Observation and Reporting of Landforms and Landscape Dynamics by Citizens
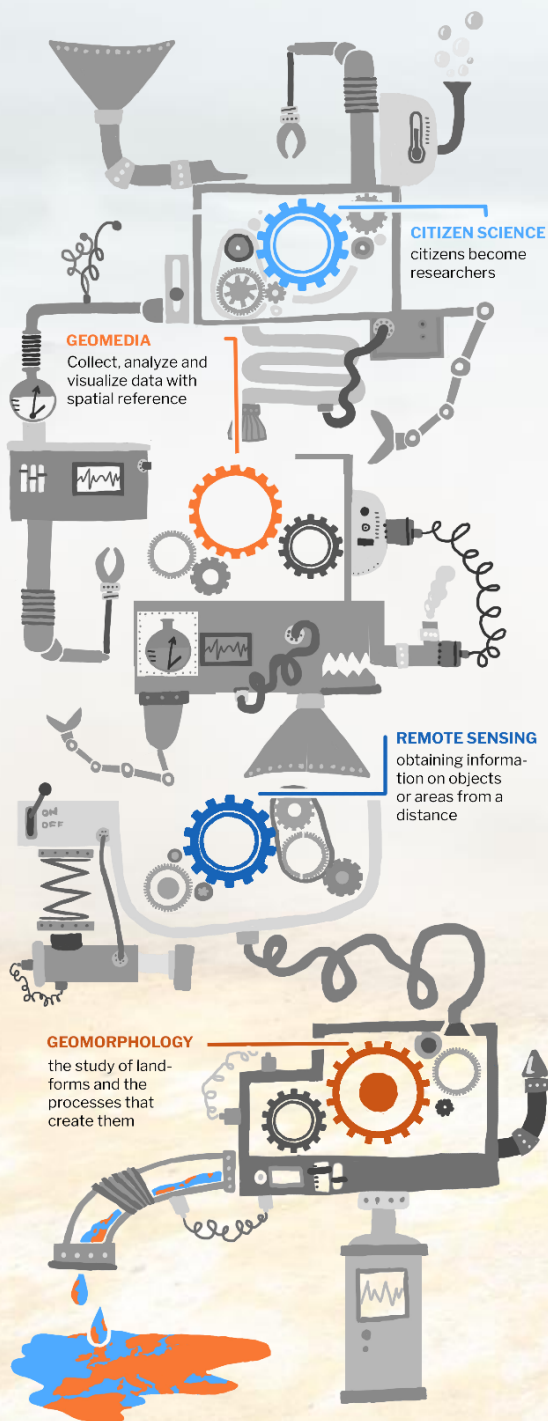
Daniel Hölbling[*], Sabine Hennig, Lorena Abad, Simon Ecke and Dirk Tiede

Department of Geoinformatics - Z_GIS, University of Salzburg, Salzburg, Austria
*(*Corresponding author: daniel.hoelbling@sbg.ac.at)*

