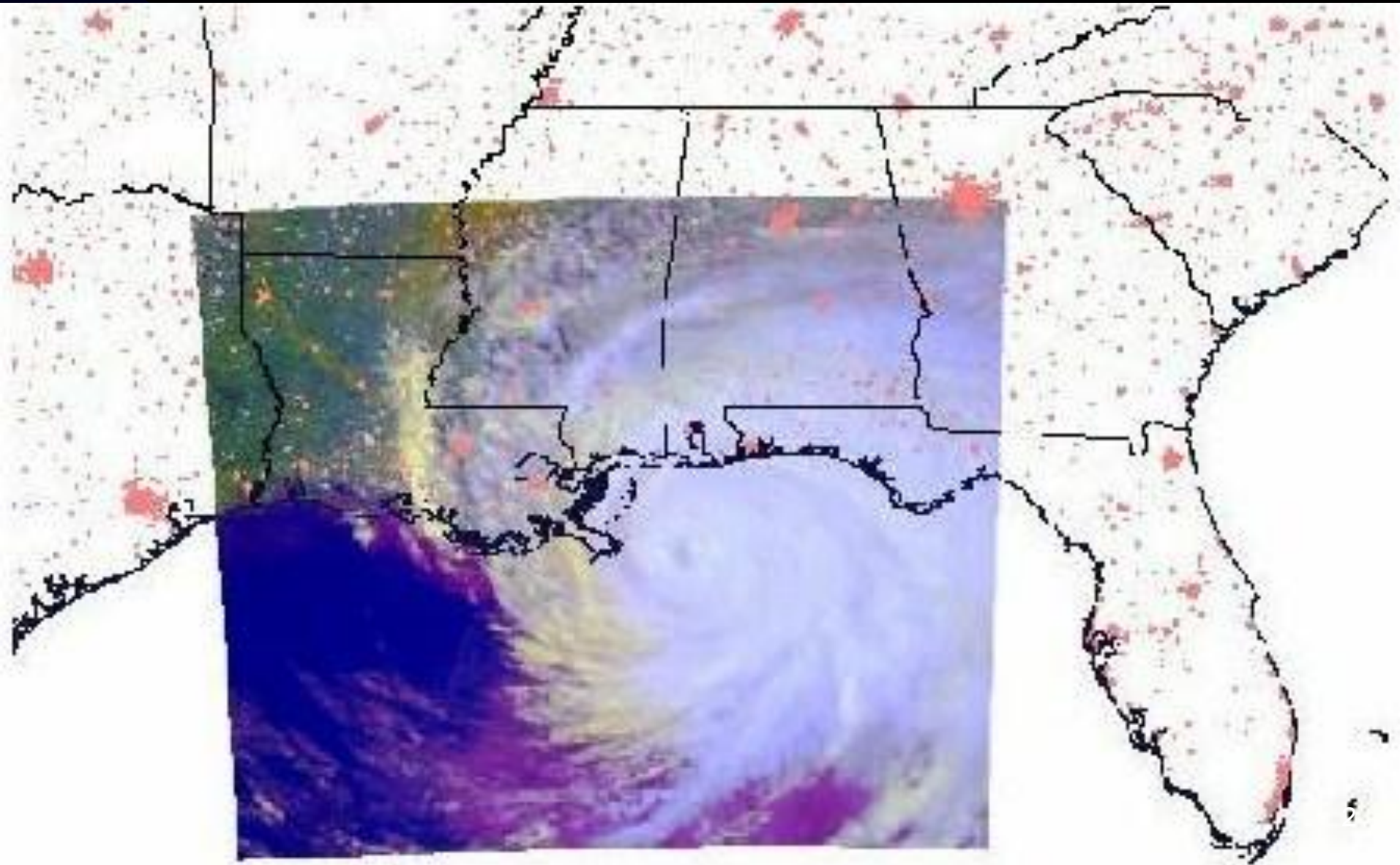