

combination and comparison tools for

# Thematic Maps

in a webservices environment



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# A change in my world

My tools once were these:



# A change in my world

...but now look like this:

The screenshot displays a web browser window with the URL `localhost/D3tests/tracksViewer/napoleon.html`. The browser tabs include "The Graphical Web 2014" and "TRACKING GEOGRAPHY &". The browser's address bar shows the local file path. Below the browser, a code editor window titled "Napoleon.html - D3tests" is open, showing the source code for the visualization. The code is in JavaScript and uses D3.js to create a timeline chart. The code includes comments and variable declarations for margin, centered, projection, svg, path, g, and div. The timeline chart is visible on the right side of the code editor, showing a horizontal axis with labels for October, November, and December. The chart displays a series of vertical lines representing events, with some lines extending upwards and others downwards. The chart is styled with a blue background and red dots for markers. The code editor also shows a file explorer on the left with a project structure including folders like "azimuth-distance", "cartogram", "data", "distancePerception", "example", "LangstonsAnt", "lib", "Masterarbeit", "RDproj\_test", "testFilter", "tracksViewer", and "worldAttributes". The status bar at the bottom of the code editor shows "73:32 LF UTF-8 Git: master".

```
54 d3.selectAll("#Timeline").append("chart");
55
56 // define variables
57 var margin = {top: 0, right: 0, bottom: 0, left: 0};
58 width = 510;
59 height = 330;
60
61
62 var centered;
63
64 // define projection parameters
65 var projection = d3.geo.mercator()
66   .center([28.88034, 54.260112])
67   .rotate([0,0])
68   .scale(39000);
69
70 // create svg canvas to draw map on
71 var svg = d3.select("#Map").append("svg")
72   .attr("width", width)
73   .attr("height", height)
74   .attr("border", 3)
75   .attr("class", "canvas");
76
77 // create path object
78 var path = d3.geo.path().projection(projection);
79
80 // create group object g
81 var g = svg.append("g");
82
83 // create div object to use for dynamic tooltip
84 var div = d3.select("body")
85   .append("div")
86   .attr("class", "tooltip")
87   .style("opacity", 0);
```

But my task is still the same:

*“show the story in the data”*

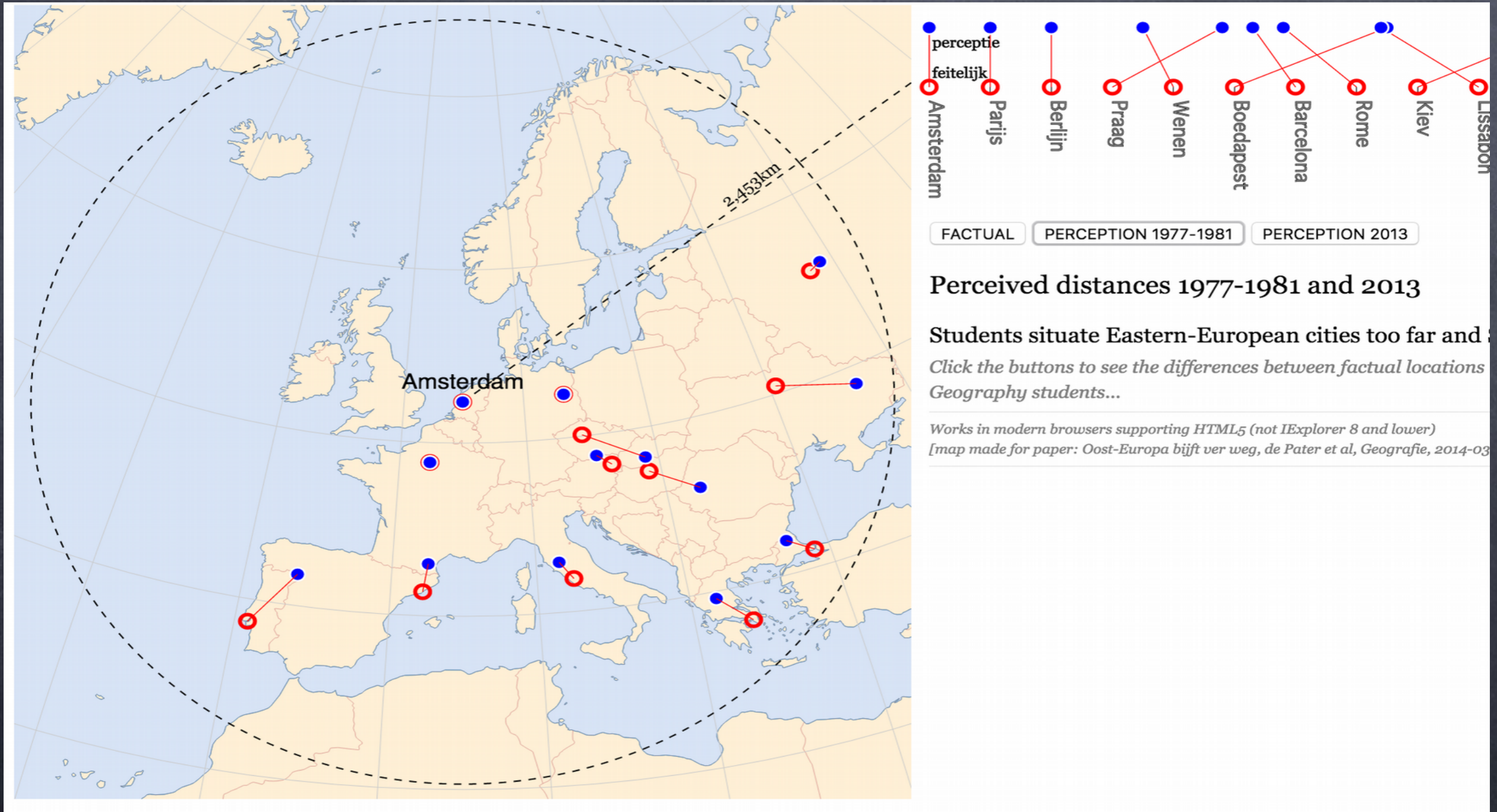
But my task is still the same:

*“show the story in the data”*

*the*

*cartographic intent*

# in simple ways...

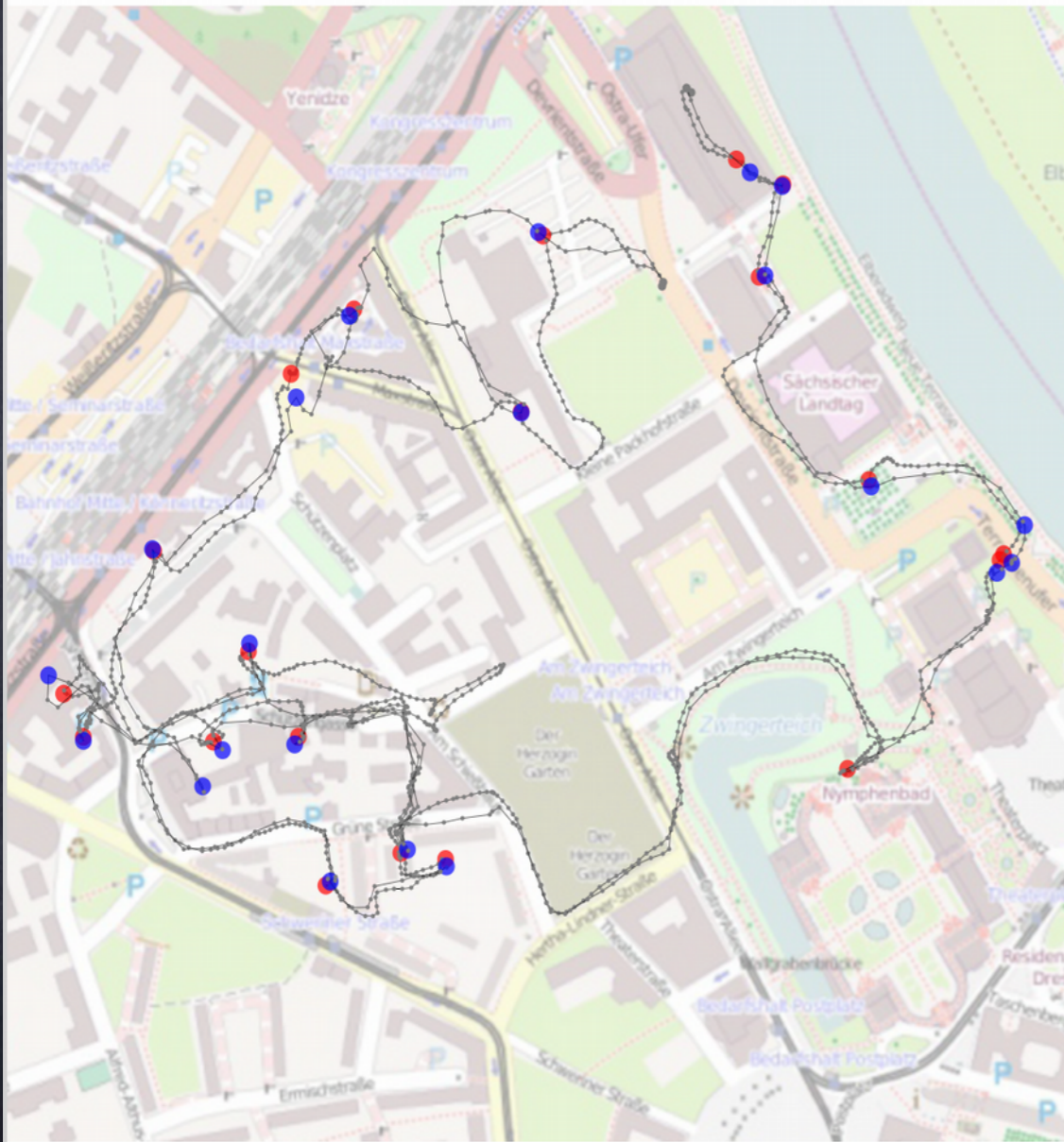


[kartoweb.itc.nl/D3tests/distanceperception/index\\_en.html](http://kartoweb.itc.nl/D3tests/distanceperception/index_en.html)

