Dutch Kadaster and crowdsourcing

Crowdsourcing in National Mapping
Leuven, Belgium April 3rd and 4th 2017

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Inhoud:

→ A brief introduction

→ Crowdsourcing, comunity sourcing

→ Crowdsourcing in Kadaster

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Kadaster: a brief introduction

Kadaster: the Netherlands' Cadastre, Land Registry and Mapping Agency
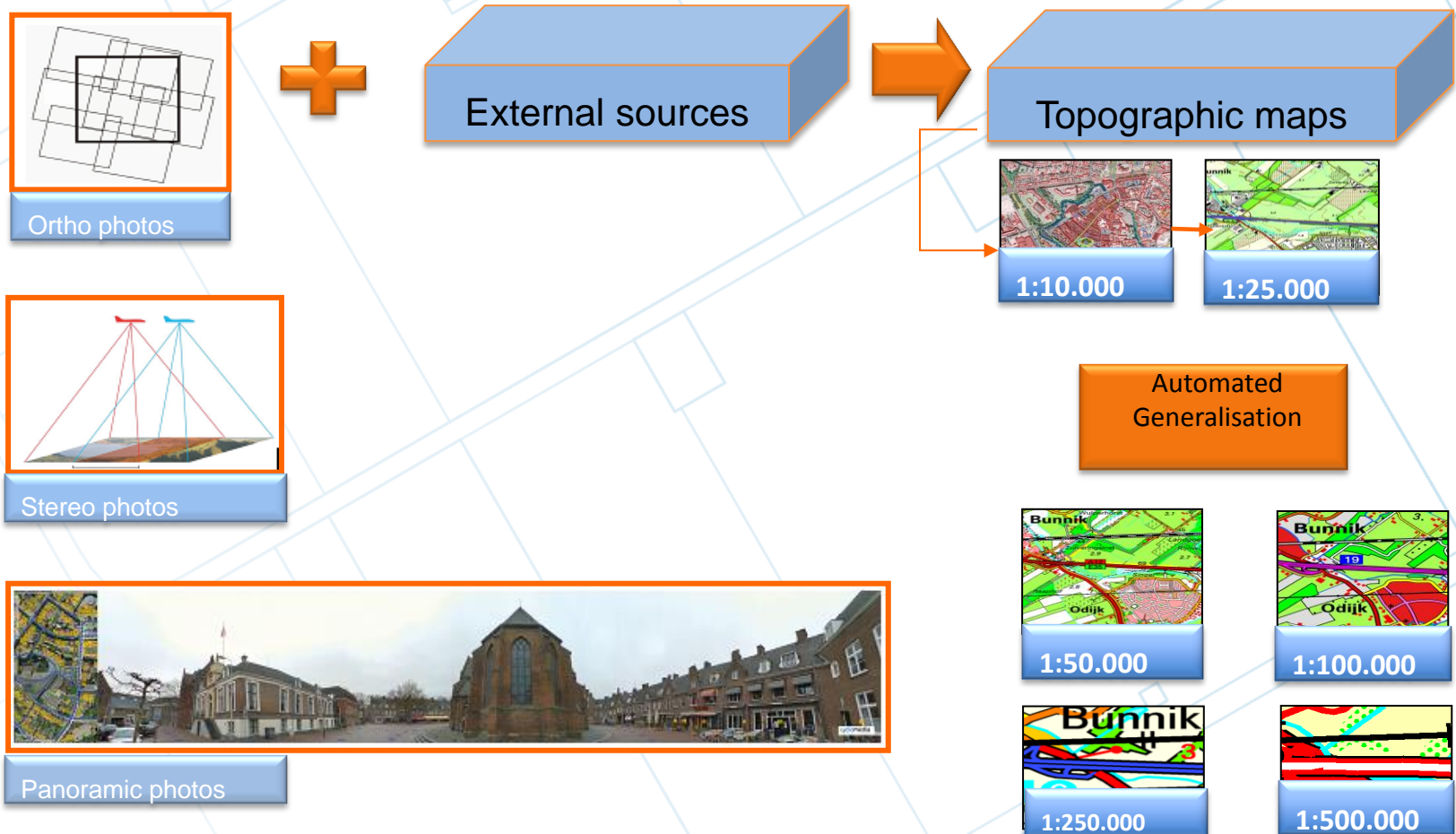

Who we are, what we do and why we do it?

