

Assessment of standards-compliant Web Mapping Tools for Atlas Creation

GIS-
Software

AtlasStyler

PostGIS
Spatial PostgreSQL

GeoServer

MapProxy

osgEARTH

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Atlas of Switzerland

3D | SCHWEIZ | EUROPA 3D | PANORAMA | BLOCKBILD | PRISMENKARTE ATLAS DER SCHWEIZ

LEGENDE INDEX INFO VERGLEICH BESCHRIFTUNG PROFIL HIMMEL

HIMMEL WOL... SONNENSYSTEM STE... HIM

Sonne Planeten

Mond Umlaufbahnen

Sonne
Mond
Planeten
Umlaufbahnen
Zeit
25 2010 - 13:55

Zeitabhängig
Tagesansicht
Nachtsicht
Erweiterte Einstellungen

Datum und Uhrzeit

25 2010 - 13:55

Datum 25 10 2010
Zeit 13 55

THEMA BASISKARTE GELÄNDE ABFRAGE VORSCHAU REFERENZKARTE STANDORT

Seen Gemeinden Inselkarte
 Flüsse Bezirke
 Siedlungen Kantone
 Strassen Länder
 Bahnlinien Wald
 Bahnhöfe Gletscher
 Seilbahnen Satellitenbild

Name Menkent
Bayer-Bezeichnung Menkent
Sternbild Zentaur/Centaurus

Scheinbare Helligkeit 2.06 Absolute Helligkeit 0.7
Distanz 60.9 Lj
Azimuth 187° 6' 35'' Altitude 10° 16' 20"
Rektaszension 14h 7m 15s Deklination -36° 25' 13"
Aufgang 10h 9m 26s Untergang 16h 31m 5s

Spektralklasse K2III Veränderlich Nein
Eigenbewegung [mas/a] -519 / -518 Radiale Geschwindigkeit 1.3 km/s