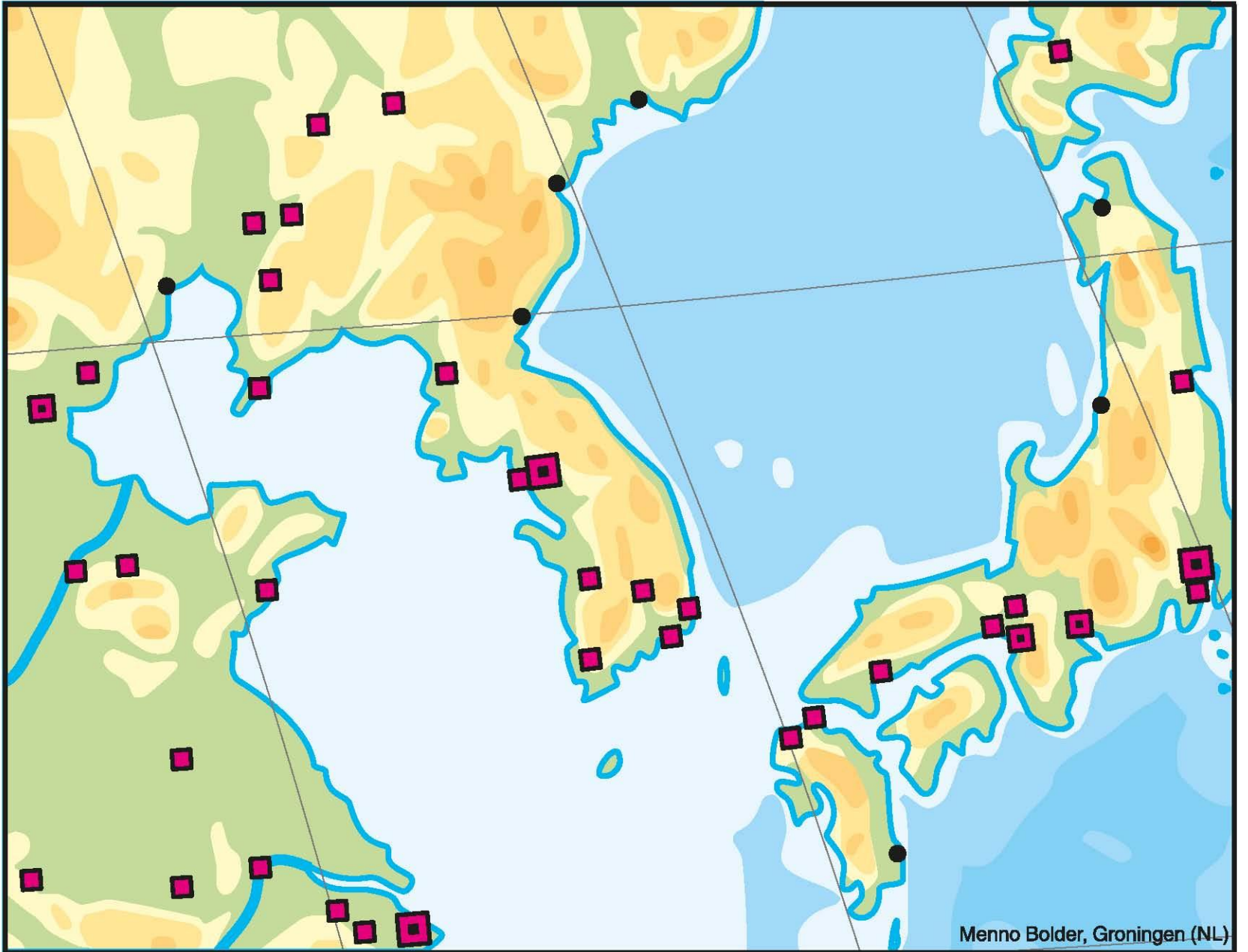# Names, Mapping and GIS

