



Digital Humanities in Topoi

Das Topoi-FORUM „Spatial Data“

<http://community.topoi.org/web/forum-sda/>

Räumliche Analyse & Datenbanken

Undine Lieberwirth





1 Aufgabenbereich ● ... **Fachbereiche, Methoden**

2 Umsetzung ● ... **Ausstattung, Workflows**

3 Ergebnisse ● ... **Veröffentlichungen**



Fachbereiche

Prähistorische Archäologie

Klassische Archäologie

Vorderasiatische Archäologie

Ägyptologie

Altorientalistik

Archäologie

Historische Bauforschung

Historische Geographie

Alte Geschichte

Religionsgeschichte

Geschichte



Methoden & Ausstattung

<http://community.topoi.org/web/forum-sda/devices>

Scan

PG

GP

GPS

FE



-> Digitale Dokumentation

Prähistorische Archäologie
Klassische Archäologie
Vorderasiatische Archäologie
Ägyptologie
Altorientalistik

Historische Bauforschung
Historische Geographie
Alte Geschichte
Religionsgeschichte

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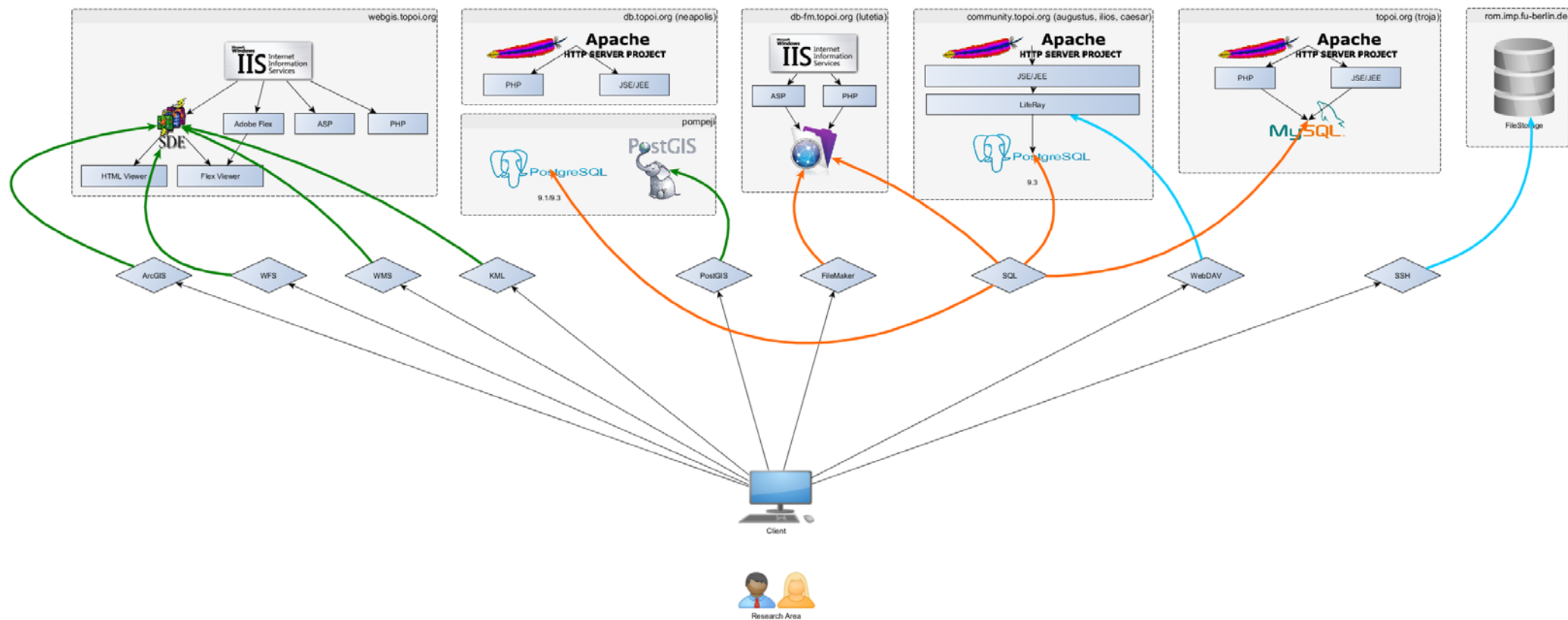
✓

-> Räumliche Analyse

Scan = Laserscanning PG = Photogrammetrie GP = Geophysik GPS = Global Positioning System FE = Fernerkundung



Serverstruktur

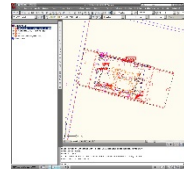




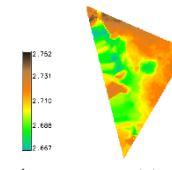
Methoden

<http://community.topoi.org/web/forum-sda/gis-lab>

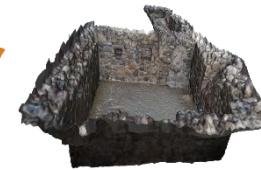
CAD



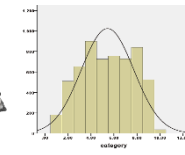
GIS



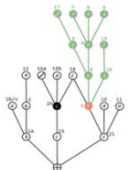
SfM



R_Project



S_Syntax



-> Digitale Dokumentation

Prähistorische Archäologie
Klassische Archäologie
Vorderasiatische Archäologie
Ägyptologie
Altorientalistik

Historische Bauforschung
Historische Geographie
Alte Geschichte
Religionsgeschichte

-> Räumliche Analyse

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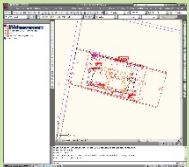
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CAD = Computer Aided Design, GIS = Geographische Informationssysteme, SfM = Structure-from-Motion, R_Project = Statistical Computing, S_Syntax = Space Syntax Analysis

