

COST

Domain Committee "Information & Communication Technologies"

COST Action TD1202

Start Date 01-05-2012

COST: Mapping and the Citizen Sensor

MONITORING PROGRESS REPORT

Reporting Period: from 1st May 2012 (or start date of the Action)
to 30th April 2013

This Report is presented to the relevant Domain Committee.
It contains three parts:

- I. Management Report** prepared by the COST Office/Grant Holder
- II. Scientific Report** prepared by the Chair of the Management Committee of the Action
- III. Previous versions of the Scientific Report;** i.e., part II of past reporting periods

The report is a "cumulative" report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter II.D. *Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year's budget allocation.

Executive summary (max.250 words):

The Action has only just had its first post-kickoff meeting and so has little concrete to report. This first meeting, however, was effective in that it laid the foundations for future work by providing an overview of the interests of participants and a plan for directed activity, led by the WGs, to review key subject areas. The Action has also identified a series of communities to engage with and plans to link to the cartographic (via up-coming meeting in Dresden), geographic information science (via the Association of GIS Laboratories of Europe (AGILE) conference in Spain 2014) and remote sensing (via IEEE International Geoscience and Remote Sensing conference (IGARSS) in Italy 2015) communities have been established. Linked to these are opportunities for outputs (e.g. conference/journal articles *etc*).

I. Management Report prepared by the COST Office/Grant Holder



I.A. COST Action Fact Sheet

- **COST Action TD1202** – *COST Mapping and the Citizen Sensor*
- **Domain** *ICT (but transdisciplinary in nature)*

- **Action details:**

CSO Approval: 07/06/2012

End date: 27/11/2016

Entry into force: 11/07/2012

Extension:

- **Objectives** *(from DB as in About COST)*

Accurate and timely maps are a fundamental resource but their production in a changing world is a major scientific and practical grand challenge. Remote sensing provides images for mapping at unparalleled rates but the ground reference data needed in map production and evaluation are difficult to acquire. The rise of citizen sensors (e.g. volunteers contributing information from remote devices) provides immense potential to radically change mapping. The quality of citizen sensor data, however, is highly variable and activity is uncoordinated. A major internationally recognised mapping challenge is how to deal with the vast amounts of image data and large bank of uncoordinated citizen sensors in a way to allow accurate mapping. This Action will evaluate the utility of citizen sensors in mapping, debate means to encourage standardisation, coordination of activity and identify how mapping can proceed with imperfect data. It will produce protocols for the collection and use of volunteered data, encouraging good practices while not constraining volunteers. The work is highly inter-disciplinary, at the interface of ISCH, ICT, TUD, ESSEM, FA and FPS domains, and benefits from expertise distributed across Europe. The Action provides a means to foster advances mainly via networking of typically disparate groups for broad benefit.

The aim of the Action is to enhance the role of citizen sensing in mapping. The Action seeks to increase the value of volunteered data provided by citizen sensors for mapping applications, with a particular focus on map production and map evaluation. Specific objectives are listed in the Action's MoU.

- **Parties:** *list of countries and date of acceptance*

Austria (14/09/2012)	Czech Republic (03/04/2013)
Estonia (02/01/2013)	France (25/07/2012)
Greece (11/09/2012)	Ireland (11/07/2012)
Malta (27/10/2012)	Norway (03/10/2012)
Slovenia (08/11/2012)	Sweden (23/01/2013)
United Kingdom (12/06/2012)	Denmark (04/10/2012)
Bulgaria (22/01/2013)	Germany (11/07/2012)
Finland (15/08/2012)	Italy (02/08/2012)
Iceland (25/06/2012)	Portugal (03/09/2012)
Netherlands (13/08/2012)	Switzerland (16/07/2012)
Spain (20/06/2012)	

- **Intentions to accept:** Belgium

• **Other participants:**

(Institution Name, Country, Town)

