

# An analysis of Agile conferences' papers: a snapshot of the GI&GIS research in Europe

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## SUMMARY

*GI&GIS permeate the Information Society and penetrate on one hand a growing number of academic subjects, on the other hand the mainstream business.*

*The presence is sometime well visible, just thinking to the several EU funded initiatives and projects, from GI2000 to INSPIRE, from Madame to ETEMII to GINIE to hundreds projects listed on the ECGI&GIS portal, sometime it is not clearly visible but substantially supporting other very important activities for example, just quoting from the IST 2005-2006 Work Programme priorities, "ICT research for innovative Government", "eSafety - Co-operative Systems for Road Transport", " ICT for Environmental Risk Management", etc.*

*All this clearly shows that awareness is by now high on the crucial role of GI&GIS for the socio-economic and political growth of Europe, and INSPIRE is just the last but important demonstration of this situation.*

*At the same time it implies that the European GI Research Community has been and is really active. The relationship between the GI Community and the Political domain is twofold; the Research Community has often provided the decision makers with useful inputs and tools for their activities, while viceversa some political decisions and activities have highlighted hot themes to be addressed and investigated by the Research Community itself.*

*The paper aims at giving a snapshot of the European GI Research through the analysis of high level scientific papers and posters presented during the last six Agile conferences (1999-2004).*

**KEYWORDS:** *European GI Research, Research Agenda, Analysis of conferences proceedings*

## AN ANALYSIS OF AGILE CONFERENCES' PAPERS

The process of building an European Research Agenda on GI Science started in 1998 at the 1st AGILE Conference in Enschede as an action of some AGILE members. The AGILE Research Agenda was structured into themes (28) based on the research priorities of the U.S. UCGIS (University Consortium on Geographic Information Science) (UCGIS).

Each theme is a macro-category composed of several topics on which AGILE members have been (are) doing research; furthermore, at the 2nd AGILE Conference in Rome (1999), some Working Groups were established in order to focus on selected research themes; this is highlighted by the successive conferences where sessions specific on the issue of each working group have been held.

The AGILE Research Agenda has been the first comprehensive directory of research activities on GI Science at European level (Craglia *et al.*, 2001). The Agenda is accessible, since 1999, through the AGILE website (Agile).

Since the setting-up of the research agenda, the AGILE conferences have been the natural place where members research working-on and results have been presented, thus the analysis of papers and posters presented at these conferences provides a useful tool to investigate year by year the development of the research agenda itself.

The AGILE conferences have been organized in sessions whose themes are very often not directly linked with the themes of the research agenda. On the other hand, according to the AGILE conferences structure, posters and young researchers papers are presented in generic "poster" and

“young researchers forum” sessions; considering that, from the 1999 conference to the 2002 conference, posters and young researchers papers together make up about 30% of all papers presented their contribution in terms of being part of already established research themes and/or topics is lost. In order to have a more comprehensive and homogeneous views, about 500 papers, from the 1999 conference in Rome to the 2004 conference in Heraklion, have been reclassified according to the AGILE Research Agenda. Each paper has been matched against the topics in the themes of the AGILE research agenda by means of its title, the conference themes/session in which it has been presented and by reading at least the its abstract. Anyway a certain degree of subjectivity is unavoidable.

The results of the classification are shown in figure 1 and figure 2: figure 1 shows a year-by-year classification of the papers in order to investigate changes and developments, while figure 2 shows total figures of the classification.

Some first results of the analysis may be summarised as follows;

- The two themes “*Administrative Use of GIS*” and “*Scale*” of the research agenda get no papers; this fact is on one hand a result of the research agenda itself, where these two themes have no topics, on the other hand possible candidate papers were best suited for other themes;
- A particular case is that of the theme “*Participatory GIS*” , which again get no papers, because the topics in these theme of the research agenda are equivocal and are not the classical topics of PGIS, thus papers related to PGIS have been classified in other themes (eg. “*GIS and Society*”);
- The research agenda has not a theme on education, so papers related to education issues have been classified into the theme “*GIS Foundation*”;
- A substantial part of papers falls inside the theme “*SDF*”. This is clearly due to the growing awareness at the political level on the crucial role of the diffusion and access to the GI to support the socio-economic and political growth of Europe, and is confirmed by the several projects and initiatives funded and/or sponsored by the EU in the domain: on its own, the European GI community has had an active role in this process participating and/or providing usefule input to these initiatives.
- A relevant part of the papers falls inside the theme “*GIS Interoperability*”: this is partially a consequence of the previous point and partially due to the standardisation activity at international level (cfr. ISO, CEN, OGC, W3C, etc.).

As a general remarks, unfortunately the classification doesn’t enable to highlight “hot topics” : this is due to the same nature of the classification process that inevitably induces to generalise the specificities, while, on the other hand, “hot topics” are clearly highlighted by the conferences themes, as shown in table 1.