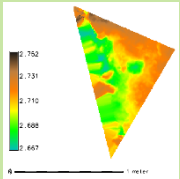


Software in Topoi

<http://community.topoi.org/web/forum-sda/gis-lab>



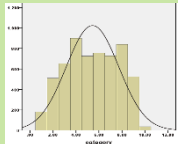
CAD = Computer Aided Design



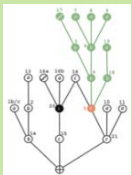
GIS = Geographische Informationssysteme



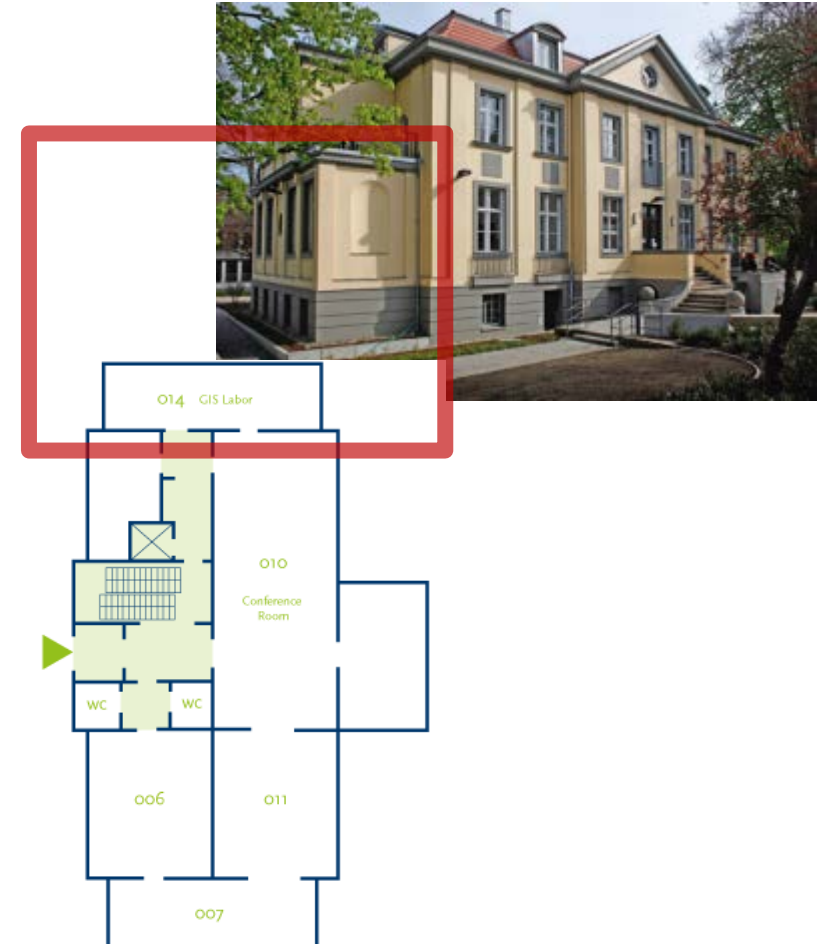
SfM = Structure-from-Motion



R_Project = Statistical Computing



S_Syntax = Space Syntax Analysis





Software aus Topoi <http://community.topoi.org/web/forum-sda/software>

BundlerTools

Softwarebundle zur automatisierten 3D Punktwolkengenerierung



GRASS GIS

v.in.ply, v.rectify, v.out.ply

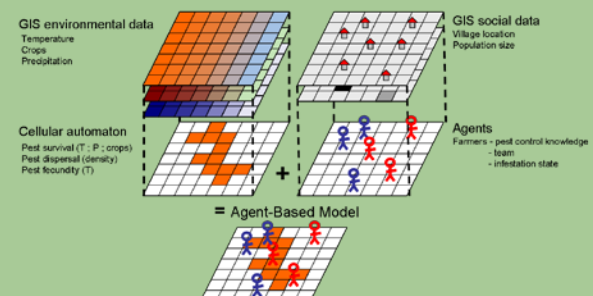
Modul zur Georeferenzierung von 3D Punktwolken



GRASS GIS

r.agent.aco

Agenten-basierte Modellierung





BundlerTools und GRASS GIS modules

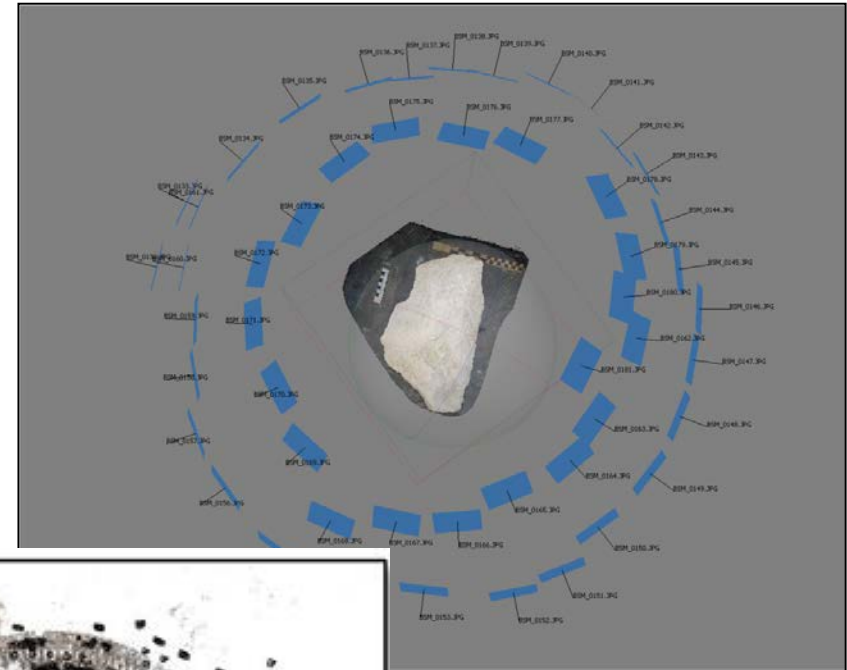
Softwarebundle zur automatisierten 3D Punktwolkengenerierung und deren Georeferenzierung

Bernhard Fritsch
Undine Lieberwirth



Structure-from-Motion Softwareentwicklung

BundlerTools (Ubuntu/Fedora) = Bundler + CMVS + PMVS2



Bündelung verschiedener Scripte zur einfachen Generierung von 3D Punktwolken

Structure-from-Motion

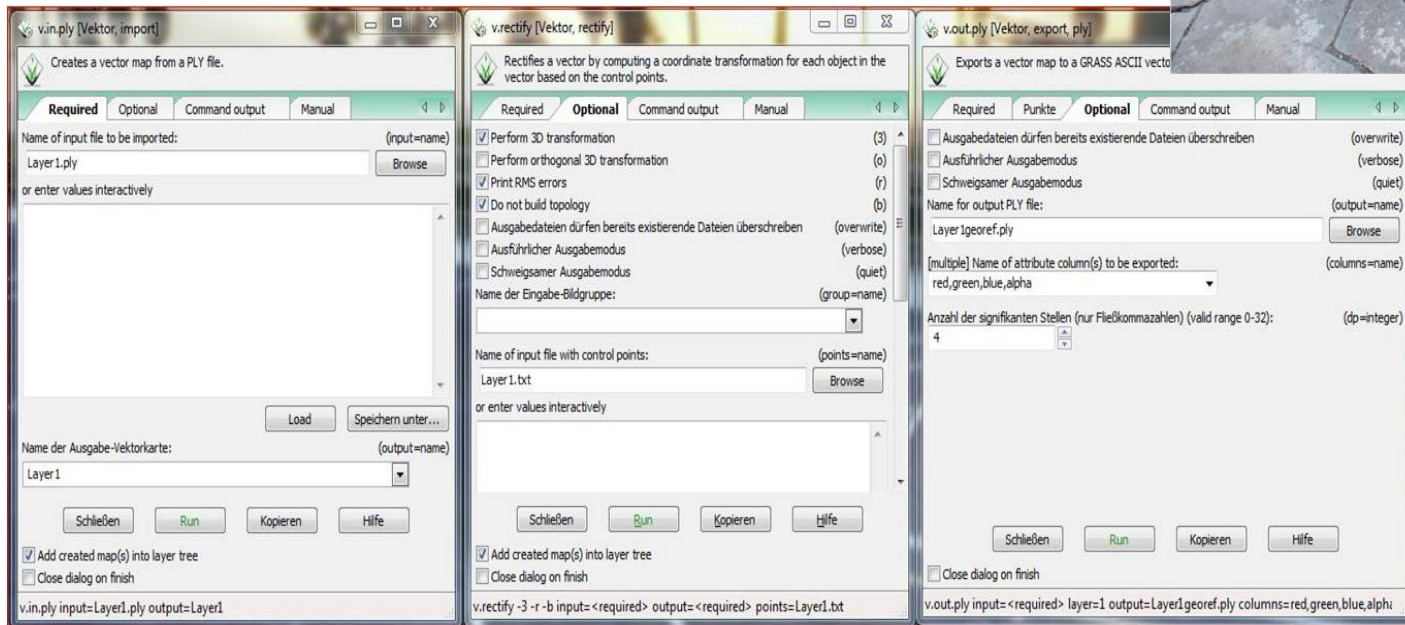
Vielfältiger Nutzen in Archäologie und Kulturwissenschaften