Universiti Kebangsaan Malaysia, Malaysia

Department of Geography, Boston University, USA

Department of Civil Engineering, NIT Kurukshetra, India

Department of Forest and Natural Resource Management, Syracuse University, USA

Moscow State University, Russia

Canadian Forest Service, Canada

National Taiwan University, Taiwan

Chair: Prof Giles Foody, University of Nottingham

Giles.foody@nottingham.ac.uk

DC Rapporteur:

Prof. Michael Mente, Germany

Prof. Janos Bito, Hungary

Dr Niels Larsen, Denmark

Science Officer: Mr Ralph Stuebner
Ralph.stuebner@cost.eu

Administrative Officer: Mr Philippe Callens

Philippe.callens@cost.eu

• **Action Web site:** (a draft web site exists but currently only viewable from the University of Nottingham – should be open to all in a few weeks. The draft site is: <http://cmswip01.nottingham.ac.uk/td1202/>).

• **Grant Holder Representative** Mrs Dorrit Tyack
▪ Dorrit.tyack@nottingham.ac.uk

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• **Working Groups** (list of WGs and names and affiliations of participants)

Below is a list up-dated at the April 2013 meeting in Nottingham. Note this shows the WG of primary interest and many have secondary interests in additional WGs. * indicates WG leader and the order is arbitrary.

WG1 – Acquiring and managing VGI

Prof Konstantinos KARATZAS, Greece

Mr Chris PHILLIPS, UK

Dr Hai-Ying LIU, Norway

Dr Kolbeinn ARNASON, Iceland

Dr Peter MOONEY, Ireland

Dr Steffen FRITZ, Austria

Mr Christian SCHILL, Germany

Mr Grega MILČINSKI, Slovenia

Prof Marco PAINHO, Portugal

*Dr Linda SEE, Austria

Dr Lucy BASTIN, UK

Dr Jari SILANDER, Finland

Mr Jacinto ESTIMA, Portugal

Dr Bin JIANG, Sweden

Dr Eysteinn SIGURDSSON, Iceland

Dr Ana-Maria RAIMOND, France

Dr Matthew MONTEBELLO, Malta

WG2 – Understanding and influencing contributors

Ms Sonja GROSSBERNDT, Norway

Prof Tapani SARJAKOSKI, Finland

*Dr Norman KERLE, Netherlands

Dr Niels Christian JUUL, Denmark

Dr Mari LAAKSO, Finland

Dr Temenoujka BANDROVA, Bulgaria

Dr Milan KONECNY, Czech Republic

WG3 – Map production

Dr Tobias KELLENBERGER, Switzerland

Dr Ioannis MANAKOS, Greece

Dr Sebastian LOPEZ, Spain

Prof. Lorenzo BRUZZONE, Italy

WG4 – Map validation

Dr Juhani KETTUNEN, Finland

*Prof Cidalia FONTE, Portugal

Dr Duccio ROCCHINI, Italy

Prof. Giles FOODY, UK

Prof. Mike JACKSON, UK

Mr Jeremy MORLEY, UK

Dr Rumiana VATSEVA, Bulgaria

Dr A. COMBER, UK

I.B. Management Committee member list

<i>Name</i>	<i>Country</i>	<i>E-mail</i>
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Jeremy Morley	UNITED KINGDOM	jeremy.morley@nottingham.ac.uk
Peter Hellinckx	BELGIUM	peter.hellinckx@ua.ac.be



I.C. Overview activities and expenditure

Total Action Budget:

87360.00

Remaining Action Commitment:

Note – our first event was on 10 & 11 April and the figure shown is not the final cost but the current status.

Meetings

Meeting Type	Date	Venue	Days	Cost	Total
Management Committee Meeting	10/11/04 2013	Highfield House, University of Nottingham UK	2 days		25250.29

STSM

Beneficiary	Date	Place		Cost	Total
					0

Workshops

Title	Date	Place		Cost	Total
	From To	From To			0

Schools

Title	Date	Place			Cost	Total
						0

Dissemination

Title	Date	Place			Cost	Total
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Others



II. Scientific Report prepared by the Chair of the Management Committee of the Action, describing results achieved during the Action operation in this period, in no more than 3 pages (the report is “cumulative”). All items listed in Sections A, B, and C, below, must be addressed.

