

The participative time machine

S M A P S H O T

2nd online event

HEIG-VD – MEI/INSIT

University of Applied Sciences Western Switzerland

S M A P S H O T

Welcome

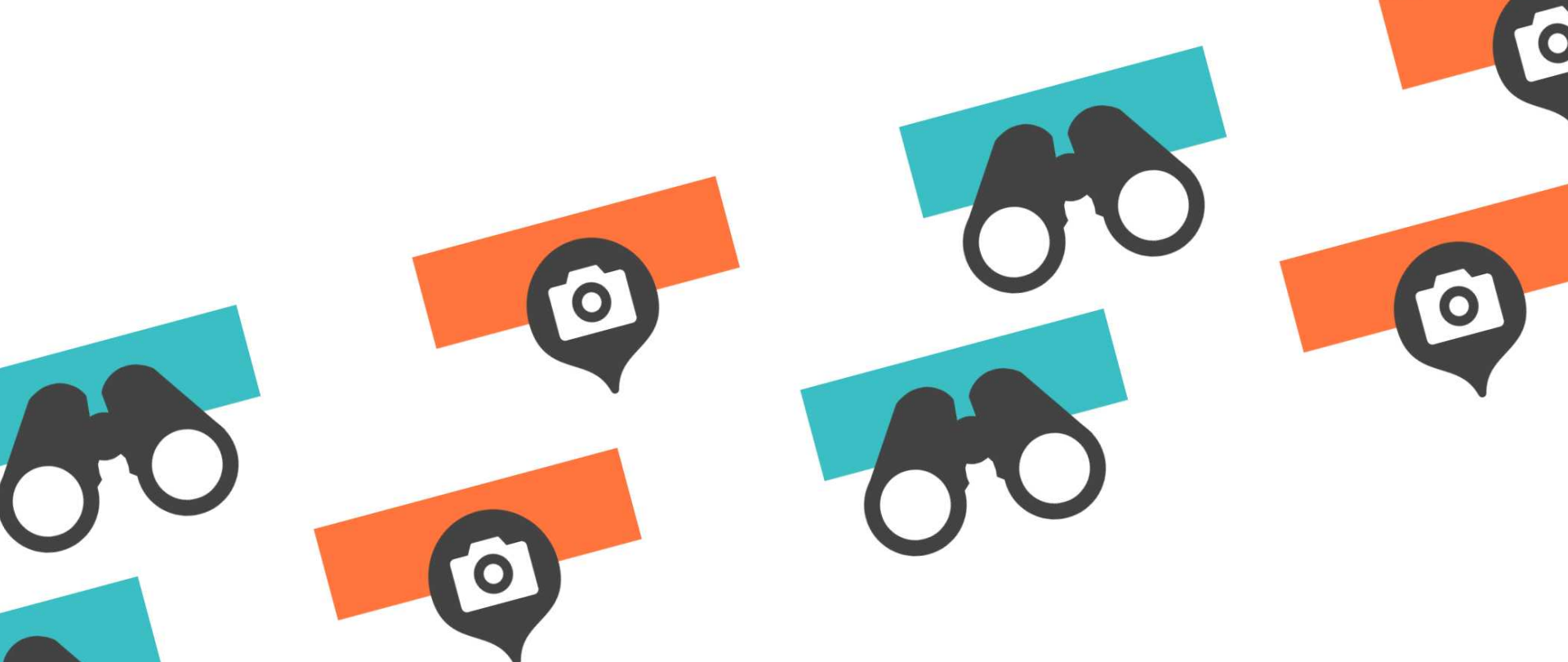
Welcome and short introduction of the HEIG-VD development team
sMapshot news: new collections, collaboration, media

New functionalities

sMapshot API : Application examples
Toponym calculation and new footprints
Georeferencing of combined images and panoramas
Control points on buildings (under development)
Discussion and exchange

