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Short Description:
As a basis to management requirements, an analysis of requirements and specification of system should be examined. This analysis should consider the palette of requirements coming from the different stakeholders, considering the data itself but also the services related; this analysis will include the planning instruments and planning issues. Related to this analysis, the involvement of the Stakeholder Board (SB) has an important role, by high-quality inputs and by targeting and identifying specific requirements (see 2.1 Management structure).
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1. Introduction

Today, urban and regional planning datasets are not aggregated and not easy to use for business issues: planning data users are confronted to fragmented data sets, unable to create comparative analysis, monitoring and analysing urban statistics, or developing urban inquiries and projects. Researchers, spatial planners and professionals from the real estate world as well as other disciplines, such as insurance industry, investors, or market-relevant activities related to urban development have a growing stake in such capabilities.

Consequently, the plan4business project is aiming to develop a web platform, which will offer urban and regional planning data users a full catalogue of harmonized planning data and services such as transport infrastructure, regional plans, urban plans and zoning plans. To be competitive on the business market, this platform will of course have to offer the data itself in integrated, harmonised and thus ready-to-use form, but it will also have to offer rich analysis and visualisation services via an adapted Application Programming Interface (API) and an interactive web frontend. Functions offered will have to range from simple statistical analysis to complex trend detection and to 2D/3D representations.

The plan4business project started in April 2012, will last till March 2014 and the project consortium is as follows:

Participant no.	Participant organisation name	Part. short name	Country
1 (Coordinator)	Fraunhofer Institute for Computer Graphics Research	Fraunhofer IGD	Germany
2	University of West Bohemia	UWB	Czech Republic
3	Help Service Remote Sensing, s.r.o.	HSRS	Czech Republic
4	International Society of City and Regional Planners	ISOCARP	Netherlands
5	Geosystems	Geosystems	Poland
6	Asplan Viak Internet as	Avinet	Norway

1.1 Aim and Context of the report

With the aim to create a web platform offering urban and regional planning datasets and services, first analysis of management requirements as well as user identification and data requirements are necessary. This analysis is the topic of this report: it is going to consider the palette of requirements coming from the different stakeholders, considering the data itself but also the services related.

The report is considering also the context of planning instruments and planning issues. As other contributors to the report, the involvement of the Stakeholder Board (SB) is playing an important role, by high-quality inputs and by targeting and identifying specific requirements.

Therefore, this report is focussing on the topics of:

- user requirements,

- users typology and
- user demand on data.

Main questions are:

- How can we bring together the demand of the users to the market offer and conditions?
- How is it possible to develop from the available data a sustainable business model, attractive for a large range of business activities?
- How is it possible to develop an open platform collecting the datasets and offering a complete and easy-to-use platform, accessible to every type of business?

There is a substantial amount of geo-data on the market: as long as they are not harmonized and not accessible in an integrated way, their value may be not considered in the future. This is precisely the aim of the project plan4business.

1.2 Content

This document is organized as following:

Chapter 1 is introducing the report and the context of the project.

Chapter 2 is dealing with the methodology used for this report: it describes the way how the users and their requirements have been identified, how the data requirements have been developed, and how the system specifications based on the user requirements were developed.

Chapter 3 is describing the planning system, the urban and regional planning context, explaining the differences between the urban and the regional planning. It is also considering the topic of land use management, as a central issue in the process of the urban and regional planning. A land use management system, as well as the different categories of land use planning, land use zoning at several levels, the relationship to environmental management and landscape planning.

The chapter is focussing also on spatial planning: as it has a different scope as urban and regional planning, and also more integrated in EU policies, it has become a dedicated place in the structure of the report. It describes the origins of spatial planning, the link to land use management, the challenges of spatial planning in Europe and a short description of the (more recent) EU territorial development perspectives. Furthermore, a short description of the territorial cohesion and cooperation is added.

The Chapter 4 is describing the relationship between urban planning and geo-data. It describes the importance and role of urban planning geo-data in the business activities as well as the use of urban planning data by the stakeholders, followed by a typology of stakeholders and their role in the urban planning process. The Chapter concludes with the business issue of the urban planning data.

The Chapter 5 describes the users of urban planning data infrastructure and their interests: the typology of users developed in the previous chapter is further described, including all relevant user categories from the private and the public sector.

The Chapter 6 is describing the analysis of the user requirements: what do the users require related to the urban planning datasets and their quality, accessibility, format, etc. It is also introducing the Chapter 7 on uses cases, where the user categories are described, and develops, together with operational use cases, practical realistic situations of business activities.

The Chapter 8 is describing the requirements to datasets according to user requirements: what kind of data is required, how should they be accessible, etc. The requirements are described again according to the user categories.

The Chapter 9 is starting a short description of the system specifications; more detailed information on the system and its specifications will be developed in the Deliverable D3.2.1 “Requirements management and Development Infrastructure”.

2. Methodology of user requirements findings

The methodology of finding the user requirements is twofold: first by using a questionnaire and collecting direct information from the users, and second, by identifying, clearly and analytically, the Use Cases that may be realized at operational stage, and for the project to be deliberated as successful.

The whole potential for Use Cases to be built-in in the system is significant and their formalisation is indispensable in order to design those functionalities required by a flexible and basically usable system. The Use Cases will therefore encompass, in a comprehensive manner, all operational tasks to be performed in the context of the different scenarios connected to urban and regional planners working environments and operational fields.

The use cases are built on the results of the questionnaire sent to several professionals, users of planning datasets and active in the fields of urban and regional planning. The questionnaire was focussing on the users' needs and their perceived requirements, in terms of functionalities and future plan4business platform services. By investigating the needs and use of data for planning purposes, a difference has been done in terms of planning subjects/fields of activities and the different scales of action. It has been collected 40 answers to the questionnaire (see annex II), they constitute about the 4,7 % of addressed professionals (850 persons, so divided 800 ISOCARP MEMBERS, 25 EUROGI members, 10 stakeholders board members, 15 RICS members), representing a significant sample for users of planning datasets, as it contains the different roles played within planners community. A particular attention has been paid in contextualizing the changing behaviours of planning actors linked to the different "business models".

2.1 Report's rationale

Each *Use Case* has been shown according to an approach that aims at highlighting a possible business model to develop. A business model is based upon a number of specific users (planners, public administrations, enterprises) and real planning situations/events. Many of the use cases represent real urban and regional planning issues, so they are connected to everyday practice of planning processes.

Each *Use Case* has been considered as an independent set of actions that logically produce a meaningful output resulting from the interaction among potential user, planning issue, planning needs and business potential connected to exploitation of required geo-data.

Use cases are represented using a synoptic table that correlate sensitive information connected to:

- **User characterization** (sector, type of user, working time, expected honorarium)
- **Business definition and description** (business activity, business case story)
- **Business key domains and critical mass** (addressed target groups, client, method used, project governance)
- **Business territorial scale** (spatial and financial dimension)
- **Data requirements.**

Through the synoptic tables it is possible to connect:

- The available data (especially geo-data, but even other information can be considered) in repositories, with
- the activities that a potential user (business case generator) needs to perform for solving the faced planning issue, and

- the set of services that can be created through the data potentialities and user demand

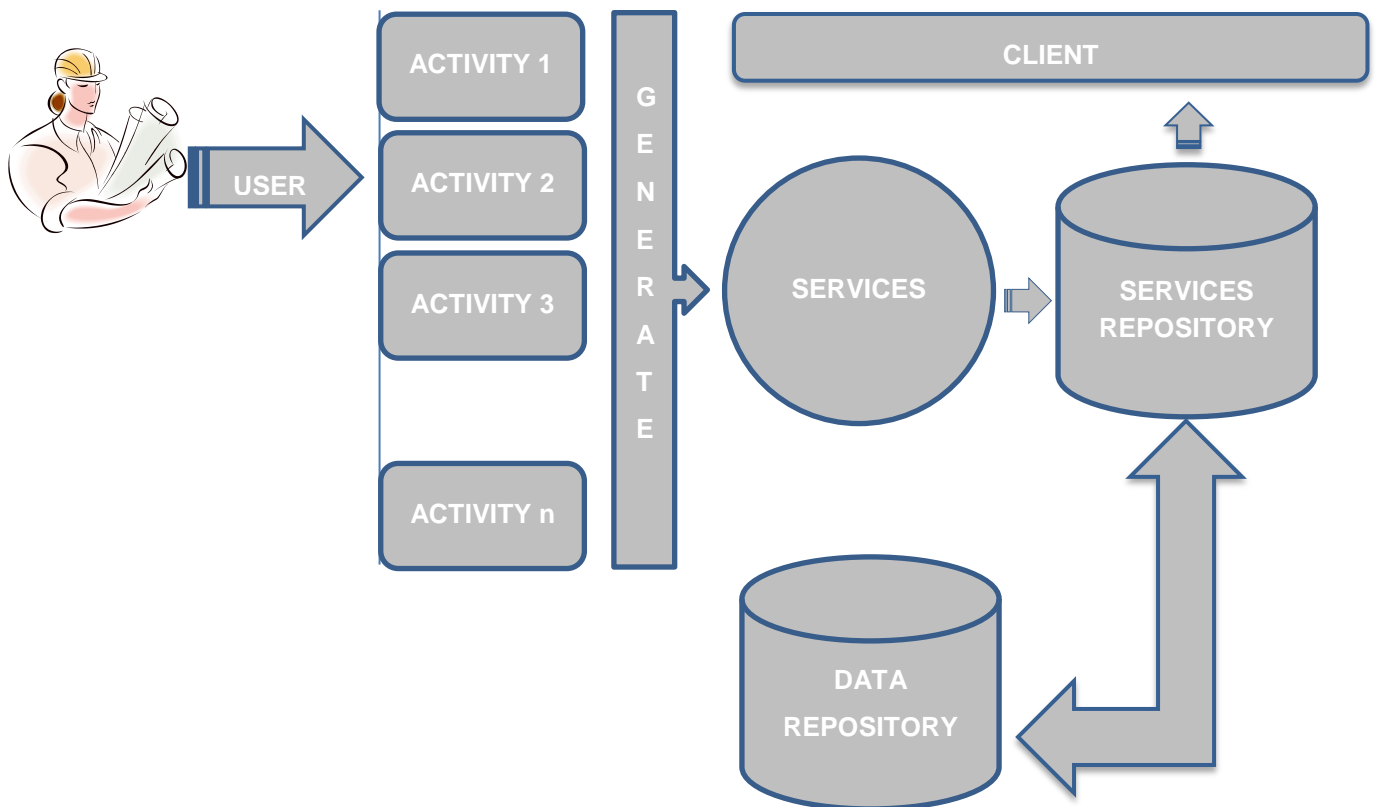


Illustration: Principle of the relationship between user and data / services repository

The description of each Use Case has been structured as following:

- First the “**actors**” are described: a role played by a user is specified.
- The *Use Case* is briefly introduced within a section called “**business case story**”.
- The different *Use Cases* are associated to a number of synoptic tables, which represent each action, performed by a given actor (business generator), which is then detailed with an inclusive description. This allows also formalising relationships between the actor and the key features of the identified business case, as well as relationships between different business activities.

The synoptic table reported here below is thought in order to get information useful to get most of the information that consent to identify user requirements and proceed with the definition of the use cases.

Use case of plan4business		
Description of the Use Case: IT CONTEXTUALIZES AND DESCRIBE THE REAL PRACTICE GENERATING A BUSINESS OPPORTUNITY		
1	Sector	IT DEFINES THE BUSINESS CASE DOMAIN (PUBLIC, PRIVATE AND EVEN OTHER HYBRID COMBINATIONS)
2	Category	IT IDENTIFIES THE BUSINESS CATEGORY (TOURISM, ENVIRONMENT, CONSTRUCTIONS...)
3	Type of User	IT DESCRIBES USERS MAIN FUNCTIONS/ROLES
4	Business Activity	IT DEFINES THE OUTPUT GENERATED BY THE BUSINESS CASE
5	Target group addressed	IT DEFINES THE RELATION AMONG BUSINESS CASE DOMAINS
6	Business Case Story	IT STRUCTURES THE MAIN ELEMENTS CHARACTERIZING THE ADDRESSED BUSINESS
	Client	IT IDENTIFIES THE CLIENT
	Product	IT DESCRIBES THE BUSINESS CASE OUTPUT/S (SERVICE)
	Dimension/Spatial/financial	IT PROVIDES THE SCALE OF THE BUSINESS
	Working Time	BUSINESS ACTIVITIES DURATION
	Method used	METHODOLOY FOLLOWED TO PROVIDE THE SERVICE
	Approx. Honorarium expected	IT PROVIDES AN IDEA OF COSTS CONNECTED TO SERVICE GENERATION
	Governance Project (e.g. how much people involved)	IT GIVES AN IDEA ON WORK FORCE TO PROVIDE THE SERVICE
7	Proposed data requirement	DATA NECESSARY TO GENERATE THE SERVICE/OUTPUT
8	Other information	ALL OTHER USEFUL RESOURCES/INFORMATION FOR BETTER DEFINE SERVICES AND PROCEDURE TO DELIVER THEM

It represents the description of common practices daily happening in business related to urban and regional planning realm. The table is an instrument to firstly identify a story that reports a planner's common business practice. The description of the practice consent to describe the business case, that will become one of the use cases to consider. All elements requested in the table contribute to:

1. Gathering the requirements (3, 6,7, 8)
2. Explain the context and opportunities connected to use cases (1, 2, 3, 4, 5, 8)
3. Describing services to provide in answer to requirements (6, 4, 8)

3. The planning system

The plan4business platform refers directly to the planning system of urban and regional issues. As essential background information, and before the identification of the user requirements, it is necessary to define the relationship of the planning system in itself and the related urban and regional planning process.

Urban and regional planning is a complex discipline and reflects a very intensive human activity on earth. Urban and regional planning can be defined under different definitions, including also the relationship to land use and the environment.

3.1 Urban and regional planning

3.1.1 Urban Planning

Urban, city, and town planning is the integration of the disciplines of land use planning and transport planning, to explore a very wide range of aspects of the built and social environments of urbanized municipalities and communities. Regional planning deals with a still larger environment, at a less detailed level. Based upon the origins of urban planning from the Roman (pre-dark ages) era, the current discipline revisits the synergy of the disciplines of urban planning, architecture and landscape architecture, varying upon from the intellectual strategic positioning from university to university. Another key role of urban planning is urban renewal and regeneration of inner cities by adapting urban planning methods to existing cities suffering from long-term infrastructural decay¹

3.1.2 Regional Planning

Regional planning is a branch of land use planning and deals with the efficient placement of land use activities, infrastructure, and settlement growth across a significantly larger area of land than an individual city or town. The related field of urban planning deals with the specific issues of city planning. Both concepts are encapsulated in spatial planning using a Eurocentric definition.

Regions require various land uses; protection of farmland, cities, industrial space, transportation hubs and infrastructure, military bases, and wilderness. Regional planning is the science of efficient placement of infrastructure and zoning for the sustainable growth of a region. Advocates for regional planning such as the representative of the “new urbanism” Peter Calthorpe, promote this approach because it can address region-wide environmental, social, and economic issues which may necessarily require a regional focus.²

A ‘region’ in planning terms can be administrative or at least partially functional, and is likely to include a network of settlements and character areas. In most European countries, regional and national plans are ‘spatial’ directing certain levels of development to specific cities and towns in order to support and manage the region depending on specific needs, for example supporting or resisting, polycentrism.

Specific interventions and solutions will depend entirely on the needs of each region in each country, but generally speaking, regional planning at the macro level will seek to:

- Resist development in flood plains or along earthquake faults. These areas may be utilised as parks, or unimproved farmland.
- Designate transportation corridors using hubs and spokes and considering major new infrastructure.
- Some thought into the various ‘role’s settlements in the region may play, for example some may be administrative, with others based upon manufacturing or transport.
- Consider designating essential nuisance land uses locations, including waste disposal.

- Designate Green belt land or similar to resist settlement amalgamation and protect the environment
- Set regional level 'policy' and zoning which encourages a mix of housing values and communities.
- Consider building codes, zoning laws and policies that encourage the best use of the land.

3.2 Land Use Management

Land Use is an essential condition of urban and regional planning, and strong related to the planning system.

It is including the use of land, combined with the use of planning and normative instruments. Both together can be considered as the basis of each urban and regional planning intervention; each operational urban action is related to the use of land and his destination (functional use). Since environmental problems arise largely from the way land is used, traditional land-use policy has come under challenge. Land use and land management practices have a major impact on natural resources including water, soil, nutrients, plants and animals. Land use information can be used to develop solutions for natural resource management issues³. Zoning regulations are one example of legal limitations on land use. This chapter is describing the land use topic and the management system of the land use. Sustainable land-management practices such as conservation agriculture, intercropping and sustainable forestry can provide multiple benefits such as reducing erosion, building soil fertility and structure, improving water quality and buffering against drought⁴.

3.2.1 Land use and land use management system

Land use can be seen as the human modification of natural environment or wilderness into built environment such as settlements, agriculture or pasture. By defining new functions to the land, also in term of changing the functionality of land, the human is transforming his environment consequently. The land structure resulting from this use of land has to be considered as the result and the mirror of his society and his culture, resulting of the action of different actors, mobile (households, companies) and immobile (communities, cities, investors).

As management is the human activity meaning the action of people working together in the aim to accomplish desired goals, land use management is a process of managing use and development of land, in which spatial, sector-oriented and temporary aspects of urban policy are coordinated. Resources of land are used for different purposes, which may produce conflicts and competitions, and land use management has to see those purposes in an integrated way. Therefore, land management covers the debate about norms and visions driving the policy-making, sector-based planning both in the strategic and more operative time spans, spatial integration of sectoral issues, decision-making, budgeting, implementation of plans and decisions and the monitoring of results and evaluation of impacts. The management system includes all processes, methods and tools used for organising, operating and supervising the urban environment including the factors influencing it. Management systems cover all phases from the visions behind the preparation of plans and decisions to their implementation and the monitoring of impacts. Planning practices, decision making processes and procedures, implementation and monitoring mechanisms and methods and tools used in the above-mentioned phases are all elements of management systems. In general, land use management is driven by various decisions taken at different levels of administration (local, regional, national)⁵.

Often, short-term orientation is conflicting the long-term ones. Therefore, a sustainable land use management will improve coordination of urban policy as well as public-public investments and public-private

investments, and involves inhabitants and local stakeholders in common visions. In doing so, sustainable land management should act in a multi-level governance structure between an operational project level and a strategic level of urban management⁶.

3.2.2 Land use planning

Land use planning is the term used for a branch of public policy, which encompasses various disciplines, which seek to order and regulate the use of land in an efficient and ethical way.

Despite confusing nomenclature, the essential function of land use planning remains the same whatever term is applied. The Canadian Institute of Planners offers a definition that: "[Land use] planning means the scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities"⁷.

In the English speaking world, the terms land use planning, town and country planning, regional planning, town planning, urban planning, and urban design are often used interchangeably, and will depend on the country in question but do not always have the same meaning, as they are defined in the national or regional legislations. In Europe the preferred term is increasingly spatial planning⁸.

At its most basic level land use planning is likely to involve zoning and transport infrastructure planning. In most developed countries, land use planning is an important part of social policy, ensuring that land is used efficiently for the benefit of the wider economy and population as well as to protect the environment.

Land use planning encompasses the following disciplines: Architecture, Environmental planning, Landscape architecture, Regional Planning, Spatial planning, Sustainable Development, Transportation Planning, Urban design, Urban planning, Urban Renaissance, Urban renewal.

Architecture, urban design, urban planning, landscape architecture and urban renewal usually address the selection of physical layout, scale of development, aesthetics, costs of alternatives and selection of building materials and impact upon landscape and species.

Environmental planning, will often address the implications of development and plans upon the environment, for example Strategic Environmental Assessment. At the very local level environmental planning may imply the use of tools to forecast impacts of development decisions, including roadway noise, and pollution, surface runoff and flooding assessments.

Because of the many disciplines and knowledge domains involved, land use planners are increasingly making use of Information Technology, such as Geographic Information Systems, and Spatial Decision Support Systems, to assist with analysis and decision-making.

3.2.3 Land Use (zoning)

Land use is the human modification of natural environment or wilderness into built environment such as fields, pastures, and settlements. The major effect of land use on land cover since 1750 was the deforestation of temperate regions. More recent significant effects of land use include urban sprawl, soil erosion, soil degradation, salinization, and desertification. Land-use changes, together with use of fossil fuels, are the major anthropogenic sources of carbon dioxide, a dominant greenhouse gas.

It has also been defined as "the total of arrangements, activities, and inputs that people undertake in a certain land cover type"⁹.

Zoning plan is a tool of land use planning used by local governments in most developed countries. The word is derived from the practice of designating permitted uses of land based on mapped zones which separate one set of land uses from another. Zoning may be use-based (regulating the uses to which land may be put), or it may regulate building height, lot coverage, and similar characteristics, or some combination of these. Similar urban planning methods have dictated the use of various areas for particular purposes in many cities from ancient times¹⁰. Theoretically, the primary purpose of zoning is to segregate uses that are thought to be incompatible. In practice, zoning is used to prevent new development from interfering with existing residents or businesses and to preserve the "character" of a community. Local governments such as municipalities commonly control it, though the nature of the zoning regime may be determined or limited by state or national planning authorities or through enabling legislation.

3.2.4 Land use at municipal scale

Each designation, known as a parcel's zoning, comes with a list of approved uses that can legally operate on the zoned parcel. These are found in a government's ordinances or zoning regulations. At municipal scale land use means the application of all those sets of planning tools, especially normative plans, that rule the use and form of streets, urban spaces, buildings and determine their legal and approved functions. Urban planning, especially at city scale, is a technical and political practice regulating the use of land and the design of the urban environment amenities and facilities, including transportation networks.

3.2.5 Land use at regional scale

Land use at regional scale is highlighting infrastructural and strategic territorial features. Elements considered are productive clusters (industry, tourism, special zones...) main infrastructures (railways, motorways, hubs, airports, harbours...), structuring ecological corridors (rivers, mountain chains, valleys...), distribution of urban centres/poles and their economic potential/influence, cross-regional planning issues, metropolitan areas/city regions development and so on. Regional land use planning comprises the coordination of infrastructural planning issues with land planning and development on a large scale.

3.2.6 Land use and environmental management

Land use and land management practices have a major impact on natural resources including water, soil, nutrients, plants and animals. Land use information can be used to develop solutions for natural resource management issues such as salinity and water quality. For instance, water bodies in a region that has been deforested or having erosion will have different water quality than those in areas that are forested.

According to a report by the United Nations' Food and Agriculture Organisation¹¹, land degradation has been exacerbated where there has been an absence of any land use planning, or of its orderly execution, or the existence of financial or legal incentives that have led to the wrong land use decisions, or one-sided central planning leading to over-utilization of the land resources - for instance for immediate production at all costs. As a consequence the result has often been misery for large segments of the local population and destruction of valuable ecosystems. Such narrow approaches should be replaced by a technique for the planning and management of land resources that is integrated and holistic and where land users are central. This will ensure the long-term quality of the land for human use, the prevention or resolution of social conflicts related to land use, and the conservation of ecosystems of high biodiversity value.

3.2.6 Land use and landscape planning

Landscape planning brings landscape architecture, urban and regional planning, landscape and ecological engineering, and other practice-oriented fields to bear in processes for identifying problems and analysing, synthesizing, and evaluating desirable alternatives for landscape change¹². The European Landscape Convention is the first instrument devoted exclusively to the protection, management and planning of all landscapes in Europe. The definition of the European Landscape Convention, significantly, begins with the premise that landscape is a product of peoples' perception. Landscape in other words is not simply another word for environment – it is created in the eyes, minds and hearts of beholders when the material, "real" components of our environment is seen through the filters of memory and association, understanding and interpretation. Landscape appreciation is not solely a matter for expert judgments, and one of the convention's strengths is its recognition of the need for dialogue and exchange across the full spectrum of society¹³. The Convention provides an important contribution to the implementation of the Council of Europe's objectives, namely to promote democracy, human rights and the rule of law and to seek common solutions to the main problems facing European society today. By developing a new territorial culture, the Council of Europe seeks to promote populations' quality of life and well-being¹⁴.

3.3 Spatial planning

Spatial planning refers to the methods used by the public sector to influence the distribution of people and activities in spaces of various scales. Spatial planning includes all levels of land use planning including urban planning and land use planning, regional planning, national spatial plans, cross-border plans and in the European Union transnational and international levels.

There are numerous definitions of spatial planning. One of the earliest definitions comes from the European Regional/Spatial Planning Charter (often called the 'Torremolinos Charter'), adopted in 1983 by the European Conference of Ministers responsible for Regional Planning (CEMAT): "Regional/spatial planning gives geographical expression to the economic, social, cultural and ecological policies of society. It is at the same time a scientific discipline, an administrative technique and a policy developed as an interdisciplinary and comprehensive approach directed towards a balanced regional development and the physical organisation of space according to an overall strategy."

Numerous planning systems exist around the world. Especially in north-western Europe spatial planning has evolved greatly since the late 1950s.

In 1999, the ministers responsible for regional planning in the EU Member States signed a document called the European Spatial Development Perspective (ESDP). Although the ESDP has no binding status, and the European Union has no formal authority for spatial planning, the ESDP has influenced spatial planning policy in European regions and Member States, and placed the coordination of EU sectoral policies on the political agenda (see chapter 3.4).

At the European level, the term territorial cohesion is becoming more widely used and is for example mentioned in the draft EU Treaty (Constitution) as a shared competency of the European Union; it is also included in the Treaty of Lisbon. The term was defined in a "scoping document" in Rotterdam in late 2004 and is being elaborated further using empirical data from the ESPON programme in a document entitled The Territorial State and Perspectives of the European Union. At the minister's conference in May 2007 in Leipzig, a political document called the "Territorial Agenda" was signed to continue the process started in Rotterdam.

3.3.1 Origins of Spatial Planning

In the last centuries, the consideration of spatial planning changed radically; in the past, planning was more a traditional “own world”¹⁵, as it was reserved only for specific disciplines, such as architects, decisions-makers – which is not the case today, due to e.g. participation process of communities, Agenda 21 process, or interconnected interests. Globalisation and sustainability are affecting spatial planning today; globalisation requires new way of governing the city to take advantage of its benefits, while sustainability demands new attitudes toward the way of living as a whole. This double challenging context is imposing changes and structural reforms on the countries’ administrative structures, including the traditional planning model and implementation mechanisms, which were clearly unable to respond to the existing economic, social and environmental problems.

Decentralisation, multilevel governance, public participation, bottom-up approaches, empowerment, local government, regional approach, environmental policies, strategic planning, participative budgets, council of regions, public private partnerships, administrative links, local agendas 21, low carbon concepts and climate change, vertical and horizontal integration, are some of the actual topics considered today in the legal bodies and planning practices.

Many expectations can be found in the early 21st century on spatial planning: scientific progress in communication technology, genetics, micro-biology (by just considering the polycentric/cluster development models used for describing the formal evolution of urban settlements), but also energy efficiency and data technology will influence the European spatial planning subsequently. But some recommendations on spatial planning remain¹⁶:

- Long term planning of the use and management of resources
- Achieving planning objectives independently of economic growth
- Improving public participation and implementation
- Influencing politics through planning more adapted to the needs of the public
- Nurturing robust professional ethics through on-going appraisal.

