

Towards FP6 - The JRC WP

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Choice of Priorities - Rationale

- ✍ Thematic priorities reflect the thematic concentration as per past evaluations
- ✍ All priorities comply with 3 basic criteria:
 - a. the policy area has a clear need for S&T support
 - b. the customers "request" the JRC support
 - c. the question "why the JRC?" can be unambiguously answered
- ✍ Attention is given to maintenance, expansion and improvement of S&T competencies

Different instruments

- Institutional activities (JRC projects)
 - GI&GIS: Harmonization and Interoperability
- Competitive activities
 - EC funded projects (mainly IST programme)
 - On going
 - GINIE - GI Network in Europe
 - NATURE-GIS
 - Recently completed
 - ETEMII, European Territorial Management Information Infrastructure
 - » Reference Data, Metadata, Interoperability
 - PANEL-GI, Pan-European link for GI
 - » EU Enlargement
 - GIPSIE, Geographic Information Interoperability in Europe
 - » OpenGIS

The GI&GIS project

- Support INSPIRE and European GI policy development
 - Formalization of the user requirements for the ESDI

- Standardization (Reference systems, Metadata, projections, ..)
- Contribute to the set-up a European GeoStatistical system.
- Technology watch and Dissemination
 - www.ec-gis.org
- Pan-European dbs development
 - Conception, creation and harmonization of spatial layers
 - Image2000/CorineLC2000, Agro-Meteorology, Catchments,..
 - Set-up of spatial information services
 - GIS x Natura2000
- Applied Research
 - Geomatics, Spatial analysis, Interoperability.

Technical Workshops

- Spatial Reference Systems for Europe
 - EC/MEGRIN Workshop on Marnes la Vallée, November 1999
- Map Projections for Europe
 - EC/Eurogeographics Workshop on Marnes la Vallée, December 2000
- Geographic Information and the Enlargement of the EU
 - EC/EUROGI Workshop on November 2000
- Cadastre as a component of Spatial Data Infrastructure to support agro-environmental programmes
 - EC/EUROGI/HUNAGI Workshop on Budapest, June 2001
- Establishment and Development of Interoperable Road Data and Services
 - Eurogeographics Workshop on Innsbruck, October 2001

Networking

- GI-GIS networks can be classified as
 - Horizontal (information society)
 - COGI, EUROGI, Eurogeographics, AGILE, OGC, GISIG, UNGIWG, ISO TC 211 (JRC is official liaison class A),..
 - Thematic (environment)
 - IRENA, I&CLC2000 steering Committee, AGSA(EEA), ETC/TE, ETC/NC, SUGRA-EN (Agro-Env), EUMETNET (Meteorological Services), JRC cluster on Carbon Sinks, ..

Infrastructure for Spatial Information in Europe

INSPIRE Objectives

INSPIRE principles

- Data should be collected once and maintained at the level where this can be done most effectively
- it should be possible to combine seamlessly spatial information from different sources across Europe and share it between many users and application
- it should be possible for information collected at one level to be shared between all the different levels, detailed for detailed investigations, general for strategic purposes
- geographic information needed for good governance at all levels should be abundant under conditions that do not refrain its extensive use
- it should be easy to discover which geographic information is available, fits the needs for a particular use and under which conditions it can be acquired and used
- geographic data should become easy to understand and interpret because it is properly documented and can be visualised within the appropriate context selected in a user-friendly way

The INSPIRE driving forces

INSPIRE timeline

nuclear safeguards

- lessons learnt from Iraq has shifted emphasis from verification of accuracy to verification of completeness of declarations
- high resolution imagery is input to functional model of plant
- compare declared information with inferred information

Audit of cadastre EU financing

- DG REGIO:
 - Co financing of national cadastre activities
 - Spain: Decision n°2651 du 10.10.1996 (79 MEUR)
 - Greece: Decision n°4355 du 22.12.1999 (104 MEUR)
- DG ENLARG:

CC cadastre projects

CC cadastre projects

Multipurpose Rural Area Mapping

RAM study

INFOTERRA (UK) & TRAGSATEC (SP)

- Design of a multipurpose GIS-based field identification system:
 - Synthesis of bibliography
 - Questionnaire (user needs, functional requirements, data requirements, data availability, expected difficulties and constraints)
 - Workshop in Leeds
- Investigation of data availability in Europe: case of UK & SP
- Technical solution for particular identified problems
 - Digitisation of current paper maps: case of Spain
 - Creation of new cadastral system: case of Greece

Why a Field Identification System in Agriculture?