Outlook

Closing



The snapshot
development team

Snapshot development

Daniel Rappo
MEI
Project management



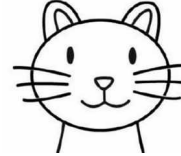
James Taylor
MEI
Web development



Jens Ingensand
INSIT
Project management



Nicolas Blanc
INSIT
Data science,
smAPSHOT
development



Maxime Collombin,
MEI/INSIT
Web/server development



Shadia Huggenberger
MEI
Accounting

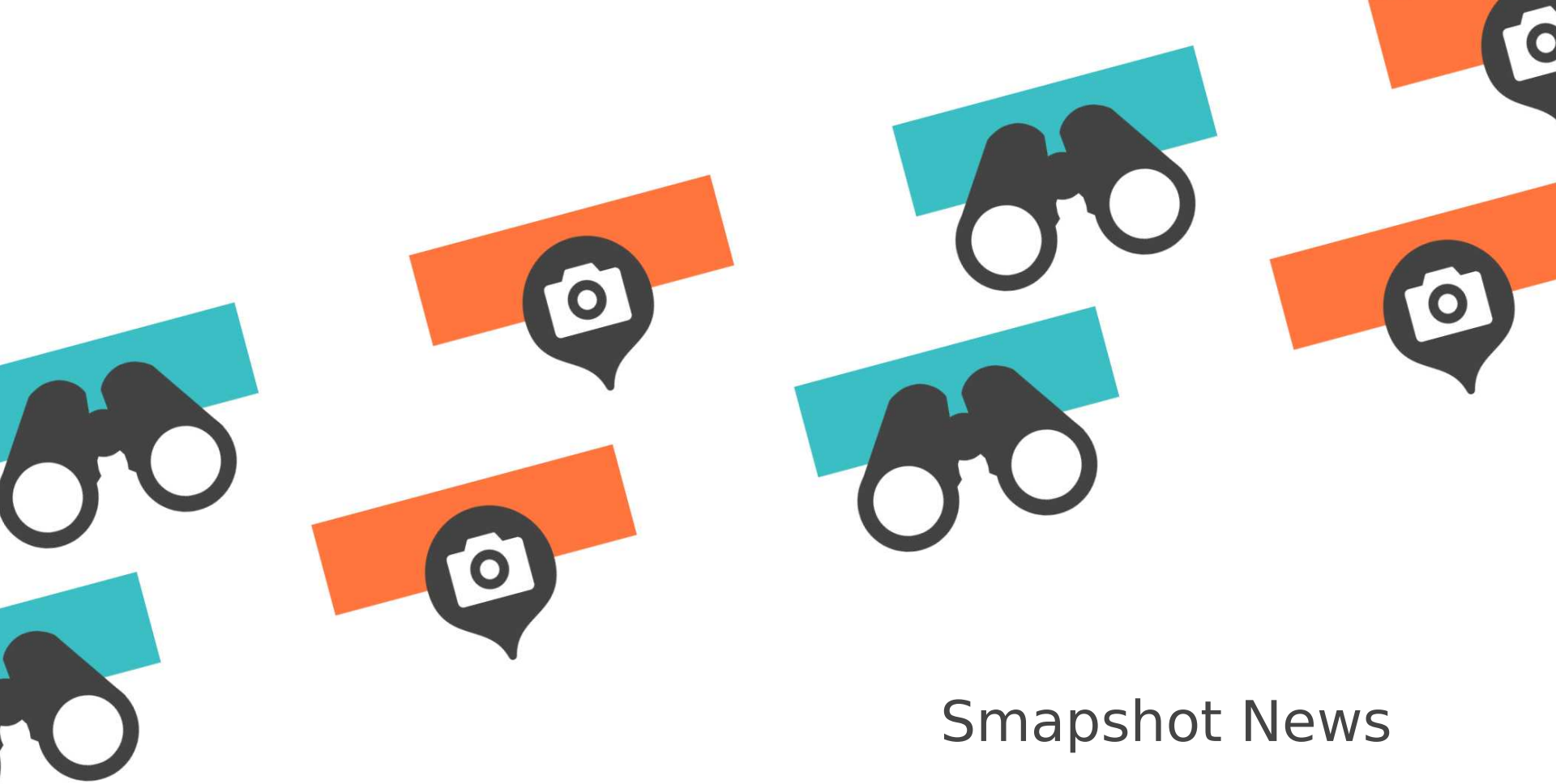


Stéphane Lecorney
MEI
Web development,
project management



Timothée Produit
IG-Group
Development





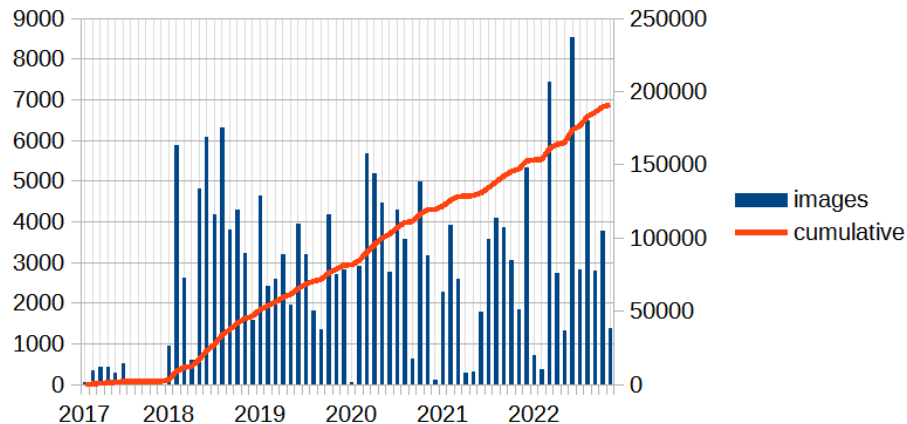
Snapshot News

Snapshot news

Since 2017

190k images geolocalised by the crowd!
Almost 237k geolocalised images

ETHZ Collections: 160k images



SmAPSHOT news

855 members since 2017

Participants

All periods ▾ From 01 / 01 / 2017 ● to 14 / 11 / 2022 ● All collections ▾

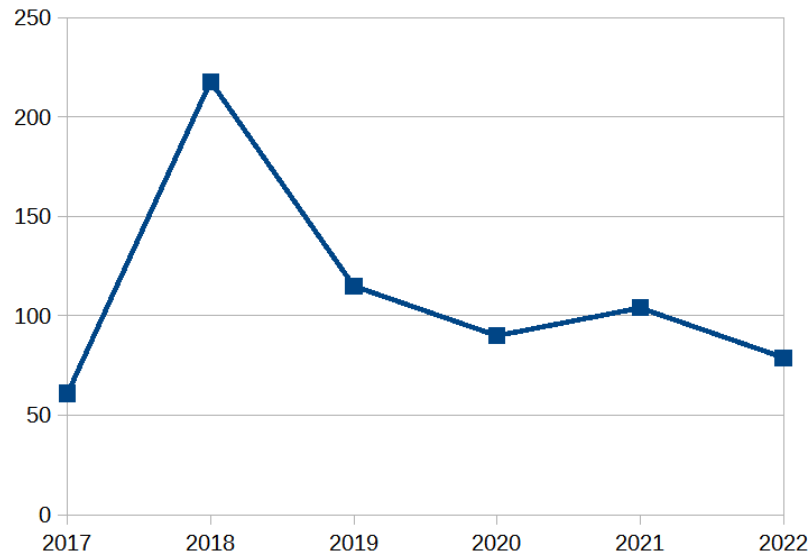
Rank	Name ▾	Geolocalised images ▾	Observations ▾	Corrected titles or captions ▾
1	Walter Zweifel	43040	201	964
2	Hans Zumbühl	30389	13	754
3	Urs Witmer	24230	245	6093
4	Sigi Heggli	22495	6	91
5	anton heer	15404	1	1154

Participants

Last 30 days ▾ From 15 / 10 / 2022 ● to 14 / 11 / 2022 ● All collections ▾

Rank	Name ▾	Geolocalised images ▾	Observations ▾	Corrected titles or captions ▾
1	Walter Zweifel	1182	0	9
2	Urs Witmer	935	1	121
3	Hans Zumbühl	615	0	211
4	anton heer	197	0	2
5	Philippe Calame	194	2	0

Number of participants per year



Snapshot news

New collections in 2022

- ETHZ:
 - Oblique photographs of Air Color SA (1985-1995)
 - Oblique aerial view of Air Color SA (1996-2006)
 - Oblique aerial view of Air Color SA (2007-2009)
 - Glaciers II
- Vorarlberg
 - New images in “Inclined aerial photos of spatial planning/State of Vorarlberg”

