ChartFlight
From Spreadsheets to Computer-Animated Data Flights

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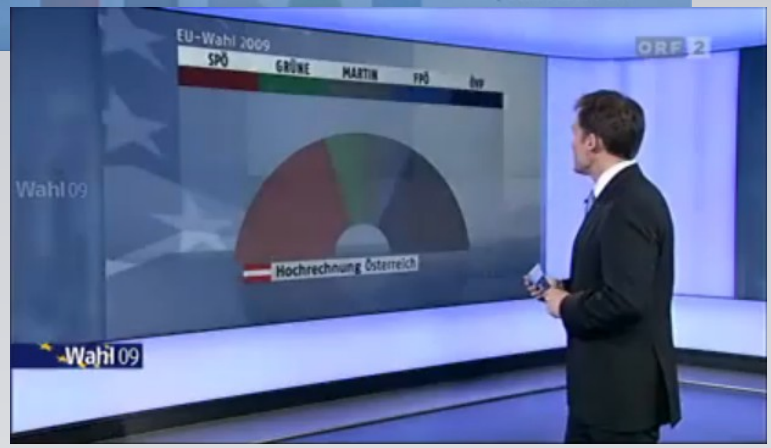
Introduction

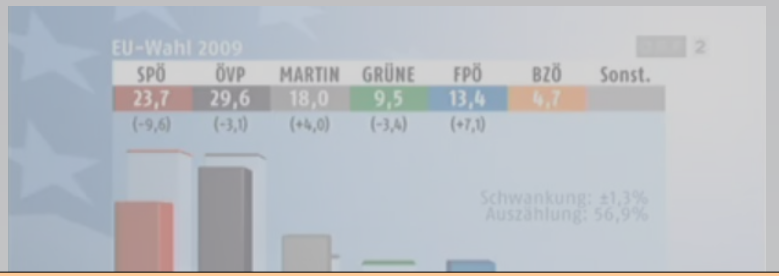
- Professional visualizations
  - Clear presentation of quantitative data
  - News programs on TV
- More mature than spreadsheet applications
- Problems
  - Not available for end-users
  - Expensive
  - Spatially distributed



www.youtube.com/watch?v=Si5Su52_118

Introduction

- Professional visualizations
  - Clear presentation of quantitative data
  - News programs on TV



How to make professional visualizations of spatially distributed data available to the public?

- Problems
  - Not available for end-users
  - Expensive
  - Spatially distributed