3.3.2 The link to Land Use Management

Historically, the human society used to divide land in parcels or plots. Villages, cities and counties are all governed by setting affectations to parcels of land. Land is then subdivided into “pieces”, which can be easier sold or developed. Each affectation or designation of land, so called “zoning”, is determined by a list of approved uses to be legally operated on the zoned plot. All those affectations are regulated in the form of a governance document. In the capitalist system of land use, the signification of land property and its use is very high; land organisation reflects political, cultural and economic influence.

3.3.3 Challenges in Spatial Planning in Europe

Cities in Europe are facing today major challenges: over 60 per cent of the European population live in urban areas with more than 50,000 inhabitants. By 2020, about 80 per cent will be living in urban areas, or much more, like in Belgium or the Netherlands, and the urban future of our continent is directly affected by urban land use¹⁷. Also technological progress and market globalization, together with demographic changes and today’s economic crisis are generating new challenges for European cities. Townscape and social structures

are in fundamental transformation processes, and the use of land is shifting from decline in one area of a city or city-region to growth in another.

Furthermore, the political framework of local stakeholders is shifting as well. The arena of decision makers in public and private sector is getting more fragmented. Cities have to cope with this, and small and medium sized cities in Europe especially have problems with this situation. Increasing number of brownfields and urban sprawl are visible signs of these processes.

A sustainable resource management (with direct and indirect impact on the environment) improves coordination of spatial development and urban planning as well as public-public and public-private investments, it involves local stakeholders in common visions: an integrated strategy of the European Community policy-making, taking into account the national, regional and local differences, can only be achieved by the establishment of an infrastructure for spatial information: the INSPIRE Directive. By using this instrument, and through land use management with Spatial Data Information, cities and city-regions can benefit from the on-going regional competition to overcome their lack of attractiveness and get competitive territory. Therefore, the INSPIRE directive and the use of Spatial Data Information relate directly to land use and land use management and help for better decisions in urban and land use development.

3.4 EU Territorial Development Perspectives

In 1999 the Ministries of Territorial and Urban Development of major EU Member States approved the ESDP (European Spatial development Perspective). Even if the EU is not directly responsible for Urban policy, the ESDP stated a clear milestone about EU strategic vision about what principle should be followed by European cities. The ESDP clearly states several key concepts like the role of city –regions or the need of pursuing a polycentric development of cities at metropolitan/regional scale. The claim about the ESDP is that, in `... its aims and guidelines it provides a general source of reference for actions with a spatial impact, taken by public and private decision-makers'¹⁸. This introduction makes three points about `application' generally and the application of the ESDP in particular:

- When discussing strategic planning documents like the ESDP, it is indeed more fitting to describe their follow-up as the `application' of ideas contained therein rather than as the `implementation' of plan proposals.
- To facilitate their application, so conceived, strategic planning documents often need to undergo further elaboration, entailing among others the making of new institutional arrangements.
- As a concept, application relates to ideas in the literature about evaluating strategic planning documents by their `performance' in shaping on-going action, rather than by the `conformance' of outcomes to intentions stated therein.

The common thread in all this is the recognition that strategic planning documents are far different from Masterplans, or blueprints for action¹⁹.

3.4.1 Territorial cohesion

A supra-national actor can enrich the governance of town planning questions. At least this would provide a viewpoint (trans-national, or relatively neutral) that can open other perspectives and add further financing for urban questions. What is relevant though is to permit cities to access funds for Territorial Cohesion directly from the EU, through the intermediation of programmes specifically designed for urban environments that is

permitting a direct dialogue between cities and a central, but composite, heterogeneous, multi-culturally generated central polity. Territorial Cohesion for many practitioners, researchers, city managers, and politicians is still something insubstantial and slippery, but they have the need of packaging this concept. From the Urban pilot projects (1995), through the Urban I and II experiences (from 1994 to 2006), considering the ESDP (1999), until the Leipzig Charter (2007), taking into account the Green paper on Territorial Cohesion (2008) and concluding with the last Territorial Agenda of the European Union 2020 (2011), it is to notice that the Europeanization of regional and urban policy still remains in a spin! The question remains that the Europeanization of territorial policies has not bred into a precise relationship between territories (cities, towns, metropolitan areas, regions (elected/functional) needs and EU promoted urban policies. Instead of looking for a static definition of territorial cohesion, it is important to focus on how to connect better the dynamics of local levels (towns, cities, metropolitan areas, inter-communal systems...). Of course, in a specific territorial case this dynamic is very slow and needs to be triggered from external, supra-local inputs to progress the definition/evolution of the concept of territorial cohesion. Territorial cohesion does not consist of a well-written sentence with clear bullet points, but it may be a set of methodologies for local and regional development, a set of development tools and specific urban policies (policies for regeneration, development, renewal, rehabilitation, culture, social inclusion...).

3.4.2 Territorial cooperation

ERDF (European Regional Development Fund) Regulation 1080/2006 establishes the tasks of the ERDF, the scope of its assistance with regard to the Convergence, Regional competitiveness and employment and European territorial cooperation objectives and the rules on eligibility for assistance.

For the current 2007-2013 programming period, EU programs dedicated to territorial and urban questions (e.g. INTERREG initiatives) became a component of the so-called “mainstream” of the EU Cohesion Policy (mainly ERDF for urban questions); this means that INTERREG was renamed “European territorial cooperation” and became the third objective of this policy, on top of the first two objectives (“Convergence” and “Competitiveness and Employment”). Despite the recent recognition of territorial cohesion as a formal policy objective of the EU, Cohesion Policy supports the implementation of the Territorial Agenda only to a limited extent. Indeed, the territorial dimension of EU Cohesion Policy has still not been taken fully into account, particularly as regards the convergence and competitiveness objectives. Territorial cooperation has become the main reference mechanism when it comes to territorial matters, while other Cohesion Policy objectives are often implemented without sufficient attention being paid to either the specific territorial assets of various functional areas or to the best way to harness them²⁰.

3.4.3 Integrated territorial approach in urban development

New urban policy in Europe, at least which financed in the next years by the European Union, are resting on the concept of *place based initiatives*.

“A *place-based policy* is a long-term strategy aimed at tackling persistent underutilisation of potential and reducing persistent social exclusion in specific places”²¹. It is still not well known how the new regulations will be set up, but we can already notice from the first published documents that territory matters and, above all, that it is important to define methodologies for integrating funds, policies and strategies. Thus, planners should continue to work, together with local communities, on defining feasible instruments necessary to put into practice the concept of “integrated territorial approach”.

Integrated territorial approach based on the identification of local rooted projects. These kinds of projects are strictly connected to the organization and implementation of medium-long period of participatory planning

processes comprehensively involving major planning actors (from grassroots organizations to banks and enterprises).

Recent proposals of European Commission stated in the Common Provisions Regulation foresee diverse mechanisms to encourage integrated approaches²².

Mechanisms to facilitate the development of local and sub-regional approaches:

- *Community-led local development*: Community-led local development (based on the experience of LEADER under rural development) can complement and enhance the delivery of public policies for all CSF Funds. It aims at increasing effectiveness and efficiency of territorial development strategies by delegating decision-making and implementation to a local partnership of public, private and civil society actors. Community-led local development should be implemented in the context of a strategic approach followed by public policy-makers, to ensure that the 'bottom-up' definition of local needs takes account of priorities set at a higher level.
- *Integrated territorial investments for the ERDF, ESF and Cohesion Fund*: An Integrated Territorial Investment (ITI) is an instrument, which provides for integrated delivery arrangements for investments under more than one priority axis of one or more operational programmes. Funding from several priority axes and programmes can be bundled into an integrated investment strategy for a certain territory or functional area. This can take the form of an integrated strategy for urban development, but also for inter-municipal cooperation in specific territories.

Mechanisms to encourage the development of integrated operations:

- *Integrated Operations*: Unlike the current period, an operation may receive support from one or more CSF Funds and from other Union instruments.
- *Joint Action Plans*: A Joint Action Plan is a new type of integrated operation implemented through a result based approach in order to achieve specific objectives jointly agreed between the Member State and the Commission.

Community-led local development and ITI are definitively very interesting innovations of the new programming period, as they move funds to local level management and partnerships. They could work if local administrations will be capable to insert them into local strategic development frameworks (e.g. Strategic Urban Agendas, Strategic Plans...).

In working with communities, planners should focus in incoming years on being capable to link ways of using a new set of urban instruments with local based urban issues and communities will (integrating tools, people, administrative tiers and resources). Finally, innovative planning methodologies and capacity of inventing additional tools for managing cities is the current challenge to face by local, regional and national administrative tiers in order to prepare the governance mechanism to meet new opportunities.

3.5 Planning systems description

Planning systems in Europe are unique and only in certain points comparable. As the plan4business platform is addressing all European planning systems, a certain understanding of the different planning systems is necessary. An overview of the different planning systems of European Countries demonstrates the different planning system levels as follows²³, according the following criteria's:

- Political and administrative organisation,
- Administrative competence for planning,
- Main planning legislation,
- Planning and implementation instruments,
- Development control,
- Planning system in practice.

On the basis of these criteria's, a comparative analysis has been done, developing a series of "structograms", structure scheme illustrating the planning system of each member state. These structograms can be found in the ANNEX 1.

3.5.1 Political and administrative organisation

Regarding the political and administrative organisation, Member States are organized mostly in four (4) or five (5) administrative levels, depending on their historical development and their territory. Common levels are in general the European level and the national level. Between national and local level, an "intermediate" level can be identified, with different models: the Province level (Italy, Belgium) together with regional level, the "pure" regional level (e.g. in France, Greece, Italy, etc.) or the State level (e.g. Germany) combined with regional level. This intermediate level is sometimes not clear in terms of planning responsibilities and political responsibilities.

Essential purposes of spatial planning are elaborated and implemented in those three or four levels: federal spatial planning, state spatial planning as well as regional planning, province level and local level. Other countries, like Greece, have administrative regions and prefectures, or Bulgaria, planning regions, but having no administration and directly governed by the Ministry of regional development. In Ireland, the planning responsibility is distributed in 88 local planning authorities, which can be broken down into county councils, city councils and town councils. It is often the case that regions are considered as the NUTS 1 Level, but in the case of federalized states, like Germany, regions are also NUTS 2 level.

3.5.2 Administrative competence for planning

Most of the European Member States are organized with competent bodies on the national, regional and local level. However, the Ministry is in general the leading institution in the elaboration of regional policy, like in Latvia. Federal States, such as in Germany, develop their own regulations based on the national building law. As an exception, Austria, which has no legal national level of spatial planning, is regulating the understanding of planning within the nine federal states by having the Austrian Conference on Spatial Planning, an agency at the Federal Chancellery of the Republic, responsible for the planning coordination.

In Italy, within the hierarchical system, higher level (coordination planning) is considered as a state competence; as general urban regional, more detailed at the provincial level and local level is still municipally competence.

Generally it can be said that municipalities are autonomous, like in Germany, and responsible for spatial planning in their territory, but according to the principles and guidelines defined by higher levels. A top-down regulation on those three, or four levels is often the case by the most of the European countries.

On the local level, local planning instruments like preparatory land-use plan, zoning plan and binding detail plan are the instruments used for the urban development. In Greece, the Directorate of Spatial Planning and Environment is responsible at regional level for the definition of national spatial planning guidelines; at the

prefecture level, the prefects have competences related to spatial planning delegated from the ministries, but also land expropriation licensing for industrial development and specific activities. Municipalities' role remains mostly advisory, with exception of certain competences like granting building permits and controlling unauthorized construction. Ireland's development is guided by a "Local Government Act (2000)", which defines planning authorities, reflecting expansion of statutory development control system meeting demands arising from economic growth, public concern in environmental control, but also reflecting a growing European dimension.

3.5.3 Main planning legislation

Planning legislation is sometimes relatively new (Netherlands), or old (Italy); generally, it can be observed that new European Member States renewed their main planning legislation: for instance, the Bulgarian legislation was established in 2001 (Spatial Planning Act, as major legal instrument), or the new Building act in the Czech Republic (2007), or on the other side the Italian one (1942). The French legislation has been actualized in 1999, the German one amended in 1990, the Greek actualized in 1999 and 2006. Also the Spanish planning system is the result of a process started in 1956: it defines a set of principles, which are through the years still valid.

The planning legislation's date of approval reflects the current planning philosophy; e.g. climate change and energy consumption is a relatively new topic, as environmental impact assessment relates to the 80ies and 90ies of the last century. The mobilisation of brownfields is also an important issue, with similar efforts in several countries.

Regarding the frequency of planning document updates, it can be stated that a general period of ten years is accepted for the renewing process of planning plans.

3.5.4 Planning and implementation instruments

Different frameworks and instruments can be distinguished. For instance, according to the Spatial Planning Act of 2001, Bulgaria is using spatial development schemes at national and regional level, and Master and detailed regulatory plans on local level.

Austria is using the land use plan and the zoning plan, made by the municipalities. They are based on the development plans and concepts of the federal states and include sectorial inputs on the national level.

The Czech Republic is using planning tools such as planning materials (analytical), spatial development policy document (binding document), spatial development principles, as well as local and regulatory plans.

The French State is using multiple instruments on three levels: spatial planning documents (territorial directives), strategic spatial planning document (SCOT), and local land use plans (PLU).

Germany as a federal state is using regional planning documents (regional plans) and local planning instruments (preparatory land-use plans and binding land-use detailed plan). Greece has, similar to Bulgaria, the two level instruments system: strategic spatial planning, and local spatial and development planning (Masterplan, general City plan).

Ireland is using regional guidelines, development plans and local plans. In Italy, which has a planning law from 1942, is using many planning instruments on different levels: the instruments are superimposed on same areas with specific design and rules for land use, that refer to different administrative procedures and institutional competences. In Netherlands, traditionally strong in planning instruments, the provincial

governments, which are providing a framework for urban, industrial and recreational development, prepare regional plans; municipal structure plans are also providing a framework for spatial development.

In Rumania, different planning instruments have been developed: on national level the national territory plan, on regional level, the strategic concept for territorial planning (not binding), a regional territory plan and a zonal territory plan. As a territorial planning documentation, the county territory plan, the general urban plan and the detailed urban plan. Also Spain is using instruments on national, regional, provincial and municipal level.

In conclusion, planning documents on the local level include at least one legally binding plan / document (zoning plan, land use plan with different scales, covering the whole municipality or parts of the built up land, while plans and / or strategic visions on upper levels are legally binding or on the level of recommendation. Relation and binding forces among plans and materials in different levels are more or less strictly defined.

3.5.5 Development control

Planning instruments are in the Member States differently controlled: submitted to the ministry for approval, or to the federal state, the region or province. Also procedures of approval are different depending to the states: it takes more or less time, sometimes the update of the planning instruments correspond with the political elections, sometimes there are reports that have to describe the status quo whether a plan has to be renewed or not. In France for example, the ministry is responsible for defining the planning development procedure.

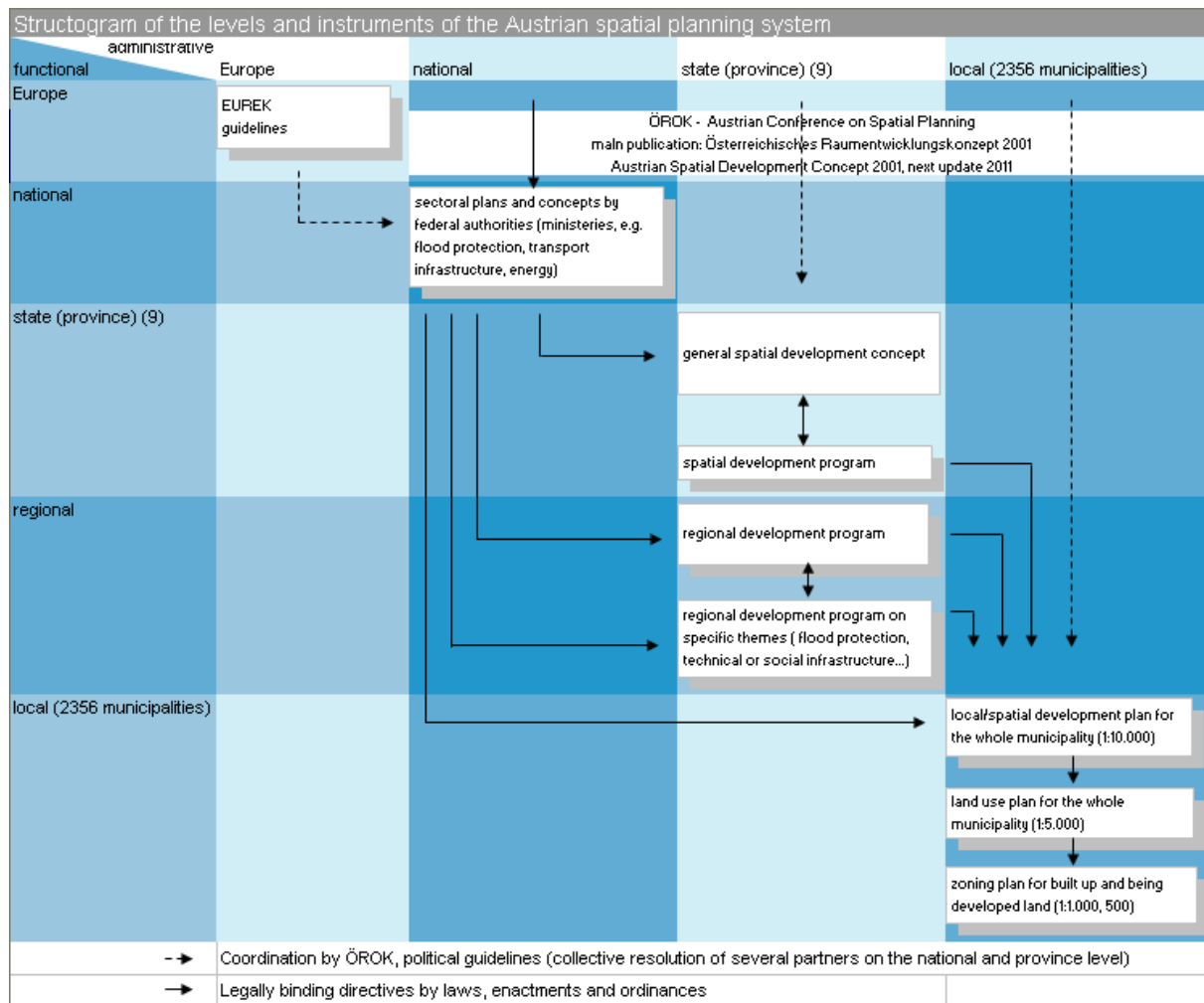
In practice, all of the described planning systems are hierarchic organised and functioning in a top-down procedure; local plans have to take account spatial development frameworks, as well as regional plans have to respect national plans – if they exist.

3.5.6 Levels and instruments of the spatial planning systems

The “structograms” elaborated on the planning systems can be found in the Annex 1 of the report; one planning system is selected here in the report as example. They describe the different functional levels in comparison with the administrative levels. The diagrams give a comprehensive overview of the different levels and instruments of spatial planning in the most European countries²⁴.

Example of Planning System

Austria



3.5.7 Planning systems evaluation

As demonstrated in the previous project “Plan4all”, the actual situation of urban and regional planning in Europe is challenging: planning systems are different, of course according to the national culture, heritage and geographic conditions.

Different levels of intervention – most of the Member States have four or five administrative levels – indicate governance challenges: planning responsibilities may be different, depending on which administration level planning decisions are taken. Integrated multilevel governance is a serious issue regarding harmonized planning systems.

Planning competences in Member States are distributed between the national, regional and local level, sometimes with the province level in between: the decision process is fragmented and planning processes are interrupted due to planning competences and responsibilities challenges. The aspects of decision-process have to be taken into account in the plan4business platform.

Planning legislations are recent or based on old traditional building laws: the sensible question of the use of land is always in the centre of the legislations. The use of the land, related to existing and future functions, is a fundamental issue in all legislations.

Regarding planning instruments, one of the central aspects of the plan4business project, most of the Member States have land use local plan (with sometimes different denominations), followed by regional plan (focussing on regional development and regional structure). At least one local plan (land use, zoning plan) is legally binding, while plans from the upper levels can be legally binding or not. The scale can differ; especially as in different countries there are one, two or even three plans on municipal level.

Regional plans may also differ: plans are established in different scales, different administrative levels, and different contents, and have often different representations and graphics. Regional plans can be legally binding or not, depending on the building legislation.

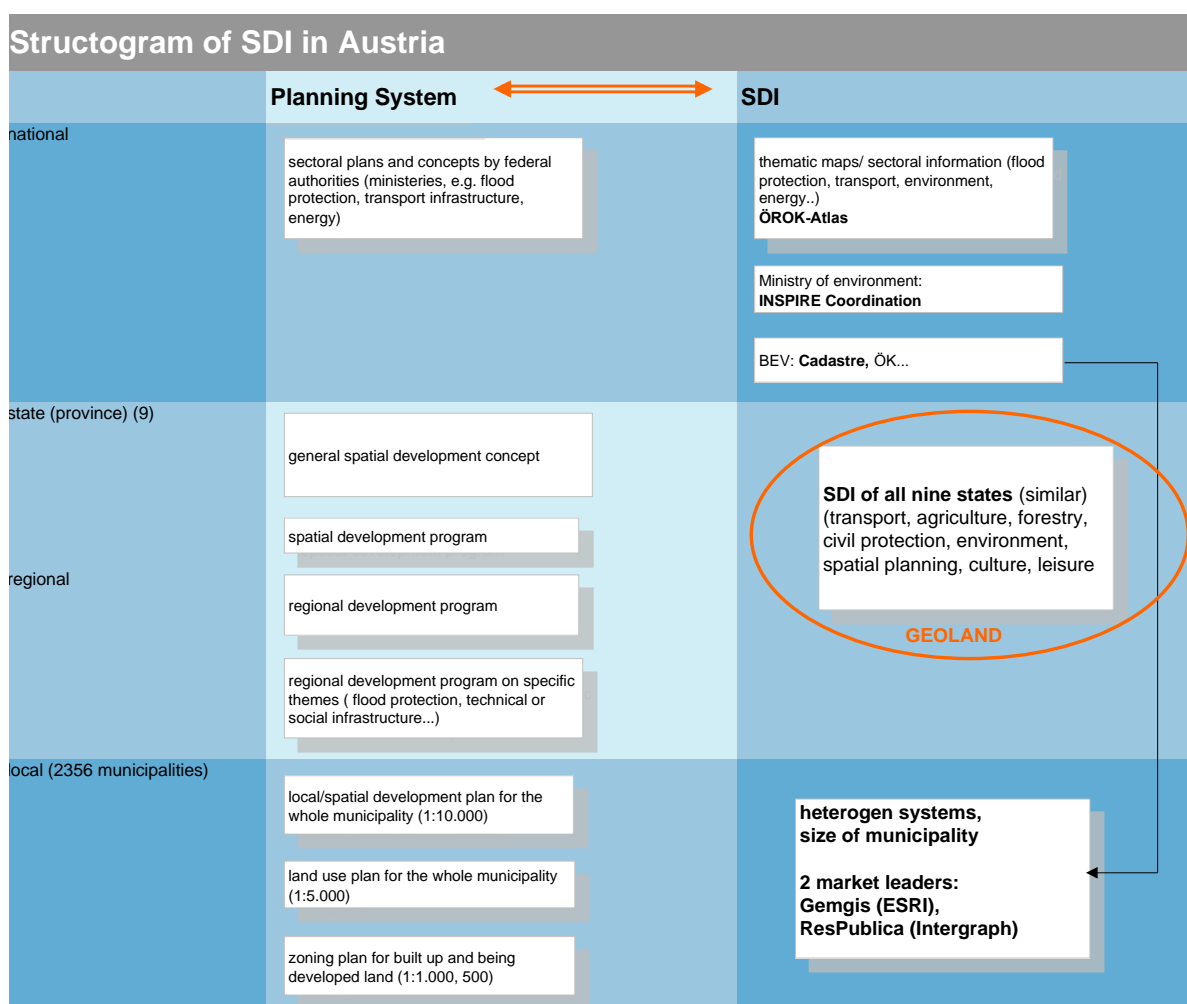
In conclusion, it can be stated that planning systems in European Member States have common aspects, such as the legislation of the use of the land on the local level, represented in most of the cases by the land use plan and legally binding, which is an important aspect considering the plan4business project. Other administrative levels, such as regional, provincial, State, or national levels, are using different instruments with different contents and representations.

3.6 Planning Systems and Spatial Digital Infrastructure (SDI)

As the link between planning systems and the actual European Spatial Digital Infrastructure is relevant for the plan4business project, relationship between systems and SDI infrastructure has been described. One example has been selected for the explanation of the contents; the other diagrams of the Member States are in the ANNEX 1 of the report (see below).

Comparison of Planning System and SDI

SDI covers more than Spatial Planning; for this reason the diagrams illustrate the comparison of the spatial planning system related to the SDI situation of each Member State. Below the example of Austria:



3.7 Online Access to Spatial planning documents


Spatial planning documents are more and more accessible online, either for free or not. This is, of course, a central point in the context of the INSPIRE directive, and also for the plan4business project an important source of information, which has to be connected to the plan4business platform.


The survey is evaluating if the online access of the spatial planning information is available online for the public, or partly available (e.g. for professionals) or not at all available.


The overview illustrates the availability and gives also, related to the plan4business implementation, the necessary information of the data availability.

Again one example has been chosen for this chapter, the other Member States are illustrated in the ANNEX 1.





Legend for all tables




Green: available online for public 









Blue: partly available (e.g. for special groups of persons) 

Red: not available but existing 

Austria

Institution	Plan	national	regional (9 states)	local (2.200 municipalities)
PGO	Centrope map		1 province, 2 parts of provinces, neighbouring provinces of Czech Republic, Slovakia, Hungary 	
All nine states of Austria	Geoland	 wide variety of plans spatial planning, flood protection, culture, mobility, forestry, agriculture,...		
Austrian Conference on Spatial Planning	ÖROK-Atlas	 spatial planning data and a wide variety if data		
Upper Austria	land use plan (1:5.000), made by municipalities			Not online,  excerpts possible if plausible interests

Tyrol	land use plan (1:5.000), made by municipalities			
Salzburg	land use plan (1:5.000), made by municipalities			Available on a different scale and generalized (1:25.000) 
Lower Austria	land use plan (1:5.000), made by municipalities			

Vorarlberg	land use plan (1:5.000), made by municipalities			
Carinthia	land use plan (1:5.000), made by municipalities			
Styria	land use plan (1:5.000), made by municipalities			
Burgenland	land use plan (1:5.000), made by municipalities			
Vienna	land use and zoning plan (1:5.000)			without legal guarantee 
all states except Vienna	zoning plans 1:1.000 - 500			in most municipalities and cities (except: Graz, Schwechat,...) 
BEV	Austrian Map online	base map , 1:50.000...		
UBA (Umweltbundesamt) (Federal office of environment)	Maps on water protection (over and under ground)			

Evaluation of the Online Access to Spatial Documents

The tables of the online access to spatial planning documents give an overview of the actual situation in Europe.