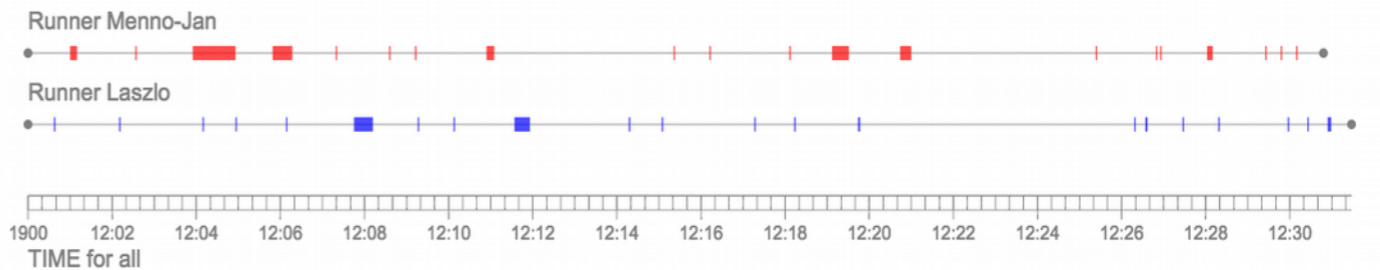
# ...or less simple ways

## GEOGRAPHY (click & hold to separate)

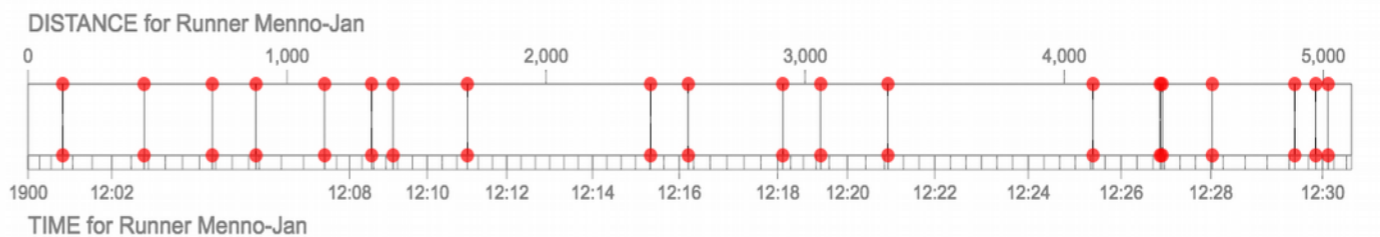
- Runner Menno-Jan
- Runner Laszlo



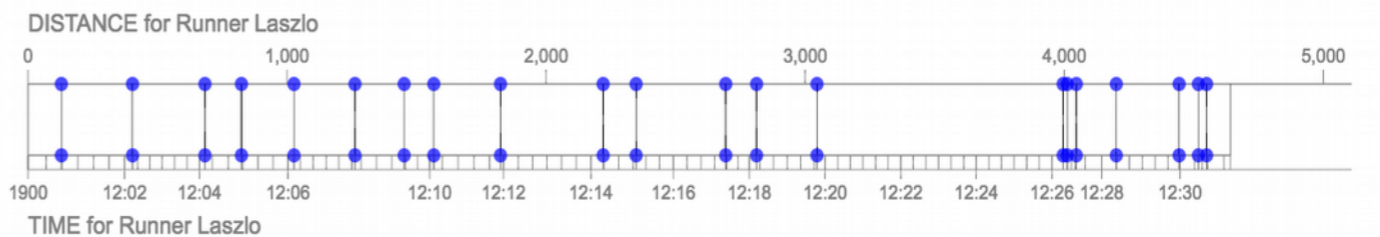
## FROM TIME TO GEOGRAPHY



## FROM GEOGRAPHY TO TIME for Runner Menno-Jan



## FROM GEOGRAPHY TO TIME for Runner Laszlo



comparing spatial phenomena



comparing spatial phenomena

...is often the way people get “the story”

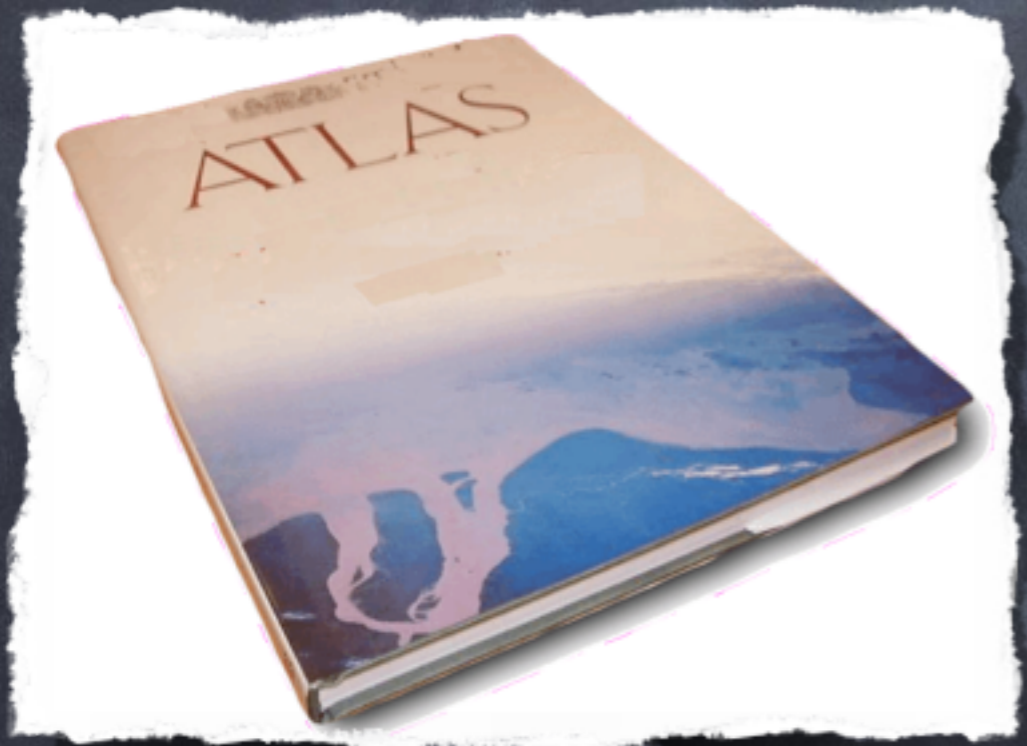
# The new role of the cartographer

providing  
(cartographic knowledge for)  
tools that implement cartographic intent:

*“code that thinks like a  
cartographer”*

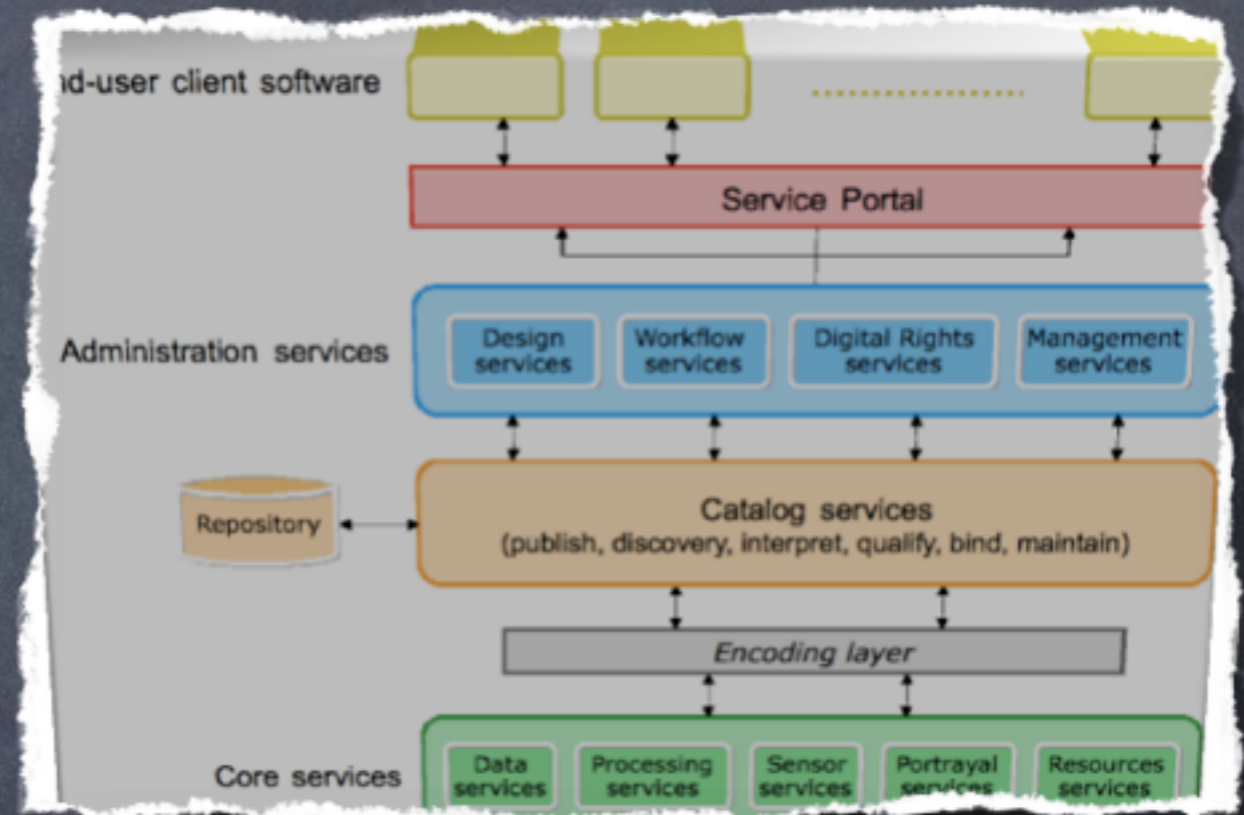
# Maps as part of a Spatial Data Infrastructure

# Maps as part of a Spatial Data Infrastructure



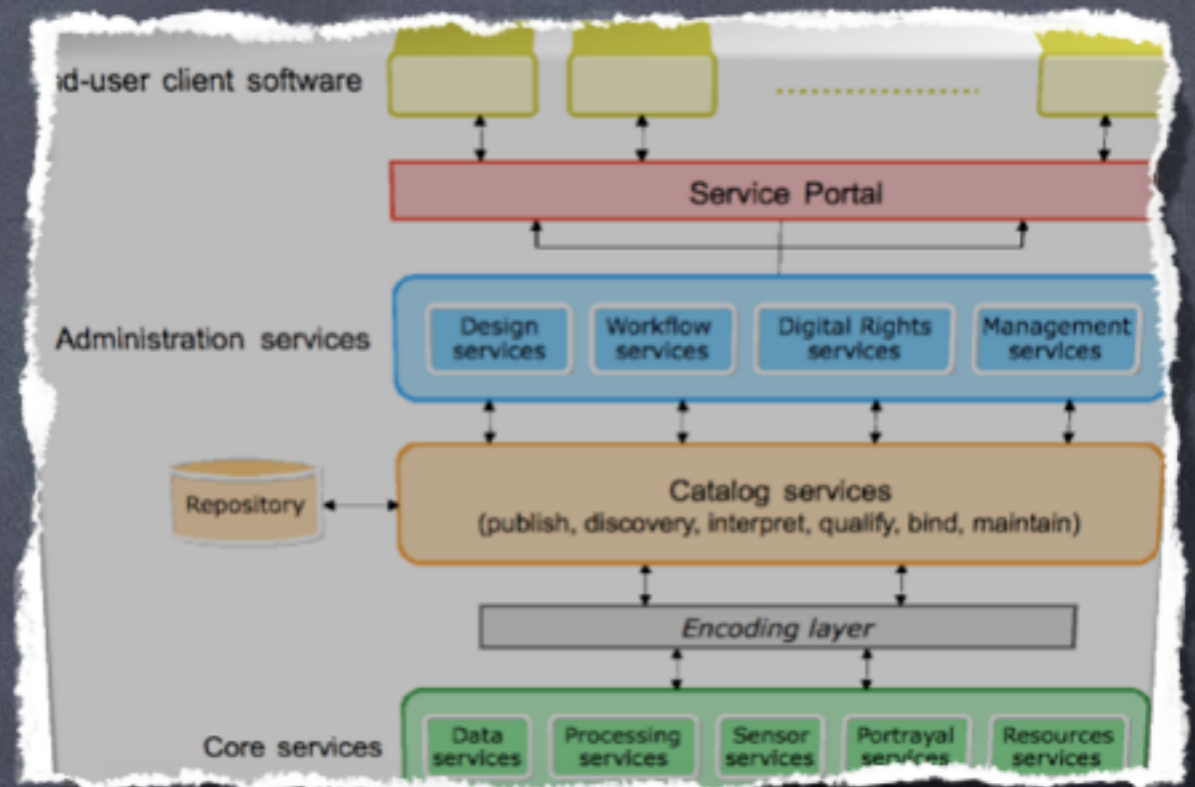
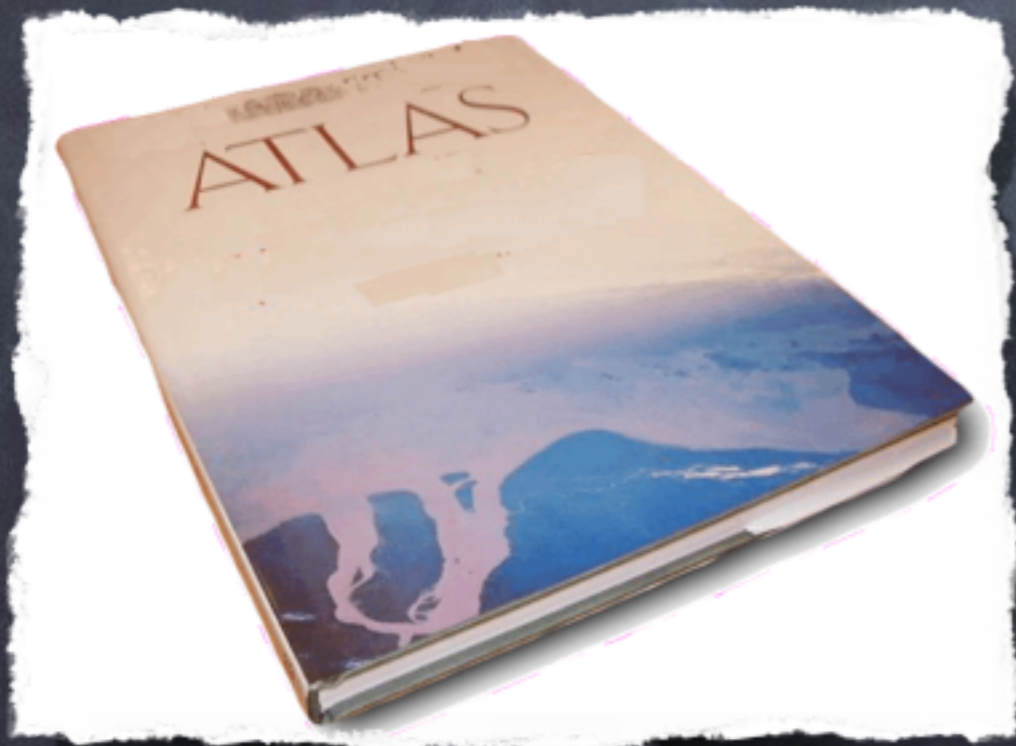
presents a synthesis  
optimised for visualisation

# Maps as part of a Spatial Data Infrastructure



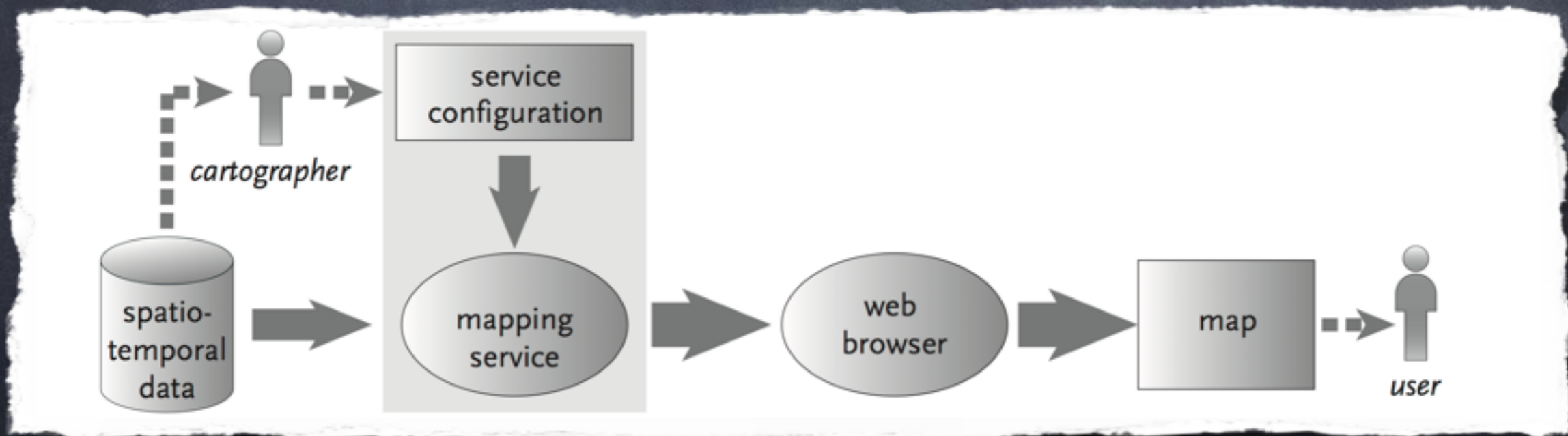
visualisation of separate data, not  
optimised for combinations (synergy)