Additional documentation such as extended scientific reports, proceedings of workshops, seminars or conferences may be provided separately as an annex to this report, and should be referenced in the report.

II.A. Innovative networking

- Innovative knowledge resulting from COST networking through the Action. (Specific examples of Results vs. Objectives)
- Significant scientific breakthroughs as part of the COST Action. (Specific examples)
- Tangible medium term socio-economic impacts achieved or expected. (Specific examples)
- Spin off of new EC RTD Framework Programme proposals/projects. (List)
- Spin off of new National Programme proposals/projects. (List)

II.B. Inter-disciplinary networking

- Additional knowledge obtained from working with other disciplines within the COST framework. (Specific examples)
- Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide scientific impacts. (Specific examples)
- Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide socio-economic impacts. (Specific examples)

II.C. New networking

- Additional new members joining the Action during its life.
- Total number of individual participants involved in the Action work. (Number of participants. Give % of female and of Early Stage Researcher participants)
- Involvement of Early Stage Researchers in the Action, in particular with respect to STSMs, networking activities, and Training Schools. In addition, justification should be provided if less than 4 STSMs were carried out during the year.
- Involvement of researchers from outside of COST Countries. (Number of participants from non-COST Countries approved by the CSO. Give % of such participants from countries with reciprocal agreements. Specify their contribution)
- Advancement and promotion of scientific knowledge through publications and other outreach activities. (Number of publications and other outreach activities that resulted from COST networking through the Action. Complete list should be given in an annex)
- Activities and projects with COST network colleagues.
- The capacity of the Action members to raise research funds.

II.D. Self evaluation

Indicate in no more than 1 page what, in the opinion of the MC, were the main successes, drawbacks (if any) and the key difficulties encountered (if any).

III. Previous scientific report(s)

Part II of past periods' reports are to be found here.

Part II

II.A

The Action has only just held its first post-kickoff event (10 and 11 April) and so at a very early stage. The key focus of this event was to (i) raise awareness of the interests and activities of participants and (ii) plan activity to address a key objective of the action, essentially to review the status of citizen sensors in mapping.

To address (i) the meeting in Nottingham contained mainly presentations about the work of participants (see the appendix for a copy of the meeting programme for a guide to the scope of the presentations). A plan for review activity to address (ii) was defined with WG leaders tasked to make a presentation at the upcoming International Cartography Conference (Dresden, Germany) to which our next event will be linked. The link to the conference is deliberate – representing the first attempt to reach out to a relevant community (future plans seek to link to other communities for mutual benefit).

II.B

The Action is highly inter-disciplinary in nature. It is too early to define scientific and socio-economic impacts or potentials but one area we need to develop is perhaps a greater involvement of industry, mapping bodies *etc* as well as the citizen science community. These activities are, in part, planned activity, especially of WG2 but all participants have been encouraged to expand the Action.

II.C

The Action has grown, from 15 parties in the full proposal, to 17 at the kick-off and at the time of the meeting in Nottingham (10 and 11 April) was 21 (excluding the non-COST countries); details above.

Based on the attendees of the kick-off and Nottingham meetings, it is estimated that the list of WG members defined above contains 36 people of whom 7 (19.4%) are early stage researchers and 9 (25%) are female. To encourage an appropriate composition the Action has an early stage representative (Lopez, Spain) and it should be noted that 2 WG leaders are female.

STSM's have been encouraged and the Action has a nominated lead to encourage and process applications (Morley, UK). However, interest to-date seems minimal; action to encourage STSM will be taken throughout the year.

The Action has involvement from non-COST countries (see above). They have yet to participate but are being encouraged in relation to future plans for which other funding sources may be available to help (notably our planned future meetings with AGILE in Spain, 2014 and IGARSS in Italy in 2015). We have been approached by a colleague in Australia and the application is being processed.

