GIUNTA REGIONALE DEL LAZIO

ESTRATTO DAL PROCESSO VERBALE DELLA SEDUTA DEL 26/06/2009

ADDI' 26/06/2009 NELLA SEDE DELLA REGIONE LAZIO, VIA CRISTOFORO COLOMBO 212 ROMA, SI E' RIUNITA LA GIUNTA REGIONALE COSI' COMPOSTA:

MARRAZZO	Piero	Presidente	MANCINI	Claudio	Assessore
MONTINO	Esterino	Vice Presidente	MARUCCIO	Vincenzo	"
ASTORRE	Bruno	Assessore	NIERI	Luigi	"
COPPOTELLI	Anna Salome	"	RODANO	Giulia	"
COSTA	Silvia	"	SCALIA	Francesco	"
DALIA	Francesco	"	TIBALDI	Alessandra	"
DE ANGELIS	Francesco	"	VALENTINI	Daniela	"
DI CARLO	Mario	"	ZARATTI	Filiberto	"
FICHERA	Daniele	"			

ASSISTE IL SEGRETARIO: Paolo IACONIS

********** OMISSIS

ASSENTI: MARRAZZO - DE ANGELIS - SCALIA

DELIBERAZIONE N. 460

Oggetto:

Adesione della Regione Lazio al progetto comunitario PLAN4ALL per la definizione di standard europei comuni per l'interoperabilità delle informazioni spaziali, finanziato dalla Commissione Europea nell'ambito del programma eContentPlus. Cofinanziamento regionale pari ad euro 37.494,00 - Cap. C11103 - es. fin. 2009.

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Oggetto: Adesione della Regione Lazio al progetto comunitario PLAN4ALL per la definizione di standard europei comuni per l'interoperabilità delle informazioni spaziali, finanziato dalla Commissione Europea nell'ambito del programma eContentPlus. Cofinanziamento regionale pari ad euro 37.494,00 – Cap. C11103 – es. fin. 2009.

LA GIUNTA REGIONALE

SU PROPOSTA dell'Assessore all'Urbanistica;

VISTO lo Statuto della Regione Lazio;

VISTA la L.R. n. 6 del 18/02/2002;

VISTO il R.R. n. 1 del 06/09/2001;

VISTA la L.R. n. 25 del 20/11/2001;

VISTA la LL.RR. n. 31-32 del 24/12/2008;

VISTA la comunicazione del Parlamento Europeo e del Consiglio n. 456/2005/CE relativa all'adozione di un programma pluriennale inteso a rendere i contenuti digitali Europei più accessibili, utilizzabili e sfruttabili;

VISTO il documento di definizione del progetto Plan4All, che è parte integrante della presente deliberazione;

VISTA la scheda di adesione della Regione Lazio al progetto Plan4All;

VISTA la scheda di conferma con la quale Regione Lazio accetta il contratto di adesione al progetto Plan4All;

VISTA la nota inviata dal coordinatore transazionale del progetto Plan4All, che certifica la partecipazione della Regione Lazio al suddetto progetto, finanziato per l'80% dall'Unione Europea (euro 149.976,00) e per il restante 20% (euro 37.494,00) da Regione Lazio, per un totale di euro 187.470,00;

PRESO ATTO che il progetto Plan4All ha come obiettivo l'armonizzazione dei dati territoriali e la definizione di standard europei comuni, al fine di semplificare l'interoperabilità e lo scambio delle informazioni spaziali;

CONSIDERATO che l'onere finanziario a carico della Regione Lazio (euro 37.494,00) farà riferimento al capitolo di spesa C11103 denominato

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"Cofinanziamento regionale di programmi ammissibili a finanziamenti comunitari e nazionali";

RITENUTO di aderire in qualità di partner al progetto Plan4All;

ATTESO CHE il presente atto non è soggetto alla procedura di concertazione con le parti sociali;

All'unanimità e in conformità con le premesse

DELIBERA

- Di aderire al progetto europeo denominato Plan4All, parte integrante della presente deliberazione, per la definizione di standard europei comuni per l'interoperabilità delle informazioni spaziali, finanziato dalla Commissione Europea nell'ambito del programma eContentPlus. Cofinanziamento regionale pari ad euro 37.494,00 – Cap. C11103 – es. fin. 2009.

Il presente provvedimento è pubblicato sul BURL del Lazio e diffuso sul sito regionale www.regione.lazio.it.

IL VICE PRESIDENTE: F.to Esterino MONTINO
IL SEGRETARIO: F.to Paolo IACONIS

Plan4All

ROMA 1 LUG. 2009

SEGRETERIA DELLA GIUNTA REGIONE LAZIO

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Plan4all

[redacted]

e*Content*plus

(Best Practice Networks)

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0 Project Summary

The project **Plan4all** will focus on the harmonisation of spatial planning data based on the existing best practices in EU regions and municipalities and the results of current research projects. The project involves detailed description and summarising of the current situation and standards, proposal, testing and implementation of spatial planning metadata profile, common data model and harmonisation procedures. The important part of the **Plan4all** project is networking standards of spatial planning data, based on previously collected and analysed experiences, and then defining common procedures and methodologies for spatial data sharing and utilisation of new pan-European standards for spatial planning data within the EU. The focus will be not only on technical and technological aspects, but also on Digital Right Managements and other IPR issues, security of data and data models. An important issue will be models for public private data sharing, and how spatial planning data could be used for social, environmental and economical development and also for protection of citizens. On the level of economical development, the sharing will support mainly real estate business and real estate investment across Europe. In a wider sense of course this can be seen as one business segment, but there is a differentiation as those investing in real estate are not necessarily the drivers and decision makers in real estate business. One of the core tasks of spatial planning is protection from natural disasters, for example flood protection. Nature preservation is another important task. Those are highly complex matters, and especially in cross-border-regions it is difficult to understand how planning limitations and measures on one side impact the system on the other side - therefore the cross-border-co-operation on those tasks is critical. Given the actual situation with planning information it is still very complicated (sometimes impossible) to have valid Environmental Impact Assessments (EIA) and Strategic Environmental Assessments (SEA) in cross-border settings. **Plan4all** can significantly contribute to improve this situation.

The expected results from **Plan4all** are European forums for SDI in spatial planning, a database of best practices, and analysis of best practices in terms of organisation, sharing, and harmonisation and SDI recommendations for spatial planning. The whole sector should profit from the availability of understandable and more transparent planning information throughout Europe. Although there are basically the same ideas and concepts behind urban and spatial planning across Europe, the legal situation is completely fragmented - sometimes down to NUTS3 or even local level. Nowadays planning laws are disjointed and even experts from one country might have difficulties to understand the planning regulations of a neighbouring country - for investors and decision makers it is almost impossible to compare (the meaning of) planning regulations across Europe. ISOCARP, the International Society of City and Regional Planners, which is a partner in the consortium, just recently issued the "International Manual of Planning Practice (IMPP)" (5th edition) that describes and compares the planning systems of more than 100 countries worldwide - including all European countries. This is very helpful for planning experts. **Plan4all** can be seen as the "next step" in such a comparison as it makes plans and their implications understandable.

1 Rationale and Objectives

1.1 Description of the issue addressed and the current situation (baseline)

Sustainable territorial planning and development is about the spatial, social and economic dimensions of development. It is concerned with where people live and work, the location of social and economic activity, and the way in which resources we possess in limited supply are exploited to achieve socio-economic objectives. National, regional and local authorities face important challenges in the development of territorial framework and concepts that balance-up and respect the needs of different stakeholders, guarantee economical development, environment protection, but also risk protection. Modern approaches to spatial planning emphasise the need for strong involvement of all levels of government, stakeholders and citizens in the planning process. Currently used methods of spatial planning do not make effective use of shared data and web technologies that insure the better use of geographic data and support the interoperability of planned solutions together with the active participation of all stakeholders of the planning process. Governments are generally very keen on evaluating quantifiable and qualitative goals and measures against their territorial planning processes, in order to improve the "performance" of government itself. On the other hand, spatial planning and related information are important not only for national, regional and local development, but also for the international dimension especially in Europe where the "continuum" of settlements characterises the transition between nations. The planning is also strongly related to natural disasters prevention, which has in many cases a cross border or international character. Therefore there is a strong need for harmonisation of data used for planning and there is an absolute need of some core of data sets for planning purposes to guarantee, that this information will be easily understandable across all Europe. This is important for all regions, and mainly for under developed regions, which need international investment together with the protection of natural resources which generally characterise these regions.

The objective of **Plan4all** is to build a network of local, regional and national public bodies, stakeholders, ICT industry, organisations dealing with planning issues and regional development, universities and international organisations to find consensus about harmonisation of Spatial Data Infrastructure (SDI) for spatial planning according to the INSPIRE Directive and also to contribute to standardisation of related Spatial Data Themes (hereinafter referred to as "Themes") from the INSPIRE Annexes. **Plan4all** will be an open network, which will cooperate also with other organisations, bodies and with related projects.

Spatial planning is defined as the comprehensive, coordinating spatially-oriented planning on all spatial scales (international – local). In contrast to the broad, comprehensive character of spatial planning, several sectoral planning authorities are in charge of single spatially relevant topics (e. g. forestry, water management, geological survey, landscape, transport etc.). **Plan4all** will focus on implementation of the INSPIRE Directive into spatial planning processes, mainly based on building spatial planning data models for selected Themes and implementing recommendations of INSPIRE Drafting Teams for Metadata and Network services. The project will use experiences coming from previous projects such as **ARMONIA, HUMBOLDT, c@r, NaturNet Redime, eSDInet+, GIS4EU and EURADIN**, whose partners are present in the **Plan4all** team. The project team will also use experience of OGC members working in the team for definition of technological standards, and take into account the recommendations of INSPIRE Drafting Teams. From the perspective of metadata standards it is expected, that a metadata profile for ISO19115/ISO19119 (implementation scheme ISO19139 respectively) will be defined. This will be an extension of the currently developed INSPIRE profile and Humboldt profile for Czech spatial planning data and services.

On the data model level the focus will be on:

- spatial and temporal representations of spatial objects across different levels of detail,
- spatial and temporal relationships between spatial objects,
- unique object identifiers,
- constraints, and
- references to common spatial and temporal reference systems as well as multilingual thesauri.

Spatial planning is multidisciplinary and reflects many Themes from various fields. It is not possible to cover all of them. In order to make the project achievable, **Plan4all** will cover just some of them.

Land cover

Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, (semi-) natural areas, wetlands, water bodies.

Land use

Territory characterised according to its current and future planned functional dimension or socio–economic purpose (e.g. residential, industrial, commercial, agricultural, forestry, recreational). Land regulation is the general spatial planning tool at regional and local levels. Land use may be characterised as ordinary mapping of existing functions as an objective picture of the use and functions of a territory, but may also be plans characterising how land may be utilised at present and in the future.