Until today, planning documents (plans) are developed with GIS tools; they are not available as open data, but mostly as PDF documents. Exceptions are the Czech Republic or Latvia, where nearly all plans are online and available for the public, as well as mostly free of charge.

In general, the survey illustrates that more or less 50% of planning documents – plan, text, legend, etc. – is available online. The other 50% are not online available, only on request by municipalities or planning responsible persons.

3.8 Conclusion

A result of the survey on planning process in the Member States can be concluded as follow.

Planning systems in Europe have a lot of common instruments and levels. The most common instrument in the European planning systems is the land use local plan (with sometimes different denominations), followed by the regional plan (focussing on regional development and regional structure). At least **one local plan (land use, zoning plan) is legally binding**, while plans from the upper levels can be legally binding or not. The scale can differ, especially as in different countries there are one, two or even three plans on municipal level. On the local level, we can observe similar initiatives for a mobilisation of building land.

Challenges of Spatial Planning in Europe are the differences of (planning) legislations all over Europe, sometimes even various in one country. Many terms are defined in the planning acts, sometimes in one State with several different meanings. Challenges of exact translation of planning terms are usual.

Also on regional level, plans are established on different scales, different administrative levels, and have also often different representations. For instance, plans are in France more schematic, and in Germany really precise. Sometimes they are legally binding or not. Contents are also different, depending of the country, like sectoral plans. Even in one State there may exist regions with plans and others without and also the time of updating is an important fact, which varies.

On the national level, plans are established in different manner, depending of the political administration, which brings the question of the governance (centralised or decentralised countries). Individual federal authorities make sectoral plans and concepts.

As for the Spatial Data infrastructure (SDI), it is more and more present in spatial planning procedures. Nevertheless, this SDI is still not fully accessible on the European level; the lack of SDI products or incompatibility between planning instruments and SDI structure is still actual today.

The analysis of the European planning system demonstrates in the context of the plan4business platform, that, in general, the planning system is still fragmented in terms of documents, reference texts, laws, and decision-making processes.

It is essential for the plan4business platform to focus on the legal documents, which are legally binding, in hits case, the land use and zoning plans on the local level. All other documents are difficult to integrate into the platform. All the characteristics of the survey were integrated in the user requirements.

4. Urban Planning and use of geo-data

Geo-data have basic importance in major operations of urban/regional/territorial planner's profession. This importance is getting more and more significant, it is currently to state that in the last 15 years the methodology to realize planning products has been experiencing relevant modifications: planners changed the way of presenting their plans, while these new technology consented them to have major possibilities in expressing potential territorial transformations. Digitization of planning materials and new opportunity connected to Geographical Information Systems has enlarged the potential of planners box of tools. Main impact is to notice in following principal planners activities:

- Socio-economic and Urban/Territorial Analysis (identification and description of territorial evolutive / involutive major changes)
- Design and graphical representation of plans/policies/projects
- Identification and definition of planning solutions (strategic planning, policy design, normative plans design...)
- Research work (preparation of technical report for territorial decision making purposes)

The possibility of connecting a set of different information, diverse in sources and nature, to specific and identifiable spaces (buildings, parks, industrial areas...) has evolved the way of approaching urban issues and enlarged the spectrum of products, richer in terms of content, deliverable by planners in a shorter time.

Analysis and research activities have enlarged the set of comparable/classifiable planning data, providing more detailed spatial outputs and setting more ambitious objectives. Urban design processes and representation have been capable to manage more complexity and planning solutions started to interact with other technologies (especially those connected to IT services).

An additional factor to consider is connected to transformation in time of information stored in data. Geo-data can represent evolving situations (from past to future) and planners can build upon "data temporal evolution" former territorial/urban situations and future perspectives/transformations.

Connecting the factors a) amount and diversity of geo-data, b) evolution in time of the geo-data and c) combination of geo-data and specific spaces of different territorial scales, it is possible to invent a relevant number of new and innovative services to offer on the market of urban and territorial implements. The services are not just to consider in the field of pure planning solutions (plans, programmes policies, technical projects), but even in other correlated activities such us:

- Providing innovative tools and methods for teaching urban subjects
- Exhibitions of/on urban transformations (valorisation of cultural heritage connected to evolution and transformation of cities, e.g. cadastre and plans advancement in time)
- Software for managing relations among land use and fiscal policies
- Devices generating real time planning answers/solutions to urban daily needs (e.g. to find the quickest way for an ambulance in the city in the rush hour)
- Programmes for analysing investment trends and changing behaviours in the real estate market

The many new outputs emerging from the above presented combination trigger a demand of a different number of dealings, these are very different in terms of clients, business critical mass, content and financial appraising in the planning products' market.

- Industrial change and the emergence of ICT
- Amount of information
- Emergence of digital networks
- Emerging trends of urban evolution

In strategic spatial planning, the planner has a role to play in:

- Assessing the environment (strengths, weaknesses, opportunities, threats), external trends, forces and the resources available;
- Identification and gathering of major stakeholders;
- Development of a realistic long-term vision and strategies taking into account the power structures, uncertainties, competing values etc.;
- Design of plan-making structures and development of content, images and a decision framework through which to influence and to manage spatial change;
- Generating mutual understanding, ways of building agreement, ways of mobilising organisations to influence different arenas;
- Preparing decisions (short- and long- term), action and implementation; and
- Monitoring and feedback.

Some central considerations:

The first observation, which must be made, is that in data terms a plan does not equal a map. All plans have a textual part, a document, many of which have an associated map. Looking at planning data from the perspective of GIS alone will therefore often not provide sufficient contextual information to interpret and understand the information we are looking at.

Secondly, more than being a provider of spatial data, spatial planning is a discipline, which consumes spatial data originating from all over public sector. This means that we must look at the capacity of SDIs to provide access to data, which may be used as input to planning processes.

Thirdly, spatial planning is a discipline carried out on local level and by a multitude of public and private sector actors. There are no international standards for land-use planning and even within single national or local legislations, there is great variance in the way guidelines are interpreted and put into action. We must therefore be able to handle the heterogeneity of policies, processes, skills, data and tools present across European spatial planning authorities.

Fourth and finally, spatial planners are not GIS professionals. While INSPIRE Annex I themes are generally produced and maintained by domain professionals residing in national mapping agencies or authorities with strong GIS skills, many planners are relating to data only after these have been visualized in maps. For this reason, thirty years into the GIS era, GIS support many planning processes only through the constraining and limited medium of printed maps.

4.1 Importance and role of urban planning geo-data in business activities

The involvement of stakeholders and the business issue: how to make money with urban planning data?

It is more and more common for urban planners to use datasets and quantitative tools to better design and understand cities. Here an example of the use of geo-data in the planning business activity.

1 Using methods commonly used to analyze the connections between friends in a social network, the researchers devised specific measures to analyze the spatial structure of cities and the accessibility of different locations.

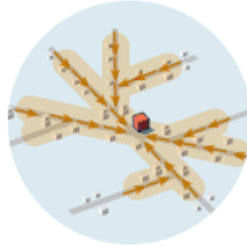
Reach

When walking on city streets, how many locations are accessible within a given distance from a starting location.



Closeness

A measure of how central a spot is, as measured by the shortest paths to nearby nodes, which occur at the intersection of streets.



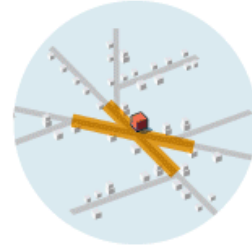
Straightness

The extent to which paths from one location to other nodes of interest are straight lines. Usually, people prefer routes with few turns.



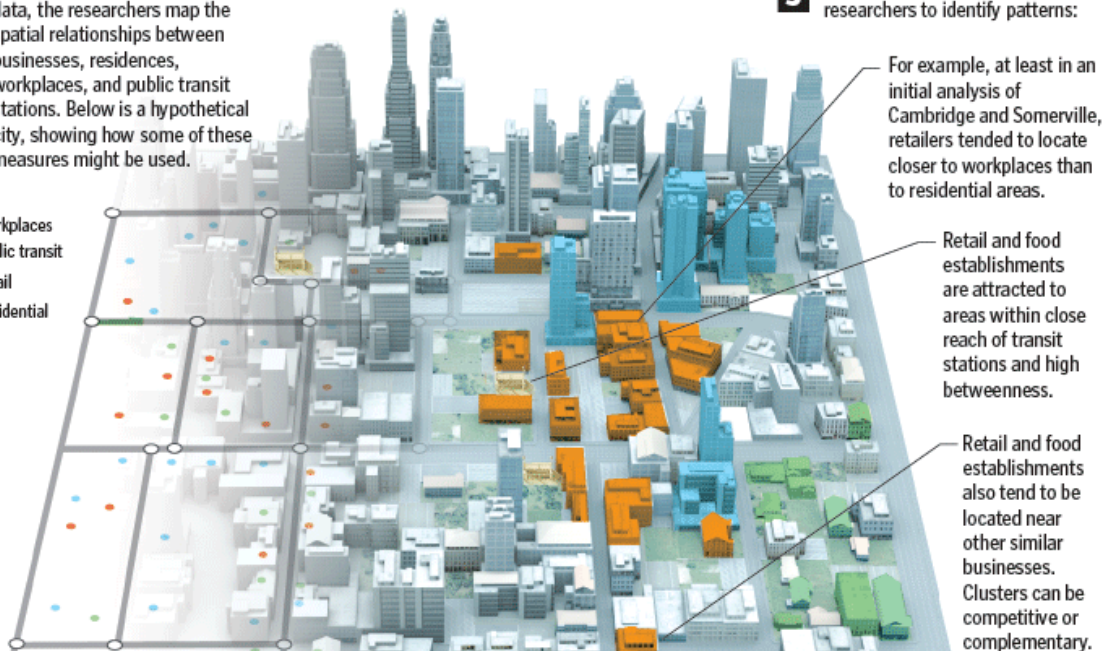
Betweenness

A measure that can be used to estimate the amount of foot traffic a location receives.



2 Using geographic and economic data, the researchers map the spatial relationships between businesses, residences, workplaces, and public transit stations. Below is a hypothetical city, showing how some of these measures might be used.

- Workplaces
- Public transit
- Retail
- Residential



Example of the use of geo-data in urban planning issues – Source: Carolyn Y. Johnson, The Globe, Boston (US)

4.2 Tools currently handled by potential users

Plan4business potential users (especially professionals working in realm of town and regional planning) have at their disposal a relevant set of tools for managing geo-data. These tools often are not completely set up to face planners needs, as planners continue to use GIS primarily for mapping activities, the importance of maps in understanding and presenting planning issues being commonly acknowledged. The more sophisticated analytical applications, which contribute to many other characteristics of the planning process, are still less established in current practices.

Open source tools and market driven ones define the two major set of tools used by planners.

Starting from open source offer, it is to notice that in order to promote the wider use and archiving of free and open geographic data, OSGeo (www.osgeo.org) is helping to build a distributed repository and registry of data sources free to access, re-use and redistribute. A comprehensive repository of available tools is reported in the following table²⁵:

Name	Description	# of layers
VMap0	Selected subsets of Vector Smart Map Level 0 polygons, lines and points, starting with a selection that has proven to be useful for creating FlightGear Scenery from it. Added a 'geonameid' column for joining urban areas with GeoNames (see below). Current details explained at the World Custom Scenery Project , will get synced some day.	33 (DETAIL)
VMap1	First attempt of a selection that would be "nice to have" for FlightGear from Vector Smart Map Level 1 - and certainly for other purposes as well. Added a 'geonameid' column for joining urban areas with GeoNames. Details similar to VMap0.	58 (DETAIL)
AptNav	Geometric average of runway center locations plus runway/taxiway shapes as used by the FlightGear and X-Plane flight simulators; data taken from Robin Peel's Airport Database . Locations converted to OGC-style POINT geometries. Use 'icao' column for searching. <ul style="list-style-type: none"> This import is currently tied to the state of the FlightGear 1.0.0 Base Package release. 	1 (DETAIL)
GSHHS	Global Self-consistent, Hierarchical, High-resolution Shoreline Database 1.6 shorelines.	4 (DETAIL)
PGS	NGA Prototype Global Shoreline .	1 (DETAIL)
SWBD	SRTMv2 Water Body Data.	1 (DETAIL)
MGRS	Military Grid Reference System, alias UTMREF.	1 (DETAIL)
TIGER	Topologically Integrated Geographic Encoding and Referencing system line data. Roads, railroads and water/stream line data from the 2006se release, water body and landmark polygons from 2005fe (thanks to Chris Holmes at The Open Planning Project for providing pre-processed data).	6 (DETAIL)
StatsCan	Line data of the Statistics Canada 2006 Road Network File .	1 (DETAIL)
OSM	OpenStreetMap Import of the planet dump . Split up into 23 different road-, railroad- and stream-layers; schema taken from Highway Map Features . <ul style="list-style-type: none"> This import is done manually - typically the weekend after a new planet dump is being made available. 	6 (DETAIL)

<i>GeoNames</i>	<p>Complete content of the "allCountries" export table from the Geonames.org geographical database (as of 2008-08-08). Locations converted to OGC-style POINT geometries. Added a 'pplkey' column for searchable classification of size for populated places [1-7]; schema proposed by Markus Neteler:</p> <ul style="list-style-type: none"> continental scale ($\geq 1:50$ million): ≥ 1 million inhabitants multi-national scale ($\geq 1:10$ million): 500000-1 million inhab. country scale ($\geq 1:1$ million): 100000-499999 inhab. regional scale ($\geq 1:500000$): 50000-99999 inhab. city scale ($\geq 1:50000$): 10000-49999 inhab. local scale: < 10000 	6 (DETAIL)
<i>CountryCodes</i>	Translation table for country codes as proposed here (thanks to Silke Reimer for preparing the table).	1
<i>FGSODB</i>	This is the primary location of the FlightGear Scenery Models Repository ; models consist of AC3D geometries, RGB/PNG textures and in some cases animations that are defined in XML wrappers. Locations in OGC-style POINT geometries.	1 (DETAIL)
<i>Custom Scenery</i>	<p>Landuse data at selected areas (example) has been auto-classified from Landsat7-images and converted into suitable polygons at the World Custom Scenery Project.</p> <p>In contrast to the datasets which are listed above, this chapter is the place for our future development. It consists of VMap0 data as a basis and is being improved either by "home grown" landcover data or by imports of "free" (TM) datasets.</p>	61 (DETAIL)

Source: Wikipedia.org

As far as the market is concerned, current GIS tools encompass a broad range of applications, which involve the use of a combination of digital maps and georeferenced data. There are several companies with high market share that divide most of the GIS user pool between them, and while most of their highly used tools present interoperability features (albeit partial), they are also characterized by particular disadvantages in use. A short analysis of the currently used tools and their shortcomings has been provided below.

Key players in the GIS field²⁶ – assessment of primary software characteristics, advantages and disadvantages

<i>Company</i>	<i>Products</i>	<i>Assessment: advantages and shortcomings</i>
Autodesk	Autocad Map 3D	<ul style="list-style-type: none"> A highly used analysis tool, Map 3D is characterized by ease-of-use, a high degree of interoperability and direct access to ESRI, Oracle, SQL and every other database format for import. Mainly used for the preparation of data import for GIS applications and georeferencing vector and raster data. As a GIS application, it lacks certain options while being located in the upper price range.²⁷
	Mapguide 6.5	<ul style="list-style-type: none"> Main advantages are the ease of deployment, data connectivity, scalability and overall performance; Shortcomings: Most MapGuide applications rely upon a client Plug-in (ActiveX Control or Java applet). Also, the spatial analysis is not performed on the underlying spatial data, but rather on rendered graphics, client-side.²⁸
ESRI	ArcGIS suite (including desktop)	<ul style="list-style-type: none"> Advantages: ease of use, solid documentation, large user base and support for older products. Good cartographic control and output, extensive labelling and vector

	software: ArcView, ArcEditor, ArcInfo)	<p>graphics software features. ArcGIS for Desktop is also available at different product levels (such as ArcView), with increasing functionality based on customer needs²⁹</p> <ul style="list-style-type: none"> Disadvantages: steep price (a full licence for ArcGIS is typically ten times the price of MapInfo), functionality dependant of the modules that the user has, shortcomings in the ability to adequately process and display discontinuities in geologic surfaces,³⁰
Intergraph Corporation	GeoMedia and GeoMedia WebMap	<ul style="list-style-type: none"> GeoMedia is an enterprise GIS software that can adequately perform mapping, geographic data creation, management, integration and analysis. Advantages: integration of many different formats and data models, good geoprocessing tools, robust set of extensions, output functionality, thorough on-line knowledge base available Disadvantages: problems with large-scale data creation, extra costs associated with each extension, limited or costly training on program and extensions. Overall, not quite as strong cartographically as ArcGIS and not a true WYSIWYG tool.³¹
MapInfo	MapInfo	<ul style="list-style-type: none"> Mapinfo is a popular tool in the community, with a relatively short learning curve and simple programming language (MapBasic). It features good re-projection utilities, easy to edit workspace files, simple query building and layer control, superior Object Linking & Embedding (OLE) and good 3D add-ons (Vertical Mapper); Among the tool's shortcoming, it is to be noted that the MapBasic programming language is a separate purchase and the upgrades are costly. AutoCAD import and export (DWG and DXF) is unstable in most cases, there are problems with features such as topological editing and creation, layout legend manipulation, gridding and graticule functions.³²
Smallworld Inc. / GE Energy	Smallworld	<ul style="list-style-type: none"> Smallworld has grown to be the global market leader for GIS in utilities and communications, remaining in this position today (Source: Wikipedia). Its popularity is due to the ability to manage complex networks, which enables a variety of core functions (asset management, engineering, etc) to be implemented efficiently.³³ Shortcomings: Low server performance, considerably more expensive development environments compared to other tools, interoperability problems with other systems or with code written in other languages.³⁴

4.3 Conclusion on the importance and role of urban planning geo-data in business activities

In recent years there has been an upgrading in the use of geospatial information, the data are now basic information that feed complex smart tools/soft-engines (geospatial Information is geospatial data that has been processed or had value added to it by a human or machine process)³⁵ that permit to offer services in many different fields.

If decision makers are solely looking at statistical charts and tables they are sadly missing out on a gold mine of geographic information, on which a type of geographic analysis called spatial analysis can be performed to yield trade area information, new customers, and competitor area analysis.³⁶

Geographic/geospatial information, nowadays, plays an increasingly important role. In many situations consistent and up-to-date spatial information is crucial (e.g. distribution of disease, disaster response systems, and security services). In many cases geographic information is an important input for decision-making processes of governments/governance (urban and regional planning, environmental planning, landscape planning), businesses (banking and financiers), I services, facilities management, insurance, media and press, real estate, retail, tourism and so on).

Finally, business with geo-data has sense just if the data itself are contextualized within intelligent/smart systems/engines, or in other words, exploited in cyber infrastructures.¹

The evolution of GCI (Geospatial Cyber Infrastructures) will produce platforms for geospatial science domains and communities to better conduct research and development and to better collect data, access data, analyse data, model and simulate phenomena, visualize data and information, and produce knowledge. To achieve these transformative objectives, *collaborative research and federated developments* are needed for the following reasons: (1) to address social heterogeneity to identify geospatial problems encountered by relevant sciences and applications, (2) to analyse data for information flows and processing needed to solve the identified problems, (3) to utilize Semantic Web to support building knowledge and semantics into future GCI tools, (4) to develop geospatial middleware to provide functional and intermediate services and support service evolution for stakeholders, (5) to advance citizen-based sciences to reflect the fact that cyberspace is open to the public and citizen participation will be essential, (6) to advance GCI to geospatial cloud computing to implement the transparent and opaque platforms required for addressing fundamental science questions and application problems, and (7) to develop a research and development agenda that addresses these needs with good federation and collaboration across GCI communities, such as government agencies, non-government organizations, industries, academia, and the public.³⁷

All listed domains create opportunity of small or large scale business activities connected to the exploitation of geo-data thanks to complex, articulated, smart and multi-topic systems.

¹ A Cyberinfrastructure (CI) is a combination of data resources, network protocols, computing platforms, and computational services that brings people, information, and computational tools together to perform science or other data-rich applications in this information-driven world.

5. Users of Planning Data Infrastructure and their interests

In the case of the plan4business project, the project is focussing on the private actors active in the field of urban and regional planning. Nevertheless, the public sector has to be considered also, as spatial Planning Authorities are strongly involved in the business process of urban and regional planning, for example as Partner in PPP (Public Private Partnership) solutions.

In the following chapter, we are describing the users and their interests in the planning data purposes, describing first the private sector, followed by the public sector.

5.1 Private Sector

Following actors of the private sector using Planning Data have been identified: Spatial Planners, Banks and Insurance industry, Energy and Environmental Services, Health Services, Commercial Services, Real Estate, Telecommunication, Tourism and Travel, Transport and Logistics as well as Security Services.

5.1.1 Urban and Regional Planners, Spatial Planners, Planning engineers

Urban and Regional Planners are educated in the spatial planning discipline: Regional/spatial planning gives geographical expression to the economic, social, cultural and ecological policies of society. It is at the same time a scientific discipline, an administrative technique and a policy developed as an interdisciplinary and comprehensive approach directed towards a balanced regional development and the physical organisation of space according to an overall strategy.

Urban and Regional Planners are interested in access to all available data on the past and present of a jurisdiction area in order to shape and propose solutions for its future development. Traditionally, gaining access to data has involved identifying and approaching all stakeholders with a vested interest in the planning area including but not limited to land tenure, infrastructure provision, industry, commerce, residences, transportation, economy and demography in order to learn opportunities and constraints.

In the past, the process has largely been manual whereby phone calls are made; meetings are held; letters are exchanged; terms are agreed; and, finally, data are made available, though often only for the jurisdiction area of the plan and not uncommonly subject to costs.

In short: the process is comprehensive, time-consuming and requires extensive manual after-work, work which consumes precious planning resources which would be better used analysing data, developing planning alternatives and proposing actions and policies in support of the overall goals of the plan.

5.1.2 Banks and Insurances Services

Banks are using Planning Data Information for internal classifications, for controlling spatial distribution of clients and activities, or evaluation of investment risks.

As an example, Banks are using Planning Data for studying the financial market typologies (Infas Company, Schober Group) identifying six different bank clients, according to the geographic situation. Clients are selected according to their urban location and their urban quarter, connected to the commercial environment, or banking and insurance environment. Also Georeferencing connected to addresses and other clients are used.

Insurances, e.g. Risk or Car insurances, are using Geolocation in relation to their tariffs and the client profile: Regional classes are determining the insurance tax price, including risk environment related e.g. to injuries.

Weather data related to Geoinformation are used for risk analysis and damages, e.g. for Munich Re: with the NATHAN (Natural Hazards Assessment Network) Risk Suite, Munich Re is optimising assessment of natural hazard risks, from entire portfolios down to individual risks at address level – worldwide. NATHAN Risk Suite shed light on the complexities involved, giving more accurate price calculations and helping to reduce costly loadings. This will speed up the business processes and enhance portfolio management. Individual products of NATHAN Risk Suite are available as individual risk analysis or portfolio analysis and with differing levels of integration in the assessment process.

Another example is the method used by the Association of Insurance Economy, the Information system “ZÜRS Geo” (Zonierungssystem für Überschwemmung, Rückstau und Starkregen), a Zone system for identification of risk zones related to flooding.

5.1.3 Energy and environmental services

Use of geodata related to environmental and energy supply services is huge: in Germany for example, 400.000 kilometer Gas lines, 1.6 million kilometer Power lines (70% underground), xx million kilometer water lines have to be managed by private and public companies, and all identified by geodata, mostly related to the urban structures. The market is very important in Europe (according to the Europe 2020 Strategy); especially as new energy sources have to be implemented (renewable energies, etc.).

Also the management of the energy networks is playing an important role, especially in the return-on-investment perspective. Existing networks, data structures of new energy challenges are only one example. Access to information, e.g. in preparation of construction of buildings, is not free to public: each building permit necessitates a long procedure, with involvement of energy and environmental services.

5.1.4 Health Services

Geographic Information is also related to business services in the health industry and directly related to the urban and regional planning discipline, e.g. by identification of diseases in selected urban quarters, study of infections in urban regions – also related directly to water supply, relationship between recreation infrastructure and quality of life, distribution of hospitals and doctors on territory related to accessibility, etc. (see WHO report “Urban Planning and Human Health in the European City, ISOCARP 2009).

5.1.5 Commercial Services

Commercial Services are the essence of urban planning decisions: related to buying behaviour, geomarketing, data-mining, accessibility (relation to transport access), and the commercial services influence the choice of company locations in the planning process.

5.1.6 Real Estate

Together with Commercial Services, Real Estate services are the essential part of urban planning in general. In combination with information system of standard ground value (see the “Boris” system in Germany – e.g. www.boris.nrw.de), property rights, market information’s, cadastre and statistics, it makes the most important business case in the field of urban planning. Real Estate agents are combining the elementary information with the geoinformation and the points of interest on several planning layers, trying to identify the best situation for their clients. Also the environment, the quality of life, the accessibility, the social environmental quality and the communication aspects are playing an important role in the decision process.

The twin processes of planning and property development are inextricably linked – it is not possible to carry out a development strategy without an understanding of the planning process, and equally planners need to know how real estate developers do their job.

Connected to urban planning, which is by its nature shaping the future of urban settlements and allocation of land for residential, commercial, institutional and industrial development, Real Estate is much more a field of business activity dealing with land and buildings for providing value added services in developing residential, commercial, institutional and integrated projects and related infrastructure.

What is Real Estate? According to general definition, Real Estate is the “Property consisting of land and the buildings on it, along with its natural resources such as crops, minerals, or water; immovable property of this nature; an interest vested in this; (also) an item of real property; (more generally) buildings or housing in general (Source: Wikipedia). By extension, Real Estate can also be: the business of real estate; the profession of buying, selling, or renting land, buildings or housing.

This kind of property is referring to one of the main classes of the human property; the other properties are the personal and the intellectual ones. Real property is regulated by law in different sort of interests, like fee simple, fee tail, life estate, or leasehold.

With the development of private property ownership, real estate has become a major area of business, commonly referred to as commercial real estate. Purchasing real estate requires a significant investment, and each parcel of land has unique characteristics, so the real estate industry has evolved into several distinct fields. Specialists are often called on to value real estate and facilitate transactions. Some kinds of real estate businesses include:

- Appraisal: Professional valuation services
- Brokerages: A mediator who charges a fee to facilitate a real estate transaction between the two parties.
- Development: Improving land for use by adding or replacing buildings
- Net leasing
- Property management: Managing a property for its owner(s)
- Real estate marketing: Managing the sales side of the property business
- Real estate investing: Managing the investment of real estate
- Relocation services: Relocating people or business to a different country
- Corporate Real Estate: Managing the real estate held by a corporation to support its core business—unlike managing the real estate held by an investor to generate income

Within each field, a business may specialize in a particular type of real estate, such as residential, commercial, or industrial property. In addition, almost all construction business effectively has a connection to real estate.

