CONNECTING VGI TO LULC MAPPING

Ana - Maria Olteanu-Raimond, LASTIG Laboratory, COGIT Team, IGN

Commission 5: Business Models and Operations
Chair: Joep Crompvoets

Brussels – 15 November 2017

COM. 5: BUSINESS MODELS AND OPERATIONS

- **Goals**

  - Contribute to the development and implementation of business models describing the rationale of how NMAs can create, deliver, and capture value in economic, legal, social, governance, cultural, etc.

- **Lead by**

  - Joep Crompvoets

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COM. 5: BUSINESS MODELS AND OPERATIONS

- **Topics**

  - Economic Value of 3D

  - **Crowdsourcing and National Mapping**

  - Marine Spatial Data Infrastructures

  - Open Data Business Models for NMAs

  - Quality Assessment of Geospatial Data: Does it fit your needs?

  - Usability of Geospatial Data

- **2nd Crowdsourcing and National Mapping workshop**

  - Workshop : Irish College in Leuven from 3 to 4 April 2017

  - Drive the crowdsourcing in National Mapping Agenda forward –Workshop 2018

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Outline

> Use of VGI in European National Mapping agencies (NMAs)

> Recommendations for NMAs To engage with VGI

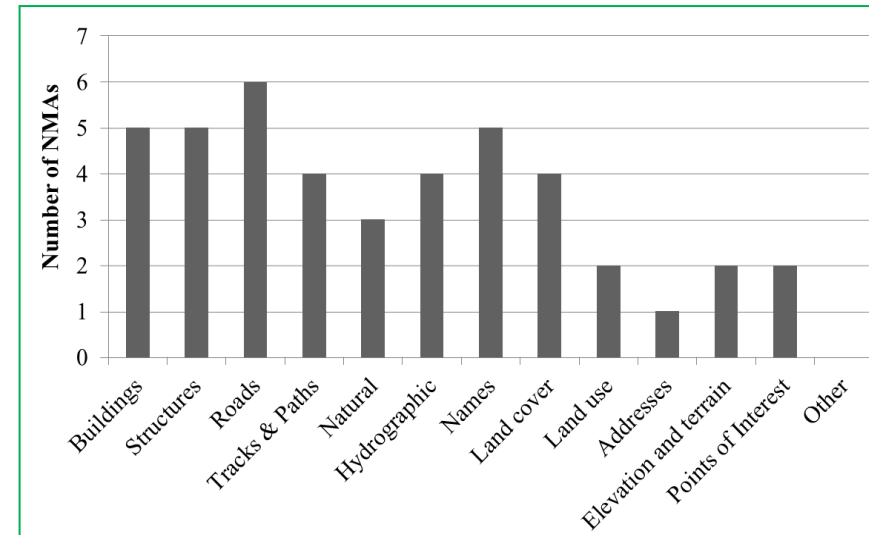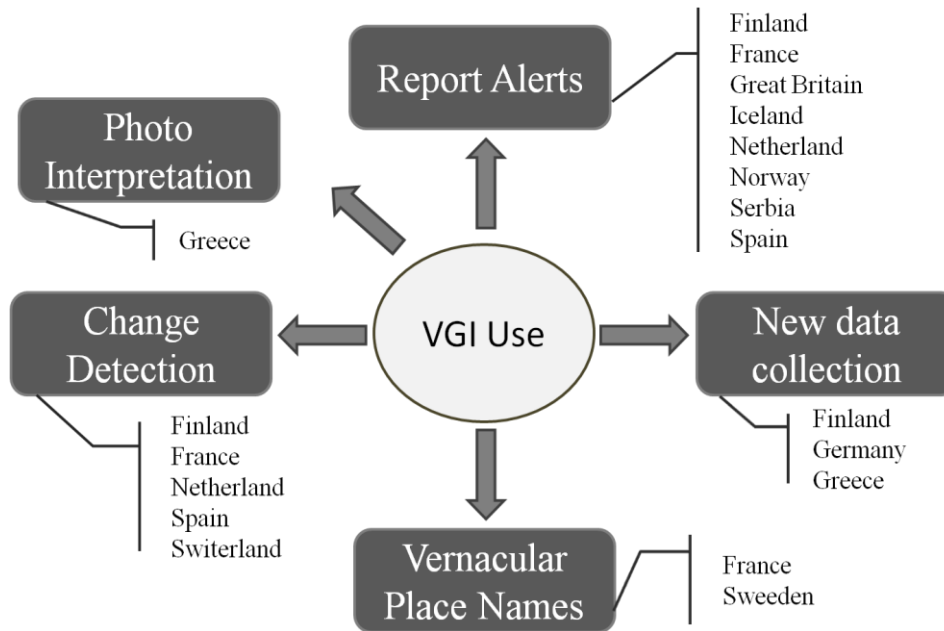> VGI, an opportunity for LULC mapping : LandSense Project