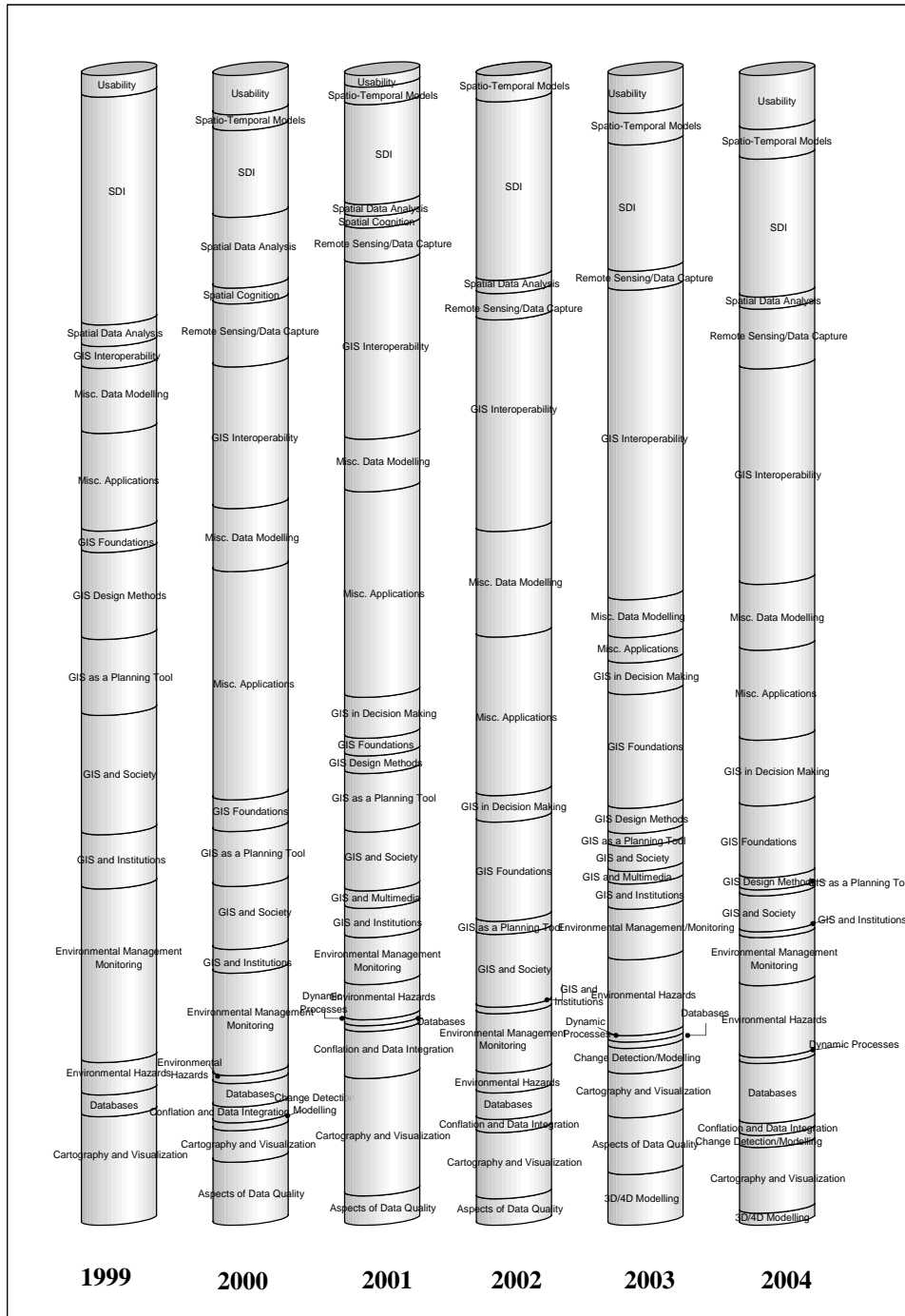


Figure 1: Year-by-year classification of AGILE conferences (1999-2004) papers according to the AGILE Research Agenda.