# Maps as part of a Spatial Data Infrastructure

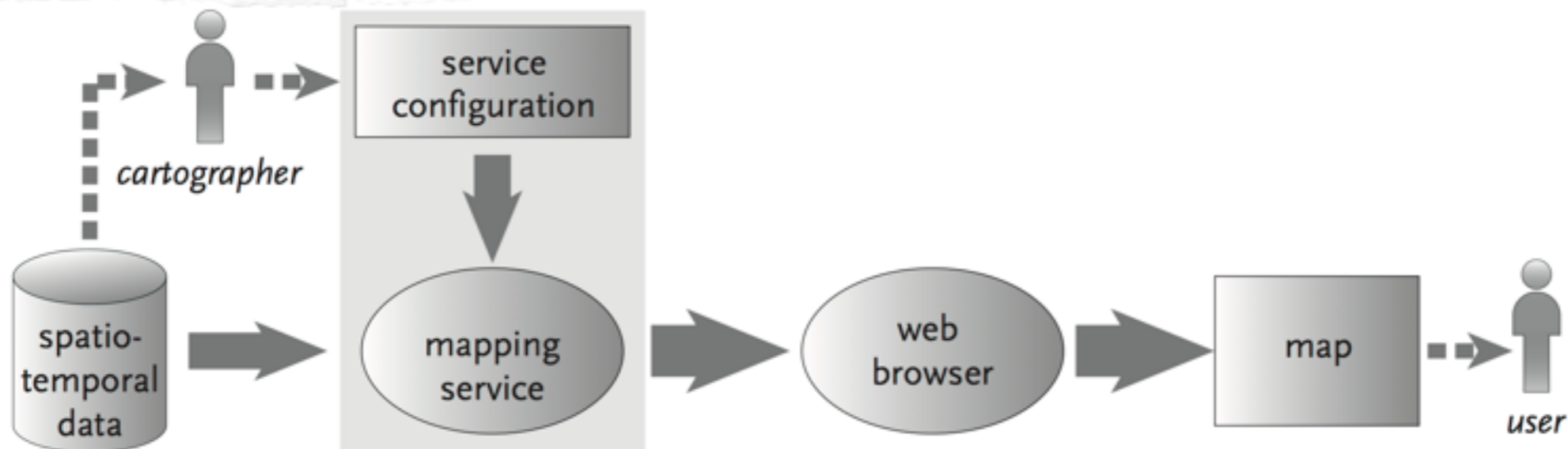


a combination of  
two different worlds

# Mapping in a webservices environment

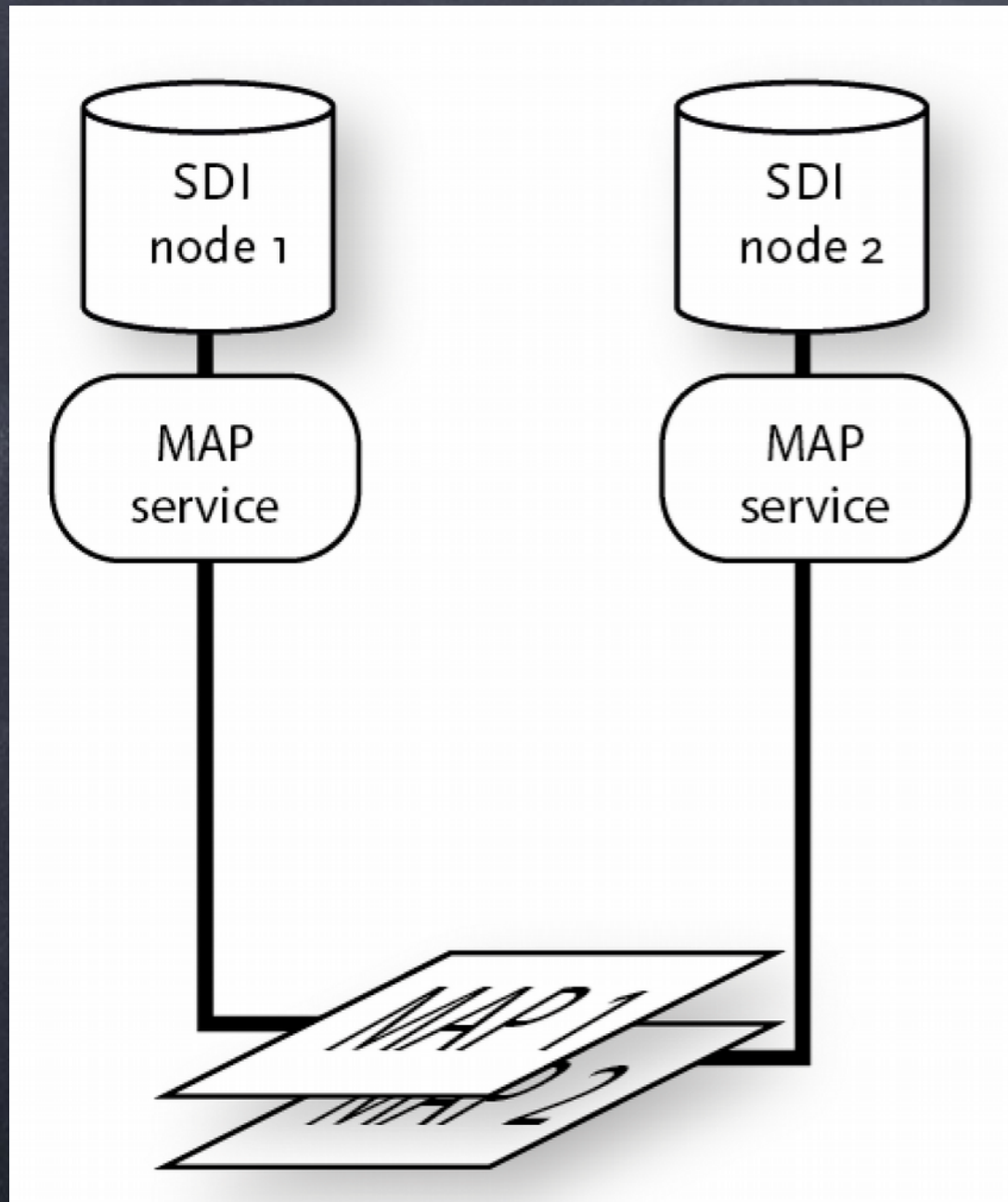


