A mapping prototype

for land use mapping by land users

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Structure of the presentation

- Context and motivation

- Inequality in participation

- Tool key requirements and the technological gap

- Challenges

- The prototype

- Geographic local knowledge
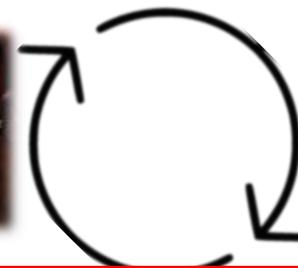
- Open data-driven collaboration

Context and motivation

Projects

Methodology
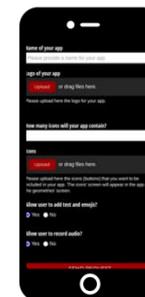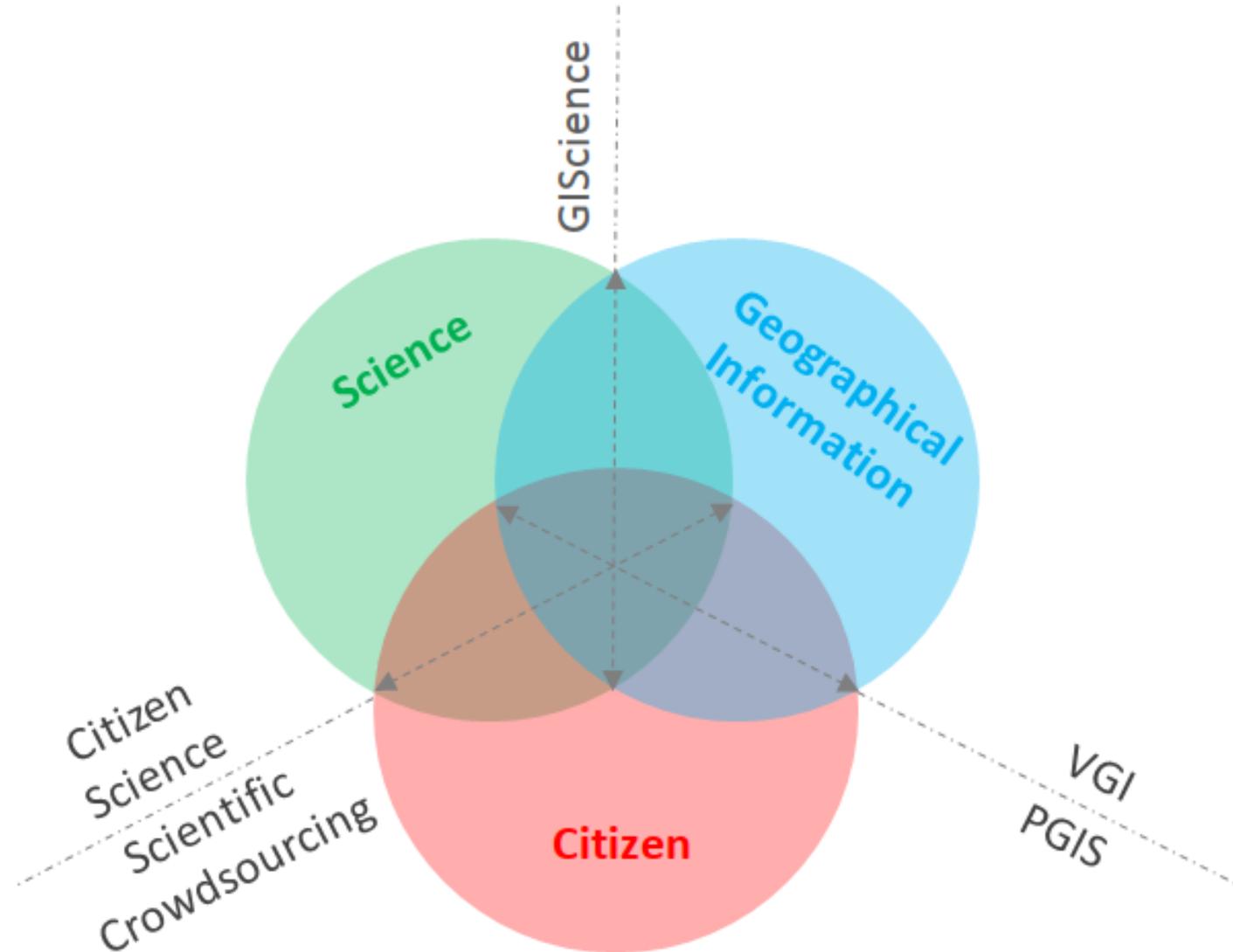
Context and motivation

