	X	1:1 – 1:60,000
Real property boundary JB 1:5	X	X	X	1:1 – 1:60,000
Boundary for three-dimensional space.	X	X	X	1:1 – 1:60,000
Real property shoreline	X	X	X	1:1 – 1:60,000

Real property boundary	STYLE			SCALE
Description	**Light background**	**Dark back-ground**	**Light back-ground**	**Dark back-ground**
Enclosing line for real property division.	X	X	X	1:1 – 1:60,000
Enclosing line for real property division JB 1:5	X	X	X	1:1 – 1:60 000
Civil parish name boundary (Gotland)	X	X	X	1:1 – 1:60 000
Civil parish name boundary JB 1:5 (Gotland)	X	X	X	1:1 – 1:60 000
Line-presented joint property	X	X	X	1:1 – 1:60 000
Point-presented real property and joint property		X	X	1:1 – 1:15 000
Angle bracket symbol for real property	X	X	X	1:1 – 1:11 000
Small angle bracket symbol for real property	X	X	X	1:1 – 1:11 000
Point-presented real property and joint property	X			1:1 – 1:7 500

Table 12. Style for the mean error of the boundary points and scale range for display.

Boundary point, mean square error	STYLE	SCALE
Description	**Text, boundary point quality**	
National boundary marker	X	1:1 – 1:5,600
Property boundary point	X	1:1 – 1:5,600
Witness mark	X	1:1 – 1:5,600

Table 13. Style for the mean error of the real property boundaries and scale range for display.

Real property boundary, mean square error	**STYLE**	**SCALE**
Description	**Text, boundary quality**	
Territorial waters boundary	X	1:1 – 1:5,600
National boundary	X	1:1 – 1:5,600
County boundary	X	1:1 – 1:5,600
County boundary, JB 1:5	X	1:1 – 1:5,600
Municipality boundary	X	1:1 – 1:5,600
Municipality boundary JB 1:5	X	1:1 – 1:5,600
District boundary	X	1:1 – 1:5,600
District boundary JB 1:5	X	1:1 – 1:5,600
Precinct boundary	X	1:1 – 1:5,600
Real property boundary	X	1:1 – 1:5,600
Real property boundary JB 1:5	X	1:1 – 1:5,600
Boundary for three-dimensional space.	X	1:1 – 1:5,600
Real property shoreline	X	1:1 – 1:5,600
Enclosing line for real property division.	X	1:1 – 1:5,600
Enclosing line for real property division JB 1:5	X	1:1 – 1:5,600
Civil parish name boundary (Gotland)	X	1:1 – 1:5,600
Civil parish name boundary JB 1:5 (Gotland)	X	1:1 – 1:5,600

Table 14. Style for the quality level of the boundary points and scale range for display.

Boundary point, quality	**STYLE**				**SCALE**
Description	**Quality 4 levels**	**Quality 6 levels**	**Description**	**Quality 4 levels**	**Quality 6 levels**
National boundary marker	X	X	X	X	1:1 – 1:5,600
Property boundary point	X	X	X	X	1:1 – 1:5,600
Witness mark	X	X			1:1 – 1:5,600

Table 15. Style for the quality level of the real property boundaries and scale range for display.

Real property boundary, quality	**STYLE**		**SCALE**
Description	**Quality 4 levels**	**Quality 6 levels**	
Territorial waters boundary	X	X	1:1 – 1:60,000
National boundary	X	X	1:1 – 1:60,000
County boundary	X	X	1:1 – 1:60,000
County boundary, JB 1:5	X	X	1:1 – 1:60,000
Municipality boundary	X	X	1:1 – 1:60,000
Municipality boundary, JB 1:5	X	X	1:1 – 1:60,000
District boundary	X	X	1:1 – 1:60,000
District boundary, JB 1:5	X	X	1:1 – 1:60,000
Precinct boundary	X	X	1:1 – 1:60,000
Real property boundary	X	X	1:1 – 1:60,000
Real property boundary, JB 1:5	X	X	1:1 – 1:60,000
Boundary for three-dimensional space.	X	X	1:1 – 1:60,000

Real property boundary, quality	STYLE		SCALE
Description	**Quality 4 levels**	**Quality 6 levels**	
Real property shoreline	X	X	1:1 – 1:60,000
Enclosing line for real property division.	X	X	1:1 – 1:60,000
Enclosing line for real property division 1:5	X	X	1:1 – 1:60,000
Civil parish name boundary (Gotland)	X	X	1:1 – 1:60,000
Civil parish name boundary JB 1:5 (Gotland)	X	X	1:1 – 1:60,000

Table 16. Style for cadastral parcel and scale range for display.

Cadastral parcel	STYLE				SCALE
Description	**Default**	**Label on reference point**	**Boundaries only**	**Reference point only**	
Real property area	X		X		1:1 – 1:19,500
Municipality polygon	X		X		1:1 – 1:19,500
Property unit designation	X	X			1:1 – 1:19,500
The central point of the property				X	1:1 – 1:19,500

Table 17. Style for cadastral zoning and scale range for display.

Cadastral zoning	STYLE	SCALE
Description	**Default**	
District polygon	X	1:1 – 1:19,500
Municipality polygon	X	1:1 – 1:19,500
District name	X	1:1 – 1:19,500

Table 18. Style for cadastral boundary and scale range for display.

Cadastral boundary	**STYLE**	**SCALE**
Description	**Default**	
Real property boundary	X	1:1 – 1:19,500
Precinct boundary	X	1:1 – 1:19,500
District boundary	X	1:1 – 1:19,500
Civil parish boundary	X	1:1 – 1:19,500
Municipality boundary	X	1:1 – 1:19,500
County boundary	X	1:1 – 1:19,500
National boundary	X	1:1 – 1:19,500

3.3 Information for printing

The maximum image size in the service is 4096*4096 pixels to enable printing of map images in larger paper formats and/or in higher resolutions. User systems are recommended to only download the maximum image size when necessary for printing to avoid performance issues.

4 List of change

Table 19. List of change.

Version	Date	Reason and change from previous version
2.3	2020-10-27	First established version in English. (2024-01-16)