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Kadaster: a brief introduction

Kadaster services

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Kadaster: a brief introduction

Map production and Update Schemas

Ortho photos

Stereo photos

Panoramic photos

External sources

Topographic maps

1:10.000

1:25.000

Automated Generalisation

1:50.000

1:100.000

1:250.000

1:500.000

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Crowdsourcing, community sourcing

Developments in society

➡ People live and act in a virtual world

➡ More connected devices than people

➡ Netwerking, sharing and opening

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Crowdsourcing, community sourcing
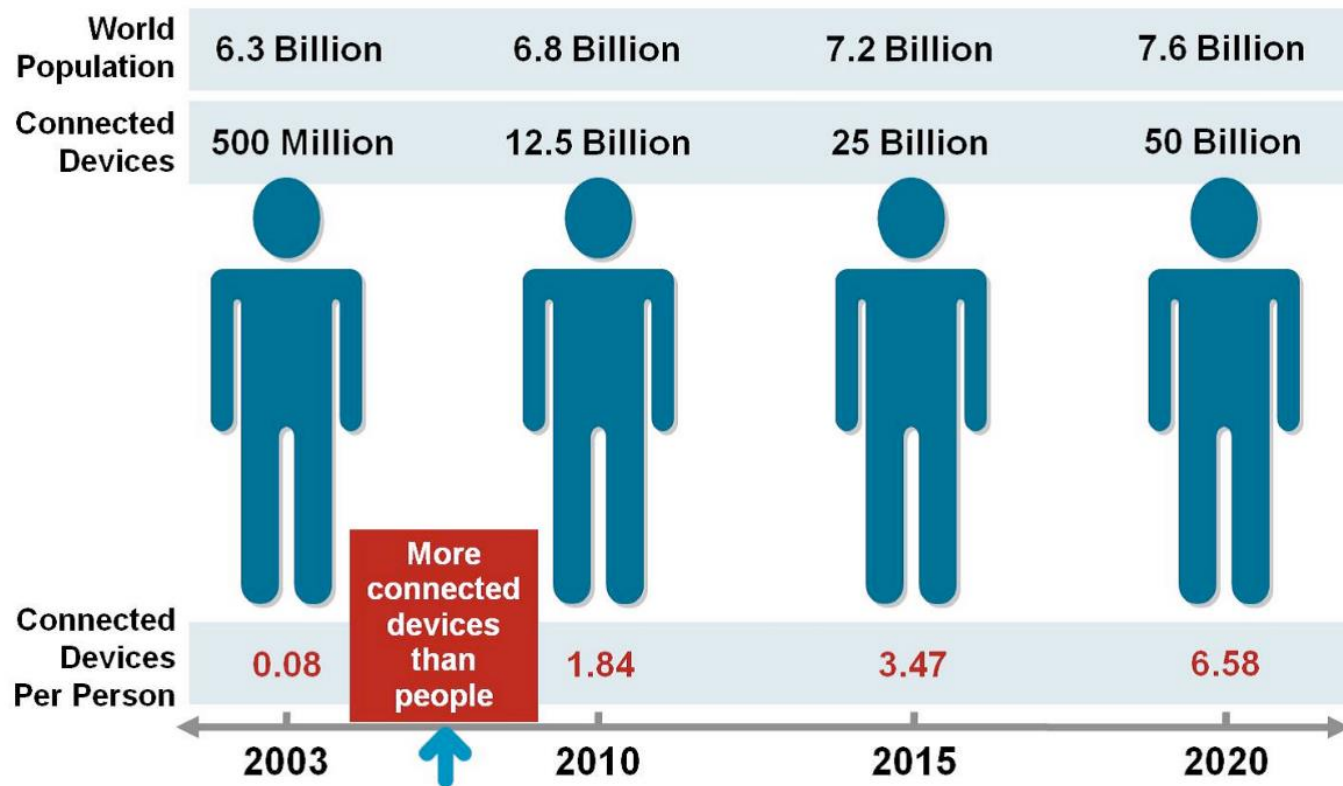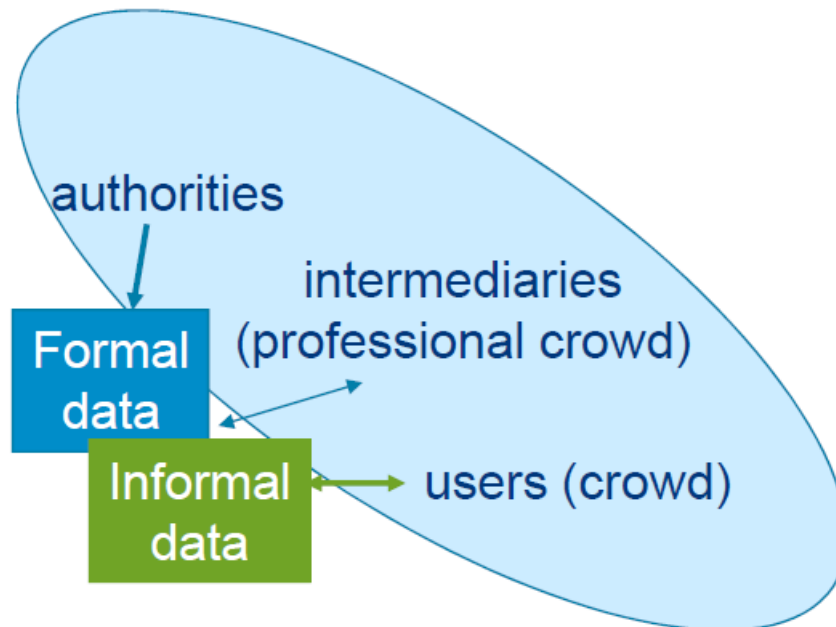
Developments in IT

