

# Volunteered Geographic Information

## A characterization

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Workshop: Voluntary geographic information for spatial data infrastructures?



- What is there?
- Relation between VGI and SDI
- Challenges for SDI development





1. Define VGI
2. Framework of comparison for VGI and SDI
3. Five case studies compared
4. VGI and SDI relation





# Volunteered Geographic Information

## Technical developments

**Gegevens waarnemer**  
 (e-mailadres of telefoonnummer)  
 of inloggen

**Uw waarneming**  
 Groep:  Geef alleen uw eerste waarneming door van soorten in deze lijst! Alle andere waarnemingen kunt u eventueel aan ons sturen per e-mail, kijk ook op [www.vlindersichting.nl](http://www.vlindersichting.nl)

Soort:


Fenofase: eerste individu

Aantal:

Locatie:  coördinaten/map  postcode  
 gemeente/straat  atlasblok  
 Postcode:  (4 cijfers)  
Alleen voor waarnemingen in bebouwde kom  
 Plaats:

Datum: 7 - 1 - 2010

Opmerking:



### ★ Google Maps JavaScript API V3 (Labs)

#### V3: The Solution for Maps Applications for both the Desktop and Mobile Devices

The Google Maps Javascript API lets you embed Google Maps in your own web pages. Version 3 of this API is especially designed to be faster and more applicable to mobile devices, as well as traditional desktop browser applications.

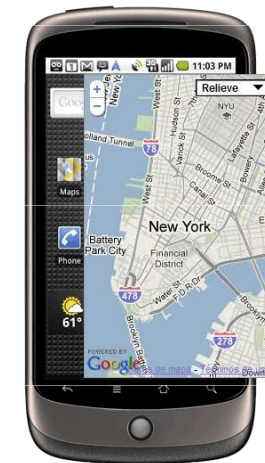
The API provides a number of utilities for manipulating maps (just like on the <http://maps.google.com> web page) and adding content to the map through a variety of services, allowing you to create robust maps applications on your website.

The JavaScript Maps API V3 is a free service, available for any web site that is free to consumers. Please see the [terms of use](#) for more information.

[Google Maps API Premier](#) customers can use the [JavaScript Maps API V2](#) on an intranet or in a non-publicly accessible application.

New! [Elevation](#) data in the V3 Maps API!

New! [Bicycling Directions](#) in the V3 Maps API!





# Volunteered Geographic Information

## Web 2.0 developments



La crisis de la moneda única

### Los mercados prefieren mirar al BCE, que tras la prórroga a las medidas de liquidez

Trichet mantiene la rebaja en los requisitos para acceder a la financiación.- Merkel se e no es necesario pese a los llamamientos de la UE

EL PAÍS - Madrid - 25/03/2010

Vota ★★★★★ | Resultado ★★★★★ 29 votos | Comentarios - 95

Frente a la <sup>De interés</sup> presión en los contactos políticos, el Banco Central Europeo ha decidido hoy rebajar algo la presión sobre Grecia al prorrogar las medidas excepcionales para acceder a la financiación. Una medida que ha sido bien recibida por los mercados que, tras el

<http://www.elpais.com>



**Verdeling van de 26 meningen**

Uitstekend	81%	<div style="width: 81%;"></div>
Goed	19%	<div style="width: 19%;"></div>
Redelijk	0%	
Matig	0%	
Slecht	0%	

**Wat wil je doen?**

- Geef je Mening in een kort commentaar - (uitleg)
- Vul een proefformulier (met cijfers) in - (uitleg)
- Tip een vriend(in) met een miltje
- Voeg toe aan je Favorieten

**Tip op:**

**Uitstekend** 18-03-2010  
*barbara cracau* - Wauw, wat een culinair feest ! Zeer verrassende keuken waar tot in de kleinste details is nagedacht over ieder ingrediënt. Zichtbaar en proefbaar dat er met liefde voor het vak gekookt wordt. Bediening professioneel en zeer vriendelijk. Aanrader voor