# Mapping ~~in~~ a webservices environment as part of



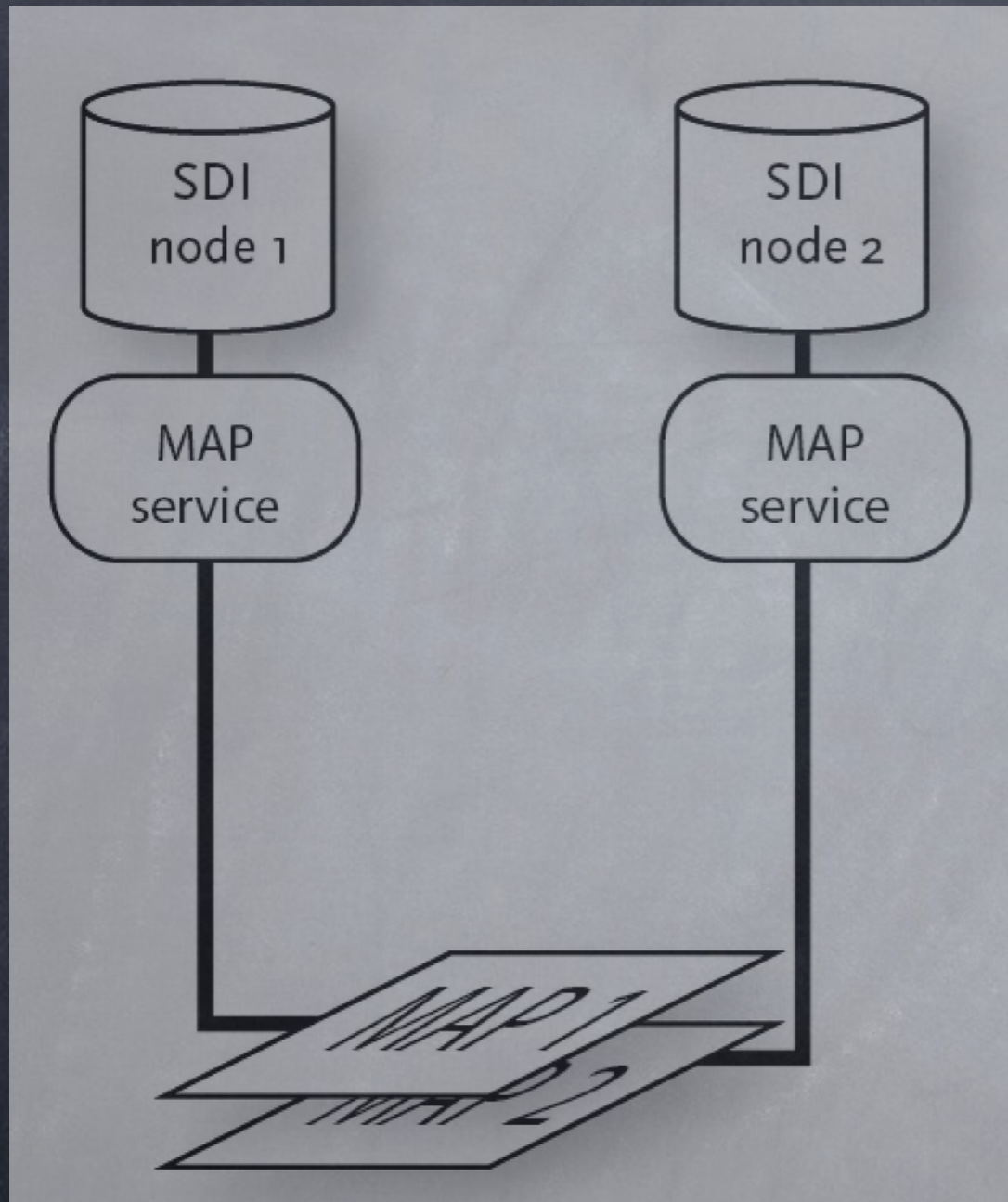


# conceptual change needed

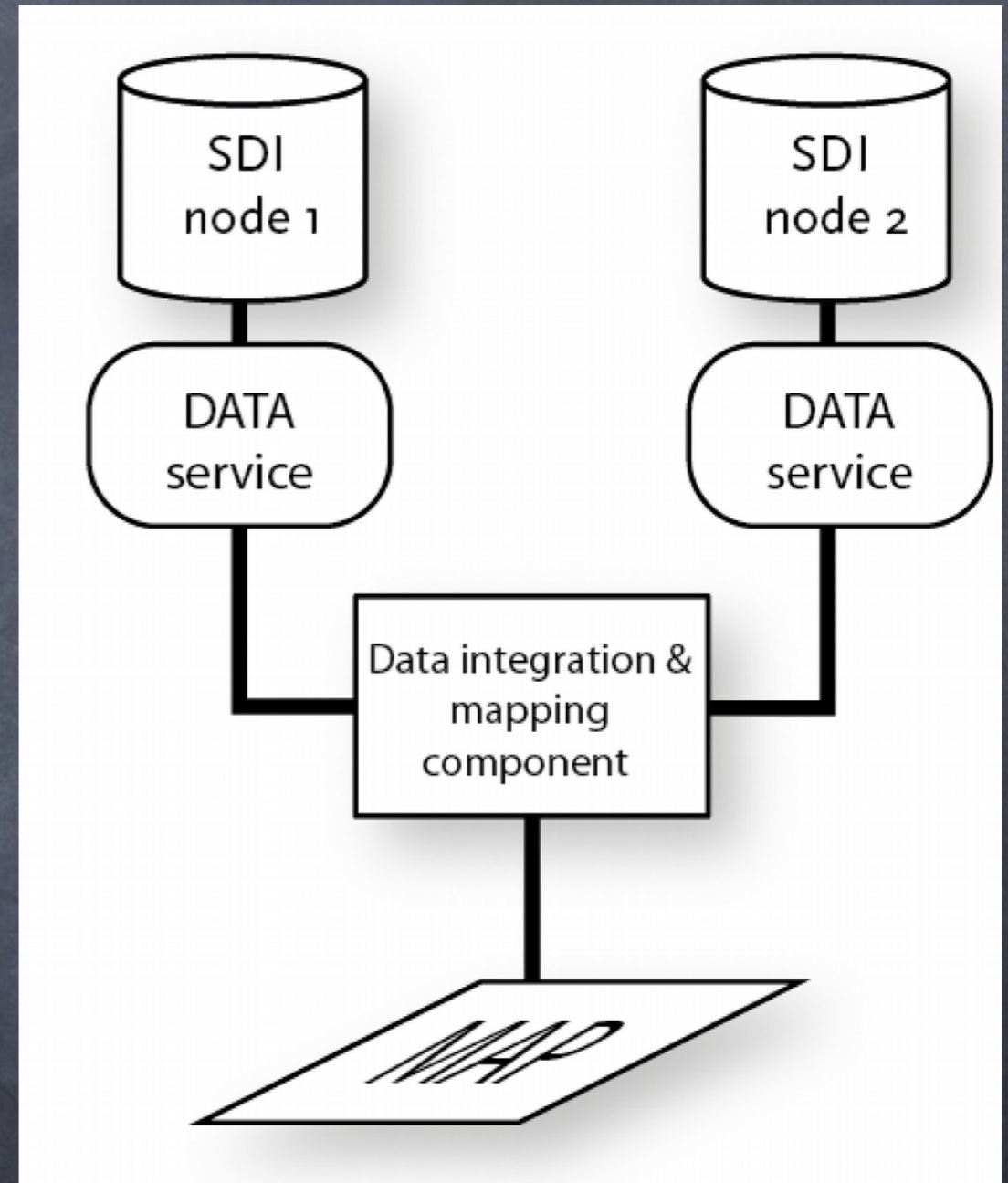
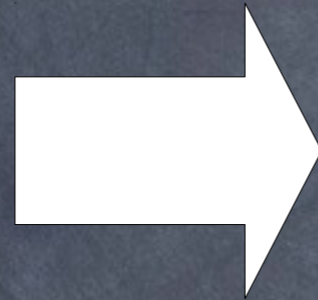