Softwarebundle zur automatisierten 3D Punktwolkengenerierung

Georeferenzierung Softwareentwicklung

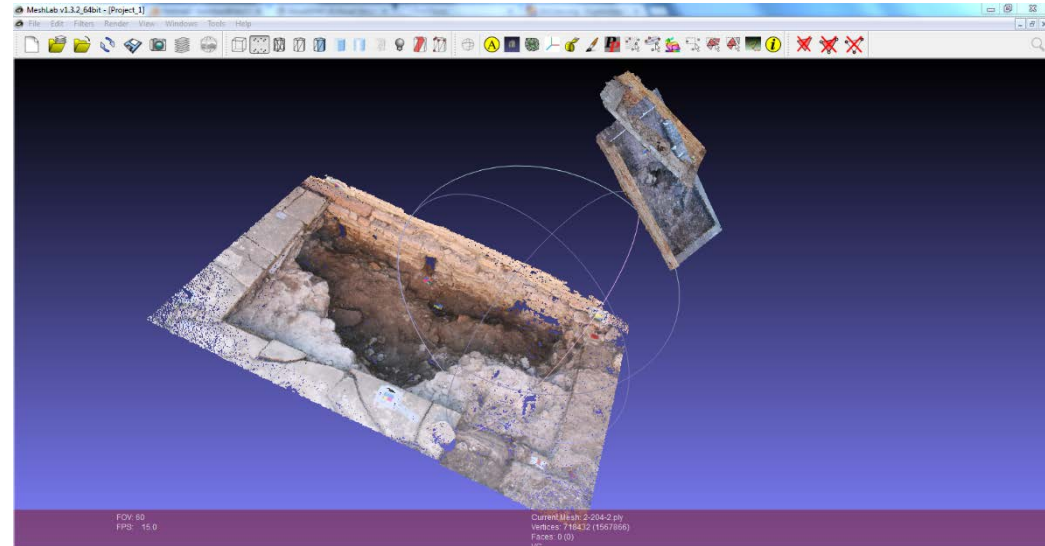
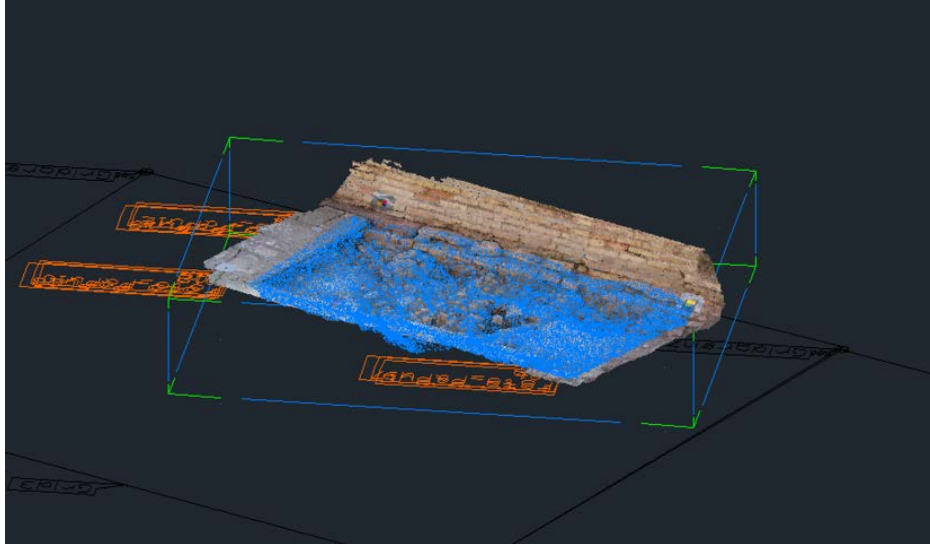
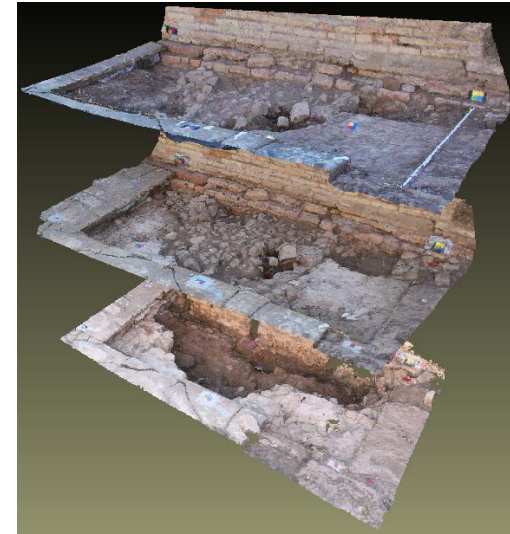
Affine Transformation



Georeferenzierung von 3D Punktwolken

Georeferenzierung Softwareentwicklung

weitere Bearbeitung:
Meshlab, Cloud Compare, Point Cloud, ParaView



Georeferenzierung von Grabungsbefunden



Workshops <http://www.topoi.org/courses/>

WORKSHOPS FOR HARDWARE AND ANALYSIS-SOFTWARE IN TOPOI

The constant endeavor to teach researchers new abilities has been resulting in numerous hardware and software courses for data modelling and data analysis since the start of Topoi.

For information on upcoming events, please visit our [Calendar](#).

An overview of all Topoi hardware devices and the most taught software, you will find in our section [Databases and GIS](#) or on <https://community.topoi.org/web/forum-sda/>

TITLE	DATE	ORGANISER
Introduction to Geographical Information Systems in Archaeology	01.07.-09.07.2014	Undine Lieberwirth
UAV (Unmanned Aerial Vehicle) Applications in Archaeology	23.5.-24.5.2014	Undine Lieberwirth
GRASS GIS introduction + Significance Tests in Archaeology	24.03.2014	Undine Lieberwirth
GRASS GIS introduction + Viewshed analysis in GRASS GIS	11.03.2014	Undine Lieberwirth
Winterschool on Modelling in Landscape Archaeology	26.02.-07.03.2014	Daniel Knitter, Oliver Nakoinz
Reflectance Transformation Imaging (RTI)	28.10.-31.10.2013	Kathryn Piquette



Konferenzen <https://community.topoi.org/web/uav-2014/>

Topoi Home UAV Conference 2014


Home Expertentreffen Rethymno Symposium Berlin Programm Flugshow Veranstaltungsort Die Organisatoren Anmeldung / Kontakt Presse

Impressions Links

Watch our Air Show Trailer and Presentation Videos

Please click on the image to watch the trailer.

Presentation videos can be found under the [Programm](#) tab.



Airshow Trailer

EXCELLENCE CLUSTER **TOPOI**
THE FORMATION AND TRANSFORMATION OF SPACE AND KNOWLEDGE IN ANCIENT CIVILIZATIONS

NAVIGATION

- **Home**
- [Expertentreffen Rethymno](#)
- [Symposium Berlin](#)
- [Programm](#)
- [Flugshow](#)
- [Veranstaltungsort](#)
- [Die Organisatoren](#)
- [Anmeldung / Kontakt](#)
- [Presse](#)
- [Impressions](#)
- [Links](#)

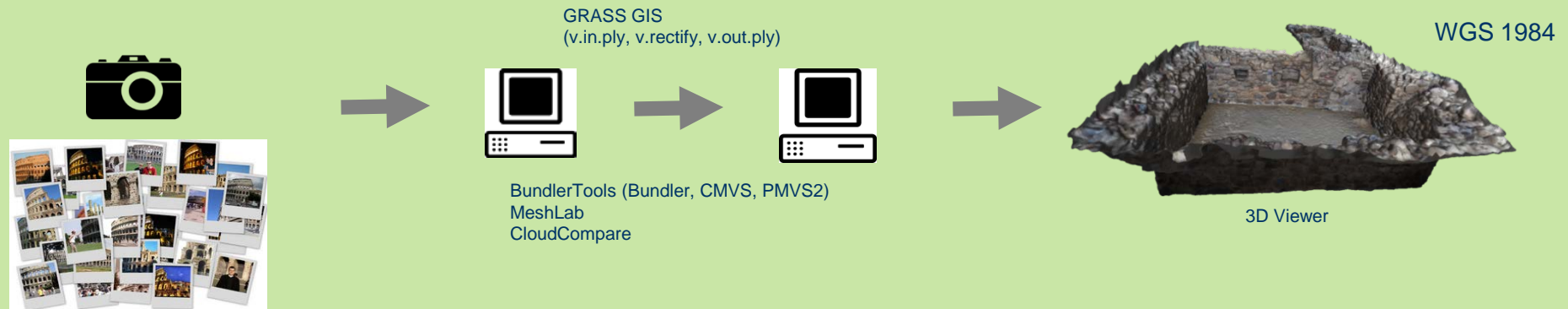
SEARCH

Everything ▾ 🔍



Workflow

Beispiel: Structure-from-Motion Methode (SfM)



