Transformation to theme GN

(ERM -> ELF Regional)

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ICT Policy Support Programme (PSP) Call 6 (Grant 325140)

Agenda

- ★ Source data
- ★ ELF data model
- ★ Matching tables
- ★ Issues

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ERM General settings

Coordinates	Geographical in degrees (longitude, latitude) with decimal fraction and based on the ETRS89 spatial reference system (which corresponds to WGS84 reference system)
Horizontal geometric resolution	equivalent precision of 5 meters or 0.2 in arc-seconds or 0.00005 in decimal degrees
Positional accuracy	125 meters
Minimum size of polygon	0.06 km²
Feature coding structure	DIGEST FACC Edition 2.1, Sep. 2001
Character sets used	UNICODE system or ISO8859 –series
Metadata	According to INSPIRE

ERM Core attributes

FCSubtype	Name of the Feature Type
inspireId	External identifier of the spatial object
beginLifespanVerion	Date and time at which this version of the spatial object was inserted or changed in the spatial data set
F_CODE	The Feature CODE using the DIGEST coding, i.e. “AP030” identifying the road feature.
ICC	The ISO 3166-1 2-char Country Code defining the country dataset to which the feature belongs. In case of more than one country, the codes are delimited by # and set in alphabetical order. This ICC attribute is added for the handling of the data in a seamless coverage.
SN	Symbol Number, a numeric identifier that will be used for easy viewing purpose
LEN/ARA	Length in km, Area in km^2 (where applicable)

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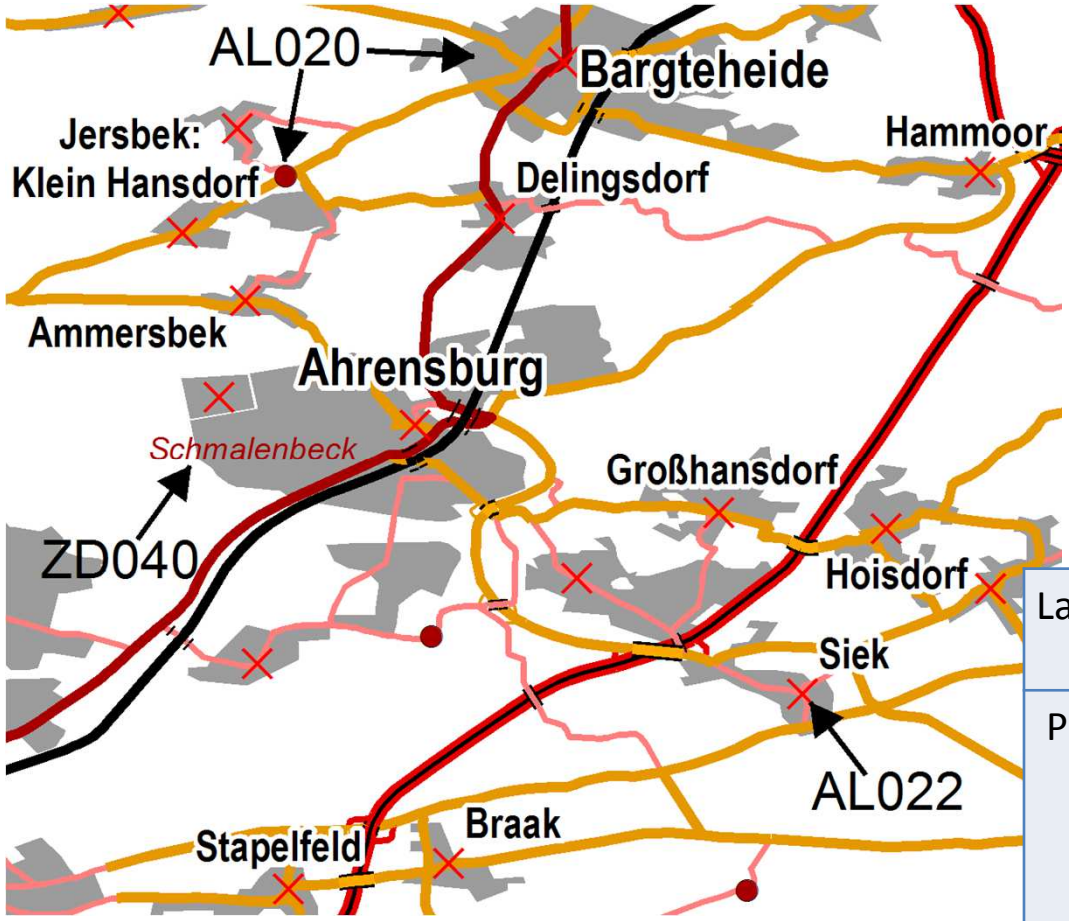
ERM Settlements (POP) - Areas