USE OF VGI IN EUROPEAN NATIONAL MAPPING AGENCIES (NMAS) – A SURVEY

Cost Action TD1202 : Mapping and the Citizen Sensor

VGI ENGAGEMENT...EXPERIENCES

- **13/ 26 NMAs had experiences with VGI**

- **9/ 26 NMAs have the intention to use VGI**

VGI ENGAGEMENT...THE MAIN OBSTACLES

- **Data Quality and Validation**
  - Biggest concerns the NMAs have, since they want to maintain their reputation for high quality products
  - Lack of heterogeneity, completeness, currency
  - Validation

- **Legal Issues**
  - Licenses, Legal liability, Privacy

- **Nature of the crowd and motivation**
  - Credibility of volunteers is a key point, motivation

- **Sustainability**
  - Stability and the long-term viability of VGI initiatives

- **Employment concerns**

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- **VGI COMMUNITY AND NMA NEEDS**
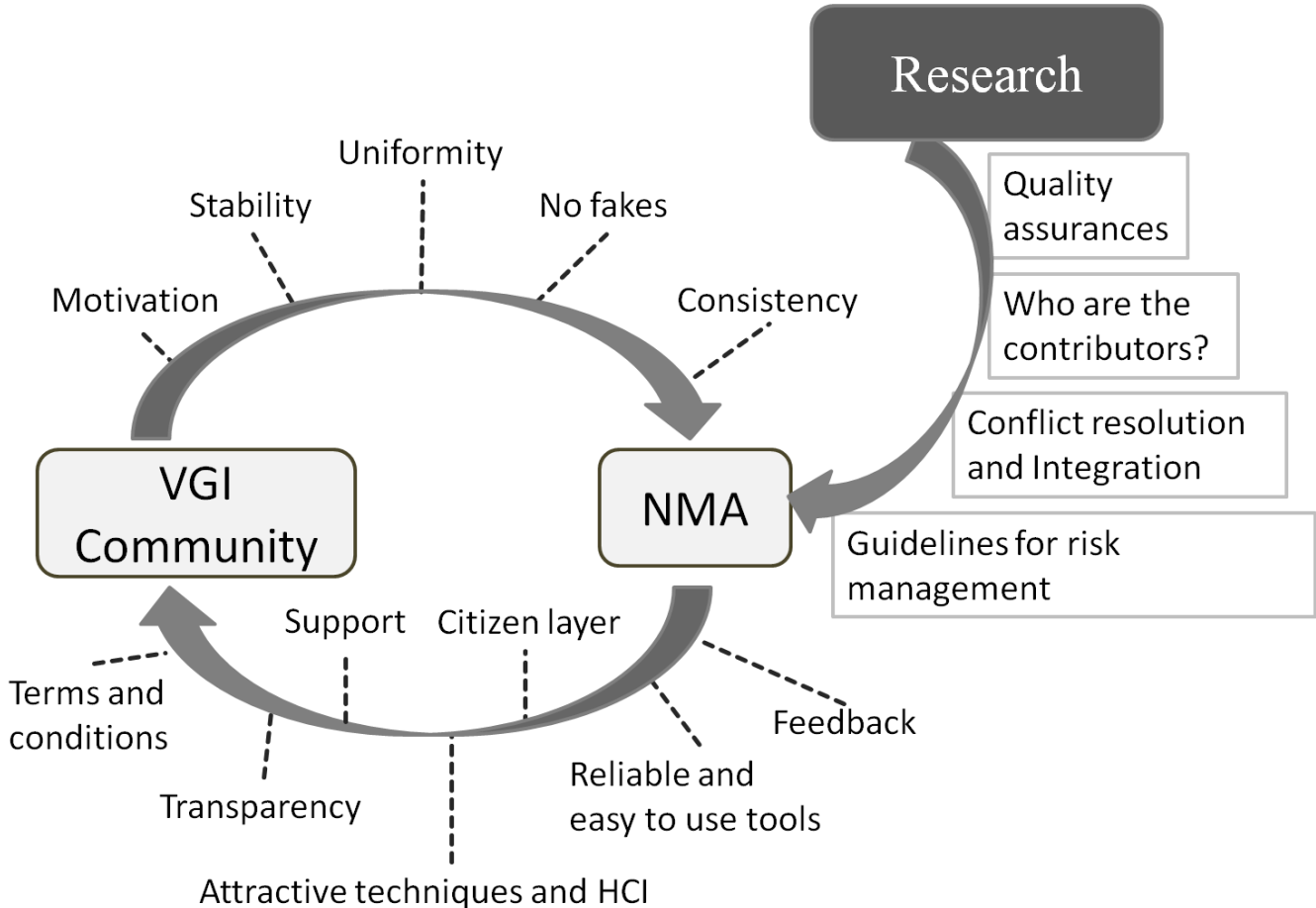
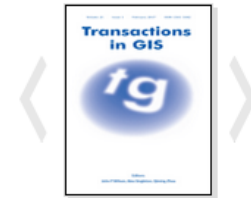# VGI ENGAGEMENT...