Feldforschung



Datenprozessierung

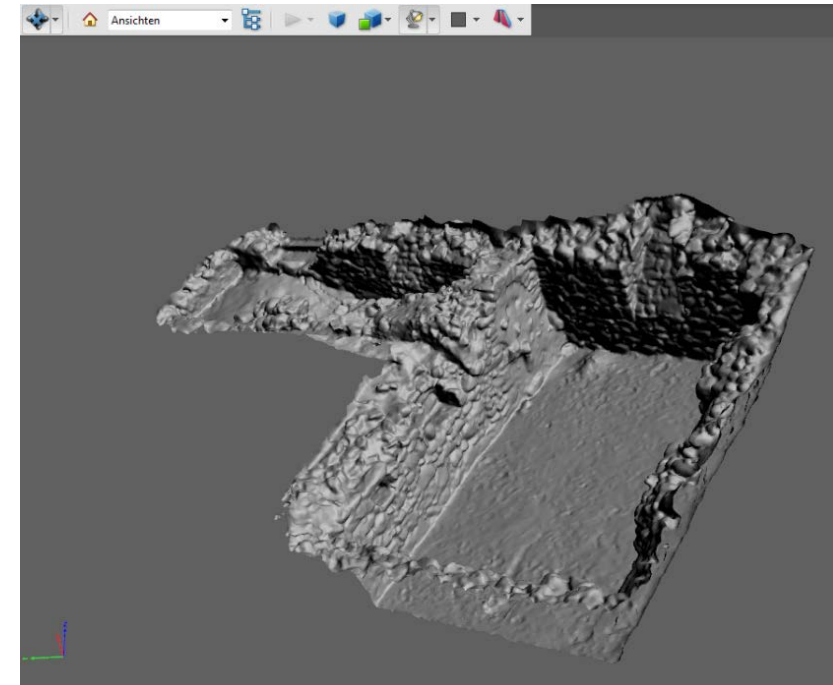


Veröffentlichungen



Topoi WebGIS

<http://community.topoi.org/web/forum-sda/webgis>



3D Viewer

<http://community.topoi.org/web/forum-sda/3d-documentation>



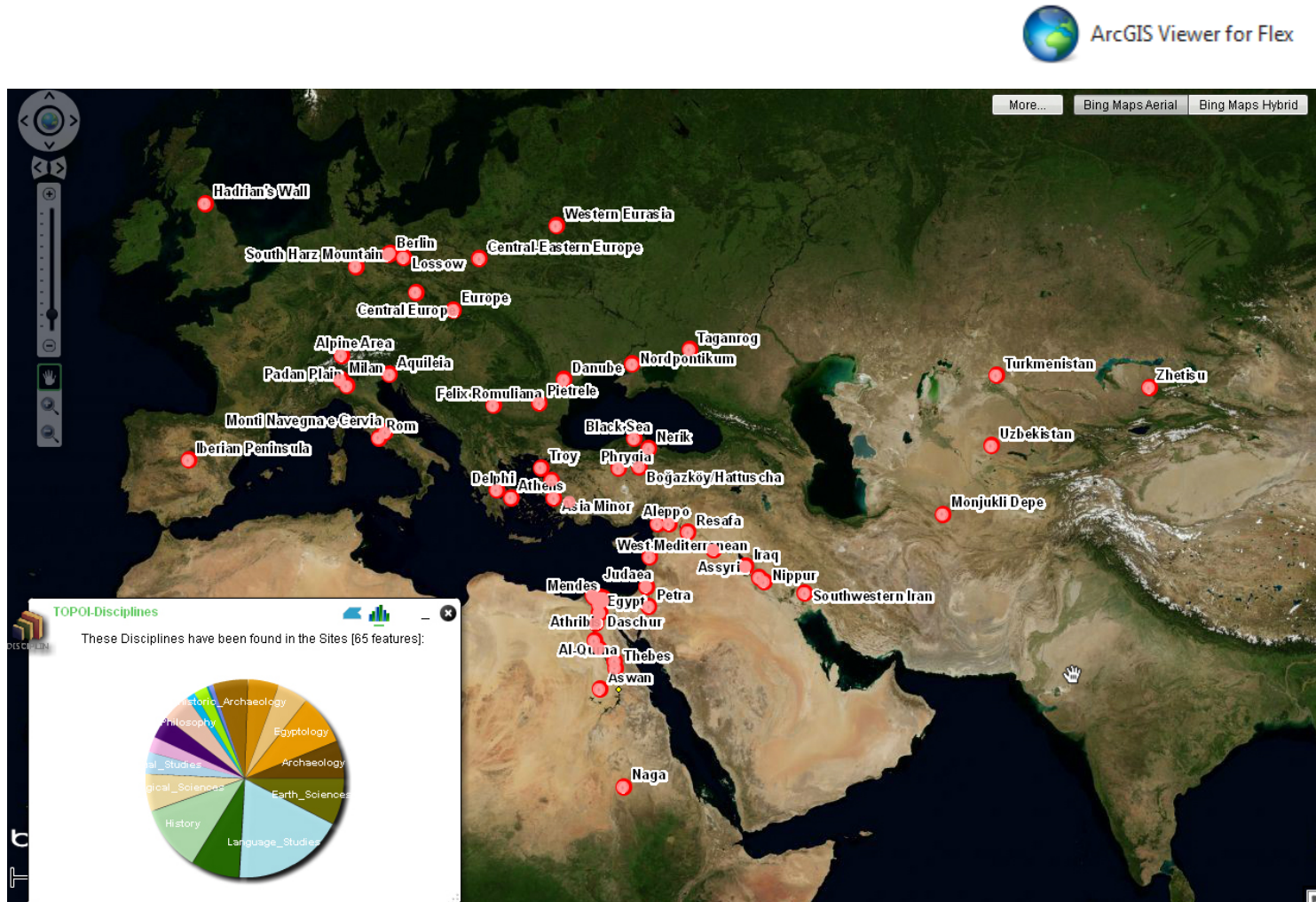
Das Topoi-WebGIS als interaktive Karte

Topoi Forum „Spatial Data“

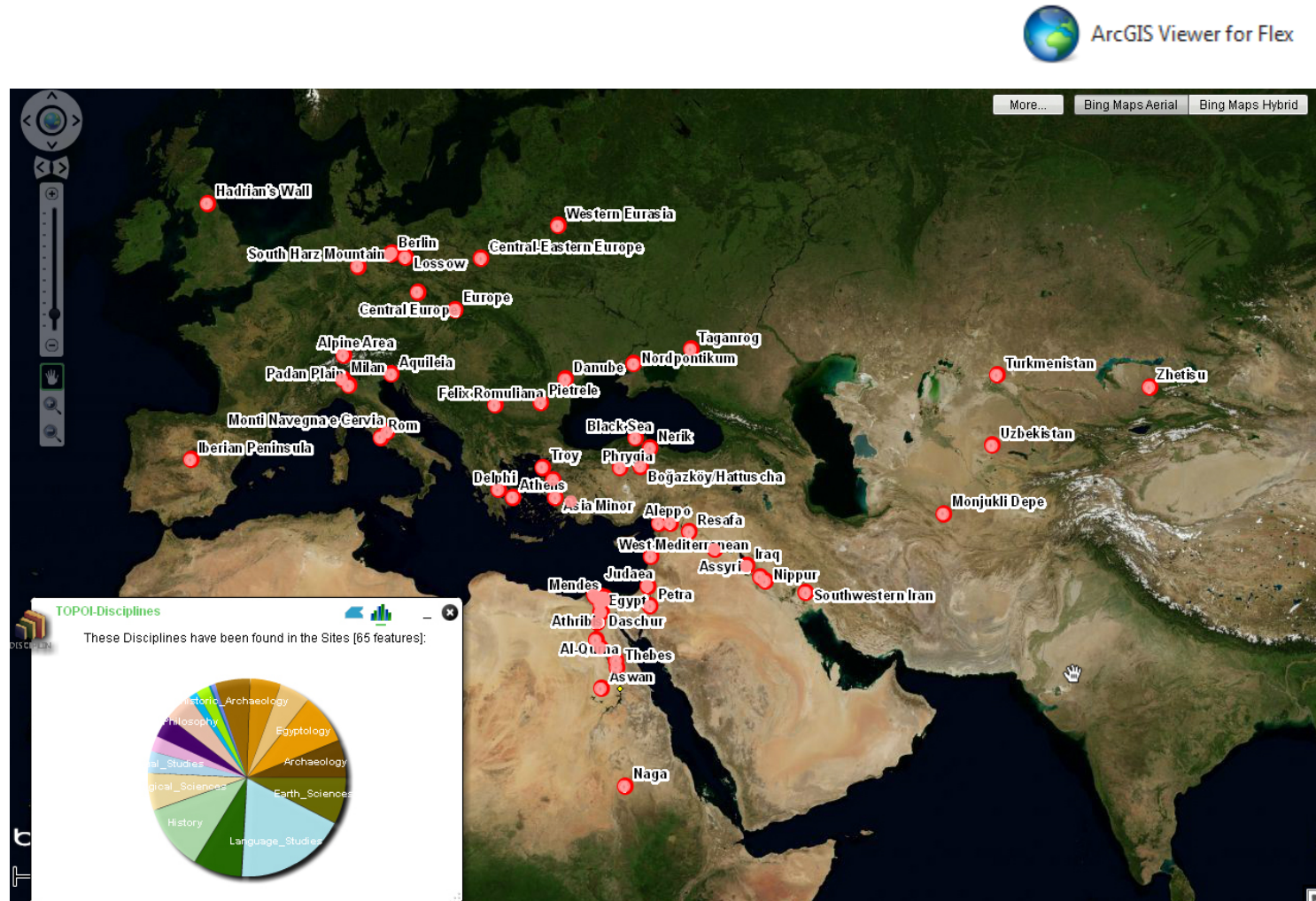
Vortragende:
Sophie Schmidt B.A.



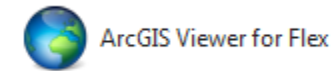
Ergebnis



Statistiken



Attribute



Pergamon

Ancient Landscapes in the Environs of Pergamon - Geoarchaeology in the Lower Kaikos Valley (TOPOI Research Projects)

OBJECTID	{OBJECTID}
project_name	Ancient Landscapes in the Environs of Pergamon - Geoarchaeology in the Lower Kaikos Valley
project_type	dissertation
PDF	Open Poster
post_name	ancient landscapes in the environs of pergamon
Name	Pergamon
Country1	Turkey
place_type	project location

topoi_research > TOPOI Research Projects
[Add to Results](#)

http://160.45.13.131/PDFs/Poster-Reader_ATeil7.pdf - Windows Internet Explorer

http://160.45.13.131/PDFs/Poster-Reader_ATeil7.pdf

Google Suche Mehr >> Anmelden Datei Konvertieren Auswählen

Google Maps CIDOC-CRM Portal - CIDOC-CRM Webmail Willkommen bei Ho... Application Express Login

http://160.45.13.131/PDFs/Poster-Reader_ATeil7.pdf

Find

CLUSTER TOPOI

Research Group A-I: Central Places and Their Environment

Seats of Residence as Central Places Representative Projects

A-I-3 Resafa - Rusafat Hisham, Syria: Palaces, Paleoenvironment and water management systems

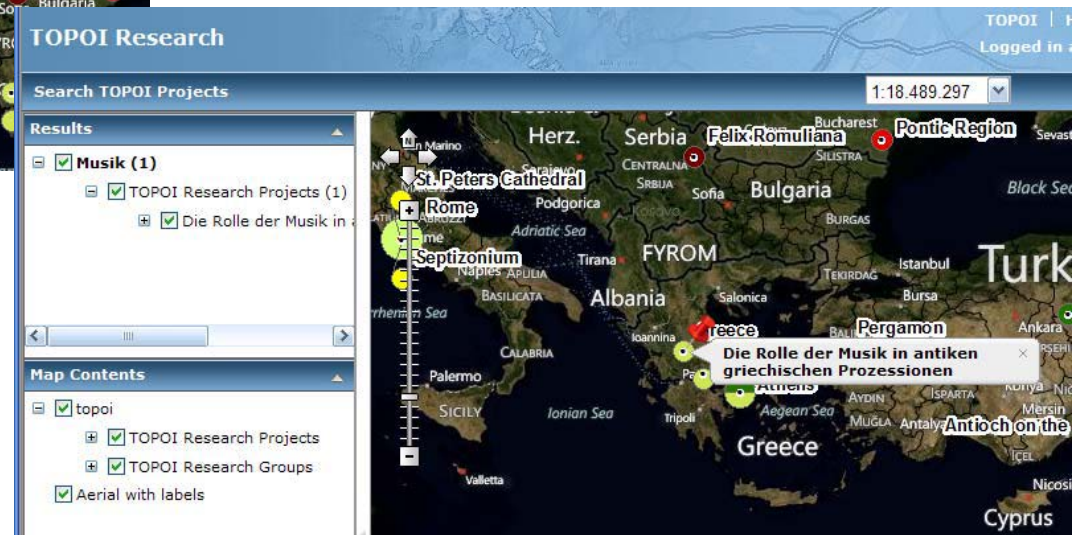
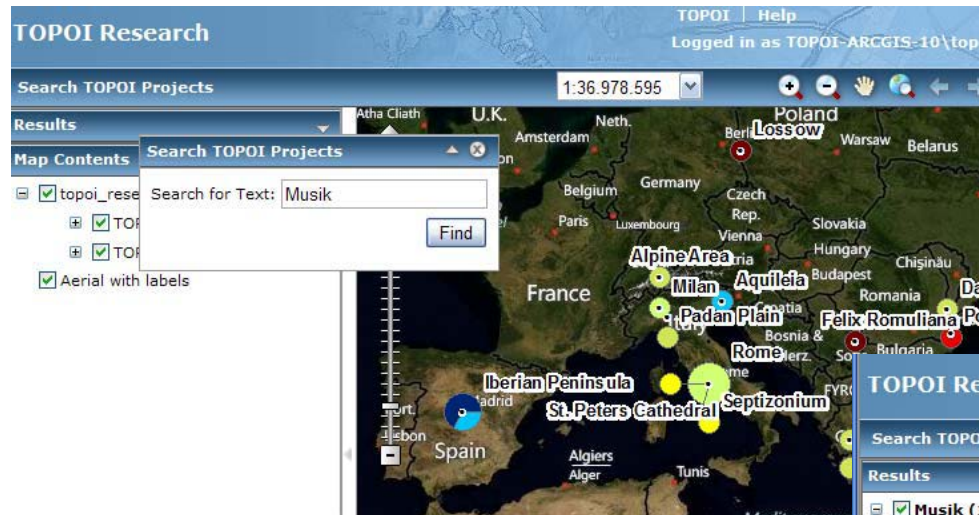
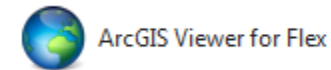
