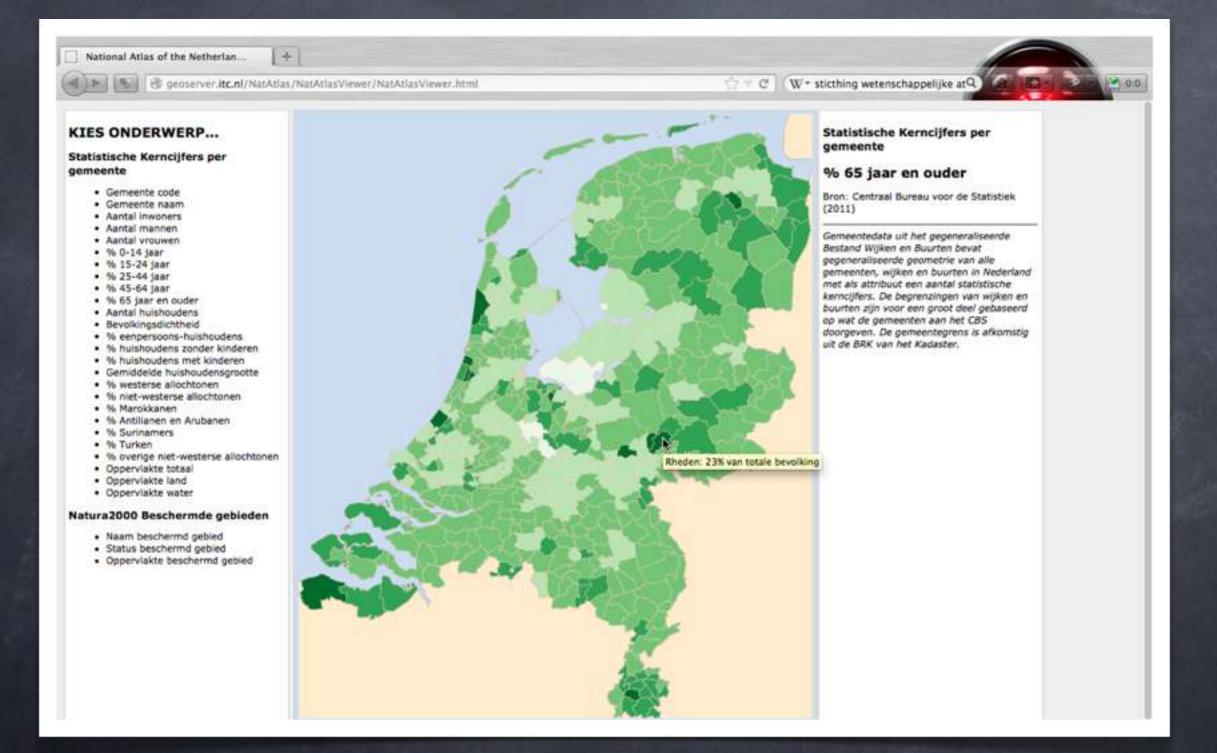
UNIVERSITY OF TWENTE.

Middleware Services for Atlases as Part of Spatial Data Infrastructures

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Demo time!



www.nationaleatlas.nl

demo shows the "public face"

National Atlas of the Netherlan... +

S peoserver.itc.nl/NatAtlas/NatAtlasViewer/NatAtlasViewer.html

W+ sticthing wetenschappelijke atQ

KIES ONDERWERP... Statistische Kerncijfers per gemeente Statistische Kerncijfers per gemeente % 65 jaar en ouder · Gemeente code Bron: Centraal Bureau voor de Statistiek · Gemeente naam (2011) Aantal inwoners Aantal mannen Gemeentedata uit het gegeneraliseerde Aantal vrouwen Bestand Wijken en Buurten bevat % 0-14 jaar gegeneraliseerde geometrie van alle · % 15-24 jaar gemeenten, wijken en buurten in Nederland · % 25-44 jaar met als attribuut een aantal statistische % 45-64 jaar kerncijfers. De begrenzingen van wijken en % 65 jaar en ouder buurten zijn voor een groot deel gebaseerd Aantal huishoudens op wat de gemeenten aan het CBS Bevolkingsdichtheid doorgeven. De gemeentegrens is afkomstig % eenpersoons-huishoudens uit de BRK van het Kadaster. % huishoudens zonder kinderen % huishoudens met kinderen · Gemiddelde huishoudensgrootte % westerse allochtonen % niet-westerse allochtonen % Marokkanen % Antilianen en Arubanen % Surinamers · % Turken % overige niet-westerse allochtonen Rheden: 23% van totale bevolking Oppervlakte totaal · Oppervlakte land · Oppervlakte water Natura2000 Beschermde gebieden · Naam beschermd gebied Status beschermd gebied · Oppervlakte beschermd gebied

what's the story behind it?