Utility and Government services

Includes utility facilities such as sewage, waste management, energy supply and water supply, administrative and social governmental services such as public administrations, civil protection sites, schools and hospitals.

Production and industrial facilities

Industrial production sites, including installations covered by Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control, water abstraction facilities, mining, storage sites.

Agricultural and aquaculture facilities

Farming equipment and production facilities (including irrigation systems, greenhouses and stables).

Area management/restriction/regulation zones and reporting units

Areas managed, regulated or used for reporting at international, European, national, regional and local levels. Includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for the dumping of waste, noise restriction zones, and prospecting.

Natural risk zones

Vulnerable areas characterised according to natural hazards (all atmospheric, hydrologic, seismic, volcanic and wildfire phenomena that, because of their location, severity, and frequency, have the potential to seriously affect society), e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions.

The spatial planning is dealing also with other INSPIRE Themes, which will be a key focus of **Plan4all**. It is for example **Cadastre**, which is currently solved in other *e*Content*plus* projects and whose partners are also members of **Plan4all**. Other topics which will be considered within the project include **Elevation**, even if it will be not defined in the data model as it is not directly used within spatial planning methodology in most countries.

1.2 Description of the project objectives

Due to the programmatic character that spatial planning has on the national level, **Plan4all** will be focused on the following more detailed spatial scales:

> **A. Regional Planning**: Regional planning is the task of settling the spatial or physical structure and development by drawing up regional plans as an integrated part of a formalized planning system of a state. Regional planning is required to specify the aims of spatial planning at an upper, overarching level. The regional level represents the vital link between a state-wide perspective on development and the concrete decisions on land uses taken at a local level within

the land-use planning of the municipalities. Its textual and cartographic determinations and information normally range in the scales of 1:50,000 to 1:100,000.

B. Local Land-use planning: Local land-use planning is the creation of policies at a local/municipal level that guides the land and resource use inside the administrative borders of the municipality in charge of this task. Sometimes "urban planning" is used as a synonym. The main instrument of land-use planning is zoning or zoning ordinances, respectively. Land-use planning is situated below the regional planning level and consist normally of two stages: first a general or preparatory land-use plan (scale 1: 5,000 – 1: 50,000) for the whole municipality and second a detailed land-use plan for small part of it, mostly legally binding (scale 1: 500 – 1: 5,000).

Plan4all will be focused on the harmonisation of metadata and spatial planning data and building networking infrastructure for sharing spatial planning data based on the existing best practices in regions and municipalities in Europe. It will be based on the results of current research activities such as HUMBOLDT, c@r, eSDInet+, GIS4EU and EURADIN and on technological state of the art defined by OGC and W3C. This will involve description, summarising, optimisation, multilingualism and harmonisation of European metadata, data models and networking standards of data for spatial planning, based on previously collected and analysed experiences, and then seeking to define common procedures and methodologies for spatial data sharing and utilisation cross Europe of new spatial planning data standards for the EU. The focus will not only be on technical and technological aspects, but also on Digital Right Managements, and other IPR issues, security of data and data models. Important issues will be models for public private data sharing, and how spatial planning data could be used for social, environmental and economical development and also for protection of citizens. For economic development, the sharing will support mainly real estate business and investment across Europe.

In general, the technological and standardisation part of the work will be separated into three parts:

1. Description, summation, optimisation and harmonisation of European standards of data for spatial planning from point of view of metadata, data models and networking services.
2. Defining common procedures and methodologies for sharing and utilisation cross Europe of new spatial planning data standards for the EU.
3. Methods of monitoring SDI utilisation for spatial planning.

Plan4all will also have important networking activities:

1. Building European cluster for SDI in spatial planning under umbrella of ISOCARP and EUROGI. The cluster will use a model based on national clusters ad hoc developed by founding consortium members and other subjects which will join the network.[1]
2. To support exchange of best practices trough interactive workshops, but also using web technologies.

Plan4all will follow current research results from past and running projects related to spatial planning methodology, such as ARMONIA, HUMBOLDT, c@r, eSDInet+, GIS4EU, EURADIN and RISE and will take into account the recommendations of INSPIRE Drafting Teams.

The main focus of **Plan4all** will be on the following steps:

Analysis

- Analysis of different user group needs related to data from spatial planning.
- Analysis of data models used in different countries for spatial planning at regional and local level.
- Analysis of needs for common model for cross border territorial decision and cross border risk management.

[1] To this regard the presence of AMFM GIS Italia as national association is foreseen to play a key role for helping to promote a/the collaborative national planning INSPIRE model to help to fulfil the achievements at EU level.

- Analysis of pan European needs for spatial planning data harmonisation from the point of view of interest of real estate business and international investors.
- Analysis of INSPIRE requirements.
- Analysis of current standards.

Design

- Design of European spatial metadata profile as extension of INSPIRE profile (there already exists experience with this task from Czech Republic).
- Design of common European minimum data set for spatial planning including mentioned Themes, which seems to be important for spatial planning.
- Design of networking infrastructure based on INSPIRE recommendation.
- Design of Digital Right Management (DRM)
- Design business model for spatial planning data.

Testing of interoperability based on current infrastructure

- Testing of interoperability on vertical level.
- Testing of interoperability on horizontal level.
- Monitoring methodology.

Dissemination

- Spatial planning data Forum building under umbrella of ISOCARP and EUROGI.
- Relation to standardisation initiatives through OGC members (HSRS) or other standardisation initiatives through EUROGI, ISOCARP.
- Relation to European projects, namely HUMBOLDT, eSDInet+ and EURADIN.
- Promotion of standards to other regions using partners who are members of networks like Euro City, ERISA, GlobalCites and others (see chapter 6. Networking).

1.3 Expected results

The expected results from **Plan4all** will be:

- European forums for SDI in spatial planning under umbrella of ISOCARP and EUROGI;
- Analysis of INSPIRE requirements and capacity building;
- Analysis of best practices in terms of organisation, collaboration, harmonisation in region;
- Recommendation for spatial planning SDI in following areas:
    - Spatial Planning Metadata profile;
    - Conceptual Data Model covering following Themes: Land cover, Land use, Utility and Government services, Production and industrial facilities, Agricultural and aquaculture facilities, Area management/restriction/regulation zones and reporting units, Natural risk zones;
    - Encoding schema for previous models;
    - Networking infrastructure design including registry, discovery, view, download, transformation, invoke spatial data, and Geo RM service;
    - Business model;
- Pilot application of ESDI for Spatial Planning;
- Four regional workshops organised by EUROGI and ISOCARP;

- One European conference under the umbrella of EUROGI and ISOCARP.

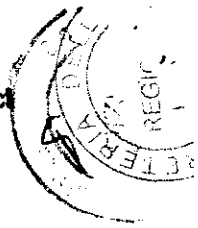
1.4 List of participants

Partic. No[1]	Participant full name	Participant short name	Country	Role in the project[2]
1	University of West Bohemia	UWB	CZ	coordination, research, standardisation
2	International Society of City and Regional Planners	ISOCARP	NL	evaluation, standardisation, dissemination, analyzing
3	Statutarni mesto Olomouc	OLOMOUC	CZ	content provider, testing, validating
4	Technology Development Forum	TDF	LV	analysing, testing, content provider, validating
5	Help service remote sensing s.r.o.	HSRS	CZ	content provider, technology provider, standardisation
6	Landesbetrieb Geoinformation und Vermessung	LGV Hamburg	DE	content provider, standardisation. testing, validating
7	Stichting EUROGI	EUROGI	NL	evaluation, standardisation, dissemination, analyzing
8	Bauska District Council	Bauska DC	LV	content provider analysing, testing, validating
9	Provincia di Roma	PROVROMA	IT	content provider, analysing, testing, validating
10	Fondazzjoni Temi Zammit	FTZ	MT	content provider, analysing, testing, validating
11	GEORAMA	GEORAMA	GR	content provider, analysing, testing, validating
12	Navarra de Suelo Residencial S.A.	NASURSA	ES	content provider, analysing, testing, validating
13	Hyperborea s.c.	HYPER	IT	standardisation, implementation, validating, testing

[1] Participant number 1 is the Coordinator. The remaining participants are beneficiaries.

[2] The main operational role that the participant plays in the proposed project. For example: content provider, technology provider, pedagogical expert, standardisation body, evaluation, dissemination etc.

Partic. No[1]	Participant full name	Participant short name	Country	Role in the project[2]
14	AYUNTAMIENTO DE GIJON	GIJON	ES	content provider, analysing, testing, validating
15	The National Microelectronics Applications Centre Ltd	MAC	IE	content provider, technology provider, standardisation
16	CEIT ALANOVA gemeinnützige GmbH	CEIT ALANOVA	AT	technology provider, standardisation
17	Asplan Viak Internet as	AVINET	NO	technology provider, standardisation
18	Dipartimento di Studi Urbani - Università degli Studi di Roma Tre	DIPSU	IT	designing, research, standardisation
19	Euro Perspectives Foundation	EPF	BG	content provider, analysing, testing, validating
20	Agentia de Dezvoltare Regionala Nord-Vest	ADR Nord-Vest	RO	content provider, analysing, testing, validating
21	Regione Lazio - Direzione Regionale Territorio e Urbanistica	Lazio	IT	content provider, analysing, testing, validating
22	Help forest s.r.o.	HF	CZ	content provider, testing, technology provider
23	AMFM GIS ITALIA	AMFM	IT	content providing facilitator, analysing, dissemination, validating, capacity builder
24	Ministry of Ecology, Energy, Sustainable Development and Town and Country Planning	MEEDAT	FR	content provider, analysing, testing, validating



2 Contribution to programme objectives

According to the *e*Content*plus* programme objectives and priorities (No 456/2005/EC decision of 24.3.2005), in order to attain the overall objective of the Programme ("*to make digital content in Europe more accessible, usable and exploitable*"), the following lines of actions will be addressed:

a) "*facilitating at Community level access to digital content, its use and exploitation*": **Plan4all** contributes to this objective, since it aims to facilitate access to spatial planning documentation (International Manual of Planning Practice (IMPP) and other documentation that is currently part of both local and regional SDI (INSPIRE Directive)) for user groups that are lagging behind and should receive adequate guidelines and opportunities (MAKING SPACES FOR THE CREATIVE ECONOMY, 2005).

b) *"facilitating improvement of quality and enhancing best practice related to digital content between content providers and users, and across sectors"*: **Plan4all** aims to standardise spatial data which are part of spatial planning documentation, including Land cover, Land use, Utility and Government services, Production and industrial facilities, Agricultural and aquaculture facilities, Area management/restriction/regulation zones and reporting units, Natural risk zones across Europe, and guarantee their multilingual description, discovery, viewing access, transformation and digital rights management to support their better utilisation and through this support sustainable regional development.

c) *"reinforcing cooperation between digital content stakeholders and awareness"*: **Plan4all** focuses on a sharing of spatial planning documentation among different holders, their better utilisation in territorial planning processes, but also their effective utilisation for risk management and for international investment. The international Sustainable Development context (Agenda 21, Rio Declaration on Environment and Development, WSSD Johannesburg, etc) has marked the action area of the environmental policies in the European Union. The assessment of the above policies requires a measurement instrument common to all 27 Member States.

