Geo Citizen Science Seed Grants Fund 2022 Application

GEO CS and Pre-University: building a bridge between school education and digital technology for geo citizen science

Applicants
- Dr. Ing. Serkan Girgin MSc, Head of Centre of Expertise in Big Geodata Science (CRIB), UT ITC *(Main applicant)*
- Dr. Ekaterina Egorova, Geographic Citizen Science Researcher, UT ITC
- Dr. Jan Jaap Wietsma, Teacher Trainer and Educational Expert, UT Pre-University

Project Description

Digital tools are essential in geosciences. ITC's state-of-the-art Geospatial Computing Platform provides such tools for research and education purposes. Many of the provided tools are also useful for citizen science (CS) projects and ITC can significantly facilitate such activities through the platform. However, the threshold to start using them is currently high and any serious attempt to support CS requires a well-designed approach with training targeting citizen scientists. This includes primary and secondary school students, whose curricula pay special attention on digital technology and promote involvement to CS activities.

This project focuses on this group and aims to find out how pre-university students and teachers can be supported to use a modern digital geoscience toolbox for CS projects. In cooperation with UT Pre-U, a feasibility study will be performed to identify how the platform and available tools can be used for CS activities, including blitz campaigns[1]. Potential use cases and expected impacts will be documented. Finally, a roadmap for developing well-written training material for the target audience will be prepared in consultation with teachers.

Impact

The project will reveal which geospatial tools are better suited for CS activities involving pre-university students, which use cases supported by a digital geospatial computing infrastructure may have more influential impacts, and what kind of training is required to perform the necessary activities. This will not only lower the barrier in making the geospatial technology more accessible for schools, but also stimulate cooperation of young citizens. Assessing the needs of this particular group together with their teachers and co-creation of a roadmap will facilitate the follow-up activities, which can include the development of training modules to be used by Pre-U and schools nationwide. Hence, the project will contribute to a better understanding of how learners and teachers can be involved in geo-CS, resulting in the development of geo-CS that fits the skill level of citizens.

The project will also strengthen the collaboration between ITC, Pre-U, and its network of schools, thus contributing to the community building. The current involvement of ITC to Pre-U, which is a flagship initiative of the UT, is noticeably limited. This also includes ITC students, although Pre-U heavily depends on student assistance and participation of ITC students can improve internationalization considerably, which can be facilitated by the project.

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[1] To give an example, the digital mapping tools can be used for a mapathon addressing a real-life problem or need (e.g., disaster damage mapping, biodiversity mapping, etc.).

Planned Activities

I.   Making an inventory of tools available on the platform that are relevant to citizen science activities (January 2023).

II.   Identification of potential citizen science use cases that can be supported by the designated tools and the expected impacts of the use cases with a special focus on primary and secondary education (February-April 2023).

III.   Consultation with teachers on identified use cases and preparation of the feasibility study report incorporating received feedback (May-July 2023).

IV.   Needs assessment for well-structured training material required for selected use cases in consultation with teachers (August-September 2023).

V.   Co-creation of roadmap for the development of training material according to the results of the needs assessment in collaboration with teachers (October-November 2023)

VI.   Dissemination of the project outcomes and the roadmap through a workshop (December 2023)

Besides these activities, the project and its outcomes will be presented in scientific meetings focusing on (geo)citizen science and pre-university education. The report and roadmap will be published in open access, and they will be promoted through blog posts and (social) media channels of ITC, Pre-U, and UT, as well as other partner institutions.

Budget

The budget requested for the project is 15,000 EUR.

The budget will be used for the following:

Description	Cost
Student assistants (100 days)	▪▪▪▪ EUR
Consultation meetings (3 meetings, including support for participation)	▪▪▪▪ EUR
Dissemination workshop	▪▪▪▪ EUR
TOTAL	15,000 EUR

The applicants are taking part in the on-going ITC Geo Citizen Science INGENUITY project and the proposal idea was initiated during the regular discussion events linked to this project. However, it is a completely new idea, and we don't have access to a regular budget that can support the proposed work by paying the costs involved. The exception is the costs related to participation of scientific meetings, for which departmental resources will be requested. Therefore, they are not included in the project budget. The contributions of the applicants are in-kind.