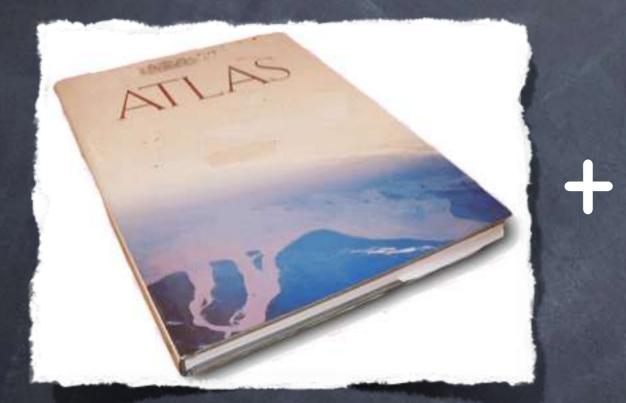
Brief history of the Dutch National Atlas

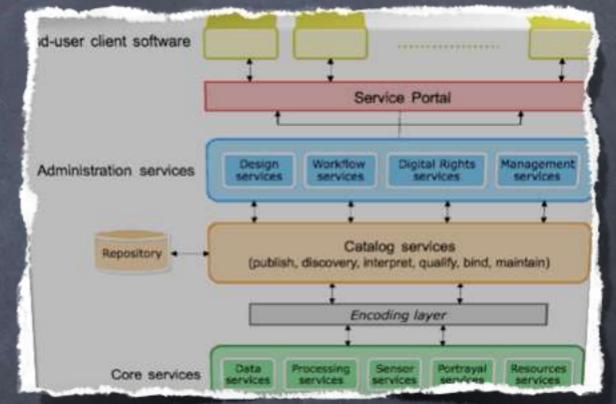
after 1998 government involvement and funding ended

