



INTAMAP

Interoperability and Automated Mapping

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

SIXTH FRAMEWORK PROGRAMME
PRIORITY IST-2005-2.5.12
ICT for Environmental Risk Management

1st Year (September 2006-August 2007)

Periodic activity Report

Annex – Plan for using and disseminating the knowledge

Reference	
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Project coordinator

Prof.Dr. Edzer J. Pebesma
Utrecht University, The Netherlands
E-mail: e.pebesma@geo.uu.nl

Appendix 1 – Plan for using and disseminating the knowledge of the INTAMAP project¹

Section 1 - Exploitable knowledge and its Use

At this stage of the project, no directly exploitable knowledge has been generated. The activities of the only SME in INTAMAP, partner Keynetix (KYX), is expected to result in client development that is exploitable.

Overview table

Exploitable Knowledge (description)	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable for commercial use	Patents or other IPR protection	Owner & Other Partner(s) involved
<i>1. Commercial Client development</i>	<i>Dedicated interpolation web client</i>	<i>1. Environmental security 2. Monitoring network administration</i>	<i>2009</i>		<i>Partic. KYX (owner)</i>

KYX will develop a *thin* client in combination with, and on top of, an upload server (using .Net, and the mapguide software); this upload server will be client to the INTAMAP interpolation service.

- The upload server will be a central store at a web site, nothing will be stored local, but with sufficient user and data protection;
- Will be project oriented, where a project may include access to certain maps and data bases with observations, dealing with security
- Will interface to the web processing service (interpolation service)
- The client can be used to view the resulting outputs, and store it on the server
- overlays, resulting in specific views, even pictures can be saved and shared with other users
- the client can be used as a tool to share information with other people
- the client will have the possibility to work with parameter choices, preferences related to application fields (e.g. radiation, rainfall, air quality).

¹ **Knowledge:** means the results, including information, whether or not they can be protected, arising from the *project* governed by this *contract*, as well as copyrights or rights pertaining to such results following applications for, or the issue of patents, designs, plant varieties, supplementary protection certificates or similar forms of protection (Article II.1.14 of the contract)

Section 2 – Dissemination of knowledge

Overview table

Planned /actual Dates	Type	Type of audience	Countries addressed	Size of audience	Partner responsible /involved
	<i>Conference</i>	<i>Research</i>			<i>All</i>
	<i>Publications</i>	<i>Research</i>	All		<i>All</i>
<i>Nov 2006</i>	<i>Project web-site</i>	<i>All</i>	All		<i>UU, Ast</i>
	<i>Posters</i>	<i>Research</i>			<i>All</i>
	<i>Open source software</i>	<i>Research</i>	All		

Conferences: the following conferences were attended by partners in INTAMAP, during year 1:

- EGU 2007, Vienna, Natural Hazards session.
- *geoENV VI – Geostatistics for Environmental Applications. Proceedings of the Sixth European Conference on Geostatistics for Environmental Applications*, November 2006, Rhodes, Greece
- *International Symposium on Environmental Software Systems (ISESS 2007)*, Prague, Czech Republic, 22-25 May 2007
- Young GI-Days, Muenster, Sept 10-12, 2007; *Paul H. Hiemstra, Edzer J. Pebesma, Chris J.W. Twenhöfel, Gerard B.M. Heuvelink. Toward an Automatic Real-Time Mapping System for Radiation Hazards.*
- Jiang, Z., S. De Bruin, G.B.M. Heuvelink and C.J.W. Twenhöfel (2007), Optimization of mobile radioactivity monitoring networks. In: *Proceedings of the fifth International Symposium on Spatial Data Quality* (Ed. A. Stein). ITC, Enschede
- Cornford, D. 2007. Data assimilation, Bayesian inference and Gaussian processes: opportunities and challenges. Presented at Smoothing-Based and Gaussian-Process-Based Methods for Non-Parametric Regression in Environmental Problems, ICMS, Edinburgh, UK, 26-30 March 2007.
- Skoien, J.O., O. Baume, E.J. Pebesma, G.B.M. Heuvelink, Identifying and removing heterogeneities between monitoring networks. StatGIS 2007, September 24-26, Klagenfurt, Austria.
- Baume, O., J.O. Skoien, G.B.M. Heuvelink, E.J. Pebesma. Geostatistical approach to data harmonization. 2007, September 24-26, Klagenfurt, Austria.
- A. Chorti and D. T. Hristopoulos (2007), Automatic Detection of Spatial Anisotropy in Environmental Data Sets, StatGIS 2007, September 24-26, Klagenfurt, Austria.
- H. Mueller, Bayesian Transgaussian Kriging, 15th European Young Statisticians Meeting-EYSM September 10-14, 2007 Castro Urdiales, Spain.

Publications:

As many of the partners are academic, and a considerable amount of the work addresses mathematical and statistical data analysis issues, one of the main results of the INTAMAP project will be research papers. In addition, software developments are being published in suitable papers.

The papers currently in press in the peer reviewed journal *Stochastic Environmental Research and Risk Assessment (SERRA)* published by Springer Verlag will appear in a special issue that is fully dedicated to automatic mapping. We believe the publication of this special issue in this prestigious journal will provide a great visibility to the scientific and technical issues related to real-time mapping but also to INTAMAP. The funding of DG-INFSO has been furthermore acknowledged in the Editorial of the special issue.