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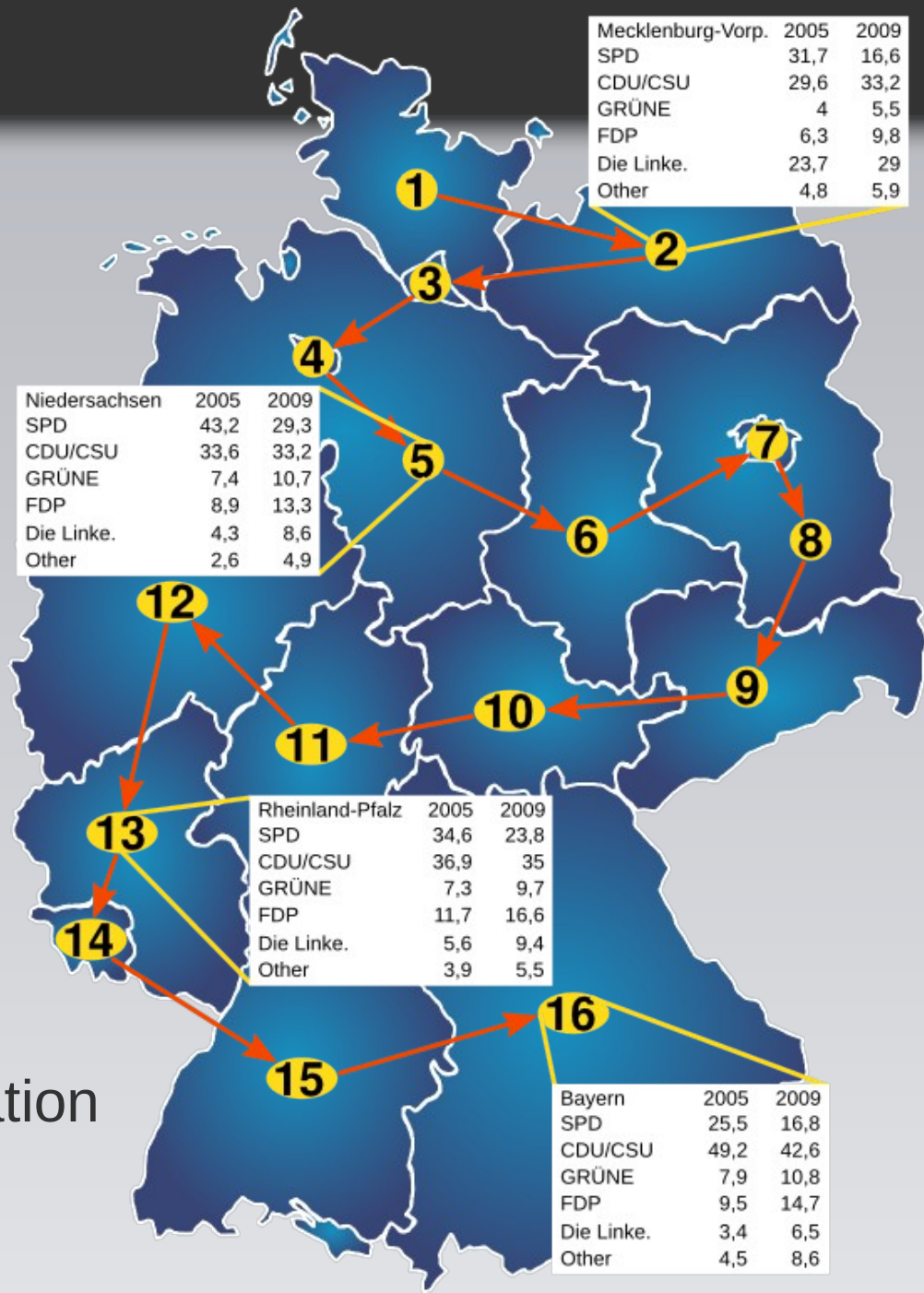
What is ChartFlight?

Web Service

- http://chartflight.uni-trier.de
  - Standard web forms
  - Upload user data
  - Customize presentation
- 3D scene is generated
  - Including animations
  - Rendered video

