

# Administrative Units

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# Agenda

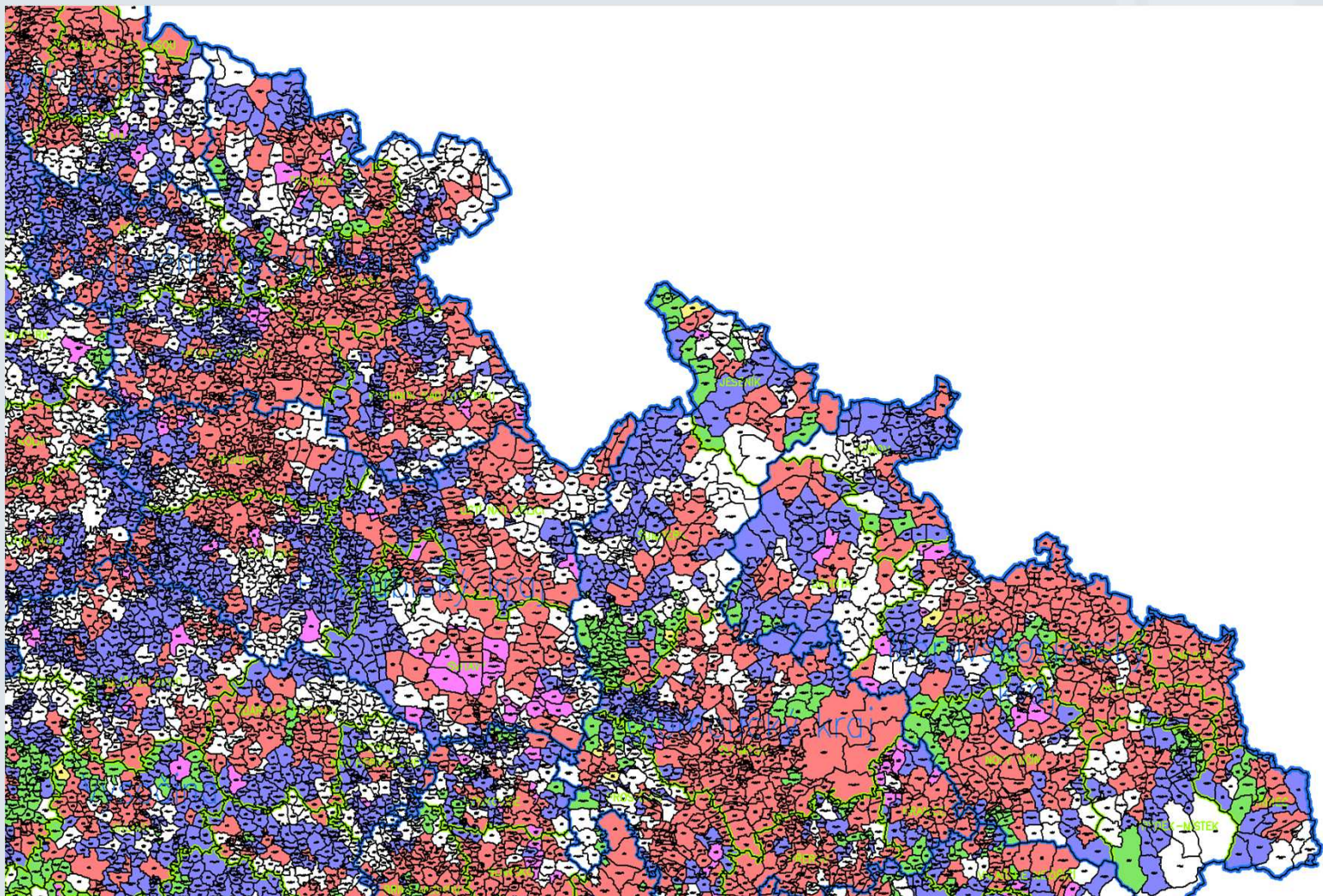
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- Data sources and discrepancies
- ETRS89 coordinates on the state borders
- Mapping on the Czech state boundaries

## Data source for AU theme

- Official source is RÚIAN data
- Parcel boundaries keeps information about the level of administrative unit (cadastral unit, municipality, county, ...)  
Geometry of the administrative units (including state boundaries) is derived as an envelope of parcels (no gaps are allowed)
- Even for non-digitized cadastral units exists digitized boundaries with compliant topology
- State boundary is implemented in the map after the international treaty came into force
- Parcels (maps) can be edited by cadastral workplaces only !

