



What is needed to make progress in georeferencing administrative data in Germany

A workflow-based approach

Introducing... us!



- Verband Deutscher Städtestatistiker (VDSt) = Professional association of German municipal statisticians.
- KOSIS-Verbund = Association within the VDSt for cooperation projects in the municipal statistical community.
- KOSIS Association UrbanAudit = Part of the ESS
- KOSIS Association DUVA
- KOSIS Association KORIS
- ...
- = a strong network of statisticians on the municipal level!



Our contribution to the “Merging” project



- WP I: Georeferencing of addresses (Michael Haußmann, Dr. Udo Maack)**
- Description of the status-quo of georeferencing administrative registers.
 - Workflow-based sustainable concept.
- WP II: Harmonisation of municipal statistical units (KORIS, Dr. Michael Wolfsteiner)**
- Concept for the development of suitable statistical base units within German cities.
- WP III: INSPIRE / SDMX metadata (DUVA, Thomas Willmann, Arno Schiffert)**
- Comparing metadata standards of DUVA, GENESIS and INSPIRE.
 - Concept for SDMX interface in DUVA.
- WP IV: Web applications and web services (DUVA, Thomas Willmann, Arno Schiffert)**
- Concept for SDI web service for Urban Audit data.
 - Concept for SDI web service for DUVA.

Agenda



- The tasks of municipal statistics in Germany
- The increasing importance of German administrative registers for official statistics
- Georeferencing of administrative registers: Status-quo
- Georeferencing of administrative registers 2.0
- Our contribution to the „Merging“ project

Chapter 1: Why do we exist?

The tasks of municipal statistics in Germany.



Source: Public Domain

The Tasks of German Municipal Statistics



German Constitution
obligation for predictive planning



German Constitution
municipal planning authority



Privacy and Statistics Laws
obligation for data protection



Predictive Planning

Infrastructure Planning

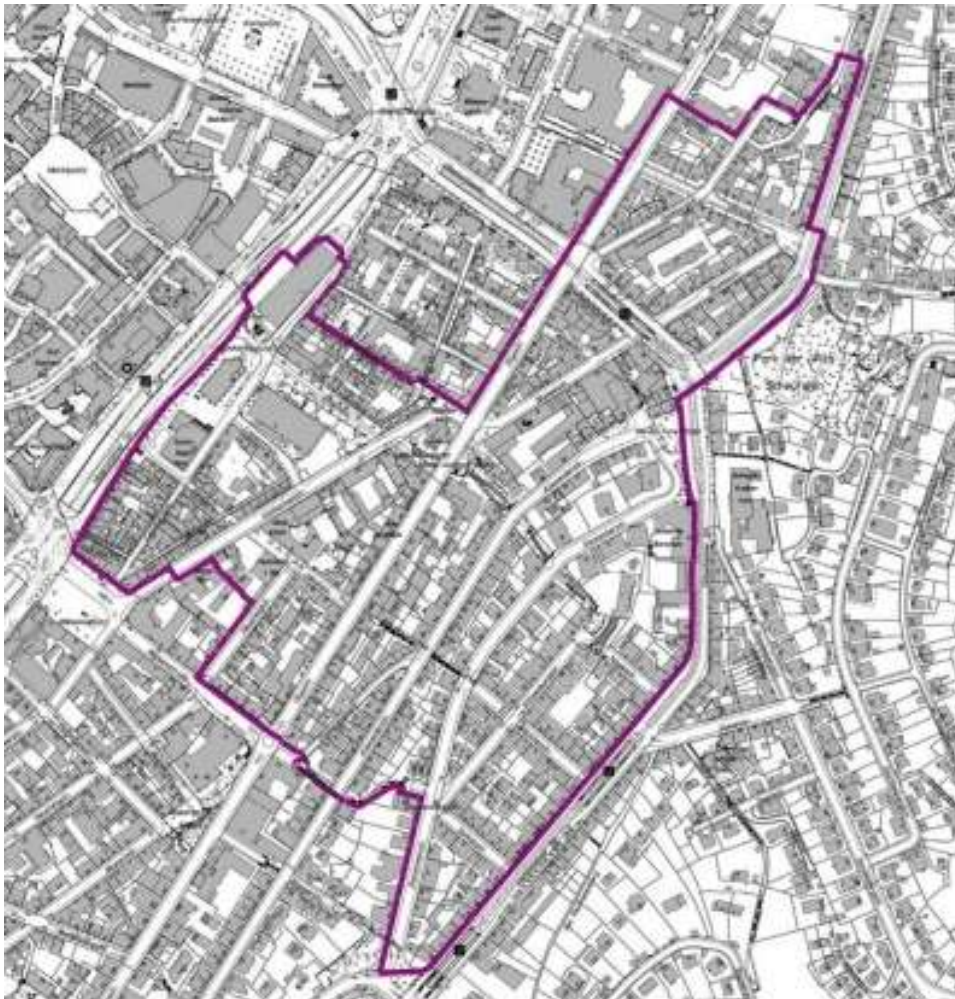
- schools, nurserys
- hospitals, rest homes
- Cultural facilities
- traffic, public transportation
- water and electricity supply
- waste management
- cemeteries
- ...