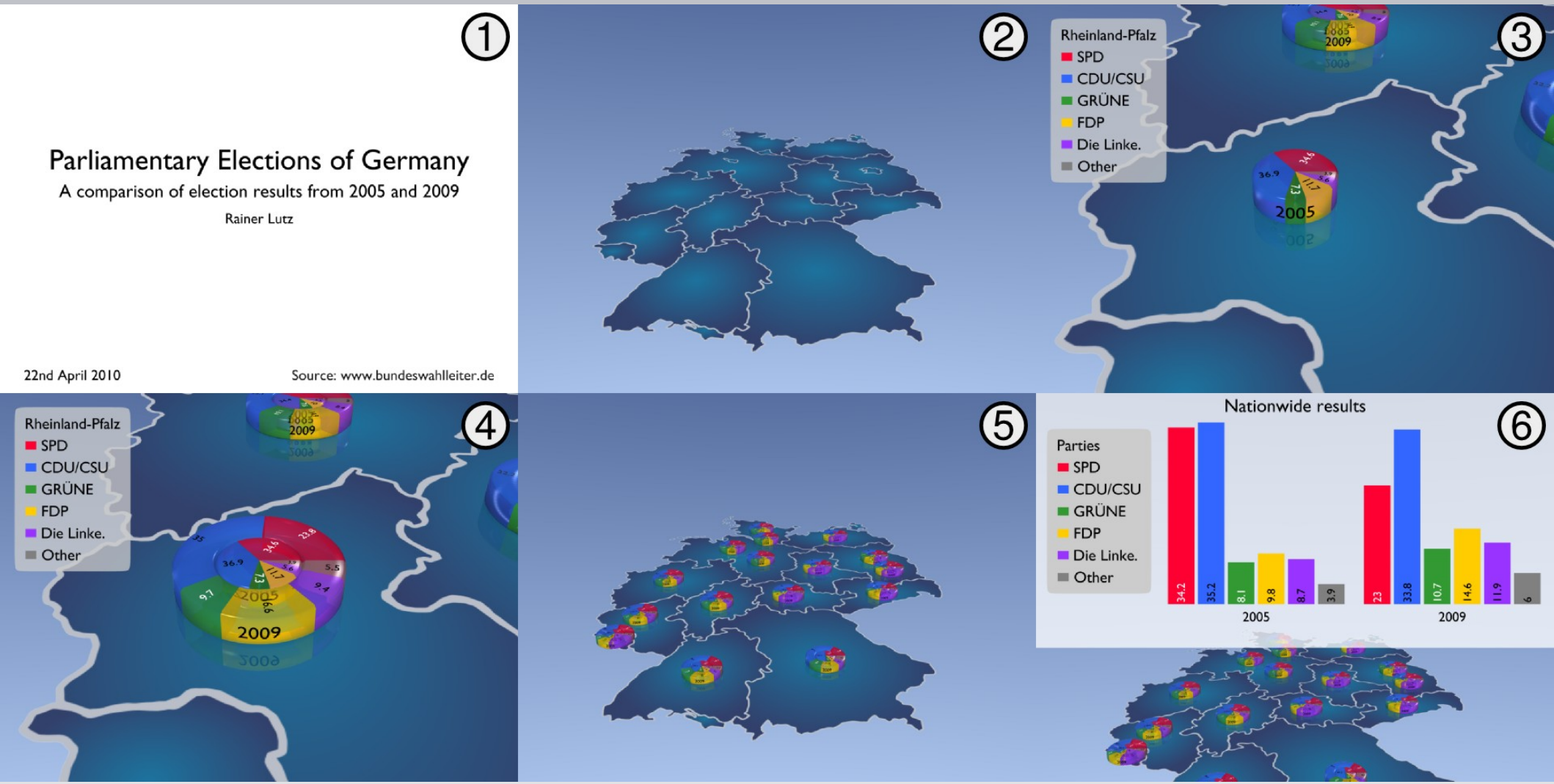
A Generic Model

- Chart flight
  - Camera movement along a given path
  - Visit animated diagrams
  - Inputs
    - Image file
      → ground plane
    - Ordered set of locations
      → path
    - Data set (CSV file)
      → separate table per location