Ferjan Ormeling

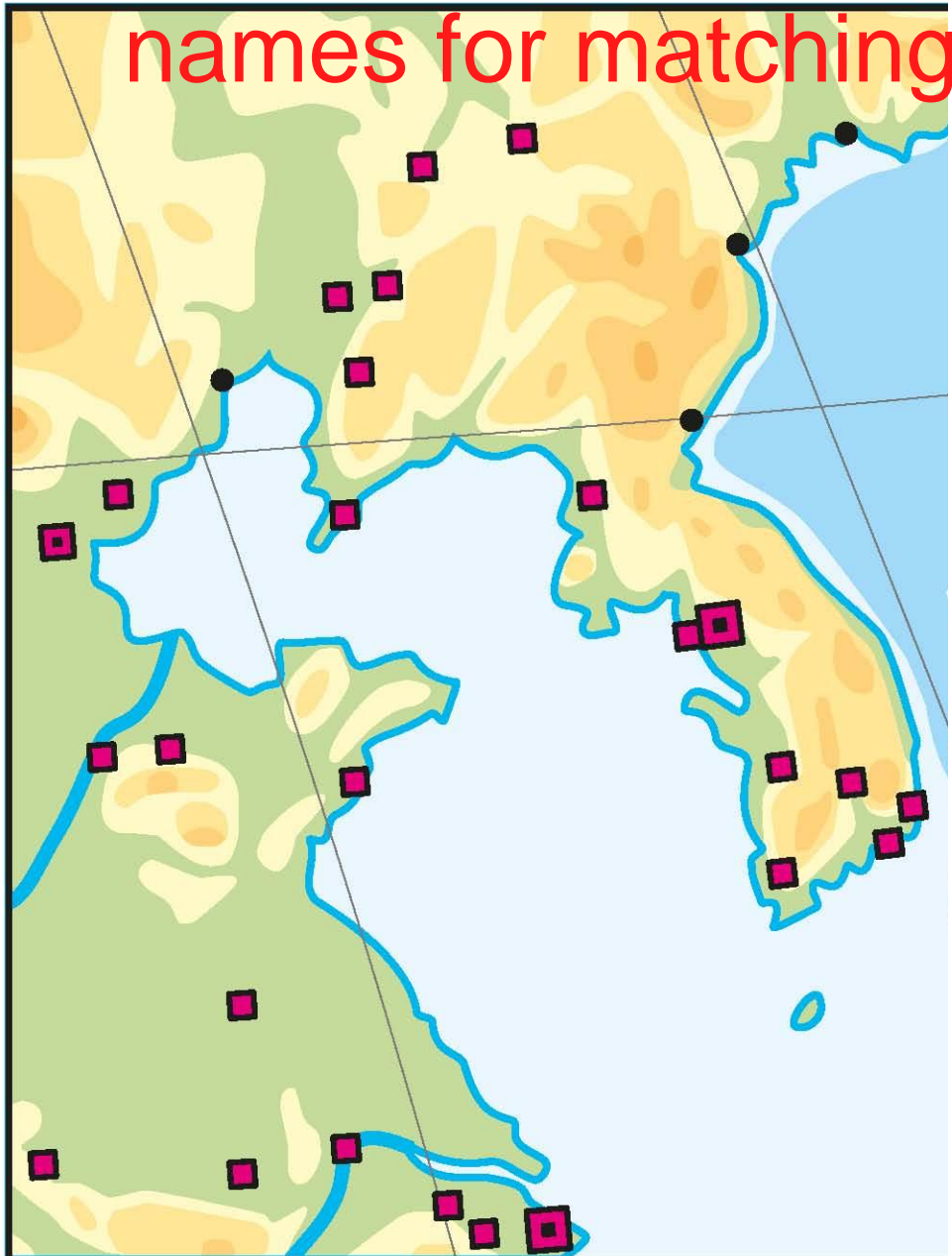UNGEGN

Matching geographical data

Menno Bolder, Groningen (NL)

3

The necessity of having geographical names for matching geographical data

The primary access to spatial information is via geographical names

- They are core reference data components (Inspire)
  → but (in general) still neglected

- They are geographic identifiers used for indirect
  spatial referencing (ISO 19112)
  → but there is no standardization organisation with power
  behind it

- They have to be integrated into national spatial data
  infrastructures (United Nations, Resolution VIII/6,
  2002)