Landeskoordinaten [m]
W-O 877248 Höhe ü. M. 3243
N-S 212271

Blickrichtung [°] 173
Öffnungswinkel [°] 128
Sichtweite [m] 8500

Themensuche

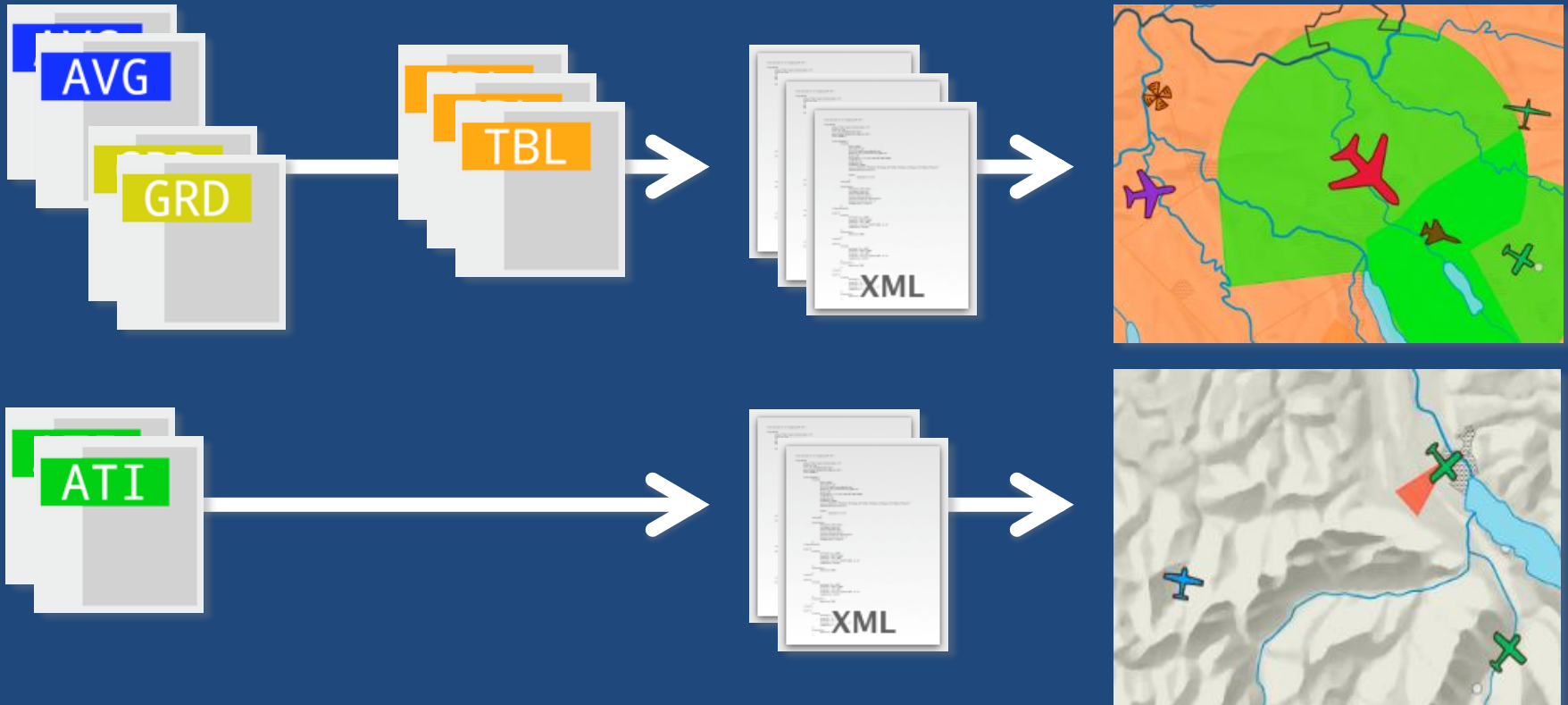
Data Formats and Map Creation

Graphics

Data

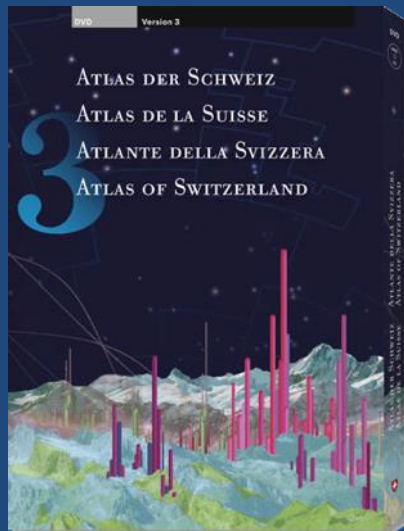
Map Desc

AoS-Map

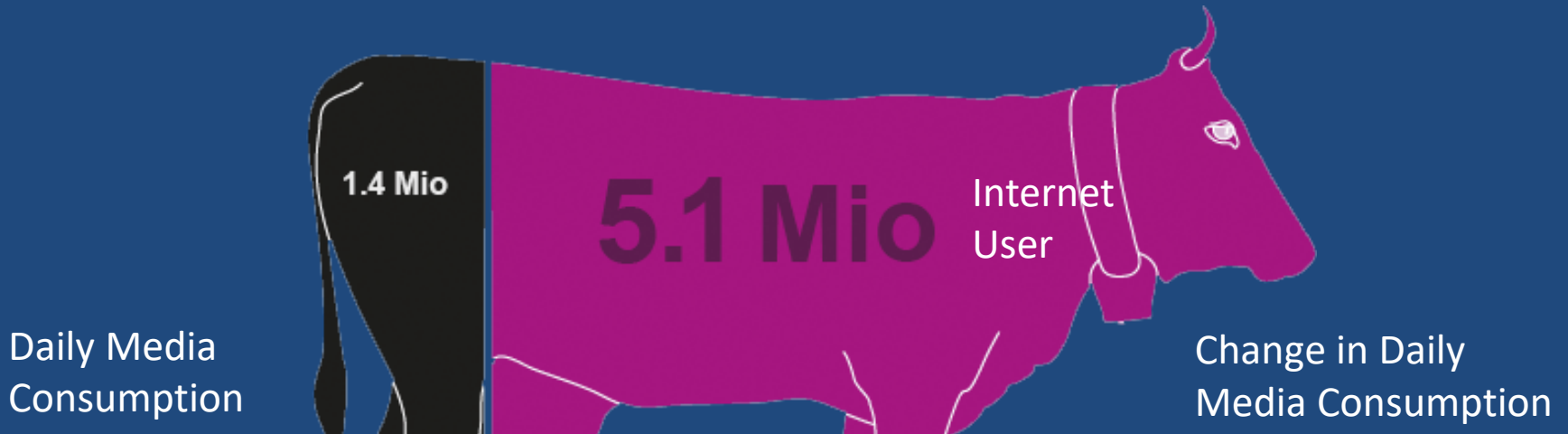


Atlas of Switzerland

2000	AoS 1	14,700	CD-ROM
2004	AoS 2	7,600	CD-ROM/DVD
2010	AoS 3	1,700	DVD
	AoS 3 Trial	15,222	Downloads



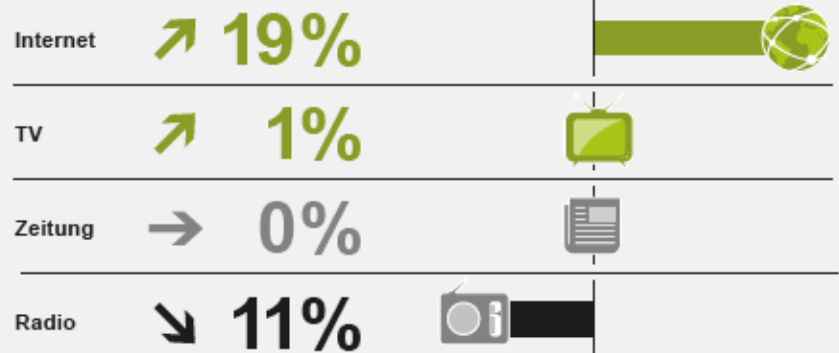
Media Consumption in Switzerland



Tägliche Mediennutzung 2009*



Veränderung Mediennutzungsdauer 2004 → 2009*



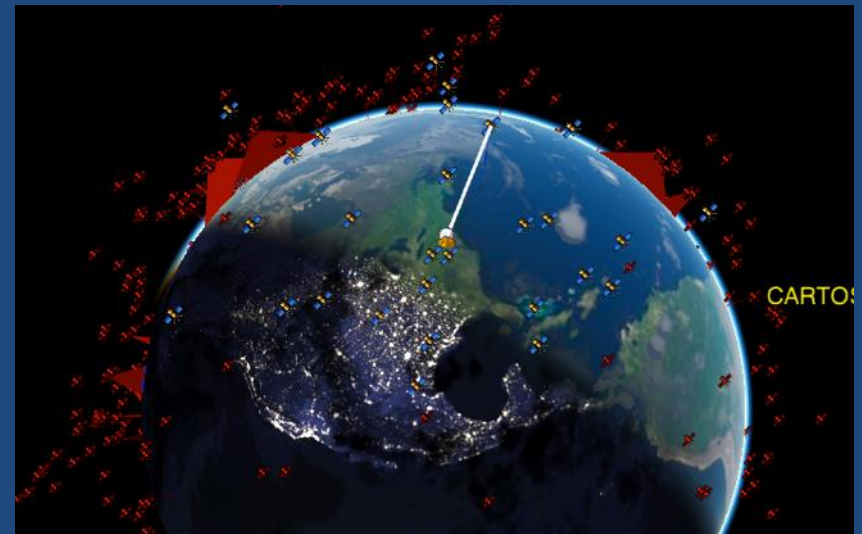
* Durchschnittswert bei Personen ab 15 Jahren

Progress in Technology

- Online Atlases and Geovisualisation Platforms
- 3D Visualisation Engines / Virtual Globes
- Mobile Apps



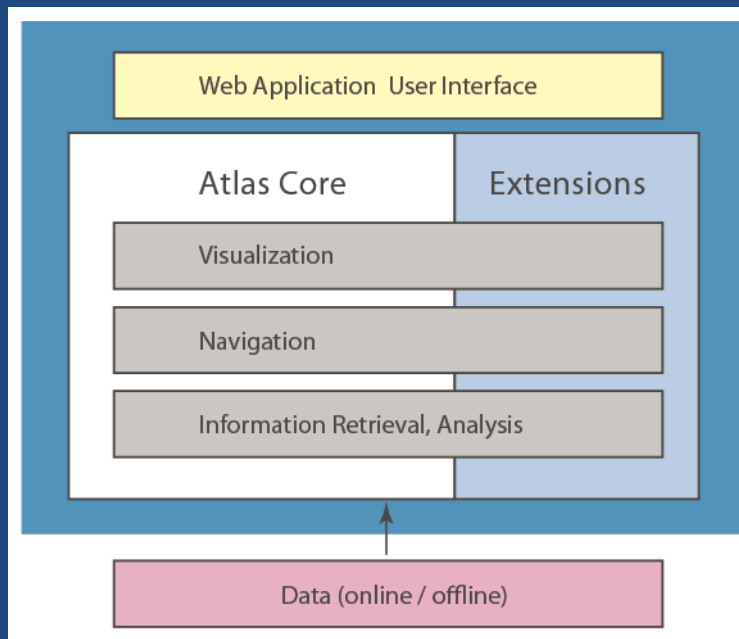
© UpNext HD maps [Amazon]



© cesium.agi

The new Atlas of Switzerland

- 2012 Project launch
- 2014/15 AoS-online (Basic version)
- 2016ff AoS-online (Extended version)