=> limited and fragmented academic projects to keep atlas alive

Prototype of 3rd edition

Atlas as part of a Spatial Data Infrastructure

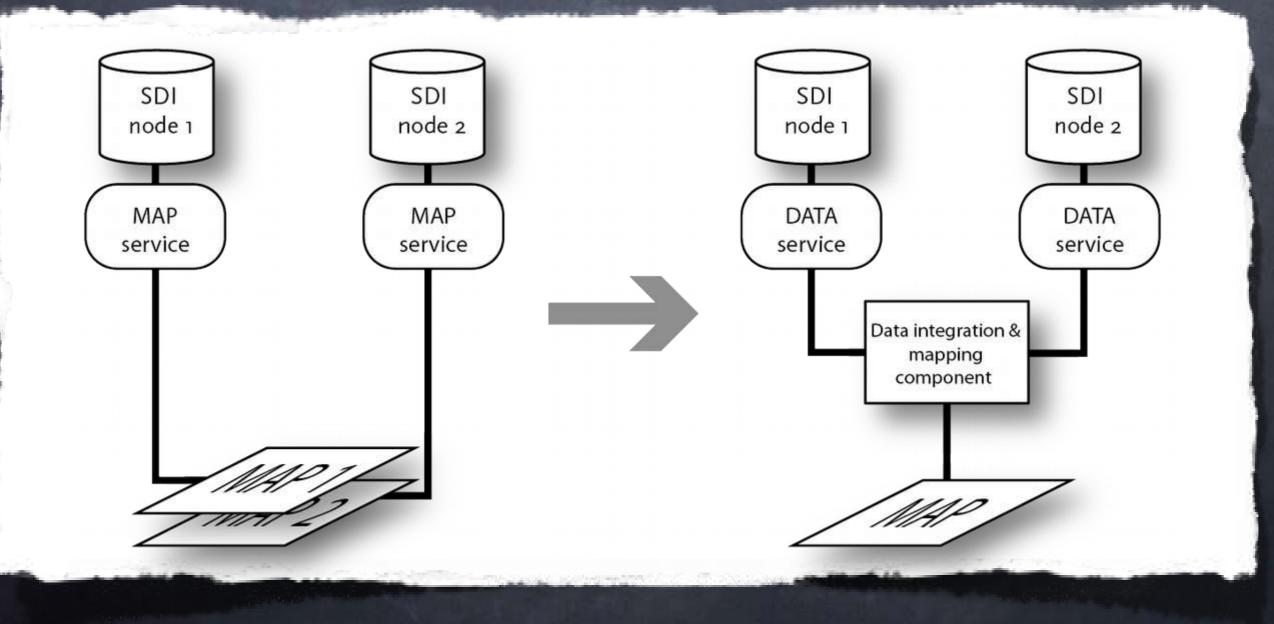




