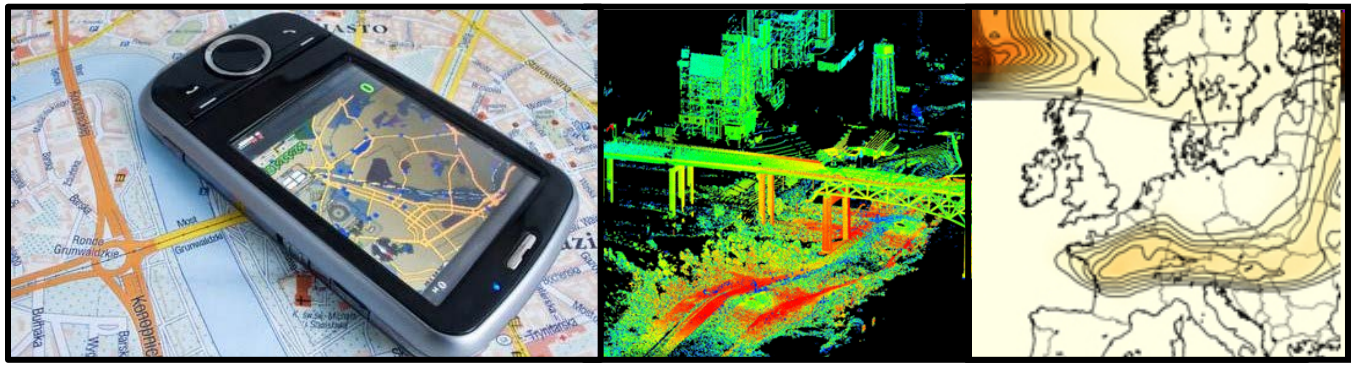
EUROGEO



Digital Earth needs Spatial Citizenship

SPACIT
education for spatial citizenship

Karl Donert, President EUROGEO,

Director: European Centre of Excellence: digital-earth.eu

eurogeomail@yahoo.co.uk

Olomouc University, Czech Republic, November 10-12 2014

esf european social fund in the czech republic

EUROPEAN UNION

MINISTRY OF EDUCATION, YOUTH AND SPORTS

OP Education for Competitiveness

INVESTMENTS IN EDUCATION DEVELOPMENT

digital-earth.eu centre of excellence

School on the Cloud

I-Use statistics in education

GEO Skills+

GEO CAPABILITIES

SPACIT education for spatial citizenship

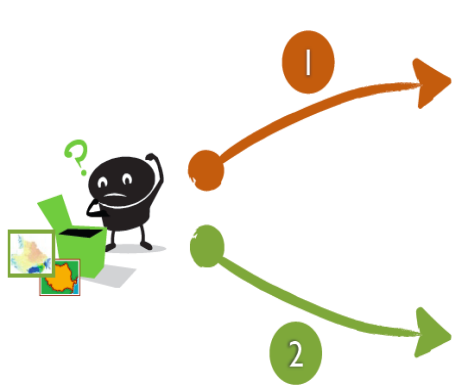
Digital Agenda for Europe

(https://ec.europa.eu/digital-agenda/)

European open data portal

http://open-data.europa.eu/open-data/

- a web site dedicated to the geodata access
- Functionalities to navigate within my data