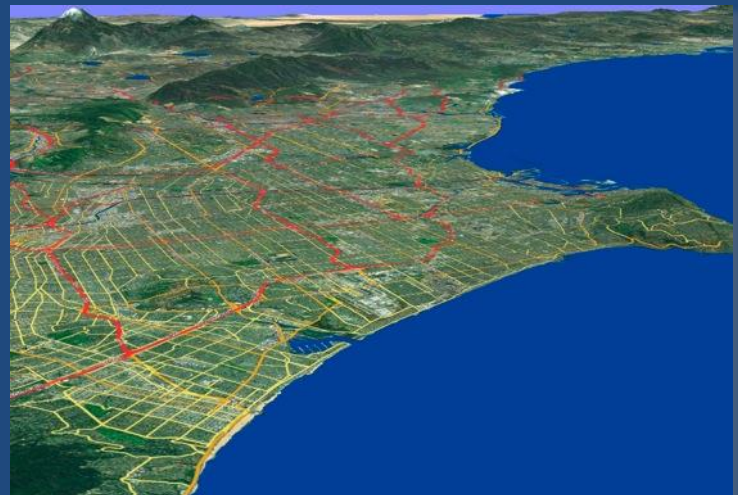


Main Features of the new AoS

- Online Atlas
- 3D Atlas (2D maps and 3D maps)
- Visualisation based on Virtual Globe Technology
- Web Mapping Standards



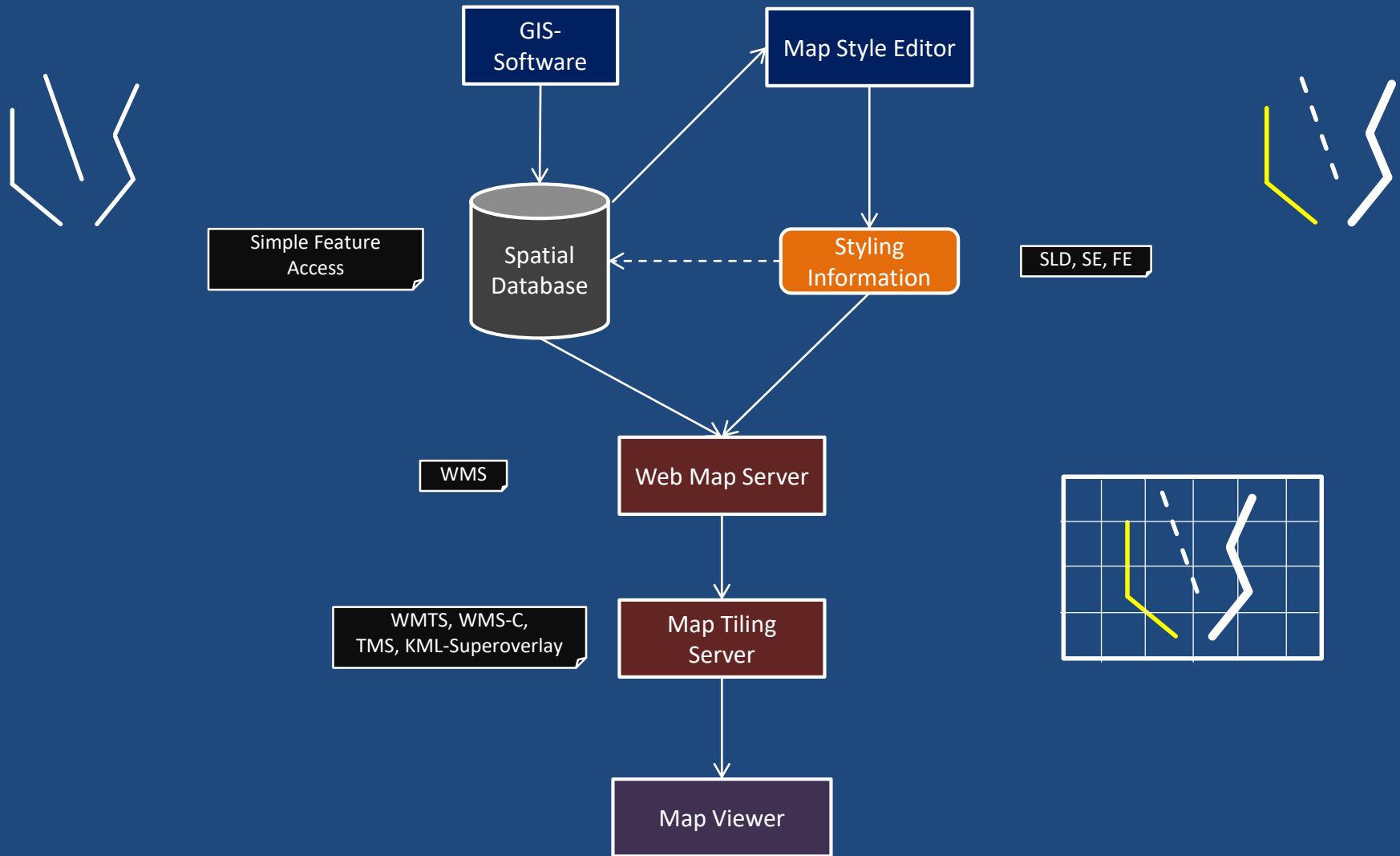
osgEarth
[Pelican Mapping]



Benefits of using web standards

- Time savings when integrating new materials into the atlas
- Partners and students are able to reuse the maps in their own applications
- Users might be able to contribute their own maps in future

