Publically available 3D-model annotations are often:
• ambiguous
• vague
• too specialized

Land Cover Maps show large differences in certain areas of the world.

This lack of correct data is a problem, because it is a basic requirement for a variety of research areas and applications. But automatic algorithms are not sufficient to generate meaningful annotations and correct land cover classification.

A crowdsourcing game to collect and verify data

A round-based multiplayer online game for up to five players has been implemented which consists of three game-rounds.

Annotation of 3D-models and land cover maps:
Players can enter up to five distinct annotations for a given model or land cover map respectively. The more users agree on an annotation, the higher the scores are.

Categorization of land cover maps by user paintings:
Each user is able to categorize land cover maps by painting the areas covered with specific types of land cover with one of 11 given categories. The more similar the paintings are, the higher the scores are.

Gamifications have been implemented to keep users playing:
1) Highscores and achievements
2) Integration into Facebook: post score and invite friends
3) Sound effects and animations
4) Offline modes if not enough players are available

The game has been implemented browser- and platform-independent to support all clients including modern mobile devices.

Models are pre-rendered into videos to decrease loading times and to be independent from WebGL.

A user study with 19 models and 20 maps has been performed which shows promising results. The results for the model and the map to the left are shown exemplarily.

Besides annotations, users are able to assign given categories to types of land cover. This box plot exemplarily shows that users are able to categorize land cover very accurately.

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