Transactions in GIS

Explore this journal >

The Scale of VGI in Map Production: A Perspective on European National Mapping Agencies

Ana-Maria Olteanu-Raimond ✉, Glen Hart, Giles M. Foody, Guillaume Touya, Tobias Kellenberger, Demetris Demetriou

Abstract

The perspective of European National Mapping Agencies (NMA) on the role of citizen sensing in map production was explored. The NMAs varied greatly in their engagement with the community generating volunteered geographic information (VGI) and in their future plans. From an assessment of NMA standard practices, it was evident that much VGI was acquired with a positional accuracy that, while less than that typically acquired by NMAs, actually exceeded the requirements of the nominal data capture scale used by most NMAs. Opportunities for VGI use in map revision and updating were evident, especially for agencies that use a continuous rather than cyclical updating policy. Some NMAs had also developed systems to engage with citizen sensors and examples are discussed. Only rarely was VGI used to collect data on features beyond the standard set used by the NMAs. The potential role of citizen sensing and so its current scale of use by NMAs is limited by a series of concerns, notably relating to issues of data quality, the nature and motivation of the contributors, legal issues, the sustainability of data source, and
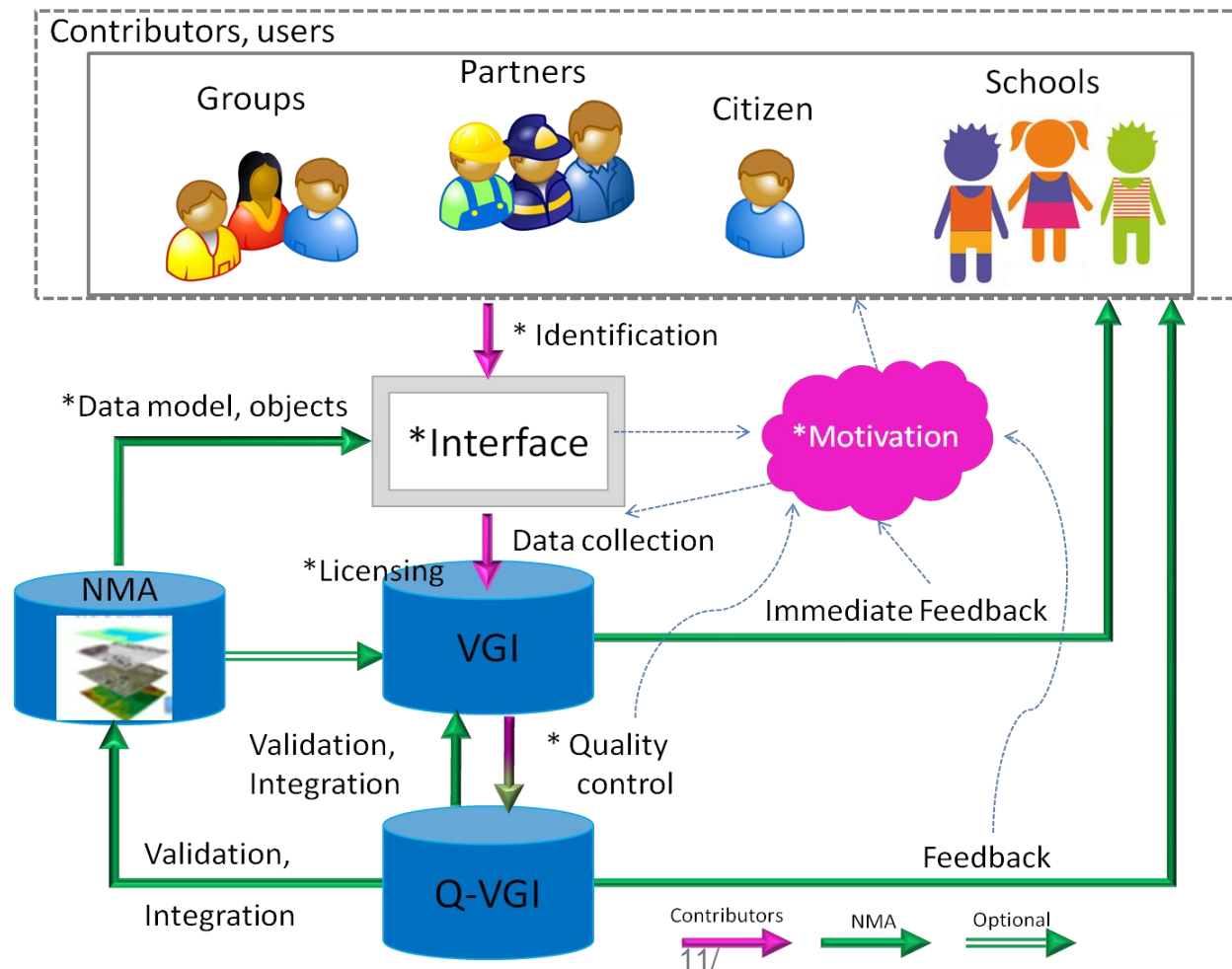
RECOMMANDATIONS FOR NMAs TO ENGAGE WITH VGI
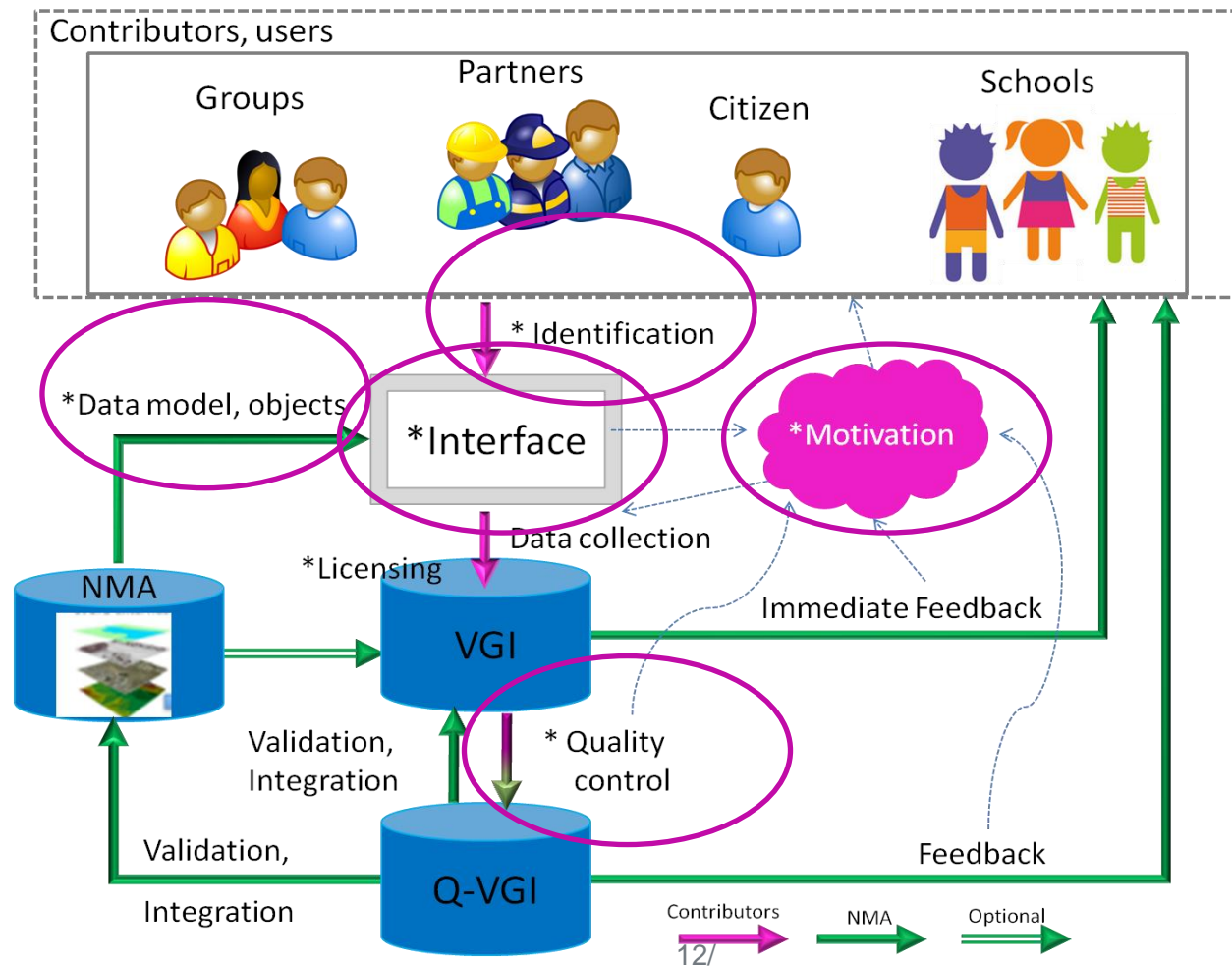
**Cost Action TD1202 : Mapping and the Citizen Sensor**