The Action has some similarity in scope with Action IC1203. The Action chair has been in contact with the Chair and Vice-Chair of Action IC1203 and is exploring the possibility of future meetings for mutual benefit.

II.D

It is too early to provide useful comment but as Chair I would flag:

- A great success is the amount of interest in the project and the number of countries involved.
- Another success was the enthusiasm for the WGs to take the lead on reviewing the status of their subject area. This hopefully lays the ground for effective collaboration and networking but much depends on the quality of the presentations at the next meeting (Dresden, August 2013) and later contributions.
- Have good plans to link to 3 major communities (cartographic, GIS and remote sensing) and exploring others.
- WG3 is small and lacks a clear lead. WG4 is small but strong. It may be possible that these get merged as do have aspects of similarity.
- There seems little appetite for STSM – we will seek to encourage them but so far there has been no interest at all.

III

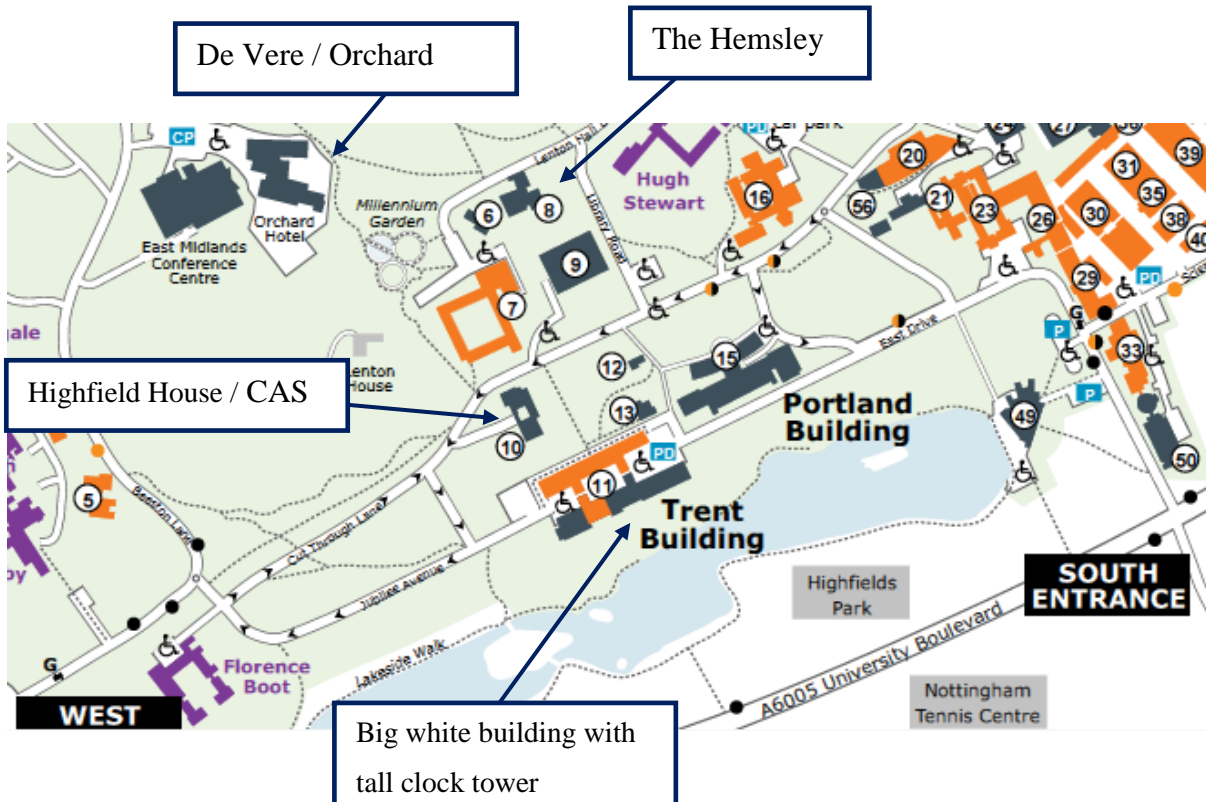
There are none.