Vind je deze recensie nuttig ? [Niet OK?](#)

**Goed** 09-03-2010  
*bijvoorbeeldank* - Is iets zakelijker geworden. Goede kwaliteit. Mooie producten. Zeer interessante en brede wijnkaart. Maar inmiddels ook aan de prijs. Minder bijzonder dan het was

Vind je deze recensie nuttig ? [Niet OK?](#)

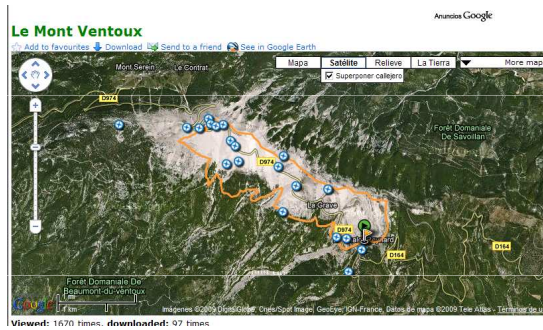
**Goed** 25-02-2010  
*Proever15213* - omdat we iets te vieren hadden reserveerden we -aan de late kant- bij C.P. De dame aan de telefoon vroe ons of er dinen waren die we niet

<http://www.iens.nl/>

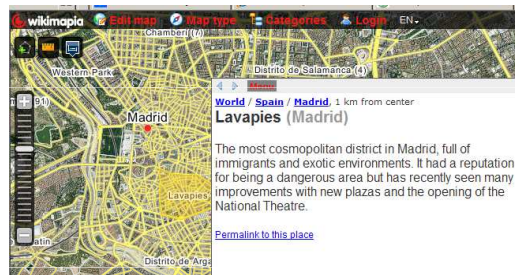


# Volunteered Geographic Information

## VGI initiatives



<http://www.wikiloc.com>



<http://www.wikimapia.org>

The most cosmopolitan district in Madrid, full of immigrants and exotic environments. It had a reputation for being a dangerous area but has recently seen many improvements with new plazas and the opening of the National Theatre.

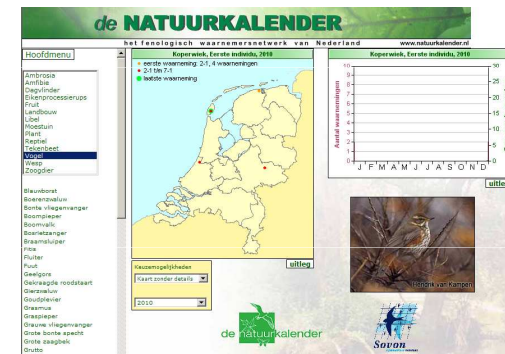
[Permalink to this place](#)



<http://www.openstreetmap.org/>



<http://www.globoamazonia.com/>



<http://www.natuurkalender.nl/>





# Volunteered Geographic Information

VGI combines elements from: 1) Web 2.0; 2) collective intelligence and 3) neogeography. (Goodchild, 2007)

Five characteristics can be identified;

1. Geographic data
2. Web platform
3. Voluntary participants
4. Community based
5. Bi-directional collaboration





Some issues:

Similarities:

- Both facilitating exchange of geographic information
- Metadata, standards, interoperability, policy, and organization?