	2003	2010	2015	2020
World Population	6.3 Billion	6.8 Billion	7.2 Billion	7.6 Billion
Connected Devices	500 Million	12.5 Billion	25 Billion	50 Billion
Connected Devices Per Person	0.08	1.84	3.47	6.58

More connected devices than people

Figure: The number of connected devices (source: Cisco IBSG: April 2011)

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Crowdsourcing, community sourcing

Formal (authoritative) en informal data

authorities → Formal data ← users → Informal data

OLD

authorities → Formal data

intermediaries (professional crowd)

Informal data → users (crowd)

Network based on trust, protocols and rules

NEW

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Crowdsourcing, community sourcing

Role of authoritative data
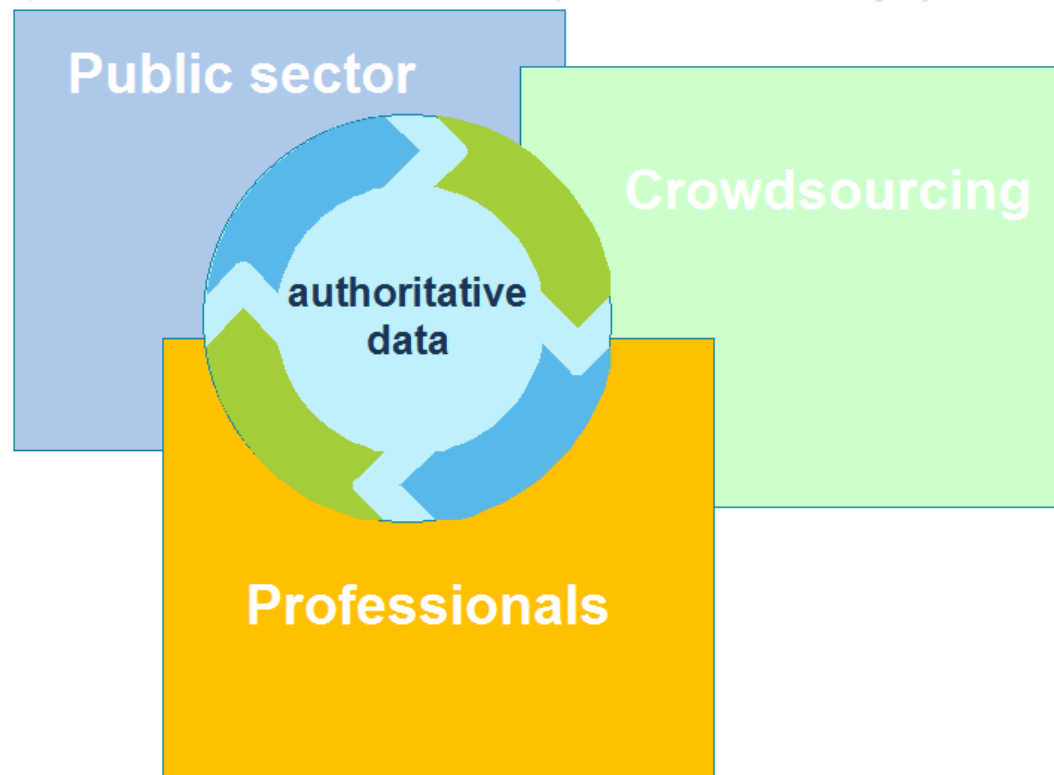
Figure: a possible role of authoritative data as linking pin.
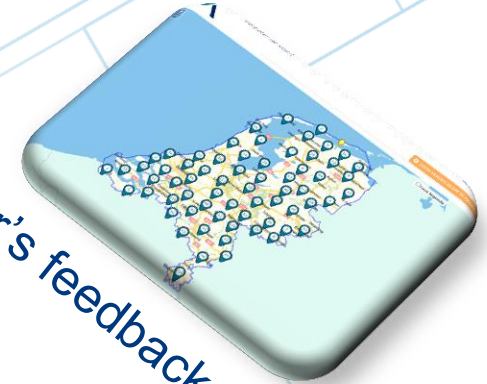
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Crowdsourcing & Kadaster

Border Landmarks

Forests paths

Crowdsourcing at school

User's feedback system

Toponyms from historical associations

Land registration in Colombia

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Border Landmarks

Check if "crowdsourcing" can be used to control the border landmarks between the Netherlands and Germany.

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Publishing the border landmarks with coordinates (searching via GPS)
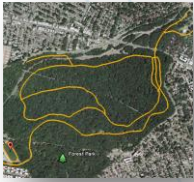**Crowd**
Giving the feedback via Smartphone / Website
Kadaster
Publishing the intended actions

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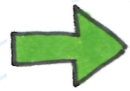
Land registration in Colombia – Fit for Purpose

➡️ Many small farmers are not able to prove in writing that they own a specific piece of land.

➡️ parcel boundaries measurment
by means of app on the mobile phone.

➡️ a substantial cost reduction for the
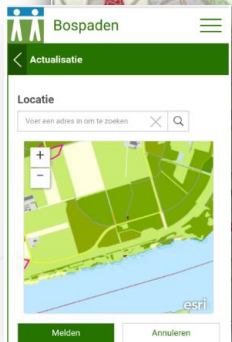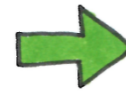Colombian government.

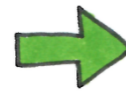kadaster

The forest paths project

The National Dutch Forest Organisation (Staatsbosbeheer) are responsible for data on forests.