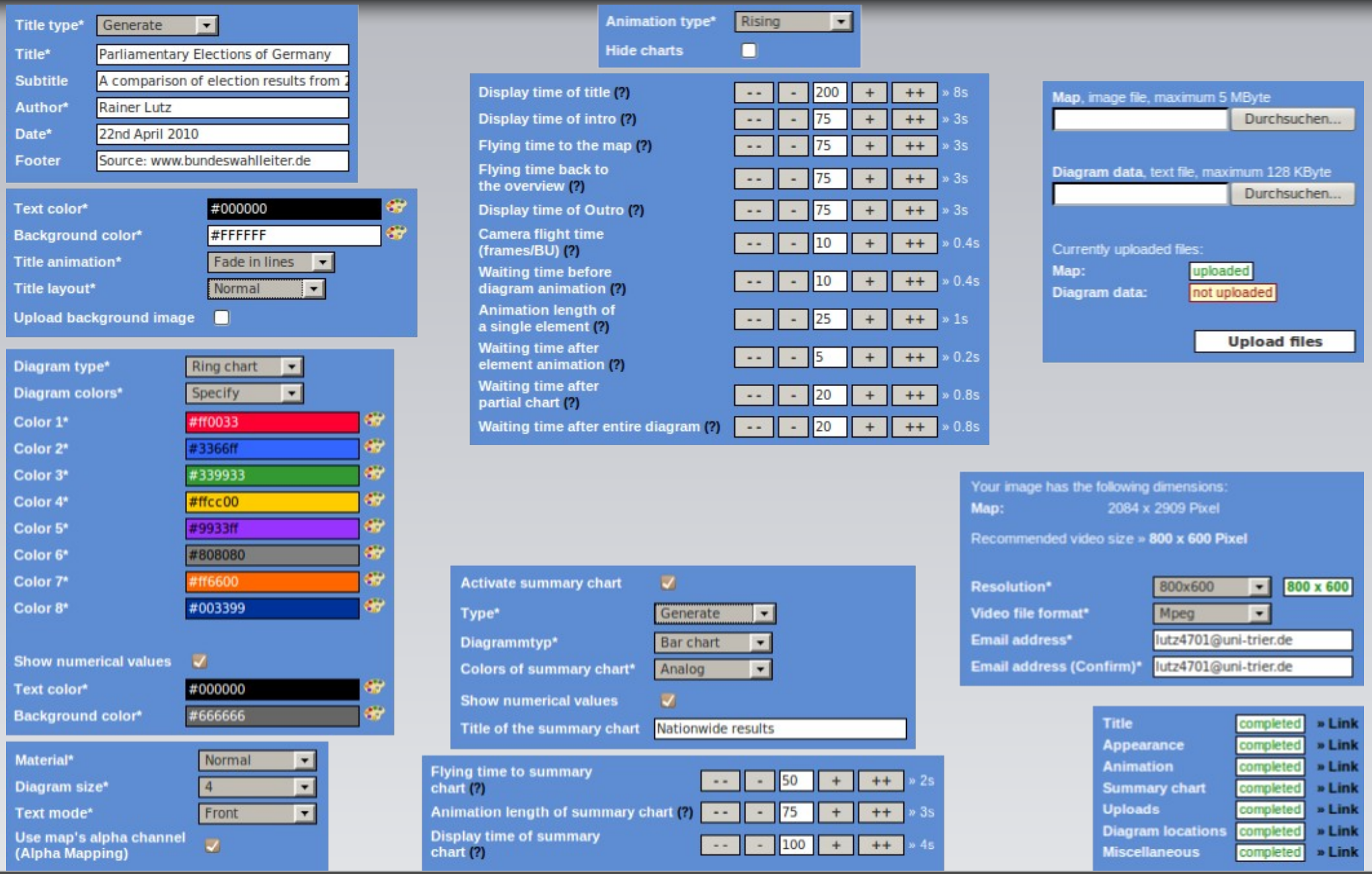
Plot of a Video

- Video: Parliamentary Elections of Germany

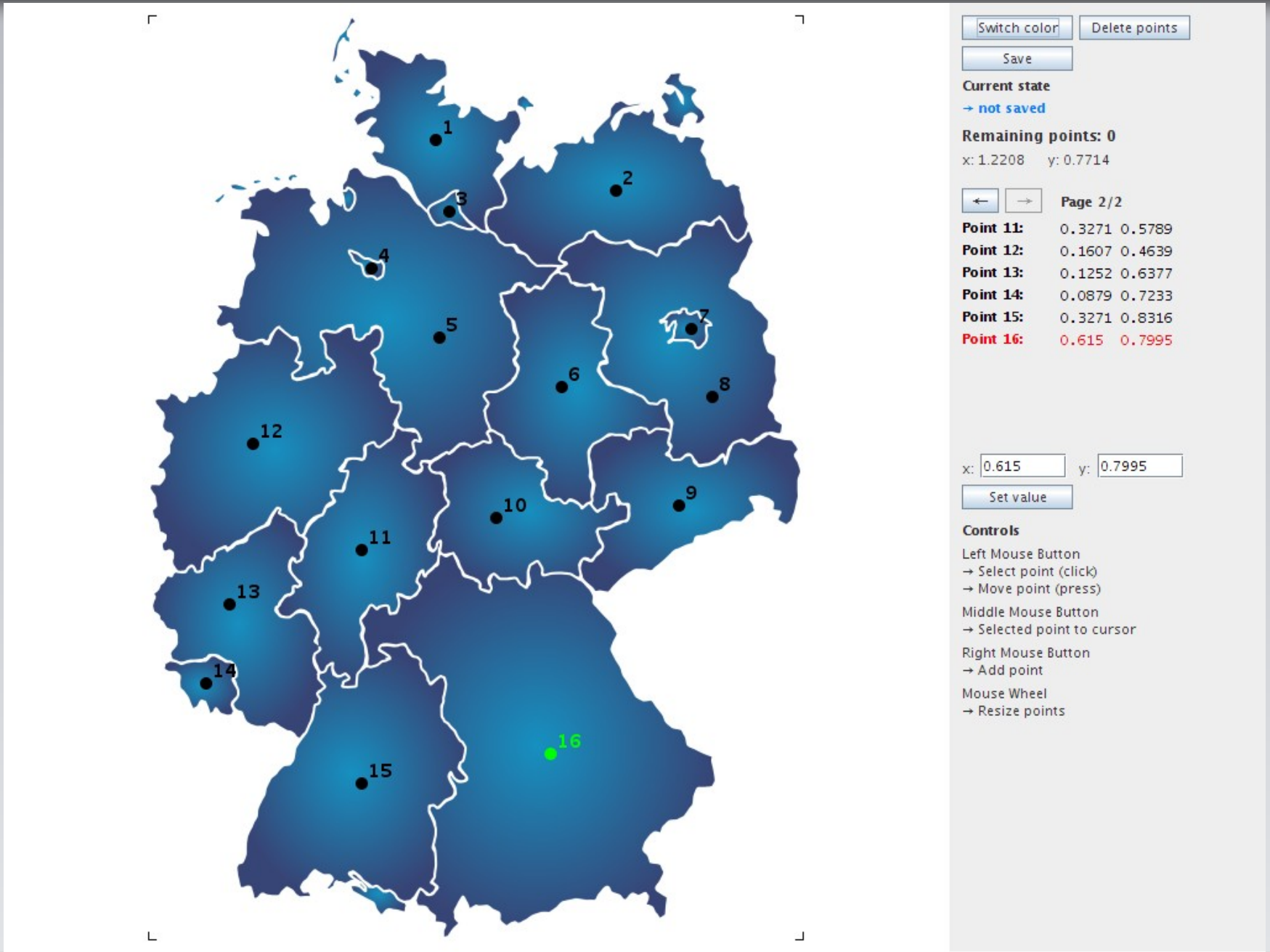


User Interface

Web Frontend



Applet


Switch color
Delete points
Save
Current state
→ not saved