  → are (in general) not yet fully integrated into national spatial
  data infrastructures
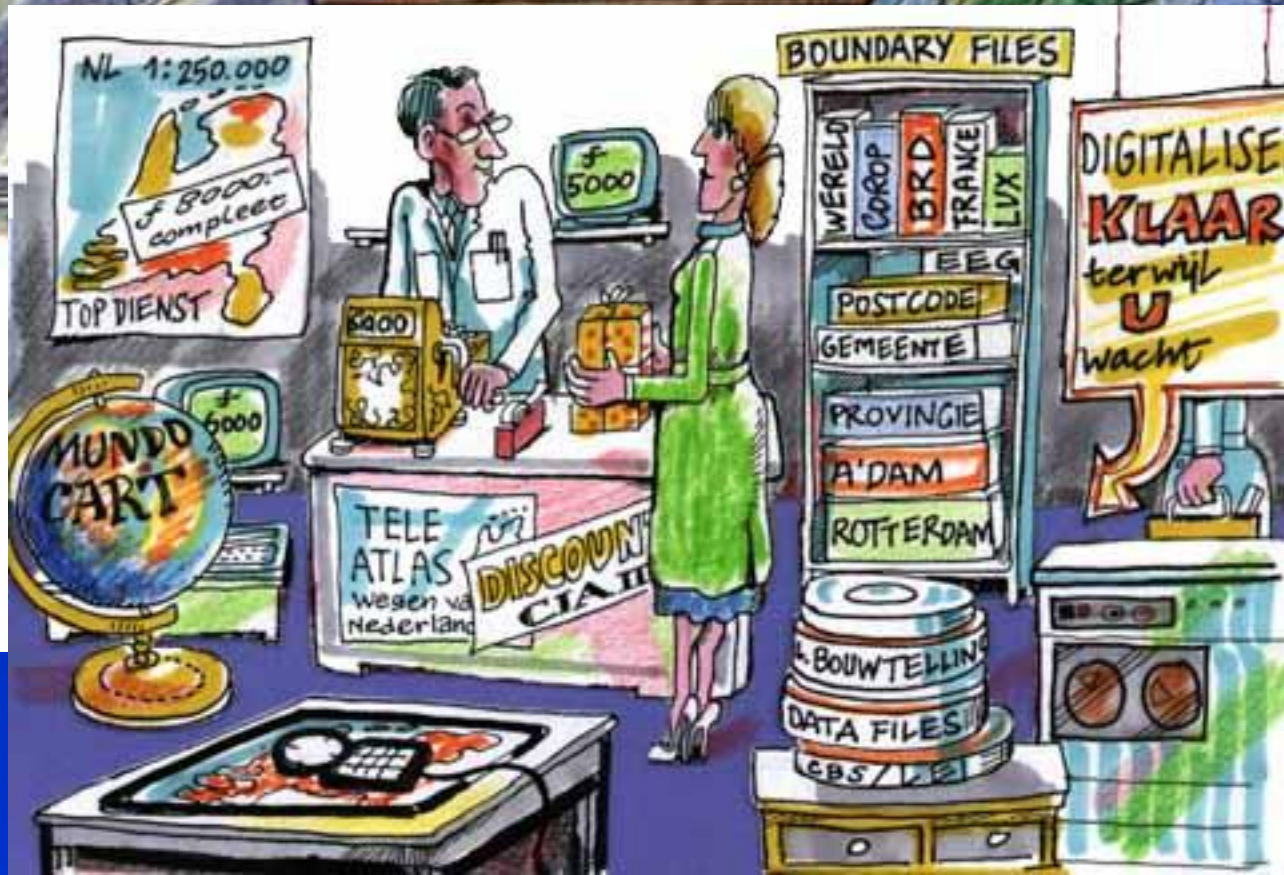
Maps and statistics
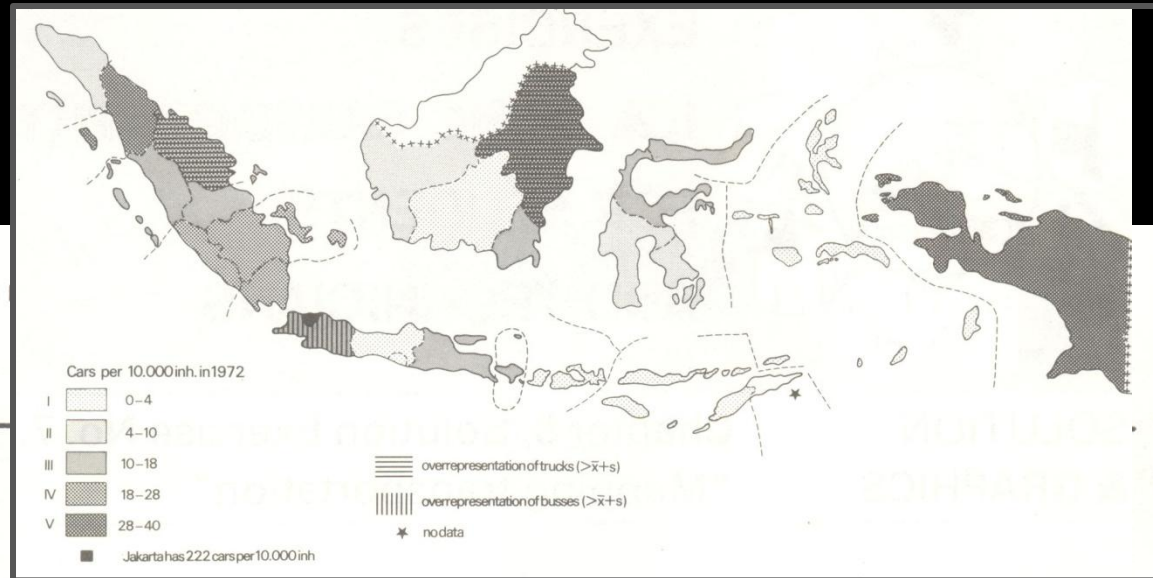
Rate per 10,000 population of motor vehicles on