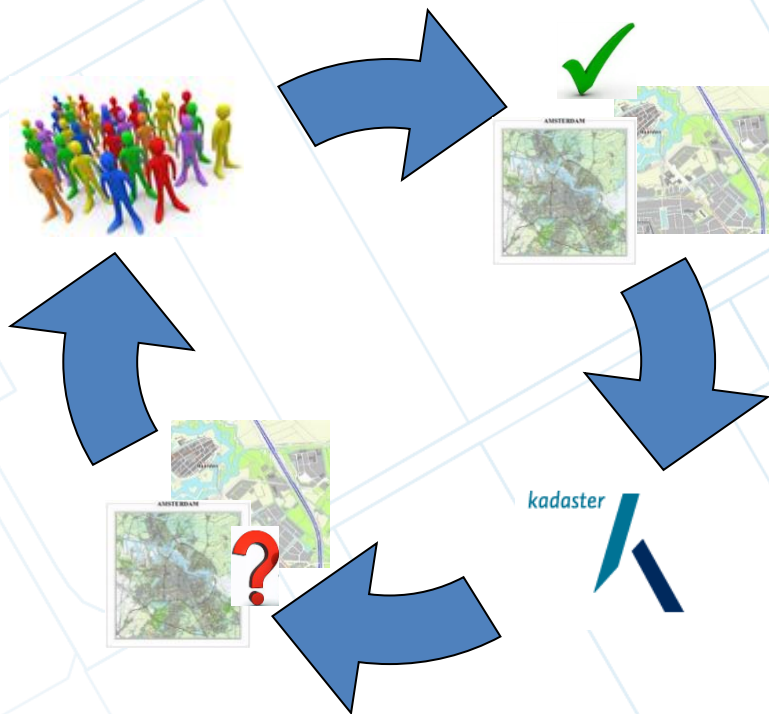crowdsourcing to update the National Dutch Forest Organisation data.

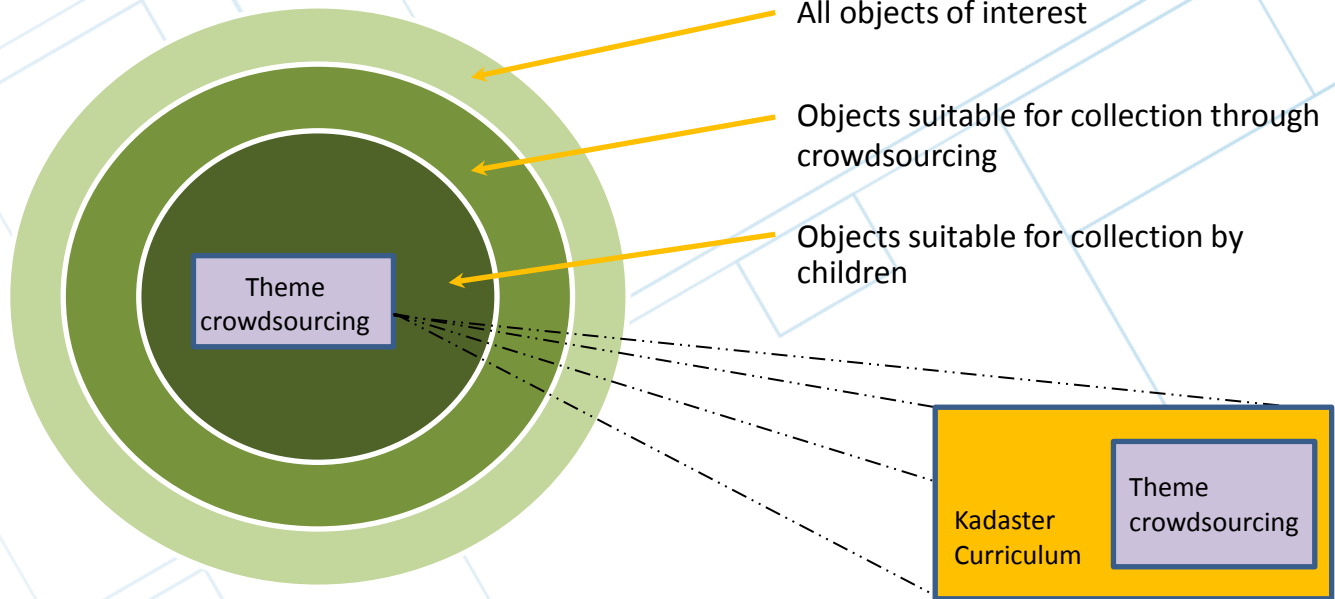the local forest rangers have since updated their digital files on forest paths in their region.