# Different types of the digitization



## Other data source - ZABAGED

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- **ZABAGED - Fundamental Base of Geographic Data**
- Based on 1:10 000 scale
- Administrative units has been digitized at first, now RÚIAN data are used as well
- Data gained from surveying department are implemented immediately after approved by Border Commisions
- TN, HY edge matched to boundary



PUBL

VIEW

<<View>>  
**PUB\_AU\_GMLI**

+KOD  
+NAZEV  
+NAT\_LEVEL  
+GEOMETRIE  
+DATUM\_VZNIKU  
+SET\_PARS\_TABLE\_NAME  
+NAZEV\_OKRES  
+OKRES\_KOD  
+NAZEV\_KRAJ  
+VUSC\_KOD  
+NUTS\_LAU\_KOD

NAT\_LEVEL by měl být  
ve formě codeListu

**NationalLevelName**

+UROVEN\_CLENENI  
+NAZEV\_UROVNE\_CLENENI

<<View>>  
**PUB\_ADM\_JED\_HRANICE\_GMLI**

+ID  
+NAT\_LEVEL  
+DATUM\_VZNIKU  
+OBEC\_KOD1  
+OBEC\_KOD2  
+OKRES\_KOD1  
+OKRES\_KOD2  
+VUSC\_KOD1  
+VUSC\_KOD2  
+STAT\_KOD1  
+STAT\_KOD2  
+OBEC\_NAZEV1  
+OBEC\_NAZEV2  
+OKRES\_NAZEV1  
+OKRES\_NAZEV2  
+KRAJ\_NAZEV1  
+KRAJ\_NAZEV2  
+STAT\_NAZEV1  
+STAT\_NAZEV2  
+GEOMETRIE

Konstanty

<<Enumeration>>  
**LegalStatusValue**

+agreed  
+notAgreed

<<Enumeration>>  
**TechnicalStatusValue**

+edgeMatched  
+notEdgeMatched

**NationalCode**

+CZ

INSPIRE AdministrativeUnit

<<FeatureType>>  
**AdministrativeUnit**

+geometry: GM\_MultiSurface = 1  
+nationalCode: CharacterString = 1  
+inspireId: Identifier = 1  
+nationalLevel: AdministrativeHierarchyLevel = 1  
+nationalLevelName: LocalisedCharacterString = 1..\* <<voidable>>  
+country: CountryCode = 1  
+name: CharacterString = 1..\* <<voidable>>  
+residenceOfAuthority: ResidenceOfAuthority = 1..\* <<voidable>>  
+beginLifespanVersion: DateTime = 1 <<voidable>>  
+endLifespanVersion: DateTime = 0..1 <<voidable>>  
+condominium(AdministrativeUnit): 0..\* <<voidable>>  
+lowerLevelUnit(AdministrativeUnit): 0..\* <<voidable>>  
+administeredBy(AdministrativeUnit): 0..\* <<voidable>>  
+upperLevelUnit(AdministrativeUnit): 0..\* <<voidable>>  
+boundary(AdministrativeBoundary): 1..\* <<voidable>>

<<FeatureType>>  
**AdministrativeBoundary**

+geometry: GM\_Curve = 1  
+inspireId: Identifier = 1  
+country: CountryCode = 1  
+nationalLevel: AdministrativeHierarchyLevel = 1..6  
+legalStatus: LegalStatusValue = 1 <<voidable>>  
+technicalStatus: TechnicalStatusValue = 1 <<voidable>>  
+beginLifespanVersion: DateTime = 1 <<voidable>>  
+endLifespanVersion: DateTime = 0..1 <<voidable>>  
+admUnit(AdministrativeUnit): 1..\* <<voidable>>