Differences and challenges:

- Users are allowed to produce and share GI
- Broader audience, more real time data need to be included
- Validation and quality assurance different

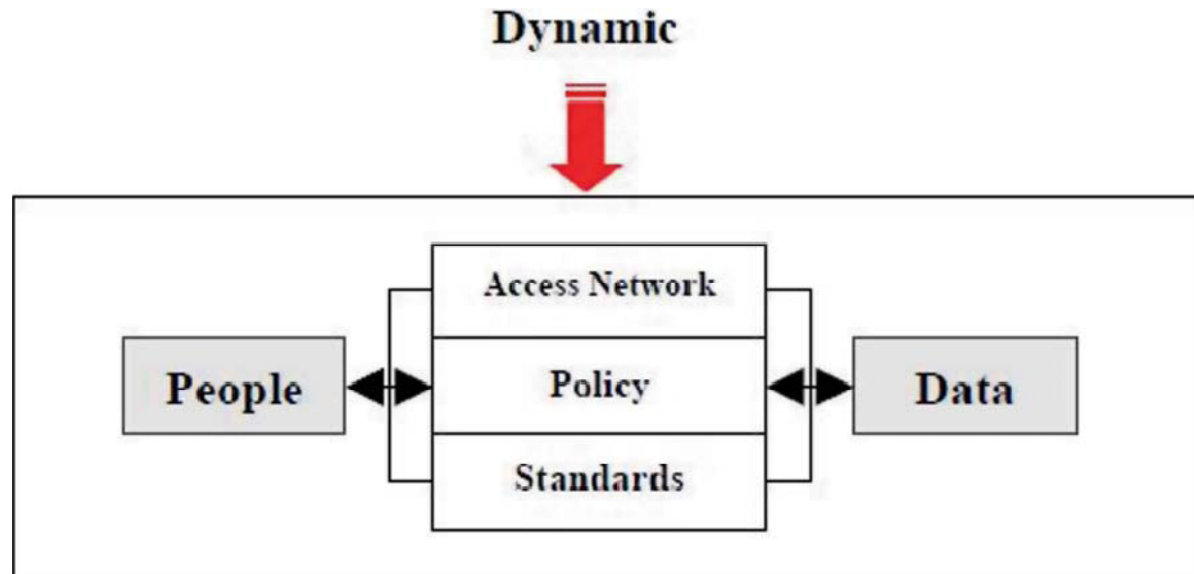
VGI utility and synergy for SDIs?







## Common framework of comparison



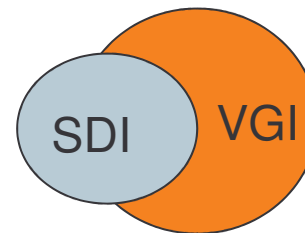
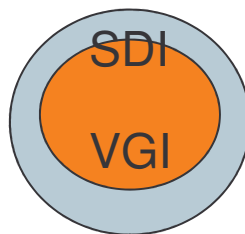
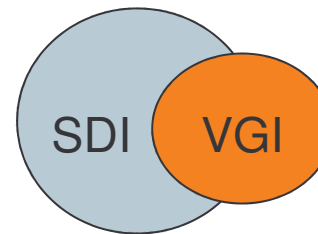
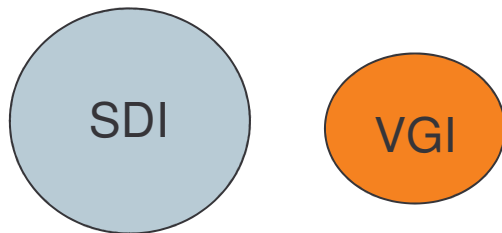


## 13 indicators defined

Nr.	Name	Description	SDI component
1	User registration	Registration to contribute required	Policy
2	Application Programming Interface	E.g. Google Maps, Bing Maps or others	Access Network
3	Available services	Availability of download and upload service	Access Network
4	Standard described	Data standards described	Standards
5	Number of user uploads	Total number of contributions uploaded	Data
6	Data types	Point, Line, Polygon	Data
7	Most recently produced dataset	Last update/contribution to the website	Data
8	Thematic focus	Focus or specific theme user community	Data
9	Geographic extent	e.g. Worldwide, Europe, national, local	Data
10	VGI and official data combined	Website offers as well VGI as official data	Data
11	Registered users	Number of users registered on the website	People
12	Website visitors per day	Number of unique visitors per day	People
13	Web references	Number of unique sites linking to the site	People



Question?