Some questions related to Real Estate: What kind of operations executed by Real Estate and what link to urban planning? What kind of business is done? What kind of activities in general? Is it a mono-functional or diverse field of activities?

5.1.7 Telecommunication Services

Most of services connected to development of solutions for smart cities are strictly connected to use of telecommunication devices. These solutions are taking place in many cities and are present in many urban strategies as key options for achieving sustainable, inclusive and smart growth. As an example, the cutting-edge generation of 3D Urban Information Models (UIM), made from accurate urban-scale geospatial information, can be used to create smart web services based on geometric, semantic, morphological and structural information at urban scale level. Services can be developed in the realm of energy efficiency, mobility, noise, safety and security and so on. Access to spatial data infrastructure is a key requisite for defining and making operational most of smooth and competitive solutions for smart cities, for this reasons both global telecommunication players and SMEs providing specific technical support to smart cities services are interested in easily access easy working geo-data platforms.

5.1.8 Tourism and Travel Services

Tourism and travel operators make a relevant use of geo spatial information: geo-data and digital maps are key elements for touristic activities. Tourism by nature involves the transfer of people to places away from home, so there is the need to visualize geographical information before of choosing a place for a vacation, but even during the holiday itself in order to fully enjoys the site. Geographical Information Systems (GIS) webGIS and geoportals are extensively adopted in tourism with diverse aims, such as (e.g. Zanker et al., 2009; Sigala & Marinidis, 2011): trip planning, visitors' management, tracking tourists' behaviour, online bookings, destination management and measurement of destinations carrying capacity. Moreover, many smart phones "apps" more and more use geo spatial information in order to provide in/on site information (e.g. to navigate a square or a cathedral when inside it, or to have a list of relevant architectural buildings situated in the neighbouring areas and so on). Thus, it is not just tourist agencies/operators to make use of geo-data, but even all those private and public institutions devoted to invent services to facilitate the experience of a place to the tourist and/or to the city user.

5.1.9 Transport and Logistics Services

Transport logistics operators make significantly use of geospatial data. It is to consider that many delivered products/goods, especially the aliments, according to EU directives, need to be tracked in their displacements, thus, it is very important to always have under control the position and the delivery scheduling of each vehicle, train, boat and so on. Many companies already offer on the market a set of services mainly addressed to fleet management. A very central application of spatial data infrastructure to logistics is the design of database tailored to humanitarian requirements (a good example of that is the UN world food programme geoportal: <http://geoportal.logcluster.org>).

5.1.10 Security Services

Security services use geo-spatial data for different purposes, it is worth remembering that:³⁸

- To protect the health of defense forces in the field and at their bases ad hoc GIS systems have been developed
- National security, national intelligence, and defense organizations have started to switch from independent, stand-alone GIS systems to more integrated, enterprise approaches that share resources, data, and applications.

- Geospatial intelligence (GEOINT) integrates imagery and geospatial data with other intelligence to create products critical to national intelligence, national security, and defense. GEOINT combines previously separated domains such as map production, GIS, and imagery analysis.

Many security services rely on use of geo-spatial data in order to design more effective and efficient products for the protection of good and persons.

5.2 Public sector (Territorial Governance Administrative Tiers)

The public sector is an important partner in the urban and regional planning, as the discipline is directly related to the political territory.

5.2.1 Spatial Planning Authorities

Authorities responsible for Spatial Planning are in Europe on the local level the municipalities, on the regional level the regional administrations, and on the national level the state administrations. All authorities are involved in planning processes.

5.2.2 Fiscal Authorities

Property rates and business licenses, which constitute a substantial part of the total revenue for any local government, are under-utilized.

This may be due to the following;

- Inadequate data on all economic activities in the district e.g. hairdressers, seamstresses, traders, barter, lotto kiosk etc.
- Misclassification of properties and Business and Inappropriate tax assessment basis
- Lack of realistic means of accessing the revenue potentials due to lack of accurate data
- Revenue collectors not paying to the Assembly all monies collected and the absence of tracking mechanisms
- Property owners avoiding the payment of property rates
- Some individuals and small-scale enterprises engaged in economic activities avoid the payment of taxes to the Assembly
- Laborious and time consuming business licensing and permit acquisitions therefore deter small scale business operators.

The Local Government Revenue Mobilization System (LGRMS) is an integrated GIS and Revenue Mobilization tool that provides realistic information on the revenue potential of an assembly and automates the revenue mobilization processes. The system has the ability to integrate and analyse a wide variety of information based on their spatial locations. It also supports a full range of business process on revenue mobilization ranging from, billing, license applications and renewals, permits issuance etc. and the tracking of the same. The key strength of the system lies in its single interface for all Properties and Businesses matters with GIS capabilities and its modular architecture allowing different modules to be implemented independently based on the user restrictions and login.³⁹

5.2.3 Regional Development Agencies

The recent development of Geographic Information Technologies (GIT), such as GIS, Remote Sensing and Desktop Mapping gives to the technicians of landscape management and regional development areas, access to a new powerful set of tools with an high potential for spatial analysis. The ability of GIT to analyse geographical information (more or less 80 to 90% of the overall information that exists can be geo-referenced) will create conditions to establish a model for economic development and with the support of this model decisions can be more accurate. By doing so, we will encourage the use of GIS in the regional science field.⁴⁰ In the past decade, economic geographers, Decision-makers, and other development specialists have shown great interest in applying Geographic Information System (GIS) technology to the field of economic development, especially to the planning process of economic development at the local, regional and state levels (W. R. Strong & E. D. Lenz 1988, R. A. Wright, K. T. Adair & F. Koleszar 1991, Shih-Lung Shaw 1993, W. J. Drummond 1993, P. Longley & G. P. Clarke 1995, G. Clarke 1997, E. Irwin 1999, H. Gary 1999, L. Greenwell 1999, B. Harris 1999, A. Kalinski 1999, N. Kristina 2000, C. Wayne & E. Fladager 2001).⁴¹

5.2.4 Other Public Services

The other Public services are the local urban administration, as so far not included in the spatial planning authorities mentioned above, the independent public bodies, the civic supplies such as public supply companies, the land registration offices, or owners of technical infrastructure.

5.2.5 Public researchers / Universities

Research activities in town and regional planning very often have a component connected to use for territorial analyses based on geospatial data. These analyses usually are used for connecting to specific geographic areas a set of data characterizing socio-economic and demographic aspects evolutions in time.

Researchers, moreover, rely on spatial data even for studying mobility and accessibility issues, from the very local scale to the regional ones. Of relevant importance is even the use done in research connected to environmental research (blue and green networks transformations) and in landscape investigation.

6. User Requirements Analysis

6.1 Users Classification

As demonstrated in the previous chapter, several actors are involved in the planning process. In the framework of the plan4business project, we are focussing only on private and public actors involved in business activities. Herewith a User Typology together with Planning Activity:

6.1.1 Users typologies

Type of Actor	Type of Planning / Business Activity
Private Actor	
Planning engineers, spatial planner	Integrated planning discipline including several territorial responsibilities dealing with the development of a territory on different scale levels
Bank / Insurance Services	Planning financial investment related to territorial intervention, financing business urban operations, risk management
Energy / environmental services	Planning sustainable growth, industrial development, solutions for population and environment, local development, long-term development including investment in infrastructures
Health Services	Capacity planning (WHO), integrated in urban planning
Commercial Services	Commerce and Business Services integrated in urban territory
Real Estate	Urban and Regional Development, buying / renting land, building, leasing, Property Deals, Mediation in transaction, information, care-taking, financing, planning, speculation
Telecommunication Services	Applications of information and communication technologies in sectors of health, education, business, governance, the environment and agriculture
Tourism / Travel Services	Leisure Planning important part of urban and regional planning, included in urban development
Transport / Logistics Services	Logistics consider physical urban structure for optimizing companies performance or transport system conditions
Security Services	Services related to company security, geo-location, risk prevention, geoinformation
Public Actor	
Spatial Planning Authorities / Planning Administrations	Determining policies in national context; supra-regional level responsible for translating guidelines into regional context. Municipalities have power and financial means to develop and implement local policy on spatial planning and the environment – working with business sector (PPP)

Fiscal Authorities	Geo-location of actors, coordination of services
Regional Development Agencies	Urban and regional planning and surveys, development concepts
Other Public Services	Responsible for coordination of services in relation with urban and regional planning, such as energy supply, garbage, etc.
Public researchers / Universities	Research on urban planning, also involving sponsoring of business

6.2 User Requirements

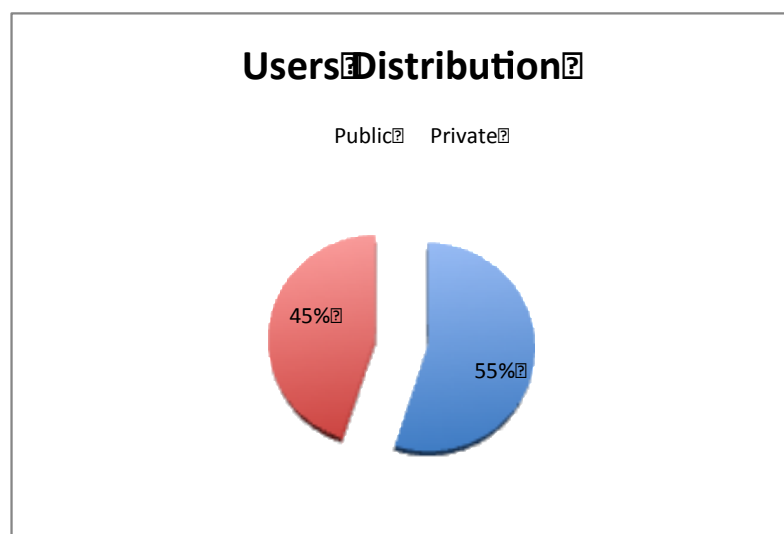
In order to identify the requirements of the users, a survey among different types of users of urban planning data has been implemented during the months June-September 2012. Results of the questionnaire are in the Annex 1 of the Report.

Out of the 850 persons addressed, 40 actors active in various sectors completed the questionnaire: 22 from the public sector and 17 from the private sector. The results have been completed with own evaluation and experience. This gives us a first overview of the user needs regarding the plan4business platform. The questionnaire results cannot be considered as a full representative, although representative persons of user associations have collected the information, and therefore already aggregated.

6.2.1 Types of users

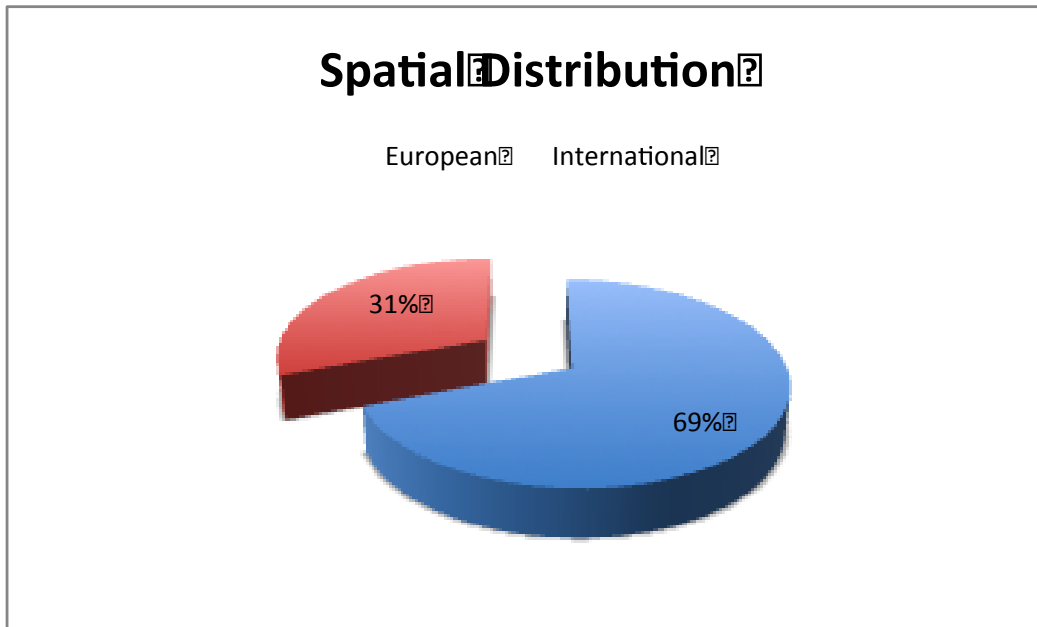
Question 1. In which activity and responsibility are you working?

Distribution Public Private



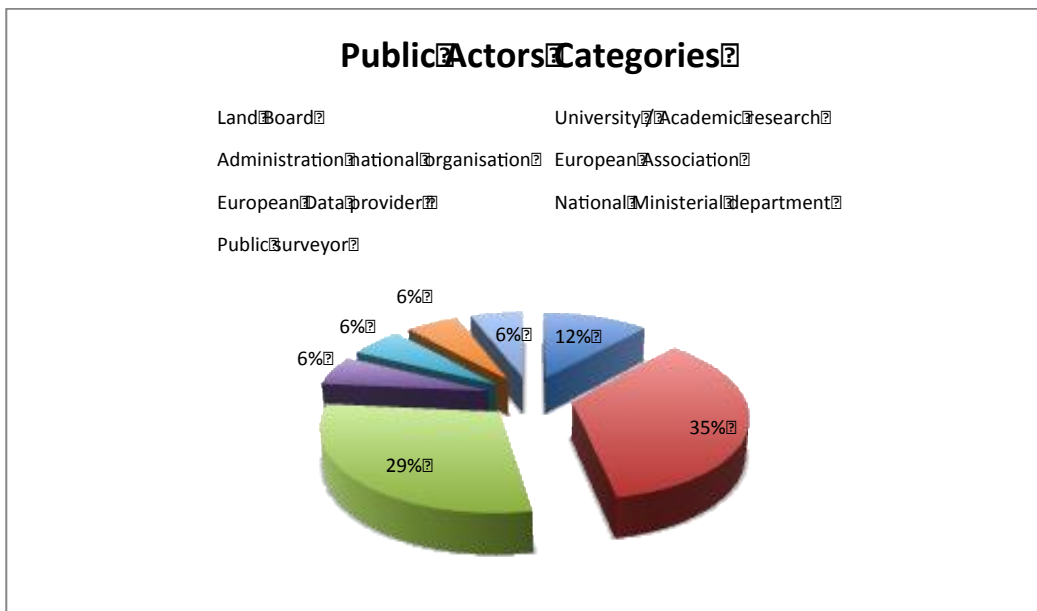
The distribution of users was approximately balanced between private actors (45%) and public actors (55%).

European / international users



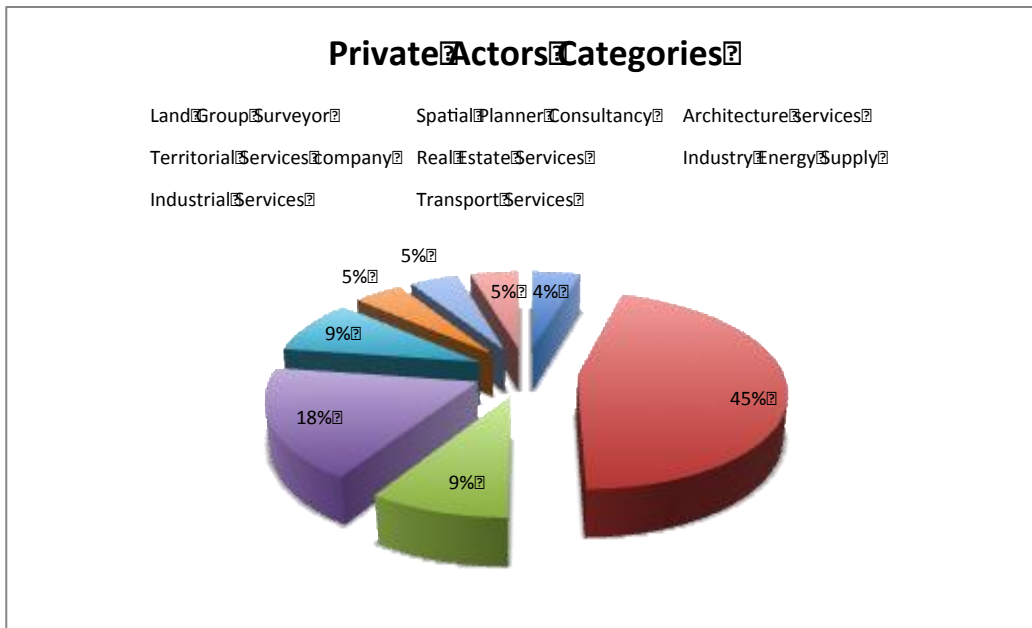
Not only European users have been requested to reply to the questionnaire but also international actors. About 30% of users outside of the EU replied: they were from Africa, South-America, America, Asia and Australia.

Public Actors Users Categories



Under the public actors, actors from several categories replied: most replies came from academics and research, Land board members and public surveyors.

Private Actors Users Categories

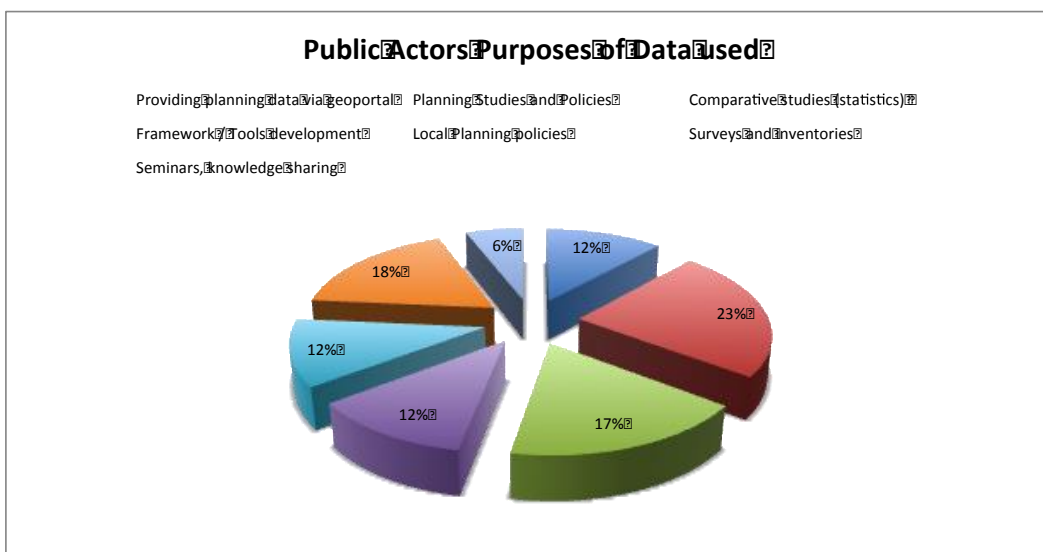


Under private actors, the most important categories were consultants in spatial planning, territorial services companies and architecture services. Interesting were replies from surveyors, real estate, transport and industry energy supply services.

6.2.2 Purposes of data used

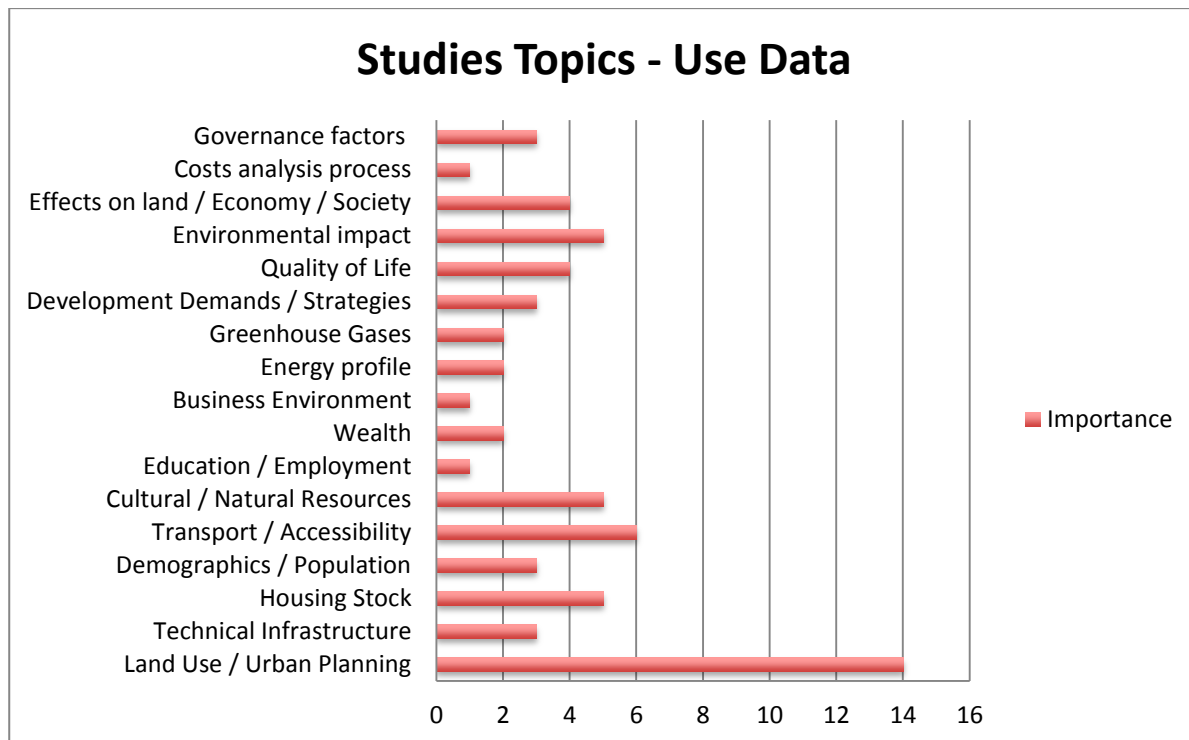
Question 2. For which purposes do you use urban/regional planning data?

Public Actors



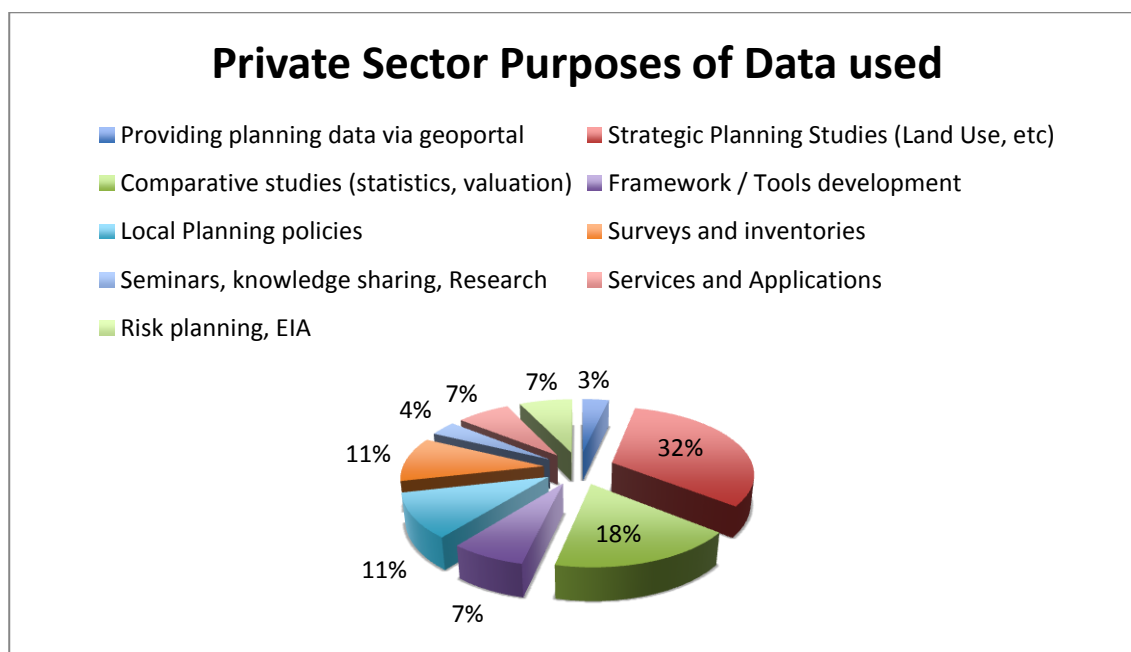
Public actors were replying with different, cumulated answers; most important are planning studies and policies, followed by statistics (comparative studies) and surveys.

What kind of topics used for studies?

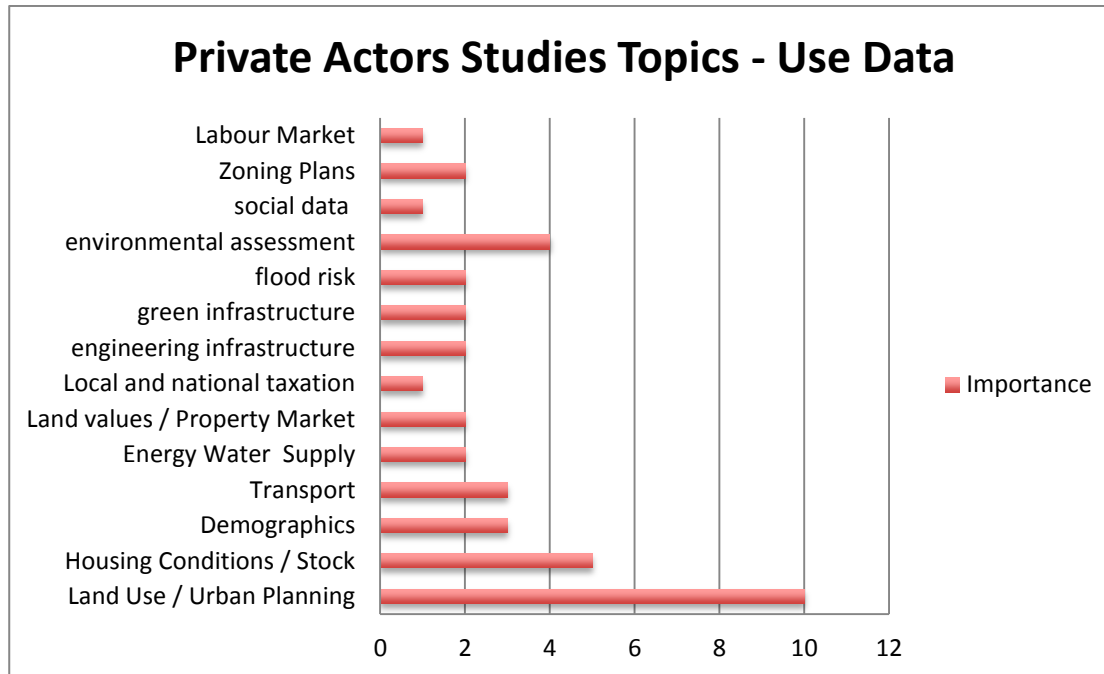


Public actors are using planning data for the following topics: land use / urban planning, Transport and accessibility studies, Environmental impact assessment studies and housing stock studies.