ENGAGEMENT WITH VGI …RECOMMENDATIONS

- **Proposing a VGI platform for contributors and data-users …*citizen and partner layer***

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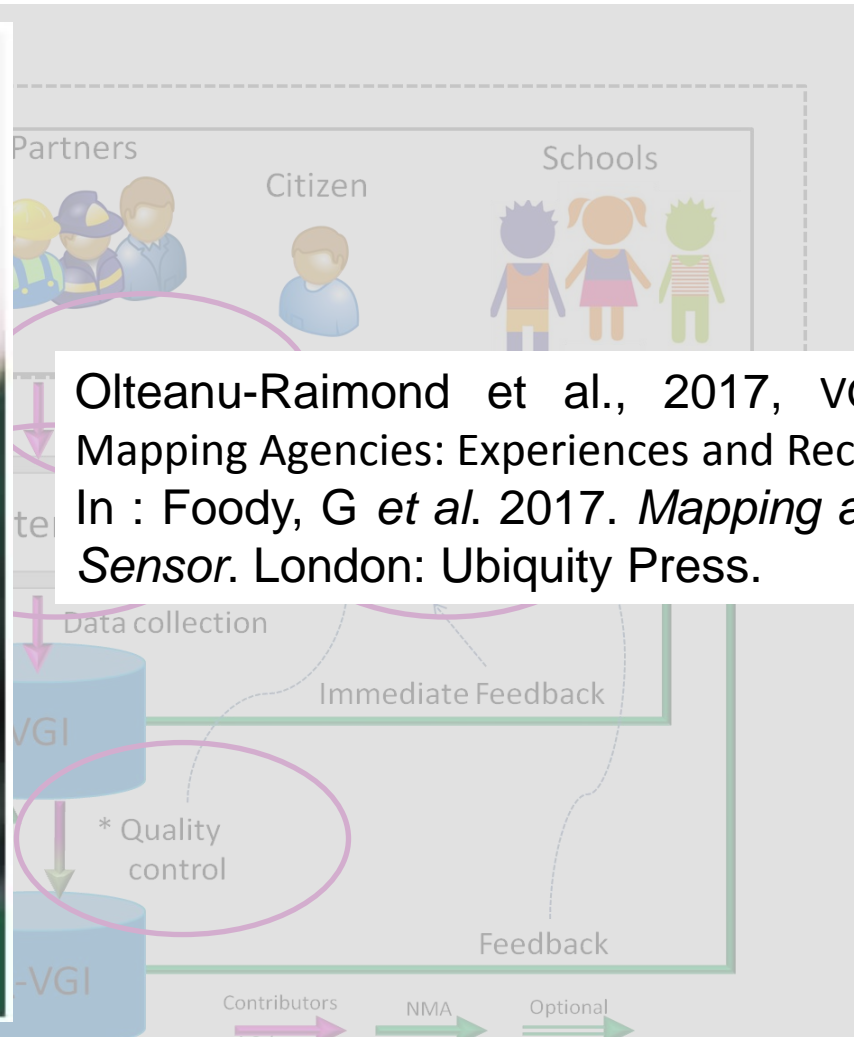
Olteanu-Raimond et al., 2017, VGI in National Mapping Agencies: Experiences and Recommendations, In : Foody, G *et al*. 2017. *Mapping and the Citizen Sensor*. London: Ubiquity Press.
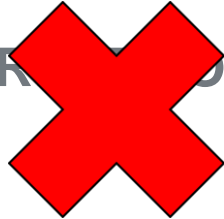
ENGAGEMENT WITH VGI

- **… VGI A THREAT FOR NMAs ?**

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ENGAGEMENT WITH VGI

- **… VGI A THREAT FOR NMAS ?**

- **… AN OPPORTUNITY**

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http://www.landsense.eu

# LANDSENSE : CONSORTIUM

+35 Support Letters (from 18 countries)