[www.openstreetmap.org](http://www.openstreetmap.org)

The screenshot shows the OpenStreetMap website interface in a browser window. The address bar displays <http://www.openstreetmap.org/>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The OpenStreetMap logo is visible in the top left corner of the page. The main content area features a map of Madrid, Spain, with various streets and landmarks labeled. The map is overlaid with a yellow grid. On the left side, there is a sidebar with the following sections:

- OpenStreetMap**: A magnifying glass icon and the text "El WikiMapaMundi libre".
- OpenStreetMap es un mapa libremente editable de todo el mundo. Está hecho por personas como usted.**
- OpenStreetMap te permite ver, editar y usar información geográfica de manera colaborativa desde cualquier lugar del mundo.**
- El alojamiento de OpenStreetMap es proporcionado amablemente por UCL VR Centre y bytemark. Otros patrocinadores del proyecto se encuentran listados en el wiki.**
- Ayuda y Wiki**
- Blog y noticias**
- Tienda**
- Legenda del mapa**
- Buscar ¿Dónde estoy?**

The bottom of the browser window shows the status bar with "Done" and "Internet" icons, and a zoom level of 100%.



[www.wikiloc.com](http://www.wikiloc.com)

http://www.wikiloc.com/wikiloc/view.do?id=151472

File Edit View Favorites Tools Help

Wikiloc - Posbank (Veluwe, The Netherlands) trail - Ro...

Mapas y planos urbanos de tu ciudad en Páginas Amarillas

Anuncios Google

### Posbank (Veluwe, The Netherlands)

Add to favourites Download Send to a friend See in Google Earth

Mapa Satélite Relieve La Tierra More maps

Superponer callejero

Viewed: 2977 times, downloaded: 136 times

#### Comments

**TheOmen** says:  
Mooie route, maar één kleine opmerking:

**Nearby trails »**

- Posbank Veluwezoom route 50 km (mountain bike)
- Milligen - 's-Heerenberg (cycling)
- Hoenderloo 19-APR-08 (hiking)

**Author: leondolman**  
(39 shared tracks , 47 shared waypoints)

**Activity: hiking**  
**near Rozendaal, Gelderland (Nederland)**

**Trail distance:** 10,04 miles  
**Elevation min:** 111 feet, **max:** 316 feet  
**Accum. height uphill:** 1.070 feet, **downhill:** 1.063 feet  
**Difficulty level:** Easy  
**Time:** 5 hours 29 minutes  
**Ends at start point (loop):** Yes  
**Coordinates:** 1995  
© leondolman All rights reserved



<http://360.org>

360.org - Windows Internet Explorer  
http://360.org/  
File Edit View Favorites Tools Help  
360.org  
niet aangemeld | aanmelden / registreren

360.org Doe mee! Kijk om hoog, en vertel ons het weerbericht

360 weerdata sturen weerdata ophalen over 360.org

Mijn favorieten  
Geen locaties

zoeken  
go  
(of klik op de kaart)