digital-earth.eu centre of excellence

School on the Cloud

I-Use statistics in education

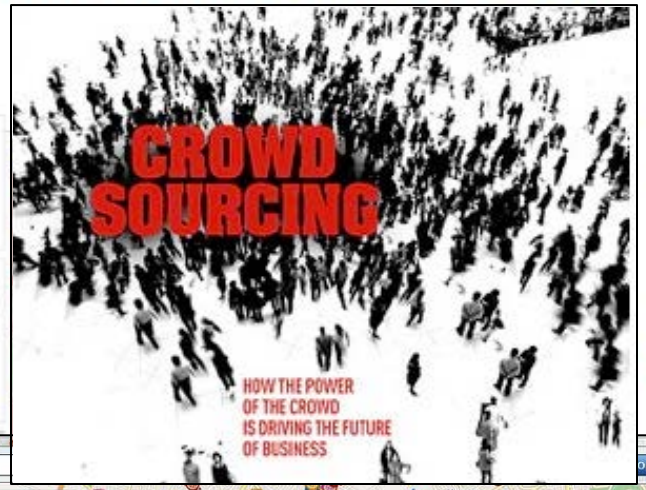
GEO Skills+

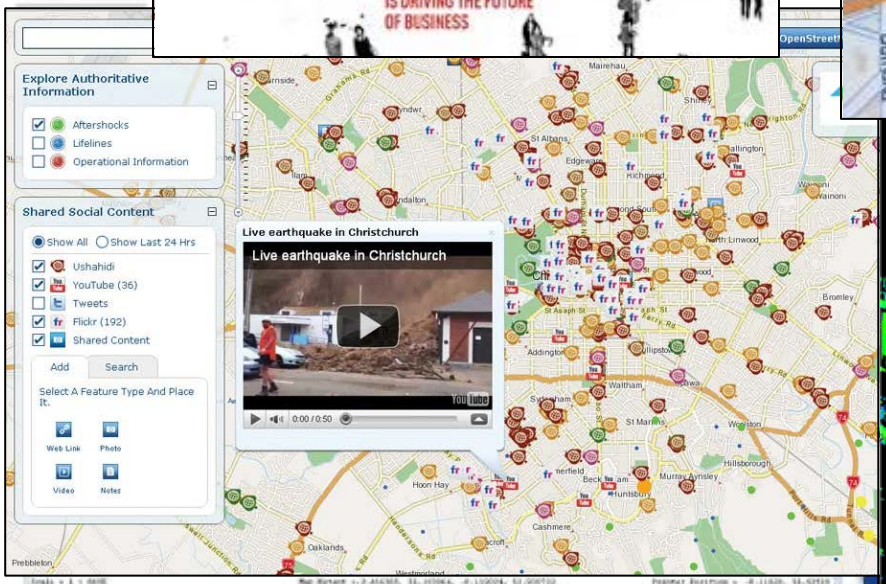
GEO CAPABILITIES

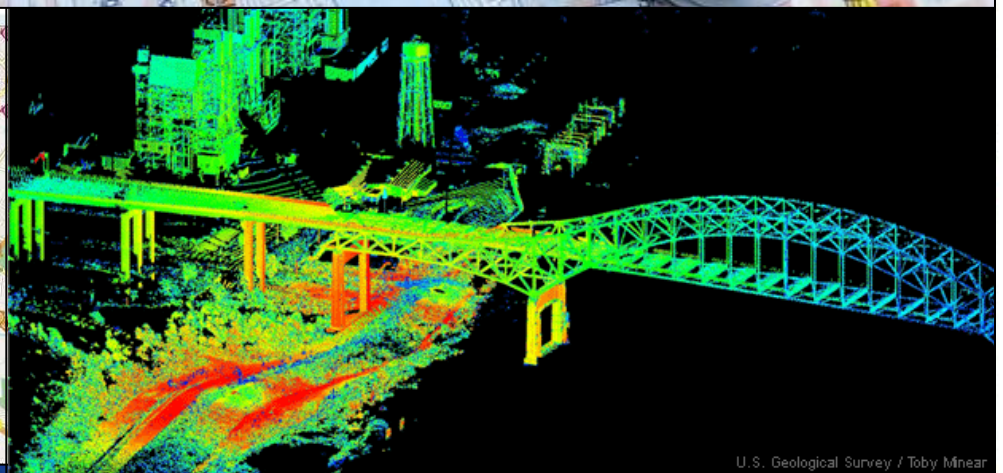
SPACT education for spatial citizenship

Citizens as prosumers

producers + consumers of data







Big Data can provide new insights…

Customer behaviour, calling/browsing habits, their social network…

…keyword use…

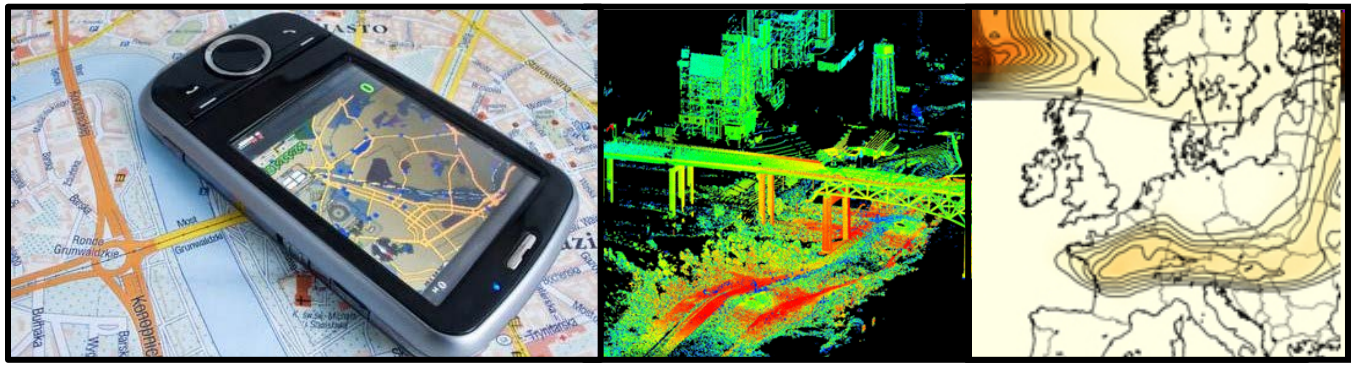
…personal profiles…

…sensor data and metrics…

… location, travel destinations…

…opportunities to move beyond traditional visualisation and analytics !

EUROGEO



Digital Earth

digital-earth.eu

Karl Donert, President EUROGEO,

Director: European Centre of Excellence: digital-earth.eu

eurogeomail@yahoo.co.uk

Olomouc University, Czech Republic, November 10-12 2014

digital-earth.eu centre of excellence

School on the Cloud

I-Use statistics in education

GEO Skills+

GEO CAPABILITIES

SPACT education for spatial citizenship

Digital Earth

EUROGEO

IMAGINE .....

… that any citizen of the planet, linked through the Internet, could freely access a virtual world of information and knowledge resources...

… it could allow us to model the world, respond to manmade or natural disasters or collaborate to address long term environmental challenges …