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3. Sinergise
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7. Environment Agency Austria
8. Institut National de l'Information Géographique et Forestière
9. European Citizen Science Association
10. StZ Felis
11. University of Heidelberg
12. Wageningen University
13. VU University Amsterdam
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LANDSENSE ENGAGEMENT PLATFORM
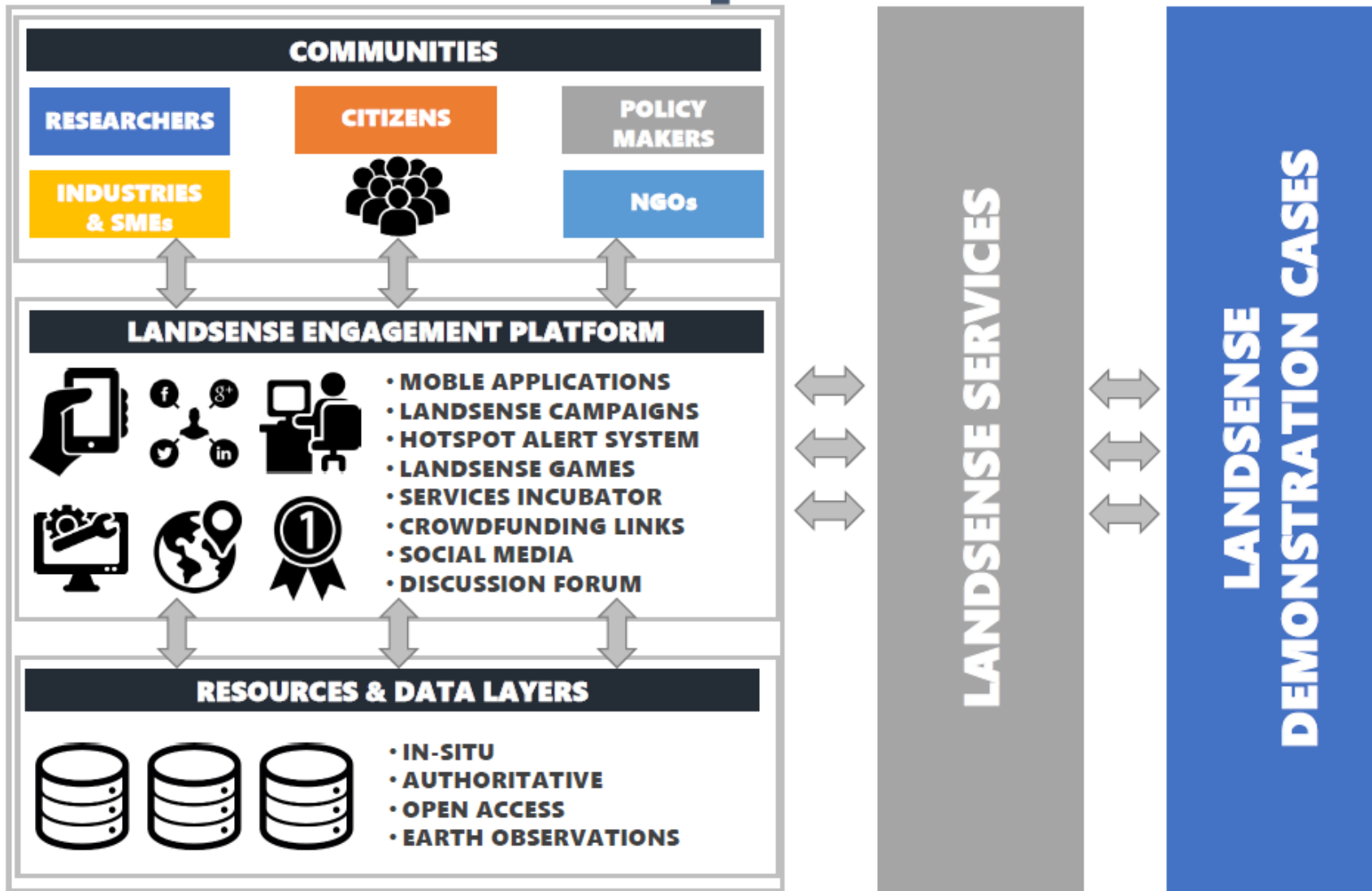
LANDSENSE ENGAGEMENT PLATFORM