**Purmerend**  
16:59 21,7° C

**Bornem**  
16:53 17° C

**Zaanstad**  
16:49 19,3° C

**Velsen**  
16:43 20,1° C

**Slochteren**  
16:42 17,6° C

Bewaar Mapa Satélite Híbrido Relieve

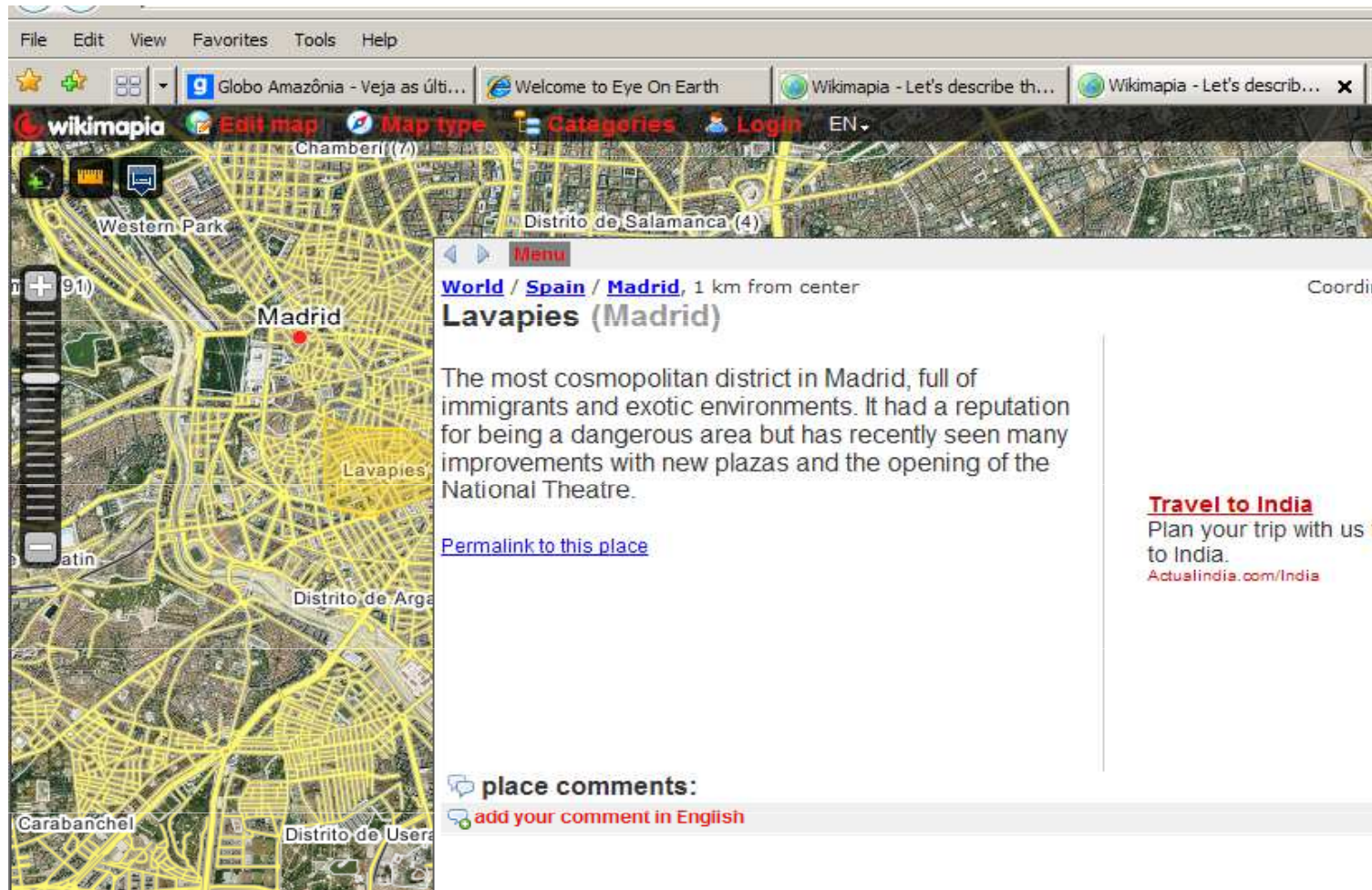
Rheden  
Tijd: 13:42  
Temperatuur: 21.6  
Weer:

19.5 14.6 18.5 19.7 21.2 20.8 21.4 17.4 18.4 16.0 18.0 18.7

Imágenes ©2010 TerraMetrics, Datos de mapa ©2010 Tele Atlas - Términos de uso



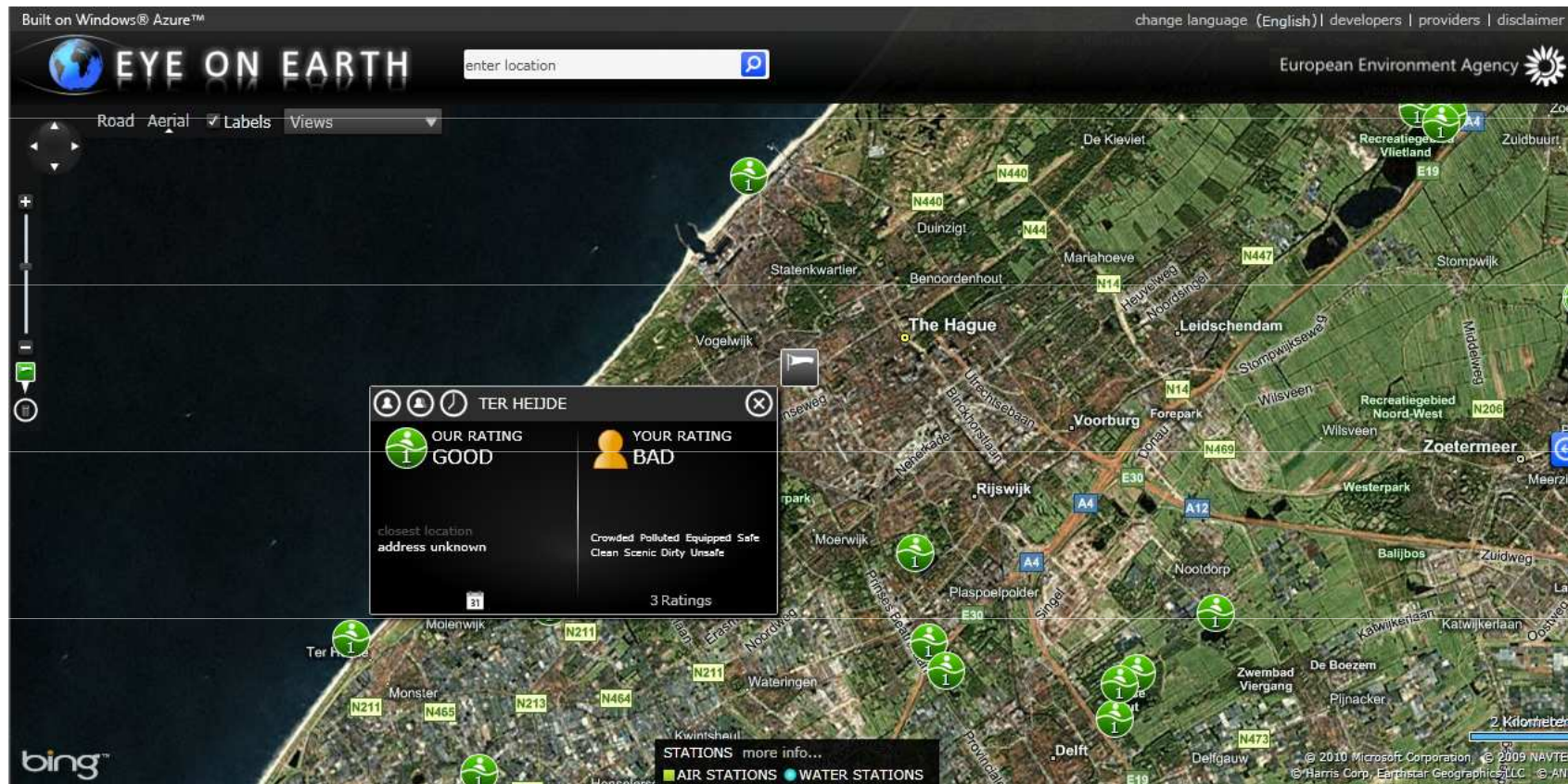
www.wikimapia.org





# Case studies

[www.eyearth.eu](http://www.eyearth.eu)