vazba na hranici z  
AB s vazbou na AU

Výskyt

**Cardinality**

+0

**NilReason**

+unknown  
+unpopulated

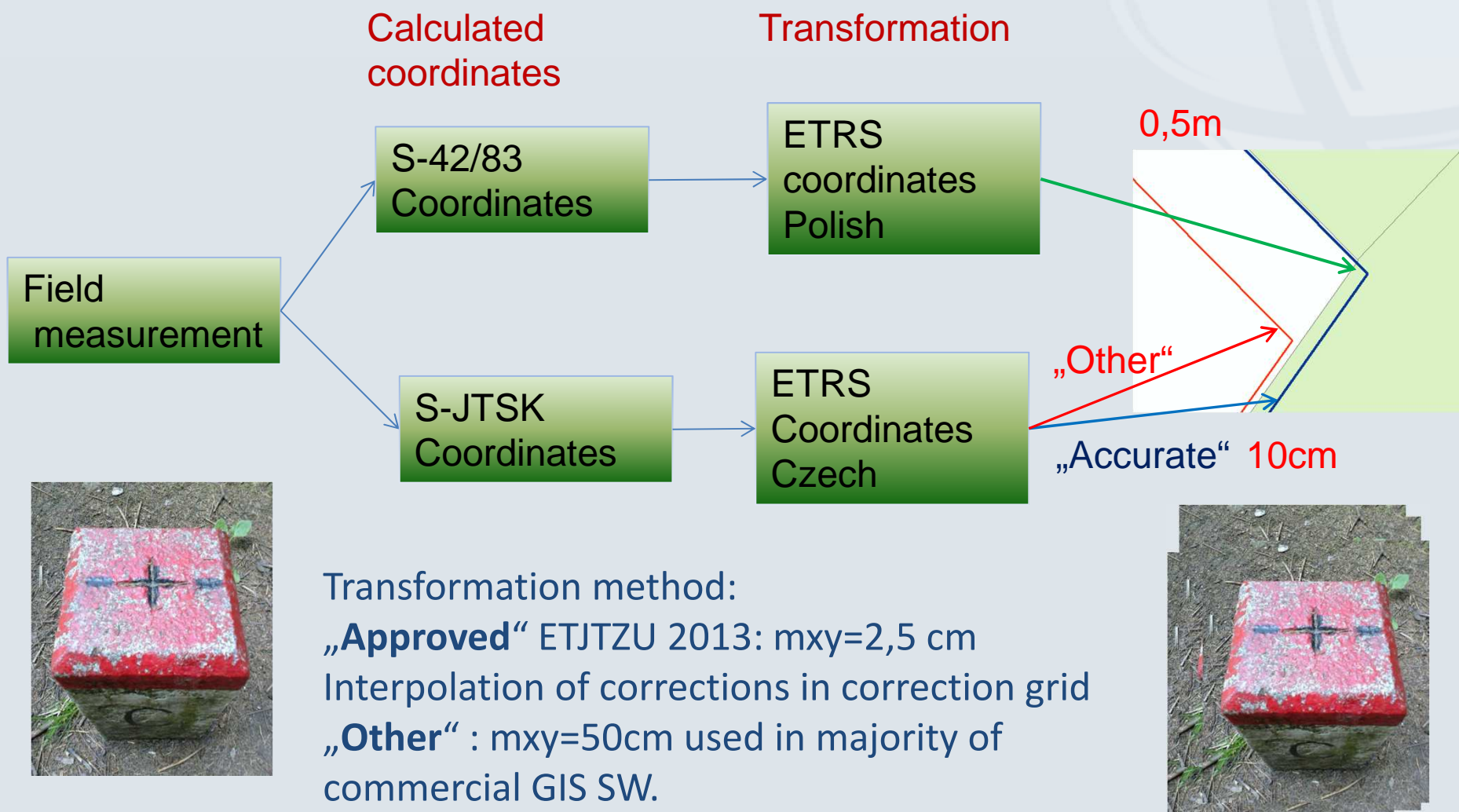
NUTS se ve verzi 3.1 nenachází,  
ve verzi 3.0 obsahuje XLink pro kraj a stát  
a nilReason unknown pro okres a obec

## Discrepancies on the state boundary

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- Errors in the cadastral map (state boundary from the international treaty has not been correctly introduced into the map)
  - We can fix it (cadastral workplaces have a final term - **30.6.2015**)
- Different coordinate systems in neighbouring countries => different ETRS89 state boundary
  - The final solution will take **years**

# Coordinate transformation





# Final solution for state boundary in ETRS89 coordinates

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- Generally – once the international treaty on the state boundary is based on different national coordinates, the ETRS89 „national implementation“ is influenced by the precision of the national trigonometric network.
- In this case accurate coordinates (treaty level) of the state boundary in ETRS89 are not available.
- To get them, additional GPS measurements are necessary as well as the elevation of boundary points has to be taken into account.