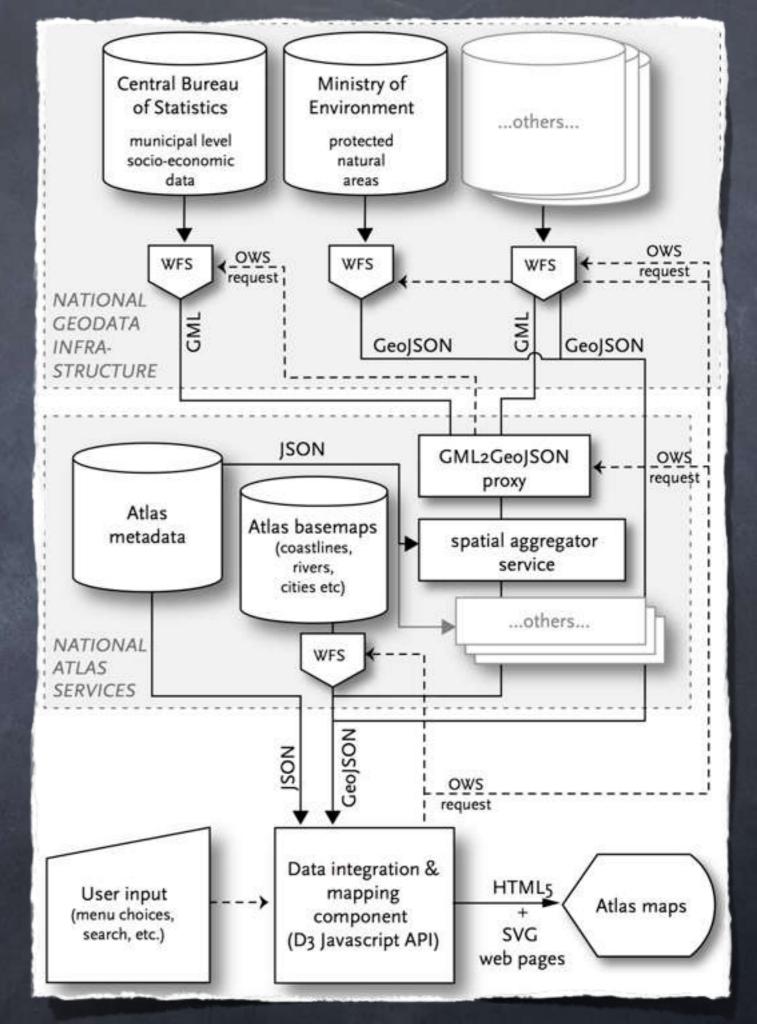
a combination of two different worlds

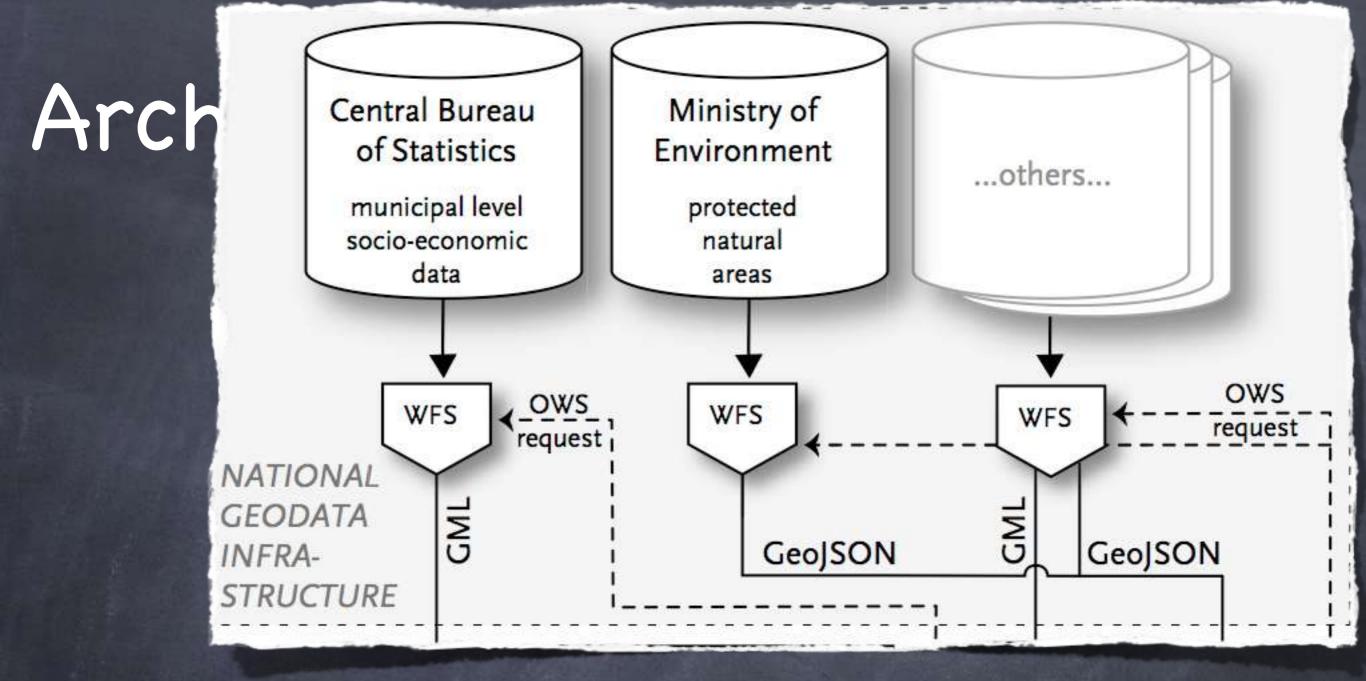
Mapping in a webservices environment

where the atlas is "just another SDI node"...



