



Workshop on Geogames and Geoplay, AGILE 2014

GAME PRINCIPLES FOR ENHANCING THE QUALITY OF USER-GENERATED DATA COLLECTIONS

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June 3, 2014
Castellón, Spain

MOTIVATION

Problems of VGI:

1. Motivation
2. Data quality
3. Spatial Coverage
4. Temporal Coverage / Recency

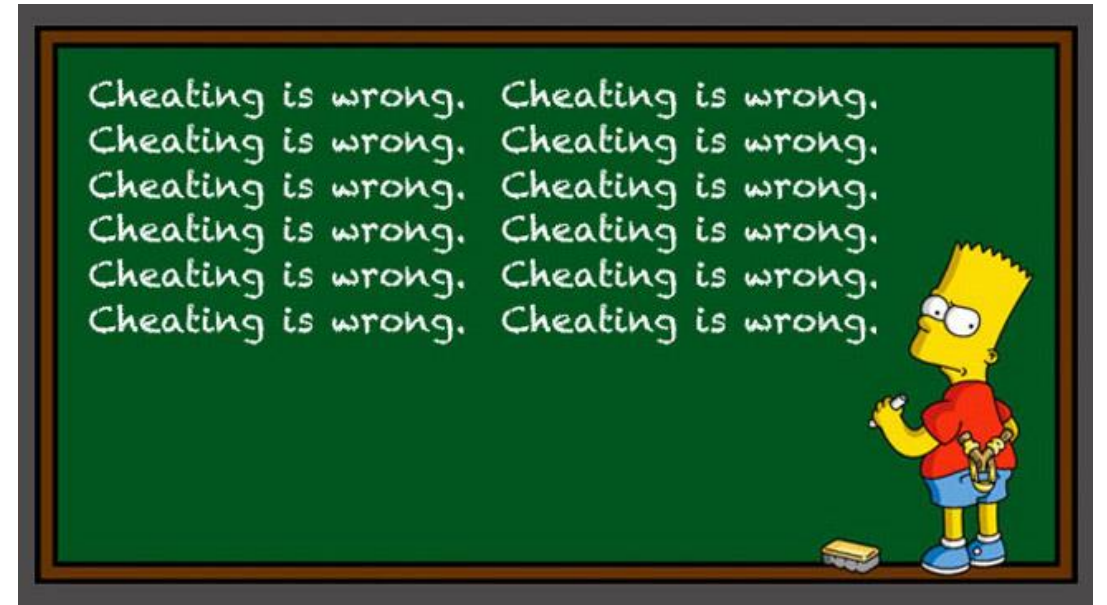
DATA QUALITY

General:

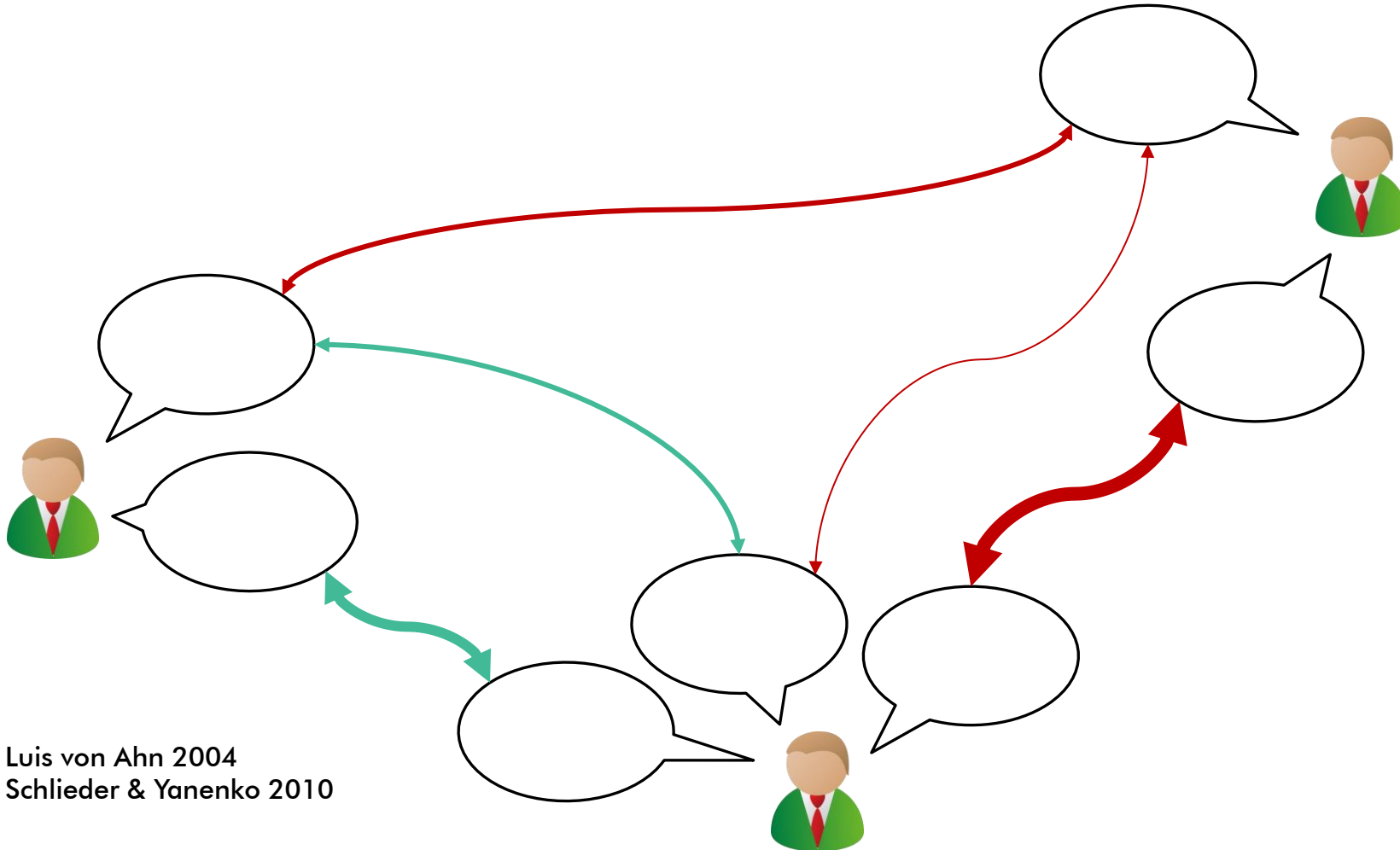
- Lack of Expertise

Gamification:

- Cheating



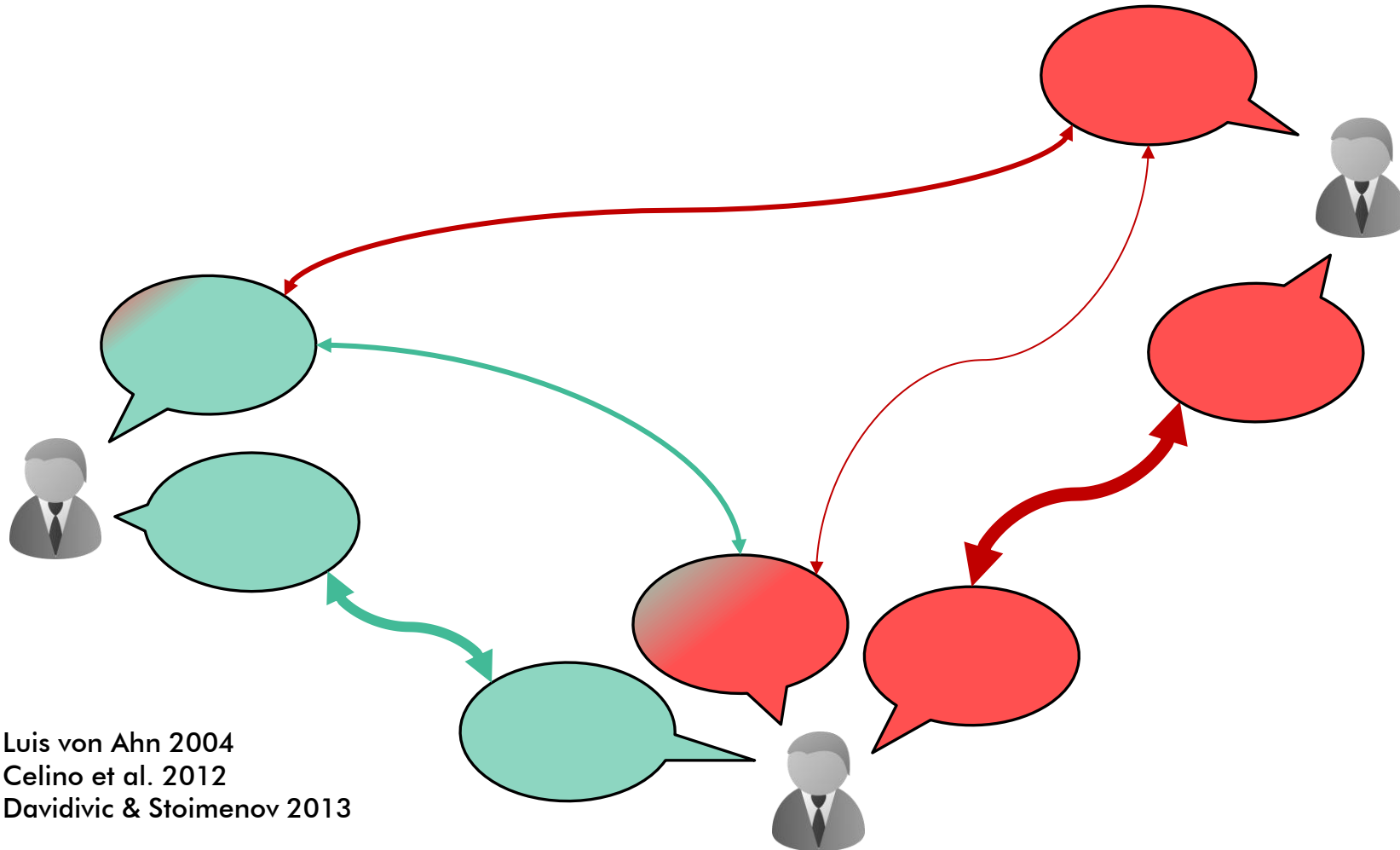
CONFIRMATION



Luis von Ahn 2004
Schlieder & Yanenko 2010



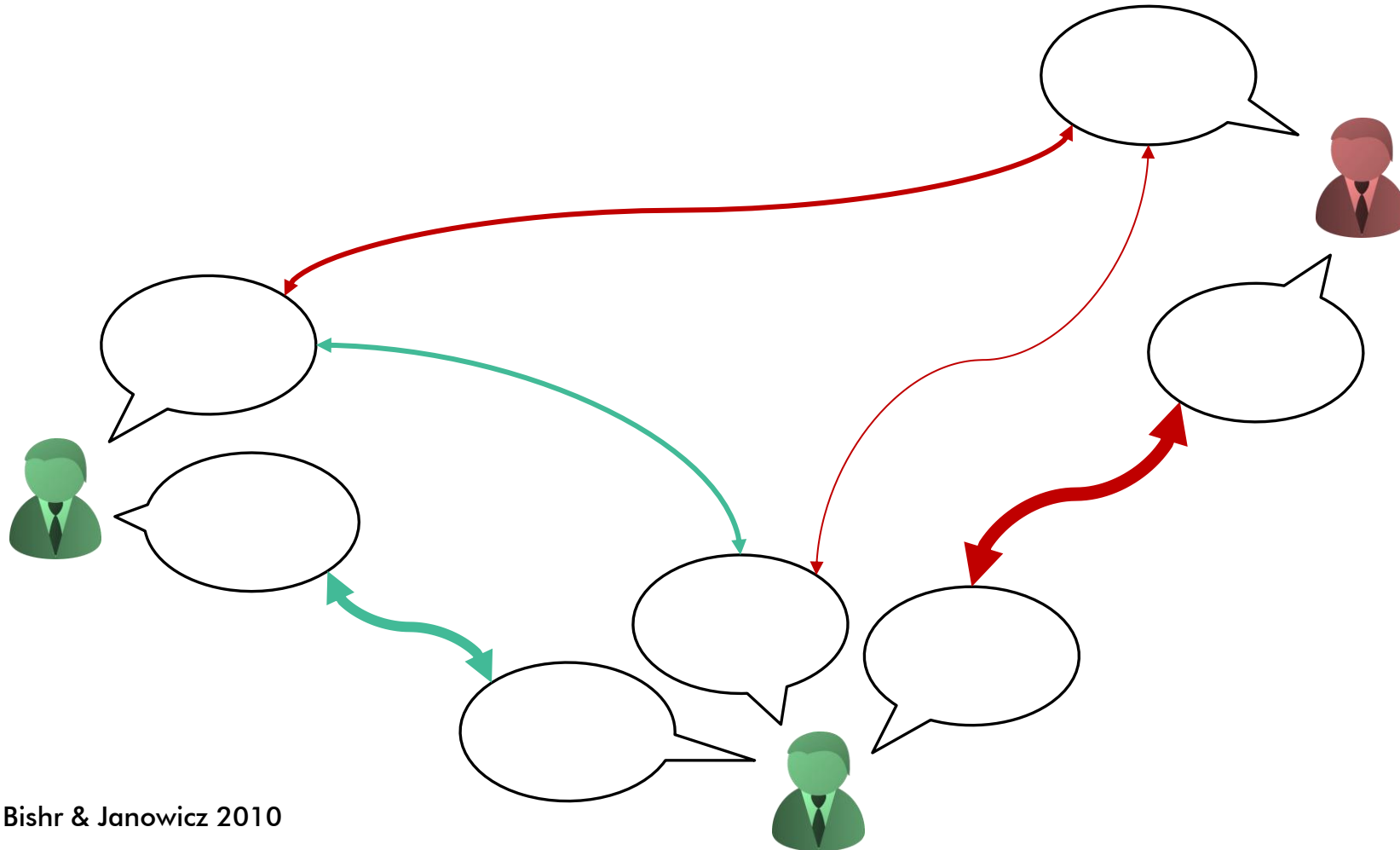
ITEM-BASED



Luis von Ahn 2004
Celino et al. 2012
Davidovic & Stoimenov 2013



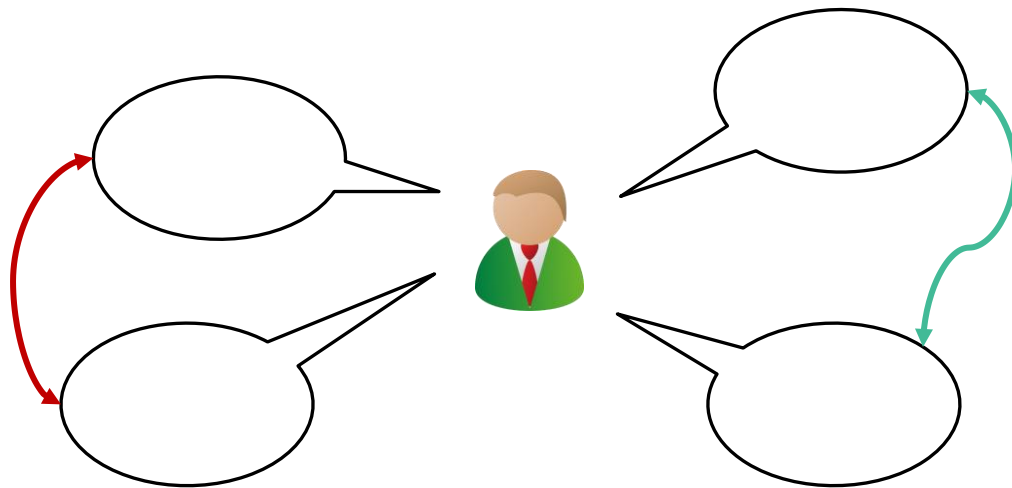
USER-BASED



Bishr & Janowicz 2010



RETESTING



Rust and Golombok 1989
Wilson 2013



CONFIRMATION VS. RETESTING

	confirmation	retesting
basic principle	inter-individual agreement	intra-individual agreement
data	objective data	subjective data
item-based validation score	[0, 1]	0, 1
user-based validation score	[0, 1]	[0, 1]
player amount	at least 2	at least 1

VGI GAME – USE CASES

Classical Mapping Scenarios

- Bus stations / trash bins / park benches / ...