sub-optimal combination  
of arbitrary map layers

# conceptual change needed

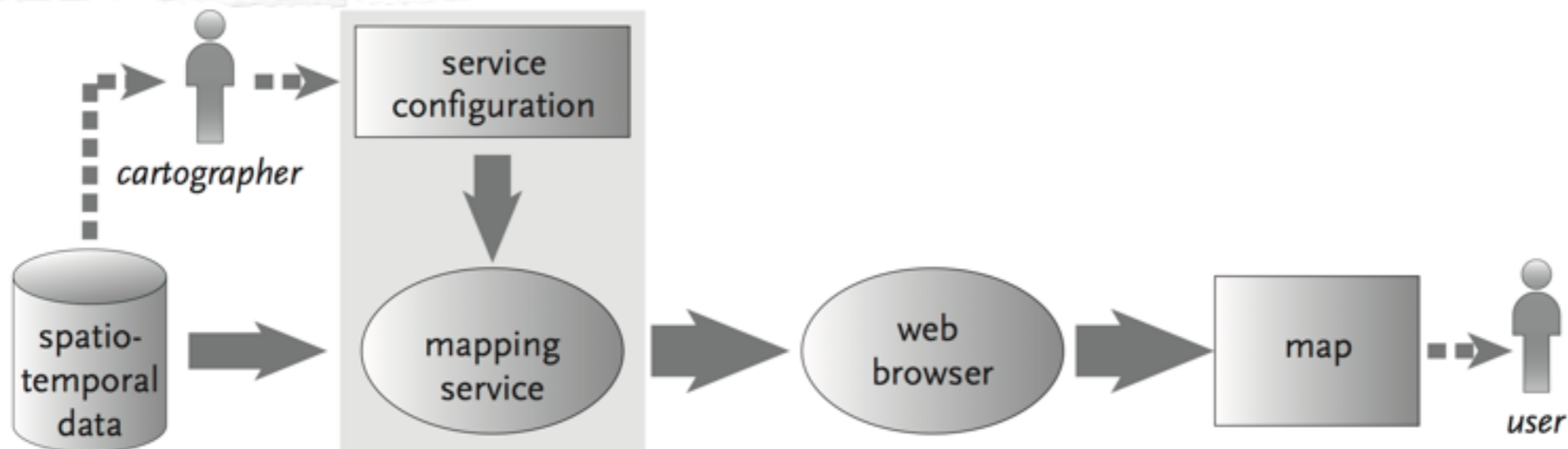


sub-optimal combination  
of arbitrary map layers

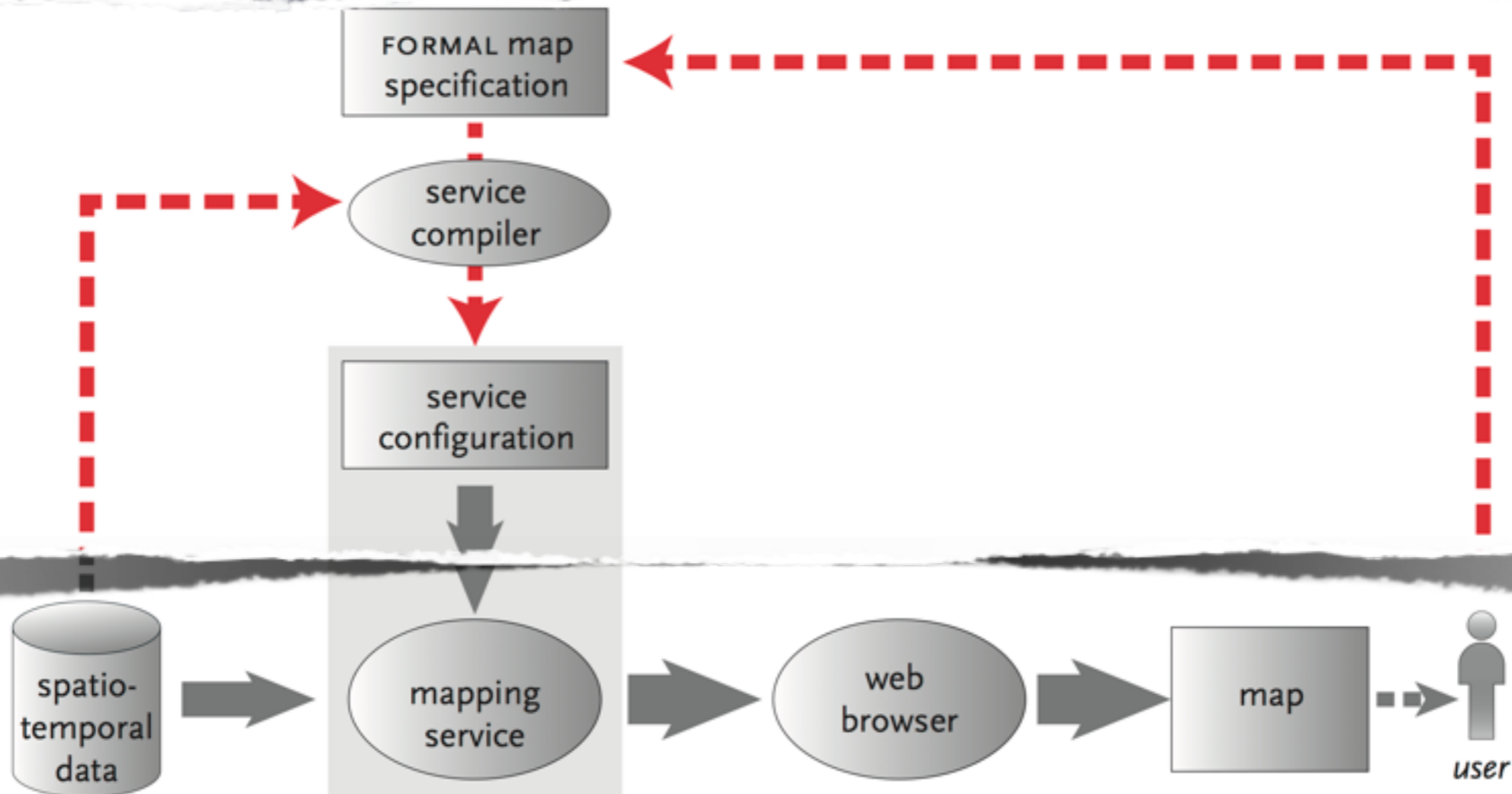


integrated mapping of  
data layers

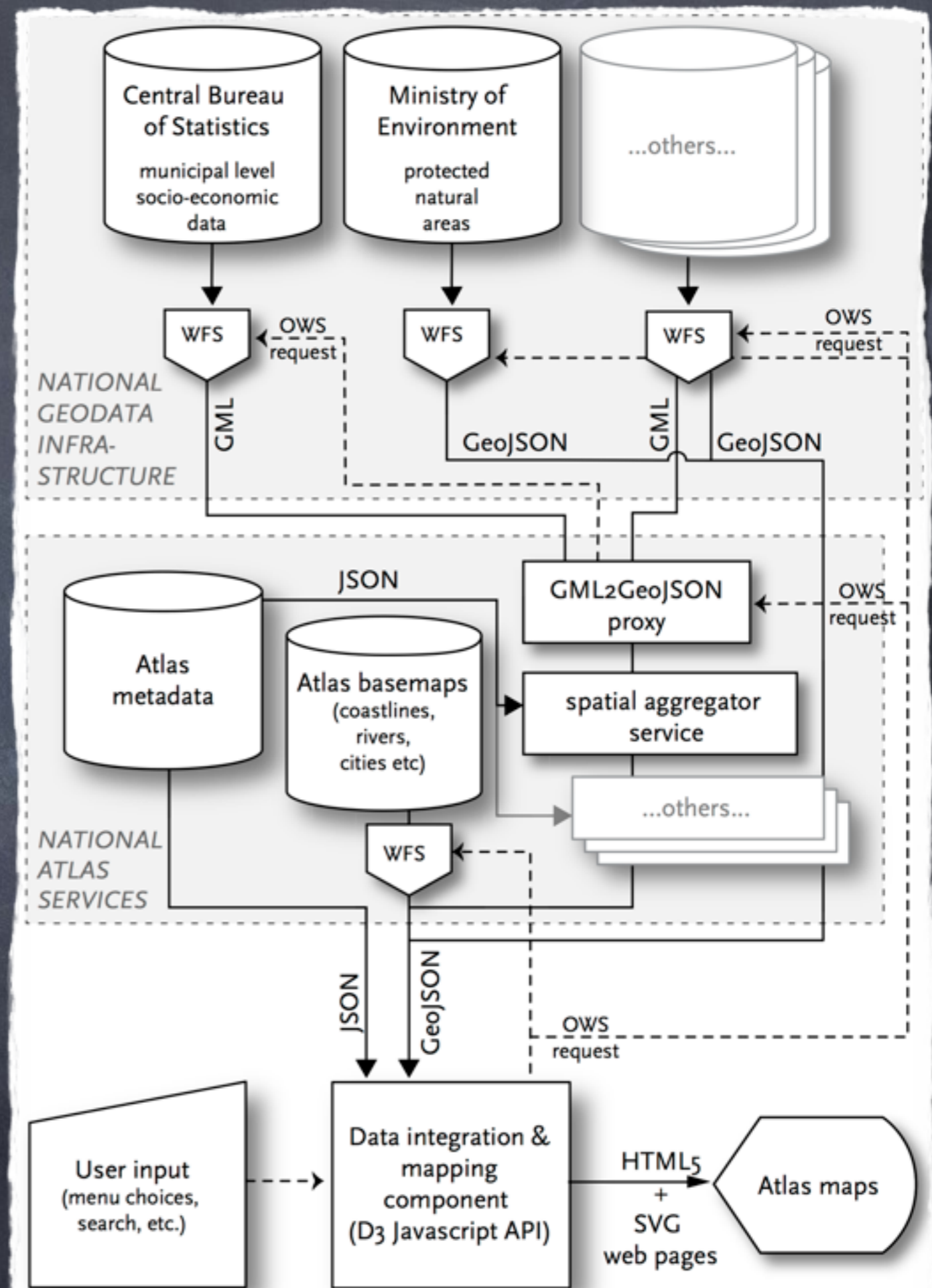
# Mapping ~~in~~ a webservices environment as part of



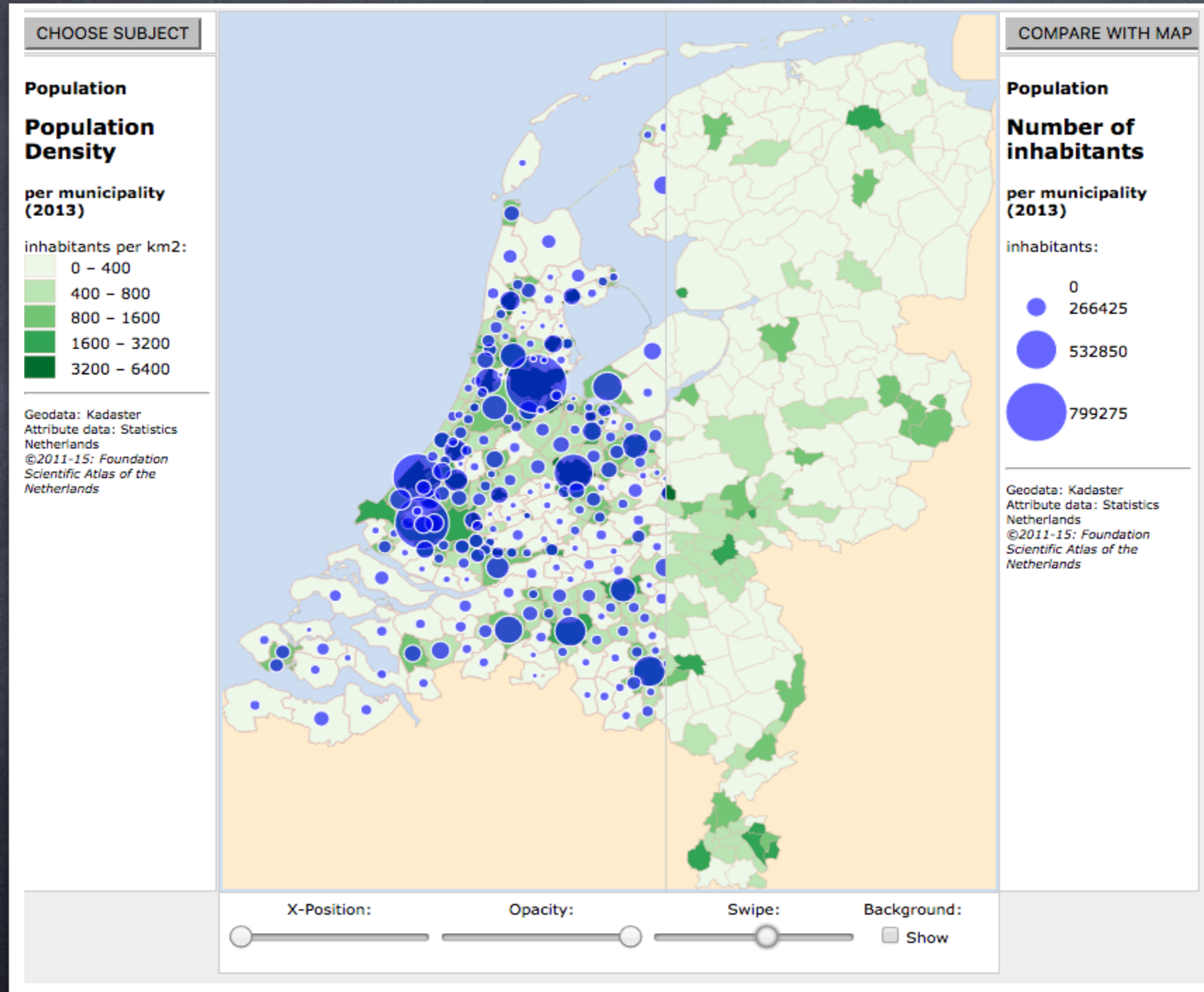
# Mapping in ~~a~~ webservices environment as part of