Concept of Digital Earth …

Gore A (1992; 1998), The Digital Earth: Understanding Our Planet

digital-earth.eu centre of excellence

School on the Cloud

I-Use statistics in education

GEO Skills+

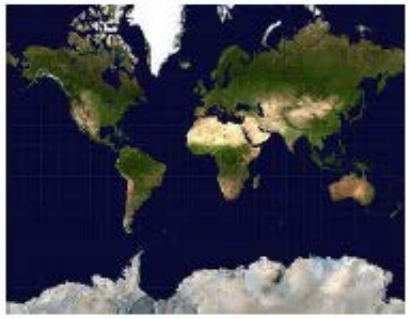
GEO CAPABILITIES

SPACT education for spatial citizenship

Digital Earth

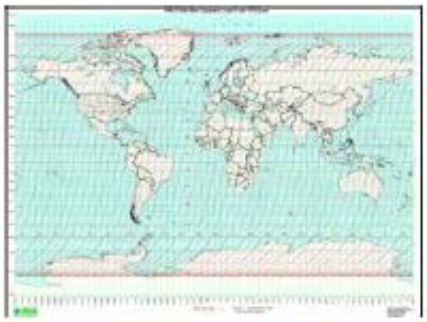
International Society for Digital Earth

The concept is now well established



Mercator

globe from space



Landsat WRS

Google Earth like

Developing rapidly and pervasively

digital-earth.eu
centre of excellence

School on the Cloud

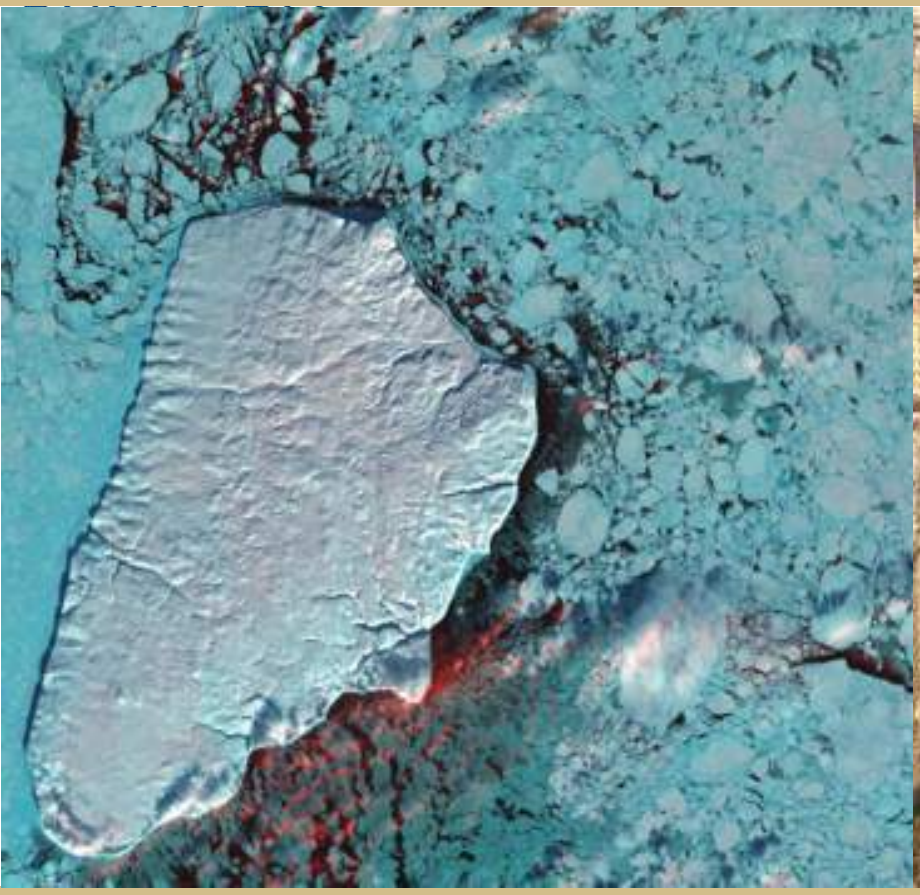
I-Use statistics in education

GEO Skills+

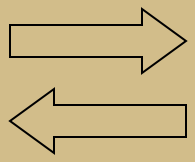
GEO CAPABILITIES

SPACIT
education for spatial citizenship

Digital Earth provides crucial links between nature and society

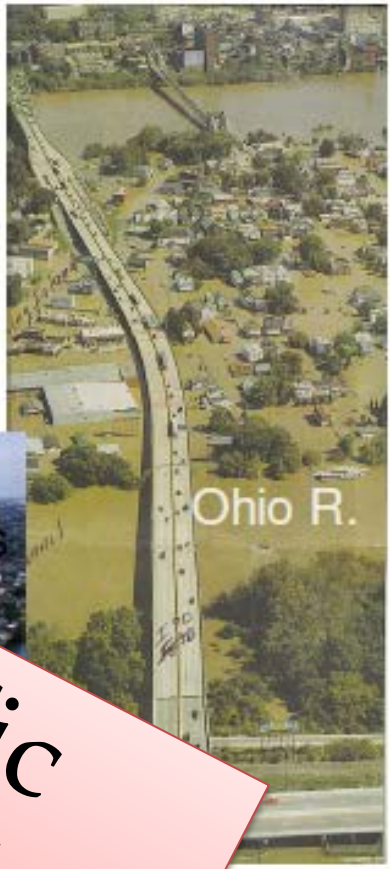


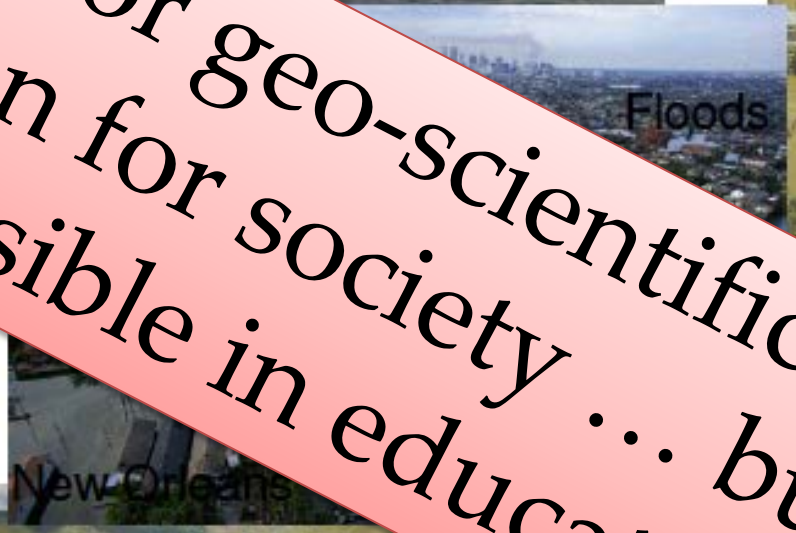
Nature: Physical equations
Describe processes

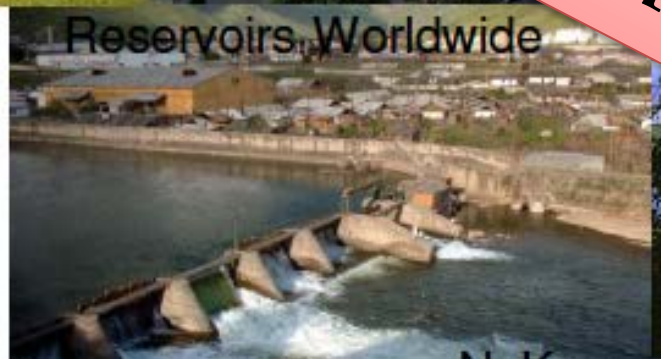


Society: Decisions on how to
Use the Earth´s resources

Managing our planet

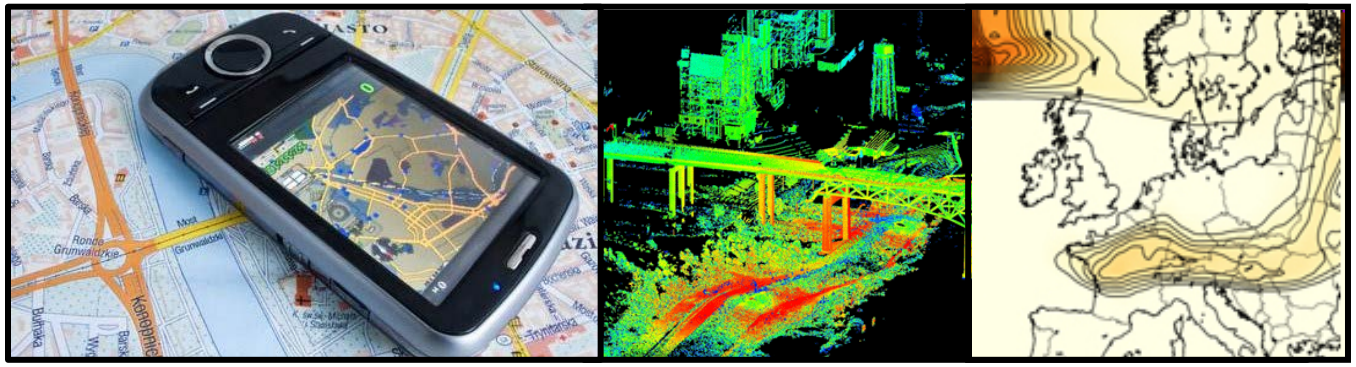






A need for geo-scientific information for society … but almost invisible in education

EUROGEO



Connecting geo-media to the education needs of Europe

Olomouc University, Czech Republic, November 10-12 2014

digital-earth.eu centre of excellence

School on the Cloud

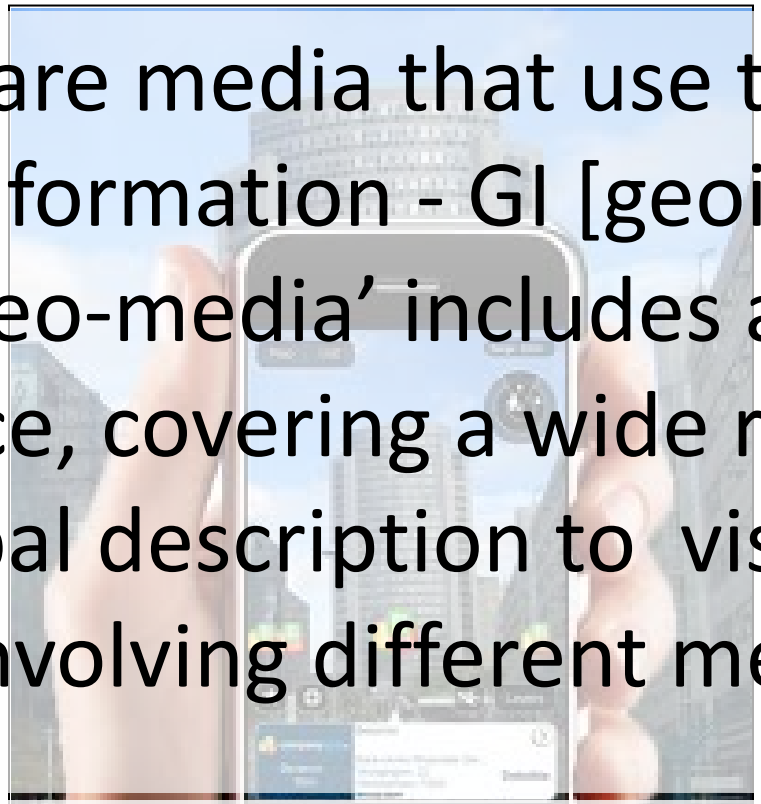
I-Use statistics in education

GEO Skills+

GEO CAPABILITIES

SPACIT education for spatial citizenship

Geo-media



"…. are media that use the spatial localisation of information - GI [geoinformation].

… 'geo-media' includes all representations of space, covering a wide range of outputs from verbal description to visualisation

… involving different media (Source: Gryl, Jekel & Donert 2010)