Subjective / Perceptual Data

- A place for a romantic picnic / ...

GeoDesign

- Which items are needless?
- Which items are missing?

EGovernment

- Vandalism / overful trash-bins



VGI GAME – REQUIREMENTS

1. Both, item-based as well as a user-based validation have to be supported.
2. The validation mechanism should seamlessly integrate into the game flow and not be recognizable to the user.
3. The balancing of the game should not be affected by the introduction of the validation mechanisms.

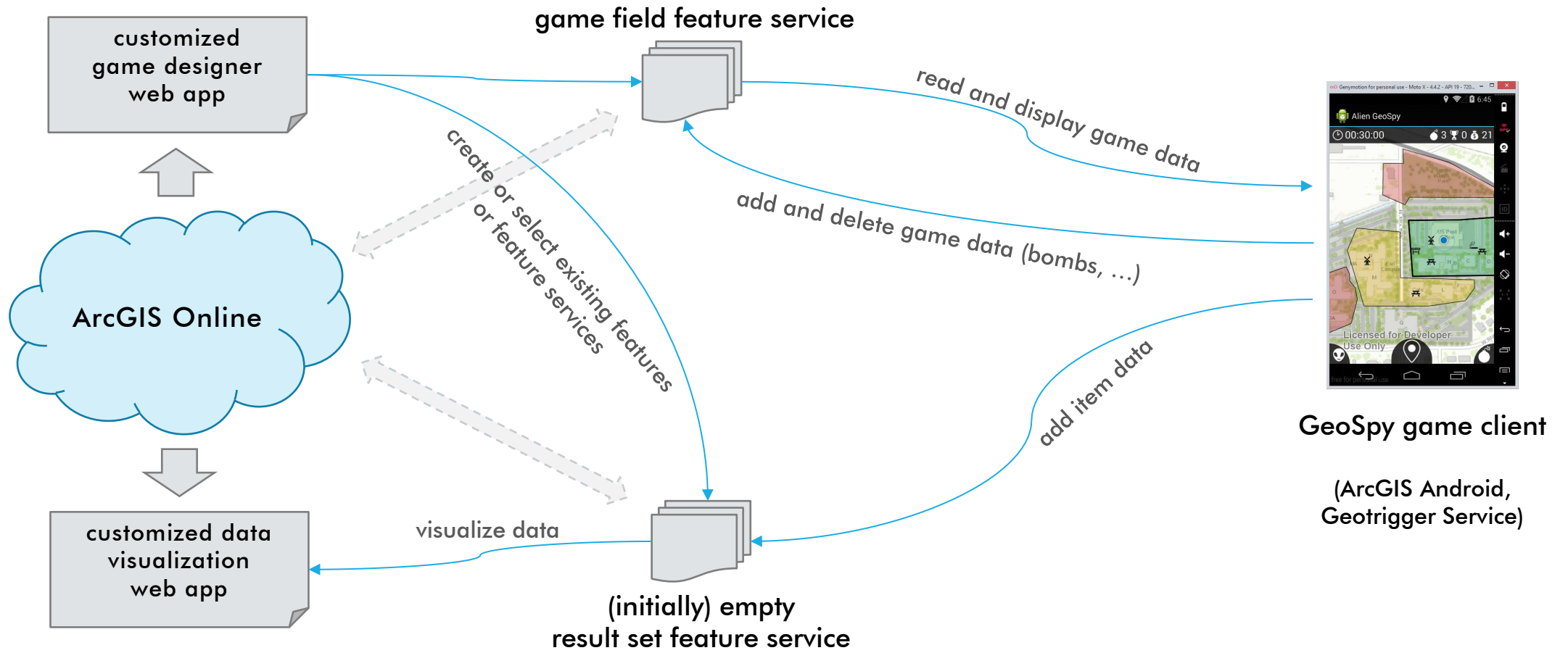
ALIEN GEOSPY – A VGI GAME

Alien Invasion Scenario:

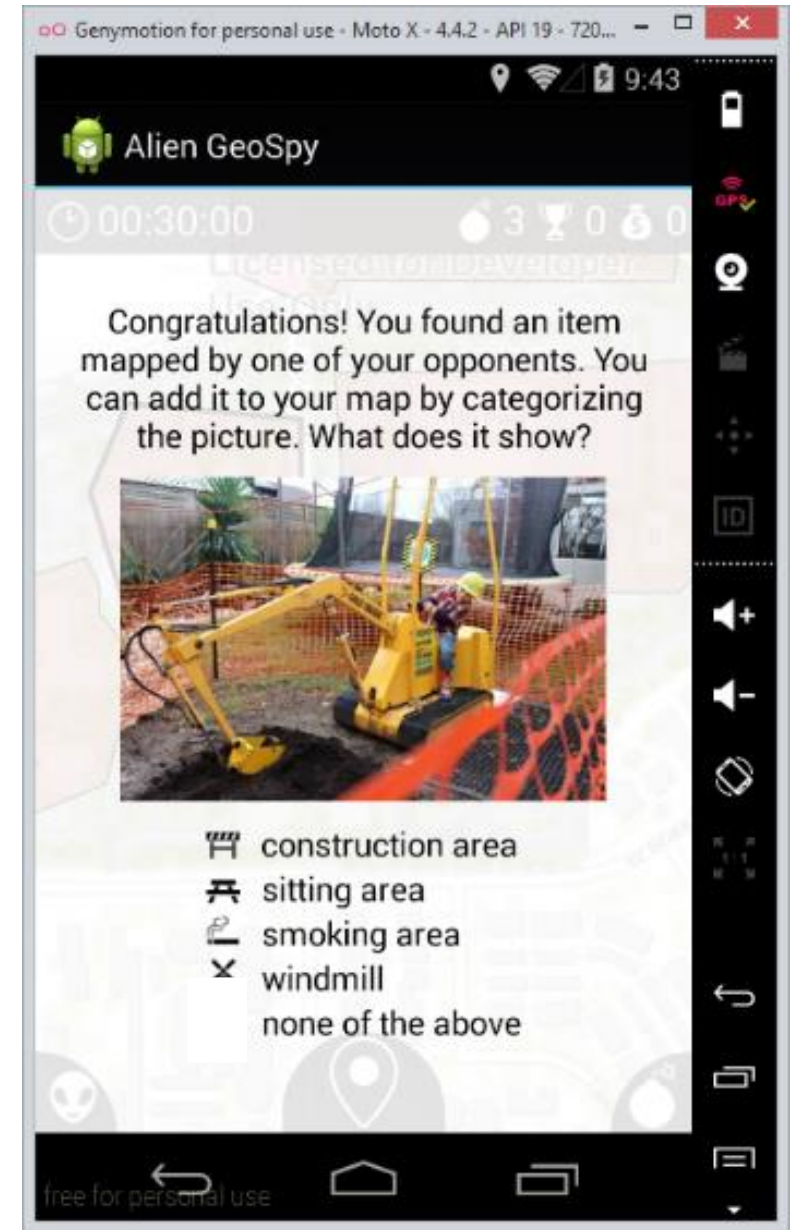
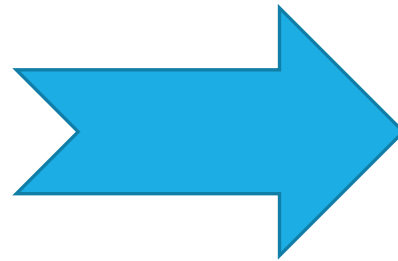
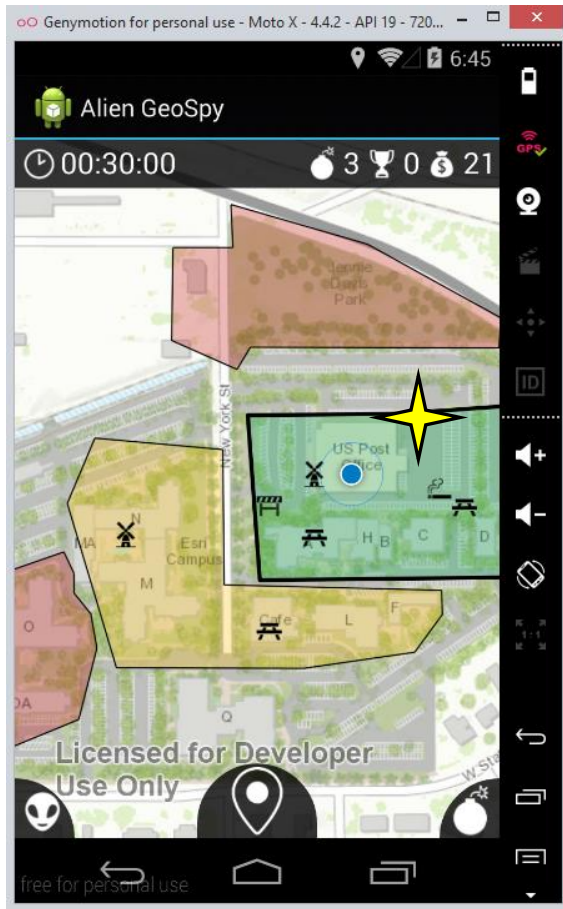
The player's role consists in spying on the planet Earth by gathering *information about given regions*. Items belonging to several predefined categories have to be found by inspecting the regions and are documented by *mapping and photographing* them within the game.