EGU 2020: Sharing Geoscience Online

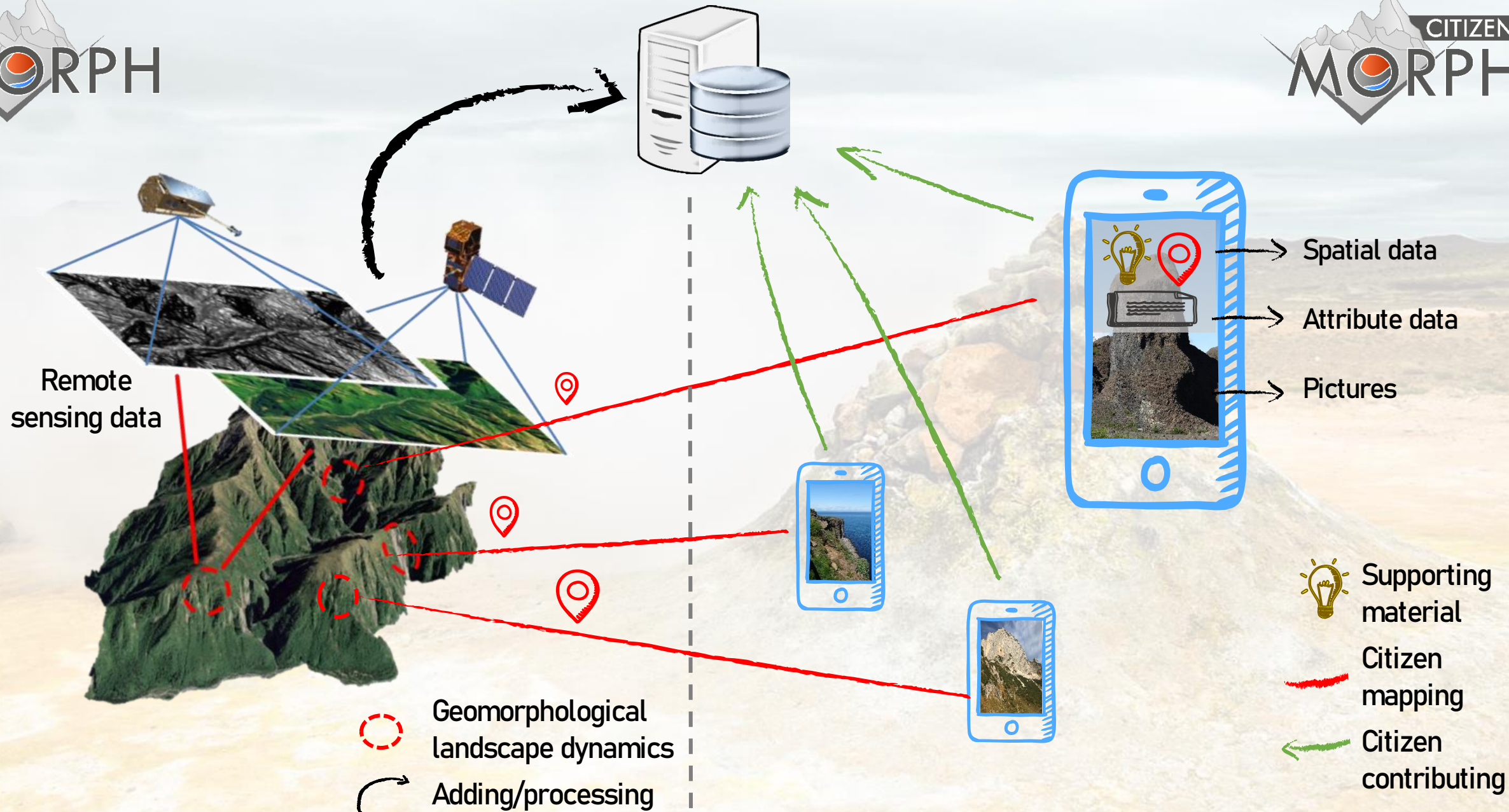EGU General Assembly 2020

citizenmorph.sbg.ac.at

What is it about?

In the project **citizenMorph** (Observation and Reporting of Landscape Dynamics by Citizens) we developed a **pilot web-based interactive application** that allows and supports citizens to map and contribute field data (spatial data, in-situ information, geotagged photos) on **landforms and geomorphological landscape dynamics**.

The **in-situ data collected by citizens** using the **citizenMorph app enriches the remote sensing data pool** of the project **MORPH** (http://morph.zgis.at) with on-site field information and supports the validation of remote sensing based results as well as increasing their detail and information content.

Video:

CITIZEN SCIENCE
citizens become researchers

GEOMEDIA
Collect, analyze and visualize data with spatial reference

REMOTE SENSING
obtaining information on objects or areas from a distance

GEOMORPHOLOGY
the study of landforms and the processes that create them

Remote sensing data

Spatial data

Attribute data

Pictures

Geomorphological landscape dynamics

Adding/processing

Supporting material

Citizen mapping

Citizen contributing

Test Areas

The **citizenMorph system** was tested and discussed in several events with citizen representatives, primarily in **Austria, Germany,** and **Iceland**.
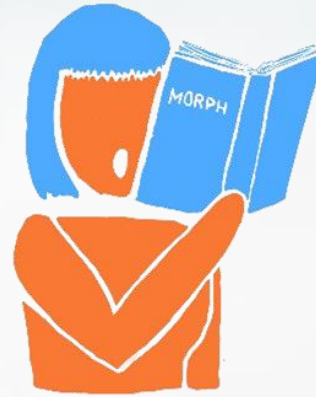
Feedback from the tests was gathered using techniques such as **observation, focus groups,** and **interviews/questionnaires**. This allowed us to evaluate and improve the system as a whole.

Why participating?

Use the materials

Learn new things

Work with geodata and geomedia

Test your knowledge

Collaborate on science projects and support research

Meet new people

What to Consider?