Remaining points: 0
x: 1.2208 y: 0.7714
Page 2/2
Point 11: 0.3271 0.5789
Point 12: 0.1607 0.4639
Point 13: 0.1252 0.6377
Point 14: 0.0879 0.7233
Point 15: 0.3271 0.8316
Point 16: 0.615 0.7995
x: 0.615
y: 0.7995
Set value
Controls
Left Mouse Button
→ Select point (click)
→ Move point (press)
Middle Mouse Button
→ Selected point to cursor
Right Mouse Button
→ Add point
Mouse Wheel
→ Resize points
1
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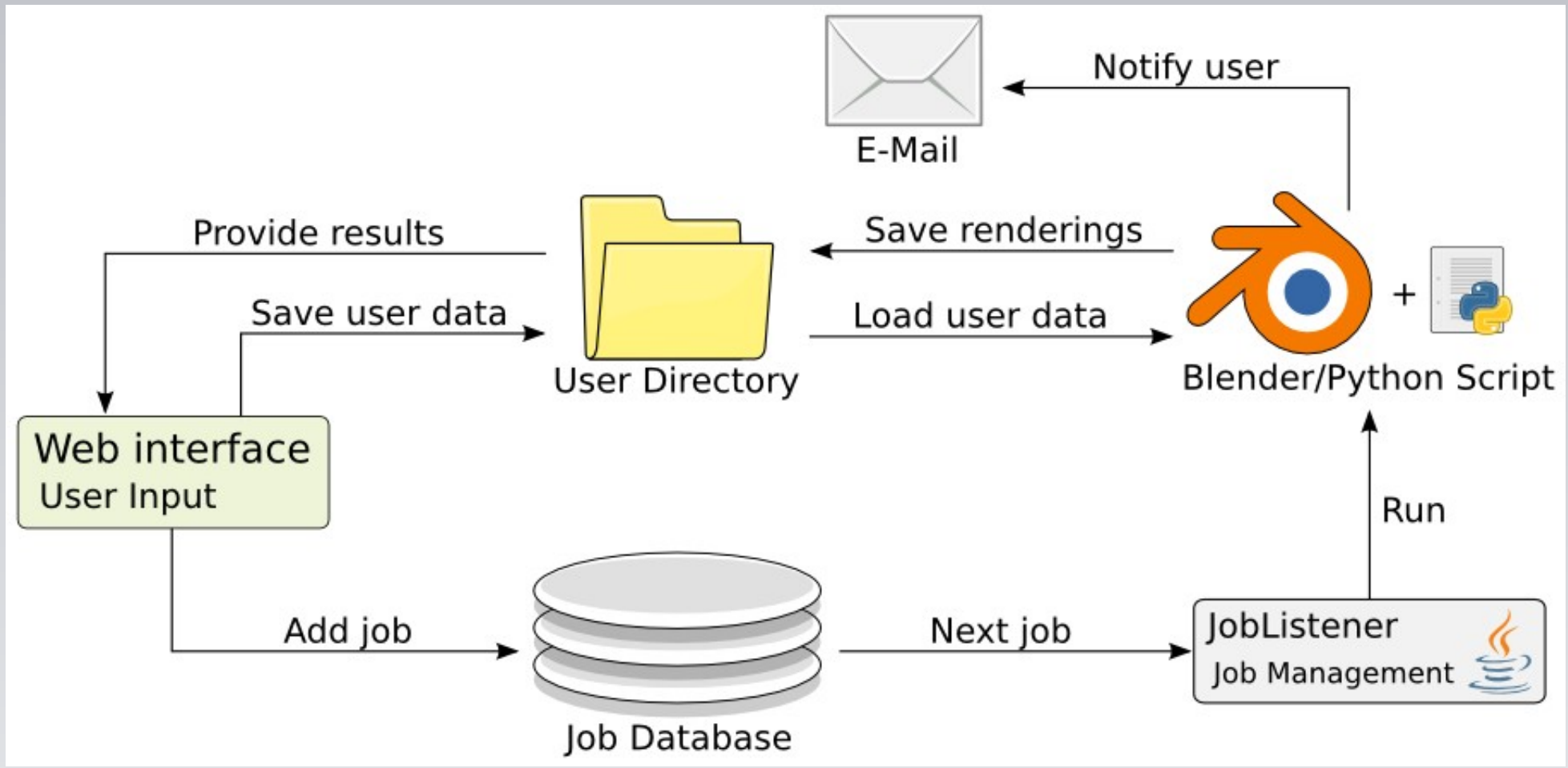
16