Land-Use Planning / Conceptual Planning

- formal zoning plans
- demarcation of redevelopment areas
- demarcation of funded areas
- ...

- energy concept
- housing concept
- traffic concept
- noise protection concept
- ...

Example: Demarcation of a Redevelopment Area



Stadterneuerungs- vorranggebiet (SVG)

Stuttgart 04 -

Leonhardsviertel /

Hohenheimer Straße

- number and structure of inhabitants / households
- quality and usage of der buildings / housings
- number and structure of workplaces
- traffic load and noise pollution
- ...

Source: Landeshauptstadt Stuttgart, Amt für Stadtplanung und Stadterneuerung; Kartengrundlage Stadtmessungsamt

Chapter 1

Conclusion:

We have to provide
small-scaled data!



Source: Public Domain



Chapter 2: Times have changed.

The increasing
importance of
administrative
registers for official
statistics in Germany.



Source: Own Work

Increasing Importance of Administrative Registers



Feature	Small-Scale Data Previously	Small-Scale Data Today
Population / demography	<ul style="list-style-type: none"> census (full survey) population register 	<ul style="list-style-type: none"> population register
Education	<ul style="list-style-type: none"> census (full survey) 	<ul style="list-style-type: none"> register of employees
Buildings and housing	<ul style="list-style-type: none"> census (full survey) 	<ul style="list-style-type: none"> census (full survey)
Work places	<ul style="list-style-type: none"> census (full survey) 	<ul style="list-style-type: none"> statistical business register
Labour market	<ul style="list-style-type: none"> census (full survey) 	<ul style="list-style-type: none"> register of employees
Motor vehicles	<ul style="list-style-type: none"> register of motor vehicles 	<ul style="list-style-type: none"> register of motor vehicles
...	<ul style="list-style-type: none"> ... 	<ul style="list-style-type: none"> ...



Chapter 2

Conclusion:

**We have to exploit
administrative
registers for small-
area data!**

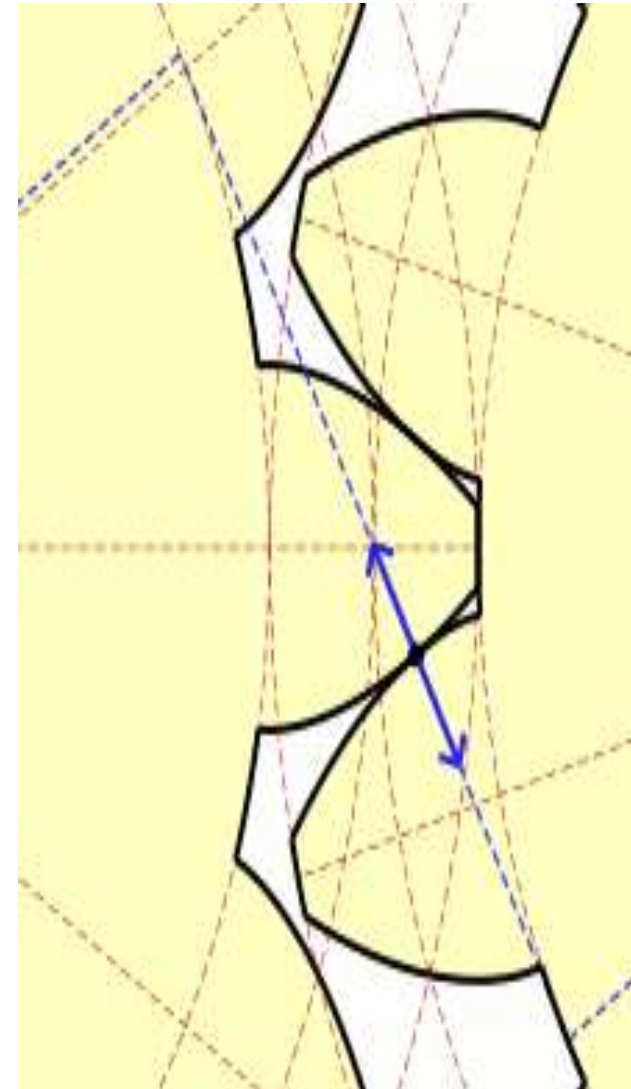


Source: Own Work.



Chapter 3: How things are done today.

Georeferencing of administrative registers: Status quo.



Source: „Involute wheel“ by Claudio Rocchini
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Today's Georeferencing Strategy



Special Administration Units

data collection
(no validation of
addresses)

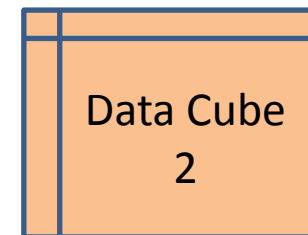
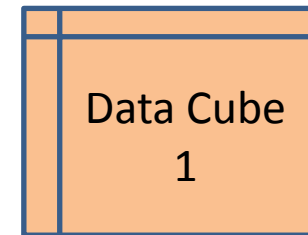
data storage



Statistical Office (Foreclosed)

statistical data
processing incl.
georeferencing

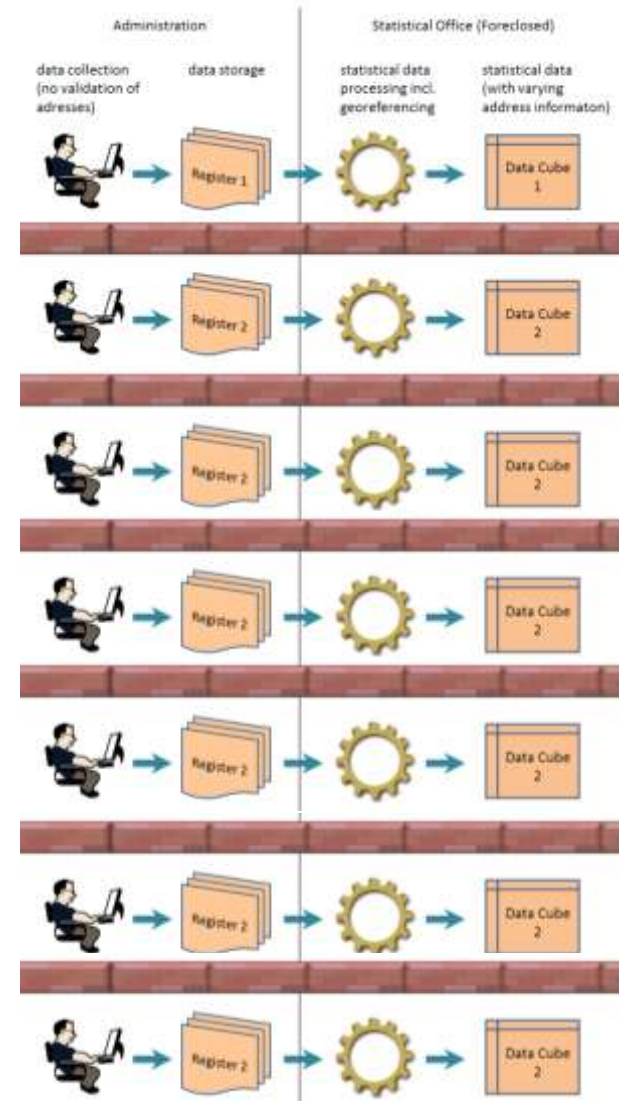
statistical data
(with varying
address informaton)



