

# ETeMII



## European Territorial Management Information Infrastructure

**Accompanying measure to support the setting up of a  
European Territorial Management Information Infrastructure**

**ETeMII**

### **ETeMII White Paper Introduction**

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# Introduction to the ETeMII White Paper

**“Data will not be maintained unless it is used;  
Data will not be used unless it is readily available;  
There are piles of data compost all over Europe, slowly rotting because access is  
denied to those who could make use of it.”**

*Christopher Roper, Landmark Information Group, 2001*

## Background

The main goal of the ETeMII project was to indicate how improved access to geographic information (GI) in Europe could be achieved. The project ran for two years, from January 2000 until December 2001, involving 12 partners representing various sectors in the field of geographic information: the public sector (national and European bodies), research institutes, and partners from industry.

The approach to attaining the project goal centered on the user of geographic information: user needs were identified, and hence barriers to access to GI could be pinpointed. Recommendations to reduce or remove these barriers could then be made. In ascertaining the user needs through distilling the results from previous FP-4 and FP-5 projects, undertaking surveys and case studies, as well as conducting workshops on specific topics such as metadata and reference data, the diversity of the project team proved a strength, enabling the charting of the needs of a wide variety of users.

Barriers identified to the access, and hence utilization, of geographic information proved to be both technical and institutional in nature. A critical barrier identified is the lack of awareness of key aspects seminal to the exploitation of geographic information: these aspects include the availability of geographic information, metadata, standards, how to implement standards and how to use geographic information. Thus, raising awareness about the availability and utility of GI is believed to be one of the main solutions to enable better access. This is in perfect alignment with one of the basic aims of the ETeMII project from the outset, namely to raise awareness of the importance and possible application of geographic information, associated technologies and methods. The dissemination of information has been a primary goal of the ETeMII project: communication of the results of this project to the users of geographic information is important, with this White Paper then forming a central part of the dissemination strategy.

## Audience

This document is primarily addressed to decision makers and their technical managers in public sector organizations at European, national and local levels. These managers who need to be informed about the impact of interoperability initiatives, standards and best practice on the seamless exchange of geo-data between organizations, as well as about their ability in the near future to predicate GI technology acquisition (tenders) on multi-vendor, component-based interoperable solutions which will prove more sustainable and flexible over the lifespan of GI projects are under increasing pressure to provide on-line access to the information assets of their organizations. For example, eEurope and similar national policies being adopted across Europe have set targets for making all government services, including those of local government available on-line, to all, by 2005. Making the leap to e-government will not be easy for any organization in the public sector, particularly for the tens of thousands of local authorities across Europe, which serve very small populations and hence have fewer technical, financial, and human resources to devote to this task. An understanding of how best to apply limited resources to hand, through being able to use and build on existing

information resources, is thus critical to achieving this aim. This introduces the notion of a European Spatial Data Infrastructure. This White Paper sets out to show the way forward for a harmonized approach to developing and exploiting GI within Europe.

Being able to build on existing information resources depends on the existence of a common base supporting spatial referencing of information and the integration of different data sources, i.e. there is a need for reference data. Its mere existence, however, is insufficient to ensure its use in this context, as there must be an awareness of the existence of the information, to facilitate its discovery, i.e. metadata is needed. Further, it should be possible to merge different data sets and use disparate data in conjunction with the same application without having to modify these components locally, i.e. interoperability is required. Not surprisingly, the work packages making up the ETeMII project centered on the following main areas: user requirements, reference data, metadata, and interoperability and standards implementation. This White Paper presents the findings associated with these issues, with three chapters focusing on reference data, metadata, and interoperability and standards implementation respectively. Findings relating to user requirements naturally underlie the discussions in all three chapters. The hope is that readers will base their system architecture decisions, in part, on efforts to achieve GI-interoperability.

This paper can also serve as a template position statement for software developers who are considering adapting their products to interoperability standards, or for data providers who are looking for upcoming exchange formats and techniques.

## Structure

Each chapter follows a similar structure to aid comprehension of the key points. First a description of the main aim is given, followed by a discussion on the output and identification of the major barriers and challenges. The vision related to the work package is dealt with in terms of recommended actions – short, medium and long term. The three chapters may be read independently; however, a more comprehensive picture emerges through studying all three together, as there are clear linkages between the subjects discussed in them.