CHECKLIST
- ☑ GOOD SHOES
- ☑ GOOD WEATHER
- ☑ SAFE TERRAIN
- ☑ WEATHER DEPENDENT EQUIPMENT (SUNSCREEN, RAINCOAT, ETC...)
- ☑ CAMERA/MOBILE

PRIVAT

How to Contribute?

In line with the concept of **participatory design**, citizen representatives were involved in all steps of the development process: specification of requirements, design, implementation, and testing of the system.

The generation of a pilot was done using **Survey123 for ArcGIS**, a survey to collect data in the field, i.e. type and location of the landform, overview image and image series of the landform.


English Survey

https://arcg.is/15WPKv0

German Survey

https://arcg.is/0rDCeD

What do we do with the data?

3D models!

The collected photos, particularly the image series, are used for **3D reconstruction** of the surface using Structure from Motion (SfM) and dense image matching (DIM) methods.

Moreover, the collected data can be helpful for **enriching and validating remote sensing based mapping results** and increasing their detail and information content.

Having a **comprehensive database**, holding **field data** and **remote sensing** data together, is of importance for any subsequent analysis and for broadening our knowledge about geomorphological landscape dynamics and the prevalence of landforms.
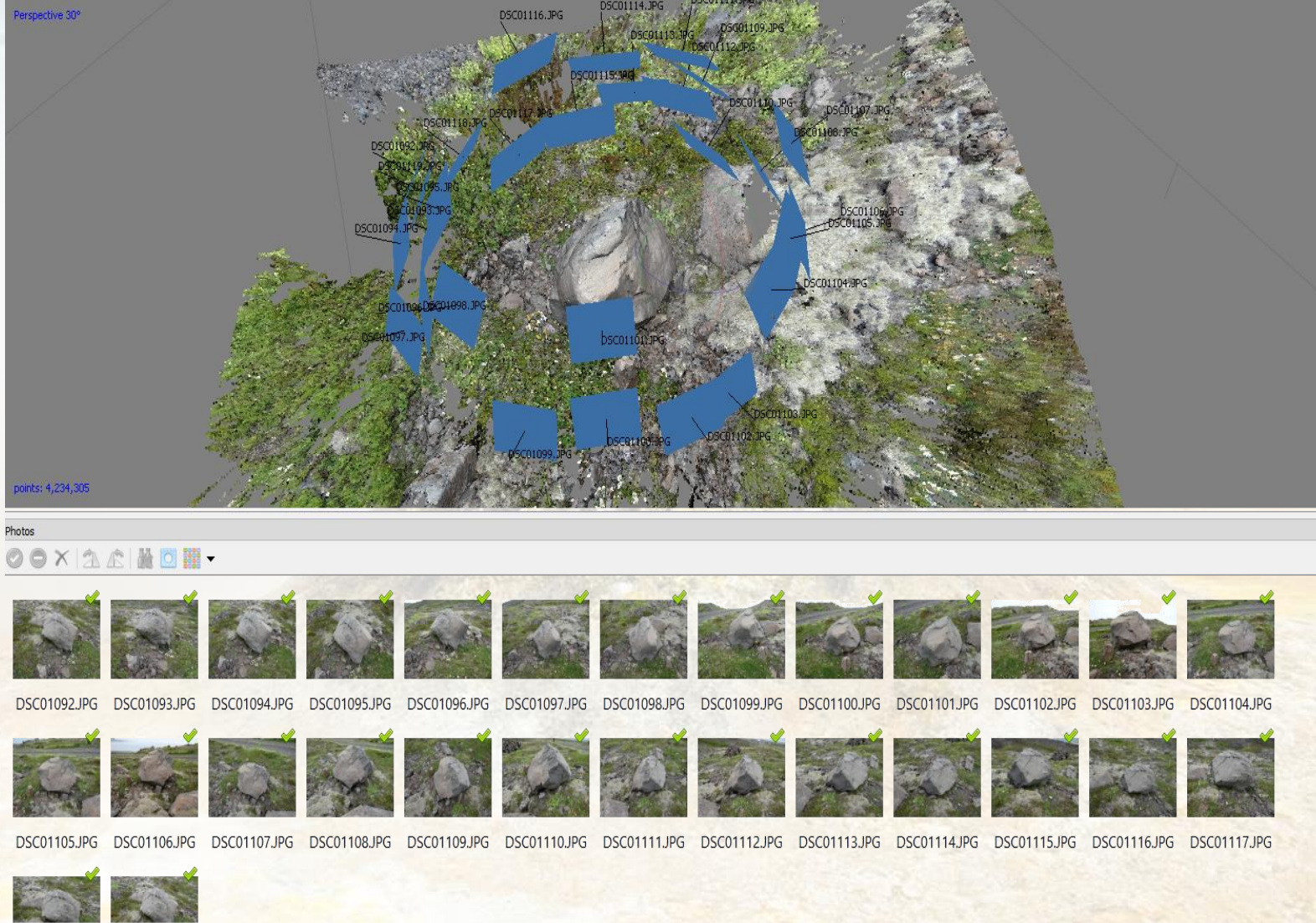
And with the locations?