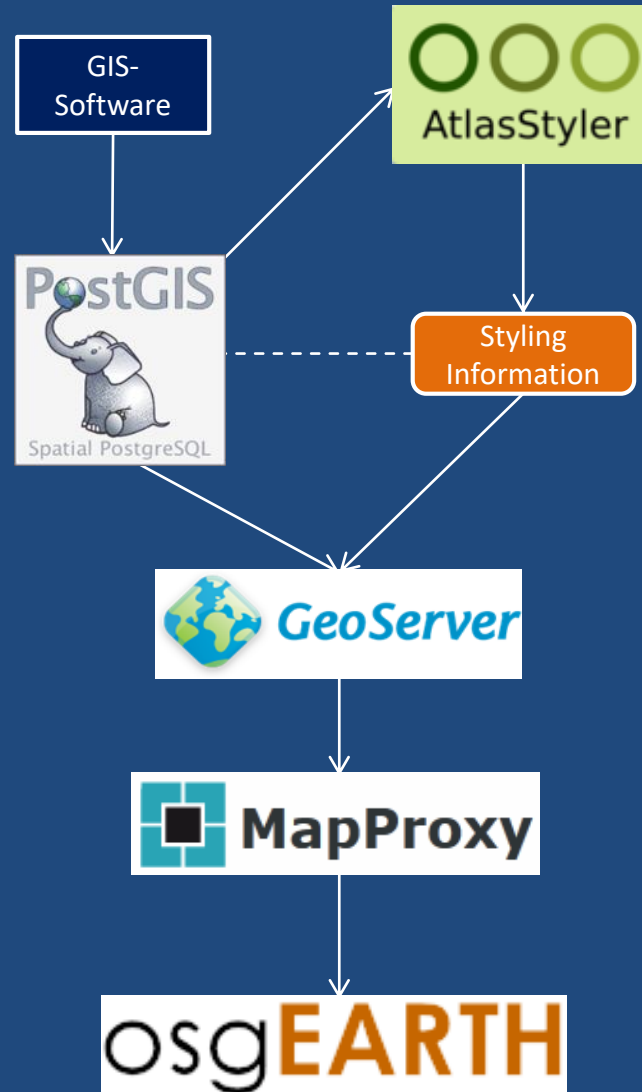
Web Mapping Workflow



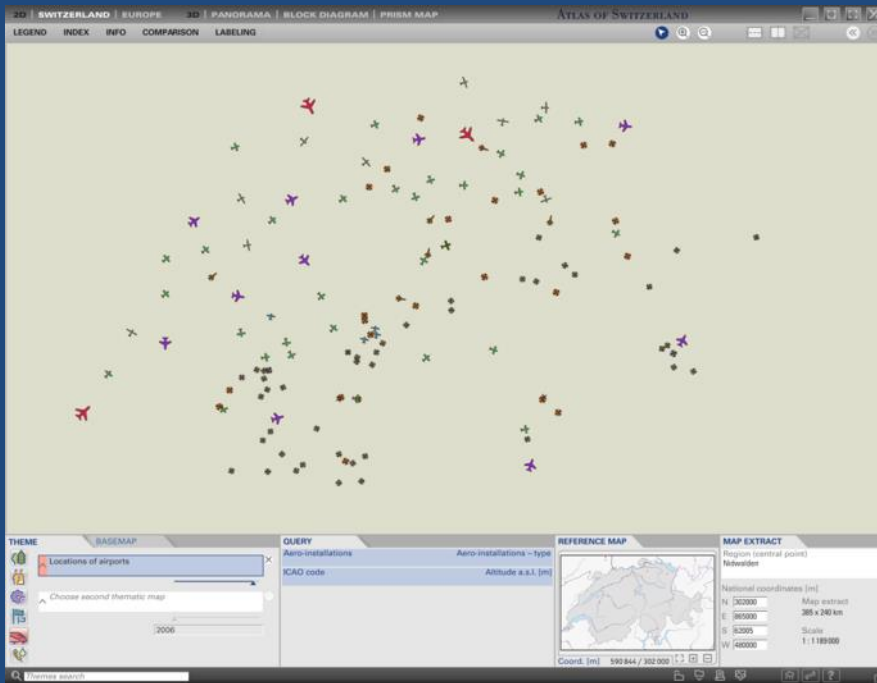
Methods

- Assessed 25 web mapping tools
 - Compared their features
 - Tested different configurations
- Wrote Python scripts
 - To convert existing datasets according to web mapping standards
 - To configure web mapping tools

