

A Communities Engagement Mobile Application for Assessing the Resilience and Deterioration of Cultural Heritage Monuments

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Abstract

Climate change has been proved to have negative impacts on historic areas hosting cultural heritage sites and monuments, which in turn yields significant adverse impacts on local economies, societies, and even politics. The first and necessary step of the process of confrontation of this challenge is the early detection and recording of the on-site inflicted damage by a monitoring tool. In order to achieve that, we developed a dedicated mobile application that aims to assist the assessment of the resilience and the deterioration of the historic areas and the potential impacts due to various hazards. Citizens and local authorities worldwide can directly use the developed application on their mobile phones to acquire photos of on-site damages and submit short reports based on them. This software component has been designed and developed in the context of the European project entitled “HYPERION”, which aims to deliver an integrated resilience assessment platform, addressing multi-hazard risk understanding, faster and efficient response, and sustainable reconstruction of historic areas.

With this application, we aim to create a user-friendly application with the latest user interface and usability issues/trends which is focused on museum enthusiasts and active citizens’ or travelers’ needs. It’s important to put the users of this targeted group at the center of our efforts and by understanding their needs to create an intuitive application for them and at the same time a useful tool for the local authorities.

Users download the application from the Google or Apple App store and they log in or create an account in the application through the PLUGGY platform, which was developed in the context of the “PLUGGY” European project. The main function of the application is to create and post an asset using PLUGGY’s REST API. An Asset is an elementary unit of content in PLUGGY, a media file with an identified owner, a title, a description, a set of tags, and a license, which specifies how this file can be reused. Initially, the user’s location is detected via GPS and corrected in case of miscalculation. The user is then prompted to select a photo (or directly to take a snapshot) that depicts the damage of a monument. To complete the creation of the asset, the user will also need to select a title that will accompany the photo, and some tags, not only for a better description of the event but also for correlation with other assets or exhibition points that already exist in PLUGGY.

The developed mobile application gives voice to citizens and encourages them to provide direct feedback to the relevant cultural authorities, in order to assist them in assessing the deterioration of the cultural heritage sites and determining the needed reconstruction actions. As a result, the communities can have a major role in the safeguard of their cultural heritage.