WEB MAPS!
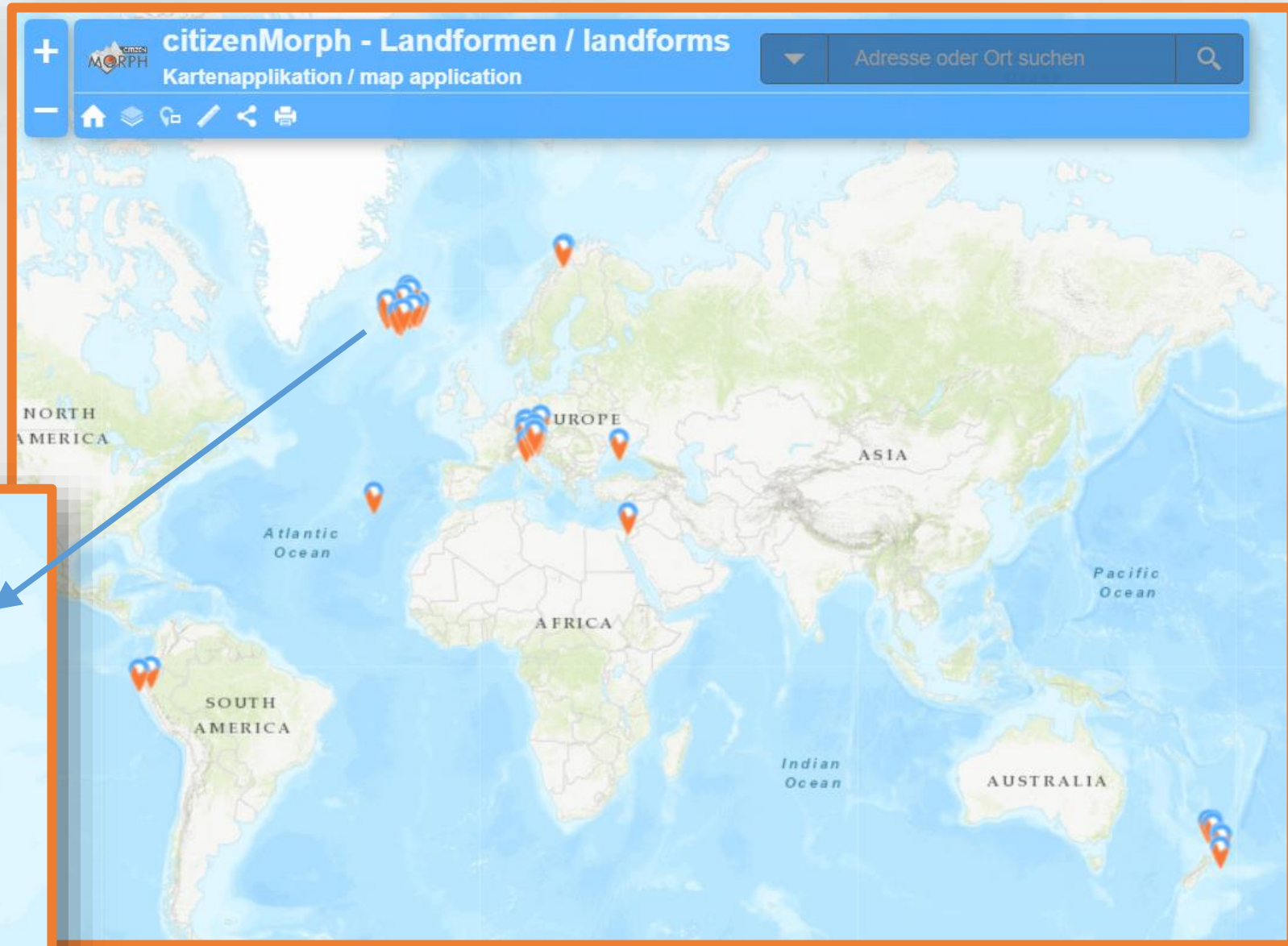
citizenMorph - Landformen / landforms
Kartenapplikation / map application

References

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