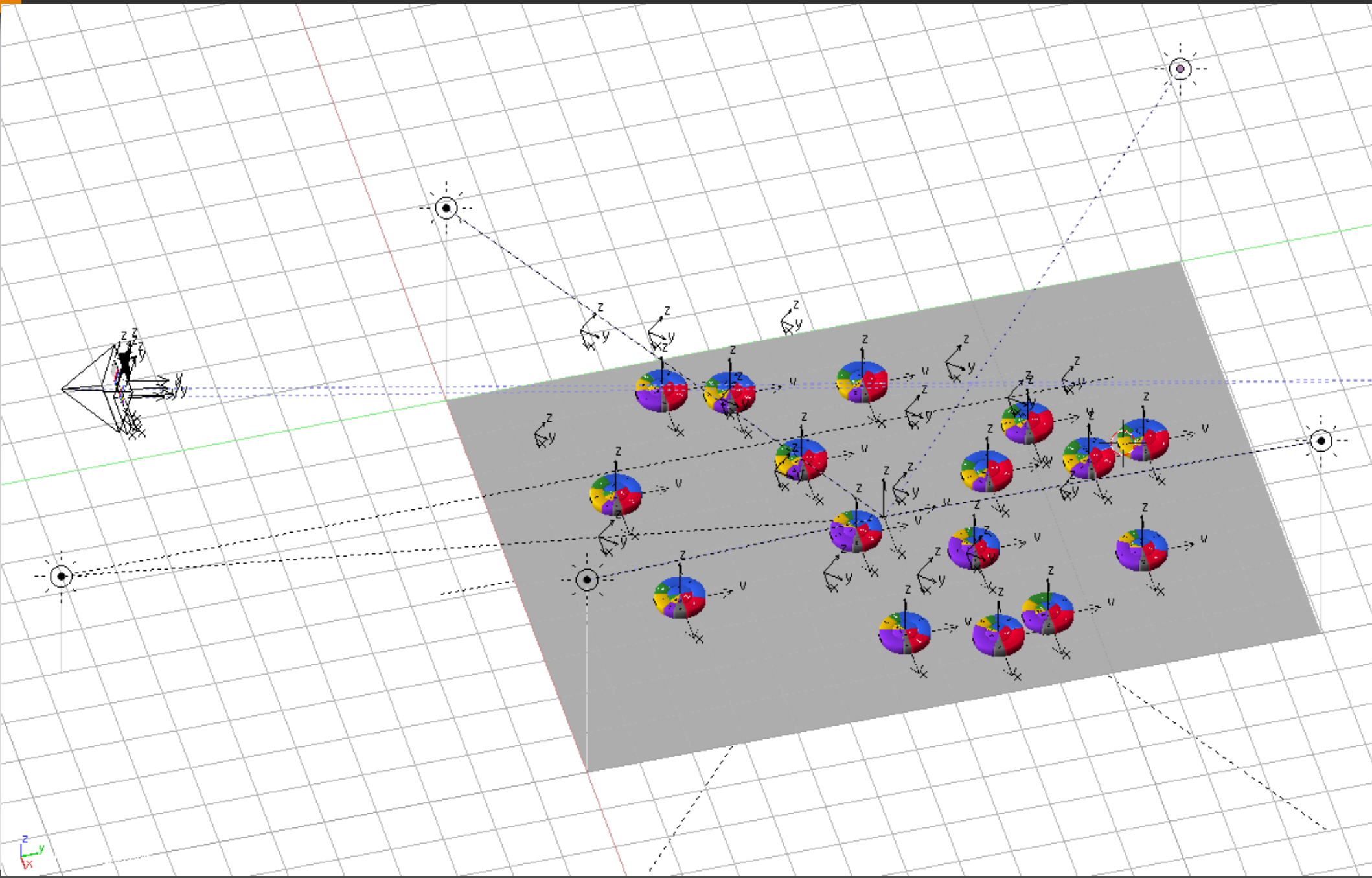
Architecture

Architecture

- 3 different components
  - Web interface, JobListener, Blender + Python



Generating Videos with Blender



Conclusion

- Web service
  - Visualization of spatially distributed data
- Generic model → chart flight
- User interface
- Architecture
  - Blender (Generation, Rendering)
- Output: Video
  - Presentations, Web, Mobile Devices, …

- Video: Cancer Incidence Statistics

Questions?