Snapshot news

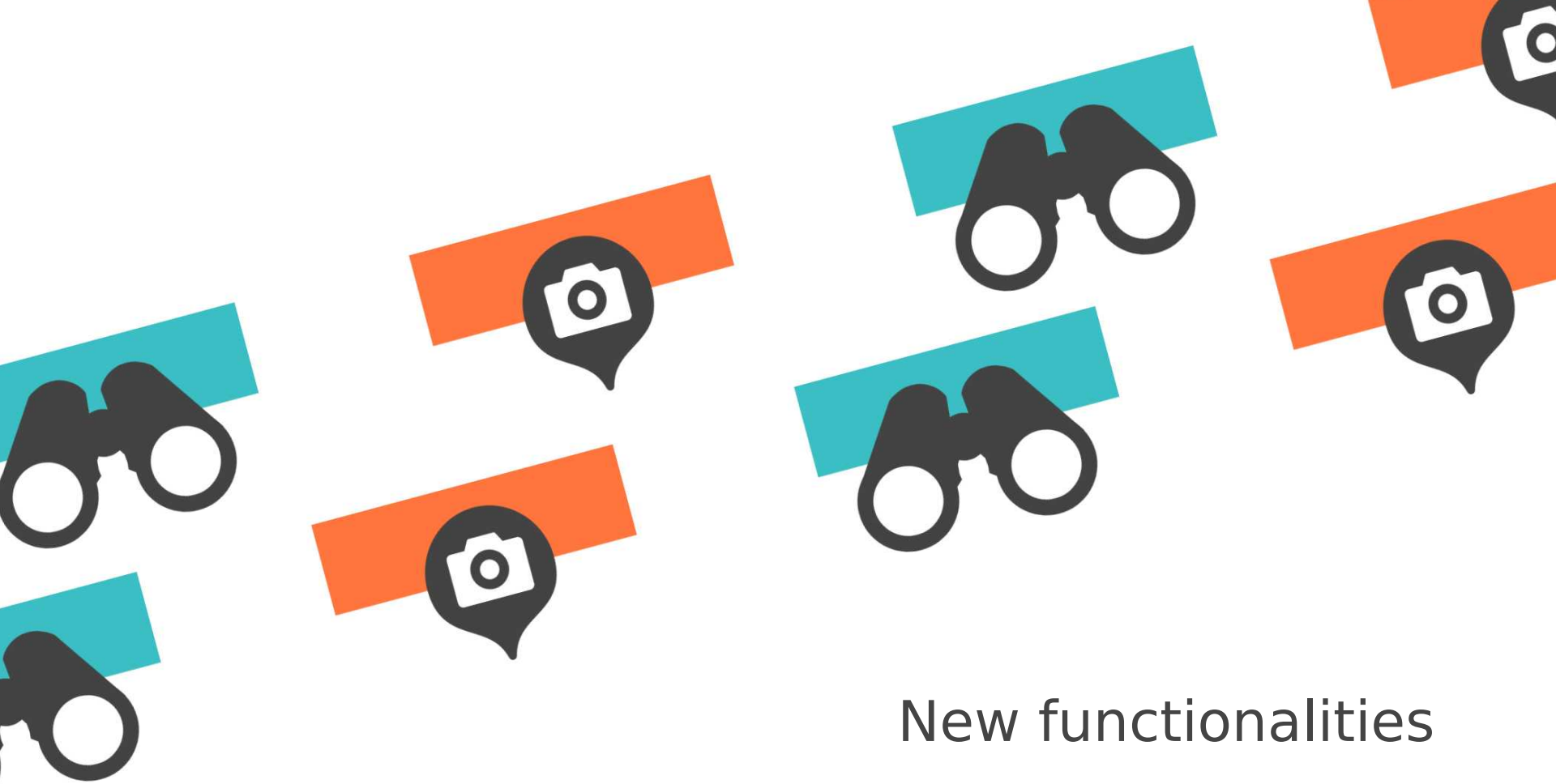
Presentation at the FOSS4G 2022 conference (24. 8 Florence, Italy)
"An open API for 3D-georeferenced historical pictures"¹