Appendix – Programme of the Nottingham meeting and MC agenda

COST Action TD1202 – Mapping and the citizen sensor

Venue – Rooms A1 and A2, Highfield House, Centre for Advanced Studies in the Arts and Social Sciences (CAS), University of Nottingham, (University Park campus). The map below is extracted from the University's map of the campus and shows a few key landmarks.

MC meeting will be held in Room A2 with all remaining activity undertaken in A1.



PROGRAMME

Wednesday 10 April

- 9.30 Arrival, registration
- 9.45 Management committee meeting [MC members and representatives only]. Full agenda given below.
- 11.00 *Coffee break* [Dinner – give menu selection to Giles]
- 11.30 The geo-wiki system and some applications – Steffen Fritz (Austria)
- The quality of information in crowd-sourcing projects - Grega Milcinski (Slovenia)
- Assessing the accuracy of volunteered geographic information – Giles Foody (UK)
- 1.00 *Lunch* – there are various places to eat. Best are probably ‘The Hemsley’ (walk through the bar area) or in the Portland building (up the stairs in the older part of the building).
- 2.15 Integration of reference data uncertainty in the accuracy assessment of land cover maps - Cidália Fonte *et al.* (Portugal)

The adequacy of Flickr in the quality control of CORINE maps - Jacinto Estima and Marco Painho (Portugal)

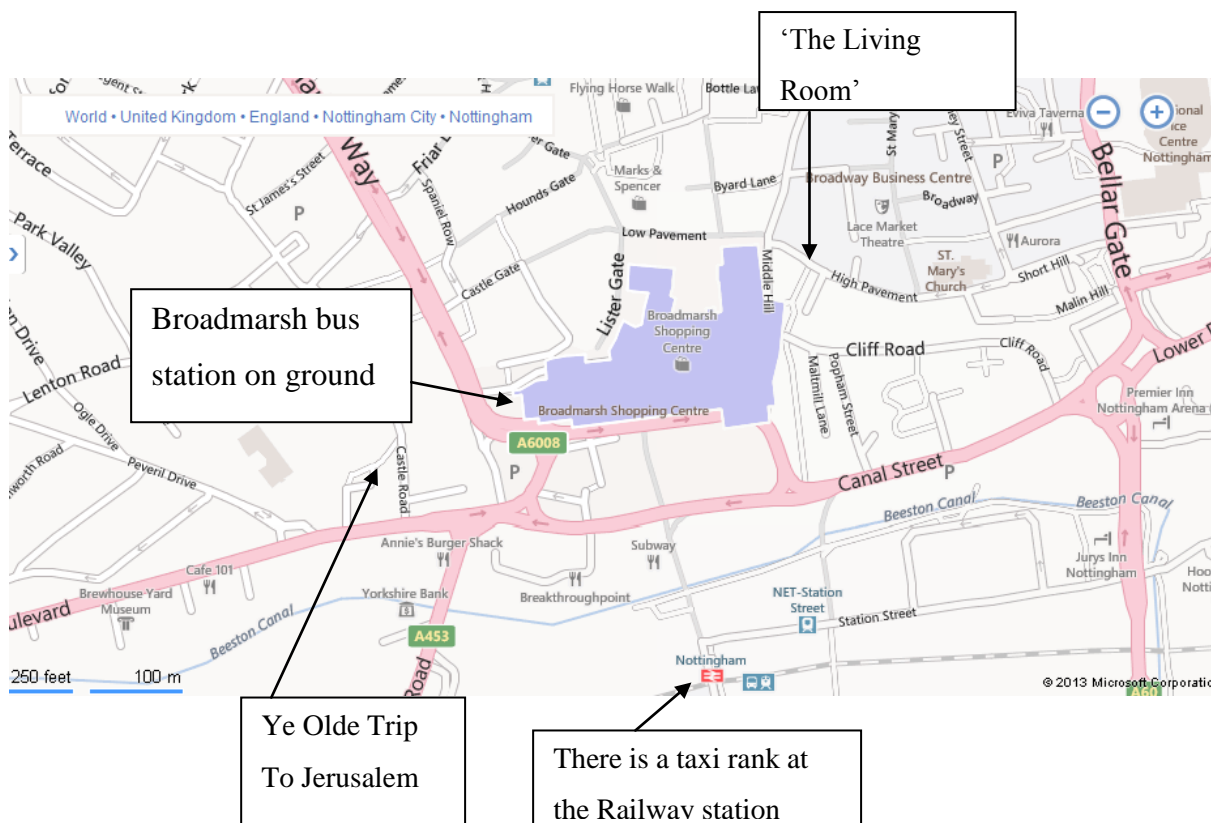
Context and adaptive cartography – Milan Konecny (Czech Republic)