	Province					
1	D.I. Aceh					
2	Sumatera Utara					
3	Sumatera Barat					
4	Riau					
5	Jambi		11,56	14,61	3,73	28,07	57,97
6,7,8.	Sumatera Selatan, Bengkulu & Lampung	18,26	16,66	5,99	24,48	65,39
10	D.K.I. Jakarta	221,75	53,47	14,32	328,59	618,13
9	Jawa Barat	15,85	8,17	1,03	30,61	55,66
11,12	Jawa Tengah & D.I.Yogyakarta	3,62	5,16	0,80	36,61	52,19
13	Jawa Timur	17,67	8,90	0,94	47,46	74,97
14	Bali	12,78	12,53	4,45	41,13	70,89
15	Nusa Tenggara Barat	3,70	4,44	0,96	8,47	17,57
16,17	Nusu Tenggara Timur & Timor Timur	3,05	3,53	0,04	7,96	14,58
18	Kalimantan Barat	5,64	3,74	0,94	28,56	38,88
19	Kalimantan Tengah	1,83	1,28	0,03	13,83	16,97
20	Kalimantan Timur	37,20	34,61	2,11	74,12	148,04
23,24	Sulawesi Utara & Sulawesi Tengah	10,35	7,99	1,76	26,92	47,02
22,25	Sulawesi Selatan & S. Tenggara	7,00	8,64	1,08	40,70	57,42
26	Maluku	2.90	7,73	0,61	9,54	20,78
27	Irian Jaya	33,24	14,11	1,13	35,21	83,69
	Indonesia	22,79	10,79	2,18	50,59	86,35

(Geo)parsing

Most of our resources have some form of spatial reference e.g. placename, county name, postcode,etc

'Geoparser's have been developed that will assist in the semi-automatic indexing of these resources by using the gazetteer as reference.

This classic gazetteer functionality: find where objects with specific names are located, is translated here as: find all documents referirng to this specific spatial object. This can be extended and turned into a more advanced functionality: find all places near a given spatial location.

More specifically, find places of a given <u>type</u> near a given spatial location. And even more specifically and possibly more useful in many circumstances:

Find the nearest place of a given type to a given spatial location.
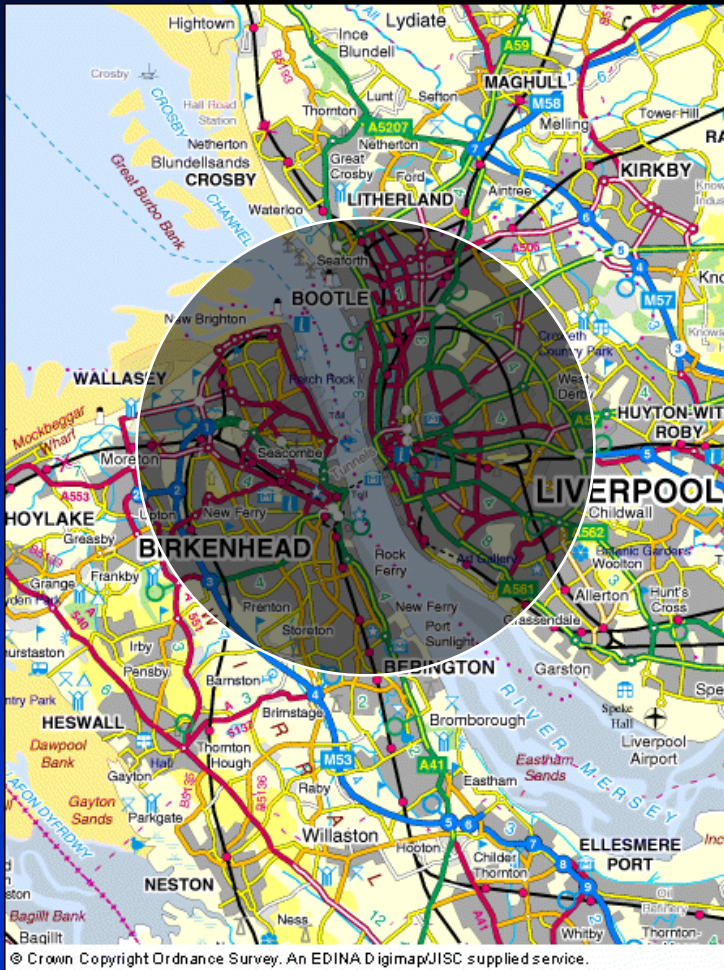
Necessary requirement: gazetteers

Task: Find resource about 'Liverpool docks'

Search using a 'traditional' gazetteer might yield:

co-ordinates allow (near) co-located places to be co-identified.

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Using spatial proximity in an active gazetteer, the search can be widened:

Place	County/UA
Liverpool	Liverpool
Bebbington	Wirral
Birkenhead	Wirral
Bootle	Sefton
New Brighton	Wirral
Seacombe	Wirral
Seaforth	Wirral
Waterloo	Sefton

… that means more & better hits …. !!!

(from Edina)

BOOKING.COM
online hotel reservations

Example: Region admin using boundary data by VAR

Cities in region Bas-Rhin (province)

#	city	ufi	hotels	center_distance	distance	remove
1	Andlau-au-Val	-1407594	2	25	0	remove
2	Blaesheim	-1412857	1	10	0	remove
3	Colroy-la-Roche	-1421139	1	36	11	remove
4	Erstein	-1425493	1	19	0	remove
5	Haguenau	-1431299	1	29	4	remove
6	La Petite-Pierre	-1438038	2	35	10	remove
7	Lingolsheim	-1447182	4	9	0	remove
8	Matzenheim	-1450259	1	21	0	remove
9	Molsheim	-1451945	2	8	0	remove
10	Morsbronn-les-Bains	-1453711	1	36	11	remove
11	Obernai	-1455637	1	14	0	remove
12	Ostwald	-1456340	2	12	0	remove
13	Rosheim	-1462667	1	12	0	remove
14	Schiltigheim	-1470024	1	13	0	remove
15	Schirmeck	-1470025	1	28	3	remove
16	Strasbourg	-1471697	35	13	0	remove
17	Wangenbourg	-1478021	1	18	0	remove
18	Wissembourg	-1478168	2	56	31	remove
Total			60			

Region properties

center longitude	7.56
center latitude	48.59
radius	25 km

Define / delete custom polygon

Geographic objects of interest, looked for by for instance tourists:

- **Populated places:** cities / villages / municipalities etc.
- **Regions:**
  - ◆ Administrative regions (provincie, departement, canton etc.)
  - ◆ Free regions:
    - ★ Lakes (Lago Maggiore)
    - ★ Rivers (Mosel)
    - ★ Islands (Cyclades)
    - ★ Coastal areas (Côte d'Azur)
    - ★ Mountains (Erzgebirge)