Presentation at the conference Humanistica 2022 (20. 5 Montréal/Online) Les données cachées d'images historiques obtenues grâce à la géolocalisation 3D participative. Un exemple concret – peintures suisses du 18ème au 20ème siècle

Swisstopo Kolloquium (4.2. Swisstopo/online) Snapshot und ein offenes API für georeferenzierte Bilder: Mehrwert aus (Geo)Metadaten auch für swisstopo Luftbilder

¹ <https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLVIII-4-W1-2022/217/2022/>



New functionalities

New functionalities


sMapshot API : Application examples

Bilder der Schweiz Online (SARI / UZH)


BILDER DER SCHWEIZ ONLINE Q SPARQL Menu Login en

[Locarno]
URI: <https://resource.swissartresearch.net/artwork...> 1823 [ca.]
Type: Object, Object, Human-Made Object

Home / [Locarno]



[Open in Viewer](#)



[Open in Viewer](#)

[Locarno]
Locarno, vista generale dall'est. Imbarcazione; Lago Maggiore; pescatore

Depicts: [Locarno](#)

External Links: [HelveticArchives](#) [IIF Manifest](#)

Dates: 1823 [ca.] Creation

Contained in: [nb-913563](#)

Persons: [Wetzel, Johann Jakob](#) (Creation)

Dimensions: *Bild* 19.6 x 27.7 cm
Blatt 19.6 x 27.7 cm
Rahmen 43.8 x 54.6 cm

Technique: [Handschrift/-zeichnung](#) [Bleistift](#)

- Embedded 3D view
- Retrieving of 3D positions
- Retrieving observations made by volunteers
- Sending and updating images from BSO to Smapshot

New functionalities

sMapshot API : Application examples

Web components

```
<script type="module" src="https://cdn/element_smapshot.js"></script>  
<element_smapshot lat="46.947949" long="7.447434"></element_smapshot>
```

S M A P S H O T



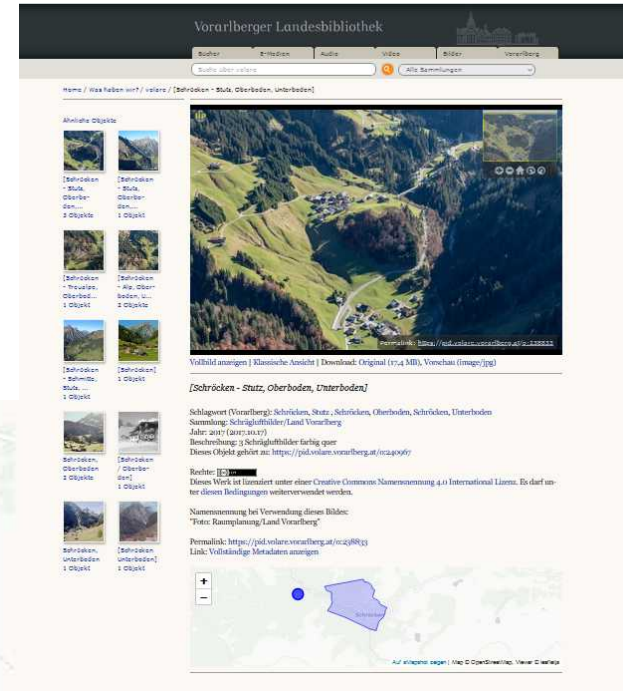
https://smapshot.heig-vd.ch/development_documentation

New functionalities

Snapshot API : Application examples

Web components

```
▼ footprint: Object { type: "MultiPolygon", crs: {...}, coordinates: [...] }
  type: "MultiPolygon"
  ▶ crs: Object { type: "name", properties: {...} }
  ▼ coordinates: [...]
    ▼ 0: [...]
      ▼ 0: [[...], [...], [...], [...], [...], [...], [...], [...], [...], [...], ... ]
        ▶ 0: [ 10.07708, 47.26448 ]
        ▶ 1: [ 10.07989, 47.26495 ]
        ▶ 2: [ 10.08004, 47.26506 ]
```