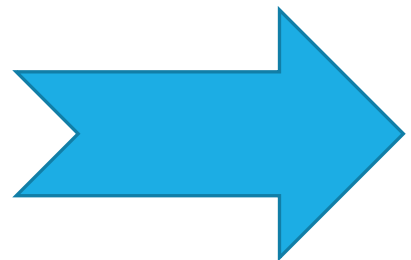
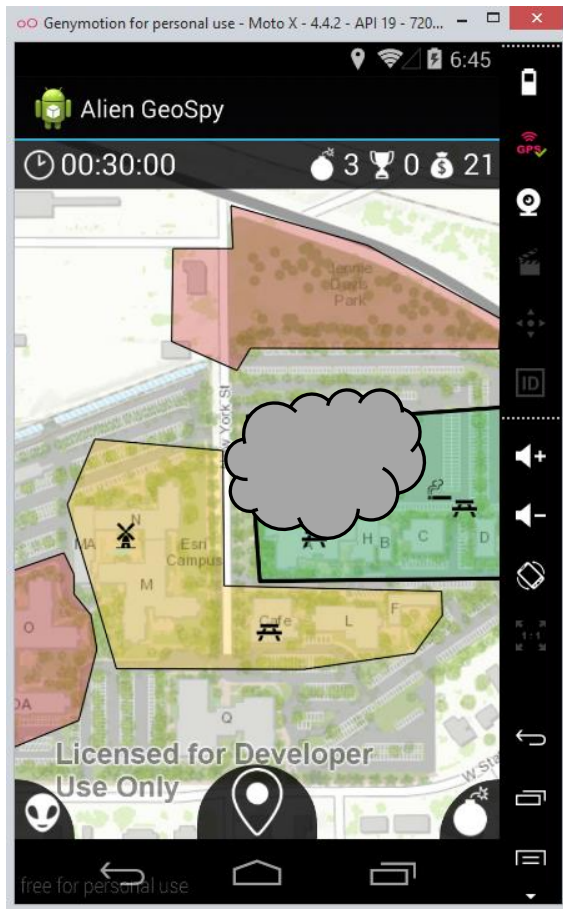
ARCHITECTURE



CONFIRMATION



RETESTING



OUTLOOK

1. Understanding of Memory Effects
2. Evaluation of the Game Principles
 - Data Quality
 - Playability
 - Game Balancing
3. Determination of Reliability Scores

THANK YOU!

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