The conditions that the *e*Content*plus* Work Programme identifies for Best Practice Networks are met. **Plan4all** is a multinational consortium that includes content providers, technology providers, researchers, professional bodies and users tackling the issue of SDI, but also planning and territorial development. This has been judged necessary, considering that each EU region has its own ICT adoption level of SDI and requires different scenarios and technology implementation. The project involves different content users, developers and holders. The pilot trials and the validation events aim to serve as the feedback mechanism for the usability, quality, and efficiency of planning content, delivered services, and spatial data publishing and sharing. Multilingual and multicultural aspects are addressed (see chapter 4.2). The evolving feedback mechanisms and the planned liaisons with specification and standardization bodies/groups demonstrate convincingly a potential of having a strategic impact on pre-standardization activities. The consortium is supported by an international organisation of the magnitude of the OGC. OGC members are represented in the team too. ISOCARP is an added value for accomplishing **Plan4all** main aims.

The cooperation structure that emerges from **Plan4all** aims to facilitate interoperability in applications of spatial planning technologies, setting up cooperation networks with interested organisations, establishing liaisons with specification & standardization groups, as well as participating and exchanging results with other relevant thematic networks and projects.

For this reason, a bottom-up approach is necessary in order to integrate all of the skills available in each country and to take into account the present level of heterogeneity of the system. Spatial planning competencies and know-how remain nationally, even regionally, but the overall problem **Plan4all** will address is the European dimension. **Plan4all** proposes the use of geospatial databases and their metadata to support the development of tools and to set up a web services network that will allow each region to calculate relevant indicators for the management of their agro-environmental policies. The European dimension of the project rests on the nature of this bottom–up approach that will enable the creation of European tools and a network group and participates in the construction of multi-scales environmental

management tools facilitating the implementation of multifunctional land use and sustainable rural development policies.

By implementing **Plan4all**, we will create a critical mass of 14 Member States plus Norway. This new network will join existing INSPIRE SDIC group and it will help to disseminate the INSPIRE approach within the spatial planning community. By enlarging the working groups throughout the project, we will reach a consensus on the elementary spatial units used for management and reporting in each country. The interoperability of spatial data sets and services will concern all of the European Union territory and, thanks to the multinational nature of the project network, spatial data will be accessible across borders in several languages.

Our main expertise and our originality are based on this bottom-up strategy that will keep the spatial planning skills at the national and regional level while implementing a European methodology for the development of application services. **Plan4all** addresses the core objective of the *e*Content*plus* program as it represents an opportunity to reuse the geographical data existing at the European level.

3 European dimension

The **Plan4all** project will be focused on European interoperability of spatial planning data. The **Plan4all** project will support exchange of best practices in spatial planning and will design models, tools and methodologies for integration of spatial planning data around Europe. It will impact on several aspects of society, science & technology and impart added value to a range of scientific and technological processes and products. **Plan4all** will thereby enrich the development of human knowledge and capacity building in the enlarged EU.

As the Lisbon Summit underlined, the term «sustainable development» covers economic, socio-cultural and environmental aspects in a mutually reinforcing way. In this context **Plan4all** will also support the approach that investment in human resources contributes to prosperity, economic and social cohesion as well as to improved quality of life. It will promote innovative approaches in e-government based on better governance of spatial data and spatial knowledge management. Decision-support tools will contribute to a range of social and economic objectives providing public administrations and other bodies the means to contribute to and benefit from effective knowledge management. The focus of **Plan4all** is not only on the period of the project duration, but it is also focused on post-project period (**Plan4all** exploitation roadmap).

The global result of **Plan4all** will be an improved and more effective model for spatial planning and access to spatial planning information. The project will build a European Team of different specialists working on data management, data modelling, spatial development, decision making and planning. It will enable them to effectively collaborate with new partners, thus increasing research and business opportunities for planners and their individual organizations (but it will particularly have a major impact on European SDI) and improving their ultimate competitiveness and increasing business activity for all European countries. This effect of research and improved competitiveness in economies will at the same time benefit the European economy by an exchange and balance of commercial and research transactions.

Again, the **Plan4all** Forum will advise on the selection of topics.

Topics will be addressed in a uniform manner dealing with:

- The capabilities of the technology, appropriate standards, interconnection and interoperability issues.
- How the technology can be applied in the e-government domain, obstacles to deployment.
- Potential benefits.
- Risks that needs to be assessed, expertise, financial management,
- Organizational aspects, regulatory and standard issues.
- Case study examples of successful implementation.

The project intends to provide a strong impact upon awareness, knowledge and usage of INSPIRE principles. It will prepare the necessary conditions for building common global monitoring systems. However, this impact will be generated not only through **Plan4all** partner's involvement in future projects, but also in the wider adoption of skills of building interoperable SDI applications and mutual co-operation among all partners. In wider context, it will strengthen the position of Europe in the GI field.

There is no limitation to specific regions foreseen in the project, but of course not every single technical implementation can be done within the project, so for some tasks it makes sense to have pilot regions and develop pilot solutions there. The consortium is active in all EU-countries. Solutions developed in one region will be documented and made available for implementation in other regions.

One of the results of the **Plan4all** will be the cooperation with other projects or networks, mainly with the ESPON network.

Environmental Protection & Management. Through its support of territorial planning the **Plan4all** project will particularly strengthen the identification and protection of environmentally sensitive areas, while the application of the principles of environmental management (e.g. EMAS 2, ISO 14001) will provide the important methodological basis of its integrated systems approach.

Multisectoral Spatial Development. The nature and structure of the **Plan4all** project will prepare local stakeholders for the establishment and monitoring of integrated land use and economic and sustainable development in a group of European local and regional areas.

Coordination and Impact on Lateral R&D Projects. The **Plan4all** project with its focus on training depends on the efficient collaboration of a wide diversity of scientific, professional and commercial expertise in Europe. It will use results of previous projects, but it will also collaborate with already existing or parallel initiatives and programmes (e.g. INSPIRE, GMES, FP7, INTERREG, e-Content, etc.). It will use ongoing studies on land use, sustainable development, standards & indicators, externalities and thresholds, and investigate the integration of any available results of their research & development.

Plan4all includes partners from data holders, software and planning, SMEs, consultancy, research organisations and academia in European countries and international organisations. There is substantial added value in European collaboration as none of the participants has the critical mass in human or financial terms to undertake the work alone. European collaboration increases access to pooled resources and technology transfer and emulates the 'global' marketplace.

The project adds a wider dimension to the work because of perceived and real problems in collaboration and technology transfer between new and old EU countries. Some partners already do this and need to introduce IT solutions to known difficulties in communication and control of the required two way flow of engineering, commercial and manufacturing information. The **Plan4all** results will be of mutual benefit to old and new EU country's stakeholders trading in both directions.

3.1 IPR issues

In the **Plan4all** project, knowledge and Intellectual Property (IP) will be the property of the parties generating it. The parties concerned will agree between them on the arrangements for applying for, obtaining and/or maintaining such rights on a case-by-case basis, in accordance with the EU contract.

However in the broader context of Europe, the project will focus on Digital Right Managements (DRM), and other IPR issue, security of data and data models, but to do so while encouraging and facilitating public private data sharing, and the use of data from special planning for social, environmental and economical development and also for protection of citizens.

In analysing the state-of-the-art WP2 will explore the IPR issues in a global context of all stakeholders involved. Spatial data is often acquired, owned and used in a single context. One of the aims of **Plan4all** will be to explore new innovative possibilities to make it possible to reuse data and its metadata in various application contexts. This will need DRM models that respect the IPR of the original owners, while enabling the new applications and partnerships to use the data without infringing those rights. So instead of these IPR issues being major barriers to the use and exploitation of SDI data, **Plan4all** will explore innovative DRM models to encourage and reward the use and reuse of the data by stakeholders. This will be accomplished by laying the groundwork for a semantic interoperability of the data, as well as by providing modules for the automatic reclassification of data by a user's demands, and by creation of data views that 'remodel' the raw data for use in other applications. In this way, organizations from raw data providers to value-added service providers will be able to offer their products for new applications and thus address a wider audience.

In addition to exploring the technical issues involved, **Plan4all** will explore the non-technical issues such as IPR: who owns what, the DRM models in use, alternative IPR approaches to facilitate Public Private data sharing and viable Revenue and Business Models for spatial planning data, without affecting or constraining innovative local public sector applications and the participation of citizens in the decision making process. Deliverable D2.4 (User Analysis Report) will include a specific section addressing the various IPR issues, recommended approaches to enhance more widespread use of data, and recommendations to enable and facilitate the involvement of community groups, organisations and companies engaged in the development of spatial planning SDI, while recognising and protecting the IPR and ownership rights of the original data owners.

As well as demonstrating the technological feasibility of the designed models, the "Large Scale Testbed" of WP6 will provide analysis and recommendations on the DRM approaches to protect IPRs and data security in the deployment of services at local, regional, national and European levels.

Taking into consideration the specific issues of the **Plan4all** project, the general principles listed below will apply for the partners in the consortium, based on the Grant Agreement and will be explicitly documented in the Consortium Agreement that all partners will sign:

- Access to pre-existing know-how, local applications or conversion software that is required to provide data for the project, or for the execution of the project, will be provided free on the basis of bilateral agreement between the parties concerned.
- Access to knowledge resulting from the project needed for use outside the project, will be granted upon written request on a royalty-free basis, provided no financial profit will be made.
- Knowledge or data resulting from the project that is needed for commercial exploitation, such as developing a marketing product or for creating a service, will be granted upon written arrangements by the parties participating in the project. Knowledge owners and local database users must provide adequate and effective protection for information that is capable of being used for a commercial application or related to privacy matters (personal data).
- Access to databases will include the right to extract in whole or in part the content of these databases. However, the right to extract will not include the right to compile the data in a new database intended for dissemination purposes. Each contractor will undertake all the necessary actions to comply with its national legislation in relation to the collection and use of data. Some licensing schemes will be necessary to establish concerning the re-use of downloaded data in vector format. These licensing schemes will depend upon general rules applicable in each country and upon data type (raw data or processed data).
- The general IT architecture described within the **Plan4all** project, in particular data models needed to ensure the integration of information in geo-databases, the central web services registry used to invoke the web services and the shared web services will be considered as a joint property of all parties. In particular, core data web data access will be open-access services. Except for the access to specific source codes that will be subject to separate agreements concluded between concerned parties, all the source codes related to the calculation of indicators will be freely available. They will be considered as open source codes.
- More specifically, the **Plan4all** Consortium Agreement will also settle the ownerships of knowledge in terms that partners will maintain the software they have developed. This applies to physical **Plan4all** databases, conversion software and testing software
- It is planned that software developed during **Plan4all** will be freely available for all partners (also after the end of the project). The **IPR for individual components developed during the project will belong to individual developers.** These components will be published on the basis of FOSS (or Open Source) licences. The access to personal data and associated data managed by national administrations will be formally decided between the **Plan4all** Executive Board and the relevant authorities.