New functionalities

Toponym calculations



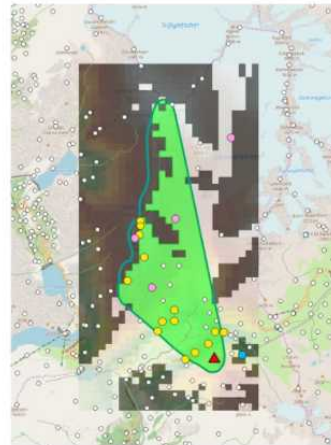
(a) Map zoom level Z5



(b) Map zoom level Z7



(c) Map zoom level Z9



New functionalities

Toponym calculations

Lac de Schiffenen, Schiffenensee 1543 m;
Le Château 1665 m;
Barberêche 1954 m;
Ruisseau des Goulets 2126 m;
Längweide 2194 m;
Coppet 2781 m;
Breilles 3107 m;
Cordast 3703 m;
Lischera 4125 m;
Studenmatt 4210 m;
Riedfeld 4484 m;
Courtaman 4564 m;
Courtepin 4575 m;
Praly 4627 m;
Ruisseau de la Crausa 4758 m;
Guschelmuth 4776 m;
Quartier Neuf 4859 m;
Bouley 4867 m;
Grossguschelmuth 4975 m;
Kleinguschelmuth 5096 m;
Wallenried 5627 m;
Cressier FR 6416 m;
Coussiberlé 7043 m;
Courlevon 7217 m;
Fin de Plan 7955 m;
Gurwolf, Courgevaux 8850 m;
Villarepos 8896 m;
Morat, Murten 9726 m;
Grenq 9966 m;
Avenches 11547 m;
Cudrefin 17088 m;
Marin-Epagnier 21364 m

Toponyms in DE/FR/IT/RO/EN*
* Swissnames + English names

Distance in m



New functionalities

Georeferencing of combined images and panoramas



Combined images
and panoramas:
“classic
georeferencing” not
possible

New functionalities

Georeferencing of combined images and panoramas

← Zurück Georeferenzierung stoppen HC_1458-GK_8090-1870-00 Login ?

Trennen Sie die Teilbilder
Zeichnen Sie Rechtecke, um das Bild in die Teilbilder aufzutellen.

Weiter



13.241-43 28.9.70 S1
Standort os. bei Pt. 2532.
Zungenende von orogr.
rechter Seite aus.

Nummer 243 - 251
sind ausgefallen

Ein Problem melden

Separation into
image-parts
→ separate
georeferencing

New functionalities

Georeferencing of combined images and panoramas

SMAP SHOT ← Karte anzeigen

Test glacier
Rotfirm
2002

↓ Herunterladen

ID aus der Institution Hs_1458-GK-B069-2002-0001
Georeferenziert von Martine Besse
Fotograf Generic Generic,
Institution ETH-Bibliothek

Ein Problem melden

CESLIUM.com Data attribution Höhe: 2033.9838m, Koordinaten: 46.6673, 8.6397

Separation into
image-parts
→ separate
georeferencing

New functionalities

OGC API Features (under development)

- New Web-GIS Standard by the Open Geospatial Consortium
- Development using node.js
- Get snapshot-data in a GIS

The screenshot shows the QGIS interface with a map displaying orange points on a blue background. The 'Layers' panel on the left shows 'Images_location', 'Images_footprint', and 'OSM Standard'. The 'Identify Results' panel on the right displays metadata for a feature named 'Images_location [7]'. The metadata table is as follows:

Feature	Value
- name	LBS_R1-920171
↳ (Derived)	
↳ (Actions)	
title	Pilatus-mit-Nebelmeer
roll	-175.82548588360714
geotags_array	Eggspürli, Rischli, Schwändeli, ...
date_shot_max	NULL
correction_enabled	true
viewshed_created	true
shop_link	NULL
license	ETH-Bibliothek Zürich, Bildarc...
azimuth	-119.15008523269725
focal	872.6482743510569
view_type	nadir
original_id	LBS_R1-920171
observation_enabled	true
geotag_created	true
geolocalisation_id	73847
framing_mode	single_image
name	LBS_R1-920171
link	http://doi.org/10.3932/ethz-a-001
px	NULL
apriori_altitude	2500
link_id	LBS_R1-920171

New functionalities

Utilization of 3D buildings for the georeferencing (under development)

- 3D Buildings: vector data → calculation of ground control points on vector data
- Under development (IG Group)