Kadaster is researching how to implement this method in the rest of the forests area in the Netherlands.

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Toponyms from historical associations

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Crowdsourcing as a part of education program

All objects of interest

Objects suitable for collection through crowdsourcing

Objects suitable for collection by children

Theme crowdsourcing

Kadaster Curriculum

Theme crowdsourcing

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Particulier   Zakelijk   Over ons   Nieuws   Zoek...

Lespakket Kadaster

### Over het lespakket van het Kadaster

Hallo allemaal! Leuk dat jullie met ons aan de slag gaan. Door het maken van leuke opdrachten en het bekijken van filmpjes leren jullie wat het Kadaster allemaal doet. Maar jullie gaan ook de brandweer, politie en de ambulance helpen zodat Nederland nóg veiliger wordt.

Klik rechts op één van de lesmodules.

Lesmodule 1: Wat doet het Kadaster?

Naar lesmodule 1

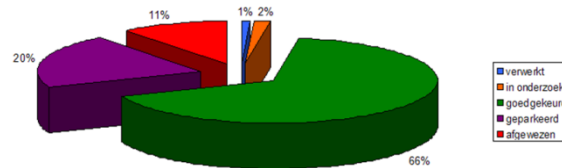### Lesmodule 2: Help de hulpdiensten!

Naar lesmodule 2

SMART 👦👧👦 = SMART 🏙️
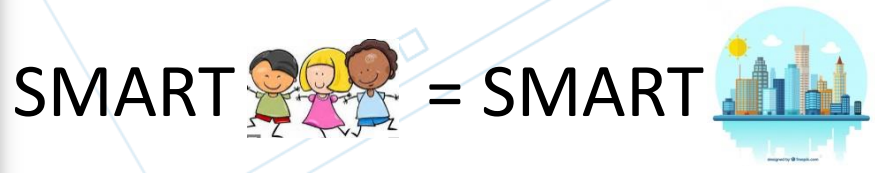
User's feedback system

→ accessible for everyone,

→ user-friendly,

→ good performance,

→ up-to-date topographical products

→ improving topographical data

→ collection (appliance of crowdsourcing)

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Improve the map

In June 2016 the Kadaster launched the 'Improve the Map'-application for large scale topography (BGT)

- The system enables everyone to give feedback in a VGI manner

- Feedback is distributed to 430 government bodies for assessment

- In November 2016 the system also included mid- and small scale topography (BRT).

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Supporting conditions

• A crowdsourcing pilot held in 2014 for the BRT was highly successful

• Research showed that both key registry holders (governments) as users were positive about a (controlled) crowdsource system

• The legal framework of key registries contained already an obligatory feedback mechanism -> the crowdsourcing perspective fitted in this framework

• Users and governments already experienced bureaucratic and non-transparent feedback systems -> an easy-to-use crowdsource system felt as a relief