Any ownership issues that may arise will be debated by the Executive Board. Decisions will be based on the board's interpretation of the Consortium Agreement, and always on the basis that the data required by the project and the results from it, should be publicly available.

3.2 Multilingual and/or multicultural aspects

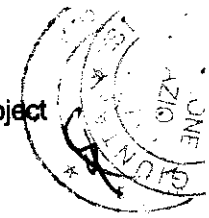
Implementation of web publishing systems and minimum data sets by all partners will be INSPIRE compliant and will thus encompass multilingual featured metadata and navigation criteria. In addition to native language, multilingual features will be implemented at metadata level. **Plan4all** specifications will be only in English, as is standard in INSPIRE documentation. The output of the **Plan4all** project will use

a common cartographic legend, which will be independent from concrete languages. This will guarantee that the **Plan4all** data and services will be universally understandable.

The Plan4all project will take into account the differences between countries (e.g. variations in map legends) and the differences in various user communities. The cartographic expressions will be modified for user groups, for example foresters, spatial planners etc. This will be done through the automatic conversion of data models.

To facilitate multilingual & multicultural access and reuse of the **Plan4all** results, the project outputs will be provided (according to their type and expected use) in multiple languages. The following table provides an overview of the major project results and their corresponding language versions that will make them more accessible, usable and exploitable in the different countries and cultures covered by the project.

Project results' type	**Languages**
Consortium-provided content	English and all project participating countries
Publicly-available content	English and all project participating countries
Domain model	English and all project participating countries
Metadata schema	English and all project participating countries
Other metadata schemas	English and all project participating countries
Software tools for repositories	English and all project participating countries
Project documentation	English
Plan4all Web portal	English and all project participating countries



4 Impact

4.1 Analysis of demand

The problem of spatial planning, its governance, participation of all stakeholders and open decision processes, is very important in whole Europe. With EU enlargement, its importance increases. There exist many cases, where low participation at all levels of government, low involvement of NGOs, stakeholders and citizens lead to non transparent processes, which in future phases of implementation can effectively block important investment opportunities. The conception of planning is interaction both between various levels of government in a region and between public authorities, business and citizens. A specific regional framework allows parties to weigh the influence of investment or administrative control by public agencies. At the same time, there are the benefits of legitimacy and transparency, public participation and the political backing of representative agencies.

On the other hand, Spatial Data Infrastructures (SDIs) are being created thanks to the INSPIRE Directive, and these SDIs are beginning to open doors to the release and exploitation of key Public Sector Information (PSI). Today's technology and know-how are such that common spatial data catalogues, housing metadata, can be queried from multiple locations, and thus provide a consistent coverage and availability of spatial data to all relevant decision makers, even if linked virtually. Spatial data duplication is minimized and decision contexts are harmonized.

The spatial planning objectives are as follows:

- Town and country planning deals systematically and globally with the land use, sets the principles of area arrangement and co-ordinates the construction and other activities influencing the land development as to their time and contents.
- Planning provides the background for sustaining the permanent harmony of all natural, civilisation and cultural values within an area, particularly with respect to the care of environment and the preservation of its elements - soil, water and air.
- Planning in its objectives emphasises the principles of complexity in using the land and changing its use, principles of consistence and continuity, and takes into account all social, economic, and cultural impacts of land development. It also respects the principle of sustainable land development.
- Planning creates a framework for private investment (including internationals) and regeneration that promotes economic, environmental and social well being for the area;

Spatial planning includes the following tasks and activities:

- defining the land use limits;
- regulating the functional and spatial dispositions of an area;
- determining the necessary clearance, restoration or reclamation interventions in an area and defining the way of its further use;
- delimitating preserved areas, preserved entities, zones of restricted activities and protective zones, and ensuring the protection of all preserved areas, preserved entities, zones of restricted activities and protective zones;
- specifying principles and conditions for time and material co-ordination of locally concentrated construction;
- assessing and evaluating area technical impacts of constructions and other measures in the area being prepared.

From the technological requirements point of view, the main demands are on data collection from different GIS and CAD systems, data management, data harmonisation from different formats and from different data models, providing metadata fulfilling INSPIRE requirements and national requirements for spatial planning guaranteeing access to data for planners and data publishing in a form, which will be understandable to citizens, but also to international investors.

4.2 Target users and their needs

Target user description	Needs	Involvement & Role	Country coverage
Regional and Local Government	Standardise all the available data and processes and improve the information access.	External stakeholder group	Europe
Local agents	Improve the information access.	Information users	Europe
Architects	Standardise all the available data and improve the information access.	Information users, information producers	Europe
Trades unions	Improve the information access.	Information users	Europe
Consultancies	Improve the information access.	Information users	Europe
Cities councils	Standardise all the available data and improve the information access.	Information users, information producers	Europe
Associations	Improve the information access.	Information users	Europe
Universities	Improve the information access.	External stakeholder group	Europe
Technical experts	Standardise all the available data and improve the information access.	Information users, Information producers	Europe
Surveyors	Standardise all the available data and improve the information access.	Information users, Information producers	Europe
Regional Consortiums	Standardise all the available data and improve the information access.	Information users	Europe
Public companies like utilities	Standardise all the available data and improve the information access.	Information users, information producers	Europe
Private companies	Standardise all the available data and improve the information access.	Information users, information producers	Europe
Real estate business	Standardize all the available data and improve the information access.	Information users, information producers	Europe
Emergency services	Standardize all the available data and improve the information access.	Information users, Information producers	Europe
Professional associations	Standardize all the available data and improve the information access.	Information users	Europe
Mancomunidades (association of local entities)	Standardize all the available data and improve the information access.	Information users	Europe
Security and defence organisations	Standardize all the available data and improve the information access.	Information users, information producers	Europe
Investors	Improve and standardise information access	Information users	Europe

4.3 Critical Mass

Plan4all project includes partners from 15 countries of Europe. It includes different groups of national, regional and local data holders represented by national public organisations (2), regional governments (5), regional development agencies responsible for data management (5) and local administration (3), SMES dealing with Spatial Planning and software development (6), International federation (2), Universities (4), GI and a Public utilities association (1). This is required due the complexity problem of spatial planning. Spatial planning requires vertical harmonisation of data between national, regional and local bodies and as well as horizontal harmonisation.

The critical mass of partners is provided not only by data holders, but also by the set of organisations dealing with planning, spatial planning data management and academic and research sector dealing with harmonisation. There is substantial added value in European collaboration as none of the participants has the critical mass in human or financial terms to undertake the work alone. European collaboration increases access to pooled resources and technology transfer, and support for global sharing of planning data and tools for non-commercial and commercial purposes.

Plan4all adds a wider dimension to the work because of perceived and real problems in collaboration and technology transfer between new and old EU counties. Some partners already do this and need to introduce to spatial planning SDI infrastructures known difficulties in communication and control of the required two way flow of engineering, commercial and manufacturing information. The project's results will be of mutual benefit to old and new EU country's stakeholders trading in both directions - harmonisations inside of regions and among regions.

All issues are respected and in the project it will be possible to provide the following large-scale tested harmonised data sets:

- Land cover - 15 in regional scale, 2 in European scale
- Land use - 60 sets in regional and local scale
- Utility and Government services - 50
- Production and industrial facilities - 50
- Agricultural and aquaculture facilities - 50
- Area management/restriction/regulation zones and reporting units - 50
- Natural risk zones - 50

4.4 Added Value

Plan4all will implement INSPIRE principles in spatial planning practice. The INSPIRE initiative intends to trigger the creation of a European spatial information infrastructure that delivers integrated spatial information services to the users. These services should allow users to identify and access spatial or geographical information from a wide range of sources, from the local level to the global level, in an interoperable and interactive way for a variety of uses. The target users of INSPIRE include policy-makers, planners and managers at European, national and local level and the citizens and their organizations. Possible services are the visualization of information layers, overlay of information from different sources, spatial and temporal analysis, etc.

The spatial information infrastructure addresses both technical and non-technical issues, ranging from technical standards and protocols, organizational issues, data policy issues including data access policy and the creation and maintenance of geographical information for a wide range of Themes[1].

Harmonise and improve interoperability of spatial planning data sets.

[1] INSPIRE Infrastructure for Spatial Information in Europe Environmental Thematic User Needs Position paper (see http://inspire.jrc.it)

Geodatabases already exist in different Member States at different scales and for different layers. Spatial data can already be re-used in many countries or regions thanks to the standardisation process conducted under the umbrella of the INSPIRE Directive. As far as spatial planning databases are concerned, each country is still shaping its own database schemes and content. Thus their cross border use meets difficulties since re-use at the cross border level is only possible when data has a well-identified and unified record layout. No common database scheme exists yet at European level for spatial planning or spatial information. This is however a basic step for enabling applications to re-use them and particularly to support the European Sustainable Development Strategy.

Increase of network services sharing

There exists a great diversity of indicators that may be derived from planning information. Apart from standardisation aspects, there is a need to develop modelling algorithms for the calculation of environmental indicators in a homogeneous way. Unfortunately, the development of operational tools and standardised procedures to calculate all these indicators represent a huge amount of work that can not be performed without a integration of resources at the European level. Based on standardised data sets the development of indicator calculation tools may be conducted in the different countries and shared through dedicated web services. This is a key element of the project that will improve the usability and quality of existing digital content of spatial planning databases, creating the conditions for the emergence of quality trans-European content-based services as well as infrastructures to allow local SDIC to retrieve processed information through dedicated web services.

Facilitate cross border use and data integration.

The project consortium mainly consists of administrative bodies (content providers) which have significant experience in collecting, storing and publishing spatial data. Some national initiatives already exist, bringing together experiences from different administrations. The European dimension of an initiative **Plan4all** putting together experiences and having its main purpose in creation of a consensual platform and identifying commonly agreed tools is also an added value. One objective of the project is to assure that metadata for data sets and services created in accordance with best practices will be accessible through discovery services.