Private Actors

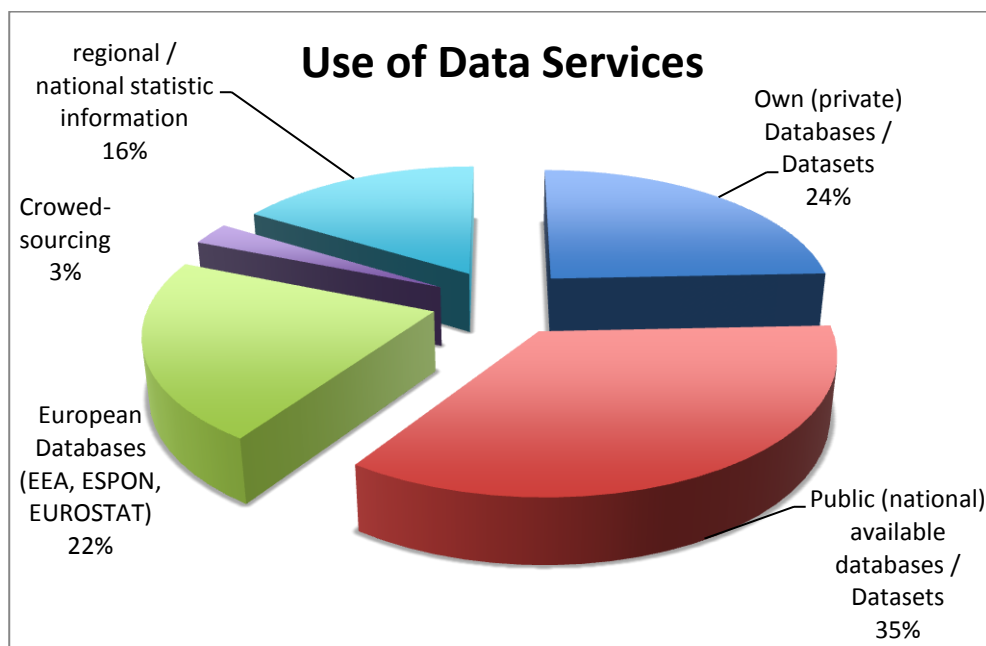


Private actors were replying with different, cumulated answers; most important are strategic planning studies, comparative studies (statistics), and local planning policies.



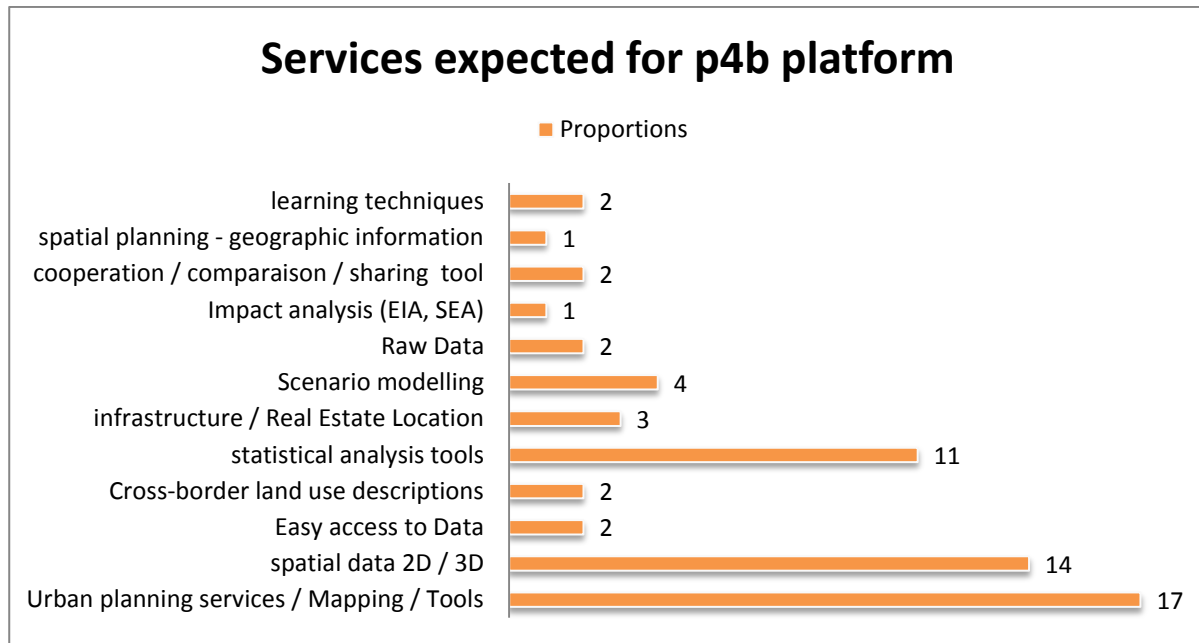
Private actors are using planning data for the following topics: land use / urban planning, housing stock studies, environmental assessment, demographics and transport.

6.2.3 Data services used



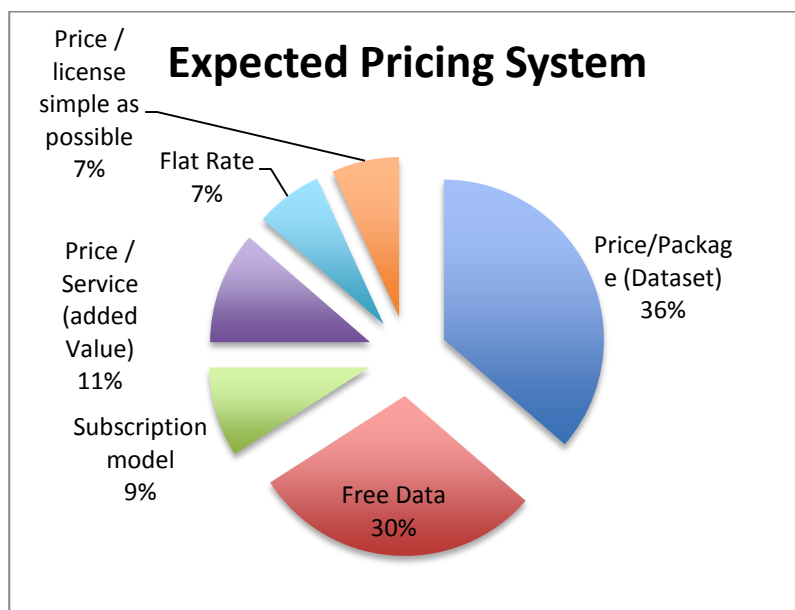
By the choice of data services, private and public actors are using different data services until now: public available databases, own databases, European databases and regional statistic information.

6.2.4 Services required



By the choice of services expected by the plan4business platform, different “wishes” have been mentioned: mapping tools, spatial data 2D/3D, statistical analysis tools, etc.

6.2.5 Pricing System



About the pricing system, different solutions have been mentioned.

6.2.6 Stakeholder Board

The Stakeholder Board has been integrated in the discussion on user needs since the beginning of the project. Here the composition of the Stakeholder Board:

Nr	Stakeholder Category	Member	Address
1	European Cities	EUROCITIES Brussels Office Knowledge Society -	george.niland@eurocities.eu
2	Citizens representatives	Dr Cristina Garzillo, Project Coordinator ICLEI - Local Governments for Sustainability European Secretariat	cristina.garzillo@iclei.org
3	Business Activities: Surveyors	Sander Scheuwater, Royal Institute of Chartered Surveyors - RICS Europe, Tony Mulhall, Associate Director Land Group	SScheuwater@rics.org TMulhall@rics.org
4	Business Activities: Real Estate	Angus MacIntosh, Real Estate Forecasting Limited, Oxford Brookes University	angus.mcintosh@ntlworld.com
4	Urban Planners	Bruce McCormack, President EUROGI Mauro Salvemini, Past President EUROGI	bruce.mccormack18@gmail.com, 8382360@gmail.com
5	INSPIRE	François Salgé TWG LU/LC	Francois.Salge@developpement-durable.gouv.fr
6	Environment	Marie Cugny-Seguin, Project Manager EEA European Environment Agency	Marie.Cugny-Seguin@eea.europa.eu
7	Business Activities: Geo Business	Dave Lovell, President EUROGEOGRAPHICS	dave.lovell@eurogeographics.org
8	Business Activities	Robin Waters, Director RSW Geomatics, Cambridge, UK	robin.waters@rswgeomatics.com
9	Business Activities: energy and environmental services	Bertrand Porquet, Vice-President Urban Solutions GDF SUEZ	bertrand.porquet@gdfsuez.com
10	Geobusiness	Maria Cabello, TRACASA, Spain	mcabello@tracasa.es

6.2.7 Synthesis of the user needs

This first survey realised on the basis of the questionnaire and interviews of the Stakeholder Board demonstrates that main concerns (for both, public and private actors) regarding the use of planning data are related to the land use planning, statistics, environmental impact assessment studies, transport, housing stock. Users are expecting from the plan4business platform an easy-to-use system, offering wide possibilities of statistical analysis, 2D/3D tools, mapping tools and infrastructure/real estate location analysis. Users are ready to pay for high quality services but expecting a certain amount of free data available.

7. Operational use cases

The goal is to identify, clearly and analytically, those Use Cases that could be developed at operational stage. The overall potential for Use Cases to be included in the data platform system is significant and their formalization is essential in order to design the functionalities required by a flexible yet practically usable data platform. The Use Cases will therefore encompass, in a comprehensive manner, all steps between users' requirement analysis and the system structuring the P4B platform: The objective is to identify the services and functionalities that best comply with the needs of the users and their perceived requirements with regard to their daily activities in using geo-data.

The description of each UC has been structured as follows:

- First the actors/users are described. Actor "specifies a role played by a user or any other system that interacts with the P4P platform system.
- The Use Case is briefly introduced within a section called "description".
- From the graphical point of view, different Use Cases are associated to tables, which in detail represent each action, performed by a given actor. This allows also formalising relationships between the actor and its needs in terms of use of geo-data.

It is to notice that the following use cases follow in their classification a very simple logic of dividing them in the private and/or public realm. This procedure has been adopted in order to facilitate the classification of the potential business activity, but it would be better in the definition of the business plan to re-arrange the use cases following more market oriented classification, as for examples those connected to set of major policies designed and implemented by public administrations (e.g. education, health, transportation...) and private enterprises/investors/developers.

7.1 Private Sector

7.1.1 Spatial Planners, Planning engineers

Use Case No. 1

Use case of plan4business
<p>Description of the Use Case:</p> <p>A spatial planner has been assigned a project for making a plan for new area (that is either planned before or does not have any existing plans).</p> <p>As a planner, he has to consider and take into account possible existing plans for the given area AND for the area around.</p> <p>Many planners need access to the planning data for use in own GIS / analytical work.</p> <p>E.g. an area should not be planned for residential purpose if the area close by is already planned for industry.</p>

1	Sector	Private / Public
2	Category	Spatial planner
3	Type of User	Consultants / Planners
4	Business Activity	Urban or rural planning.
5	Target group addressed	Private / Public
6	Business Case Story	Identify and present planned land use (spatial plan) for a given area.
	Client	Real estate agents.
	Product	Planning data
	Dimension/Spatial/financial	All
	Working Time	10 minutes.
	Method used	Find / identify area of interest. Show and give access to planning data for the area of interest, with disclaimer for the result.
	Approx. Honorarium expected	Depends on the expected accuracy of the results – from €100 to €2000. Differentiate between viewing and getting access to data.
	Governance Project (e.g. how much people involved)	NA
7	Proposed data requirement	<ul style="list-style-type: none"> • Detailed planned land use (obligatory) • Existing land use (optional) • Property register (optional). • Base map (optional)
8	Other information	NA

Use Case No. 2

Use case of plan4business (Stakeholder Analysis)		
Description of the Use Case: Elaboration of a Land Use Plan for a Municipality		
1	Sector	Public
2	Category	Spatial Planning

3	Type of User	Town planners/architects/surveyors	
4	Business Activity	To provide a functional and normative zoning within the urban administrative borders	
5	Target group addressed	Citizens, enterprises (of all sizes and typology), Local communities,	
6	Business Case Story	To gather all statistic, topographic, geologic, geotechnical, economic, demographic data necessary to define the correct land use.	
	Client	Municipality	
	Product	A land use management plan at urban scale (normative zoning plan)	
	Dimension/Spatial/financial	Urban/metropolitan scale	
	Working Time	Depends on city dimension...at least one year for small/medium sized towns	
	Method used	Comparison of cadastral plans, previous land use plans, cultural heritage plans, landscape plans with demographic and socio-economic data and trends. All local plans have to be compared with supra-ordered plans (provincial, regional, ev. National)	
	Approx. Honorarium expected	For a small/medium sized town it starts form at least 100/150.000 euros. It can achieve uo to 5/7 mil. Euros for capital cities.	
	Governance Project (e.g. how much people involved)	Yes	
7	Proposed data requirement	<ul style="list-style-type: none"> • Detailed planned land use (obligatory) • Existing land use (obligatory) • Property register (obligatory). • Base map (obligatory) 	

Use Case No. 3

Use case of plan4business (Stakeholder Analysis)			
Description of the Use Case: Elaboration of an urban structure development concept for the future urban development of a municipality			
1	Sector	Public	
2	Category	Spatial Planning	
3	Type of User	Town planner/architect	
4	Business Activity	Definition of a strategic development for the municipality	
5	Target group addressed	Investors, local communities, developers	
6	Business Case Story	To realize a shared vision for the development of a municipality/city	
	Client	Municipality	
	Product	A strategic operational plan plus technical thematic reports	
	Dimension/Spatial/financial	Urban/neighbourhood scale	
	Working Time	At least 6 months	
	Method used	Comparison of cadastral plans, previous land use plans, cultural heritage plans, landscape plans with demographic and socio-economic data and trends. All local plans have to be compared with supra-ordered plans (provincial, regional, ev. National)	
	Approx. Honorarium expected	Depends on project scale, at least 100.000 euros	
	Governance Project (e.g. how much people involved)	Yes, many administrative tiers have to be involved	
7	Proposed data requirement	<ul style="list-style-type: none"> Detailed planned land use (obligatory) Existing land use (obligatory) Property register (optional). Base map (obligatory) Mobility and accessibility data 	

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7.1.2 Banks and Insurances Services

Use case of plan4business (Stakeholder Analysis)			
<p>Description of the Use Case:</p> <p>Private study mandated by a bank to identify the distribution of potential clients related to the urban location of their bank agencies, their accessibility and potential new clients.</p>			
1	Sector	Private	
2	Category	Banks and Insurances Services	
3	Type of User	Financial analyst	
4	Business Activity	Identification of clusters of potential clients	
5	Target group addressed	SMEs, citizens	
6	Business Case Story	Providing trustworthy information on the distribution of people ready to ask for bank services	
	Client	Bank	
	Product	Report with thematic maps	
	Dimension/Spatial/financial	Urban scale	
	Working Time	2 to 4 months	
	Method used	Comparing density of population/ housing data with financial and fiscal data	
	Approx. Honorarium expected	30.000 euros for the final study	
	Governance Project (e.g. how much people involved)	No	
7	Proposed data requirement	<ul style="list-style-type: none"> Detailed planned land use (obligatory) Existing land use (obligatory) Base map (obligatory) 	

7.1.3 Energy and environmental services

Case No. 1

Use case of plan4business (Stakeholder Analysis)			
<p>Description of the Use Case:</p> <p>An environmental agency needs to design and propose a number of policies for managing and moderating noise levels in urban realm, both residential settlements and productive/industrial areas. Policy designer have to assess criterion, together with competent local authorities, to limit/contain noise level to which humans are exposed, particularly in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise-sensitive buildings areas.</p>			
1	Sector	Public	
2	Category	Energy and environmental services	
3	Type of User	Researchers/policy designers	
4	Business Activity	providing comparable and reliable noise level data at city/metropolitan scale: giving technical advise for designing proper policies (facilitation of decision making)	
5	Target group addressed	Local communities, public administrations (departments for environmental strategies), entrepreneurs...	
		Public to Public, or Public to Private working for general interest	
6	Business Case Story	Providing reliable environmental information and operational tool to manage an environmental problem to local decision makers.	
	Client	Public administration or competent authorities obliged to draw up action plans to reduce noise	
	Product	Technical report with maps	
	Dimension/Spatial/financial	All urban areas/Some specific neighbourhoods	
	Working Time	Average one month for 5 ha (it depends on urban areas to consider, on its extension)	
	Method used	Selecting Urban areas/identifying public spaces/contextualizing and separating residential/productive/leisure areas into the urban fabric (noises generated in private realm have to follow particular laws usually not applicable to noise plans)	
	Approx. Honorarium expected	It depends on scale of city and area to investigate (density, number of services and productive spots). Average a technical report for a 5 ha mixed use urban area can account from 30.000 to 50.000	

		euros	
	Governance Project (e.g. how much people involved)	A team of 2 person is enough for realizing the technical report	
7	Proposed data requirement	<ul style="list-style-type: none"> Land use management (zoning plan) data Cadastral plan data 3D data of the involved area Database of noise sources (A GIS of all spots generating noise in Urban areas) 	

7.1.4 Health Services

Use case of plan4business (Stakeholder Analysis)			
Description of the Use Case: Study about the urban distribution of diseases in a city			
1	Sector	Public	
2	Category	Health services	
3	Type of User	Planning authority ruling emergencies cases (civil protection, Ministry of Interior, Ministry of Health...)	
4	Business Activity	To locate in the urban area the zones where a disease is concentrating its dangerous effects	
5	Target group addressed	Citizens, Hospitals, Transportations means and infrastructures	
6	Business Case Story	To provide in real time the distribution of the disease in the urban area	
	Client	Public authorities managing emergency situations	
	Product	A software that provide in real time the spatial evolution/configuration ay urban scale of the disease distribution	

	Dimension/Spatial/financial	Urban scale	
	Working Time	To elaborate such kind of software requires at least 6 months	
	Method used	Connecting spatial data (geographical/topographical) with database connected to hospitals, medical centers, proximity doctors...(all these subjects should be networked to the same data system)	
	Approx. Honorarium expected		
	Governance Project (e.g. how much people involved)	Yes: connecting all emergency operational units working in public institutions of different scale (mainly national and local in this case)	
7	Proposed data requirement	<ul style="list-style-type: none"> Base map (obligatory) 	

7.1.5 Commercial Services

Use case of plan4business (Stakeholder Analysis)			
Description of the Use Case: Study mandated by a retail company for identification of potential sites for commercial infrastructure in a city of 200.000 inhabitants			
1	Sector	Private research for defining conditions of investment	
2	Category	Commercial Services	
3	Type of User	Town planner/architect/surveyor	
4	Business Activity	Identification of all area suitable for retail commerce within the city administrative border	
5	Target group addressed	Landowner, SMEs or Commercial centers/malls, developers, Planning department of the Municipality	
6	Business Case Story	The business case defines itself in the identification, selection and prioritization of areas potentially usable for retail companies purposes	

	Client	A private developer	
	Product	A technical report with thematic maps	
	Dimension/Spatial/financial	Urban scale	
	Working Time	3 months	
	Method used	Analysing land use management functions (zoning plan) and mobility/accessibility plans	
	Approx. Honorarium expected	50.000 euros for the report and the maps	
	Governance Project (e.g. how much people involved)	No	
7	Proposed data requirement	<ul style="list-style-type: none"> • Land use management (zoning plan) data • Cadastral plan data • Base map (obligatory) 	

7.1.6 Real Estate

Case No. 1

Use case of plan4business		
<p>Description of the Use Case:</p> <p>A real estate agent has been requested by a client to identify possible properties planned for a given purpose – and still not used for that purpose.</p> <p>E.g. Ikea are searching for properties planned for commercial activity – and still not occupied.</p>		
1	Sector	Private
2	Category	Real estate
3	Type of User	Real estate agents, investors
4	Business Activity	Identify possible properties available for a given purpose.
5	Target group addressed	Private / Public
6	Business Case Story	Identify properties that has been planned to a given purpose –

		and whose existing land use is different from the planned land use.
	Client	Real estate agents. Property investors. Public administration.
	Product	
	Dimension/Spatial/financial	All
	Working Time	One week
	Method used	<p>Define requested purpose and identify correct classification category.</p> <p>Search for properties / areas which correspond to the classification.</p> <p>Overlay (if possible) with existing land use – and take away those properties / areas which has an existing land use equal to the one searched for (assumable the property is already occupied).</p> <p>Present result as map, table and dataset (GML / XML).</p>
	Approx. Honorarium expected	Depends on the expected accuracy of the results – from €1000 to €30000.
	Governance Project (e.g. how much people involved)	NA
7	Proposed data requirement	<ul style="list-style-type: none"> • Detailed planned land use (obligatory) • Existing land use (optional) • Base map (optional)
8	Other information	The use case is simplified and can be extended to include more advanced analyses, which requires other type of data.

Case No. 2

Use case of plan4business		
<p>Description of the Use Case:</p> <p>A real estate agent is preparing an advertisement and information package for a property he got for sale. As per regulation, he is obliged to inform possible buyers about what spatial / land use plans exists for the property and its surrounding.</p> <p>E.g. I am about to purchase a property. However, if its planned to establish industry at the next property, I will not purchase it.</p>		
1	Sector	Private

2	Category	Real estate
3	Type of User	Real estate agents, investors
4	Business Activity	Identify planned land use for a given property.
5	Target group addressed	Private / Public
6	Business Case Story	Identify and present planned land use (spatial plan) for a given property.
	Client	Real estate agents.
	Product	Plan for property
	Dimension/Spatial/financial	All
	Working Time	10 minutes.
	Method used	Find / identify property or parcel. Select and search for planned land use. Present information, with disclaimer for the result.
	Approx. Honorarium expected	Depends on the expected accuracy of the results – from €100 to €2000.
	Governance Project (e.g. how much people involved)	NA
7	Proposed data requirement	<ul style="list-style-type: none"> • Detailed planned land use (obligatory) • Property register (optional). • Base map (optional)
8	Other information	The use case is simplified and can be extended to include more results (information about the property), which requires other type of data.

Case No. 3

Use case of plan4business (Stakeholder Analysis)
<p>Description of the Use Case:</p> <p>A private company is looking for a better location in the Region of Liverpool. The mandate to the Real Estate Company is to check the business needs, such as the operational issues (business needs and user/customer/stakeholder) and the Workforce issues (recruiting and retaining workforce staff from diverse), to be able to decide which location would be the best. The Real Estate Consultants deliver the analysis to the client after a 2-month time.</p>

1	Sector	Private	
2	Category	Real Estate	
3	Type of User	Consultant	
4	Business Activity	Consultancy	
5	Target group addressed	Private to Private	
6	Business Case Story	Searching for Better location, with high revenues and high results in terms of value, personnel and accessibility	
	Client	Private company	
	Product	<p>Location building analysis existing and proposed - development of scenarios</p> <p>Analysis of every building – existing and proposed:</p> <ul style="list-style-type: none"> • Lease terms • Rent and other costs • Net lettable space • Space per employee • Relocation/redundancy <p>Four Scenarios elaborated:</p> <ul style="list-style-type: none"> • Combined • Dumbell • Hub & Spoke • Regional Devolved 	
	Dimension/Spatial/financial	Great region of Liverpool	
	Working Time	2 months	
	Method used	<ul style="list-style-type: none"> • Face to face interviews • Postal Questionnaires of all staff • Socio-Demographic Analysis <ul style="list-style-type: none"> ○ Race, census ○ Gender, census ○ Disability, census ○ Age, census ○ Sexual orientation, BoHo Sexual Diversity index ○ Religion, census ○ Population Size, census 	

		○ Deprivation, ODPM index	
	Approx. Honorarium expected	100.000 EUR	
	Governance Project (e.g. how much people involved)	Involvement of private actors, public actors (municipality)	
7	Proposed data requirement	Data necessary for: <ul style="list-style-type: none"> • Standard off-peak drive time • Key office development sites (planned, pre-application, under construction) • Total office occupation costs (£ft²) • Connection to airport hubs and destination • Other plotting properties of company on map 	

7.1.7 Telecommunication Services

Case No. 1

Use case of plan4business (Stakeholder Analysis)			
<p>Description of the Use Case: A private telecommunication company (TC) is looking for selling on the market its smart services for urban areas (from small municipalities until metropolitan areas). The TC has developed a number of models for improving energy efficiency in the city (e.g. optimizing heat dispersion, providing energy from renewable sources) and other services connected to major urban issues (mobility, noise, air pollution...).</p> <p>In order to make a business proposal to the city finalized to develop a smart platform (functional/accessible through mobile devices/ipad/laptops) to help the city in making decision on planning choices, the TC needs to access 2D and 3D geo-data of the potential client.</p>			
1	Sector	Private	
2	Category	Telecommunication	
3	Type of User	Team of Consultants/Municipality Technicians	
4	Business Activity	Providing "Smart Services" for Cities	
5	Target group addressed	Private to Public	
6	Business Case Story	Identifying in the urban fabric the most adequate places for proposing projects based on use of renewable energies.	

	Client	Municipalities, Cities, Metropolitan Areas	
	Product	Smart platform managing smart services for cities	
	Dimension/Spatial/financial	Urban/metropolitan areas	
	Working Time	From 2 weeks to one month	
	Method used	<ul style="list-style-type: none"> • Geographic and topographic analysis of urban areas (use of 2D geo-data) • Socio-economic and administrative analysis of selected areas • Assessing of energy (e.g. solar) potential using 3D data models of the selected area 	
	Approx. Honorarium expected	<p>Depends directly on scale of project, energy potential of the selected areas, availability of 2D and 3D data, local facilitation in fiscal and administrative processes.</p> <p>At least a single consultant should generate 50.000 euros/months revenue to the company in developing the smart platform (team composed at least by 3 persons).</p>	
	Governance Project (e.g. how much people involved)	Involvement of private actors, public administrations (especially at local level) and local communities	
7	Proposed data requirement	<ul style="list-style-type: none"> • Data requirements for city/neighbourhood-Model/s generations • Data requirements to populate or extend city/neighbourhood-Model/s <ul style="list-style-type: none"> - e.g. solar energy potential assessment • Data requirements for modelling purposes <ul style="list-style-type: none"> - e.g. Data requirements for solar energy modelling <p>Data requirements change and increase with the number of different smart services that the TC is capable to provide.</p>	

7.1.8 Tourism and Travel Services

Case No. 1

Use case of plan4business (Stakeholder Analysis)
A municipality wants to launch a local fiscal policy to monitor and rule touristic activities happening in the

sea-shore, especially bathing resorts using state/demania property for providing their services.			
1	Sector	Public or Private Service for Public	
2	Category	Tourism	
3	Type of User	Civil servants or Consultancy for public Administration	
4	Business Activity	Providing a technical report, integrated with a mapping of use of demania/public property, operated by private tourism service providers.	
5	Target group addressed	Public to Private/ Private for Public to Private	
6	Business Case Story	The Report generates a business case financed by public authorities (e.g. municipality contracts a consultant for realizing the technical report). Reports results will change fiscal revenue of public administration, this will indirectly generating other business cases (even in term of services) at urban scale.	
	Client	Municipality (this sort of action could be launched even at metropolitan or regional scale)	
	Product	A mapping of use of public areas for private services (e.g. occupation of beach soils for providing bath services), mapping is integrated with technical/fiscal considerations	
	Dimension/Spatial/financial	Urban scale	
	Working Time	It depends on areal extensions to consider, average one month for 5 up to 10 ha.	
	Method used	Gathering data using local GIS information and check crossing with fiscal offices, chambers of commerce databases	
	Approx. Honorarium expected	A technical report can account from 15.000 up to 30.000 euros for 5 up to ha to investigate.	
	Governance Project (e.g. how much people involved)	3 to 5 including civil servants and service (consultants/technicians preparing maps and report) providers	
7	Proposed data requirement	Land use management data Cadastral data Fiscal data (fiscal statements) Commercial data (register of enterprises operating in selected areas)	

7.1.9 Transport and Logistics Services

Use Case No 1.