Resafa was founded as a fortress at the eastern Roman border in the 1st century AD. At the beginning of the 6th century, the fortress became a city of pilgrimage, as it was said to cover the relics of the Roman saint Sergios. Because of this sanctuary, the Umayyad Caliph Hisham ibn 'Abd al-Malik (724-743) decided to take residence in Resafa. For about 15 years, the city was the political centre of the Arabian empire. At least two palaces were built and decorated richly with stucco (Fig. 1) and wall paintings. Gardens and water basins also served as part of the caliphal representation. This is astonishing, given that Resafa is situated in a dry area. One main goal of the project is therefore the reconstruction of environmental conditions and the understanding of the water management system, based on a hydrological modelling. Initial results show that this system was often changed during Resafa's history, and that it attained its most effective form during the Umayyad period.

trace the development of the palace hinterland, thereby identifying its role within a central place model on a local level, its nature and function and its influence on the surrounding region. The hinterland's central nature is particularly evident in economic terms, confirming earlier theories that metallurgy played a key role in the development of this region. Felix Romuliana could therefore have played a key role on a regional or wider scale, as it lies directly on the East-West axis connecting the Timok and Morava valley regions. This position suggests that it may have served as a central place in a network of smaller fortified sites located along this route. Furthermore, a reconstruction of settlement patterns via geomorphological and archaeological surveys aims to establish to what extent geographical conditions influenced the formation, development and abandonment of these settlements from the Neolithic to the Medieval period.