## Reference data

*Reference data* sets form the foundation on which other spatial data sets are built. They provide a framework for linking and integrating other geo-referenced information, as well as contextual information to aid the visualization of territorial knowledge. The chapter on reference data proposes the minimum set of geographic reference data at the European level, and how to move forward to make this reference data a reality. This minimum set relates not only to public and private use of geographic databases, but also to the development of a range of applications using geographic information. In particular, the possibilities offered by access to geographic databases via the web heighten the need for the availability of a minimum set of reference data. Such access implies the need for specific investments to meet requirements in terms of interoperability and metadata. Data policy issues also need to be addressed.

Consistency and co-ordination are the keywords with respect to the creation of reference data. Standardization and harmonization should be strived for when dealing with issues such as content, structure and quality of the data sets. Financial support is needed for coordinating activities at the European level. The intention is to stimulate the convergence of initiatives at the local and national level in European countries.

## Metadata

The main aim of the *metadata* work package was to reach consensus on the way to meet user needs for metadata and to start the process of implementation. As metadata, defined as data about data, may serve many purposes (supporting discovery, inventory, transfer, management and exploitation), and may thus be implemented at varying levels of complexity and detail, achieving consensus is not straightforward. The lack of awareness on how to implement and use metadata on the part of both data producers and users became obvious. Two ETeMII workshops dedicated to metadata in relation to user needs, as well as a desk study, contributed to the understanding that there is a need to adopt an international metadata standard. An international standard (ISO 19115) under development is expected to be adopted widely as a recognized basis for tools for the documentation of geographic information. Also important is the shared feeling that ISO 19115 should be cross-referenced to the Dublin Core, an international initiative that describes how to document information resources. In this way, the ETeMII project has been able to stimulate further the process of consensus building that takes place as a result of a number of related initiatives in Europe.

Implementation of metadata is not only a technical issue. It is people who create and use metadata. The multi-lingual and multi-cultural environment urges the need for research at both the EU and national level on the semantics of metadata. The need for organizations to develop a strategy for dissemination of information is crucial. This strategy needs to go beyond technical aspects such as standards, to include organizational aspects. Education, a focus on organizational aspects (“organizational learning”), and improved communication between producer and user, is needed to raise awareness of the value of metadata and the need for implementation of systems to capture and publish it. Metadata is a key element in the process of giving European citizens access to public sector information.

## Interoperability through standardisation

The *standards and interoperability* work package aimed to raise awareness concerning standards, with a clear focus on implementation strategies. Interoperability is defined here as the ability of a system to use parts of another system, without special effort on the part of the customer. Interoperability should be made operational on several levels: technical, semantic, institutional and legal.

Developments in the arena of GI standards are taking place at bewildering speed. The international GI standardization process has been one of the fastest and most successful standards processes in our time. This can perhaps be understood when one takes into account predictions, such as those by Oracle, that this is likely to be a trillion dollar market within the next few years. ISO TC211 began work eight years ago. Today there are over thirty standards in the making, some of which are ready for use. Support for the process is indicated by the regular attendance of over one hundred delegates from thirty nations at its meetings. At about the same time as ISO embarked on standards development, OGC set out to develop GI standards from an industry point of view. With over two hundred blue chip companies as members, OGC is best positioned to ensure the opening markets are supplied with appropriate applications. OGC standards are being migrated to ISO TC211, through a strong, effective co-operative agreement between the two structures.

ETeMII's emphasis on the role of standardization in removing barriers to the use of spatial information in Europe is in keeping with the belief of both OGC and ISO TC211 belief that the best approach to this growing GI market is one of open standards and interoperability. The workshops relating to user requirements and metadata provided insight into the main

barriers for implementing standards. The lack of real awareness of existing standards came to the fore.

Action is required to launch small, tailored dissemination projects, which target specific groups, such as policy makers, data providers, data users and teachers. Each target group should be given access to information and tools that will directly assist them with the dissemination of interoperability issues among members of that group.

## **Summary**

Poor access to data has been a significant barrier to the development of the information society. Europe has already removed the barriers to the movement of goods and people throughout the EU. In a similar manner, the barriers to the movement of data must now be addressed. ETeMII's main aim was to contribute to the removal of this barrier. Phrases such as "e-Europe" and "Government on line" will only become reality if data is easily accessible and affordable. This will pave the way, too, for European business, government and the individual citizen to exploit the untapped wealth that is contained in the collective public databases of European municipalities, regions and countries. Government and business should be limited only by their imagination, in identifying new ways to explore and exploit a network of harmonized data.