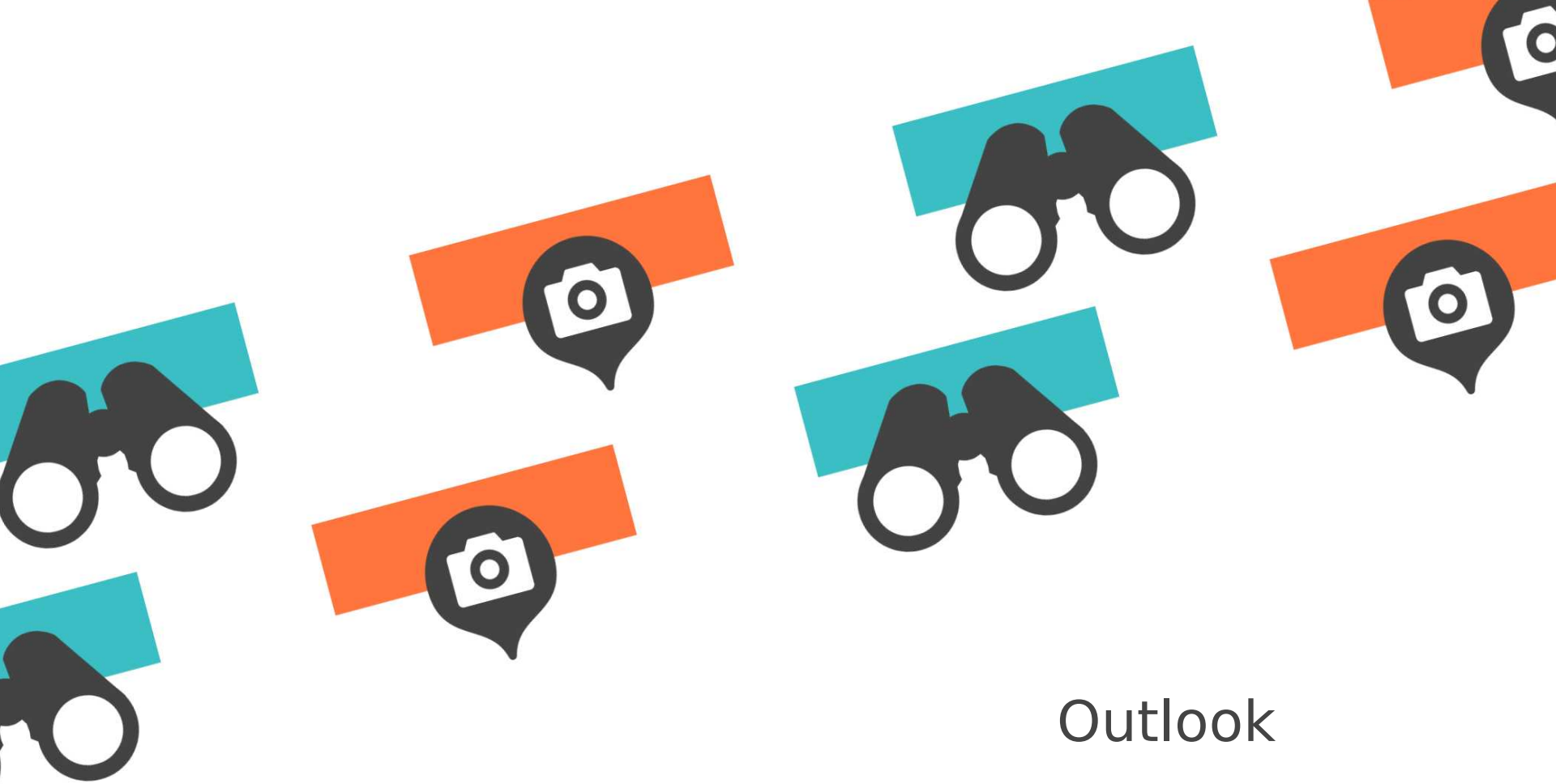


New functionalities

Suggestions by smapshotters

- Improvement of the georeferencing of multi-views
- Show the direction of view of georeferenced photos
- Improve the selection of photos that can be georeferenced
- Collaborative georeferencing ...

→ your suggestions / opinion?