- Direct aids on agricultural arable areas (18 MEUR)
- Indirect payments on forages areas (6 MEUR)
- Rural development plans (5 MEUR)
- Olive trees GIS (2 MEUR)
- Vineyard registers (.5 MEUR)

Need a field identification system for

- Declaration: agricultural parcels localization
- Administrative controls (100% computerised)
- On the spot checks (5% rate)

The ideal system should:

- Provide a one to one relation between the agricultural field and the identification system, or at least minimise the number of crops or farmers per ID unit,
- Ensure a maximum stability in time so that yearly ID changes are minimised,
- Offer, in addition to an identification number, a graphical description of limits and an reliable estimation of area,
- Be accepted by the applicants, avoiding conflict between neighbouring users and administration,
- Be updated in nearly real time avoiding so misunderstanding between applicants and administration,
- Be user friendly in term of accessibility and understanding, so that involuntary errors can be avoided,
- Be digital to authorise automatic administrative controls and early detection of disagreements,
- Present a detailed land cartography including all local details (ortho) so that ID unit subdivision can be done efficiently.

In term of Precision

- The fact that areas are to be given in hectares with two decimals,
- Penalties applies when the discrepancy between declared and measured area per crop group reaches 3% or 2ha,
- Technical tolerances on area measurements at field level can apply. Anyway, the tolerance should be below 5% for at least 50% of the measured area.
- Discrepancies below 2 ares may be admitted but any difference at field level above 0.5ha has to be clarified,

- In the field, exact location of field limit is rarely better than up to one meter.

Why not to use the Cadastre

- Land management respects rarely ownership limits, so that an agricultural fields intersect usually several cadastral plots,
- The percentage of rented land is high in most Member States, so that the ownership information provided by the cadaster is of little use,
- Land use in the cadaster is rarely up to date, land eligibility has thus to be based on other sources,
- Due to fiscal reason, the motivation is low to declare the land restructuration. It results that the actual limits can differ significantly from the official ones,

Why not to use the Cadastre

- Delays of cadastral update are generally long due to lack of resources,
- Areas are not guaranteed and disagreements can exist between the numerical and graphical information,
- For budgetary reason, cadastres are often analogue and of difficult and onerous access for farmers and administrations.

The EU15 adopted Systems

- Agricultural field level:
Belgium, N. Ireland
- Cadastral and Land Register parcels:
England, Italy, Spain, Luxembourg
- Ilot level:
Austria, Finland, France, Germany, Ireland, Scotland
- Bloc level:
Denmark, Greece, Portugal, Sweden, The Netherlands

GIS approach by 2005:

Cadastral options

- mapping scale should be kept a the level required by the application (between 5.000 and 10.000),
- local details should not be mapped but available through an orthophoto coverage (resolution between 50cm and 1 m),
- local projection should leave place to national systems (UTM)
- land uses and land limits should be redefined in function of the actual situation and temporal stability should be kept in mind,

- periodical update should be automated,
- cartography should be digital and seamless,
- costs should be kept minimum taking profit of the technological progress and the real level of the needs to be satisfied.

Field ID in Agriculture: The Role of MARS and JRC

- Technical orientation and follow up of MS & CC (ID system, cost evaluation, validation)
- Integration of agricultural policy needs (arable, vineyard, olive groves, forage, rural plans)
- Diversification of uses (traceability, insurance)
- Integration with other policies (multipurpose, audit)

Question ?
How to get
Mapping Agencies
interested
in the user needs?