Use case of plan4business (Stakeholder Analysis)			
Description of use case: Fleet managers need to make sure daily fleet movements and maintenance schedules run efficiently without compromising quality customer service. Use of geo-data (GIS solutions) can help to save daily expenses through reduction in travelling distance and routing planning time. Mileage savings translate into reduced fuel use and a smaller carbon footprint.			
1	Sector	Private for Enterprises	
2	Category	Movement of goods/delivery of services management	
3	Type of User	Enterprises offering the delivery service, specifically the final distribution office	
4	Business Activity	Delivering in time goods and services optimizing manpower and other resources needed for operating the distribution.	
5	Target group addressed	Logistics planners, Distributors (drivers), clients (sender/receiver)	
6	Business Case Story	To move within a city/region/nation in the quickest and safest modality a material good.	
	Client	Mainly Enterprises (of all size) and public administrations.	
	Product	The good is delivered safely in the shortest time.	
	Dimension/Spatial/financial	From urban to national scale.	
	Working Time	From few ours to 3 or 4 days.	
	Method used	First, data entry staff insert the information for deliveries into the main computer system. The information is automatically loaded into a GIS Server, where shipment addresses are geocoded and checked against a map to determine the zone to which each shipment belongs. The zones are created based on routes and drivers. These zones are then clustered and optimized into tours based on allocation rules and driver input. All data is accessible to staff via	

		handheld computers and LAN radio at any time and across the whole duration of service implementation (this is a common methodology used by major private logistics enterprises).	
	Approx. Honorarium expected	Average from 30 to 150 euros for each delivery.	
	Governance Project (e.g. how much people involved)	No	
7	Proposed data requirement	<ul style="list-style-type: none"> • Base map • Mobility and accessibility database • Land use plan 	

7.1.10 Security Services

Use Case No. 1

Use case of plan4business (Stakeholder Analysis)			
Description of use case: Geospatial intelligence, GEOINT (GEOspatial INTelligence), GeoIntel (Geospatial Intelligence), or GSI (GeoSpatial Intelligence) is intelligence derived from the exploitation and analysis of imagery and geospatial information that describes, assesses, and visually depicts physical features and geographically referenced activities on the Earth (Wiki, Geospatial Intelligence). A possible use of GEOINT is the definition of a detailed emergency (emergency of different nature in the city) response plans.			
1	Sector	Private or Public for Public Interest (responding in real time to an emergency)	
2	Category	Risk management at Urban scale	
3	Type of User	Technicians working in public institutions or military departments taking care of security issues in the city	
4	Business Activity	GIS connects geospatial data with other forms of intelligence such as human, measurement and signature, signal, open source, and technical intelligence. GIS serves as a powerful and unique platform to integrate and link all kinds of intelligence into smart tools helping in designing emergency responses/plans in real time.	
5	Target group addressed	Citizens and all entities dedicated to security at urban scale	
6	Business Case Story	One emergency in the city (Fire, flash flood,	

		car accident in a critical traffic node...)	
	Client	Hospitals, Police Stations, Firemen, Municipality Departments taking care of public security	
	Product	A software (smart tool) integrating geo/spatial-data with other data (voice, tracked information, imagines...)	
	Dimension/Spatial/financial	Urban scale	
	Working Time	The smart tool responses in very short time. Its design requires at least 6 months, its updating will take one man/month.	
	Method used	A smart tool streamlines the process of creating, importing, editing, and sharing GIS data while empowering the field data collector to perform real-time or post collection processing of data from GPS receivers and a variety of data collection devices (digital cameras, voice recorders, and more): such tools are already exploited in the market (e.g. ESRI), but they still have relevant margins of improvement.	
	Approx. Honorarium expected	N.A.	
	Governance Project (e.g. how much people involved)	No	
7	Proposed data requirement	<ul style="list-style-type: none"> • Base map • Mobility and accessibility database • Land use plan • Other databases depending on faced emergency/security risks 	

7.2 Public sector (Territorial Governance Administrative Tiers)

Use Case No. 1

Use case of plan4business (Stakeholder Analysis)
Description of use case: Intermodal transfers of cargo can create relevant traffic blockages and reduce efficiency. This leads to increased costs and delayed distributions. Railway managers look for organizing a smart toolkit for optimizing the exchange of good from rail to road and vice versa.

1	Sector	Public or Private for Public or Private Interest	
2	Category	Transport Management	
3	Type of User	Public or Private Railway Company (operational managers)	
4	Business Activity	Using geo-spatial information in order to make effective and efficient the management of Intermodal nodes.	
5	Target group addressed	Enterprises, logistics firms, railways companies, distribution firms...	
6	Business Case Story	Railway managers looks for passenger or goods delivery. The use the geo-data help to efficiently manage assets and monitor safety. The facility to share maps and information online improves communication with stakeholders and clients.	
	Client	Railway Companies	
	Product	Smart toolkit for managing intermodal transfers of shipment.	
	Dimension/Spatial/financial	Urban/Metropolitan/Regional scale	
	Working Time		
	Method used		
	Approx. Honorarium expected		
	Governance Project (e.g. how much people involved)	No.	
7	Proposed data requirement	<ul style="list-style-type: none"> • Base map • Mobility and accessibility database • Land use plan 	

7.2.1 Spatial Planning Authorities

Use case of plan4business (Stakeholder Analysis)			
Description of use case: A municipality wants to exactly assess the amount of green and empty/underused areas (e.g. parks, abandoned areas, greenfield without specific use, industrial abandoned areas...). Aim of the municipality is to launch a policy for densifying the urban fabric in order to increase the offer of housing within the city and containing phenomenon of suburbanisation/urban sprawl.			
1	Sector	Public or Private for Public Interest	
2	Category	City Management/Strategic Planning	
3	Type of User	Planning Office of the Municipality	
4	Business Activity	Identifying available plots in the city to launch competitions for the edification of new housing (private, cooperative, public).	
5	Target group addressed	Mainly Planners, Architects, Constructors, Citizens interested in new housing	
6	Business Case Story	The request of Municipality generates a number of new plans (structural-strategic, normative, detailed...), new operational projects (form and measure of new settlements/buildings) a number of technical reports and maps.	
	Client	Municipality and its districts	
	Product	Plans, projects and technical reports for realizing new housing	
	Dimension/Spatial/financial	Urban scale	
	Working Time	At least one year just for the design part of the planning process	
	Method used	Cadastral geo-data, urban land use plans, special plans (urban landscape, protected heritage...) are compared with recent ortophotos in order to identify possible areas for constructing new buildings.	
	Approx. Honorarium expected	Many professionals are involved in this transformation. In general this process in a city of 1.000.000 of inhabitants can account at about 2.5 mil. of euros (considering all procedures connected to design, but not the physical implementation)	
	Governance Project (e.g. how much people involved)	Local Governance: Municipality, Districts, Local communities are involved in the planning process	
7	Proposed data requirement	<ul style="list-style-type: none"> • Detailed planned land use • Existing land use • Property register • Base map 	

7.2.2 Fiscal Authorities

Use case of plan4business (Stakeholder Analysis)			
Description of use case: A municipality wants to review and optimize its fiscal policy. This policy is strictly connected to the functions normed in the local zoning plan (land use management plan at urban scale). The municipality aims at checking up if all people is really paying the due tax (e.g. verifying if citizens declaration in using the building spaces designed for commercial use are true or false in terms of square meters) and if functions designed in normative plans really correspond to real uses of spaces (buildings, market places, parking places...).			
1	Sector	Public or Private service for Public Interest	
2	Category	City Management	
3	Type of User	Fiscal Office of a Municipality	
4	Business Activity	Identifying uses of private and public spaces in the City and verifying if correspondent to fiscal declarations of users	
5	Target group addressed	Shops, professional offices, markets, all public spaces in private use...	
6	Business Case Story	The generation of a report on state of art of use of spaces/buildings in the city requires their detailed description. The description is based on linkage	
	Client	Municipality	
	Product	Technical report with maps	
	Dimension/Spatial/financial	Urban scale	
	Working Time	It depends on how big is the city on its financial and economic power. Average: for a 100.000 inhabitants city in a region scheduled as competitive, at least six months to deliver credible results. Team work including 3 experts.	
	Method used	Comparing real spatial data with declarations on space used presented by users.	
	Approx. Honorarium expected	This is a team work (at least three experts). Average 3500/5000 one person month.	
	Governance Project (e.g. how much people involved)	This is just implying the municipal level.	
7	Proposed data requirement	<ul style="list-style-type: none"> • Database of physical persons fiscal records • Database of juridical persons fiscal records • Detailed planned land use 	

		<ul style="list-style-type: none"> • Existing land use • Property register • Base map 	
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7.2.3 Regional Development Agencies

Use case of plan4business (Stakeholder Analysis)			
Description of use case: Definition of a regional strategic framework for use of EU structural funds in the realm of urban development. The regional development agency needs to define an approach that permit to maintain a balanced and polycentric development of cities.			
1	Sector	Public to public or private for public service	
2	Category	Territorial governance	
3	Type of User	Consultants/planners team	
4	Business Activity	To define a number of maps of regional scale with reports to deliver to the decision makers in the Regional Development Agency	
5	Target group addressed	Municipalities, main infrastructures managers, actors of productive areas (enterprises of different size and their representatives, labor unions)	
6	Business Case Story	The generation of reports and maps requires use of geo-data at regional scale and the need to strategic connect them to other data base containing information on socio-cultural-economic data.	
	Client	Regional development agencies or similar institutions operating at regional scale on territorial development and cohesion issues	
	Product	Operational reports and maps. Operational for decision makers.	
	Dimension/Spatial/financial	Regional scale.	
	Working Time	It depends on considered areal extensions, number of cities, their critical mass (economy, inhabitants...) and geo-political relevance. Average, we speak of a team of three people working at least three months..	
	Method used	Gathering of relevant geo-data (depending even on territorial/urban policy demand), linkage of geographical datasets with other databases (especially socio-economic information, representation of thematic maps, compilation of operational report on specific development themes (e.g. polycentric distribution, urban sprawl, landscape potentialities, protected areas...))	

	Approx. Honorarium expected	One person month costs around 5000 euros gross income.	
	Governance Project (e.g. how much people involved)	Yes, it implies different administrative tiers with responsibilities in urban and regional planning	
7	Proposed data requirement		

7.2.4 Other Public Services

Use case of plan4business (Stakeholder Analysis)			
Description of use case: Individuation of areas, internally to the metropolitan administrative borders, adequate to realize a sanitary landfill			
1	Sector	Private or Public responding to a demand of Public administration, or to a demand of Local communities, or to stakeholders	
2	Category	Design of public urban services/facilities	
3	Type of User	Planners working in public administration/private consultant-planners responding to local communities/stakeholders	
4	Business Activity	To realize a map at metropolitan scale + a technical report	
5	Target group addressed	Local municipalities/councils and communities in the metropolitan areas	
6	Business Case Story	In order to single out potential areas for realizing a sanitary landfill. It is necessary to launch a detailed study on areas having all geological/geotechnical and land use optimal characteristics to host such a sensitive urban infrastructure.	
	Client	Usually a public administration, but even local municipalities or local communities could ask for such a study	
	Product	Technical reports with maps	
	Dimension/Spatial/financial	Metropolitan scale	
	Working Time	From 3 to 9 months	

	Method used	Comparison of land use plans with topographical and geological ones	
	Approx. Honorarium expected	Average 50/75.000 euros...it depend on extension of metropolitan area an on number of potential areas to compare	
	Governance Project (e.g. how much people involved)	Yes: Governance at local scale implying local municipalities and communities	
7	Proposed data requirement		

7.2.5 Public researchers / Universities

Use case of plan4business (Stakeholder Analysis)			
Description of use case: A team of researcher has to provide an evaluation on physical outputs (refurbishments, renewed public spaces, civic centers, new buildings... generated by urban regeneration policies in the last 20 years in a metropolitan area.			
1	Sector	Public or Private responding to a request of public administrators	
2	Category	Evaluation of public policies promoted by public administrations	
3	Type of User	Researcher, Policy Evaluator	
4	Business Activity	To identify physical results of policies	
5	Target group addressed	Local policy administrators, planners, architects, local communities, local planning offices	
6	Business Case Story	In order to answer the research demand, researchers have to provide reports and maps on area invested by policies initiatives. The generation of reports and maps requires use of geo-data at metropolitan and neighbourhoods scale and the need to strategic connect them to other data base containing information on socio-cultural-economic data.	
	Client	Public administration	
	Product	Reports and maps	

	Dimension/Spatial/financial	Metropolitan Urban scale	
	Working Time	From 6 months to one year	
	Method used	Gathering spatial data connected to urban transformation induced by policies, that is comparing operational plans (zoning plan on land use management, detail plans, and operational project registered on cadastral plans)	
	Approx. Honorarium expected	This kind of study average costs around 80.000 euro. It depends on how big is the city and how many policies are to investigate.	
	Governance Project (e.g. how much people involved)	Yes, Local level Governance.	
7	Proposed data requirement		

7.3 Implementation of use cases

With this collection of use cases, it is proposed in the consortium to focus first on the implementation of 2 or 3 simple and easy-to-understand use cases, e.g. for spatial planners, real estate or commercial services; a second step should be the implementation of more complicated use cases, focussing on local issues and high-quality data, such as real estate housing stock, security services, or telecommunication services.

8. Data Requirements according to private and public users

What kind of data is required for the private and the public actors?

This chapter is trying to identify the data requirements of

8.1 Private Actors

Private actors have specific requirements regarding planning data, in order to realize their business activities. Hereafter a collection of general data requirements from the private sector regarding the data:

- Documentation preview
- Map export for using as a material
- Metadata catalogue preview
 - Commentary:
 - Retrieval of civil engineering main data provided by their administrator is very limited. Their mass distribution to the users of this group cannot be expected. Appropriately designed business model (future question) could solve this problem to satisfaction of all interested parties.
- Planning engineers of the plans and planning studies are a special case – if they project the planning documentation or the planning studies, they can get the data, and they should have chance to download the data directly
- For spatial planning data preview prefer to use the WMS server or the web-based thin client that enables printing of a map part or the whole plan
- Download the data of the currently projected area and the mentioned buffer (via WFS) while working to order

Further requirements:

- Visualisation original legal plans by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries) for a municipality and their surroundings
- Visualization the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file for a municipality and their surroundings
- Urban land use plan has to be allocated in a standardised data exchange format to the municipality
- Meta data search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
 - Main designation of land use purpose
- Download of data, to be used as professional working material (with different levels of access according to the types of users - and also in line with INSPIRE: for example, the professionals pay for the data they use, the general public has a free but limited access, etc.) - Please note: access to SDI data cannot be provided, according to national laws, before the first step of the adoption of any territorial and urban plan.

- Catalogue of plans, comprising all relevant regulations and legal deliberations.
- Possibility to view and overlay maps, adding themes from different databases; possibility to perform simple graphic operations such as buffering, drawing objects, measuring, etc.; possibility to print parts of the maps.
- Possibility to download data in GIS-compatible formats.
- Basic data processing
- Limited possibilities of editing for planning adjustments.

In particular for commercial Services:

- Visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries)
- Visualization of the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file
- Visualization of INSPIRE Annex III Themes: protected sites, Area management/restriction/regulation zones and reporting units, Natural risk zones, Bio-geographical regions, Habitats and biotopes, Species distribution, Energy resources, Mineral resources
- Access to ground value information
- Metadata catalogue preview
- Meta data search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
 - Main designation of land use purpose (e.g. industrial area, commercial area, centre zone)
- Possibility to perform simple graphic operations such as buffering, drawing objects, measuring, etc.; possibility to print parts of the maps.
- Possibility to download data in GIS-compatible formats.

In particular for the Real Estate services:

- Documentation preview - Visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries)
- Visualization of the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file
- Access to ground value information
- Metadata catalogue preview
- Metadata search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans

- Main designation of land use purpose (e.g. industrial area, commercial area, centre zone)
- Commercial distribution of the "value" map
- A map application (e-shop) would be prepared for this user group; it would be possible to buy a map made up of layer combination of the Price map, Plan, Regulation plan etc.there
- Catalogue of plans, comprising all relevant regulations and legal deliberations.
- Possibility to view and overlay maps, adding themes from different databases; possibility to perform simple graphic operations such as buffering, drawing objects, measuring, etc.; possibility to print parts of the maps.
- Possibility to download data in GIS-compatible formats.
- WMS giving the possibility to work with local and remote data.

Further Requirements from the Real Estate services:

- Documentation preview - Visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries)
- Visualization of the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file
- Access to ground value information
- Metadata catalogue preview
- Meta data search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
 - Main designation of land use purpose (e.g. industrial area, commercial area, centre zone)
- Commercial distribution of the "value" map
- A map application (e-shop) would be prepared for this user group; it would be possible to buy a map made up of layer combination of the Price map, Plan, Regulation plan etc.
- Catalogue of plans, comprising all relevant regulations and legal deliberations.
- Possibility to view and overlay maps, adding themes from different databases; possibility to perform simple graphic operations such as buffering, drawing objects, measuring, etc.; possibility to print parts of the maps.
- Possibility to download data in GIS-compatible formats.
- WMS giving the possibility to work with local and remote data.

8.2. Public Actors

Public actors have different data requirements as the private sector, and as a conclusion from the user analysis:

- Documentation preview - Visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries)
- Metadata catalogue preview
- Catalogue of plans, comprising all relevant regulations and legal deliberations

- Metadata search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
 - Main designation of land use purpose
- View the area where citizen's parcel is located (orthophoto, spatial planning documents)
- Query if they are constraints that apply to the parcel
- Check his project meets the constraints
- It would be also good to have the analytical functions option over the data within the portal – e.g. finding the projected areas for living, up to the distance of 5 km from city centre as a part of documentation preview
- Adding the comments into the map (user's graphics) at the time when the planning documentation is discussed
- Possibility to add comments - new information
- Visualization of the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file
- Points of interest on the requested maps by category
- Possibility to add comments, new information

Further requirements from the public sector:

- Preview of the planning documentation in case of publishing opinions on the negotiated planning documentation;
- Nature conservation authorities that need delimitation of TSES from the plans (where it is mandatory) for publishing opinions within the common work agenda (for modification of TSES)- are a special case
- Visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries)
- Visualization of the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file
- Providing the scope designated by binding land use plans and the vector data of urban land use plans by Web Feature Services
- Supply of an electronic participation platform
- Meta data search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
 - Main designation of land use purpose
- Query the displayed information to access the actual regulation part that apply to the parcel
- Easy import of geospatial data into the database of Spatial planning Authority
- Possibility of dynamic conversion of the data models (import) of geospatial data of the technical infrastructure providers into the planning data model. The goal is to implement the technological

processes for the most automatic processing of the entry data from various, but known sources. Still, there is a risk of DM instability for data output on the part of providers.

- Awareness, openness, accessibility and seamless interoperability are their major requirements.
 - These will be addressed through INSPIRE compliance particularly through use of a scaled-up ISDE.
- This will need to interwork with other existing infrastructures, such as the GeoDirectory, EDEN (Environmental Data Exchange Network) and specific widely used applications such as the LGCSB's gPlan system.
- Visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries)
- Visualization of the scope designated by a binding land use plan by Web Map Service + Visualization of the original legal plan as PDF file
- Providing the scope designated by binding land use plans and the vector data of urban land use plans by Web Feature Services
- Supply of an electronic participation platform
- Meta data search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
- Main designation of land use purpose

In particular for public researchers and universities:

- Documentation preview - visualization of the original legal plan by Web Map Service (bit mapped raster graphic + overlaying vector data to no visualization style is assigned, which carries however feature data for WMS get feature info queries) + Visualization of the original legal plan as PDF file
- Data & metadata catalogue, with possibility of listing and grouping the data under different classifications.
- Metadata catalogue preview
- Meta data search for:
 - Name and number of urban land use plans
 - Information to the date of establishment, public display period, notification of permission of urban land use plans
 - Legal foundation of urban land use plans
 - Main designation of land use purpose
 - Visualization of the scope designated by a binding land use plan by Web Map Service
 - Providing the scope designated by binding land use plans and the vector data of urban land use plans by Web Feature Services
 - Catalogue of plans, comprising all relevant regulations and legal deliberations.

8.4 Code Camp results

A Code Camp took place during the second week of July 2012, together with a brainstorming on the aims and objectives of the plan4business platform.

Hereafter the minutes of the Code Camp:

The plan4business database was set up on the HSRS server and the following datasets were imported by using developed scripts for import:

- Urban Atlas
- National ecological networks of protected areas (CDDA)
- Corine Land Cover (CLC)
- Natura2000

Other datasets can be imported.

Datasets available are described on the following WIKI page:
https://intranet.plan4business.eu/r/projects/p4b/wiki/Data_sources

Geoserver was installed and CLC and CDDA data are published by web services.

Related to the plan4business-analyst subproject:

SQL queries to access and query the plan4business database. The functionality of the analyst was shown on simple queries.

Complex queries that cannot be solved in real time can be performed and user could be informed for example via email that his data or result from the query are ready to download or display.

Draft land use application schema was briefly presented. The schema is taken from the INSPIRE Data Specification on Land Use. It has been implemented in the plan4business database.

Related to the plan4business integration engine: Using HALE for mapping of user's data into the plan4business database (currently manual process).

Relational schema might not be easy to use for the user. Therefore, an intermediate application schema could be used – 2 step integration:

User's data ->(mapping)-> 1. intermediate schema ->(predefined mapping)-> 2. database schema

Another issues to be addressed in the future development is to create a schema in the database by a user and automation of the integration process.

Related to the Server: Basic client user interface was set up. The client displays data and SQL queries can be performed. The SQL query form will be substituted by predefined analyses or workflows in later stage.

Display of KML file is performed using the analysis engine.

Future work – connection of the analysis engine through WPS interface.

Geoserver http://p4b.ccss.cz/geoserver_p4b/web/

Geoportal <http://p4b.ccss.cz/>

Related to the User Requirements: Presentation of preliminary results from the questionnaire including the draft deliverable on user requirements.

Thursday brainstorming session results presented including suggested business cases (will be included in the deliverable).

Three levels of data:

1. NUTS 1 – e.g. CLC, Natura2000, OSM, Urban Atlas
2. NUTS 2 – e.g. regional plans
3. NUTS 3 – spatial plans on local/municipal level

What data should be of primary interest for the plan4business project?

Pan-European data are not interesting as a product - > there is a need to make derived (value added) information from these data.

Local spatial plans are interesting as a product. Together with derived information from these plans is a basis for the business model of plan4business.

Plan4business should offer:

1. Viewer
2. Analyst
3. Broker/market place (for those who have data and also for those who need data)

A data group was established – to address the issues of application schemas, availability of data at NUTS1-NUTS3 levels, integration of data and definition of user scenarios.

The group led by Przemysław Turowski (Geosys) includes

- Tomas Mildorf and Otakar Cerba (UWB),
- Didier Vancutsem (ISOCARP),
- Tor Overli (AVINET).

The data group should work across various tasks and WPs.

All the results of the Code Camp have been followed up in the next steps of the project.

9. System Specifications

9.1 Introduction

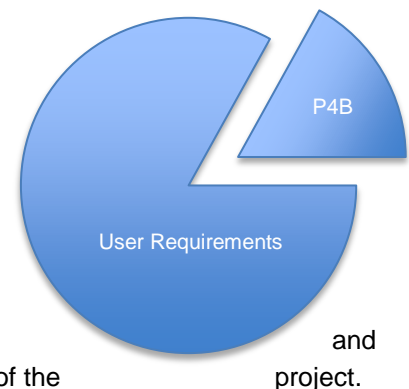
The user requirement analyses has identified and assessed a broad range of possible functions, tools and data requested by a broad range of users related to spatial planning and the use of spatial planning data.

The purpose of the plan4business project is to develop a platform for integration and harmonisation of planning data, including transport infrastructure and physical plans across Europe and make these available for commercial access, analyses and visualisation.

The identified requirements represent a broader domain the scope of the plan4business project. However, these are identified needs and shall be used as a background and possible future extension of the plan4business platform.

The Business model of plan4business is under development and its results will have impact on the planned technical platform.

The system specification will identify and define those requirements that are needed to be fulfilled for making the plan4business portal operational attractive, fulfilling the identified needs, the Business model and the scope of the



9.2 Methodology

The purpose of the system specifications is to identify and express the specifications the system shall fulfil from the users perspective.

The specifications are the foundation for the technical specifications; implementation and development work to be undertaken under WP 4 (engine development) and 5 (client development), and are the result of the business planning under WP2 and the user requirements identified through this document. The result of the specified and implemented systems will be integrated and made operational through WP6.

The project follows an agile and iterative development approach, in which the simplest elements are implemented – and made operational at an early stage of the project, while the more complex ones are implemented later. Altogether four such stages are planned, representing four levels of complexity.

This approach ensures the platform starts to attract customers with concrete useable services relatively quickly, whom will be able to provide valuable experiences and feedback back to the project.

The specifications can as such not be regarded as a final product, but will be revisited and revised through the project, based on experience and lessons learned.