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Demo

www.verbeterdekaart.nl
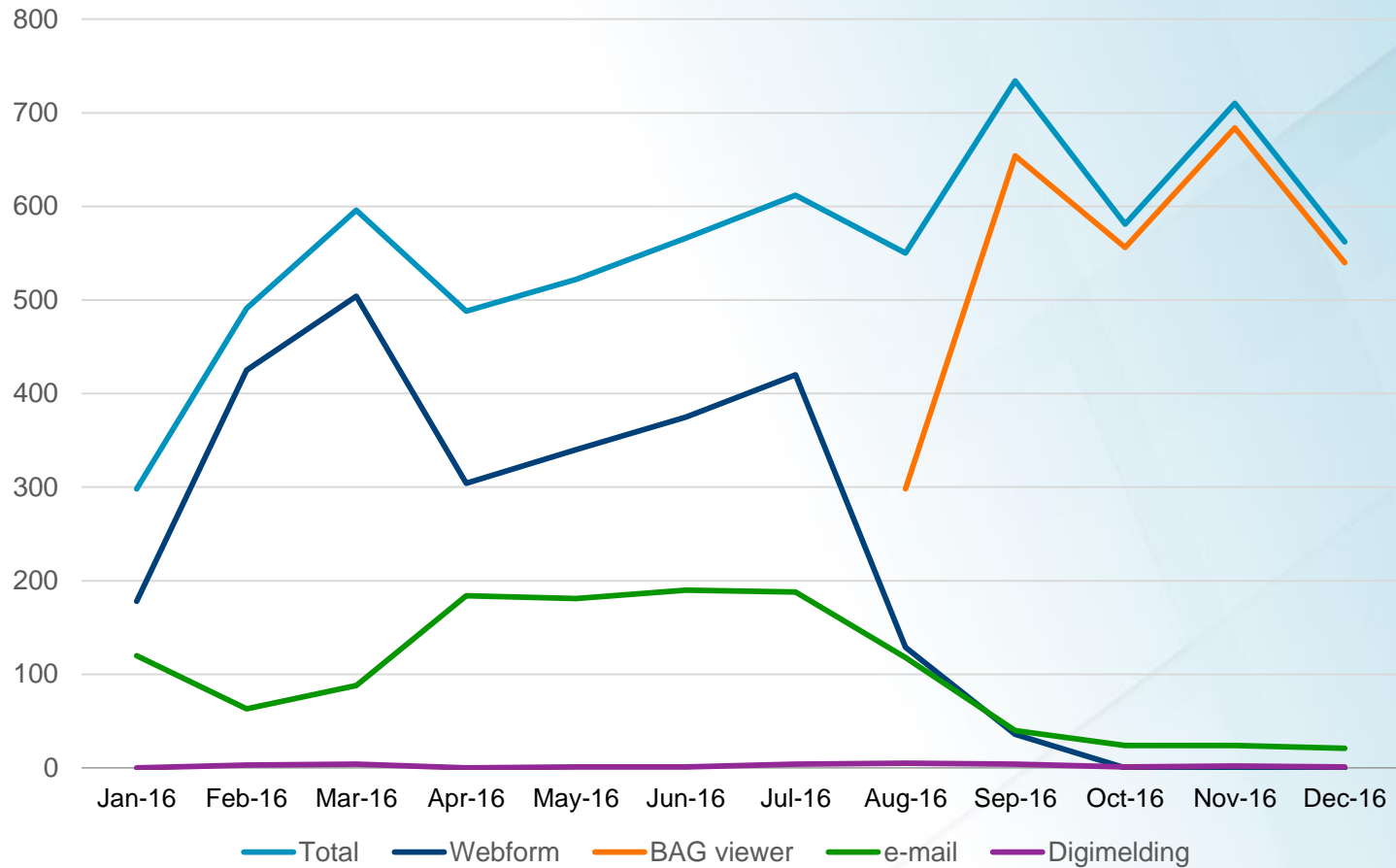
'Improve the map' (topography)