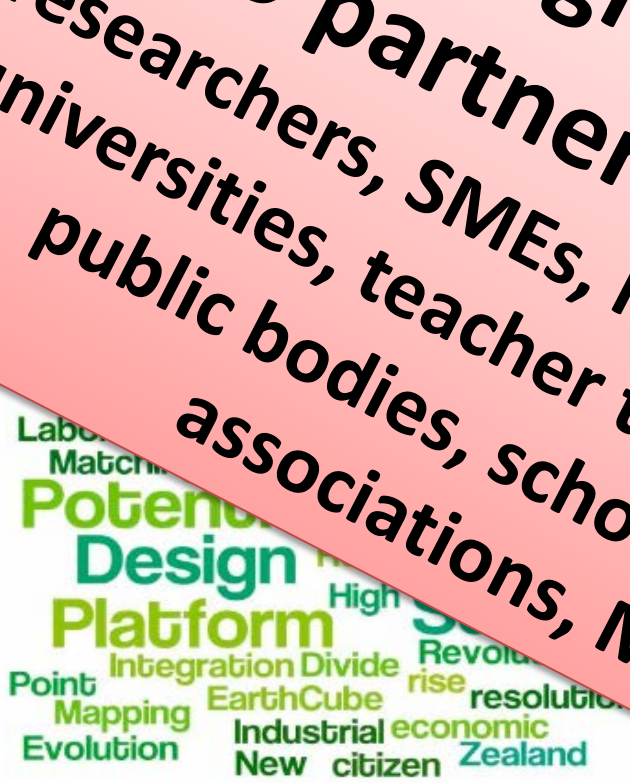
Gryl I, Jekel T and Donert K (2010), Spatial Citizenship, p 2-12, In Jekel T, Donert K and Koller A (eds.) Learning with GeoInformation V, Berlin, Wichman Verlag

orking Digital Earth

Digital-earth.eu

89 partners - 23 countries

researchers, SMEs, large companies, NGOs,
universities, teacher training organisations,
public bodies, schools, professional
associations, Ministries



digital-earth.eu

digital-earth.eu
centre of excellence

School on the Cloud

I-Use statistics in education

GEO Skills

SPACE

education for spatial citizenship

Needs Analysis: Main issues

- **Infrastructure** issues: soft- hard-ware,
- **Low knowledge** of teachers, low confidence
- **No time** in the curriculum, curriculum too full
- **Not in teacher training** curriculum
- **Decision makers unaware** of importance
- **No guidelines** what students should be able to do

(Needs Analysis, digital-earth.eu Project, 2011)

Need 1: support for grassroots actors – teachers and educators

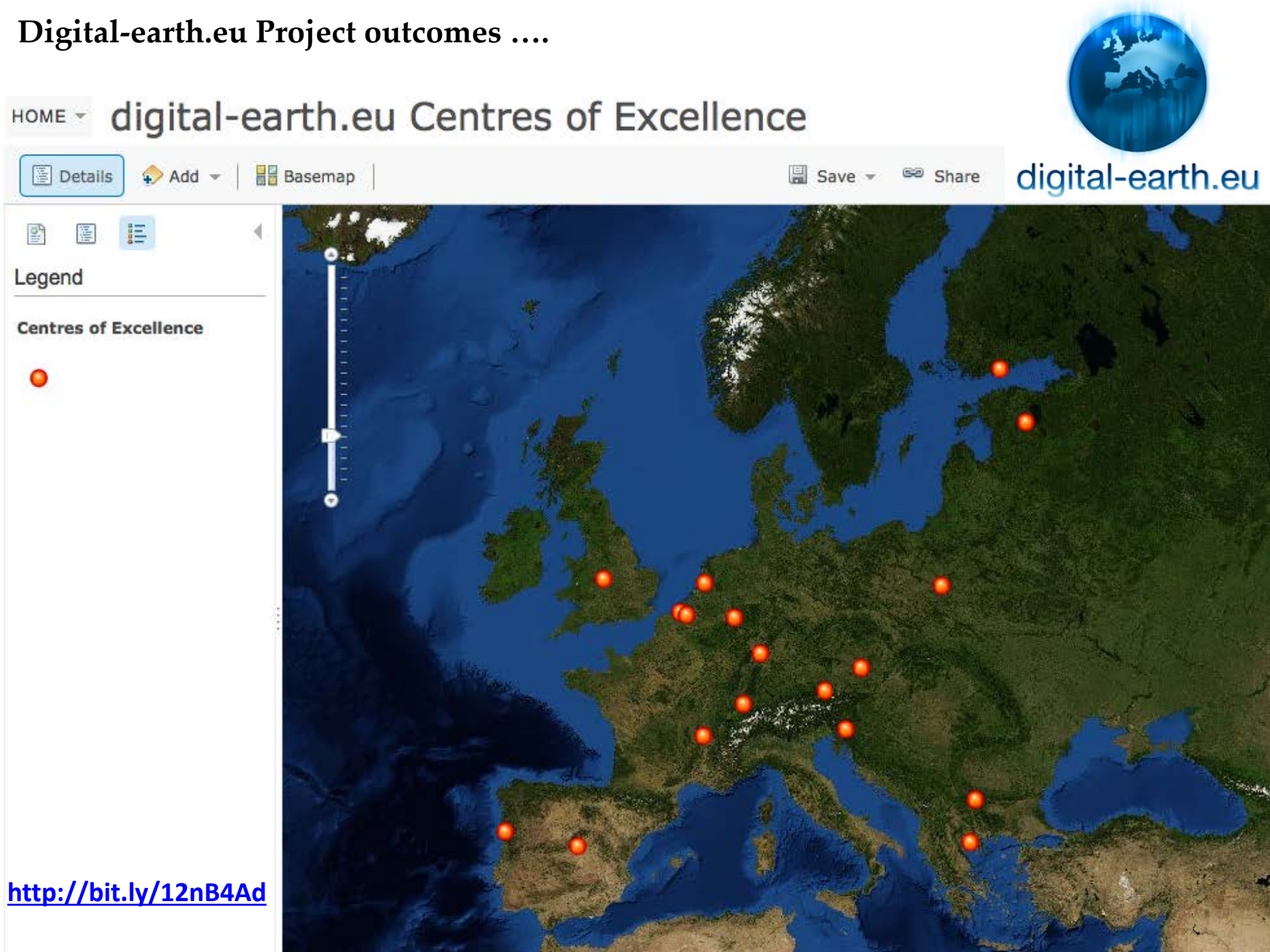
Need 2: target key decision makers – politicians (EU /national), Ministries, ICT coordinators, curriculum developers, geospatial industry etc.

EUROGEO

Project outcomes

- **Shared** resources, ideas and activities
- Introduced **new concepts** - geographic (geo-)media – spatial citizenship
- Created a cross-border **infrastructure** (Centres of Excellence)
- Raised **awareness** – politicians, industry, decision makers, education
- Connected with major **European initiatives** – Digital Agenda - Open Data – Europe 2020 – New skills, new jobs

Digital-earth.eu Project outcomes ….



http://bit.ly/12nB4Ad

ZGIS
DEPARTMENT OF GEOINFORMATICS

DIGITAL:EARTH:AT
Fachdidaktikzentrum für Geographie und Geoinformatik Salzburg

.....EDU Project

01.05.2013 – 31.10.2014

YouthMap 5020: „Entwicklung einer Kartenapplikation für Salzburg für und durch Kinder & Jugendliche“

This project develops a youth-specific web-based map for Salzburg based on ArcGIS online. Pupils from 6 partner schools participate the entire application development process and bring in their specific requirements.

FFG

FFG “Talente Regional”
Project-Nr.: 839717
http://www.ffg.at/2-ausschreibung-talente-regional-gefoerderte-projekte

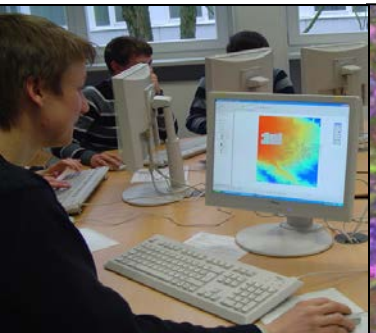
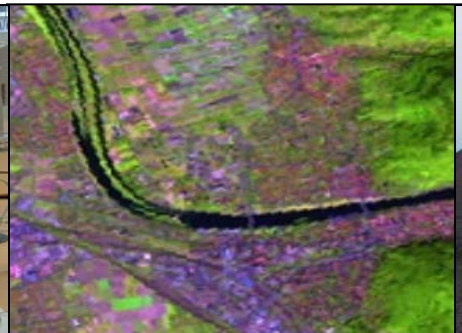
ZGIS UNIVERSITÄT SALZBURG with support from SYNERGIS & STADT : SALZBURG

GIS-Station, Heidelberg, Pedagogical University

Attendance: **over 4.800 participants** in 220 events, …
360 teachers / trainee teachers
110 student teachers
3700 students with 241 accompanying teachers

Coverage: Participants from **241 educational institutions**
Spread in further schools through participating trainee teachers

Course offering: For **all types of school and teacher training**

Bulgarian Centre
GI Analytics, SME

GRID Warszawa

UNEP

digital-earth.eu
centre of excellence

EDUINKUBATOR 2013

Twoje źródło edukacyjnych inspiracji

18 października 2013 r., Warszawa

EUROGEO

Rejestracja trwa do 16 października (środa).