Layer	Feature class name	Feature class type	Feature codes
POP	BUILTUPA	Area	AL020
	BUILTUPP	Point	AL020, AL022
	URBANP	Point	ZD040

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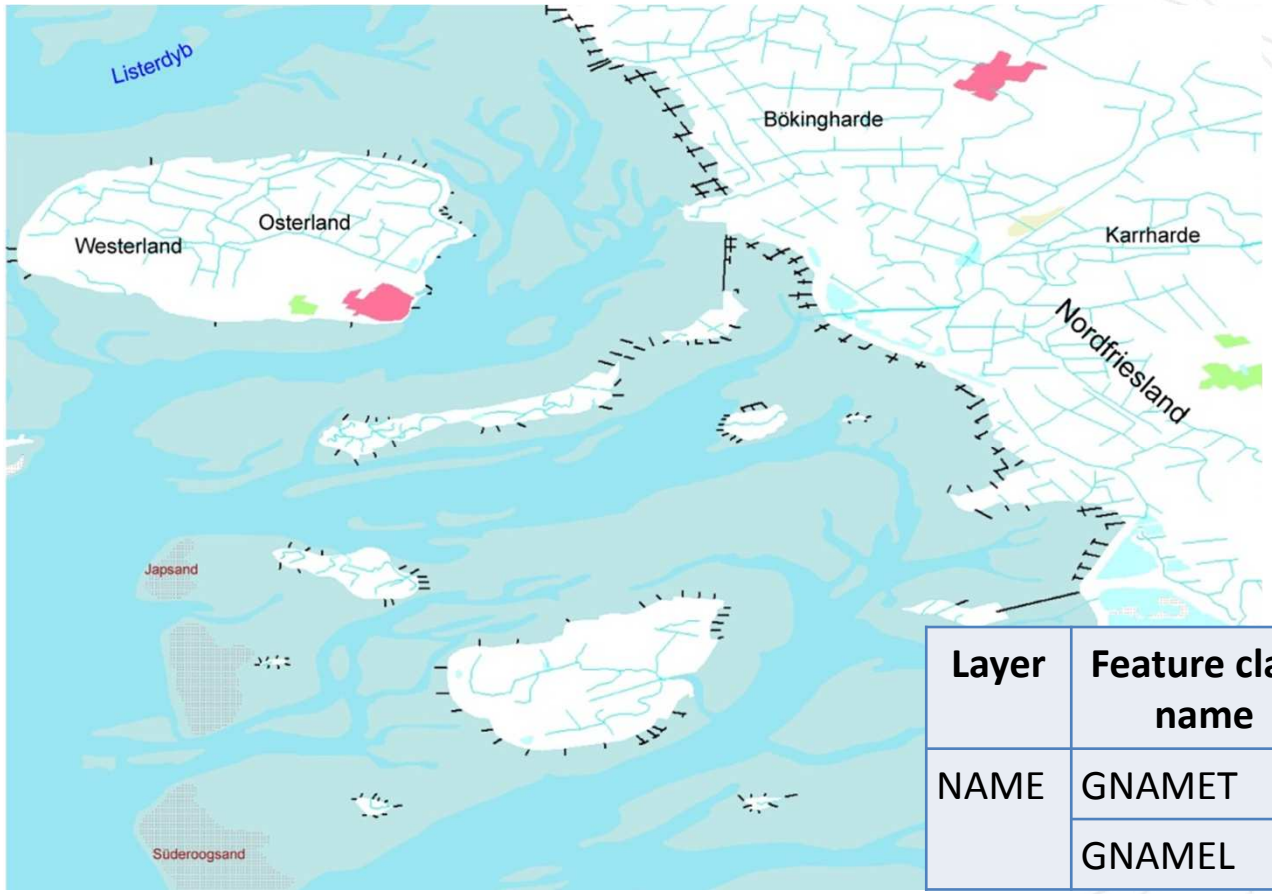
ERM Named Location (NAME) - Annotation



Layer	Feature class name	Feature class type	Feature codes
NAME	GNAMET	Text	ZD040
	GNAMEL	Line	ZD040

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ELF data model

To cover the content of ERM Settlements (POP) and Named Location (NAME):

- GN Geographical Names
  - Point representation of settlements (BuiltupP AL020 and AL022)
  - Geometry limited to GM_Point for Regional/Global LoD
  - Additional attributes

- LC Land Cover
  - Area representation of settlements (BuiltupA AL020)

