SOFTWARE RELEASE NOTES DOCUMENT

Version 1.0 pilot TEST

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WEB-BASED APPLICATION FOR THE VISUALISATION AND ANALYSIS OF THE ALPHA CITIZEN SCIENCE STUDY IN LAGOS, NIGERIA

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1. **OVERVIEW**

The present document comprehends the release notes of the web-based application dedicated to the communication and visualization of the citizen science data collected in the context of the ALPhA study, conducted by Urban Better | Oni et. al. in Lagos, Nigeria and Yaoundé, Cameroon in its pilot TEST version.

The following content will assume the reader's familiarity with the ALPhA web-application Requirement Analysis and Specification Document (RASD) and the subsequent Software Design Document And Test Plan, written by M. Abd Alslam Mohammed Elkhalifa, M. Abdalla Eldouma Mohamed, D. Aguirre and L. Dragun (2021).

The Software Release Notes document primarily aims at providing the client party the fundamental aspects of the software's pilot TEST version.

2. **PURPOSE**

The Software release notes are communication channel between developers and users. The notes aim to explain new features added, issues resolved, and improvements in a product. In this case, these release notes represent the first pilot TEST of the web-based application for the visualisation and analysis of the alpha citizen science study in Lagos, Nigeria.

3. **NOTES**

This first release of the we application comprises the following features:

- **User registration and login:** users can sign up to the web application with their username, e-mail, age, and custom password.
- **A mapping tool**: comprising a base map layer (OSM) displaying the city. The map has dynamic elements or widgets with which the user can interact. User can interact with the map without the need of being logged in.
- **At-a-glance-view (Pop-up Dashboard)**: 3 main attributes of the marked ALPhA sites ar shown on the pop-up upon user hovering on the data point: ALPhA space name if available, picture if available and point coordinates in meters on the pseudo-Mercator East-North reference system.
- **A data analysis tool**: Application of various widget filters will allow the user to display subsets of the data, based on their personal needs. The current available widgets are custom sport (including aerobics, basketball, football, cycling, running, or jogging, swimming, walking or others), Safety perception (Increased or decreased), higher or lower health/injury risk, organised group activities, spontaneous individual activities, and spaces used or not used during the Covid-19 Lockdowns.
- **Individual presentation of data:** In-the-map-view of the data nodes (filtered or unfiltered), by clicking it is redirected to a more extensive page of that ALPhA space survey entry from the epicollect5 data base.
- **A dynamic element**: weather forecast widget for the following days in the city of Lagos.

- **An incentive to contribute**: An About section where the user receives further references and information on the objective of the ALPhA study, on the organizers and on how to contribute to data collection.
- **A commenting space**: comprising a blog that stores logged in user's comments on the web app. Each user can further edit or delete its own comments.
- **A contact space**: where users can contact the development team.

4. <u>FURTHER IMPROVEMENTS AND RELEASES</u>

This first release of the web-application uses an Epicollect database synchronizer, that erases and replaces the applications database table with the epicollect dataset every time it is run. Further releases should aim to achieve a one-sided synchronization as described in the application's design document, where only new Epicollect entries are appended to the app's data table. This improvement is furthermore necessary to allow for other upgrades of the system, such as the possibility for the user to leave comments on individual data entries, which requires the Epicollect data table to be related to others.
Improvements in security are to be yet deployed as all user input needs validation, in order to minimize cross site scripting and SQL injection vulnerabilities.

5. <u>DISCLAIMERS</u>

The RASD document is based on the assumptions that the georeferenced ALPhA spaces are in fact public (i.e., no private owner), that the citizens reporting on the space are honest in their evaluation of injury and safety risks (since its verification is outside the scope of this project) and that Epicollect5 will continue to grant access to its database through its REST API. Some entries on the Epicollect5 database where not stored on the application database as either they lacked spatial data, or the spatial data was inconsistent with the user's location. The pilot TEST of the web application is run in a WSGI development server not suitable for production deployment.