> Zapisz się na konferencję i warsztaty już teraz <

digital-earth.eu
centre of excellence

School on the Cloud

I-Use statistics in education

GEO Skills+

GEO CAPABILITIES

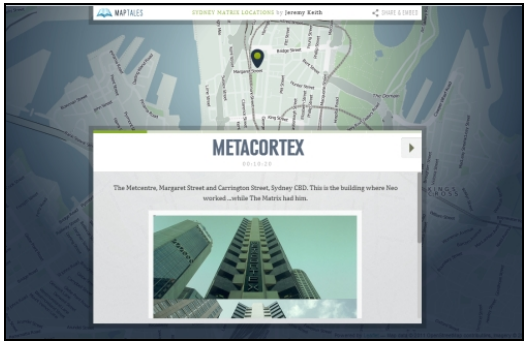
SPACT
education for spatial citizenship

IFE-ENS Lyon French Digital Earth Centre of Excellence

EUROGEO

digital-earth.eu
centre of excellence

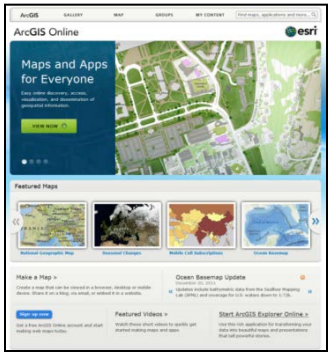
Geoliteracy
Using geolocalization for creating tales



Tactileo
Using mobile devices to learn

Sonic mapping:
Using audio data for creating maps

Collaborative mapping:
Using AGOL for creating collaborative maps



Learning with Games: Introduce serious gaming into the learning process

centre of excellence

I-Use statistics in education

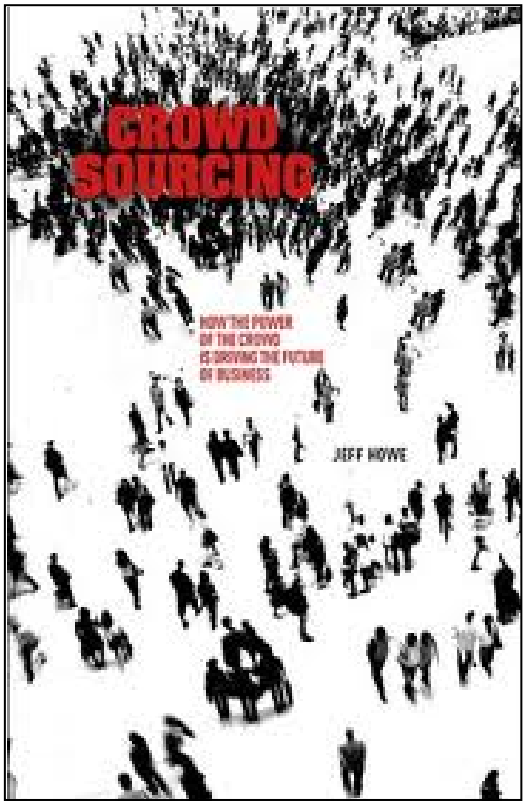
education for spatial citizenship

Digital Earth: the future

- **Research with Centres of Excellence**
  - *H2020 proposals*
- **Further networking**
  - *School on the Cloud*
- **Industry / Policy Partnerships**
  - *Founder members of European Citizen Science Association*
  - *UNEP 'Eye on Earth' stakeholder group*
  - *ESRI - ArcGIS Online for organisations*

Digital Earth: the future in education

- **New projects / initiatives**
  - *Spatial Citizenship*
  - *Crowdsourcing*
  - *Citizen Science*
  - *Hazards Education*
  - *Spatial Planning*
  - *Teachers as leaders*
  - *Geo-VET*



EUROGEO

SPACIT

education for spatial citizenship

Spatial Citizenship – Connecting Society with Geo-Media

Lifelong Learning Programme

"This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein."

Ref. n. 517908-LLP-I-2011-1-AT-COMENIUS-CMP

Copyright © 2012 Spatial Citizenship

digital earth.eu centre of excellence

School on the Cloud

I-Use statistics in education

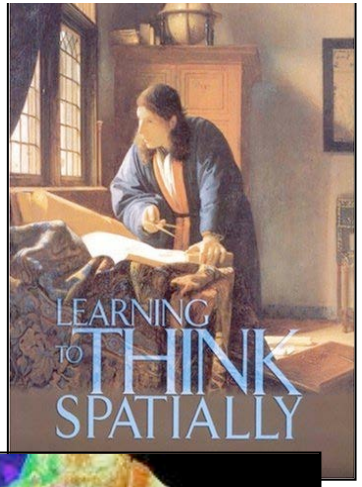
GEO Skills+

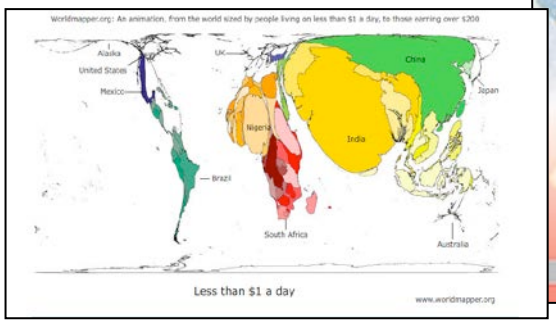
GEO CAPABILITIES

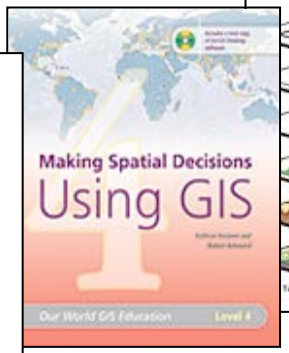
SPACIT education for spatial citizenship

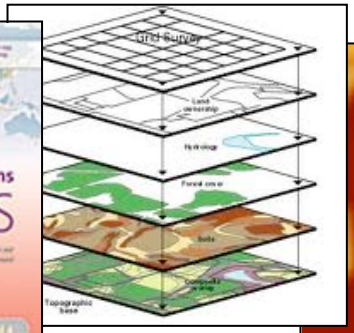
Spatial thinking

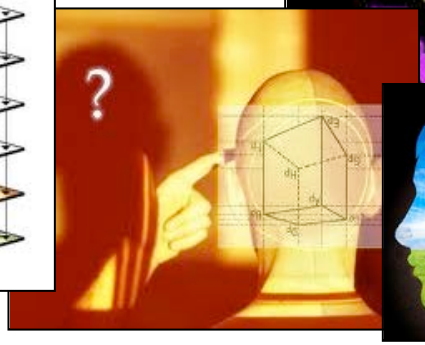
- way of mind, to help **navigate the world** - visualisations
- how we **use/organise space** around us
- crucial to **solving problems,** big & small