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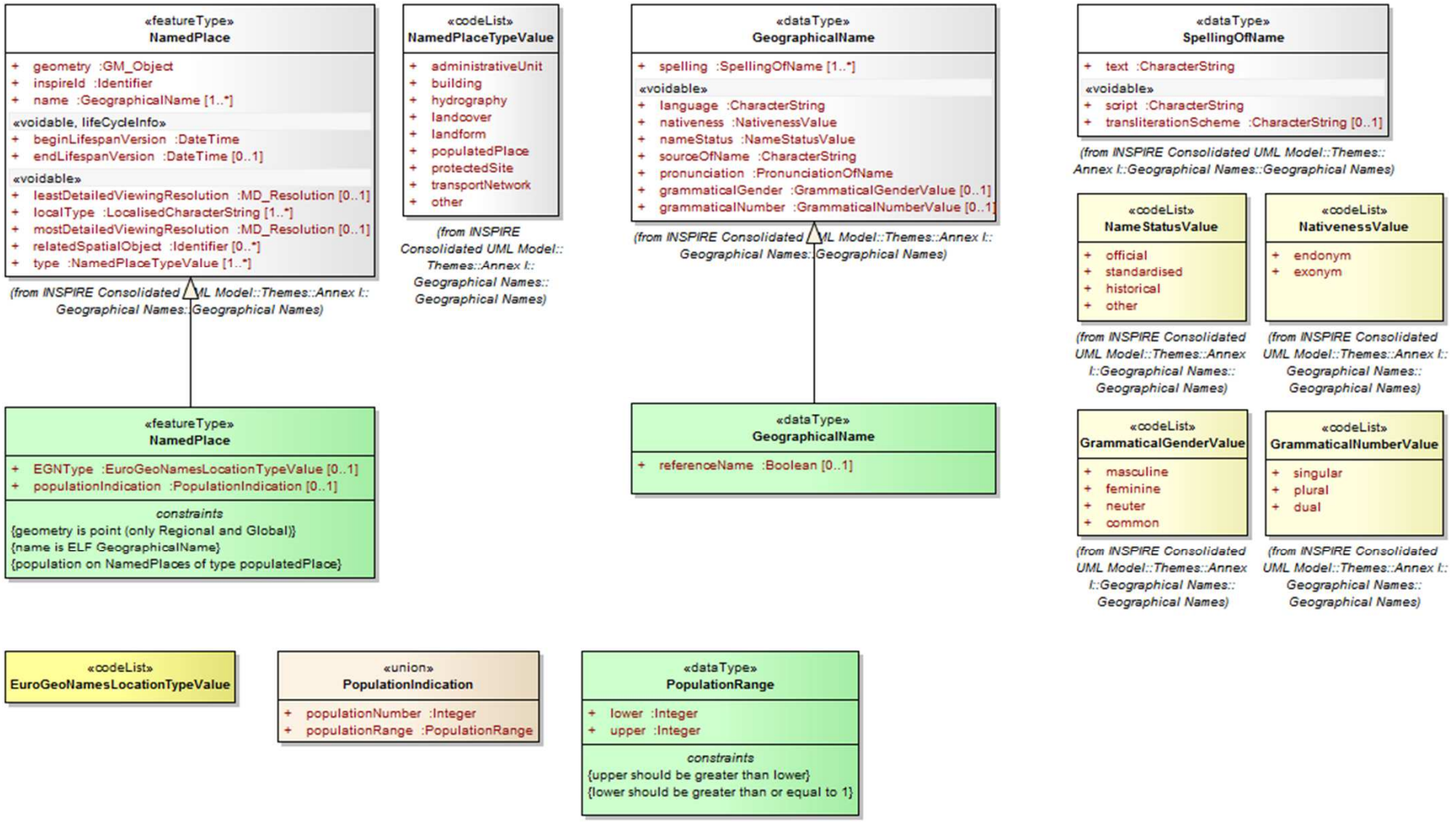

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Data Transformation Scenario

3. Snowflake transforms your data using the mapping table you provide

- ★ Share your national UML data model -> The UML models, combined with the matching tables, provide a better overview of the relationships between object classes.
- ★ Indicate a point of contact in the matching tables

Table	Esri Shapefile records	PostGIS table Rows
BUILTUPP	273,510	273,510
BULITUPA	37,860	37,860