A-I-8: Ancient Landscapes in the Environs of Atarneus and Pergamon - Geoarchaeology in the Lower Kaikos Valley

A-I-4: The Late Roman Inner Palace

Suchfunktion



Open Data

The screenshot displays the Topoi-WebGIS interface. The main map area shows a satellite view of Italy with a semi-transparent topographic overlay. A green circle highlights the 'Info' button in the top navigation bar. On the left, the 'Map Content' panel lists layers: Italy, Sampling_Location20082009, Sampling_locations_2010, Archaeological_sites, Roman_street, settlements, and ASTERcomposite.img. On the right, the 'Info' panel shows details for the 'Italy' layer, including a list of layers (Sampling_Location20082009, Sampling_locations_2010, Archaeological_sites, Roman_street, settlements, ASTERcomposite.img) and a list of tables. The 'Supported Image Format Types' section lists various formats: PNG24, PNG, JPG, DIB, TIFF, EMF, PS, PDF, GIF, SVG, SVGZ, AI, BMP. The 'Supported Interfaces' section lists REST and SOAP. The 'Supported Operations' section lists Export Map, Idem, Find, and Generate KML. The 'ArcGIS Viewer for Flex' logo is visible in the top right corner.

Topoi A_I_9 Projects of TOPOI
Monti Navegna e Cervia: Geoarchaeology

Map Content

Layer Visibility

- ☒ Italy
- ☒ Sampling_Location20082009
- ☒ Sampling_locations_2010
- ☒ Archaeological_sites
- ☒ Roman_street
- ☒ settlements
- ☒ ASTERcomposite.img

Info

Italy

- ☒ Sampling_Location20082009
- ☒ Sampling_locations_2010
- ☒ Archaeological_sites
- ☒ Roman_street
- ☒ settlements

Zoom to
Transparency
Move up
Move down
Description

ArcGIS Services Directory

Home > Italy (MapServer)

Italy (MapServer)

View In: [ArcMap](#) [ArcGIS Explorer](#) [ArcGIS JavaScript](#) [Google Earth](#) [ArcGIS.com Map](#)

View Footprint In: [Google Earth](#)

Service Description:

Map Name: Layers

[Legend](#)

[All Layers and Tables](#)

Layers:

- [Sampling_Location20082009](#) (0)
- [Sampling_locations_2010](#) (1)
- [Archaeological_sites](#) (2)
- [Roman_street](#) (3)
- [settlements](#) (4)
- [ASTERcomposite.img](#) (5)

Tables:

Description:

Copyright Text:

Spatial Reference: 32633

Single Fused Map Cache: false

Initial Extent:

XMin: 143148.122839155
YMin: 4417635.20021109
XMax: 800639.021154265
YMax: 4966450.50458635
Spatial Reference: 32633

Full Extent:

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YMin: 4527424.5
XMax: 512613.438841468
YMax: 4775475.5
Spatial Reference: 32633

Units: esriMeters

Supported Image Format Types: PNG24, PNG, JPG, DIB, TIFF, EMF, PS, PDF, GIF, SVG, SVGZ, AI, BMP

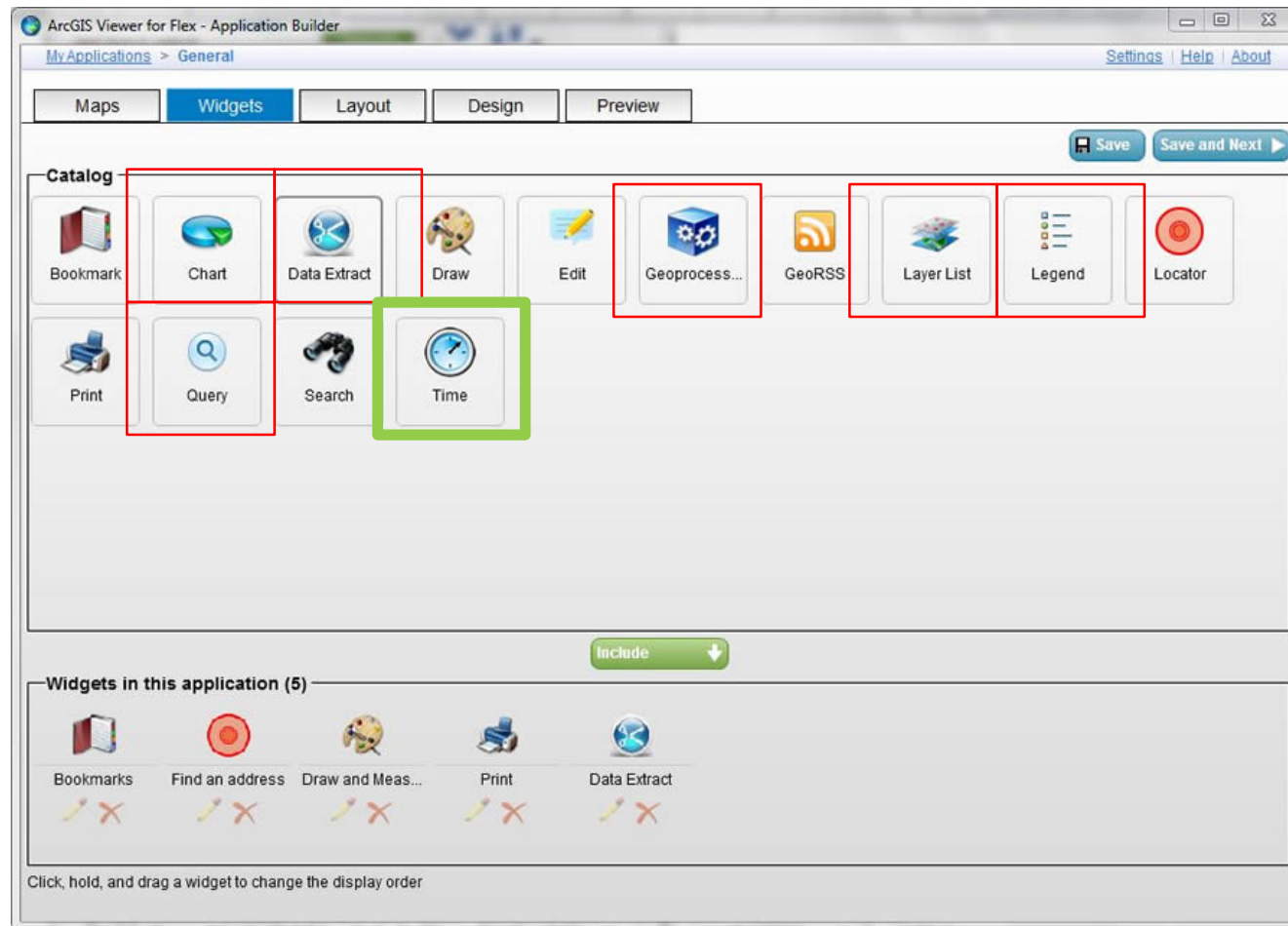
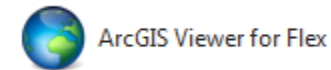
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- Title:
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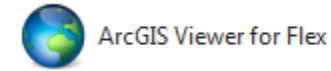
Supported Interfaces: [REST](#) [SOAP](#)

Supported Operations: [Export Map](#) [Idem](#) [Find](#) [Generate KML](#)

Administration



Administration



Calculate viewshed

Observation point

Viewshed distance Meters

[Help](#)

Drive times

Start location

[Help](#)