Punch in coordinates and feature code → list of (named) objects → select most likely object → link to other db

select most likely object → relevant attribute information

link to other db → additional attribute information

relevant attribute information → take appropriate decisions

additional attribute information → take appropriate decisions
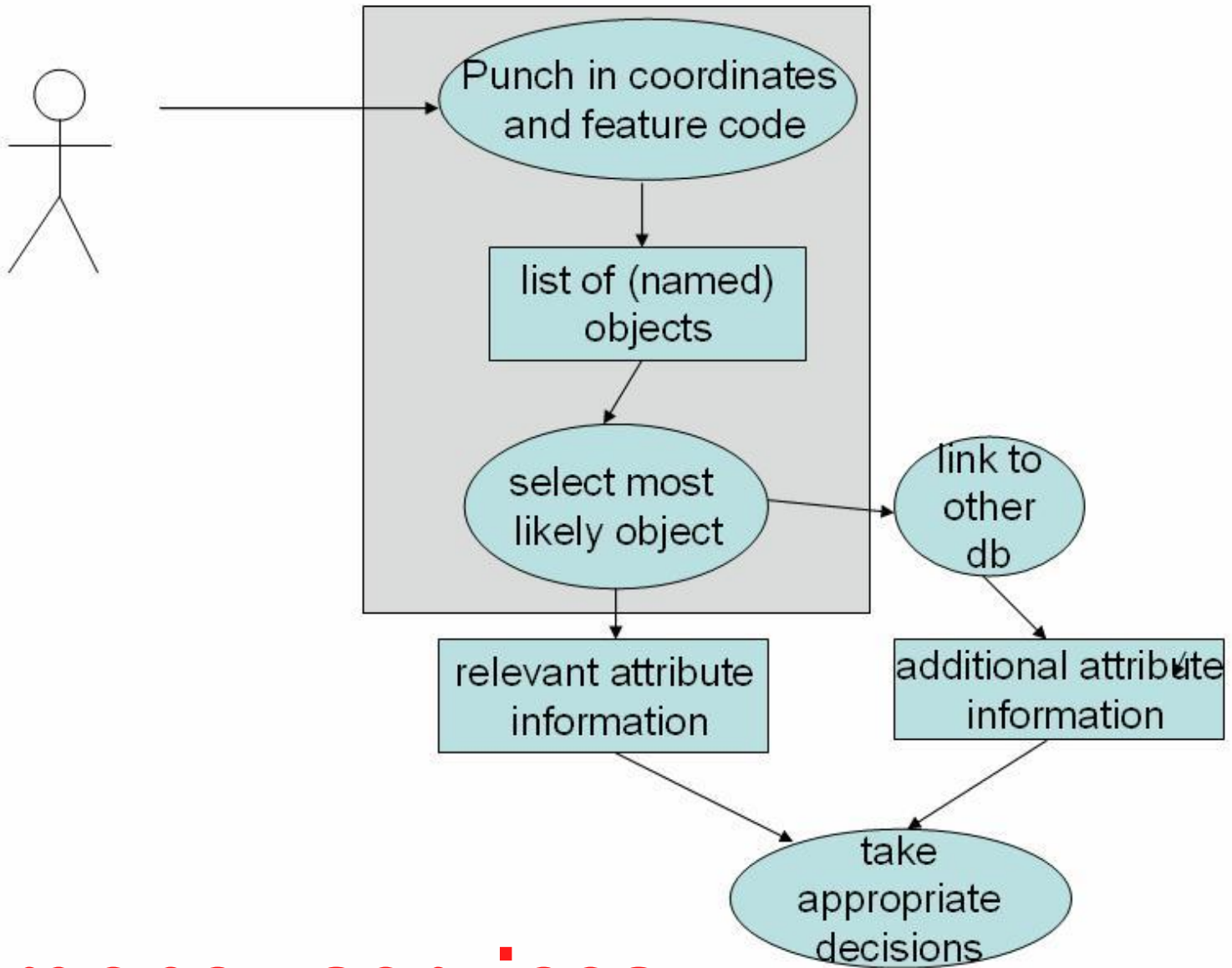
Emergency services

GIS operations

- Querying, buffer and overlay operations on the basis of named objects are possible on the basis of place name standardization