Climate Action Research and Education Seed Call Application Form

I. General information

Project title: Creating User Stories for the Citizen Voice Platform

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II. Summary of the proposed research project/program

1. PROJECT DESCRIPTION

Context. Public participation processes have become an integral part of urban planning. Recent technological advances have enabled the development of new digital tools for participation, with great potential to reach larger numbers of participants, enabling remote participation and two-way interaction between stakeholders. Digital tools are also compatible with the ongoing digitalisation of governance practices, facilitating the documentation and monitoring of policies, and supporting transparency and openness between the government and the public. The **diversity** in needs and requirements from the several urban stakeholders adds a layer of **complexity** to the development and uptake of digital tools for public participation. Understanding how different stakeholders interact with digital tools is critical to ensure that **engagement is effective and sustainable**. Recent research reveals that tool development needs to move away from the idea of one-size-fits-all towards a toolkit approach that enables **customisation** to meet the needs and requirements of stakeholders [1,2]. **Flexibility** in the design of digital tools should also facilitate individual participation on mobile or desktop devices as well as participation in group settings supported by devices like maptables [2].

Objectives and outcomes. This project aims at designing and implementing user stories to understand how different stakeholders use digital mapping tools for public participation (e.g., PPGIS). A user story describes a tool's features from the user's perspective (e.g., citizens, policymakers, researchers, etc.). They are concrete expressions of user needs for the conceptualisation of a tool and can be gathered through user interviews, questionnaires, observation, and story-writing workshops [3]. User stories ensure that digital tools are **functionally useful** with a suitable **task-technology-user fit** and user-friendly interface and navigation [4]. These characteristics are key for **active and continuous engagement**, which in turn creates opportunities for joint analysis, dialogue, and deliberation. In this project, we will develop the user stories for Citizen Voice – a digital platform under development at TU Delft by one of the applicants. Citizen Voice is currently a prototype: The software foundations and user stories for basic survey functionalities have been created and are under implementation (survey creation and data collection). This seed funding will take Citizen Voice to the **next level**. We will be able to develop user stories for additional functionalities, like city dashboards and policy monitoring. These functionalities have been identified in previous research as part of the conceptualisation phase of the Citizen Voice platform [1]. Using an **interactive** and **co-creative** approach, the user stories will be created, validated, and prioritised in partnership with urban stakeholders. Each user story will be developed into a unique interface and implemented in the existing Citizen Voice prototype, and the combined interfaces will comprise a **customisable toolkit** that satisfies the diverse needs of urban stakeholders. A comparative analysis between the toolkit developed in this project and a commercial digital mapping tool will be performed. A **set of best practices** will be developed to support the use of the toolkit, not only from a technical perspective but also from a participatory process perspective. These best practices will be formulated as a living document, open to iterative evaluations.

Project team. The project will bring together an **interdisciplinary team** to work on climate action at the intersection of urbanism, participatory design, and software development. The project also interacts with urban stakeholders outside academia, including citizens, policymakers, and practitioners, creating a **transdisciplinary environment**.

Impact and relevance. The digital toolkit prototype developed in this project will be **open source** to broaden its impact. As an open resource, the toolkit has the potential to become a widely used tool in urban research and practice. It can also support bottom-up initiatives led by civil society and NGOs engaged in urban action (interventions, transitions, planning), contributing to **democratising decision-making**. Our deep commitment to open science and data advances the discipline of urban science as

it counterweights the increasing commodification of urban data and knowledge. Furthermore, the toolkit can be of great value for urban researchers and practitioners in **developing countries**, where resources can be a constraint to gathering spatial information through participatory mapping (particularly costly software licenses). Creating data and knowledge about the urban condition in developing countries is a pressing issue, given the expected urban growth rates in these countries. The set of best practices, encapsulating our experience in using the tool in participatory processes, will serve as a **reference resource** for many urban stakeholders engaged in public participation.