5 Networking

5.1 Networking Capacity

Plan4all will stimulate networking of organisations dealing with SDI for spatial planning (universities, high schools, long life education). The project will pay specific attention to the promotion of spatial planning SDI as one pillar for regional innovation, which is a cross-cutting objective throughout the Research & Innovation Area, and very specifically the support to potential activities oriented to exploit the results. In order to reach the required critical mass and to assure the highest impact of **Plan4all** results, it is of primary relevance to involve spatial planning organisations from a large enough number of EU countries. Implementing the project at European level allows the consortium to have the necessary breadth to cover the complete chain and will allow know-how, experience, methodologies, and general practice to disseminate throughout Europe. The involvement in **Plan4all** of European associations with large numbers of members, such as ISOCARP, EUROGI, IFHP, Eurocities and ERISA, and the exploitation of their communication channels (e.g. mailing lists and databases of contacts) guarantees the wide dissemination of the project and its results to a very large number of educational institutions.

The networking capacity of **Plan4all** is increased as many of the project partners are members of international bodies, and they will be able to use this network to extend the impact of the project. The project partners are members the following international organisations:

- Region Bauska - Latvian Association of Local and Regional Governments, EURO-NET
- ISOCARP is involved as NGO (Non-Governmental Organization) in: Relations with International Organizations United Nations, Economic Commission for Europe, Geneva – CHE UNESCO, Paris - FRA
- Council of Europe, Strasbourg – FRA, UN-HABITAT, ISOCARP has an accredited status with several International Organisations, a.o: Accredited Representatives, UNECE, Geneva - Charles Lambert (FRA), UNECE, New York - Gilles Laheurte (USA), UNESCO, Paris - Hari Baral (FRA, COUNCIL of EUROPE, Strasbourg - Wassy Bacharyar, UN-HABITAT - Federico Malusardi (ITA)
- DIPSU founding member of the PLANUM[1] association CEIT and CEIT ALANOVA as organisations are involved in * ISOCARP - International Society of City and Regional Planners, ENoLL - European Network of Living Labs (with the City of Schwechat), * EARTO - EUROPEAN ASSOCIATION OF RESEARCH AND TECHNOLOGY ORGANISATIONS, OeGR - Austrian Society of Spatial Planners AGEO - Austrian Umbrella Organisation for Geoinformation , OCG - Austrian Computer Society, OeVG - Austrian Society for Transport Planning, VOeSI - Association of Austrian Software Industry, CORP - Competence Center of Urban and Regional Planning, that organizes the annual international CORP-conferences, see www.corp.at
- North-West RDA is involved in: EURADA (European Association for Regional Development Agency), IRE (Innovating Region for Europe), EEN (Europe Enterprise Network),
- Olomouc A.V.E.C. - Alliance Of European Cultural Cities, European Cities Marketing
- GIJON - Gijón participates actively in different networks at different level: European, worldwide and municipal. The most representative are: Conference of Atlantic Arc Cities, -EUROCITIES , - Ciudades Europeas para la Cooperación y el Desarrollo Cooperación europea en el ámbito local , Energie-Cités , -RETIS : European Transregional Network for Social Inclusion, -European Cities Marketing , -E2C: European Association of Cities, Institutions and Second Chance Schools - EUREXCTER: European Association for Territorial Excellence, FEDARENE (European Federation of Regional Energy and Environment Agencies), -CMRE: Council of European Municipalities and Regions, -CGLU: United Cities and Local Governments, -OICI: Organización Iberoamericana de

[1] publishing an international periodical Journal registered with the Court of Rome on 4/12/2001 under the number 514/2001 and distributed through the Internet and its protocols.

Cooperación Intermunicipal, -CIDEU: Centro Iberoamericano de Desarrollo Estratégico Urbano ., -AICE: International Association of Educating Cities, -W3C Consortium, Global Cities Dialogue, -International Healthy Cities Foundation, Mayors for peace, -International Congress & Convention Association (ICCA)

- The AMFM GIS ITALIA members represent regional and local public administrations, public utilities companies and GI stakeholders industries as well as SMEs, moreover AMFM is member of EUROGI.
- HSRS – OGC member, through WirelessInfo member of ENNOL.
- EUROGI – which is a pan European non governmental organisation having members with a multidisciplinary profile through which the organisation reaches more than 6 500 entities across Europe. Some major GI-SDI related companies are also members of EUROGI bringing in the capacity to deal with technological issues related to spatial planning. Moreover, EUROGI has strong connections with many international organisations of which it is to highlight the informal of the EGIN - European Geographic Information Network (coordinator) and the GSDI - Global Spatial Data Infrastructure Association (founding member and board member).

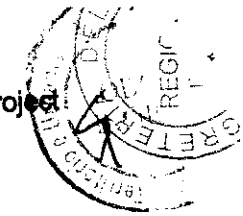
In addition, both the awareness and training activities of the project (such as the expert workshops) as well as the exploitation and sustainability activities (such as the partner affiliation networks of planners, universities, content publishers, and professional/planning associations) aim to particularly promote the uptake of results from interested stakeholders, and invite interested organisations to join the project. This is the aim of the *Affiliation & Networking Program* that aims to openly involve interested organisations in the project's progress and implementation. Affiliated partners will have access to most project documentation, events and results; they will be also invited (when desired) to participate in pilot trials and validation events. Details of particular rights and obligations of affiliated partners will be defined in the Consortium Agreement to be signed by all partners before the project is launched.

5.2 Clustering Activities

Plan4all aims to actively contribute to clustering activities with input initially on (intended, implemented, and finally also assessed) implementation of selected SDIs and spatial planning technologies (specifications/standards for spatial planning) that provides access to large numbers of potential users with particular needs. It will also allow testing (and collecting data from) the application of already developed approaches in a virgin, technologically undeveloped, field that may provide very useful feedback about the potential of SDI for spatial planning technologies for the development of the regions in Europe. Apart from a large number of domain-related experts and users, the **Plan4all** consortium also includes high-expertise organisations that are already involved in a variety of initiatives of the SDI and spatial planning initiatives. These partners will bring into the project their expertise and experience regarding the implementation of standards/specifications. They will also report back to clustering activities and standardization initiatives the results from the implementation in the spatial planning sector. Finally, the overall aim of **Plan4all** is to create a synergy between the clustering activities of *e*Content*plus*, the spatial planning technological and standardization bodies/groups and the OGC standards. Liaisons will also be sought at a project level, aiming to take advantage of experience collected by already implemented *e*Content*plus* and FP projects, such as Humboldt or c@r[1]. Humboldt as an IP research project is designing rules and harmonisation processes for European SDI based on INSPIRE Directive. One from Humboldt scenario is Urban Planning. IP project c@r under IST defines European wide collaborative methods and tools. The pilot application is spatial planning.

During the project, additional domain applications, based on clustering with existing projects, are expected to be identified and integrated into the **Plan4all** approach. These applications will stress principles of sustainable development and the relation between different domains, including

[1] Collaboration and Rural (C@R) is a project that aims to enable people in remote and rural Europe to fully participate in the knowledge society as citizens and as professionals.



environmental, economic and social aspects of sustainability and regional development. **Plan4all** will assist existing clusters to adopt "outward looking" approaches by exchanging experiences, information, good practices and knowledge. Such an exchange of knowledge and experience will facilitate the exploitation of synergies, the joint development of collaborative projects, and overall will assist clusters from different domains to move towards the desired aim of *e*Content*plus* for a single European Information Space offering rich and diverse educational content and services through an interconnected federation of INSPIRE principles that adopt commonly agreed or harmonized SDI technology standards.

6 Performance monitoring

6.1 Success indicators

Indicators	Expected Progress		
	Year 1	Year 2	Year 3
Number of the subjects which will implement the metadata of their own planning information according to INSPIRE Metadata Implementing Rules including thesauri.	20 subjects publishing INSPIRE metadata	35 subjects publishing INSPIRE metadata	50 subjects publishing INSPIRE metadata
Number of the subjects which will use the catalogue services for planning metadata.	100 users of catalogue services	200 users of catalogue services	500 users of catalogue services
Number of metadata of planning data sets :	1000 data records	2000 data records	5000 data records
Implementation of existing technology standards – Common Data Model. Indicator will measure how many components of the "national/sub-national" data models will be considered and inserted in the common data model. Mainly the indicator will focus on the usability of the developed common data model. Due to the characteristics of the model the indicator will be mainly of qualitative type.	Definition of common data model	Implementation of common data model by 20 organisation	Implementation of common data model by 50 organisation
Implementation of networking standards	Design of Networking infrastructure	Implementation of networking infrastructure by 20 organisations	Implementation of networking infrastructure by 50 organisations
Aggregation of critical mass of content	4	10	20
Consensus building. The indicator will measure the number of organisations participating in the work of different working groups defining Plan4all standards.	20	50	100
Expert workshops on spatial planning technologies.	4	4	4
Conferences organised	0	1	1
Affiliated partners	10	80	150
Project web site hits	400,000	1 000 000	2 000 000
Produced newsletters	2	2	2
Project publications/presentations	10	15	20
Cooperation and links with other projects. How many attendances and presentations will be given in the context of other EC.	6 projects	10 projects	15 projects

At the moment the following projects are foreseen to start exchanges with: EURADIN, eSDInet+, GIS4EU, HUMBOLDT, VESTA-GIS,Nature-GIS			
Organisation of events with user participation	18	18	18
Edited special issues in scientific journals	0	3	6

6.2 Performance measurement and evaluation

A monitoring mechanism will be set up by the Project Board to collect data from all partners. The data collected will be used to calculate detailed indicators of the following implementing rules for all project activities. The basis for monitoring is a prior list of indicators and also expected numbers for every stage of the project. The indicators described in the previous chapter were chosen in order to be clear to partners, measurable, capable of showing progress of the main elements and goals of the project. Each indicator will be described in the following way:

a) Reference to the project objective.

b) Numbers, which has to be reached in every period of the project.

For every period, indicator values achieved will be compared with expected results. This will be the basic input for the Project Manager and Project Board to assess progress of the report. The indicators will be defined for periods of Month 12, Month 24 and Month 30, but these indicators will be estimated every quarter to provide feedback to the project management team and to define concrete and immediate actions in case that some indicator targets will not be achieved.

Another important part of the performance measurement will be to monitor implementation in tested content deployment based on the INSPIRE Monitoring and Reporting Implementing Rules. This will give feedback on how the **Plan4all** results are compliant with INSPIRE. The monitoring will be based on the INSPIRE Implementing Rules.

