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LACO-Wiki Mobile: An Open Source Application for In situ Data Collection and Land Cover Validation

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LACO-Wiki Mobile is a smartphone application for in situ data collection, which is being developed as a free and open source software project in the framework of the European Space Agency funded project CrowdVal. The mobile application works in tandem with the online land cover validation tool LACO-Wiki (https://www.laco-wiki.net), where users can generate a statistically robust sample for validation purposes. The land cover legend is read directly from the map uploaded to LACO-Wiki for generating the sample. The user must also indicate the type of validation to be undertaken. Blind validation is where the user chooses the land cover type from a pre-defined legend, plausibility validation is where users can see the land cover type from the map while on the ground and can then choose to accept it as correct or not, while enhanced plausibility allows users to indicate the correct land cover type when it is incorrectly specified in the land cover map. This sample is then transferred to the mobile application, which directs users to specific locations on the ground to collect the validation data, i.e. operating in a 'directed' mode. The user can see the locations of the points on the mobile phone, and as they approach a point, the user is given the option to validate the land cover. These points can then be used in the accuracy assessment of the land cover map. The application also operates in 'opportunistic' mode, i.e. allowing the user to collect land cover at any location of their choice, e.g. while driving along a road. Such data collection can be useful for verifying visually interpreted samples or complementing training data for the development of land cover maps. Although the open source application is still under development, a version will be openly accessible in github by the time of the conference.