



Presented at the FIG Working Week 2023,
28 May - 1 June 2023 in Orlando, Florida, USA

FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

Protecting
Our World,
Conquering
New Frontiers

Consistency of Data in Cadastral Systems

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Inconsistencies and origins

Inconsistency	(No.)	%	(No.)	%	(No.)	%	No.	%
Parcels not in register	73	1.43	12	0.26	6	0.17	91	0.69
Parcels not on cadastral map	110	2.15	38	0.83	1	0.03	149	1.12
Buildings not in register	207		87		36		330	
Buildings not on cadastral map	93		46		18		157	
Disjunct parcels	4	0.08	6	0.13	0	0.00	10	0.08
Duplicate parcel ID	30	0.59	0	0.00	0	0.00	30	0.23
Missing parcels ID	19	0.37	2	0.04	0	0.00	21	0.16
Area difference exceeding tolerance	195	3.82	213	4.68	202	5.58	610	4.59

> 5%

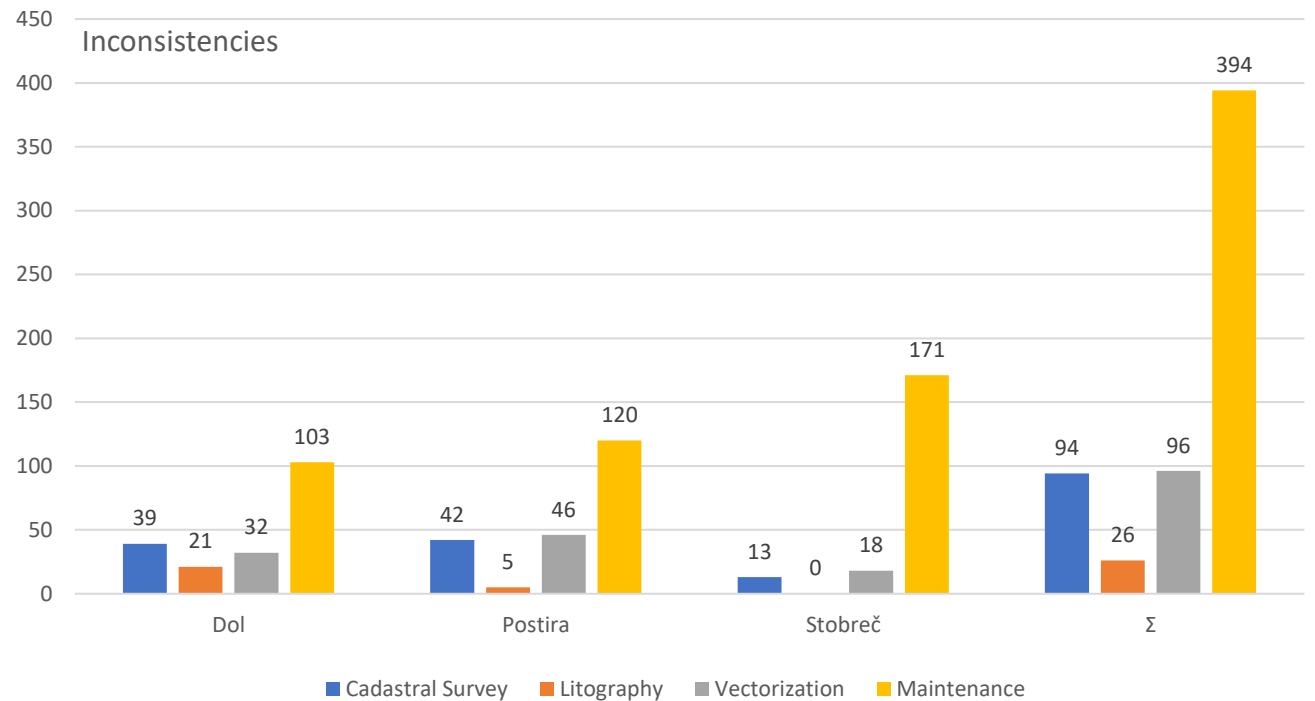