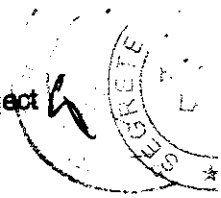
The monitoring will be focused on:

- **the existence of metadata for:**
  - the spatial data sets of the Themes in Annex I of the INSPIRE Directive;
  - the spatial data sets of the Themes in Annex II of the INSPIRE Directive;
  - the spatial data sets of the Themes in Annex III of the INSPIRE Directive;
  - the spatial data services.
- **the compliance of metadata for:**
  - the spatial data sets of the Themes in Annex I of the INSPIRE Directive;
  - the spatial data sets of the Themes in Annex II of the INSPIRE Directive;
  - the spatial data sets of the Themes in Annex III of the INSPIRE Directive;
  - spatial data services.
- **the extent of spatial data sets of the Themes in:**
  - Annex I of the INSPIRE Directive;
  - Annex II of the INSPIRE Directive;
  - Annex III of the INSPIRE Directive.

- **the compliance of spatial data sets of the Themes in:**
  - Annex I of the INSPIRE Directive;
  - Annex II of the INSPIRE Directive;
  - Annex III of the INSPIRE Directive.
- **the accessibility of metadata about:**
  - spatial data sets;
  - spatial data services.
- **the accessibility of spatial data sets** through:
  - view services;
  - download services.
- **the use of spatial data services:**
  - discovery services;
  - view services;
  - download services;
  - transformation services;
  - invoke services.
- **the compliance of spatial data services:**
  - discovery services;
  - view services;
  - download services;
  - transformation services;
  - invoke services.
- **the use of the infrastructure for spatial information. In particular:**
  - the use of the spatial data services of the infrastructure for spatial information based, inter alia, on the results of the monitoring indicators;
  - the use of spatial data sets of the three Annexes by public authorities, including what and how;
  - with particular attention to good examples in the field of environmental policy;
  - if available, evidence to indicate use of the infrastructure for spatial information by the general public;
  - examples of cross-border usage and efforts made to improve cross-border consistency;
  - how transformation services are used to achieve data interoperability.

Partners will report on the organisation of the quality assurance processes within their infrastructures for spatial information. The report will comprise:

- a description of the quality assurance procedures including the maintenance of the infrastructure for spatial information;
- an analysis of the quality assurance problems related to the development of the infrastructure for spatial information based, inter alia, on the results of the monitoring indicators;



- measures taken to improve the quality assurance of the infrastructure;
- available description of the setup of the certification mechanism.

7 Project work plan

7.1 Description of work and roles

This section describes the approach and provides the detailed work-plan to achieve the objectives of the **Plan4all** network of best practices for the full duration of the project. It explains the structure of the **Plan4all** work-plan and how the plan will lead the Partners to achieve the objectives on time.

For spatial planning data holders it is important to understand whether and how existing ICT tools and related applications can enhance their data sharing in appropriate ways. They are also concerned with protecting their IPR and the business security of information.

The strategic focus of **Plan4all** underlines the interest in the support of spatial planning information sharing throughout Europe among different levels of administration and also between administrations, citizens and businesses. It is also evident that some areas within Member States already have the necessary infrastructure for spatial planning SDI and have already responded to new and emerging opportunities. Identification of such areas and the examination of how they use, or can use, spatial planning SDI to drive local change is a necessary and integral part of the work. There is a need to examine areas that have already successfully built spatial planning SDI as a driver of regional change. Identifying areas and examples of what has already taken place will be achieved through identification of innovation challenges in specific areas and analysis of spatial planning SDI framework conditions for innovation.

To achieve the objectives of Best Practice Networks for geographic information, **Plan4all** will undertake to support local and regional public administrations for participation in the INSPIRE process and on the economic and societal potential impact estimation of participation of such SDI in different public services and its use in different market sectors, including public online services and information, particularly focused on development of regions. This will take into account new forms of collaboration, work organisation and working environments. Innovation will focus on the impact of these new methods and on the implications for the modernisation of institutions and democratic practices in European regions.

The overall strategy of the project is based on a bottom-up approach and will aim to respond to the needs of municipalities and regions or end-users through analyses in WP2. Our method goes from the municipalities, regions and countries towards Europe. To ensure complete coherence with the expectations of the end-users during the project, the work of all the committees (see management structure) will be organised into workshops in order to establish a consensus on the methodology, validate results and approve the next steps. The project has been planned in three distinct and complementary phases involving a variable number of partners. The aim is to establish the initial consensus about needs and demands in WP2 and WP9 through the user partners and universities;, to define standards and architecture in WP3, WP4 and WP5 through research and technical partners; and to implement solution and content deployment to all partners, validate the results and find EU consensus through technical partners and end users.

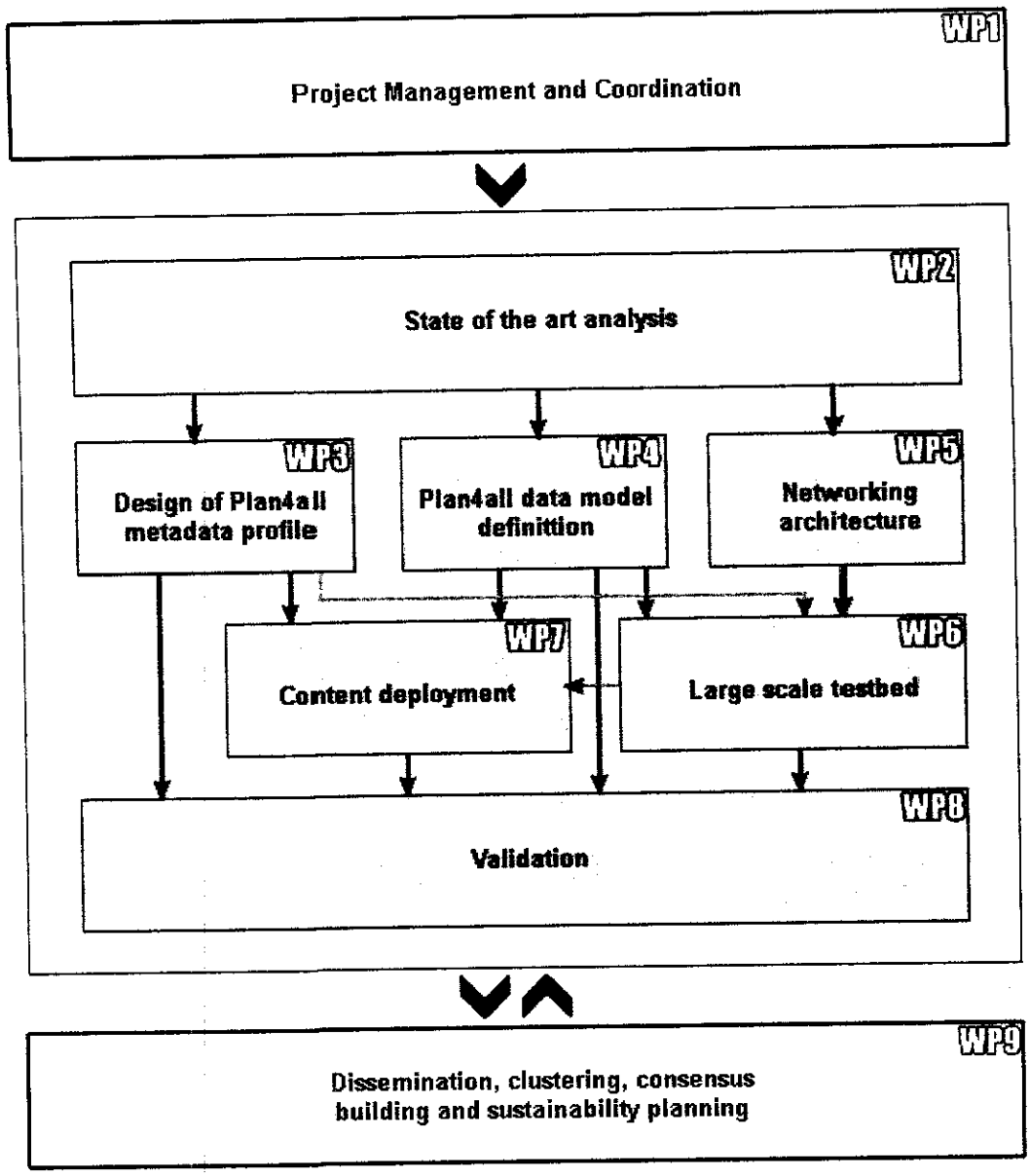


Fig.1 Organisation of WPs.

The work-plan of **Plan4all** has been structured into nine Work Packages (hereinafter referred to as "WPs") (see Fig. 1). They facilitate the proper organisation and implementation of the project. The WPs are as follows:

WP1 Project Management and Coordination – will ensure the proper organisation, implementation and orchestration of the rest of the project activities, in order to monitor and evaluate the progress of the project.

WP2 State of the art analysis - will be focused on identification of leading regional and local administration, identification of innovation challenges and a framework structure for analysing relevant technology developments and trends, analysis of technology and application developments that are relevant to spatial planning SDI needs and on analysis of standard metadata, data models, networking technologies and on analysis of user requirements on planning systems.

WP3 Design of Plan4all metadata profile – will define common metadata profile for European Spatial Planning as overlapping of national legislation for spatial planning and INSPIRE profile.

WP4 Plan4all data model definition – will be focused on national models and their combination and translation into common models covered by selected INSPIRE Themes.

WP5 Networking architecture – will extend the INSPIRE networking principles for the purpose of European Spatial Planning.

WP6 Large scale testbed - aims at using existing technologies and services that are already successfully implemented and operating in some regions by the project's technical partners, in order to appropriately deploy them for the needs of **Plan4all.**

WP7 Content deployment - will populate the **Plan4all** spatial data repositories using semantically rich and multilingual metadata.

WP8 Validation – will provide the quality framework for the evaluation of the outputs of **Plan4all** through pilot evaluation and validation activities to be performed within the targeted user organisations.

WP9 Dissemination, clustering consensus building and sustainability planning – will include all activities planned to promote and valorise the project results. A major aim is to achieve wide dissemination at multiple levels, including publicity/dissemination activities. It will also involve all activities related to creating liaisons with SDI technology standards, as well as formulating networks for future sustainability of the **Plan4all** network and the promotion of its results.