Outlook

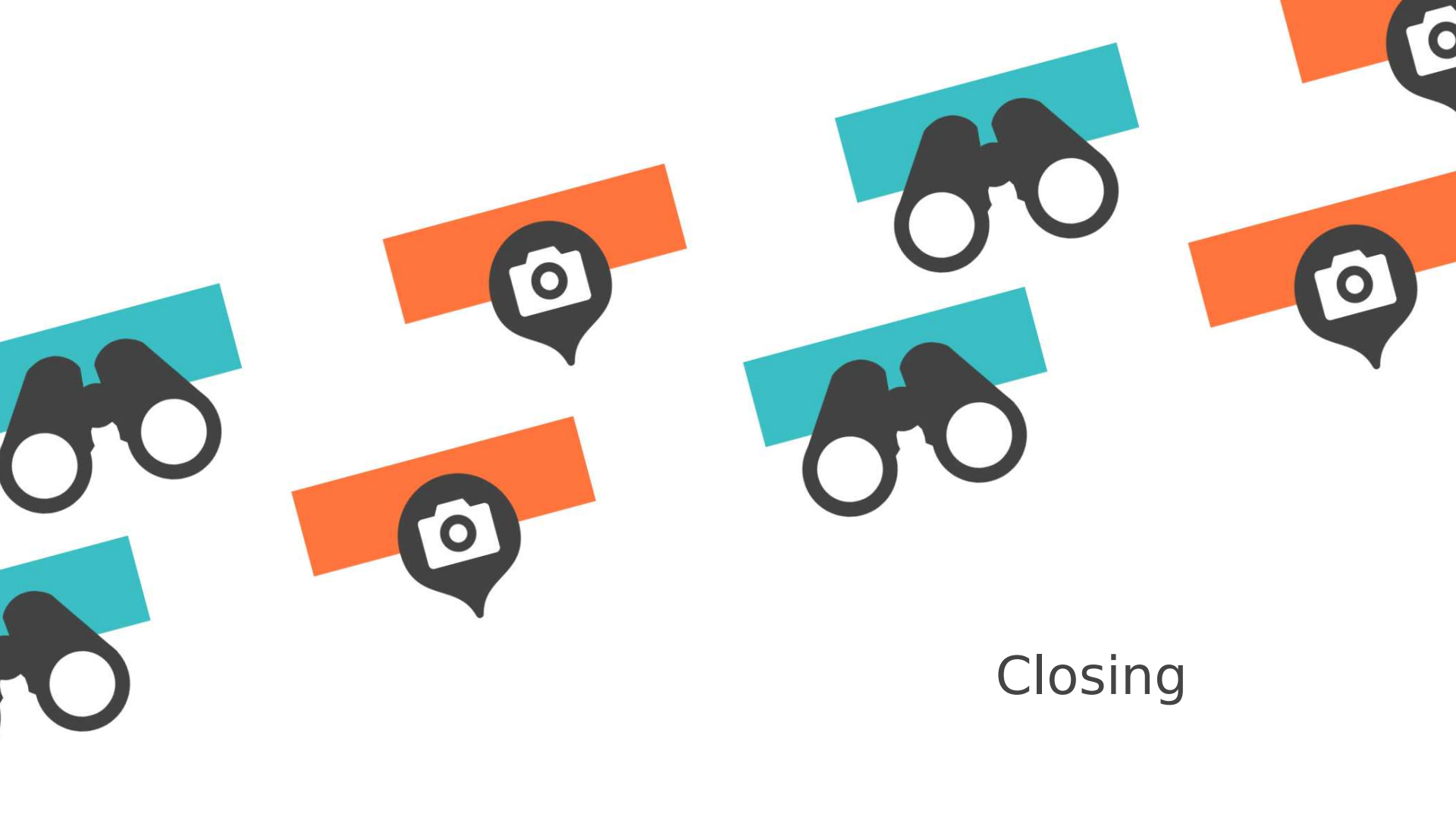
Outlook

Intentions :

National infrastructure for 3D georeferenced pictures (including photographic observatories)

Research in toponym placement

Automated Image characterization for research



Closing

Thank you

smAPSHOT.heig-vd.ch

smAPSHOT@heig-vd.ch