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1834
1894
1994
today

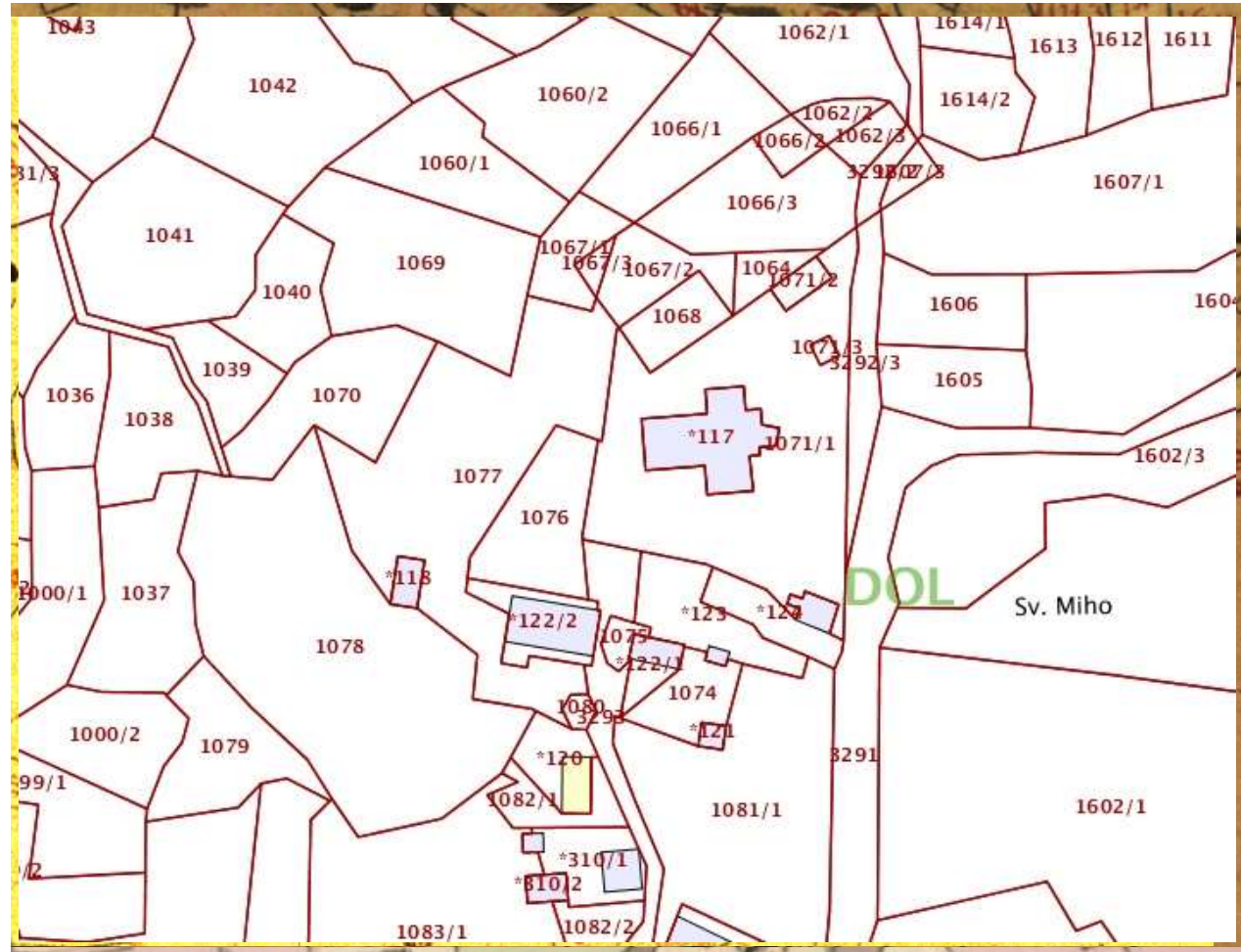


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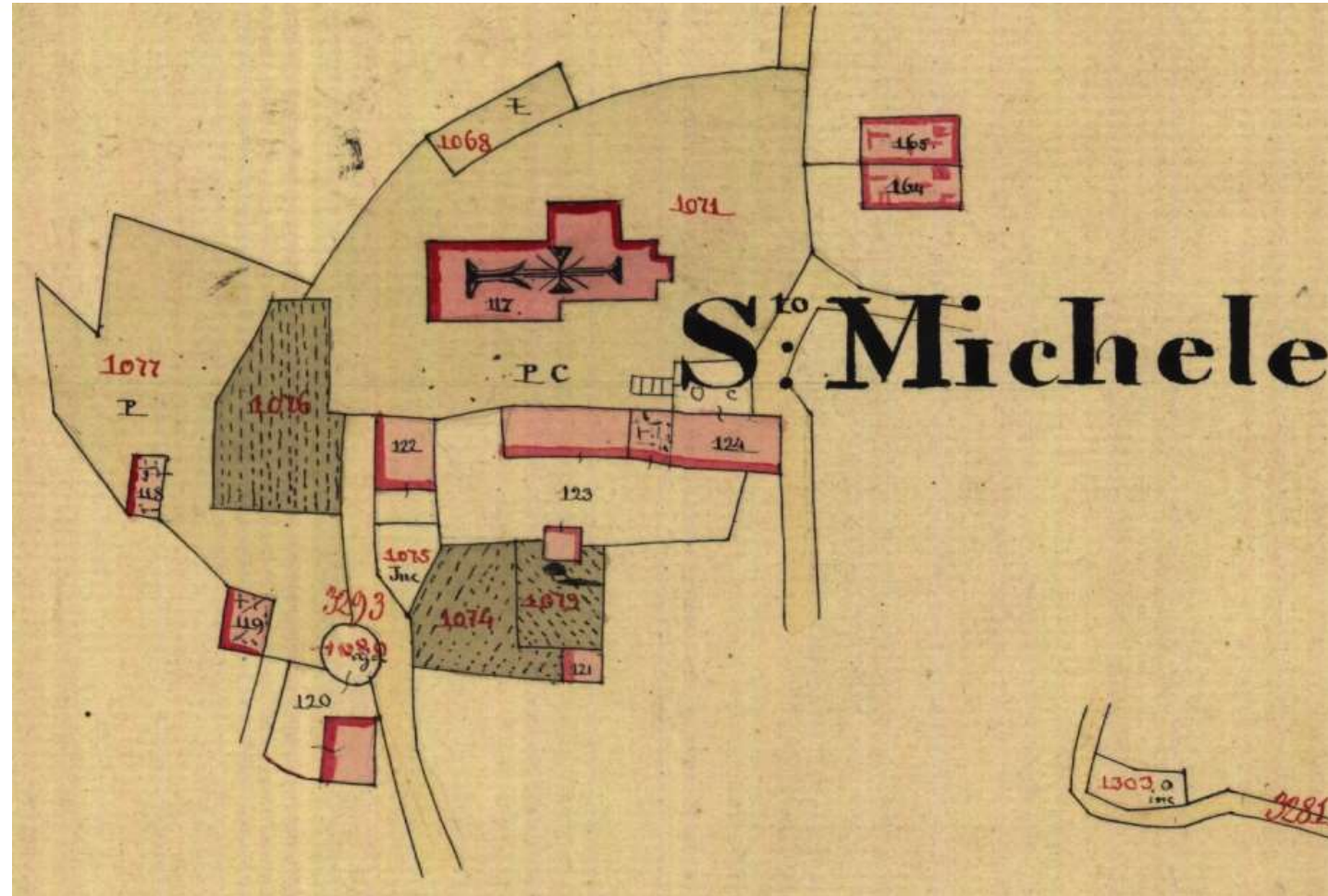
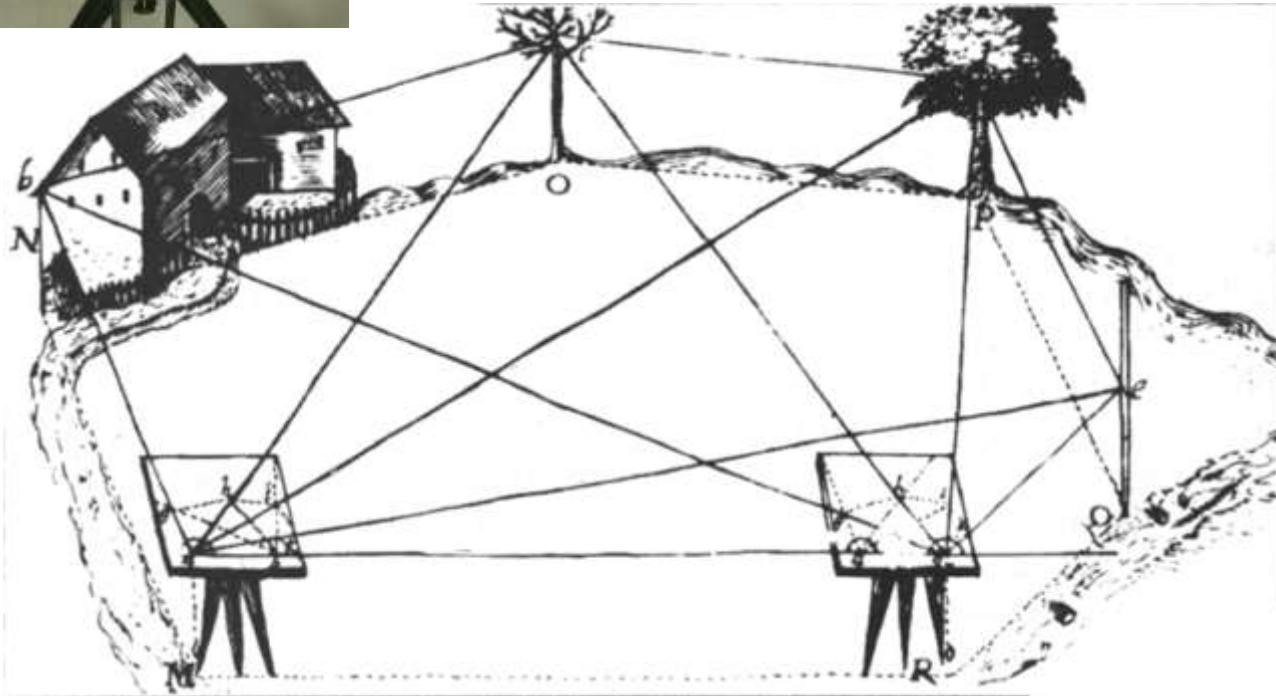