Today's Georeferencing Strategy



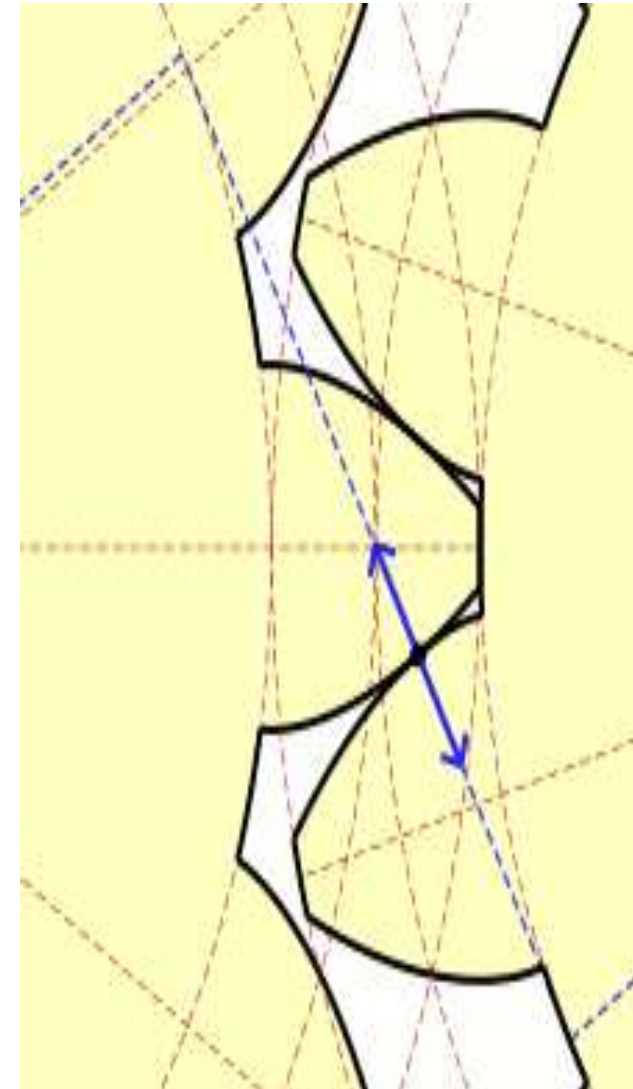
- The quality of addresses in the registers is very heterogenous (partially false, outdated, missing, ...).
- There is no geocoding service that can match ALL addresses in the registers without interpolation.
- Indirect Georeferencing.
- Joining register-derived statistical data is complicated, time-consuming, expensive and prone to errors (e.g. census 2011).





Chapter 3 Conclusion:

We are
georeferencing in a
sequential, industrial
way.



Source: „Involute wheel“ by Claudio Rocchini
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Chapter 4: Our Idea: Taking the next step.