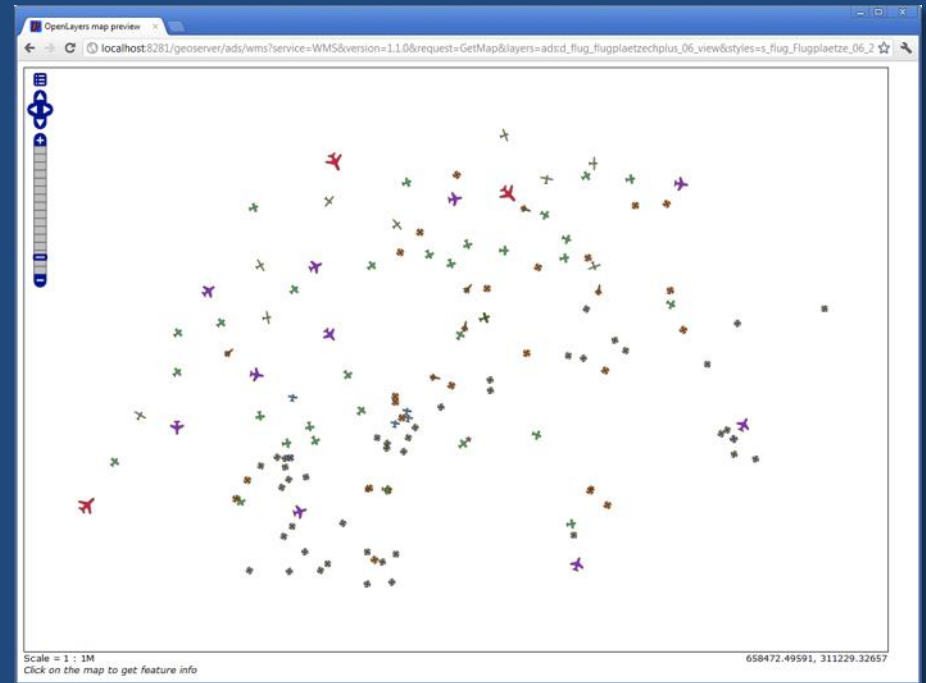
Web Mapping Tools



Results: Symbol map

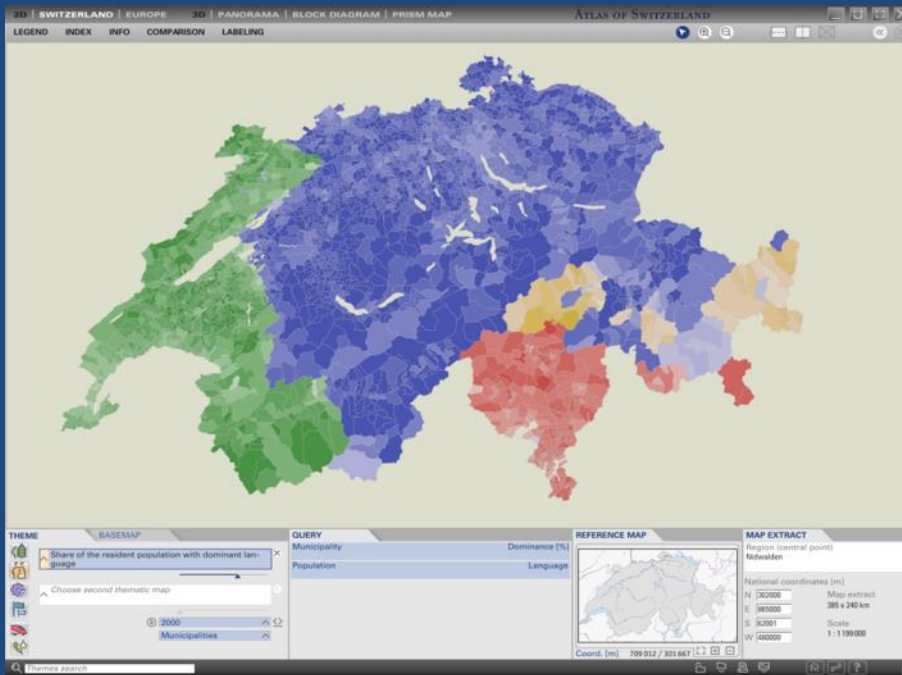


Atlas of Switzerland 3

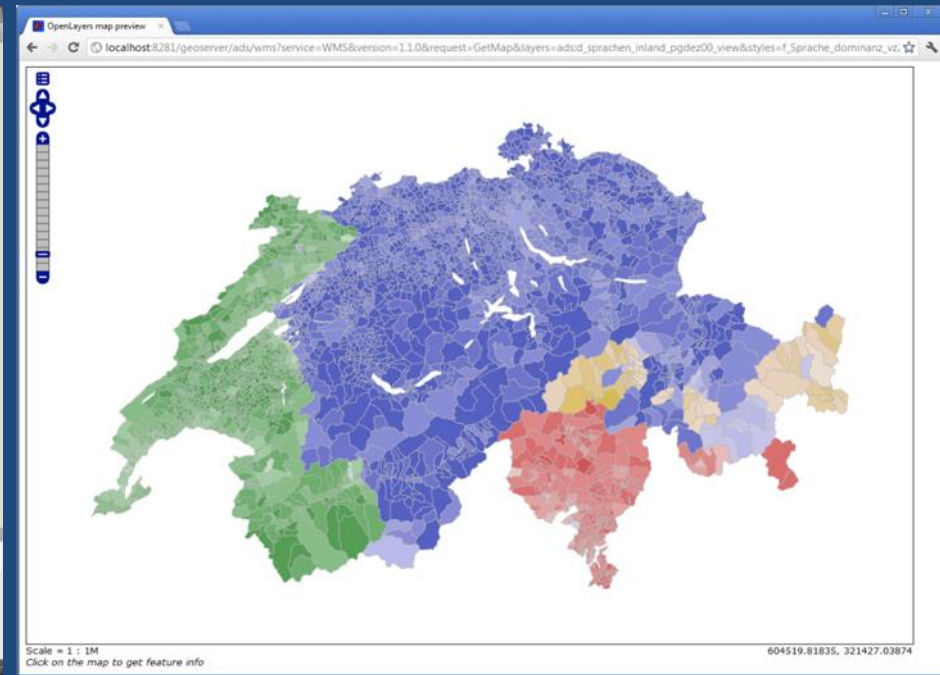


Web mapping replication (OpenLayers)

Results: Multivariate map

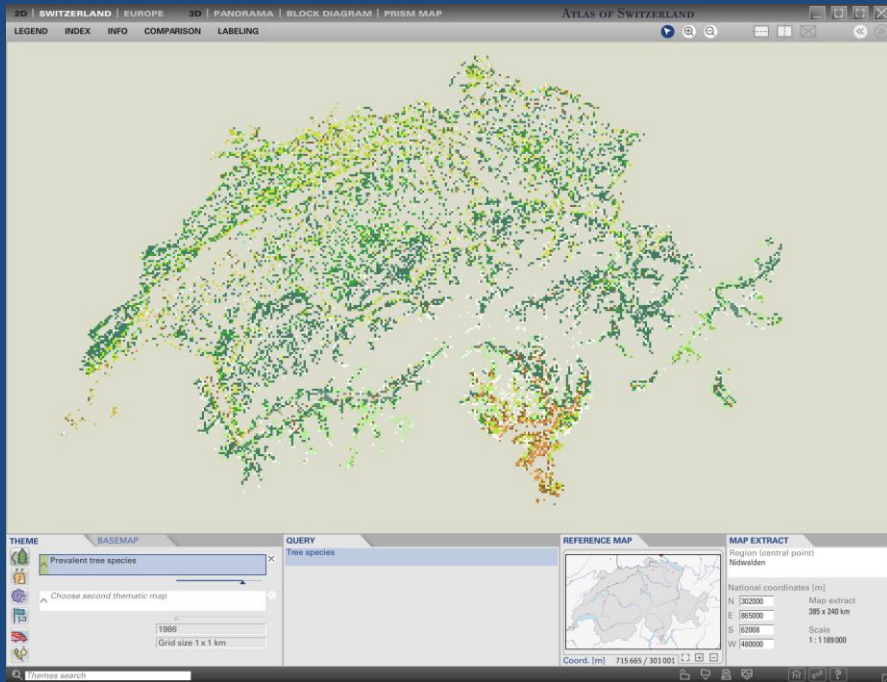


Atlas of Switzerland 3

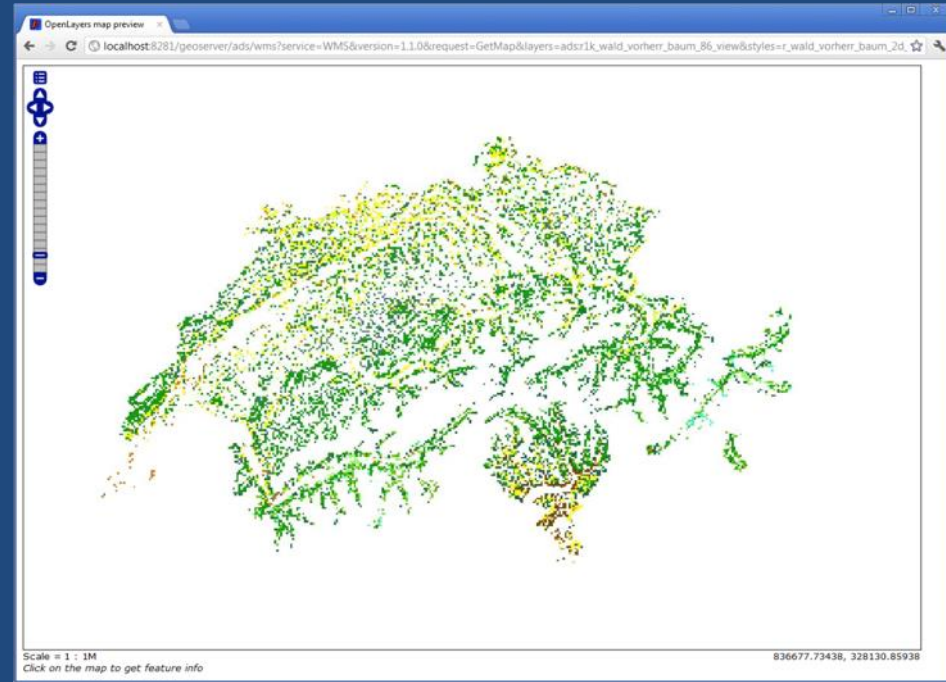


Web mapping replication (OpenLayers)