- **4 SERVICES**

- **3 DEMO CASES**

LandSense Campaigner

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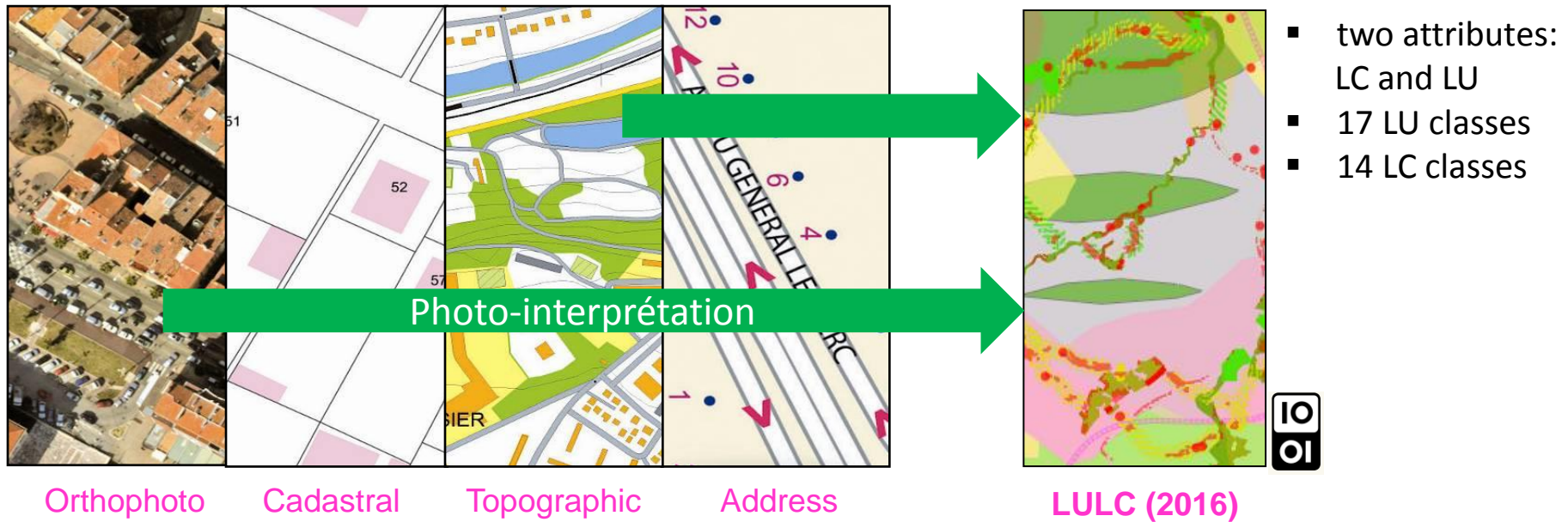Subscribe to LandSense newsletter

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CONTEXT

- **The role of IGN: produce and maintain spatial data at country level**

- **IGN produces The Large Scale reference system (RGE®) and LULC**

Orthophoto   Cadastral   Topographic   Address   **LULC (2016)**

Photo-interprétation

- two attributes: LC and LU
- 17 LU classes
- 14 LC classes

- **Update policy : continuously, annual or cyclical (2-3 years)**

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Building (RGE®)   LULC

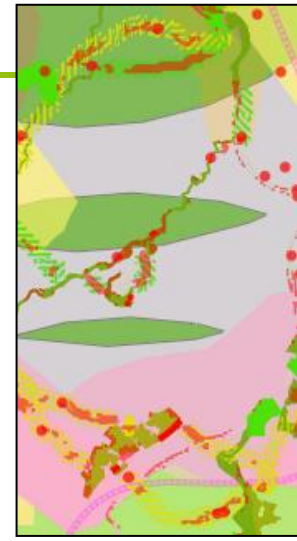- **Update, Improve, and Validate** LULC and buildings use

  - Throw guided and opportunistic campaigns

  - Using Change Detection and QA services

  - Using mobile and web-based applications

  - Involving citizens, students, public and private stakeholders, and OSM community

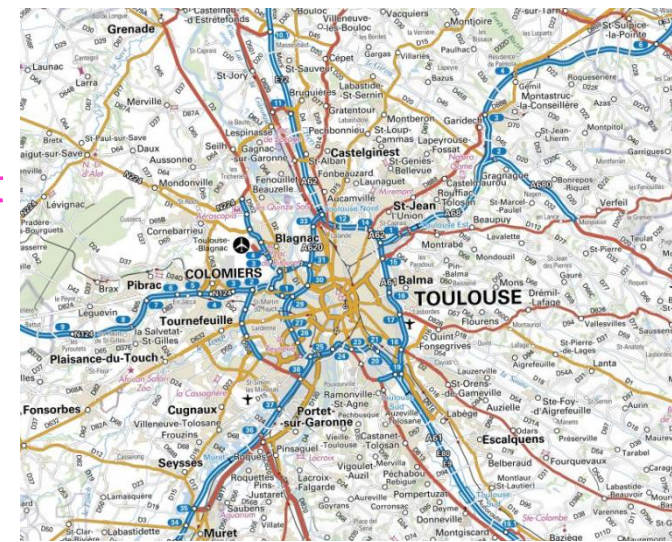- **Case study: Toulouse and its surrounding areas**