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Key cadastral documentation



cadastral map

Parte III.

Nro del Foglio	Denominazione della Contrada	Nro delle Particelle	Qualità legale del bene		Del Proprietario			
			Domini-cale	Rudica	Nro della Casa.	Nome e Cognome.	Condizione.	Domilelio.
176								
177	1					Mattinoz Stefano	Agricola	Espresso
178	2					Mattinoz Stefano	Agricola	Espresso
179	3					Mattinoz Stefano	Agricola	Espresso
180	4					Mattinoz Stefano	Agricola	Espresso

list of parcels

Cadastral map reconstructions



source map

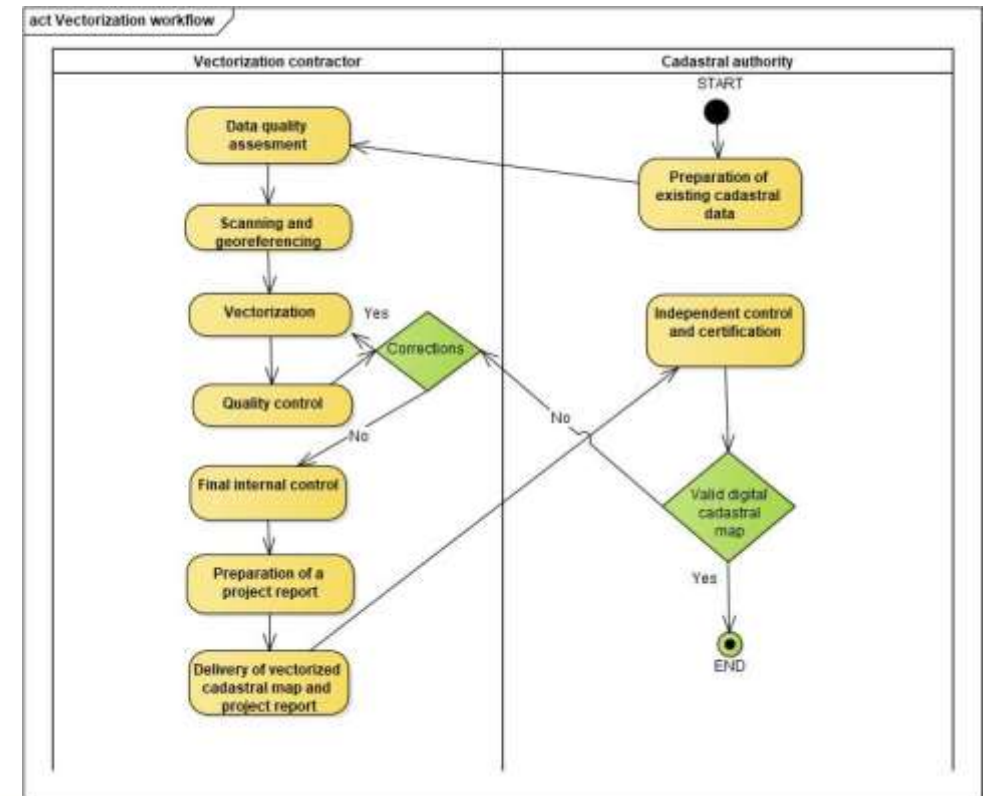
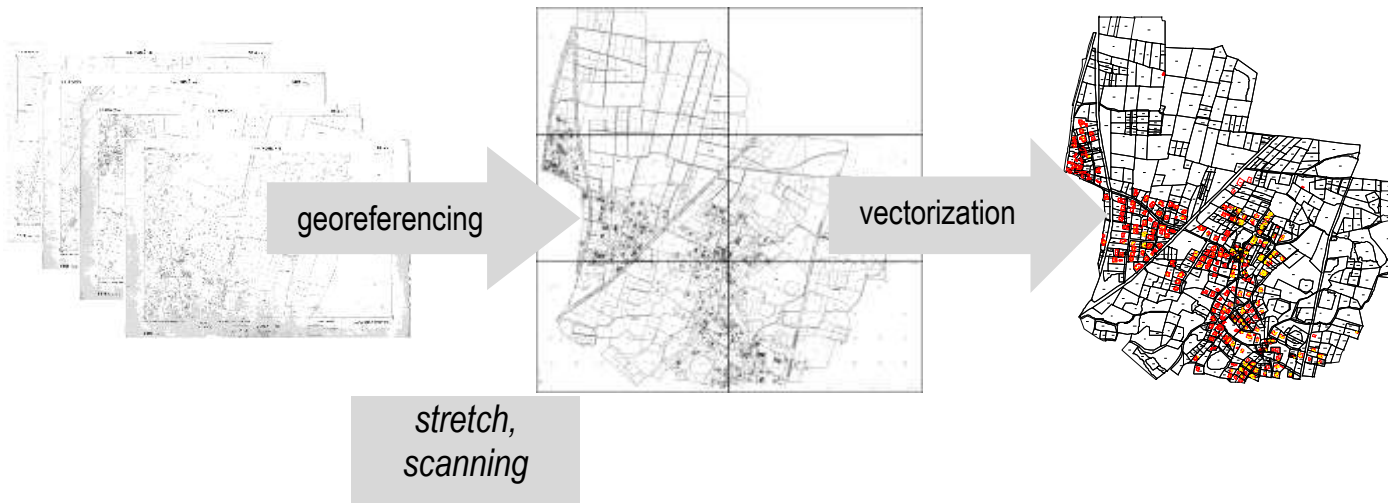