Results: Raster Map

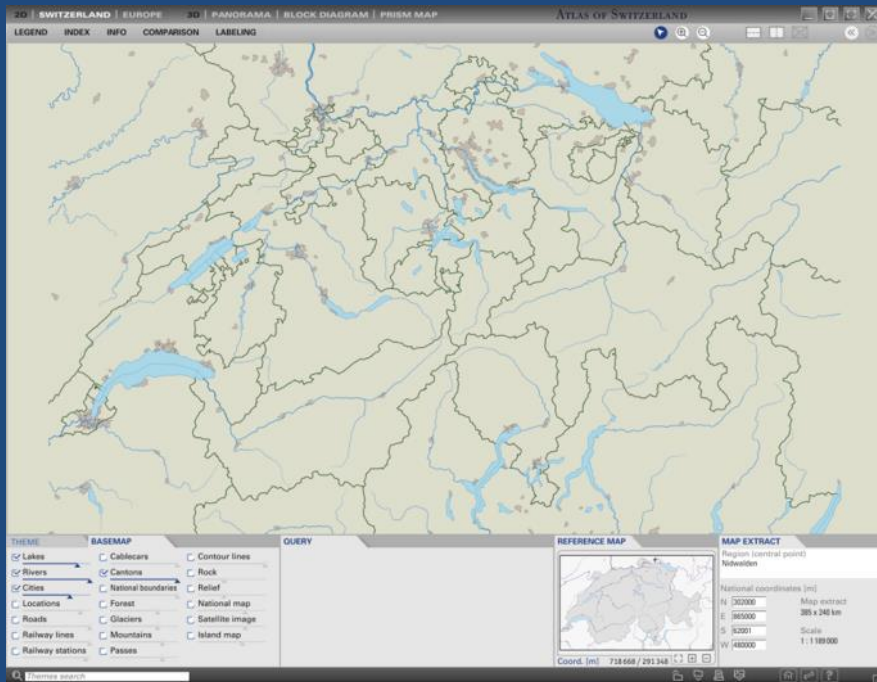


Atlas of Switzerland 3

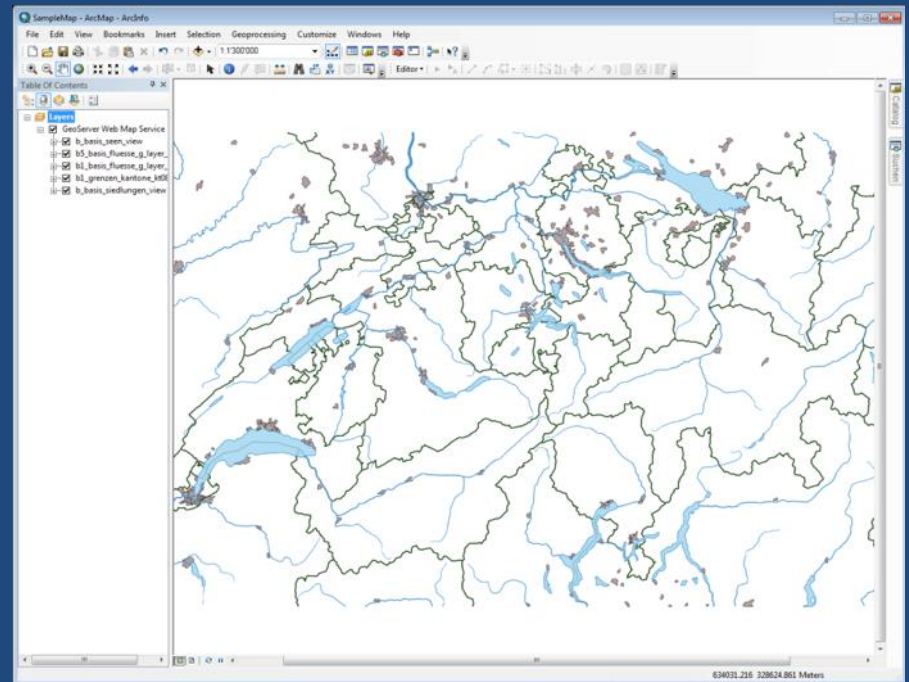


Web mapping replication (OpenLayers)