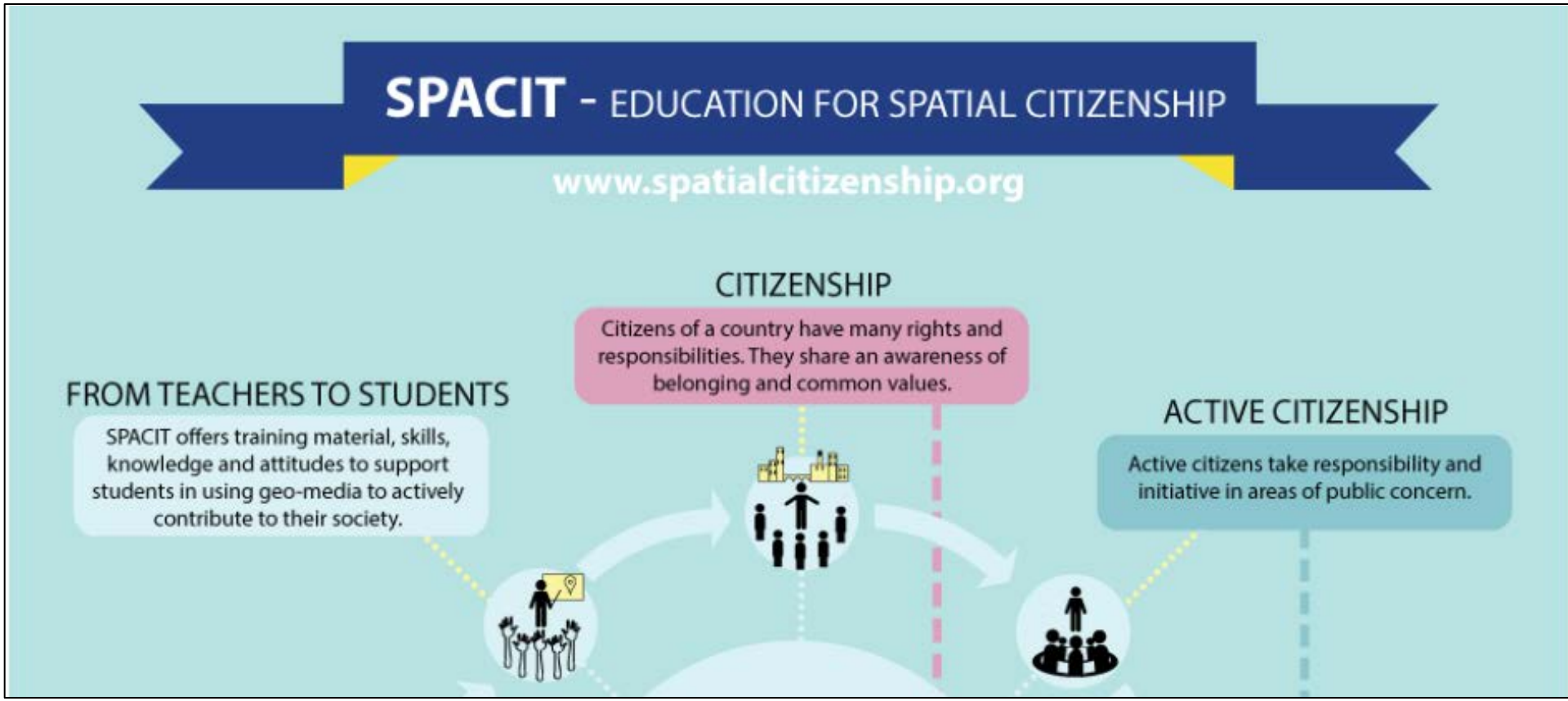




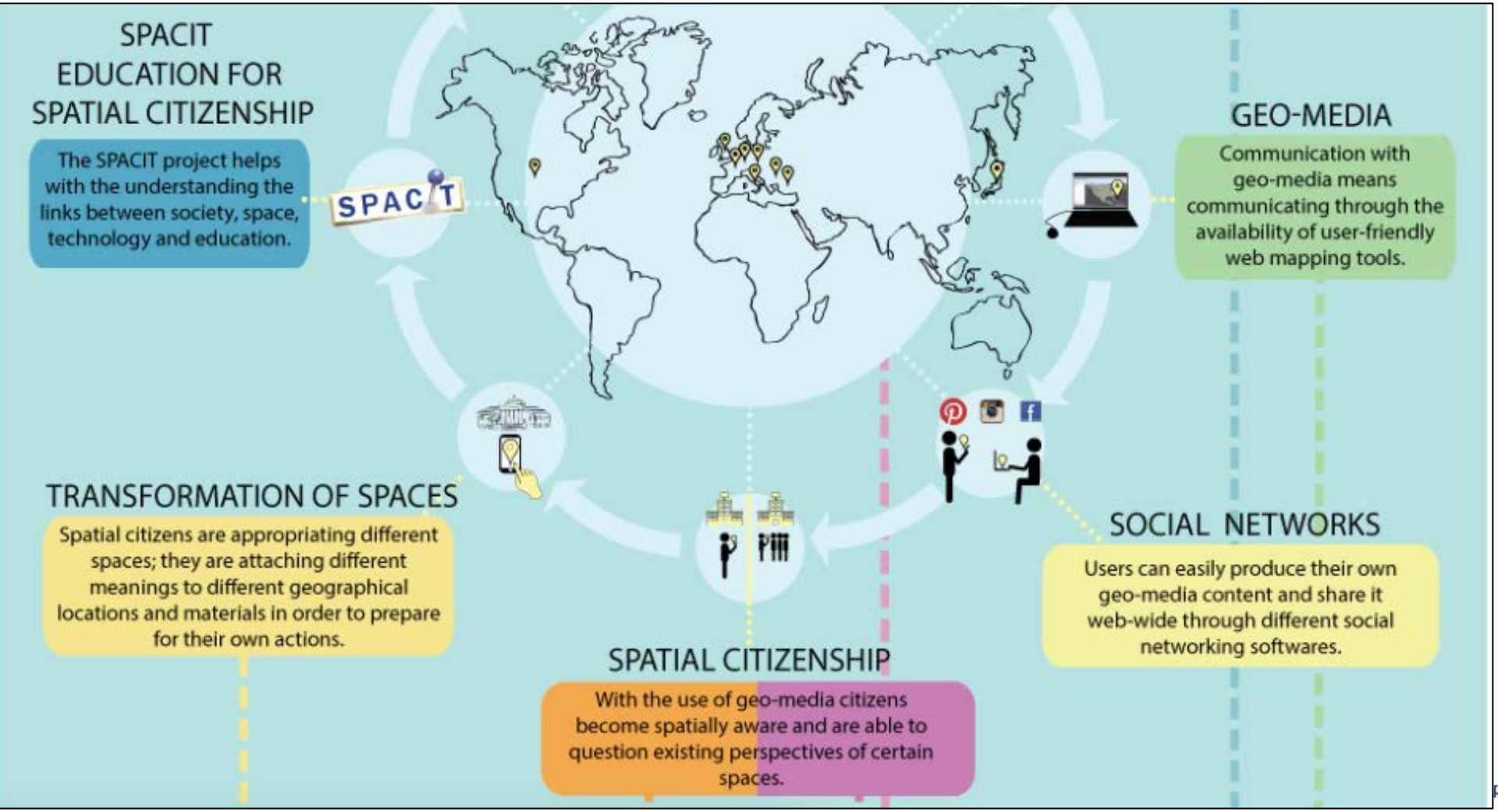


EUROGEO
SPACIT education for spatial citizenship
digital-earth.eu centre of excellence
School on the Cloud
I-Use statistics in education
GEO Skills+
GEO CAPABILITIES
SPACIT education for spatial citizenship

Spatial Citizenship



Spatial Citizenship



SPACIT – the project (2010-2014)

- **Objectives**: SPACIT aims at providing **teachers** with the relevant education to **support** active **Spatial Citizenship in the classroom**.
- **Main Target Groups**: in-service and pre-service **teachers** and **teacher trainers, leaders and decision makers**

SPACIT – the project (2010-2014)

Main Outputs:

online **reader** on the geoinformation society, technological basics, its social implications and economic effects for individuals;

a **competence model** and **curriculum** for an increased participation in the geoinformation society through Spatial Citizenship;

materials for teachers to actively learn / teach Spatial Citizenship skills and competences to pupils.