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Schema Mapping

Application Schema 'RegionalGlobal_GeographicalNames' (version 2.0)								Application Schema <provide name				
Type	Documentation	Attribute Association role Constraint	Attribute / Association role / Constraint	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Transformation Specification	Type	Documentation	Attribute Association role Constraint	Attribute / Association role / Constraint	Values / Enumerations
NamedPlace Supertypes:NamedPlace	Any real world entity referred to by one or several proper nouns.Source [INSPIRE, theme GN]							AL020/AL022 BuiltupP ZD040 GNameT				
		beginLifespanVersion	Date and time at which this version of the spatial	DateTime	1	voidable	setValue(VoidValueReason = unpopulated)					
		endLifespanVersion	Date and time at which this version of the spatial	DateTime	0..1	voidable	setValue(VoidValueReason = unpopulated)					
		geometry	Geometry associated to the named place. This	GM_Object	1		copy			BuiltupP.SHAPE GNameT.SHAPE	feature geometry	point Polygon?Point?
		inspireId	External object identifier of	Identifier	1		NewGUID					
		leastDetailedViewingResolution	Resolution, expressed as the inverse of an indicative scale or a	MD_Resolution	0..1	voidable	IF F_CODE = 'ZD040' THEN see Mapping Tables: A30			GNameT.SID	Symbol Identification	
		localType	Characterisation of the kind of entity designated by geographical name(s), as defined by the data	LocalisedCharacterString	1..*	voidable	IF F_CODE = 'ZD040' THEN see Mapping Tables: A3 ELSE setValue (localType = settlement)			GNameT.CNL	Category for Named Location	
		mostDetailedViewingResolution	Resolution, expressed as the inverse of an indicative scale or a	MD_Resolution	0..1	voidable	setValue(mostDetailedViewing = 75000)					
		name	Name of the named place.	GeographicalName	1..*		see ComplexTypes					
		relatedSpatialObject	Identifier of a spatial object representing the same entity but appearing in other themes of INSPIRE, if any.NOTE If	Identifier	0..*	voidable	IF (F_CODE = 'AL020' OR F_CODE = 'AL022') THEN setValue(relatedSpatialObject=PopulatedPlaceID)			BuiltupP.PopulatedPlaceID		
		type	Characterisation of the kind of entity designated by geographical name(s).SOURCE	NamedPlaceTypeValue * administrativeUnit* building* hydrography* landcover* landform*	1..*	voidable	IF (F_CODE = 'AL020' OR F_CODE = 'AL022') THEN setValue('populated Place') ELSE setValue('landform')					
		populationNumber	The number of inhabitants for a populated placeSource [ERM]	PopulationRange	0..1		IF (F_CODE = 'AL020' OR F_CODE = 'AL022') THEN see ComplexTypes					

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Schema Mapping

Application Schema 'Regional_GeographicalNames' (version 0.1)								Application Schema			
Type	**Documentation**	**Attribute Association role Constraint**	**Attribute / Association role / Constraint**	**Values / Enumerations**	**Multiplicity**	**Voidable / Non-Voidable**	**Transformation Specification**	**Type**	**Documentation**	**Attribute Association role Constraint**	**Attribute / Association role / Constraint**
GeographicalName Supertypes:GeographicalName	Proper noun applied to a real world entity.Source [INSPIRE, theme GN]							AL020/AL022 BuiltupP ZD040 GNameT			
		language	Language of the name, given as a three letters code, in accordance with	CharacterString	1	voidable				NLN1/NLN2	ISO 639-2/B 3-Char Language for NAMN1/NAMN2
		nativeness	Information enabling to acknowledge if the name	NativenessValue* endonym* exonym	1	voidable	setValue('endonym')				
		nameStatus	Qualitative information enabling to discern which	NameStatusValue* official* standardised*	1	voidable	setValue('official')				
		sourceOfName	Original data source from which the geographical	CharacterString	1	voidable	setValue('EuroRegionalMap')				
		pronunciation	Proper, correct or standard (standard within	PronunciationOfName	1	voidable	setValue(VoidValueReason = unpopulated)				
		spelling	A proper way of writing the geographical	SpellingOfName	1..*		see SpellingOfName below				
		grammaticalGender	Class of nouns reflected in the behaviour of	GrammaticalGenderValue * masculine*	0..1	voidable					
		grammaticalNumbe	Grammatical category of nouns that expresses	GrammaticalNumberValue * singular* plural*	0..1	voidable					
		referenceName	referenceName indicates if the name is suitable for	Boolean	1						
PopulationRange	The number of inhabitants either expressed as a real value or a range.Source [ERM]							AL020/AL022 BuiltupP			
		population	The number of people within an area (for	Integer	0..1		IF (PPL <> -29997 OR PPL <> -29998) THEN copy			PPL	Population Place Category
		lower	Population lower range.Source [ERM]	Integer	0..1		IF (PP1 <> -29997 OR PP1 <> -29998) THEN copy			PP1	Population Lower Range
		upper	Population upper range.Source [ERM]	Integer	0..1		IF (PP2 <> -29997 OR PP2 <> -29998) THEN copy			PP2	Population Upper Range
SpellingOfName Supertypes:SpellingOfName	Proper way of writing a name.Source [INSPIRE, theme GN] NOTE Proper spelling means the writing of a name with the correct capitalisation and the correct letters and diacritics present in an accepted standard order.										
		text	Way the name is written.	CharacterString	1		copy			NMAN1/NAMN2	name
		script	Set of graphic symbols (for example an alphabet) employed in writing the name, expressed using the four letters codes defined in ISO 15924, where applicable.SOURCE Adapted from [UNGEGN Glossary 2007]. EXAMPLES Cyrillic, Greek, Roman/Latin scripts. NOTE 1The four letter codes for Latin (Roman), Cyrillic and Greek script are "Latn", "Cyrl" and "Grek", respectively.	CharacterString	1	voidable	IF NLN1='BUL' THEN setVallue(script="Cyrl") ELSEIF NLN1='GRE' THEN setValue(script='Grek') ELSE setValue(script='Latn')			NLN1/NLN2	ISO 639-2/B 3-Char Language for NAMN1/NAMN2