2. RELEVANCE FOR CLIMATE ACTION PROGRAMME

The toolkit provides citizen data collection and visualisation capabilities that can be used in any of the flagship projects. The project is a joint effort led by two tenure trackers of the Climate Action Program, linked to the **Sponge Cities** and the **Behavioural Design for Climate Action** flagship projects. This toolkit has direct applications in researching methods for the democratisation of climate governance in both our own flagships and our broader research and practice networks. For example, in the Sponge Cities flagship, the toolkit can be used to gather spatial information to understand how citizens and urban stakeholders relate to urban nature and water flows. This information is critical to developing nature-based solutions as part of Sponge Cities. In the Behavioural Design for Climate Action flagship, the toolkit can be used to understand how citizens interact with digital tools for developing climate-resilient strategies for cities in two main settings: distributed digital participation and supplementing group workshops with evidence-based methods. Furthermore, **citizen data** is critical for the assurance of a **socially just adaptation** of living environments and is thus **relevant to all four themes** in the program. Our project is also aligned with the cross-cutting theme of **AI for Climate** with potential future collaborations in using AI methods to analyse citizen data (e.g., text data mining).

3. FOLLOW-UP

Our toolkit will become an **asset of TU Delft** and can be used to support **individual projects**, from BSc projects to PhD theses, as well as **larger consortium projects**. At the European level, many upcoming HORIZON calls focus on issues related to digital transition, including the development/testing of digital tools for participatory design and planning. Our project will provide **both software and knowledge** to support these funding opportunities. We also plan to use the outcomes of this project to direct our future proposals; we envision first a follow-up seed grant to consolidate the toolkit and the platform and then apply for larger funding. The collaborative effort behind this project extends **beyond TU Delft** and the Climate Action Program, as it will involve the team already working on the Citizen Voice platform. Citizen Voice is a pilot project part of the Convergence Alliance and supported by the Digital Competence Centre (DCC) at TU Delft. We believe our open-source platform has significant potential for **long-term continuity**. Throughout the pilot, we have seen our project **grow organically**, calling the attention of many research groups and institutions within and outside TU Delft. This seed will enable the **continuation** of the pilot project (end February/23) and the collaboration with both the Convergence Alliance (and its public and private **partners**) and the DCC. The seed funding will also provide opportunities for **future collaborations**. Given the diversity of applications of digital participation tools, our platform can stir future collaborations with other Faculties within TU Delft, particularly ABE, IDE, TPM, and CEG, institutions like AMS, and not least local municipalities. Finally, sharing the toolkit within an open-source platform will lead to its further development in collaboration with its (in and outside) users, **creating a community** around the topics of digital participation and climate action in cities.

III. Budget

Budget	
Description of costs	Cost [€]
Student assistant(s) – design of the user stories (350h at 30€/h, over 1y)	10500
Student assistant(s) – implementation of the user stories (350h at 30€/h, over 1y)	10500
Commercial software license for the comparative analysis (Maptionnaire or Maplix, TBD)	4000
Co-creation workshops with urban stakeholders (incl. catering, panellists, and facilitators)	3000
Dissemination (events/conferences)	2000

IV. References

[1] Ioannou, J. (2022). Urban Voices: Citizen Voice: An innovative Open-source Map-based tool for effective public participation. MSc thesis, TU Delft.
[2] Aguilar, R., Flacke, J., & Pfeffer, K. (2020). Towards supporting collaborative spatial planning: Conceptualization of a maptable tool through user stories. ISPRS international journal of geo-information, 9(1), 29.
[3] Dimitrijeviˊc, S.; Jovanovic, J.; Devedžiˊc, V. A comparative study of software tools for user story management. Inf. Softw. Technol. [3]2015, 57, 352–368.
[4] Franken-Champlin, C. J. (2019). Contextualizing Planning Support (Systems): Co-designing to fit the dynamics of spatial strategy making.