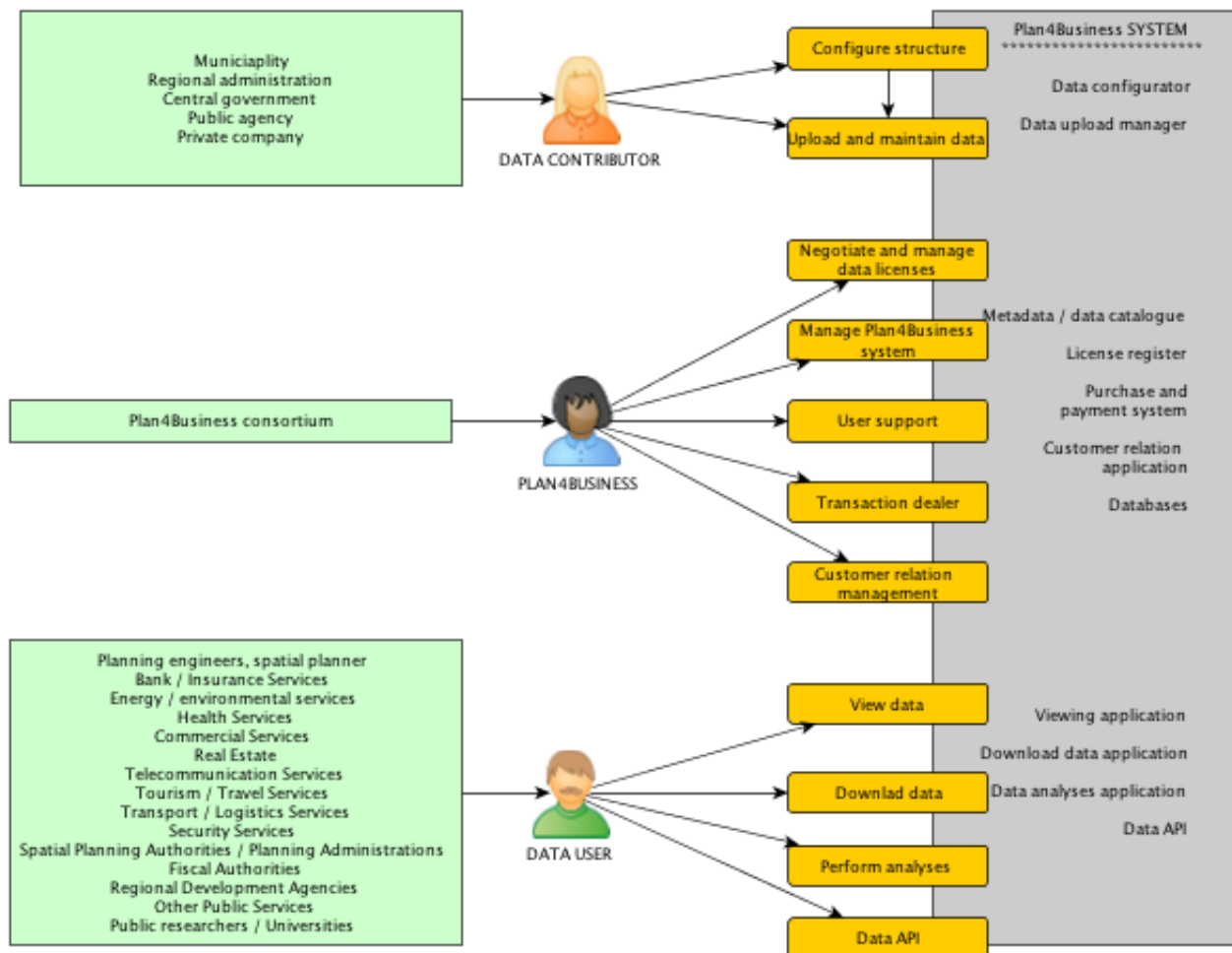
First, an overall description of the system is given, identifying the main components and structure of the plan4business system.

Then, specific system requirements are given, grouped into relevant areas.

The requirements are prioritised by the use of the words MUST, SHOULD and COULD. MUST requirements are mandatory and shall be fulfilled, while SHOULD requirements are given high priority, even though not mandatory. COULD requirements can be fulfilled if the system, the project and its frame allows so.

9.3 Overall requirements

The illustration below gives an overview over the main structure of the plan4business system; its user groups, use tasks and main system components.



The plan4business system will support three user-groups;

- Data contributors – those that have data and whom possible can share these, either for free or for a fee / cost
- Data users – those whom need access to data for planning, analyses, investment, etc.
- Plan4business managers and operators – whom are running the plan4business platform.

From an overall perspective, the plan4business platform will be used for;

- Configure data harmonisation models

- Upload and manage uploaded data (e.g. data maintenance)
- Manage plan4business portal, including metadata and catalogue structure, license register, customer register, transaction and payment management and user support
- Perform data analyses
- Viewing and visualisation of planning data and results of data analyses
- Downloading data

The technical components of the plan4business portal shall implement and fulfil the use-tasks and their requirements as they are described in this document. The technical specifications of these are the subject of deliverable D3.2.

9.4 Specific requirements

Keeping into account the three pillars of the Plan4business infrastructure (contributor, P4Bsystem, user, see 9.3), specific requirements should be developed in interfaces functions between these key elements and related activities to perform in the P4B-System (data uploading/downloading, data licenses...). Interfaces, especially those linked to users and data contributors, will be designed in order to be extremely user-friendly. Following sub-chapters highlight specific issues of single operations and provide connected requirements descriptions and obligations using the grammar explained in the methodology chapter (see 9.2).

9.4.1 Data Contributor Requirements

A user under this section is a data contributor.

Requirement	Obligation
For access control, authentication and authorisation please refer to Customer Relation management under plan4business requirement section.	NA
Configurator: An interface for defining mapping between a contributor's structure and plan4business's data structure. The configured structure shall be the foundation for uploading data to the Plan4business platform.	NA
The configurator shall support the following defined feature classes; including all relevant features from the INSPIRE themes. The data model for the identified feature classes may be simplified from the INSPIRE model and it will be the simplified model that will be supported.	MUST
The configurator shall support multiple formats for data to be harmonised, as a minimum the following; <ul style="list-style-type: none"> - CityGML - Shapefile 	

<ul style="list-style-type: none"> - KML / KMZ - XPlanGM 	
The configurator shall utilise a graphical interface for setting up harmonisation and integration rules between original datastructure and target datastructure (from – to). A tool such as FME can be used a model for the user interface.	SHOULD
The target structure (to-model) shall be predefined and available via the user interface.	MUST
The configurator shall enable the user to redefine, combine, split and modify features and their attributes (data model harmonisation).	MUST
The configurator shall enable the user to define coordinate and datum transformation of the data.	MUST
The user shall be able to to a test-harmonisation of a dataset. The results shall be presented through tables (feature with attributes) or via a map.	SHOULD
A defined set of example configurations shall be made available. The example configurations shall be prepared by the Plan4business team and be available to all uploading users to copy to his own configurations and modify onward on the copied version.	SHOULD
A defined configuration shall belong to a defined user (“my configurations”)	MUST
The configurator shall store and make available the defined transformation to be used when the actual dataset is to be uploaded.	MUST
The user shall be able to modify and delete his own configurations.	MUST
The user shall be able to share his configurations with other users.	SHOULD
The configurator shall support defining uploading batch procedures, easing the process of uploading and maintenance of the data.	COULD
Data uploader: The tool to be used by the data contributor to upload a new dataset or a new version of an existing dataset.	NA
The user shall be provided a wizard oriented interface, assisting him in uploading a new dataset or replacing an old one.	SHOULD
The user shall utilise one of his defined configurations.	MUST
When uploading the data, the user shall define relevant metadata, catalogue information and licensing / pricing regime (select between pre-defined regimes).	MUST
<p>The possibility of harmonisation will differ from dataset to dataset. As a minimum, the following shall be uploaded / defined;</p> <ul style="list-style-type: none"> - The original dataset (e.g. a scanned image or a DWG file). Original dataset can be in any file-based formats, including scanned raster images, vector data, etc. - The outline of the dataset – or the actual plan 	MUST

- Metadata and licensing information	
All uploaded data and defined information shall be included by the system into the relevant Plan4business storages.	MUST
A detailed log shall be available, clearly stating what has been done, by whom and when.	MUST
<p>All information and data shall be verified and automatically checked before being entered into databases for consistency and security.</p> <p>If the information and data can be uploaded without breaking the integrity of the databases, it shall be uploaded with a warning to the user.</p> <p>If the information and data can not be uploaded without breaking the integrity of the databases, it shall not be uploaded and the user shall be notified.</p>	MUST

9.4.2 Data User Requirements

A user under this section is an end-user whom will use the system to access planning data.

Requirement	Obligation
For access control, authentication and authorisation please refer to Customer Relation management under Plan4business requirement section.	NA
For payment and transactions, please refer to Transaction under Plan4business requirement section.	NA
<p>The user interface shall be easy to use and find its way through. Through the first page, the user shall easily see what is available for free, what requires log-in and what requires payment. He shall quickly find coverage and information about availability. The first page shall have the following content as minimum;</p> <ul style="list-style-type: none"> - Log in, new user - When logged in – see last transactions + possible to see all transactions - See a map showing coverage - Get a textual description of Plan4business, what is available and how it works - By guided by wizards for viewing, analyses or downloading data 	MUST
View data: The interface for viewing planning – and other included data. The interface shall also be the interface for showing results from data analyses.	
The viewing interface shall have a map as its main focus area, but at the same time be able to present tabular information, e.g. attributes.	MUST
Standard map navigation tools such as zoom, pan, print, search (by names of places) shall be supported.	MUST
The map shall visualise relevant and included pan-european datasets, local harmonised (simplified) spatial plan data (seamless) and plan-coverage (layer that shows the extent of	MUST

every plan included in the system).	
The user shall be able to select what to be visible on the map, including background and thematic data. The actual content will be further described under Data Requirements.	MUST
Datasets that requires authorisation or payment for viewing shall, if <ul style="list-style-type: none"> a) the entire layer is restricted: be visible in layer list – but de-activated b) part of the dataset / layer is restricted, e.g. one detailed plan (out of all): show the outline of the plan and a polygon fill that indicates there are more data – which is not at that stage available for the user 	SHOULD
Visualise results of analyses.	MUST
Have a cartography that fits with INSPIRE standards as best as possible, but focus in readability and clarity.	MUST
The viewer interface shall enable the user to see terrain, and possible buildings in a 3D perspective and navigate through this. On top of the terrain model, background data as well as thematic data (e.g. planning data) shall be draped.	
Be an entrance to downloading service and analyses services.	MUST
Download data: Interface for downloading data	
The following data shall be available for downloading, depending on license and possible procurement; <ul style="list-style-type: none"> - Uploaded original datasets (in original form and structure as uploaded). - Uploaded harmonised datasets - Pre-loaded pan-european datasets 	MUST
For original datasets, the user will select the actual dataset via the viewer interface, or via a search based on metadata / catalogues.	MUST
For uploaded harmonised datasets or pre-loaded pan-european datasets, the user will select the area of interest via the viewer interface – or by giving a given defined area (e.g. a country).	MUST
The user shall be able to select which format and coordinate system the data shall be downloaded to (not relevant for uploaded original datasets). The following formats shall be supported; <ul style="list-style-type: none"> - KML / KMZ - ESRI Shape and Geodatabase - DWG / DXF 	MUST
Before the order for downloading is executed, price and size of data shall be calculated. The user shall confirm the order.	MUST
The data to be downloaded shall be compressed and made available for downloading when the order has been confirmed and that necessary permits and financial transactions	MUST

completed.	
Perform analyses: The Plan4business shall support analyses of the data, and possible associated data to the portal.	
The analysis tool shall support both pre-defined analyses (defined by Plan4business administrators) and analyses built by the user.	MUST
Obtain aggregated ("average") planning data (what is the average size of a development, what are relative portions in Italy compared to Polan for a given use type...)	SHOULD
Gain distribution of data property over time	SHOULD
Gain point-based or area-based statistical measures, such as deviations over a given period)	SHOULD
Perform simulations based on data pool to determine development of real estate value	COULD
Glean correlation coefficients between a property of selected plans and external data sets, such as employment time series	COULD
Enable visual representations and diagrams for the basic functions listed above (as raster or vector graphics, alternatively as 3D graphics embedded in a WebGL Browser)	COULD
Data Mining and cluster analysis functions	COULD
Data API: Interface for access to data, analyses and tools from external applications or services	
To be defined	

9.4.3 Plan4business Management Requirements

A user under this section is a system manager or administrator within the Plan4business consortium.

Requirement	Obligation
Negotiate and manage data licenses: For the Plan4business portal, all data available in the system must have a valid license for use and possible sale / download. The model for this will be further designed under the Business model, however, a management solution is required.	
All datasets shall have a valid license.	MUST
The acceptance of the license by the data owner shall be documented through the system (e.g. email, signed and scanned document, e-signature, etc)	SHOULD
The full conditions off all used licenses shall be available electronically.	MUST
Plan4business will standardise and limit the number of used licenses. The used licenses shall technically be incorporated into the datasets and how these are available (e.g. if a dataset has a license to only be viewed – and not downloaded, the system shall not allow downloading).	MUST
Manage Plan4business system:	
The Plan4business system shall have a manager and administrator interface.	

User support: User support is required for both data contributors and data users.	
The user support interface should include; <ul style="list-style-type: none"> - Frequently asked questions - Newsletters - Tutorials - Request for assistance - Help 	COULD
Transaction dealer: To secure the commercial part of Plan4business, a transaction manager (web shop) is required.	
The transaction manager shall be an integrated part of the Plan4business system and ensure required payment is received and transferred for all paid transaction via the portal.	MUST
Payment shall be received from the Data Users. Normal used payment mechanisms shall be used (credit card, pay pal, etc)	SHOULD
The transaction manager shall maintain a full account of all transactions and payments, in accordance with EU regulations.	SHOULD
For goods that shall be paid to data contributor, the transaction manager shall do so more or less automatically (based on a standard pricelist incorporated in the system)	COULD
Customer relation management (CRM): Customers in this context is both data contributors and data users. The CRM shall ensure authentication, authorisation and contact.	
The CRM shall be an integrated part of the Plan4business system and ensure all users of services that require authorisation are identified and authenticated.	MUST
The CRM shall enable anyone to register, and edit their information, as a customer, either as contributor or as user, or possible as both.	MUST

9.5 Data Requirements

Plan4business depends on availability of data. The following list represents a minimum.

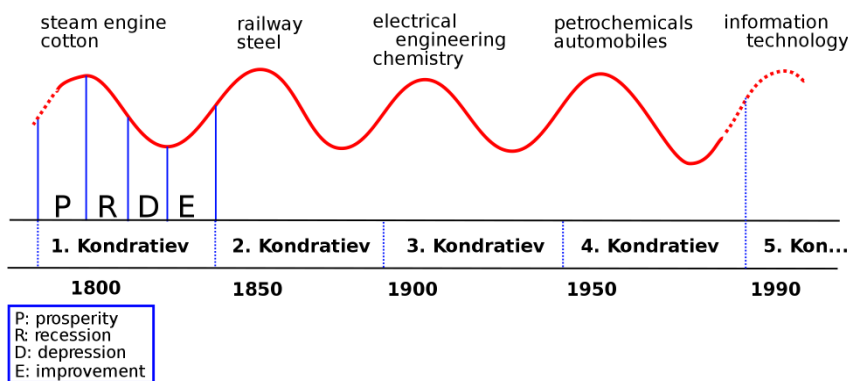
Requirement	Obligation
Urban and regional planning data from different countries, e.g. in ALKIS, DXF/DWG, Shapefile, CityGML, XPlanGML format or in other GML application schemas. The data can and will be in different formats and levels (e.g. from scanned raster images of paper plans to fully digital, topological and logical vector plans). The target of the project is to have as a minimum 300 different planning datasets available.	MUST

Land use data including GMES Urban Atlas data. Expected coverage: full Europe.	MUST
Open Street Map data as representative of traffic and as a key reference dataset. Expected coverage: full Europe.	MUST
Natura 2000 data as information about potential restriction coming from environment protection. Expected coverage: full Europe.	MUST
Market information (number of properties, content, etc. and transactions (sale, rental), their number, content, areas of distribution, price levels).	SHOULD
Social and economic data (CSP, Eurostat data). Expected coverage: full Europe.	SHOULD
Individual property data (legal status, current use, resources, construction data) and cadastral parcels data, including property types	COULD

More requirements to be defined according to the use cases implementation.

10. Conclusions

In the past 250 years, we have experienced five major technological revolutions and each of these was linked to a specific technological innovation. Every technical invention and development has resulted in advantages and disadvantages, which have influenced the well-being and prosperity of mankind. But somehow, they have provided the conditions for a long period of sustained economic growth as a process of economic development, which is usually described as a series of waves (Kondratieff waves)(Kondratieff, 1925).



Simplified Kondratieff Wave Pattern (2009), Source: Rursus, Wikipedia

http://en.wikipedia.org/wiki/File:Kondratieff_Wave.svg

The consequences of the application of ICT in production and services will change traditional ways of running businesses in industry, services and other organizations as well as changing everyday life more generally. These developments form the basic driving force for spatial change and have been discussed by many scientists and futurologists. Major developments are ongoing in the sectors of industry, services, business location, new working practices, housing and conventional traffic. And precisely the planning services – linked to urban and regional planning – are going to be profoundly affected by ICT applications.

Today, most GIS products directly read and sometimes dynamically transform data with minimal time delay. The GIS community has been pursuing the open interoperability for many years, and the solutions to achieving this goal have changed with the development of new technologies. In the early days of GIS, the focus, with rare exceptions, was on individual, isolated projects. Today the focus is on the integration of spatial data and analysis in the mission-critical business processes and work flows of the enterprise and on increasing the return on investment (ROI) in GIS technology and databases by improving interoperability, decision-making, and service delivery.⁴²

Plan4business is promoting the idea of boosting spatial data integration and harmonisation in order to offer on the market a number of geo-data generated services that can facilitate the solutions of a number of daily businesses. To facilitate means to propose services that, thanks to added values created through elaborations of smart soft-engines, deliver a more effective and efficient solutions to territorial questions (see list of use cases, chapt.7) finalized to improve environmental conditions, quality of life in urban and metropolitan areas, the management of different kind of risks (from the very local scale to the global one).

According to the present situation of the planning systems, planning legislations and planning actors, the plan4business platform is a great challenge: due to heterogeneity of policies, (decision) processes, documents (paper or online, legally binding or not), skills, data and tools, as well as fragmented

implementation levels and governance, as the present report demonstrated, the plan4business is going to respond to several challenges.

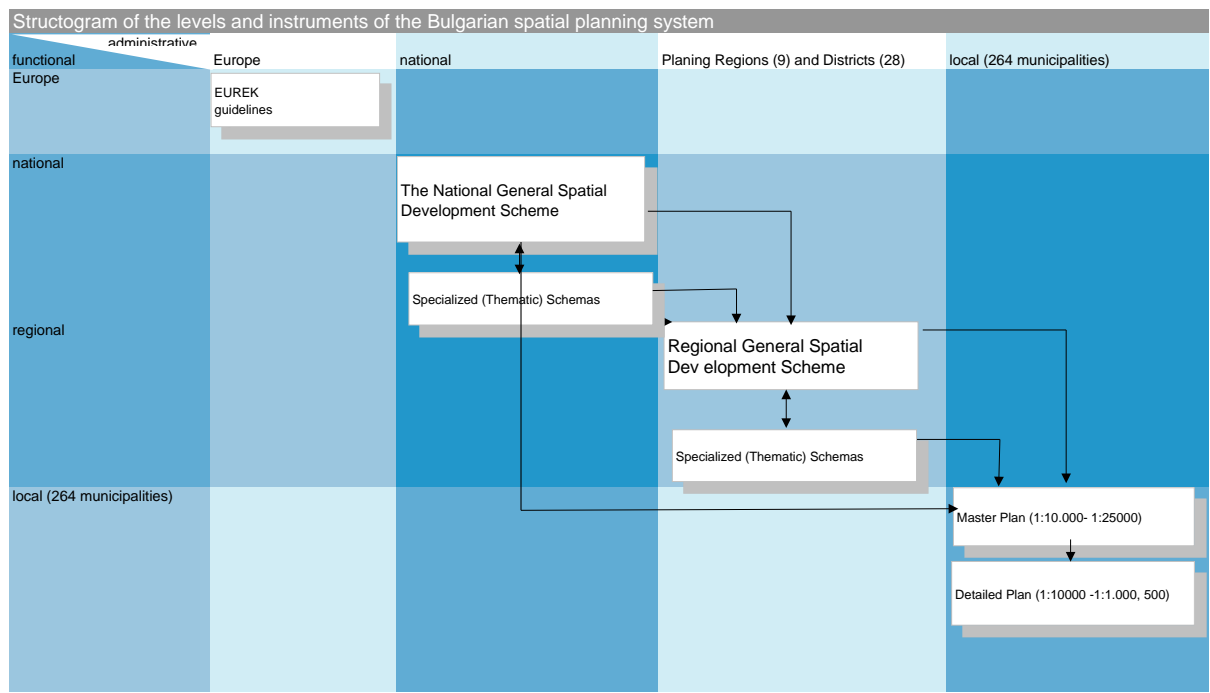
In order to put in place a service platform for aggregation, processing and analysis of urban and regional planning data, there is a number of issues to be faced, among these it is important to focus on following priorities as next project's steps:

1. Planning systems are somehow different in Europe; therefore the platform **needs a system adaptable to every administrative level**; indeed, it is utopic to imagine to have a common planning system all over Europe, but in their differences the systems have many key common features, especially in the normative zoning scale at local scale, this is a good starting point for elaborating first harmonisation actions;
 2. the platform needs also a consistent approach if the aim is to address the needs of users (e.g. to identify critical use cases, with major interest on market, and experiment the platform with them)
 3. An integrated model is needed – taking into account the different requirements of governance levels;
 4. A first selection of needs should be made as a start package (selected use cases will start to develop more promising/requested services);
 5. The local level is the premium level of intervention, also taking into account the EU and other higher levels as benchmarks;
 6. The local level with cadastral information and normative land use plans (*zoning plans: plan directeurs, piani regolatori, flaechnutzungsplaene, binding land use plans, planeamiento municipal...*) is the most important if we would like to be successful;
- The platform should be open to all users; information and communication to the users is necessary.

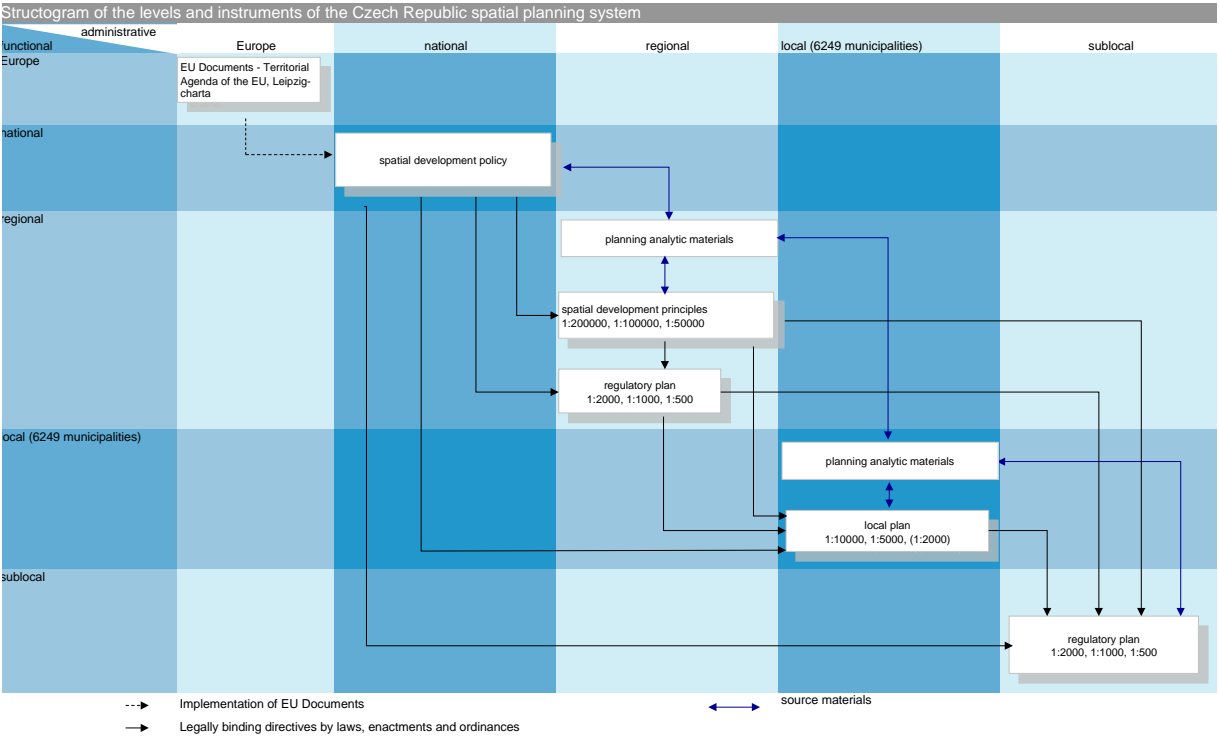
This report, basing its results on desk research and direct questionnaires sent to major and relevant stakeholders, furnishes a set of information (use cases, planning systems in Europe, planning systems tools scales and relations...) useful to set in a realistic way the P4B-Platform both from business expectations viewpoint and from technical ones.