Architecture

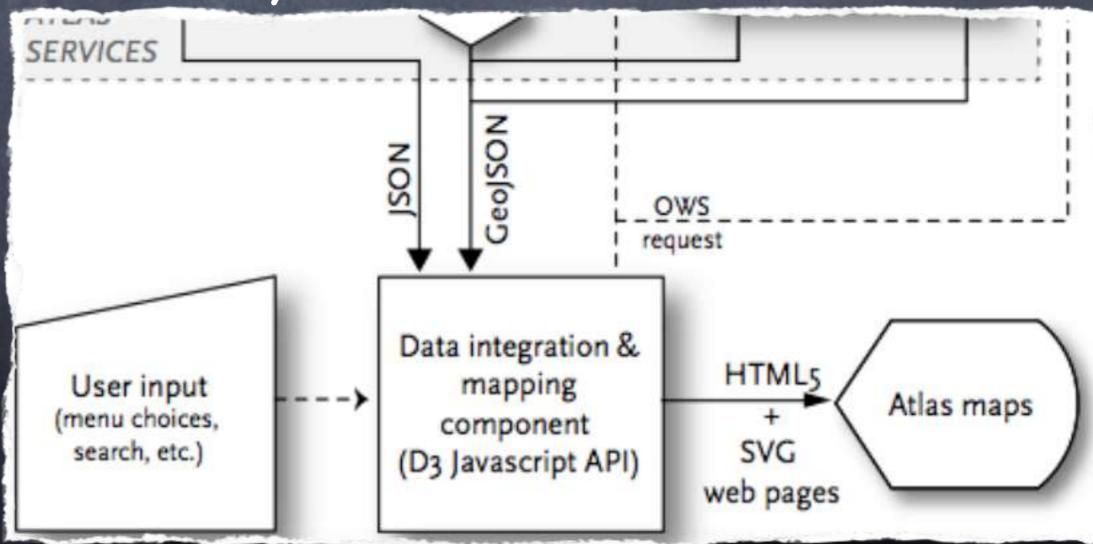




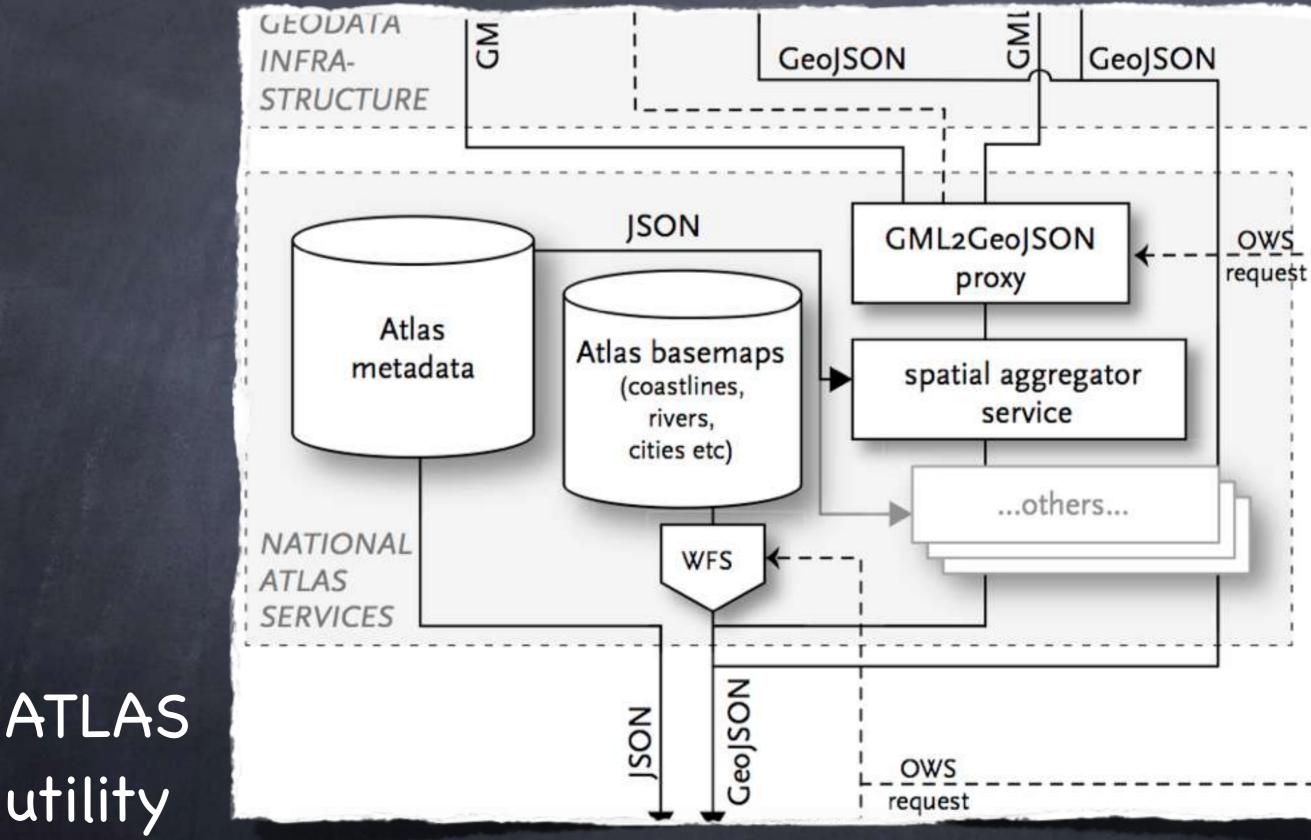
use data services
(WFS) requests
GeoJSON where
possible