Georeferencing of administrative registers 2.0



Source: Own Work

Georeferencing 2.0



Special Administration Units

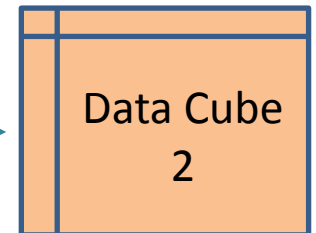
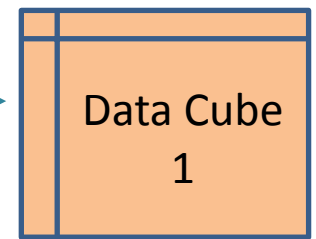
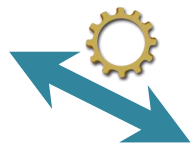
data collection
(incl. validation
of addresses)

central address
service

data storage

Statistical Office
(Foreclosed)

statistical data
(with unified
address information)

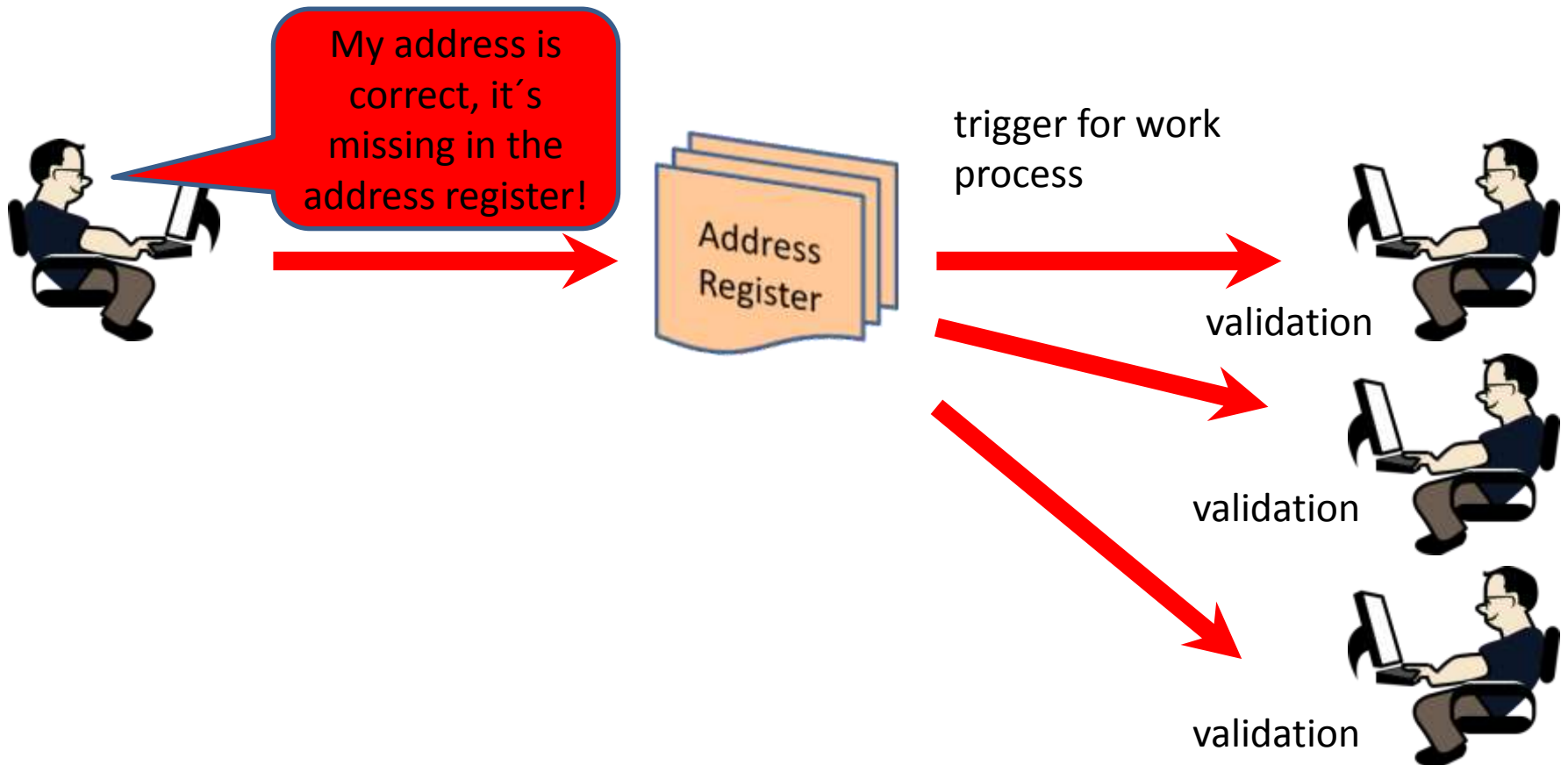


Georeferencing 2.0

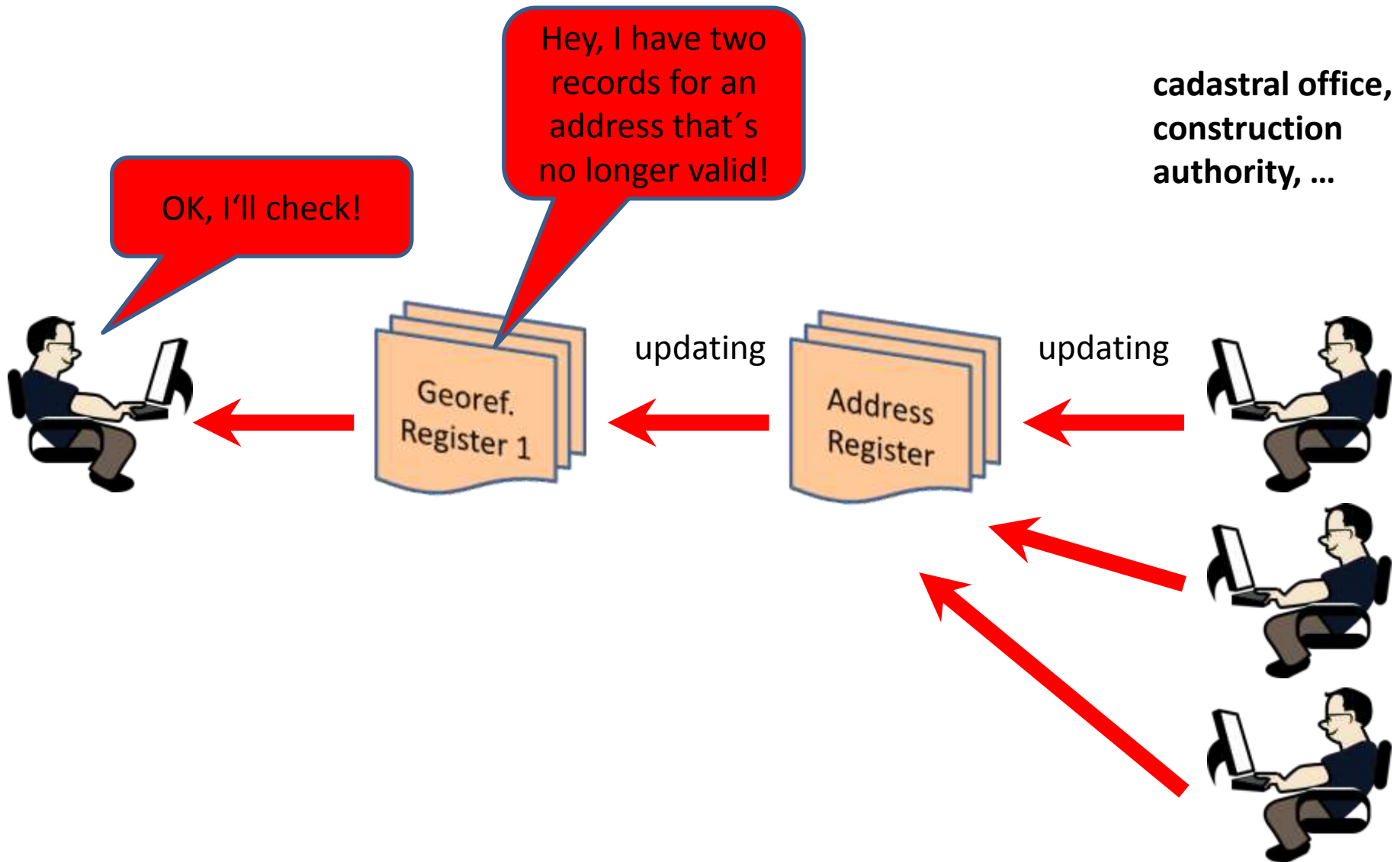


data collection

cadastral office,
construction
authority, ...