NamedPlace	Transformation	Comment	New Changes
beginLifespanVersion	setValue(VoidValueReason = unpopulated)	Ok	Ok
endLifespanVersion	setValue(VoidValueReason = unpopulated)	Ok	Ok
geometry	copy	Ok	Ok
inspireId	NewGUID	Ok	Ok
leastDetailedViewingResolution	**IF F_CODE = 'ZD040' THEN see Mapping Tables: A30**	**For AL020/AL022 leastDetailedViewing should be set depending on the PopulationNumber**	**The leastDetailedViewingResolution value is based on the population value. The lookup table for the population values has been included in Section 3 of this document. There are no ZD040 values in the table.**
localType	IF F_CODE = 'ZD040' THEN see Mapping Tables: A3 ELSE setValue (localType = settlement)	Ok	Ok
mostDetailedViewingResolution	**setValue(mostDetailedViewing = 75000)**	**Missing**	**The mostDetailedViewingResolution has been created as a constant with value: 75000**
name	see ComplexTypes	Ok	Ok
relatedSpatialObject	**IF (F_CODE = 'AL020' OR F_CODE = 'AL022') THEN setValue(relatedSpatialObject=PopulatedPlaceID)**	**Seems to contain the localID instead of the PopulationPlaceID?**	**Having checked the mapping it seems that this has correctly been mapped to the PopulationPlaceID and not the localID. Could you clarify what you mean by localID?**

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Issues

type	IF (F_CODE = 'AL020' OR F_CODE = 'AL022') THEN setValue('populated Place') ELSE setValue('landform')	Missing in QGIS, GML contains the PopulationPlaceID instead of the type?	The type value has been set to 'populated Place' where F_CODE = 'AL020' OR F_CODE = 'AL022' and set to 'landform' for everything else.
populationNumber	IF (F_CODE = 'AL020' OR F_CODE = 'AL022') THEN see ComplexTypes	Ok, but if population is given lower/upper can be empty?	It has been modified to contain the following logic: if population is less than 1 then publish lower and upper else don't publish lower and upper.

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LeastDetailedViewing

- Value for the scale denominator set based on the population

Class	Classification		leastDetailedViewing Scale denominator
6	1	1,000	75.000
5	1,001	5,000	100.000
4	5,001	50,000	200.000
3	50,001	100,000	300.000
2	100,001	1,000,000	500.000
1	> 1,000,000		500.000

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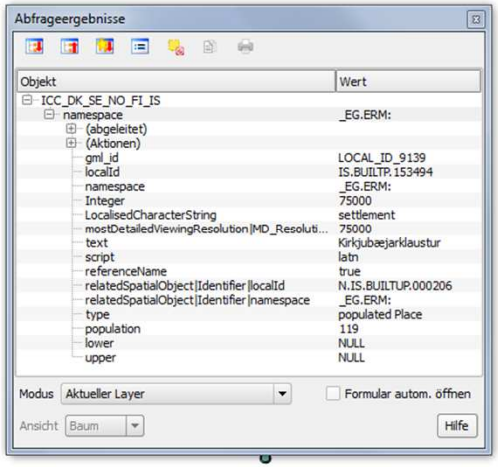
Results

- Quality checks
  - GoPublisher built-in validation
  - Altova XML-Spy
  - Visual: QGIS



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