Landspotting: collecting essential land cover information via an attractive internet game

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Based on the geo-wiki.org concept of collecting land cover information via crowdsourcing, we present a novel approach on how to get the crowd involved. Internet games as well as social networks are becoming increasingly popular and the full potential is yet to be exploited. However, thus far, few if any games provide anything other than entertainment. Can an attractive philanthropic game be created which uses the crowd to collect essential information needed to help to acquire better data to improve the understanding of the earth system?

Since accurate and up to date information on global land cover plays a very important role in a number of different research fields such as climate change, monitoring of tropical deforestation, land use monitoring and land-use modelling, but still shows high levels of disagreement, the game will focus on how this essential land cover calibration and validation data can be collected in areas where uncertainty is currently highest. In the current version of the land spotting game, we combine uncertainty hotspot information from three global land cover datasets (GLC, MODIS and GlobCover). With an ever increasing amount of high resolution images available on Google Earth, it is becoming increasingly possible to distinguish land cover features with a high degree of accuracy. We first direct the landspotting game community to certain hotspots of land cover uncertainty and then ask them to enter/record the type of land cover they see (for this they will be able to acquire a certain number of points), possibly uploading pictures at that location (additional points will be received).

Even though the development of the game "landspotting.org" is still underway, we illustrate what the functionality will be and what features are envisaged for the near future. Landspotting.org will be designed in such a way as to challenge users to help map out the remaining areas of confusion over the globe – possibly in the form of an adventure game. Users will be primarily directed to areas with high disagreement, and where high resolution scenes are available for validation. The players will be directed to specifically validate and carefully select pixels on top of the Google earth platform. In order to control for misuse, there will be overlap among the land cover validation pixels. The selection of those validation pixels can be manifold: a certain lattice, random points or a stratified sample. Moreover, we show how Facebook and other social networks can be used to promote the tool and a huge crowd can potentially become involved. Preliminary results will be presented and a mockup version of the game will be shown.