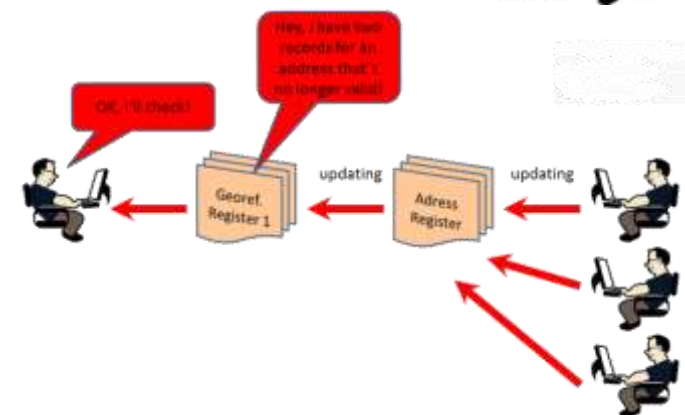
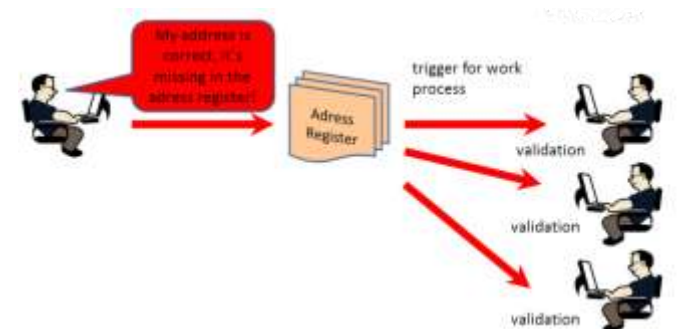
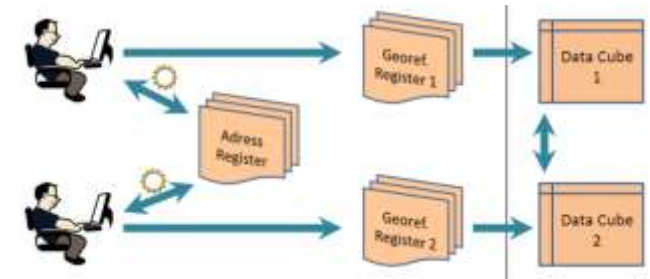
Georeferencing 2.0



Georeferencing 2.0



- The quality of addresses in the registers is highly accurate and homogenous.
- The central address register contains current coordinates, the georeferencing can be processed on-the-fly.
- Joining register-derived statistical data is fast and trivial.
- Money is saved.





Chapter 4

Conclusion:

**Treating the cause,
not the effects!**

**Integration of the
georeferencing
process!**



Source: Own Work

Chapter 5: What will we provide?

Our contribution to the “Merging” project.



Source: Der Sämänn / Hortus Deliciarum, Public Domain.

The final report on WP I will contain:



- 1.) A documentation of the status-quo in selected German cities
 - Expert interviews with standardized questionnaire
 - Exemplary workflow model

- 2.) A concept „Georeferencing 2.0“
 - Exemplary workflow model
 - Requirements for INSPIRE connectivity

- 3.) Assessment of the requirements for implementation

Chapter 5 Conclusion: We hope our ideas will spread!



Exit qui seminat
seminare semen suum



Omne humani genus
a Deo vocatum est sed
electi in Christiana fide
perversantes tantum
modo salvantur

Aliud cecidit
super petram

Aliud cecidit
inter spinas

Aliud cecidit
in terram bonam



Aliud cecidit
secus viam



Thanks for your attention!

I would like to further discuss this topic with you.
Therefore you can find my contact information here:

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