Results: Combined Layers

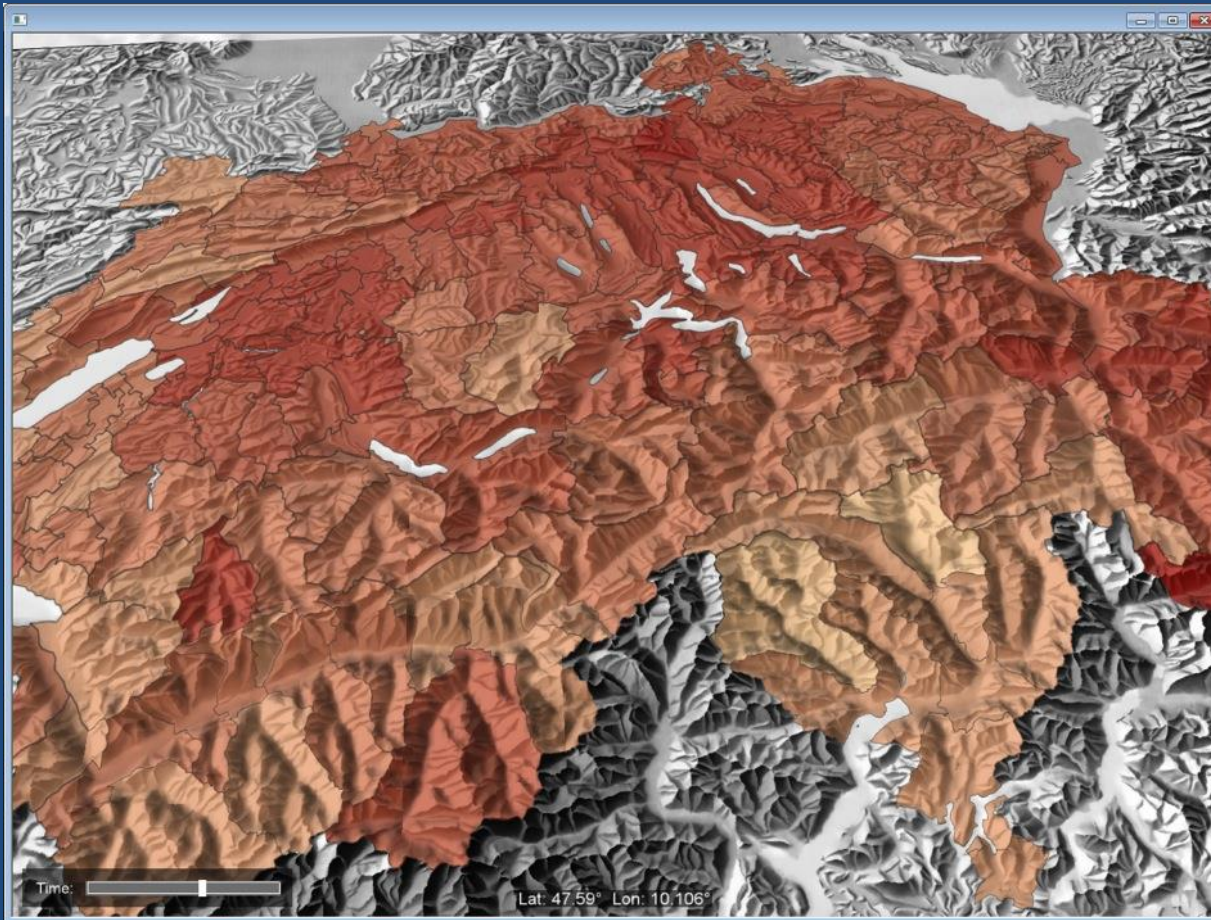


Atlas of Switzerland 3



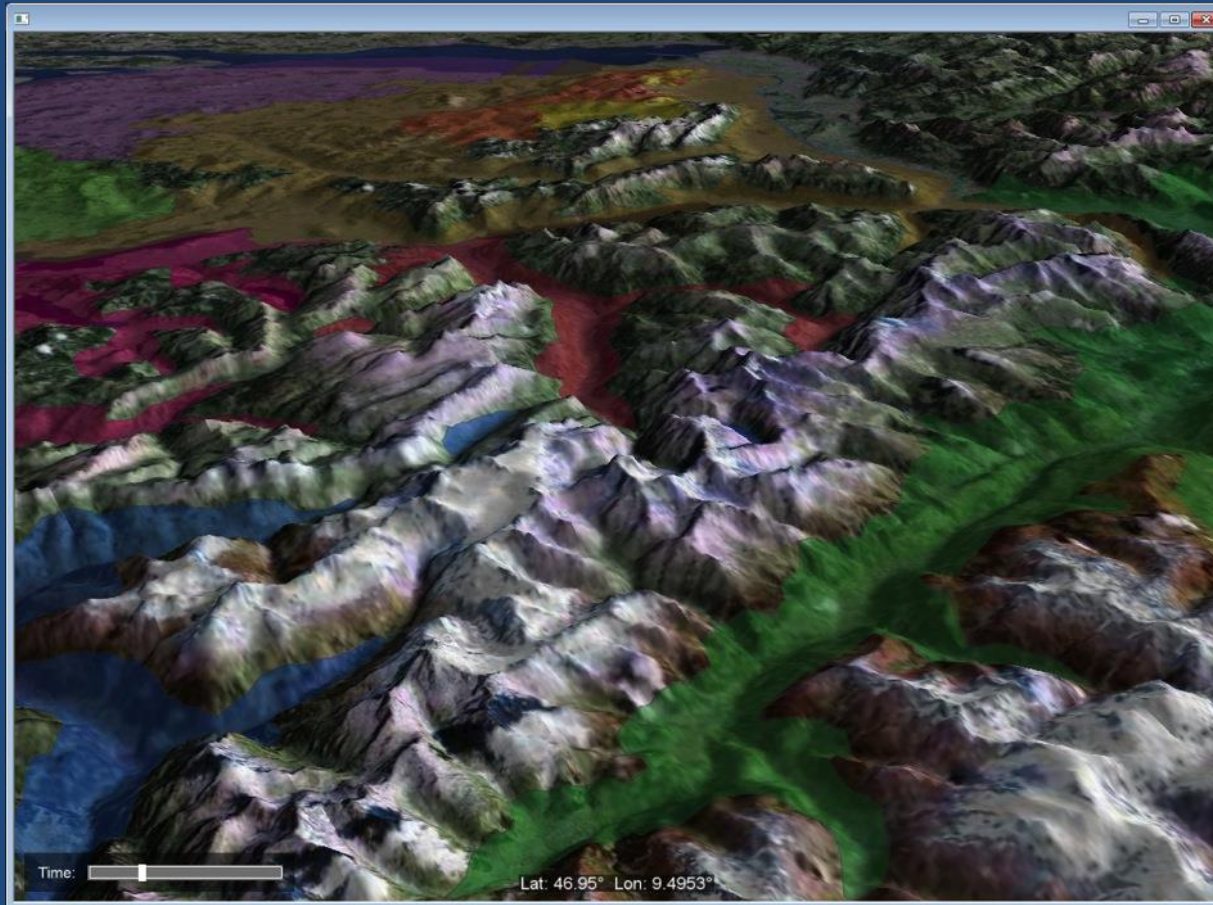
Web mapping replication (ArcGIS)