Milestones (M):

Milestone 1 (M1) in Month 6 - End of initial analysis

Milestone 2 (M2) in Month 9 - Design of Spatial Planning Metadata

Milestone 3 (M3) in Month 12 - Closing of first year and first financial statement

Milestone 4 (M4) in Month 16 - Spatial planning data model and networking architecture design

Milestone 5 (M5) in Month 18 - Progress report

Milestone 6 (M6) in Month 24 - Platform and content deployment

- Closing of second year and second financial statement

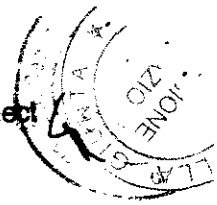
Milestone 7 (M7) in Month 30 - End of validation and reports from validation

- Project ending and third financial statement

7.1.1 Role of partners

The partners will be divided into groups according to their skills and also according to the task for which they will be responsible. Every partner could eventually participate in more groups, which will follow the structure of WPs. The groups will be:

- **Data providers group** will deal with user requirements, deployment of local and regional platforms, and deployment of the content and validation of platform. The group of content providers is formed by OLOMOUC, HSRS, LGV Hamburg, Bauska DC, PROVROMA, FTZ, GEORAMA, NASURSA, GIJON, CEIT ALANOVA, EPF, ADR Nord-Vest, Lazio, HF, AMFM, MEEDAT;
- **Research and standardisation partners** will deal with analysis of INSPIRE requirements and definition of standards. The research partners are UWB, ISOCARP, EUROGI, HSRS, Hyperborea, MAC, CEIT ALANOVA, AVINET, DIPSU, AMFM ;
- **Technological partners** will deal with deployment of the local and regional platforms and central **Plan4all** portal. They will also play main role in exploitation of platform. The technological partners are HSRS, Hyperborea, MAC, CEIT ALANOVA, AVINET, HF;



- **Validation partners** will deal with validation methodology and will also participate on validation of standards and cooperate with data holders on validation of platform. The partners are ISOCARP, EUROGI and all Data providers;
- **Dissemination partners** will deal with dissemination of results and also with strategy for future exploitation. The dissemination partners are ISOCARP, EUROGI and all Research and standardisation partners.
- **Management team** will be formed by UWB, HSRS and by all WP leaders.

7.2 Technologies and Standards

The main objective of **Plan4all** is not to develop and implement one common platform, but to define the rules for European spatial planning data interoperability. These rules have to be technologically independent and they will allow implementation of a solution based on either commercial or Open Source platforms. For the demonstration of feasibility of such a solution, there will be an implemented solution covering all pilot areas, which will be an effective combination of both Free and Open Source Software (FOSS) and commercial systems.

The following outlines the technical approach that will be followed to deliver and make recommendations on the harmonisation of spatial data related to spatial planning. The approach addresses the strategic questions, namely:

a) What are the needs for harmonisation of spatial planning documentation at European level? Which are the main layers to be harmonised? Which thematic layers are affected by spatial planning? What could be the benefit and how could it be quantified on the level of public and private sector?

b) What are the positive experiences of data holding partners with building SDI for spatial planning?

c) What are experiences of technological and scientific partners with SDI for spatial planning?

d) What are the responsible organisations in single EU countries for definition of models for spatial planning documentation?

e) What are the current experiences, best practices and projects at European and national levels leading to harmonisation of spatial documentation?

f) How the experience from the regional level and municipality level could be transferred to national level? Spatial data are managed at the regional and municipality level. Important question is how to transfer best practice experience from network based at the level of regional or municipality partners to national level.

g) What are the main barriers for better sharing of data for spatial planning from the point of view of metadata, data models, networking services and legal and business issues?

h) What are the socio-economic costs and benefits for harmonisation of spatial planning data across Europe?

i) How can common technological solutions support harmonisation of spatial planning data?

Underlying these questions is the perception that differences between municipalities, regions and countries could be reflected in spatial planning methodology and also in existing planning SDI and that there will be found consensus about future common spatial planning SDI, which could be demonstrated by the examples of existing best practices. The use or application of new technologies and standards can now largely determine or impact the development of regions, protection of citizens and opportunities for businesses and services. Answering these questions is also very important for demonstration of the INSPIRE advantages, but also feasibility of the INSPIRE directive, because **Plan4all** will bring to INSPIRE implementation lower levels of administration, regions and municipalities. And there will be also established a strong link with industries, as parts of spatial planning documentation are also data from private companies.

The **Plan4all** is focused on the standardisation, harmonisation and processing of geospatial data in urban planning. The **Plan4all** project will be focused on the following Themes:

- Land cover
- Land use
- Utility and Government services
- Production and industrial facilities
- Agricultural and aquaculture facilities
- Area management/restriction/regulation zones and reporting units
- Natural risk zones

The changes of European cities and countryside are expected for the spatial planning data flow processes of urbanisation, re-urbanisation, de-urbanisation, suburbanisation, re-cultivation of landscape, etc. The geospatial data will be necessary in all decisions associated with ecological risk or sustainable growth. Therefore, the activities connected with acquisition, processing and providing of urban planning data are only generically addressed today. The fundamental problems of spatial planning are that data providers use data in different data models (e.g. GIS model, CAD model, raster images, data models of sensor measurements etc.), data formats (e.g. SHP, GML, DGN etc.), mediums (e.g. web services, files on CD, printed map etc.), quality, portrayal rules, and other aspects (e.g. terminology, reference models, spatial and temporal aspects, language, metadata, data transformation, data consistency, etc.). The main problem connected with acquisition, processing and the provision of spatial planning data is data heterogeneity, because the data come from many different sources (data providers). The heterogeneity of data is even more important, because the heterogeneity results in better or worse data accessibility and use.

The need for data sharing and their harmonisation is driven by economic considerations, but also by the need for environment protection and risk management. In a consequence of growing globalisation the interconnection is related to more and more economic subjects and data sets. In addition, there are all of the relations with the European Union members and other European countries. While the majority of data is created on the local level, this data is used at higher levels (e.g. regional administration or government). The spatial plans are extremely important for international real estate business, but spatial planning is also a critical issue for risk management and environmental protection, which is global and cannot be solved in one region or country.

Acceptance of these datasets depend above all on delivery of metadata based on national and international legislation rules (e.g. INSPIRE requirements). Therefore **Plan4all** will create the common spatial planning metadata profile (combination of requirements of ISO 19115, INSPIRE and national legislatives). After its acceptance, spatial planning experts will be able to process data originating from different sources. It could mean their cataloguing, storage (mainly in some database tool), and preparation for the distribution to end-users (mainly through web services). Presently, they must use many different software products to perform these operations (generally for conversions of heterogeneous data properties). After an implementation of the **Plan4all** solution in this step the experts or system will be able to prepare harmonized model for spatial planning data by leveraging the many heterogeneity issues that are presently: data format conversion, datasets merging, datasets re-projection, data model transformation, terminology harmonisation (and language translation) for thematic attributes, generalisation to needed scales and standardized portrayal. In practice it implies also that their storage (mainly in some DBMS) will require adjustments for previous operations. With the introduction of the **Plan4all** solution for the harmonisation process, the GIS expert will need only one common tool based on Web Services. The main goals of this solution are better possibilities of manipulating, searching, visualising and sharing data, improved data access and higher quality of data and easier uniform data processing. Finally, after having harmonized datasets and corresponding metadata, it is possible to offer a catalogue interface to the data and also the catalogued data could be published (mainly through web services) (Fig.2).

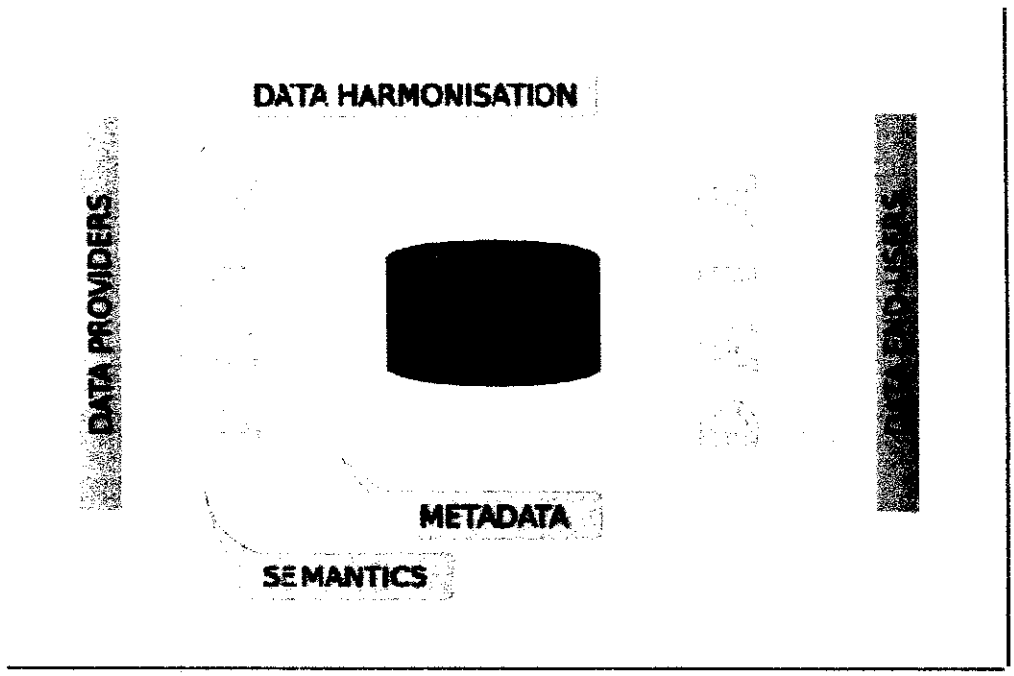


Fig.2 Data processing.

For effective reuse of spatial data outside of its original context it is necessary to ensure also the semantic interoperability of the data: the meaning of the data content (the semantics) has to be understandable for new users. Semantic matching (or 'mapping') between terminology and concepts used in different contexts (and different countries) is therefore an important part of the data harmonisation effort in this project. For this purpose one or more spatial ontologies will be built. In these ontologies the relationships between terms (e.g. synonyms, or terms that are aggregate concepts for other more detailed ones) can be described in a formalized way, so that computer software can 'understand' and reason with this information. The spatial ontologies can be used as input for the metadata search engines to assist the user in finding his/her way in the metadata. In this way the fitness-for-use can be better assessed and the chance of misinterpretation is reduced. The semantic mapping rules can also be put to use in the querying and analysis (data integration) of the spatial data, for example for the reclassification based on user's needs. Semantic mapping will furthermore help in the harmonization process itself as part of creating the harmonized models and profiles by specifying conversion rules between the original 'local' data models and the global harmonized models.

The common **Plan4all** data model will be a conceptual data model: which is not concerned with implementation details (data formats, storage systems, and other implementation issues). It merely describes the information from a usage viewpoint: what is the information that is needed, how can it be modelled into classes, attributes and relations between classes, what are the definitions (in words) for these information items (what is a 'Stream', a 'River', a 'WaterSurface', a 'Parcel', what categories are there in the case of 'Flooding Risk': 'low', 'high', 'very high'; how are these categories related to sensor measurements, what is the meaning of these categories in terms of emergency response, ...). This will support implementation of these models in different platforms using different technologies.