Architecture

Atlas Viewer: - based on the Open Web Platform - uses D3 library

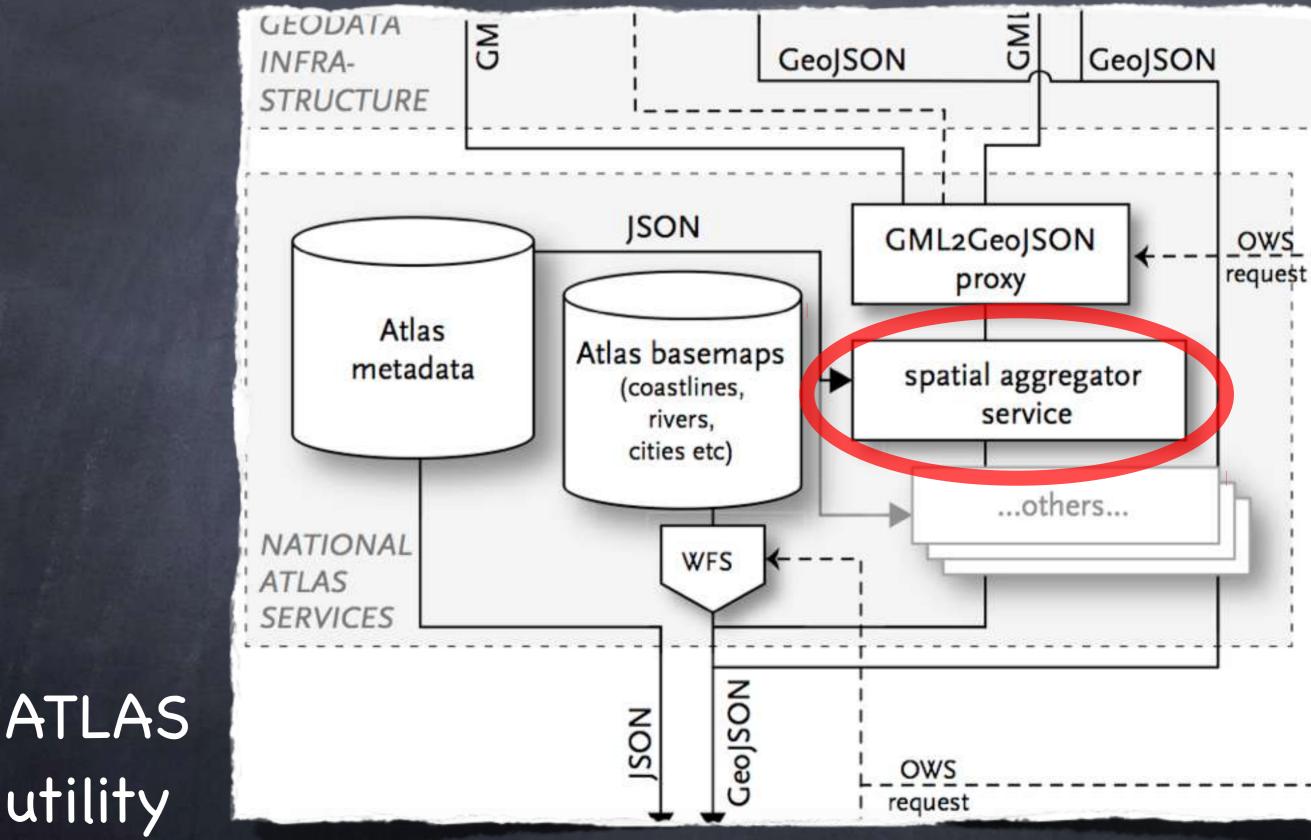


Architecture: middleware



services & basedata

Architecture: middleware



services & basedata

Architecture NORMAL DATA SERVICE

```
"mapgroups": [
```

```
"groupnum": "0",
"groupname": "Statistic Core Data per Municipality",
"groupDescription": "Municipal data consists of the geometry of all municipa
"date": "2011",
"defaultLabelAttribute": "GM_NAAM",
"source": "Central Bureau for Statistics (CBS)",
"serviceType": "WFS",
"serviceVersion": "1.1.0",
"serviceURL": "http://geoservices.cbs.nl/ArcGis/rest/services/wfs?",
"serviceTypeName": "natatlas%3AWijkenBuurten2011%3AGemeenten_2011",
"serviceOutputFormat": "json",
"maps": [
   "data_attribute": "GM_CODE",
   "unit": "".
    "name": "Municipality code",
    "maptype": "area_colour"
    "data_attribute": "GM_NAAM",
```