Extract Data

Extract data and download zip file

1. Select area

2. Select layers to extract ☒ Incident Areas
☐ Incident Lines
☒ Incident Points

[Help](#)

Population summary

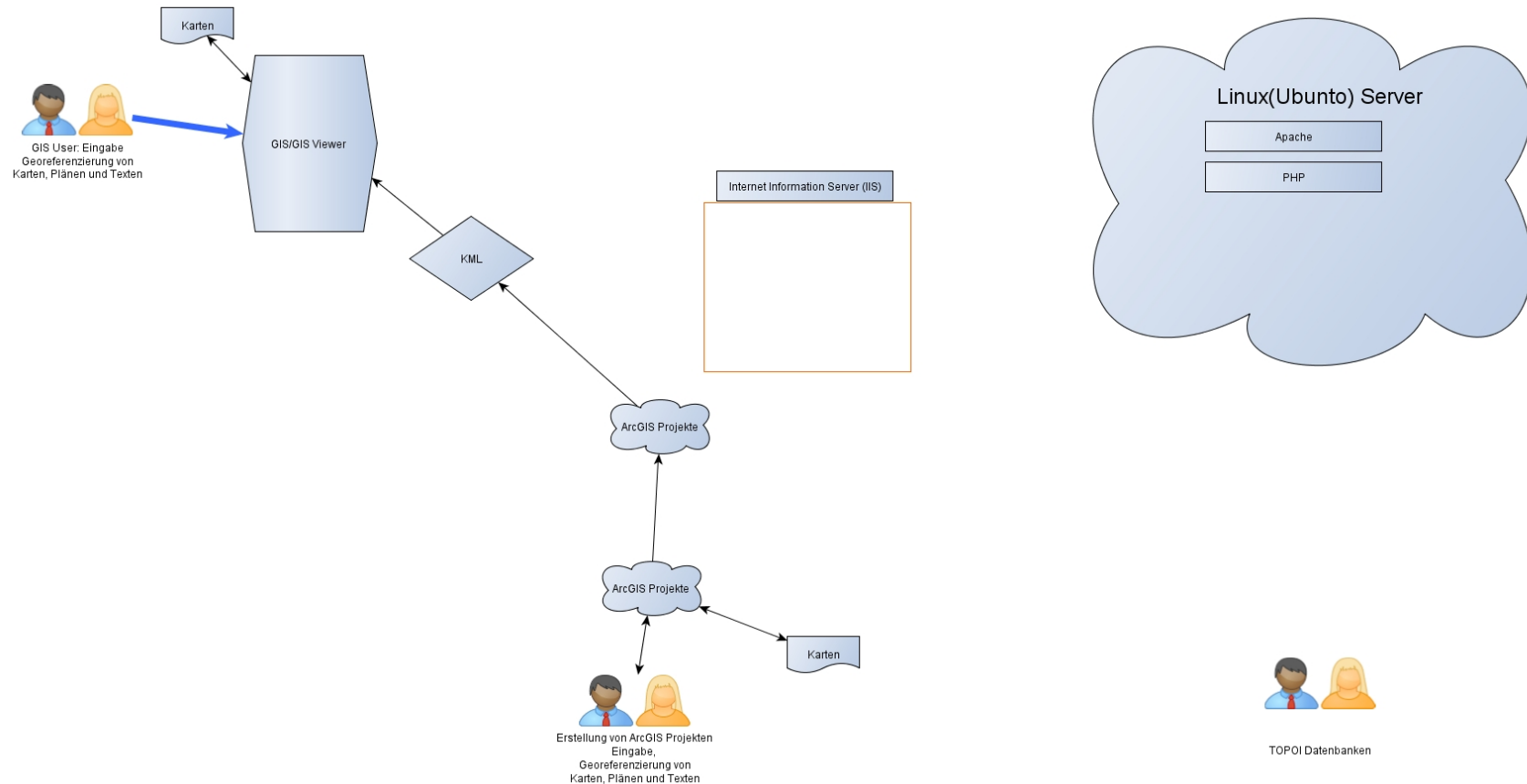
Population area

[Clear](#)

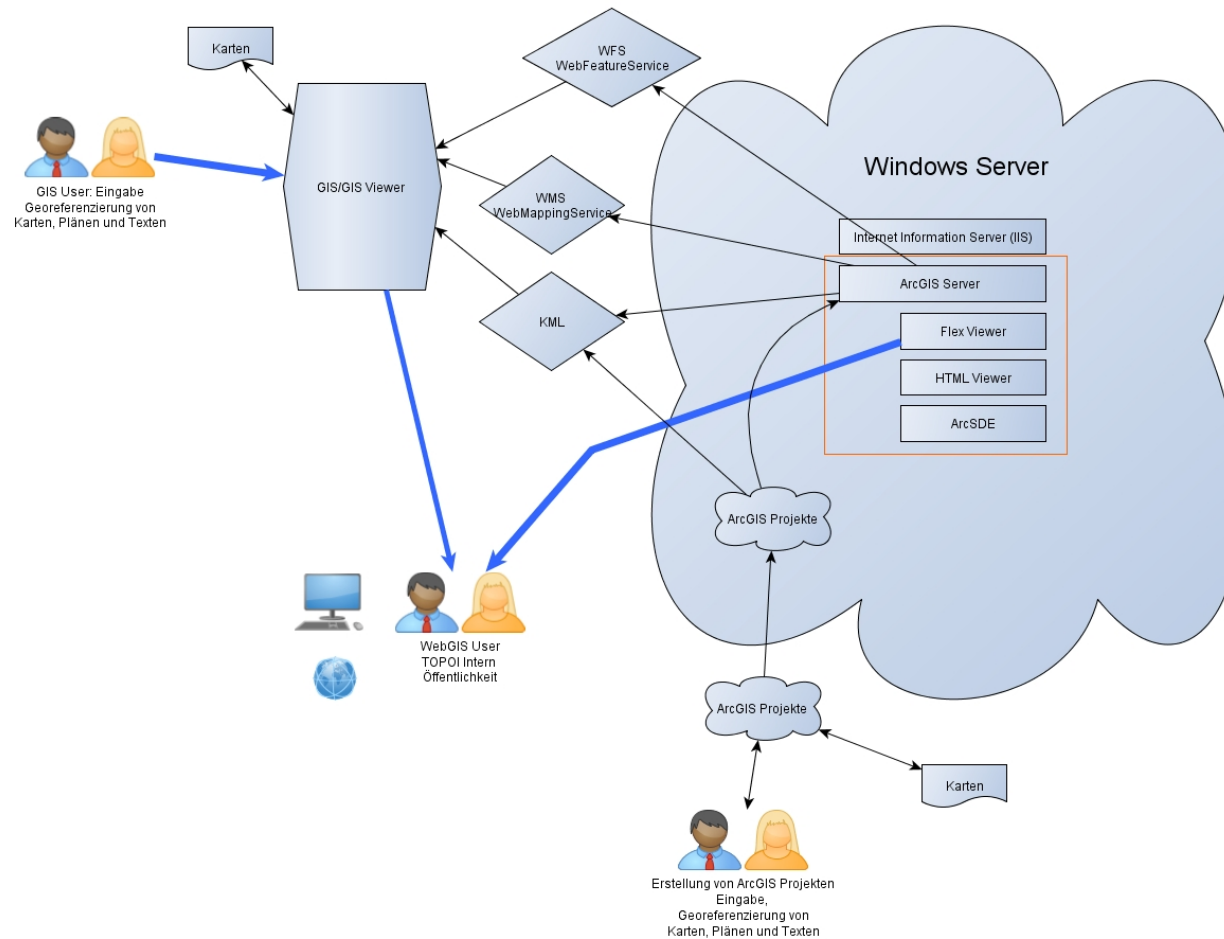
[Help](#)

Creating Widgets (Adobe Flash Builder, ActionScript® language)