lithographed



vectorized

Vectorization – flow diagram

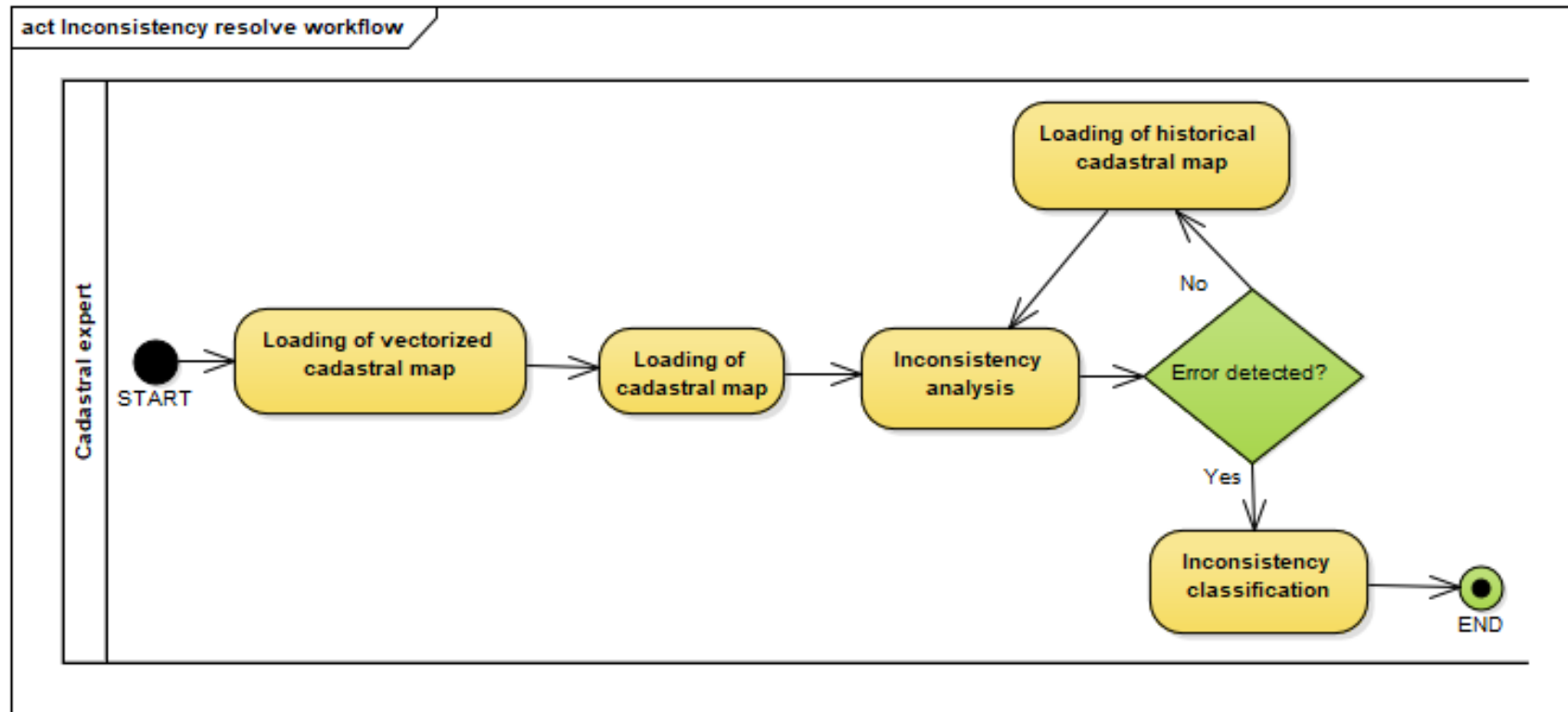


Quality Control: Data differences - Queries

- cadastral parcels in the list of cadastral parcels / not mapped,
- cadastral parcels mapped / not in the list of cadastral parcels,
- buildings registered in the list / not mapped on the cadastral map,
- buildings mapped / not registered in the list of cadastral parcels,
- duplicate parcel ID on the map,
- duplicate parcel ID in the register, and
- land without parcel ID on the cadastral map.

Compliance of Areas

Resolving inconsistencies





electronic map



vectorized map - paper



archived map

Parcel ID	Ar	Am	Difference	Tolerance	Tolerance – abs(Difference)	R [%]	Note
1	2	3	4	5	6	7	8
*124	7	168	-161	5	-156	2229	
*123	378	256	120	39	-81	21	

Conclusion

- Trust in Cadastral System?
- Resurveys ?

- Consistent maintenance of Electronic Data?