Spatial Citizenship Education

- **connect citizenship to relevant technologies** and the increasing availability of open geo-media
- increase **participation through new geo-media channels**
- introduce the **spatial perspective** and the **positive uses of geo-media**

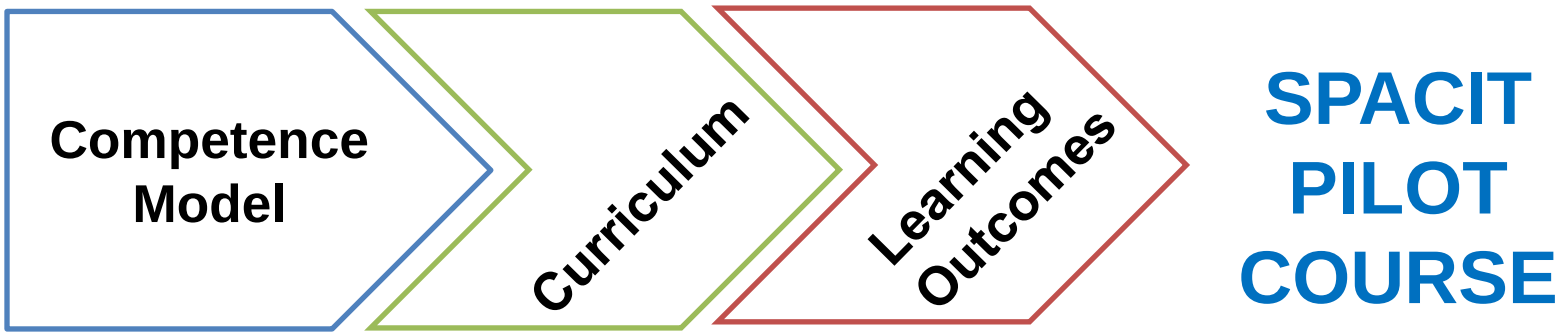
COURSE DEVELOPMENT
Competence Model

- Definition of the **competences** – i.e. Knowledge, Skills Attitudes of a '**spatial citizen**'
- Used a **3-step process**:
  (i) existing **literature analysis**;
  (ii) filling the **matrix** of competence dimensions with **KSA**;
  (iii) extending the analysis to **known competence models** (e.g. European Qualifications Framework for Lifelong Learning) and neighbouring domains.
- **Interdisciplinary approach** : subject-specific + more general skills from other disciplines
- **Competence fields**: Technology to handle spatial information; Reflection/Reflexivity on geo-media; Communication, participation and negotiation through spatial representations.

Gryl, I., Schulze, U. & Kanwischer D. (2013) . Spatial Citizenship: the Concept of Competence. In: Jekel, T., Car, A., Strobl, J. & Griesebner, G. (eds.): GI_Forum 2013. Berlin: Wichmann.

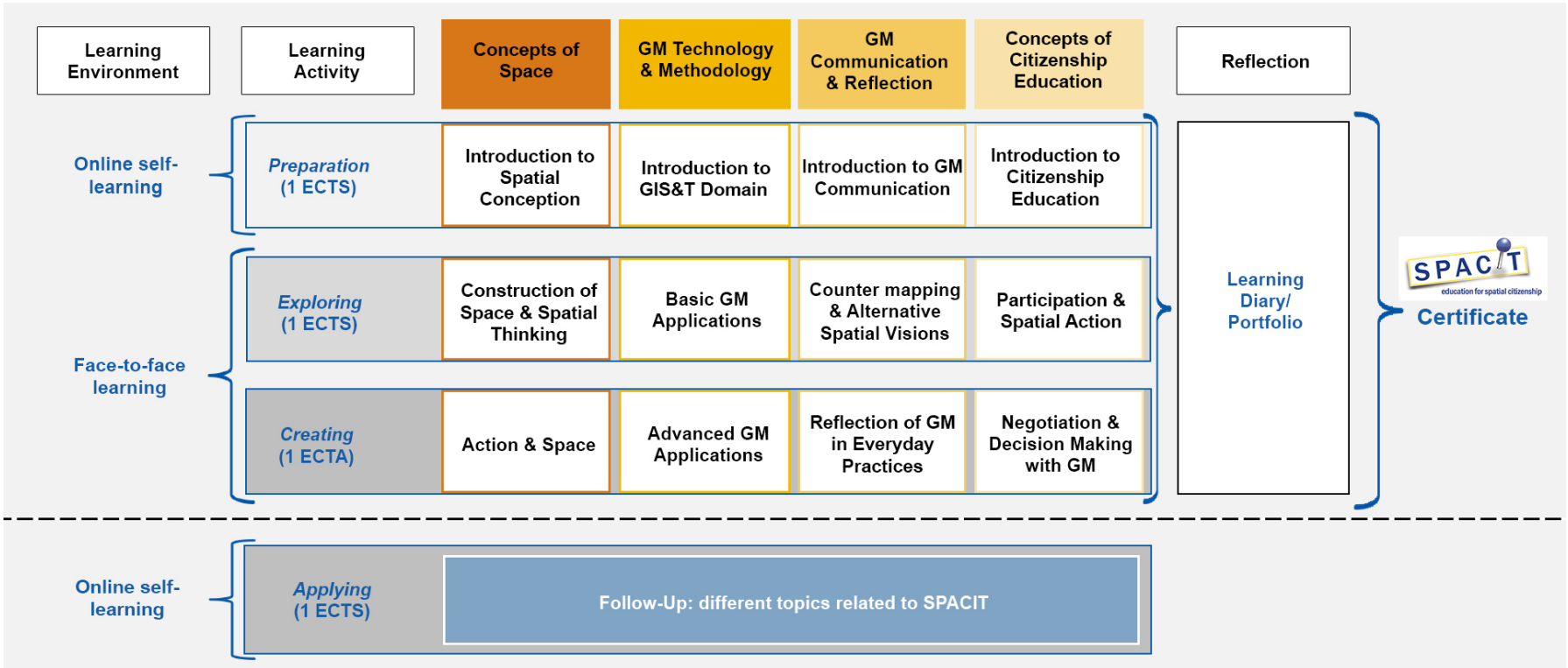
COURSE DEVELOPMENT

The Curriculum

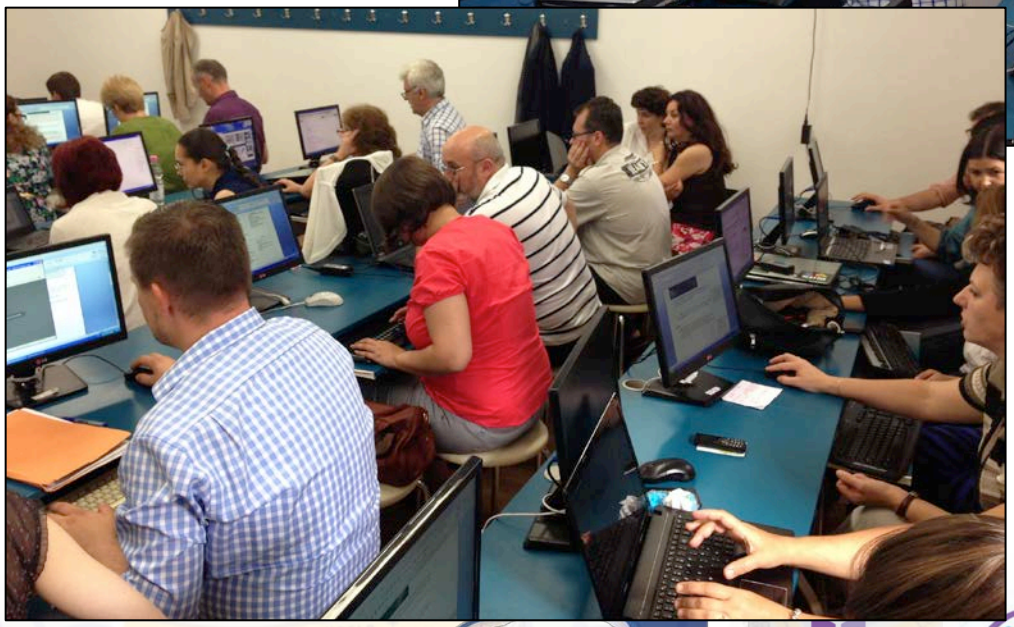


COURSE DEVELOPMENT

The Flexible Curriculum



PILOT COURSE



education for spatial citizenship

The Course

- Online-offline blended learning
  http://www.spatialcitizenship.eu
- 4 learning modules;
- Flexible learning paths
- Available soon ….