Projects

Methodology

Citizen participation in GIScience

Citizen participation in GIScience

Tool key requirements and the technological gap

- Easy to use

- Easy to share

- Easy to customise

- On-site, off-site, online and offline mapping

- Cross-platform: mobile devices and public screens

- 'Universal applicability'

  o Text-free interfaces

  o Avoids a predefined or agreed classification criteria for attributing a geometry

- Open-for-all (i.e. no registration)

Challenges

Social challenges ------ → ● ← ------ Social needs (understanding)

Technological challenges ------ → ● ← ------ Technological appropriateness

Security challenges ------ → ● ← ------ Appropriate protocols and ethics

Institutional and legal challenges ------ → ● ← ------ Data quality and data legitimacy

Challenges

A PWA mapping prototype

Recenter

Toggle Basemaps: > *Google Hybrid Map > OSM > PlanetScope >*
Toggle Layers: > *Central spatial database > LocalStorage > Clear >*

Cancel

Drawing
tools

Input Attributes

Confirm

Send

Initial screen

Mapping knowledge

A PWA mapping prototype

Open Filter menu

Select feature

Comment or Delete

Confirm

Send

Filter by attribute

Filter by date

Delete feature

AI-based suggestions

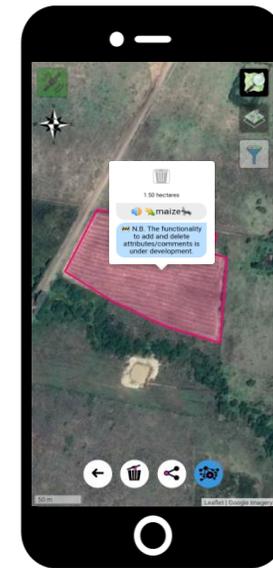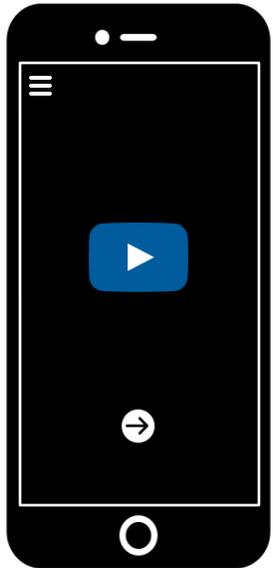Share Direct URL

Sharing knowledge

A PWA mapping prototype

Toggle Basemaps: *> Google Hybrid Map > OSM > PlanetScope + SkySat? >*

Toggle layers: *> Central spatial database > LocalStorage > Clear >*

Video tutorial

Recenter

Globe minimap on click

Request & About

Comment/ Delete

Open Filter menu

Select feature

Language Selection

Cancel & Go back

Drawing tools

Input Attributes

Filter by attribute

Delete feature

AI-based suggestions

Go back to map

Initial screen

Confirm

Filter by date

Send

Share Direct URL Using popular messaging apps

Customisation | **Mapping knowledge** | **Sharing knowledge**

Geographic local knowledge

Map semantics

Classification

Decision tree structure → **4 possible options** A1, A2, B1, B2 → **Limited Knowledge can be captured**

Single/Multiple choice → **10 possible combinations** *if max 2 choices & order is irrelevant* A1, A2, B1, B2, A1A2, … →

Attribution

Characters → **'Unlimited' combinations** → **'Unlimited' Knowledge can be captured**

Optimal balance between possible options or combinations (complexity) and potential knowledge that could be captured

Open data-driven collaboration

Mappers on mobile devices or public screens. Land users

Geometry & attributes

Direct URL

Central spatial database for open data

Creates geometry & attributes

Online

Offline

{pwa_url}

{pwa_url}/Customised-1/ /Customised-n/

Open data-driven collaboration

Geometry & attributes

Central spatial database for open data

Mappers on mobile devices or public screens. Land users

Creates geometry & attributes

Online

PWA Service Worker

Device's download folder

Browser's local storage

Offline

Data visualisation from local storage

A Mapping Prototype

{pwa_url}

{pwa_url}/Customised-1/ /Customised-n/

Open data-driven collaboration

Relevant land-related datasets and imagery uploaded upon request

Land users data visualised in OSM Basemap

Land users unprocessed data visualised as a layer

Geometry & attributes

Post-processing & analysis

Upload to OSM

Land-related disciplines

Mappers on desktop. OSM contributors

National mapping and cadastral agencies & Decision makers

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Thank you

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