  - **First campaign :** Mid-March – Mid-August 2018

GOALS OF THE FRENCH PILOT

- **To enrich LULC data**

  - Distinction between residential land-use, industrial land-use and administrative land-use, which are all included in the same class (US235) in the current database
    - Needs to identify public parks, leisure's areas, camping, etc.
      - →Mapping building use
  - ⇒ **Proposal :**
    - Add new LU classes at different levels :
      - Level 1 : US 2 (*Industrial land use*) and US 5 (*Residential land use*)
      - Level 2 and 3 for US3 (*Administrative land-use*)
        - Level 3 for *Public Services and Administration* LU class and *Leisure and Culture* land use class

    - Opportunistic and guided campaigns

- **Improve and update LULC data in general**
  - Freely contribution : highlight or map errors and changes
  - ⇒ **Proposal:** Opportunistic campaign + Distinguish between errors and update

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GOALS OF THE FRENCH PILOT

- **Improve LU classes difficult to update**
    - Agricultural VS Non Agricultural use
    - Quarries in operation VS inactive quarries

⇒ **Proposal**: guided campaign + Building functionality

- **Update LU6.1 'Transition areas' Class**

⇒ **Proposal**: guided campaign

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TOOLS TO CONTRIBUTE
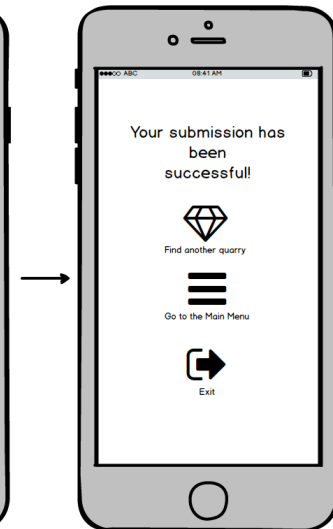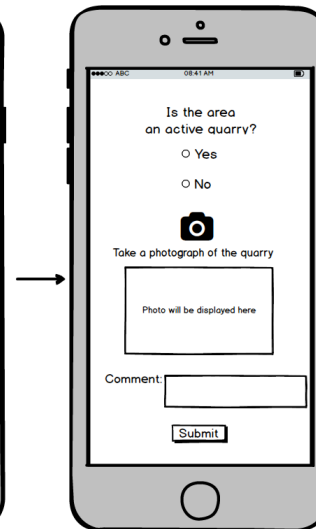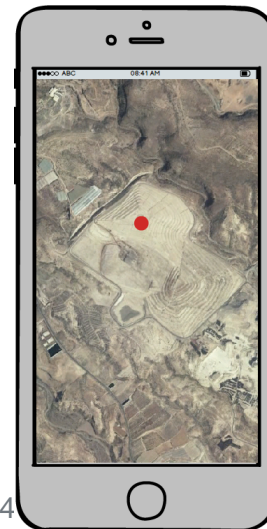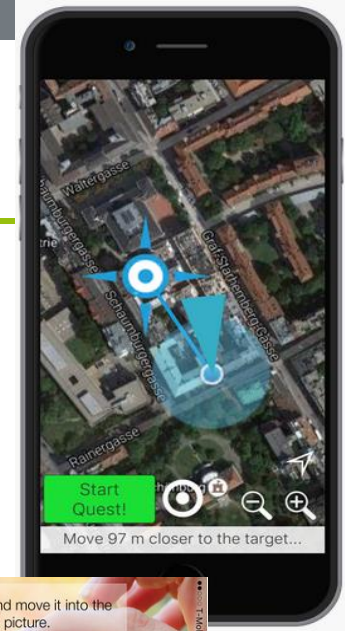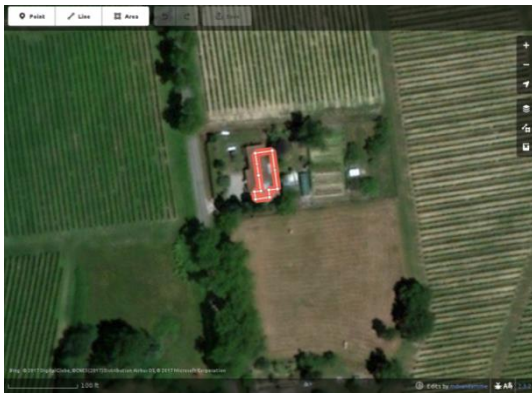
CONCLUSION

- **Despite the progress …some barriers still exist**

- **More engagement and interaction is needed between**

  - NMAs, VGI Community, Academics, Public bodies, SMEs

- **Organizing workshops involving different actors**

- **Real problems allowing to resolve real requirements**

- **By involving actors in the beginning of the VGI data collection**

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Thank you !!

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