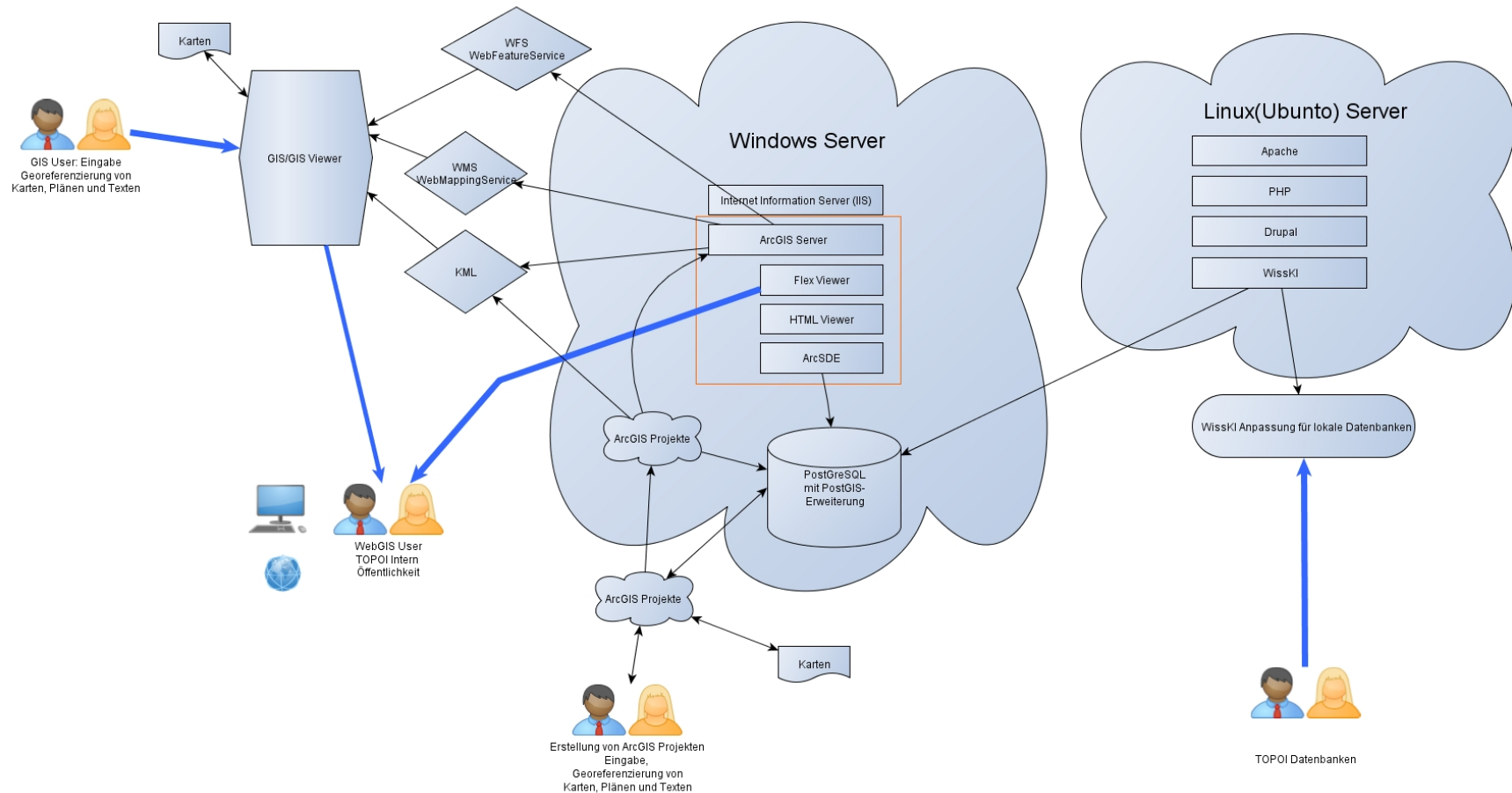
Administration



Administration




Administration




WebService

Intranet

EXCELLENCE CLUSTER

 **TOPOI**
FORUM Spatial Data




FORUM Spatial Data

WelcomeTopoiBox - SDAGIS LaborWebGIS3D DocumentationSoftwareEquipment listMaps/Resources X
FORUM MembersContact


[community.topoi.org](#) > FORUM Spatial Data > TopoiBox - SDA > Home > Karten Repository > Karten TOPOI

Activities

WEB CONTENT DISPLAY



Zur Beachtung
Verwenden Sie bei der Speicherung von neuen Dokumenten bitte keine Umlaute und Sonderzeichen im Dateinamen. Die Nutzung und der Download der Dateien kann in diesem Fall nicht für alle Rechnerumgebungen sichergestellt werden!





























Karten Repository
Up
Karten TOPOI

AddSort ByManageDOCUMENTS AND SEARCH

Home > Karten Repository > Karten TOPOI

Access these files offline using Liferay Sync.

	Title	Size	Downloads	
<input type="checkbox"/>	 Algeria	--	--	
<input type="checkbox"/>	 Atlas Barrington	--	--	
<input type="checkbox"/>	 Egypt topographisch TIF	--	--	
<input type="checkbox"/>	 Germany	--	--	
<input type="checkbox"/>	 Italy	--	--	
<input type="checkbox"/>	 Jordan	--	--	
<input type="checkbox"/>	 Kazakhstan	--	--	
<input type="checkbox"/>	 Middle Europe	--	--	
<input type="checkbox"/>	 Morocco	--	--	
<input type="checkbox"/>	 Near East	--	--	
<input type="checkbox"/>	 Northern Black Sea Region	--	--	
<input type="checkbox"/>	 Romania	--	--	
<input type="checkbox"/>	 Russia	--	--	

1. Form

Anforderungen Ziele

- alle kartierbaren Topoi-Ergebnisse präsentieren
- interaktiv und intuitiv nutzbar
- Open Access, Open Data / OGC Standard
- auch für den User leicht zu administrieren

2. Funktion

- browserbasierte Anwendung
- schnell umsetzbar
- schnelle Internetanbindung (BACKBONE)

Darstellung

community.topoi.org/web/forum-sda/webgis
<https://www.topoi.org/research/research-concept/forums/webgis-2/>
Intranet

EXCELLENCE
CLUSTER

 **TOPOI**
FORUM Spatial Data Analysis



Sign In

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FORUM Spatial Data Analysis

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WebGIS

3D Documentation

Software

Equipment list

Maps/Resources

FORUM Members

Contact

Geografische Informationssysteme in TOPOI

Topoi's web-based Geographic Information System (WebGIS) is an online tool for spatial and geo-statistical depiction of geo-referenced data.

On the basis of modern reference maps, research results are presented by Topoi researchers in layer-based, raster or vector format. Use is made of, e.g. historical maps, elevation maps, contour maps, networks between settlements or drill core sites used in sedimentological research aimed at reconstructing landscapes. Detailed descriptions of the projects are available on the corresponding project websites.

The introductory WebGIS application (right) shows all of the disciplines involved in research in the Excellence Cluster during Topoi I (2008 – 2012), indicating both their location and frequency of occurrence. This is followed by a depiction of all Topoi-I projects that created and/or used spatial maps.



Click on a map to access it. To navigate within the map use the icons on the top menu bar of the WebGIS interface.

The application complies with OGC specifications.

Open Access

select layers can be downloaded in different shapes: More ... -> Drop Down Arrow -> Description.

Archaeological and Geoarchaeological Research in Kazakhstan

Research Group A-I-1

The archaeological and geographical tandem subproject "Archaeological and Geoarchaeological Research in Semirech'ye/Kazakhstan" deals with the archaeological cultural development of this region during the Bronze Age and Early Iron Age (2nd – 1st millennium BC). The geographical aspect of the project involves reconstructing the Late Holocene landscape of southeast Semirech'ye.



Das Topoi-WebGIS als interaktive Karte

Schulungen





Digital Humanities in Topoi

Vielen Dank für Ihre Aufmerksamkeit

Undine Lieberwirth M.A.
Exzellenzcluster 264 – TOPOI
FORUM Spatial Data
Email: undine.lieberwirth@fu-berlin.de
Website: topoi.org, community.topoi.org/web/forum-sda