# Czech state boundaries - legal status

Saxony

Measurement in progress

Poland

Accurate measurement  
Treaty level

Bavaria

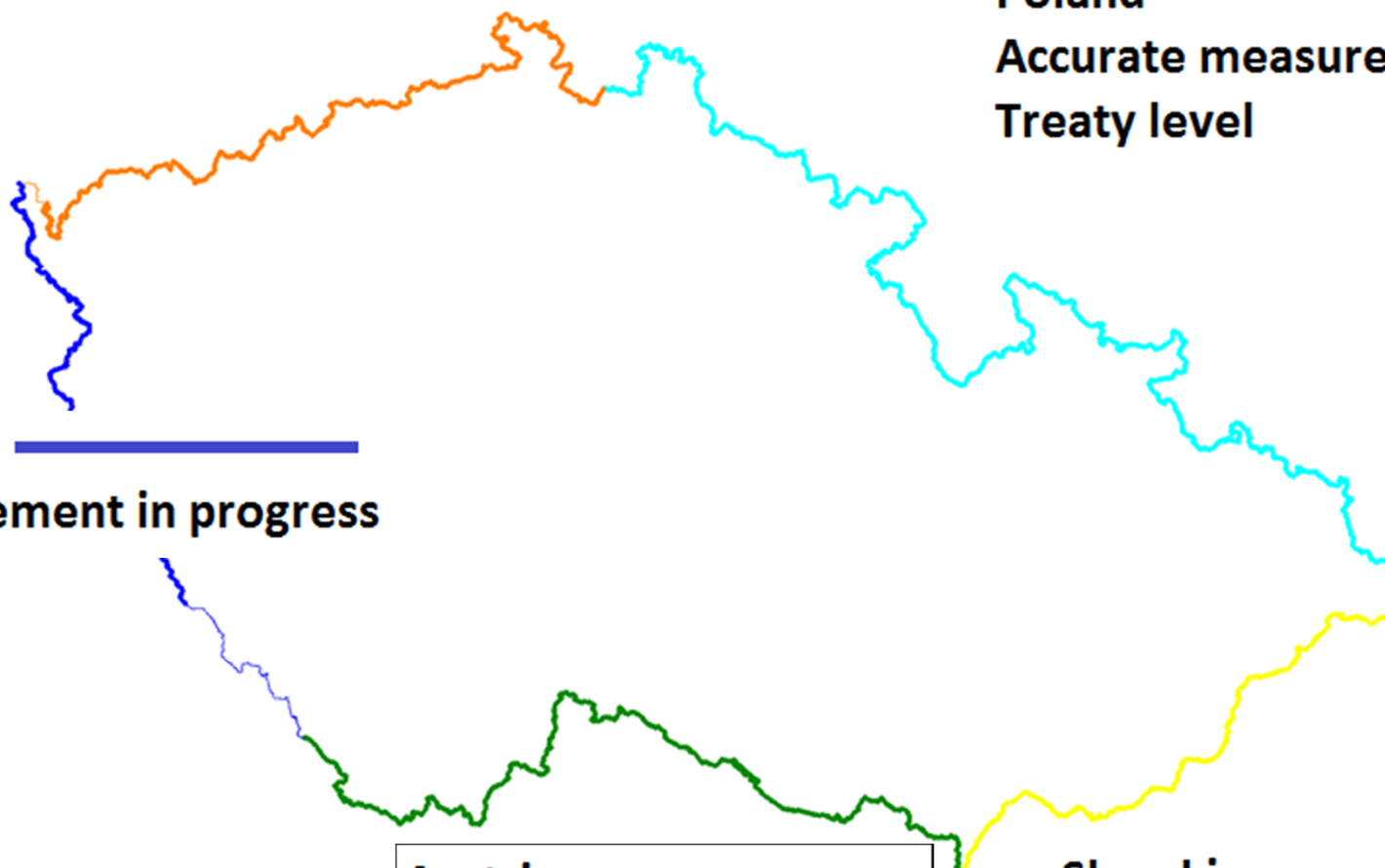
Measurement in progress

Austria

Accurate measurement  
Not approved by treaty

Slovakia

Accurate measurement  
Treaty level



# Czech state boundaries - legal status

Saxony

Measurement in progress

Measurement is based on the  
ETRS89

Measurement finished in 1 year  
Treaty ???

Bavaria

Measurement in progress

Measurement is based on the  
ETRS89

Measurement finished in 3  
years  
Treaty ???

Discussion about  
ETRS89  
measurement  
started

Austria

Accurate measurement  
Not approved by treaty

Poland

Accurate measurement  
Treaty level

Measurement based on  
the ETRS89 postponed  
until some changes of  
the boundary are  
accomplished

ETRS89 on the  
treaty level

Slovakia

Accurate measurement  
Treaty level

## Conclusion

- Common unique ETRS89 coordinates of the state boundaries are crucial for crossborder data harmonization
- Final solution for Europe – international treaties on the state boundaries based on the ETRS89 coordinates - is necessary, but it will take years (additional measurement and processing).
- In the meantime an adjusted common boundary for edge-matching of other themes (HY, TN, ...) has to be used (can we fit for example CP theme to this boundary?)
- A special coordinate transformation to the ETRS89 (based on dynamic grid) is being prepared to fit other themes (CP, BU) to the state boundary.

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**Thank you for your attention**

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