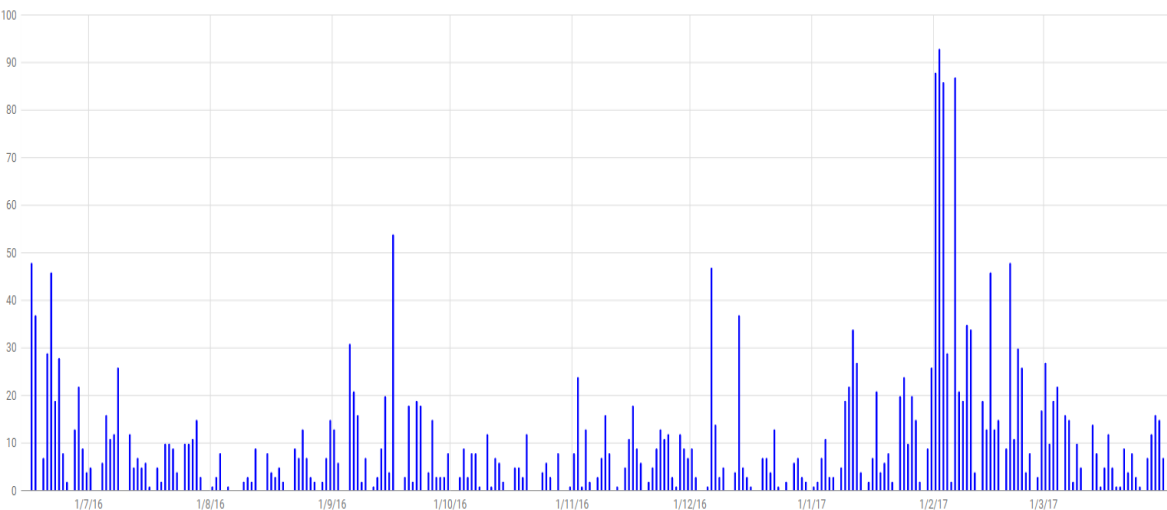bagviewer.kadaster.nl

Adresses and buildings

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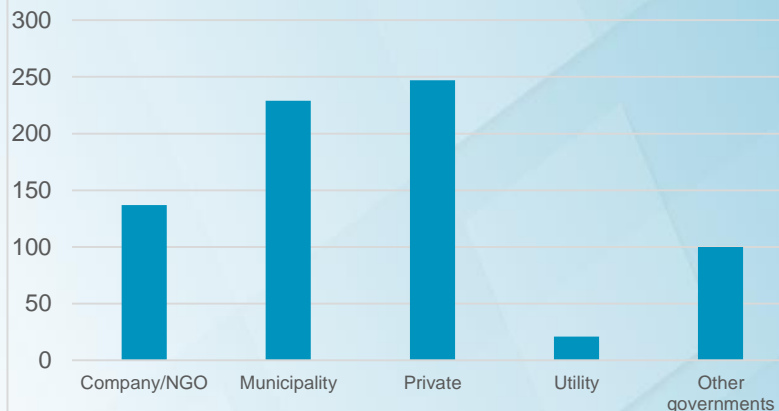
Results

Amount of BAG feedback per month in 2016

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Factsheet Verbeter de Kaart (BGT) 31-3-2017

Total amount of feedback in 2016: 2072
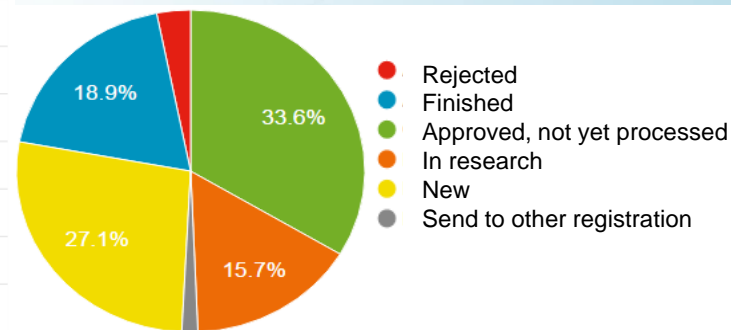
Total amount of feedback in 2017: 1328

Spread of unique contributors based on e-mailaddress on 31-3-2017 (n=734)

Number of active feedback per day since 16-6-2016

Overview BGT feedback status at 31-3-2017

- 18.9%
- 33.6%
- 15.7%
- 27.1%

Legend:
- 🔴 Rejected
- 🔵 Finished
- 🟢 Approved, not yet processed
- 🟠 In research
- 🟡 New
- ⚫ Send to other registration

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Conclusion

- The crowdsource feedback system is a success

- The reports are spatially and temporally diverse

- Challenge lies in motivating all 430 government organizations to assess the feedback timely

- Another challenge lies in motivating value adders as contributors

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API

- This year an API will be developed for third-party applications
  - With this API users can directly give feedback from external software and apps
- OpenStreetMap is interested in connecting to this API
  - The API will first be open for point geometry but in the future complete objects could be accepted.

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Thank you for your attention