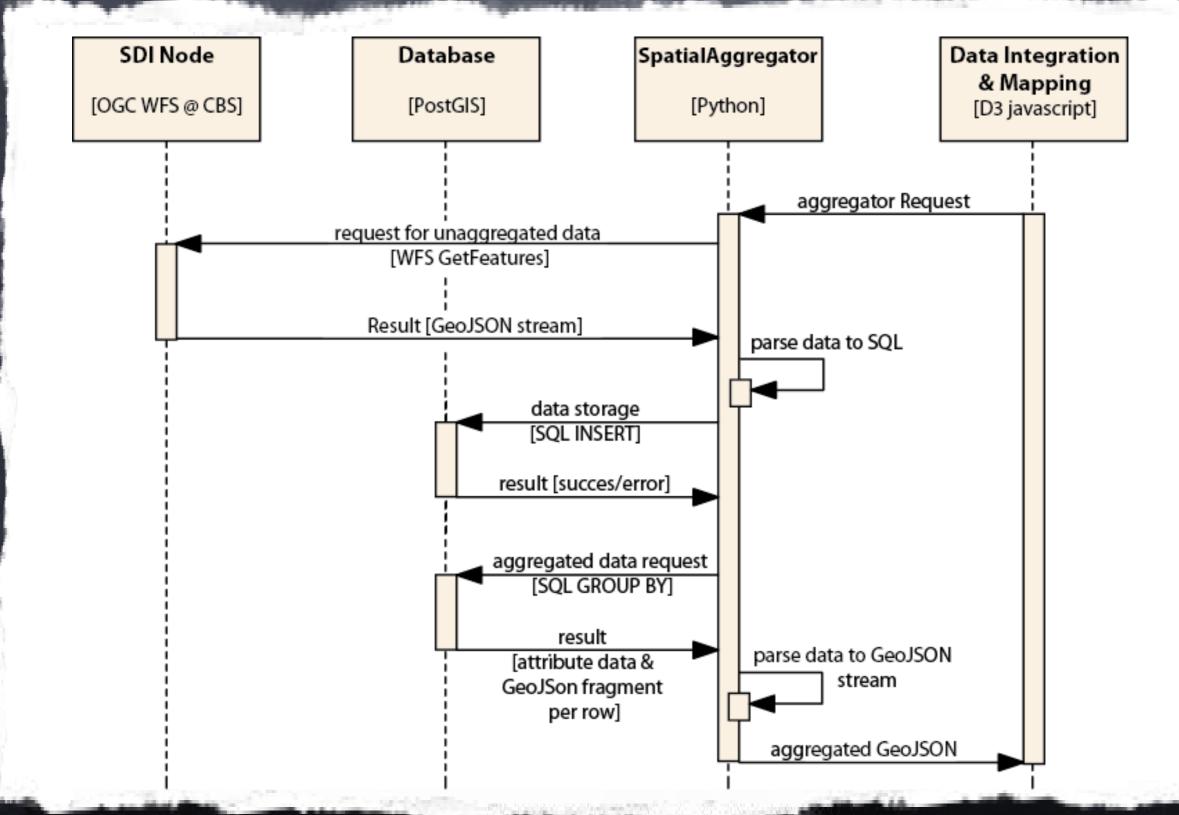
Architecture SPATIAL AGGREGATOR SERVICE

```
"serviceType": "WFS",
"serviceVersion": "1.1.0",
"serviceURL": "http://geoserver.itc.nl/natatlas/spatialaggregator?",
"serviceTypeName": "gem2prov",
"serviceOutputFormat": "json",
"maps": [
    {
        "data_attribute": "aant_inw",
        "unit": " inhabitants",
        "name": "Population",
```

```
"maptype": "point_size",
"spatial_aggregation" : "union",
"attribute_aggregation": "sum"
```

```
"data_attribute": "bev_dichth",
"unit": " inhabitants per km2",
"name": "Population density",
"maptype": "area_value",
"spatial_aggregation" : "union",
"attribute_aggregation": "round_average"
```

Architecture: middleware SPATIAL AGGREGATOR SERVICE



Architecture: middleware SPATIAL AGGREGATOR SERVICE

very much a "proof-of-concept"
tightly coupled to CBS WFS
use of PostGIS is pragmatic, not robust
more attention to interface needed

Conclusions

the test bed shows:

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that a (National) Atlas as an integral part of a (National) SDI is feasible

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that a (National) Atlas as an <u>integral part</u> of a (National) SDI is feasible

> provides many advantages (up-to-date, flexible, extensible, interoperable)

What's next?

work in slow progress (funding ended 2009)

core is implemented, still lots more needed

viewer: better UI, combinations of maps

atlas services: atlas metadata formalisation

Thank you!

follow the progress at:

<u>www.nationaleatlas.nl</u> (follow the english)

code on gitHub: https://github.com/kobben/NatAtlas

For details see: Cartographic Journal 50:3, pp. 225-231