A list of publications where INTAMAP is acknowledged is:

D'Alimonte, D. and D. Cornford (2007) Outlier detection with partial information: Application to emergency mapping. *Stochastic Environmental Research and Risk Assessment (SERRA)* **In Press**. DOI 10.1007/s00477-007-0164-8

Brenning, A. and G. Dubois (2007) Towards generic real-time mapping algorithms for environmental monitoring and emergency detection. *Stochastic Environmental Research and Risk Assessment (SERRA)* **In Press**. DOI 10.1007/s00477-007-0166-6

Chorti, A. and D.T. Hristopulos (2007) Systematic identification of anisotropic correlations in spatially distributed data sets. *IEEE Transactions on Signal Processing*. **Submitted**.

Elogne, S. N., Hristopulos, D. T. and M. Varouchakis (2007) An application of Spartan Spatial Random Fields in environmental mapping: Focus on automatic mapping capabilities. *Stochastic Environmental Research and Risk Assessment (SERRA)* **In Press**. DOI 10.1007/s00477-007-0167-5

Dubois, G. (2007) Editorial. Advances in automatic interpolation for real-time mapping. *Stochastic Environmental Research and Risk Assessment (SERRA)* **In Press**. DOI 10.1007/s00477-007-0159-5

Ingram, B., Cornford, D., and D. Evans (2007) Fast algorithms for automatic mapping with space-limited covariance functions. *Stochastic Environmental Research and Risk Assessment (SERRA)* **In Press**. DOI 10.1007/s00477-007-0163-9

Pebesma, E.J., Dubois, G. and D. Cornford (2006). Real-time automatic mapping for environmental monitoring network management. “*geoENV VI – Geostatistics for Environmental Applications. Proceedings of the Sixth European Conference on Geostatistics for Environmental Applications*” Series: Quantitative Geology and Geostatistics, Vol. 15 Soares, A., Pereira, M. J., Dimitrakopoulos, R. (Eds.)” **In Press**.

Pilz, J. and Spöck, G. (2007): Why do we need and how should we implement Bayesian kriging methods. *Stochastic Environmental Research and Risk Assessment, forthcoming*. [Online] DOI 10.1007/s00477-007-0165-7

Skøien, J.O., Pebesma, E., Blöschl, G. (2007). Geostatistics for automatic estimation of environmental variables - simple solutions. **Presented at:** *EGU General Assembly*, Vienna, Austria, 15-20 April 2007.

Spöck, G. and Pilz, J. (2007): Spatial sampling design and covariance-robust minimax prediction based on convex design ideas. Technical Report, University of Klagenfurt, 21p., to appear in: J. Pilz (Ed.) *Interfacing Geostatistics and GIS*. Springer, Berlin.

Szegvary, T., F. Conen, U. Stöhlker, G. Dubois, P. Bossew, G. de Vries (2007) Mapping terrestrial γ -dose rate in Europe based on routine monitoring data. *Radiation measurements*. **Accepted**

Williams, M., Cornford, D., Ingram, B., Bastin, L., Beaumont, T., Pebesma, E. and G. Dubois (2007). Supporting interoperable interpolation: the INTAMAP approach. **Presented at:** *International Symposium on Environmental Software Systems (ISESS 2007)*, Prague, Czech Republic, 22-25 May 2007. **In press**.

Posters and talks, held at the following conferences:

Skøien, J.O., Pebesma, E., Blöschl, G. (2007). Geostatistics for automatic estimation of environmental variables - simple solutions. **Presented at:** *EGU General Assembly, Vienna, Austria, 15-20 April 2007.*

Chorti and D. T. Hristopulos (2007), Automatic Detection of Spatial Anisotropy in Environmental Data Sets, StatGIS 2007, September 24-26, Klagenfurt, Austria.

Project web site:

A web site (<http://www.intamap.org>) was installed within three months of the start of the project. The web site contains basic information about the work, the funding, the partners, deliverables, a link to the wiki, and a restricted section where (draft) deliverables could be uploaded that are only accessible to project members (e.g. because it contained information taken from reports that have not become public yet).

Within the first year, a second incarnation of the web site has been launched, with much better graphics, responsive menu items, and attractive color usage.

Wiki

It has been decided by the project to use a wiki site (<http://wiki.intamap.org/>) that is world-readable, but only editable for project members. The wiki site is the place where much of the joint (meaning: between partners) work takes place, and where relevant information of general interest (meeting reports, tutorials, discussions) is published.

Open Source Software distribution

Most open source software developments will be distributed freely in source code form over the internet. Some of the developments now available have been made available on the SourceForge web set, found at <http://www.sourceforge.net/projects/intamap> . Typical use up to this stage involves the public readable CVS (version control system) file tree, which is writable for project members only.

At this stage, much of the software written is in prototype form, and not well connected together. It is foreseen that this will change in year two, when we start putting developments at different institutes together into a single working system. It is not necessarily foreseen that such developments will be kept at open repositories before they are finished, rather that they will be made public after sufficient publication has taken place.

Section 3 - Publishable results

No publishable, exploitable results have been achieved so far.