Results: Choropleth Map



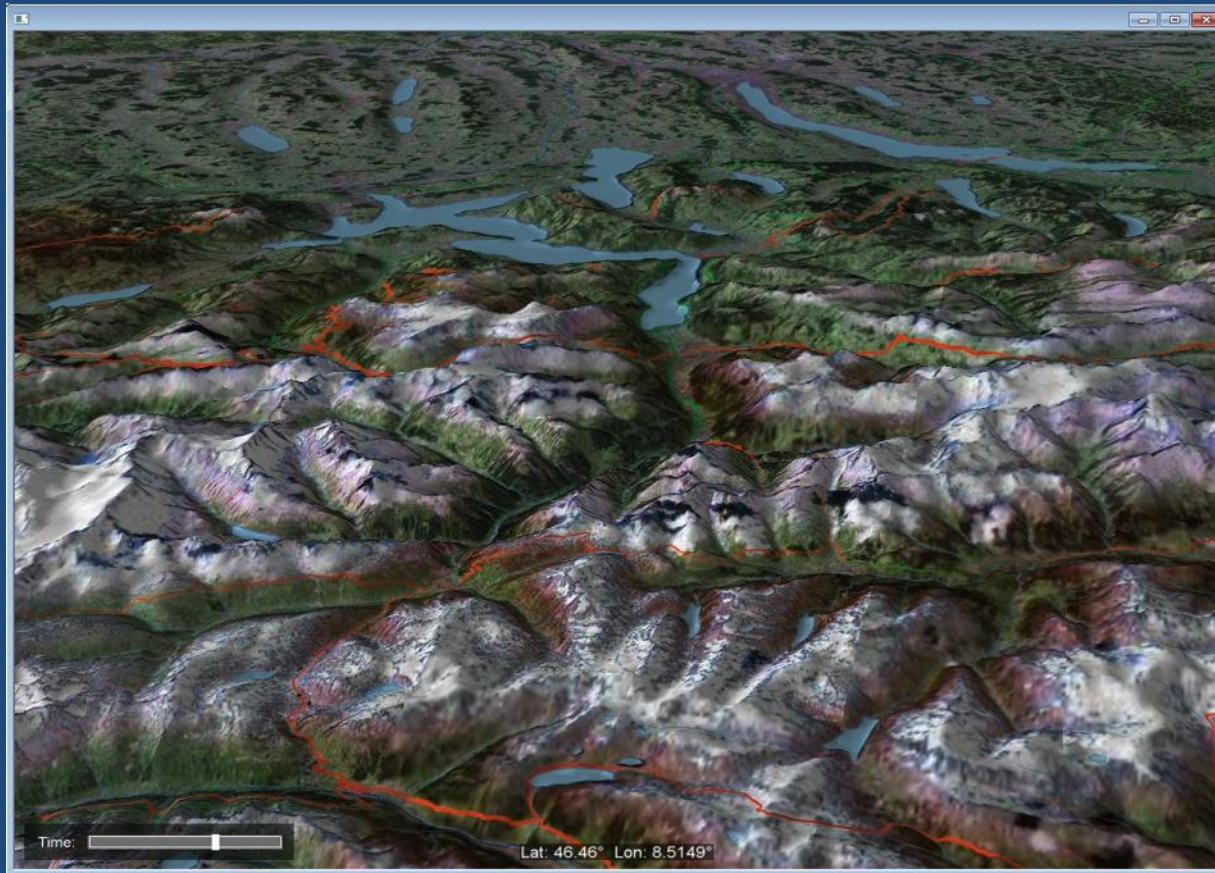
Web mapping replication (osgEarth)

Results: Choropleth Map



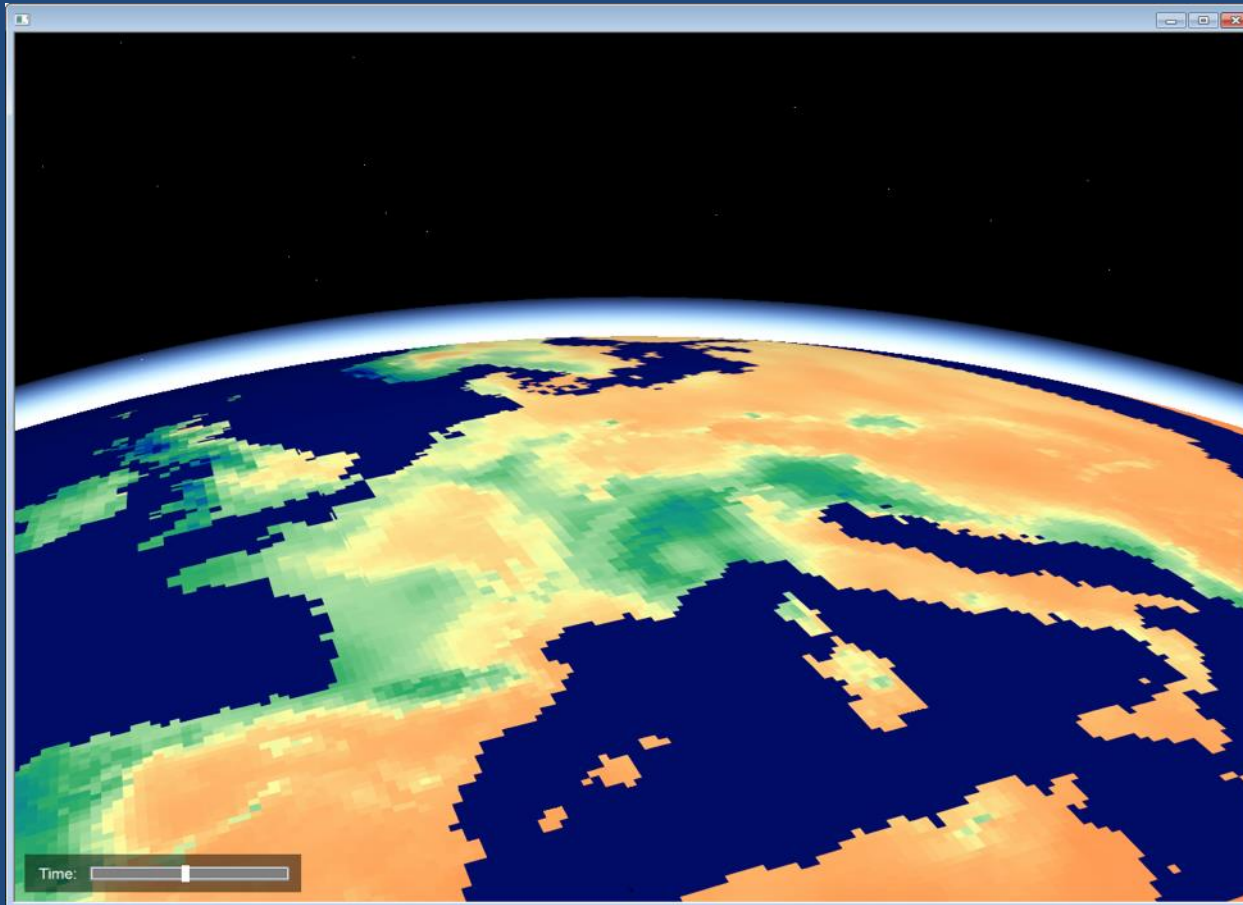
Web mapping replication (osgEarth)

Results: Polygons and Lines



Web mapping replication (osgEarth)

Results: Raster Map



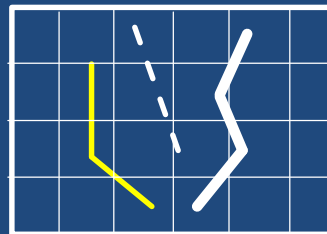
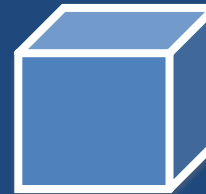
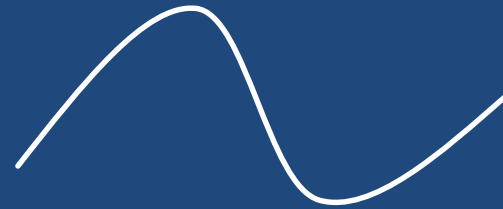
Web mapping replication (osgEarth)

Conclusion

Approximately **85%** of the current map stock of the Atlas of Switzerland 3 can be transformed using web mapping standards and visualised on a virtual globe afterwards.

Open issues

- Bézier curves
- Charts
- Solids
- Vector tiling
- Security





Thank you for your attention!

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