3.30 *Coffee break*

4.00 Collaborative disaster damage mapping – Norman Kerle (Netherlands)

Mapping species diversity: facing uncertainty in an open source world - Duccio Rocchini (Italy)

For those who wish to attend, a group **dinner** will be hosted at a local restaurant, ‘The Living Room’. Travel and food costs will be paid centrally (but you can’t then claim the 20 euro meal allowance!); basic meal and drinks will be paid for all eligible participants but additional food/drinks will need to be purchased separately. Plan to leave ~6.20pm, dress smart-casual (no ripped jeans, fancy dress or sports trainers!). Menu selections needed in advance – pass details to Giles for ~11am coffee break.



Thursday 11 April

- 9.30 Mapping urban development of the Black Sea coastal zone in Bulgaria based on Remote Sensing data – Rumiana Vatsseva (Bulgaria)
- Collecting and updating pedestrian routing and accessibility information – could crowdsourcing help? Mari Laakso and Tapani Sarjakosi (Finland)
- Activities in Finland – Juhani Kettunen and Jari Silander (Finland)
- OSM-GB – Jeremy Morley (UK)
- 11.00 *Coffee break*
- 11.30 Crowd-sourcing and credibility assessment and quality control - Mike Jackson (UK)
- Laboratory on cartography - cooperation between UACEG and BCA - Temenoujka Bandrova (Bulgaria)
- CITI-SENSE - Development of sensor-based Citizens' Observatory Community for improving quality of life in cities - Hai-Ying Liu and Sonja Grossberndt (Norway)
- 1.00 *Lunch*
- 2.15 Volunteered Geographic Information and Computational Geography: New Perspectives – Bin Jiang (Sweden)
- VGI: Where are we now? Likely next steps - Peter Mooney and Andrea Ballatore (Ireland)
- 3.00 MC meeting continuation (MC agenda item 7) – Michael Mente (Germany), DC Rapporteur for ESSEM domain.
- 3.30 *Coffee break*
- 4.00 Discussions (possibly in WGs) – including plans for next meeting(s).
- 5.00 Close

Minutes of the Second Management Committee Meeting of COST Action TD1202 ‘Mapping and the Citizen Sensor’

University of Nottingham, Nottinghamshire, UK, from 10 April to 11 April 2013.

Agenda

1. Welcome to participants
2. Adoption of agenda
3. Approval of minutes and matters arising of last meeting
4. Update from the Action Chair a. Status of Action, including participating count b. Action budget status c. STSM status and new applications
5. Promotion of gender balance and of Early Stage Researchers (ESR) Update from the Grant Holder
6. Update from the COST Office
7. Update from the DC Rapporteur
8. Annual Progress Conference (preparation and/or feedback from DC)
9. Follow-up of MoU objectives a. Progress report of working groups
10. Scientific planning a. Scientific strategy b. Action Budget Planning c. Long-term planning (including anticipated locations and dates of future activities) d. Dissemination planning (Publications and outreach activities)
11. Requests for new members
12. Non-COST applications to the Actions
13. AOB
14. Location and date of next meeting
15. Summary of MC decisions
16. Closing