# Architecture



# The Dutch National Atlas



# comparing spatial phenomena

in *theme*:

– same place and time – different variables

# comparing spatial phenomena

in *theme*:

- same place and time – different variables

in *space*:

- same variable – different places
- *or* same variable – different aggregation



# comparing spatial phenomena

in *theme*:

- same place and time – different variables

in *space*:

- same variable – different places
- *or* same variable – different aggregation

in *time*:

- same variable and place – different times

# comparing spatial phenomena

in *theme*:

- same place and time – different variables

in *space*:

- same variable – different places
- *or* same variable – different aggregation

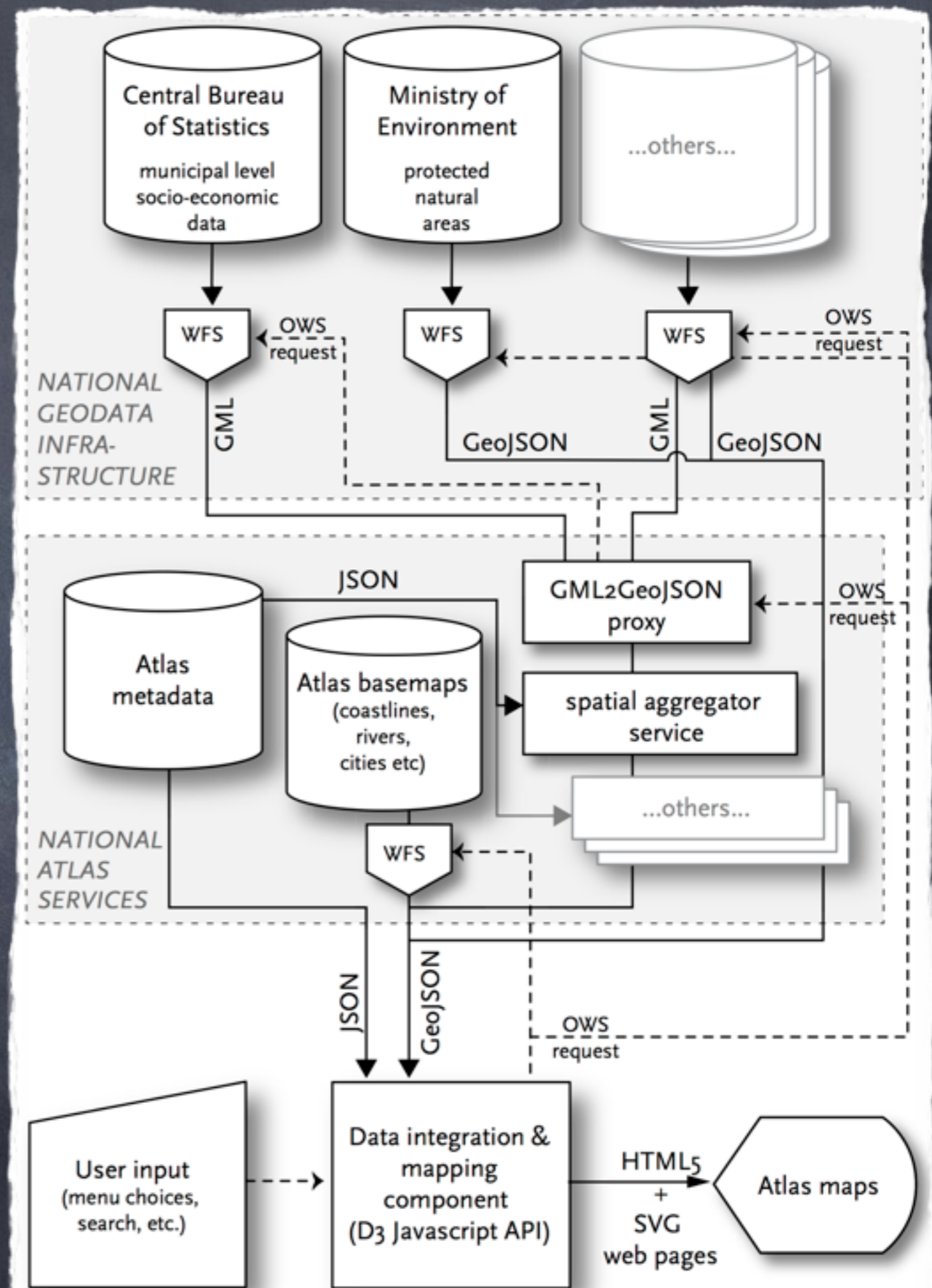
in *time*:

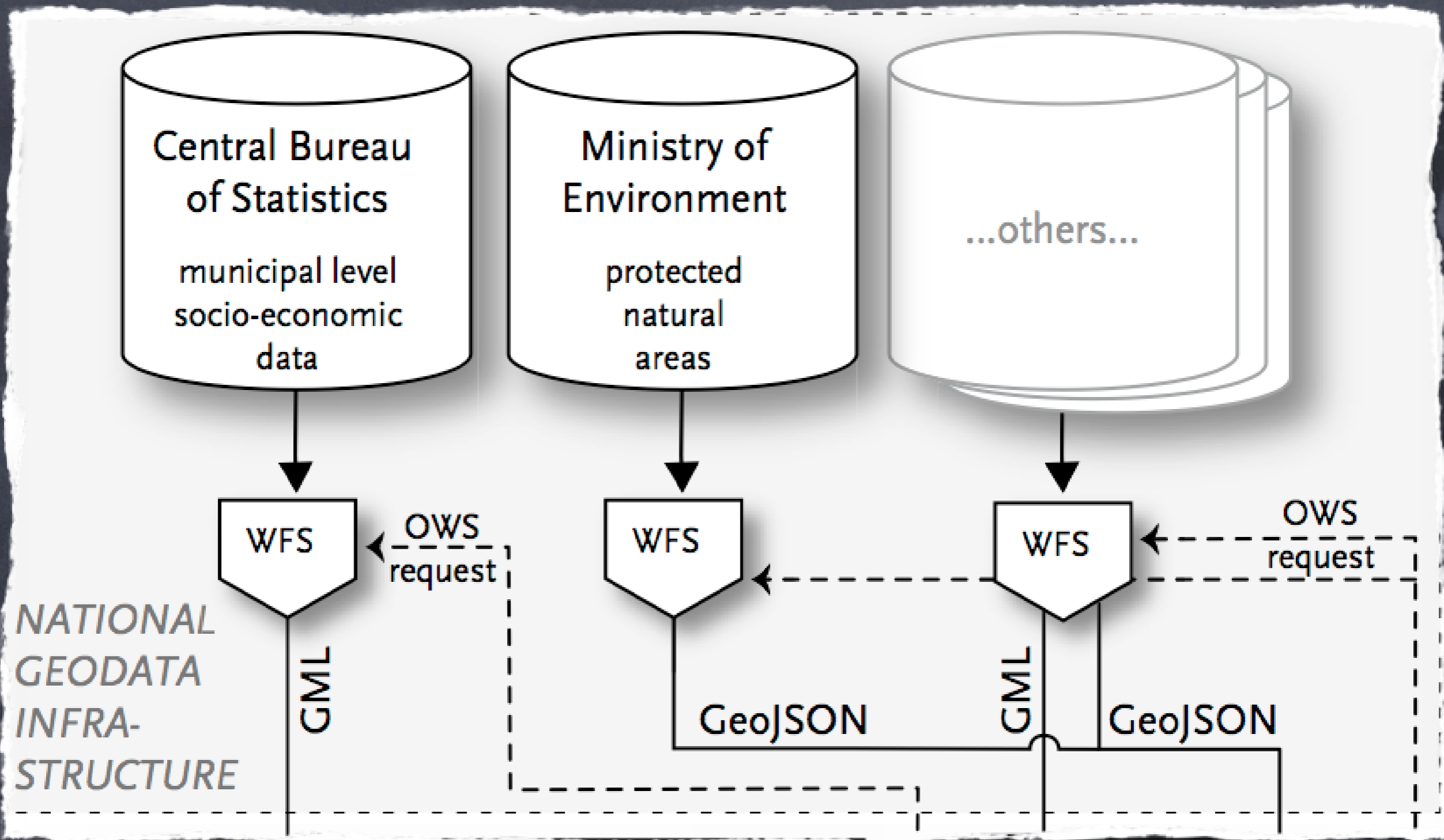
- same variable and place – different times

in *expression*:

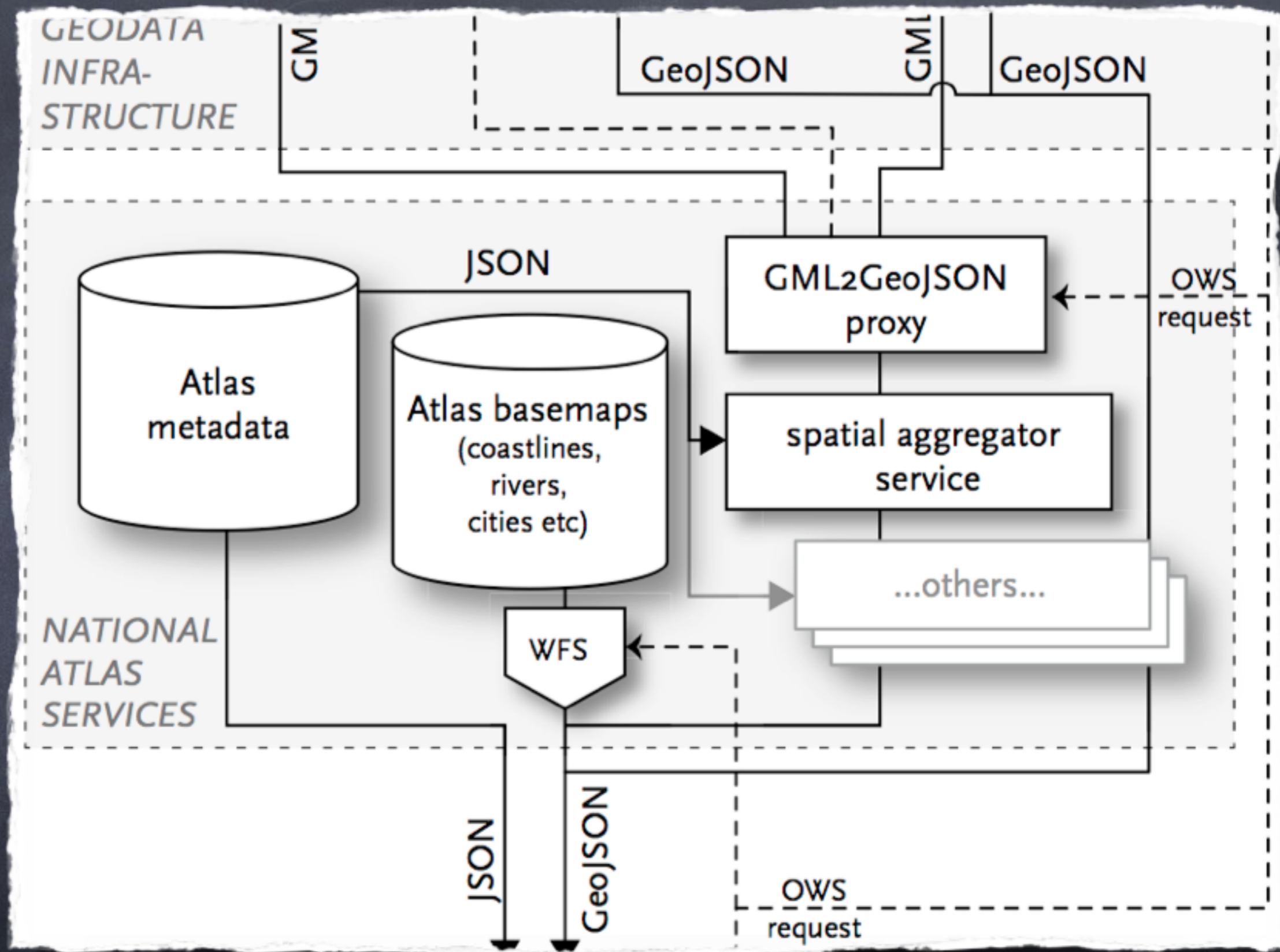
- same place, time and variables – different visual expressions

# Architecture





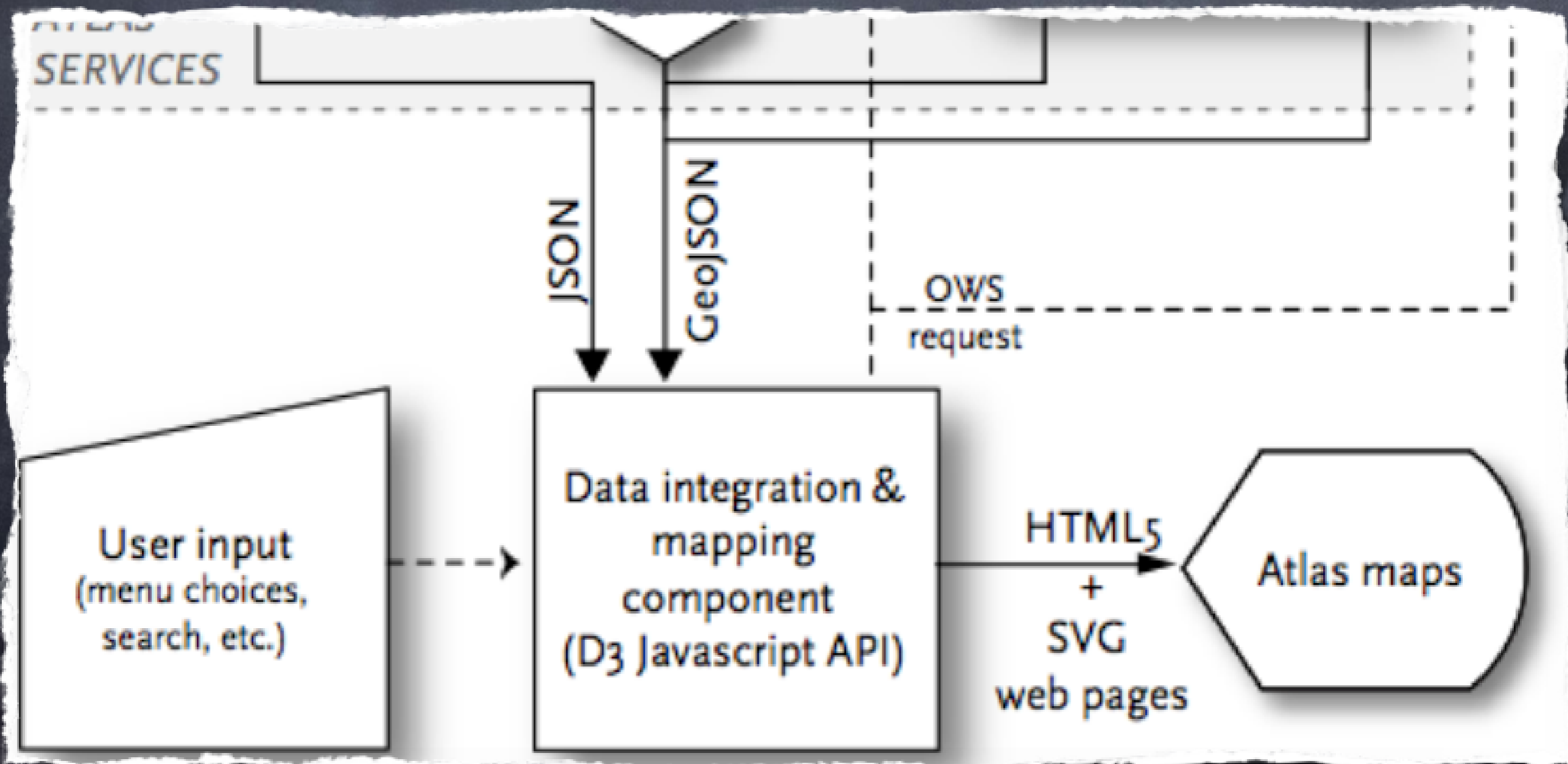
- use data services (WFS) requests
- GeoJSON where possible



ATLAS utility services & basedata

# Atlas Viewer:

- based on the Open Web Platform
- uses D3 library



Thank you for your attention...

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