## Comparison of case studies

	Openstreet-map	Wikiloc	360.org	Wikimapia	Eye on earth
<b>Policy</b>					
<b>User registration (1)</b>	Yes	Yes	Partly	Partly	No
<b>Access network</b>					
<b>Application Programming Interface (2)</b>	Own OSM API	Google Maps	Google Maps	Google Maps	Bing maps
<b>Available services (3)</b>	Download and Upload	Download and Upload	Download and Upload	Upload	Upload
<b>Standards</b>					
<b>Standards described (4)</b>	Map features and values	Standard format	Standard data form	Map features	Standard data form



# Case studies

	Openstreet-map	Wikiloc	360.org	Wikimapia	Eye on earth
<b>Data</b>					
<b>Number of user uploads (5)</b>	1.949.859.482	136.635	300-500 per day	11.748.660	64.000 (estimated)
<b>Data types (6)</b>	Points, lines, polygons	Points and lines	Points	Points, lines, polygons	Points
<b>Most recently produced data set (7)</b>	Less than one hour	Less than one hour	Less than one hour	Less than one hour	Not available
<b>Thematic focus (8)</b>	General	Outdoor activities	Weather	General	Environment
<b>Geographic extent (9)</b>	Worldwide	Worldwide	Worldwide	Worldwide	Europe
<b>VGI and official data combined (10)</b>	Yes	No	Yes	No	Yes
<b>People</b>					
<b>Registered users (11)</b>	208.553	108607	7500 (estimated)	650.000	Not available
<b>Website visitors per day (12)</b>	39.495	7.954	1.449	1.068.210	101
<b>Web references (13)</b>	4118	345	39	6961	64



## Characteristics of VGI

1. Policies and guidelines are defined by communities of registered users.
2. Access networks in the case studies are bidirectional
3. Standards are described for the data content and are case study specific
4. Data content is limited to a specific focus or theme and focus on own user community
5. People: VGI has a broad user base with many users involved.





# General characteristics

## VGI and SDI compared

SDI component	Differences	
	VGI	SDI
<b>Policy</b>	Community of registered users	Formal organizations
<b>Access Network</b>	Bidirectional	One directional focus
<b>Standards</b>	Data standards	Metadata, data and service standards
<b>Data</b>	Specific focus or theme	Broad data scope
<b>People</b>	Broad user base of non-professionals	Limited user base of professionals





# General characteristics

## Similarities

1. Organize and make geographic information available and accessible.
2. Policies, access networks, standards, people are apparent in both.
3. Activities necessary to acquire, process, distribute, use, maintain, and preserve spatial data.





## Challenges for VGI and SDI development

### VGI

1. From identifying and describing to understanding.
2. Empirical analysis and development over time.

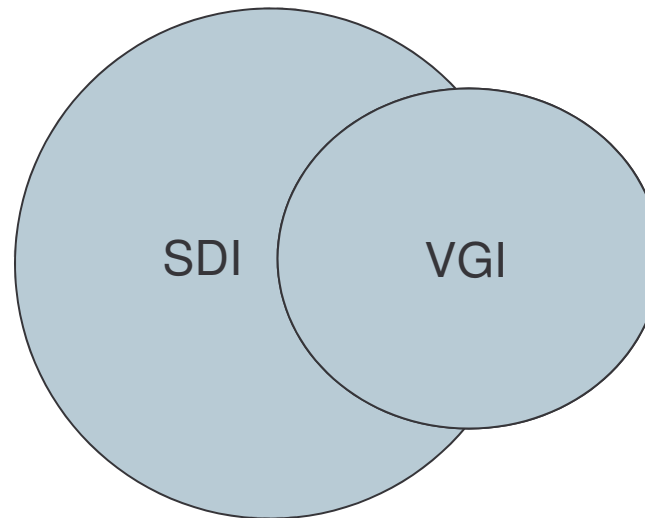
### SDI

1. Can SDIs accommodate VGI?
2. How can utility and synergies be reached?





Common base?





Questions?