For the inventory of data harmonisation issues a checklist will be used based on:

- one table that describes causes for heterogeneity in spatial information
- one table that helps in carrying out a gap-analysis: the comparison between the existing (pre-harmonised) state of the data and the required (harmonised) state of the data,

- a list of types of geometry (from an INSPIRE Survey), to more easily describe the geometry of the data that will be used in the Scenario (points, lines, curves, polygons/surfaces, 3D volumes, coverage's, network data)

UML is an excellent tool for conceptual modelling and to provide definitions for classes, attributes, etc. On the other hand, UML is not practical for real data sharing, which will be based on ISO and OGC standards. There is no way to implement UML models inside of OGC services. Therefore, as for implementation of services based on the INSPIRE Directive, a feature catalogue (ISO 19110) will be used as a second way to describe a data model. As there is an overlap between these two ways to describe a data model, it will be investigated how overlapping parts of the feature catalogue can be derived from the UML diagrams.

The **Plan4all** architecture will be based on an analysis of needs of spatial planning data sharing among regions and among countries. The main focus will be on the tasks related to risk management and international investment, but we will look also for other needs for sharing spatial planning information. The result of the analysis will be a set of services which will be required for **Plan4all**

For the **Plan4all** architecture the following principles will be considered to set up a commonly designed infrastructure. It will include:

- Accessibility
- Multilingualism
- Security
- Privacy
- Subsidiarity
- Use of Open Standards
- Use of Multilateral Solutions

The design and implementation of the **Plan4all** networking demonstration platform will use a basic set of INSPIRE services.

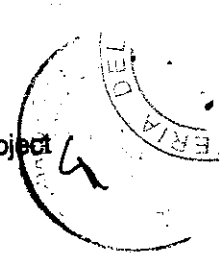
Discovery Services will make possible to search for spatial data sets and services on the basis of the content of the corresponding metadata and to display the content of the metadata. The goal of discovery will be to support discovery, evaluation and use of spatial data and services through their metadata properties. The important aspect will be:

- Nature of the Metadata
- Availability of the Metadata

View Services will make possible, as a minimum, to display, navigate, zoom in and out, pan or overlay viewable spatial data sets and to display legend information and any relevant content of metadata. The implementation rules for the directive highlight the following aspects of a view service:

- Multiple datasets View Geometry (supported spatial reference systems)
- Multiple datasets View Output Format (supported formats and their possible integration)
- Temporal data dimension
- Legend availability and handling
- Restriction of access and e-commerce
- Multilingualism
- Relationship with client applications

Download Services will enable copies of spatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly. A download service will support download of a complete dataset or



datasets, or a part of a dataset or datasets, and where, practicable, provide direct access to complete datasets or parts of datasets. Gazetteer like services are also covered by a type of download service.

Transformation Services will enable spatial data sets to be transformed with a view to achieving interoperability, it will include coordinate transformation service, but also generalisation services.

Invoke Spatial Data Services service will support usage of individual (spatial) services as well as combinations of individual (spatial) services both synchronous and asynchronous through a (web) service orchestration or "workflow engine". For spatial data services available on the Internet, the service will enable a user or client application to run them without requiring the availability of a GIS.

The **Plan4all** Services will be tested on the current European standardisation effort given by INSPIRE directive and implementation rules, worldwide standardisation effort of Open Geospatial Consortium and W3C consortium, and on the results of European and National research activities and will extend European best practices in the area of European and national research and innovative projects into the solution, which will on one side guarantee feasibility of implementation **Plan4all** platform on all levels of public sector. The **Plan4all** project will analyse given standards and will combine these standards with the needs of spatial planning. The focus will be also on an optimal combination of commercial and open source platform to reuse existing solutions.

Plan4all functionality will be based as much as possible on standards defined in INSPIRE implementation rules to ensure maximum interoperability and extensibility around Europe. The most important standards for geospatial information are ISO 19100 series and Open Geospatial Consortium (OGC) standards. The shared system will be built on service oriented architecture (SOA). OGC services should be preferred. The design of architecture of platform for test beds will be based on analyses of mentioned standards

In the INSPIRE Implementing Rules the INSPIRE metadata profile is defined (seemingly standard independent, but the ISO 19115/19119/19139 implementation is proposed in Technical Guidelines). The CSW servers may be cascaded.

A Web Map Service (WMS) will produce map compositions of georeferenced data. WMS doesn't provide data itself but produces map images. It may be used as a portrayal service in the portal architecture. The original OGC standard WMS 1.3 was adopted by ISO (as ISO 19128). Maps may be rendered in several reference systems depending on WMS implementation. Implementation of optional functions is expected:

- querying map features
- legend, metadata URL,
- user defined styles support and filtering (Symbology Encoding, Styled Layer Descriptor and OGC Filter Encoding specs.)

Web feature service (WFS) is intended for use on spatial vector data transfer in GML format based on OGC Simple Feature Model. Basic WFS only enables reading data from server. The client may query data using OGC Filter Encoding expressions. Transactional WFS (WFS-T) enables also inserting and updating data on server with transactions.

Web coverage service (WCS) is intended for use on coverage data transfer, typically raster data (eg. satellite and airborne images, DEM etc.). Output format is georeferenced raster, eg. geoTIFF etc. Data may be retrieved in different coordinate reference systems. Multiband data may be also retrieved. Former standard version was 1.0. Current standard version 1.1.2. It includes transaction support.

Gazetteer profile for WFS is not officially adopted until now. On the basis of current specification (version 0.9.3) it is planned to extend WFS providing elements mapping parent / children / relative relationship enabling client to transverse the tree similar to thesauri implementation. The implementation will enable sophisticated searching of places and objects. For the portal simple WFS may be used in the first phase.

Web processing service (WPS) will enable implementation of spatial analysis as a web service. It enables implementation of whatever analysis without bounds. Input may be:

- data sent in the request XML body
- data from another web services (WFS, WCS, ...)
- data tightly bound with the service itself (opaque for end client)
- combination of above mentioned data sources

Response XML body may include output data or URL to result data.

Services may be cascaded to provide desired functionality.

Other expected standards will be:

- Filter encoding - Specification defines XML based query language for OGC services (WMS, WFS, CSW). The language introduces both attribute and spatial operators.
- Styled Layer descriptor (SLD) for enabling predefined or user defined styles. The colour, size, patterns, markers, labels etc. may be defined. Filter encoding may be used for filtering features.
- Web Map Context (WMC) will support to store and retrieve map composition e.g. on local disk for WMS.

For the integration of the Sensor environment with the Web Environment, a Web Interface will be used defined by the Open Geospatial Consortium, Inc. (OGC) initiative called Sensor Web Enablement (SWE). The standards could be divided between encoding and services.

7.3 Background and reference documents

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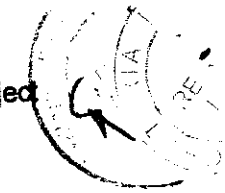

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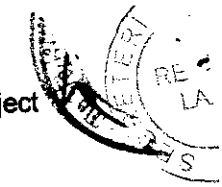
Glossary of terms

ARMONIA	Applied multi Risk Mapping of Natural Hazards for Impact Assessment
c@r	Collaboration and Rural (C@R) is a project that aims to enable people in remote and rural Europe to fully participate in the knowledge society as citizens and as professionals.
CAD	Computer-aided design
CAGI	Czech Association for Geoinformation
CD	Compact Disk
CLC	Corine Land Cover
CORBA	Common Object Request Broker Architecture
COSIN	Community Spatial Information Network
CSW	Catalogue Service for Web
DBMS	Database Management System
DEM	Digital Elevation Model
DGN	File format for CAD
DRM	Digital Right Management
DTM	Digital Terrain Model
EB	Executive Board
EC	European Commission
EMAS	Eco-Management and Audit Scheme
ERISA	The European Regional Information Society Association
ESDI	European Spatial Data Infrastructure
eSDInet+	Thematic Network funded by the European Commission
ESPON	European observation network for territorial development and cohesion
EU	European Union
EURADIN	eContent*plus* Programme Project
EUROCITIES	Network of major European cities
EUROGI	European Umbrella Organisation for Geographic Information
FIG	Fedération Internationale des Geometres
FOSS	Free and open source software
FP7	Seventh Framework Programme
Geo RM	Geo Rights Management
geoTIFF	public domain metadata standard which allows georeferencing information to be embedded within a TIFF file
GI	Geographic information
GIS	Geographic Information System
GMES	Global Monitoring for Environment and Security



GML	Geography Markup Language
HTTP	Hypertext Transfer Protocol
HUMBOLDT	European project - http://www.esdi-humboldt.eu
ICT	Information and Communication Technologies
IFHP	International Federation for Housing and Planning
IIOP	Internet Inter-Orb Protocol
IMPP	International Manual of Planning Practice
INSPIRE	Infrastructure for Spatial Information in European Community
INTERREG	EU-funded programme
IP	Integrated Project
IPR	Intellectual Property Rights
ISO	International Organization for Standardization
ISOCARP	International Society of City and Regional Planners
IT	Information Technology
Moodle	Course management system
Nature-GIS	Network bringing together the different stakeholders in protected areas: users and experts in IT and in nature conservation.
NaturNet Redime	6th FP project
NUTS	Nomenclature des Unites Territoriales Statistique
OGC	Open Geospatial Consortium
ORCHESTRA	One of the European Union's major research and innovation projects for risk management
PB	Project Board
PLANUM	An international periodical Journal registered with the Court of Rome on 4/12/2001 under the number 514/2001 and distributed through the Internet and its protocols
PM	Project Manager (or Person-Moth)
PSI	Public Sector Information
R&D	Research and Development
RISE	Reference Information Specifications for Europe
RM	Right Management
SC	Sub Committee
SDI	Spatial Data Infrastructure
SDIC	Spatial Data Interest Community
SHP	ESRI format for data
SLD	Styled Layer Descriptor
SME	Small and Medium Enterprise
SOA	Service Oriented Architecture

SWE	Sensor Web Enablement
UML	Unified Modeling Language
UNESCO	United Nations Educational, Scientific and Cultural Organization
URL	Uniform Resource Locator
VESTA-GIS	Vocational Educational and Sectoral Training network on GIS & GI Application domains
VoIP	Voice over Internet Protocol
W3C	World Wide Web Consortium
WCS	Web Coverage Service
WFS	Web Feature Service
WFS-T	Web Feature Service Transactions
WMC	Web Map Context
WMS	Web Map Service
WP	Work Package
WPS	Web Processing Service
WSSD	World Summit on Sustainable Development
XML	Extensible Markup Language