COURSE DEVELOPMENT

EUROGEO

SPACIT
education for spatial citizenship

Four Modules

- Concepts of Space
- GM Technology & Methodology
- GM Communication and Reflection
- Concepts of Citizenship Education

Module 1: Concepts of Space

- Introduction to Spatial Conceptions
- Construction of Space & Spatial Thinking
- Action and Space

Module 2: Geo-Media (GM) Technology & Methodology

- Introduction to GM
- Exploring GM for citizenship education and spatial thinking
- Applying GM in the classroom

Module 3: Geo-Media Communication & Reflection

- Communicating with Geo-Media
- Expressing alternative spatial visions
- Critical reflection on Geo-Media

Module 4: Concepts of Citizenship Education

- Introduction to Citizenship Education
- Supporting Active Citizenship
- Participation with Geo-media

SPACIT – the Outlook

- Understanding the links between society, space, technology and education
- Pilot course aimed to evaluate and improve SPACIT materials for online and F2F versions
- **Introducing the SPACIT approach in formal curricula in secondary education**

http://www.innovativelearning.co.uk/2014/11/11/finlandcurriculum2014/

Finland confirms: Geography and GIS essential in renewal of the core school curriculum

November 11, 2014 / 0 Comments / in Articles, Featured, Frontpage Article, Images, More Articles, News, Uncategorized / by donertkd

Does anyone doubt that Finland continues to give their youngsters the best education in the world? Now they are introducing geographical studies throughout their core basic curriculum. This blog introduces the changes and suggests some aspects of geo- that have become so important in Finnish school education

RECENT POSTS

Finland confirms: Geography and GIS essential in renewal of the core school curriculum

The Future of Learning and Teaching in the Cloud

A manifesto for Europe: building geospatial capacity

Is Geo- really important?

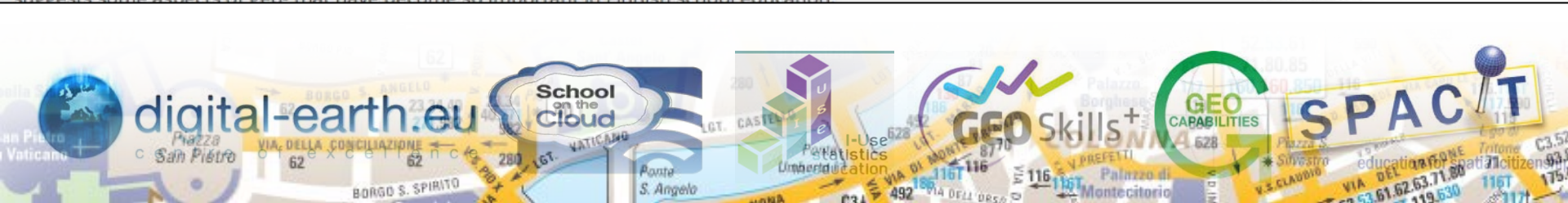
School on the Cloud: lessons from Digital Earth

Follow @karldonert 820 followers

KARL DONERT ON TWITTER

Blog: Why #Finland makes #Geo #gis part of core #education #curriculum http://t.co/WFRMSiyTk1

20 hours ago



SPACIT – the Outlook

- Watch out for the SPACIT materials! www.spatialcitizenship.org

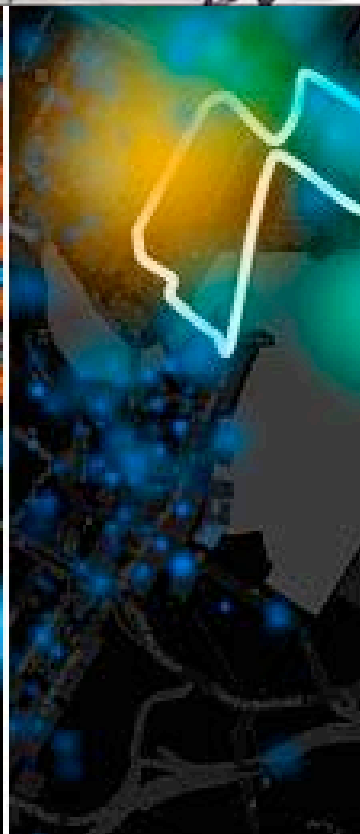
- Watch out for SPACIT courses on EUROGEO

Contact details

Karl Donert

kdonert@yahoo.com

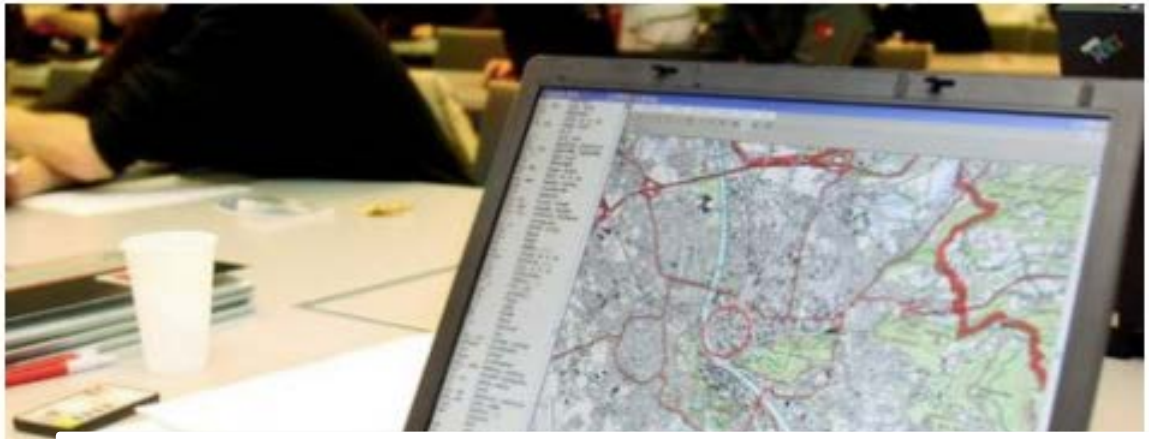
Digital Earth



http://www.digital-earth-edu.net

Innovative learning network

HOME ABOUT SERVICES PROJECTS BLOG CONTACT

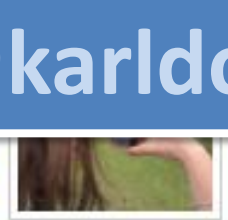


KARL DONERT ON TWITTER

RT @GeoSkills_Plus #Geography hits all of these!! "10 Skills The Workforce of the Future Will Need" @GeoSkills_Plus http://t.co/eoaYuPXGaD
about 1 hour ago

Geo-cube: a #geographical journey #geoed #edtech http://t.co/SveYdcaloH
about 1 hour ago

Karl Donert
www.innovativelearning.co.uk
kdonert@yahoo.com
@karldonert



some spatial citizenship tags
teacher training these

EU Digital Agenda: where does education really fit in?

Spatial Citizenship

October 17, 2014 / 0 Comments / in News

CATEGORIES

Articles
Featured
Frontpage Article
Images