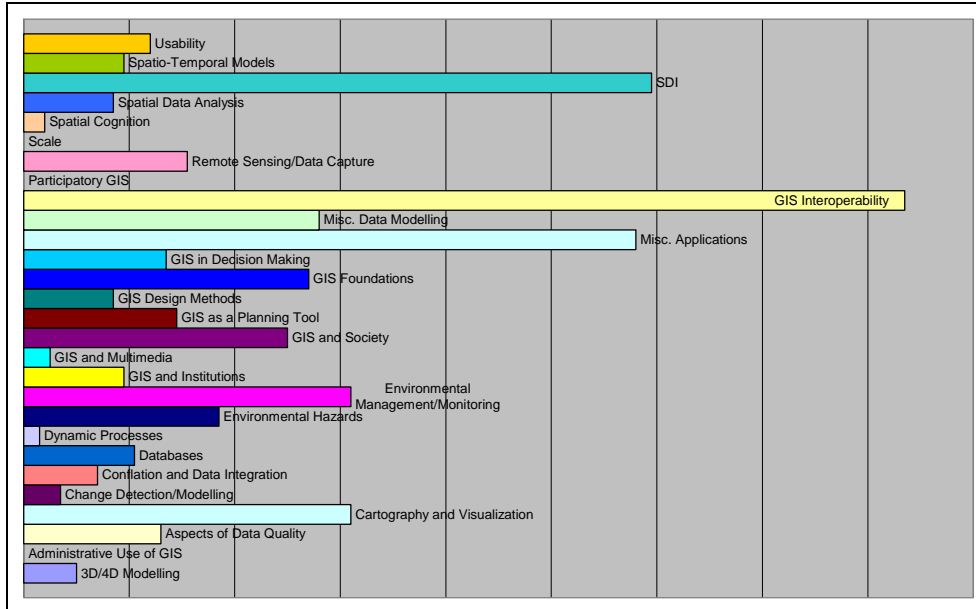


Figure 2: Total figures of the classification according to the AGILE Research Agenda.

Year	Conference Theme	N. papers
1999	Short papers	10
	Posters	10
	Young Researcher	9
	Web -based visualisation	4
	Integration of Spatial and Administrative Databases	4
	Spatial Aspects of Socio-Economic or Environmental Modelling	4
	Emerging Technologies	4
	GI Infrastructures	4
	GIS for Public planning	4
2000	Young researcher's forum	14
	Posters	13
	GI policies	8
	Semantic interoperability	5
	Emerging technologies	5
	Spatial modelling	5
	Transportation and mobile GIS	5
	Geodata usability	5
	GI databases	5
	Technical interoperability	4
Spatial modelling	4	
2001	Posters	28
	Young researcher's forum	8
	Interoperability	8
	Spatial data infrastructure	6
	Environmental modelling	5

	Socio-economic modelling	5
	Location based and mobile services	5
	Environmental modelling and remote sensing	5
	GI in the new economy	5
	GI processing and usability	5
	GI policies	4
	Education	4
	Visualisation	4
	Strategic questions	3
	Planning	3
2002	Posters	28
	Environmental modelling	10
	Access to GI and public participation	6
	Education	6
	Methodologies	6
	Semantic Interoperability	5
	Implementing interoperability	5
	Socio-economic applications and transportation	5
	Data policies and infrastructure	5
	Urban Modelling	4
	Economic issues	4
	Location Based Services	3
2003	Posters	13
	Location-based Services	8
	Environment and Disaster Management	5
	Ontology and Semantics	5
	Image Semantics	5
	Interoperable Services	5
	3-Dimensional	5
	Data Usability	5
	Land cover	5
	Ontology and Metadata	5
	Decision Support Systems	5
	Spatial Data Infrastructures	5
	Education	4
	Urban	4
	Environmental Risk Management	3
	e-Government	3
	Spatial Temporal	3
	Data Policy	3
2004	Posters	17
	Spatial Data Infrastructures	16
	Semantics	9
	Decision Support Systems/Risk	8
	Urban Modelling	6
	Remote Sensing	6
	Visualisation	5
	Database Technology	5

Environmental/Social Modelling	5
Data Usability	5
Decision Support Systems	4
Geodata knowledge discovery	4
Pricing and Geomarketing	4
Education	2

**Table 1:** AGILE conferences (1999-2004) papers according to the AGILE conferences sessions.

### SOME CONCLUSIONS

The classification of the AGILE Conferences (1999-2004) papers has been an interesting “exercise”, with the aim of having a comprehensive view of all papers presented. It has been also some time a difficult and frustrating process since the ambiguity and the similarity of some topics/themes and the length of the research agenda itself (28 themes and about 236 topics !).

The AGILE research agenda clearly reflects the way in which it has been developed, as an inventory of research topics more than as a true, well designed and structured agenda; it seems that the agenda has substantially not been regularly updated and has not profited of new inputs coming from the AGILE conferences.

On the other side of the Atlantic Sea, the UCGIS agenda is at its 6<sup>th</sup> edition without hundreds topics, but with just 10 long-term research priorities and 19 short-term research priorities; the UCGIS long-term priorities are also available in the AGILE research agenda, but this is not the case of the short-term priorities which best highlight important “hot topics” and emerging themes (such as “*Geospatial Semantic Web*” or “*Location-based Services*”, just to mention two on them) that, anyway, have been addressed by some sessions of the AGILE conferences.

The lesson learned during the preparation of the paper is mainly addressing the issue that European scientific and technical communities of GI should be able to track own ways for making agendas according to the peculiarity of the research, societal, educational and cultural components of Europe.

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