ANNEX I – Planning systems Description / SDI / Online Access

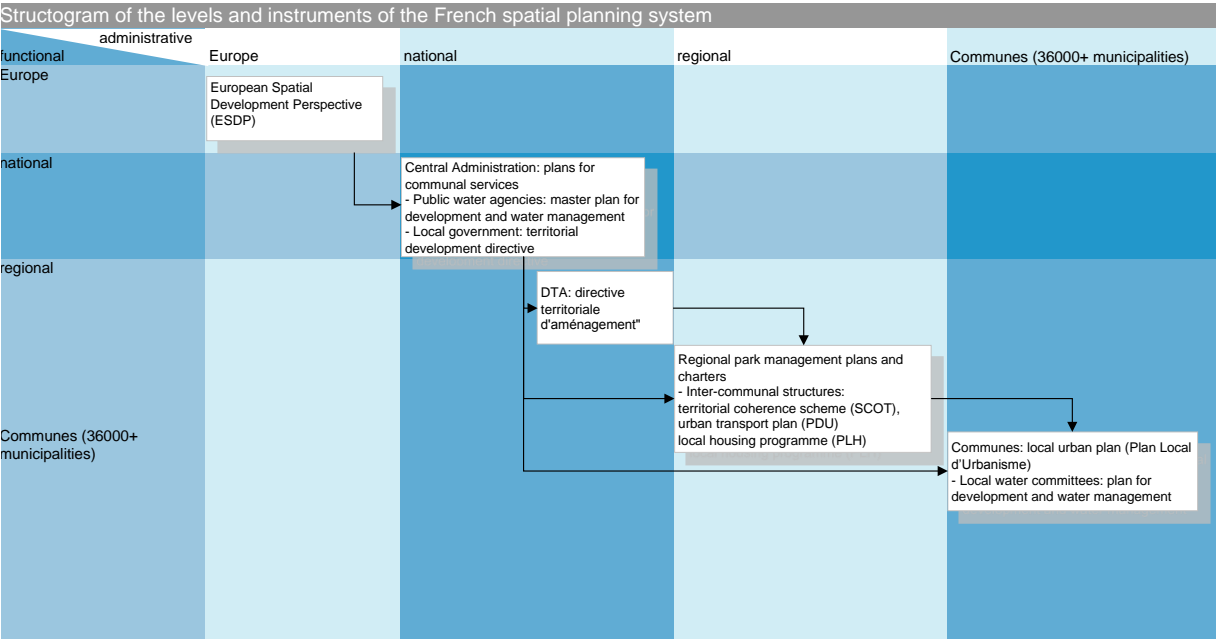
Bulgaria



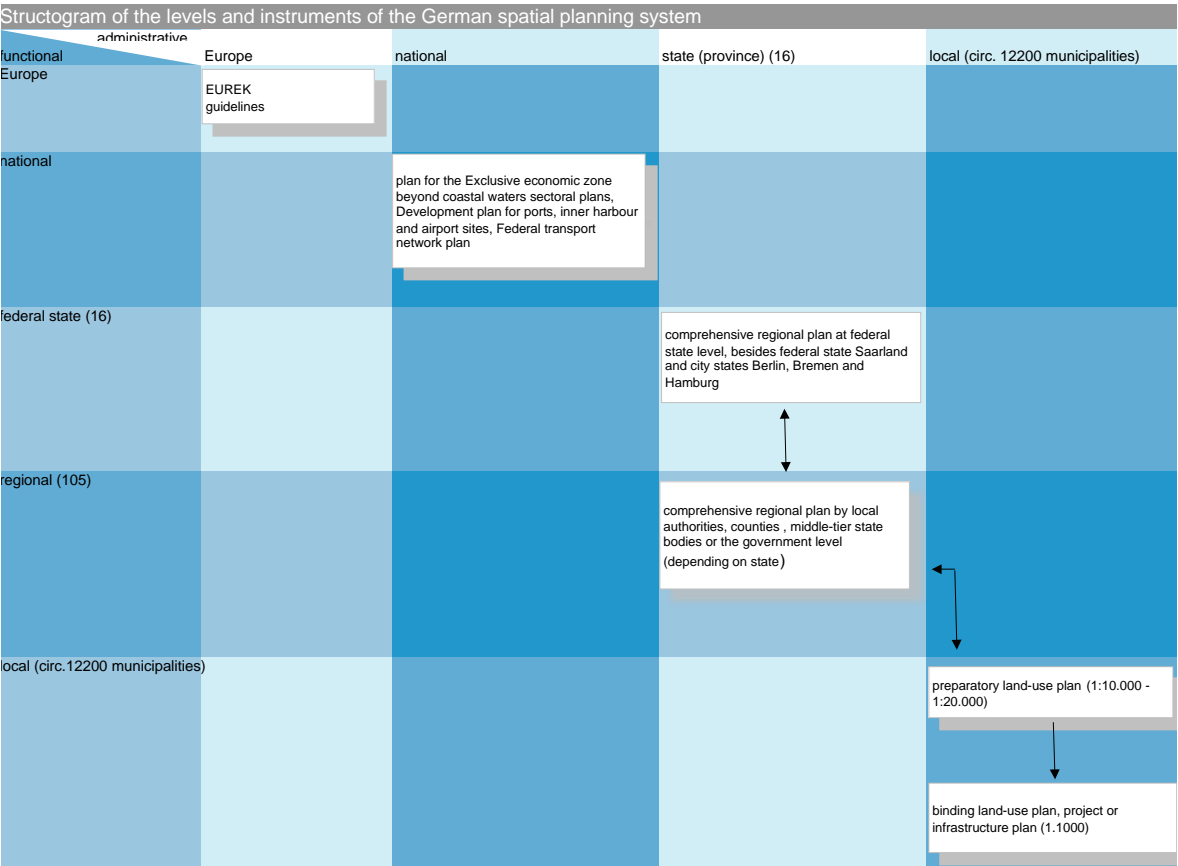
Czech Republic



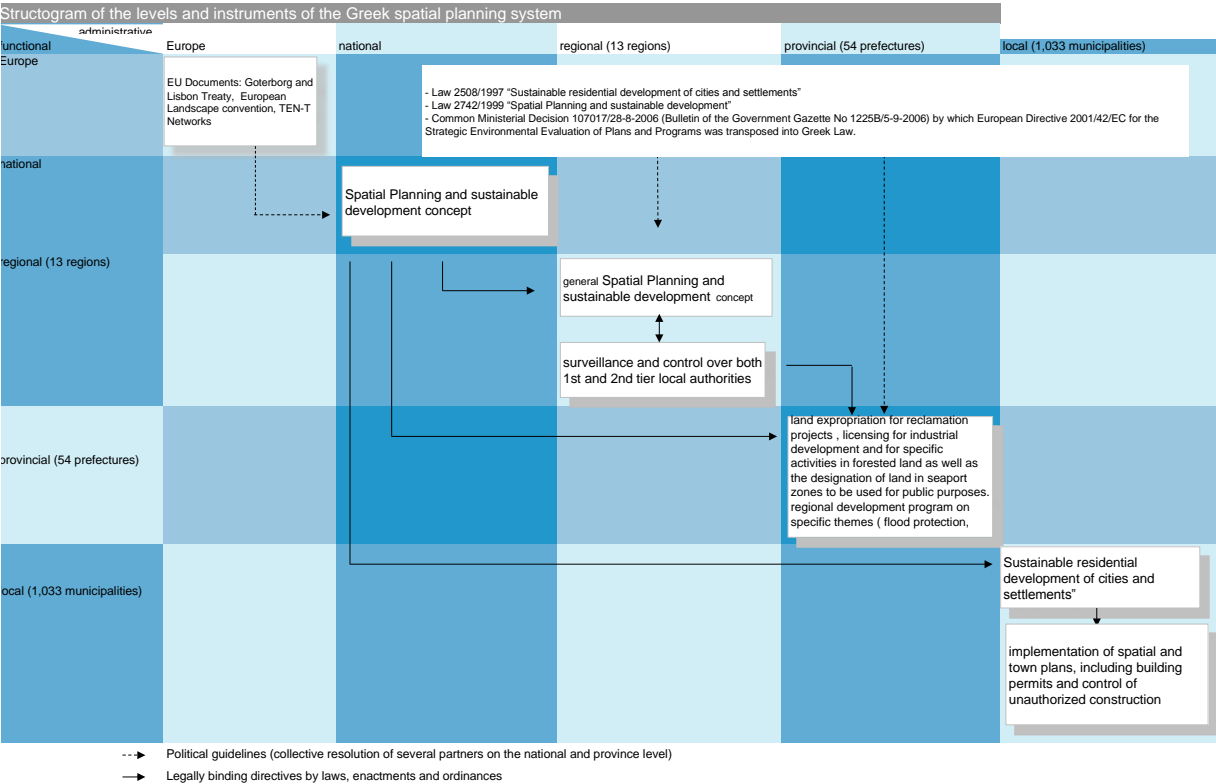
France



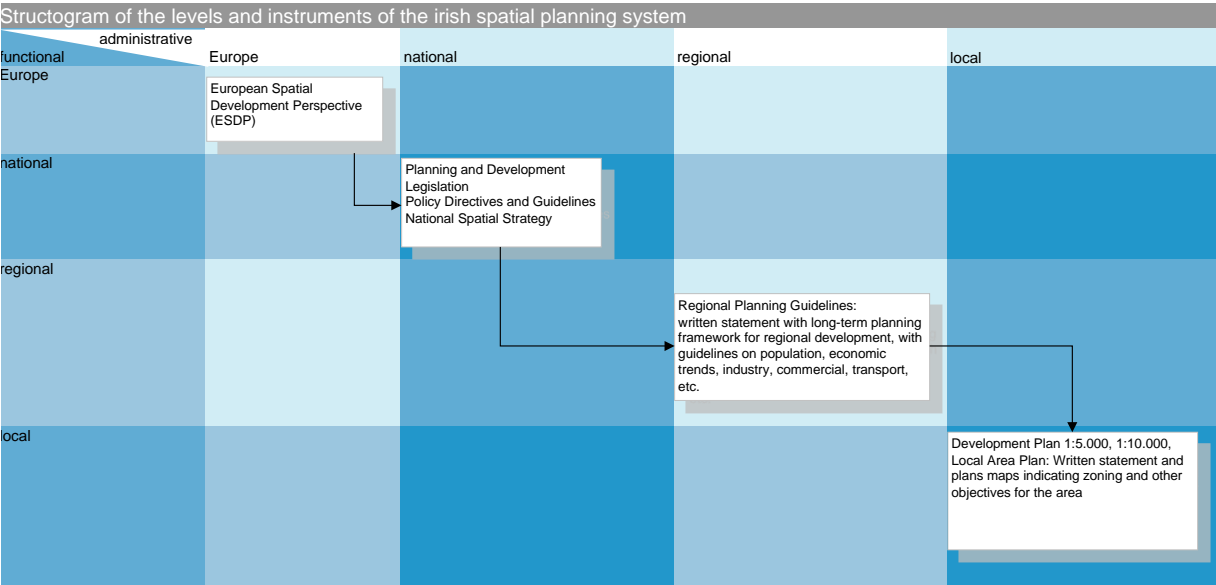
Germany



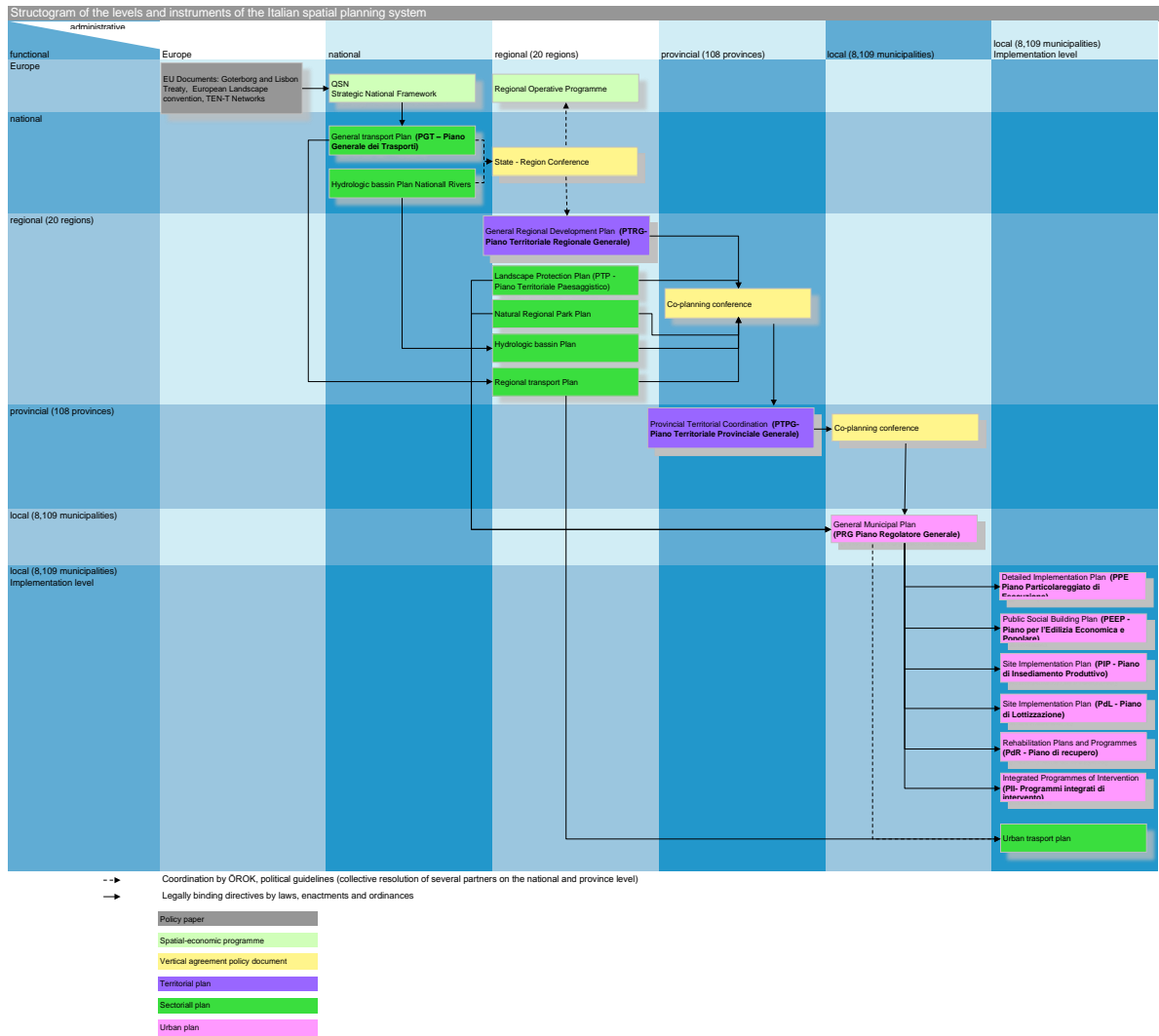
Greece



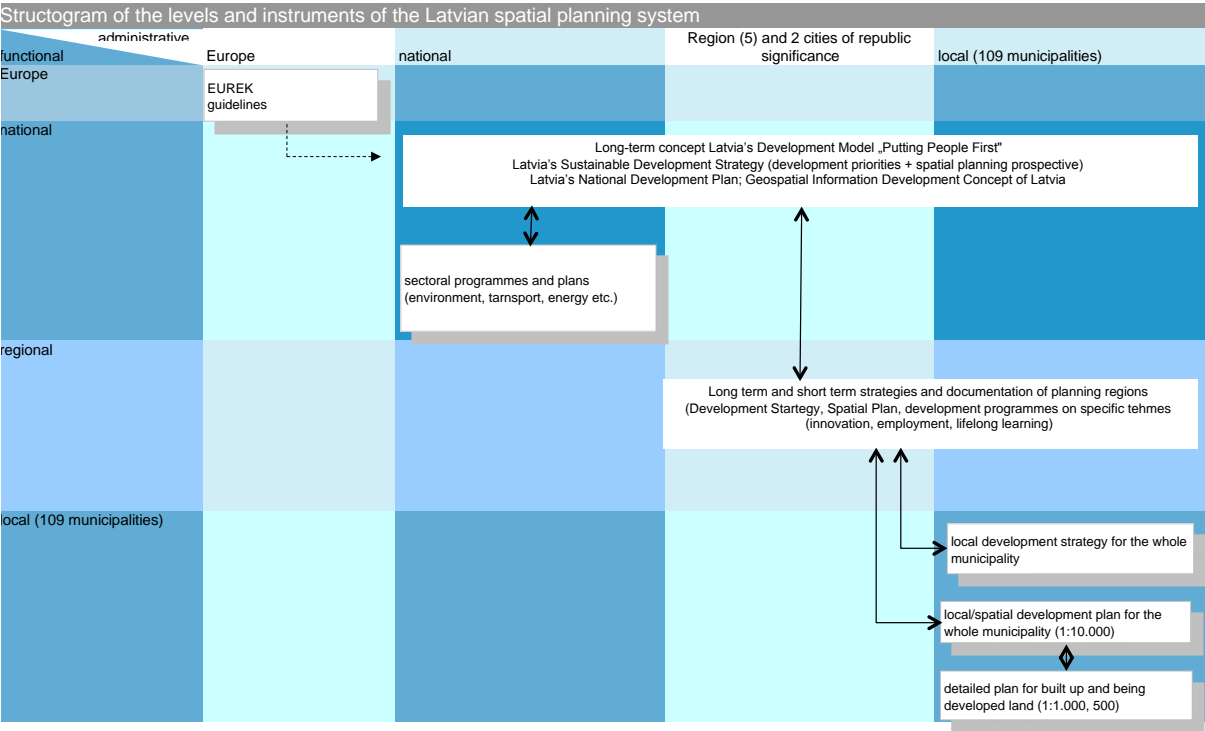
Ireland



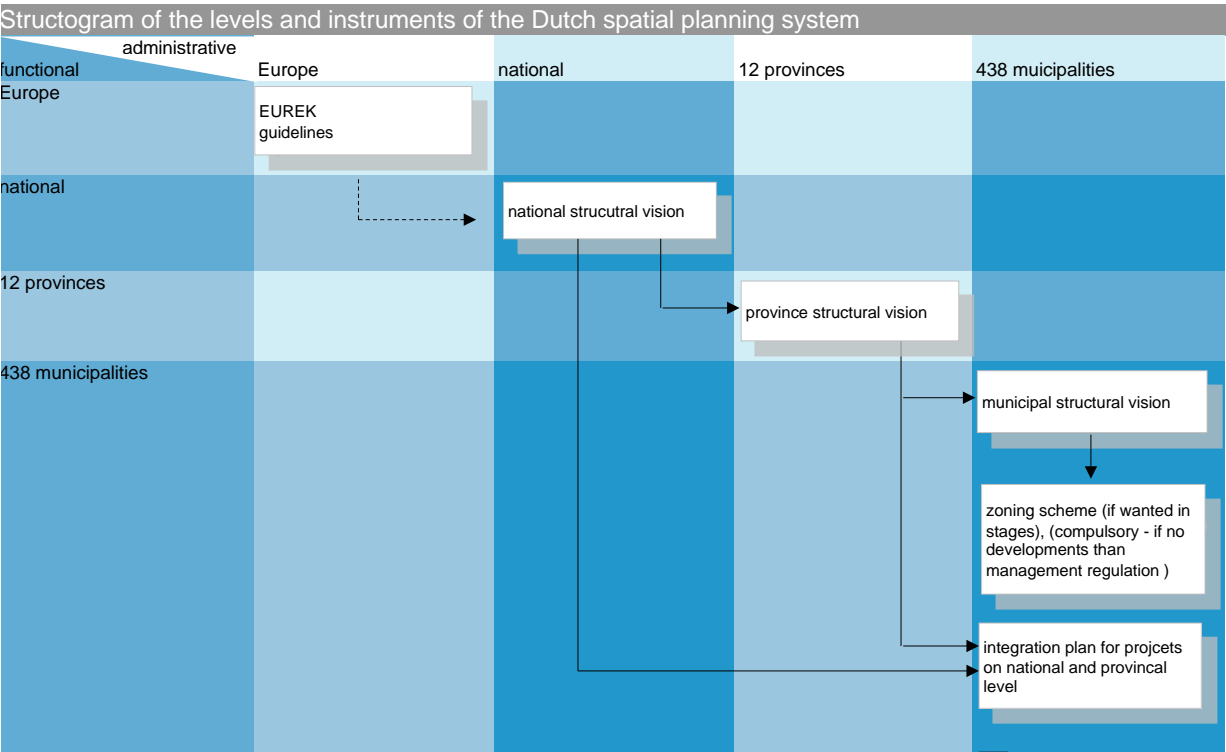
Italy



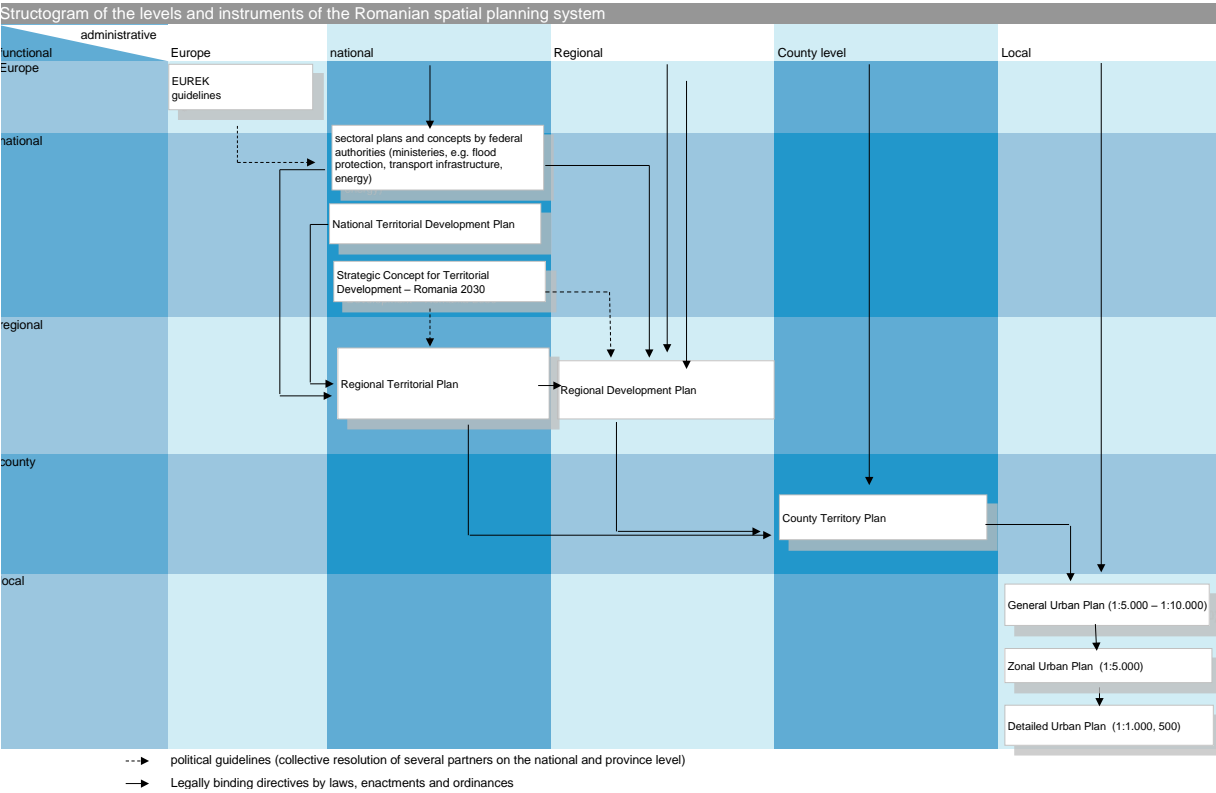
Latvia



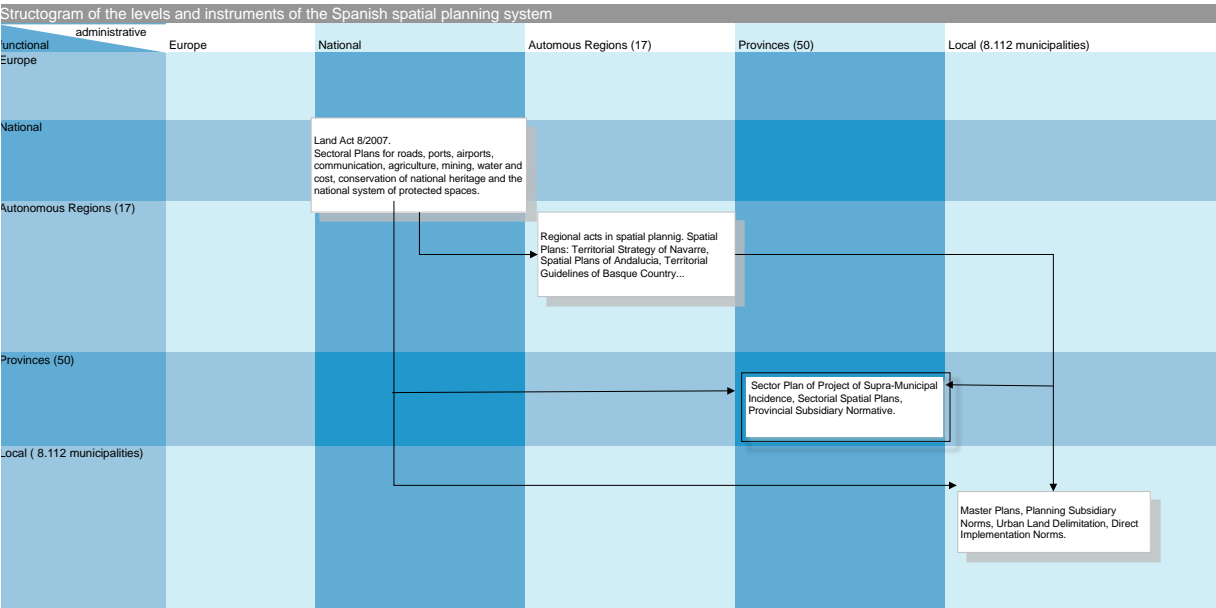
Netherlands

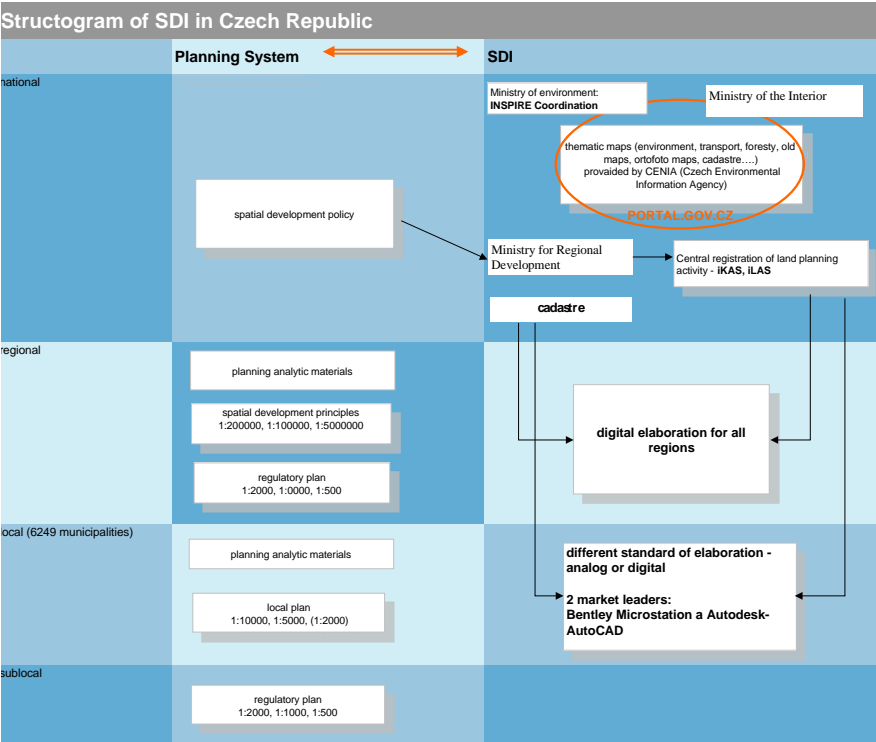
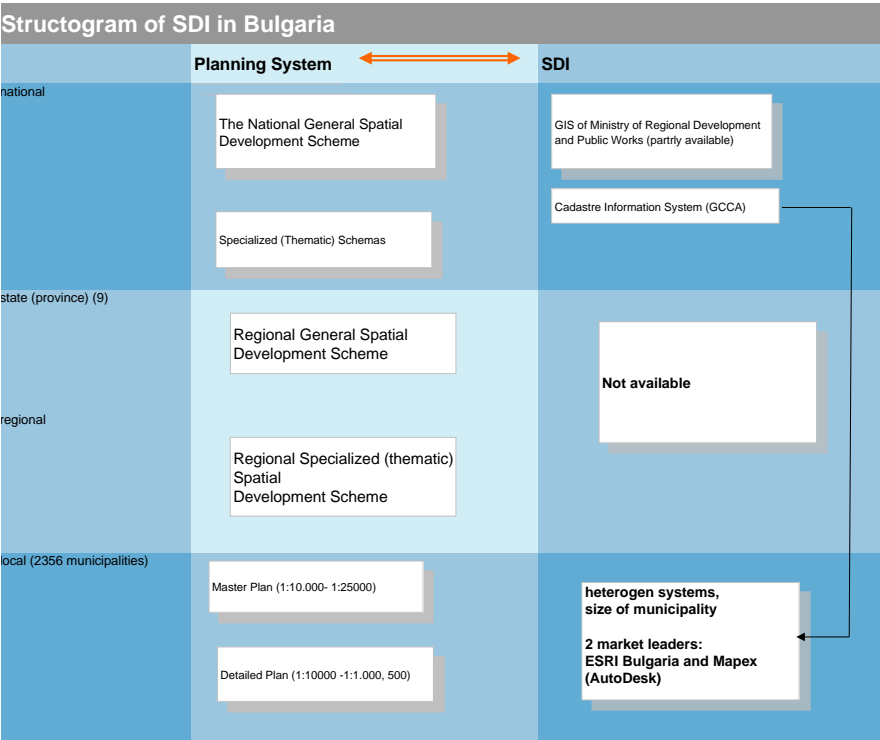


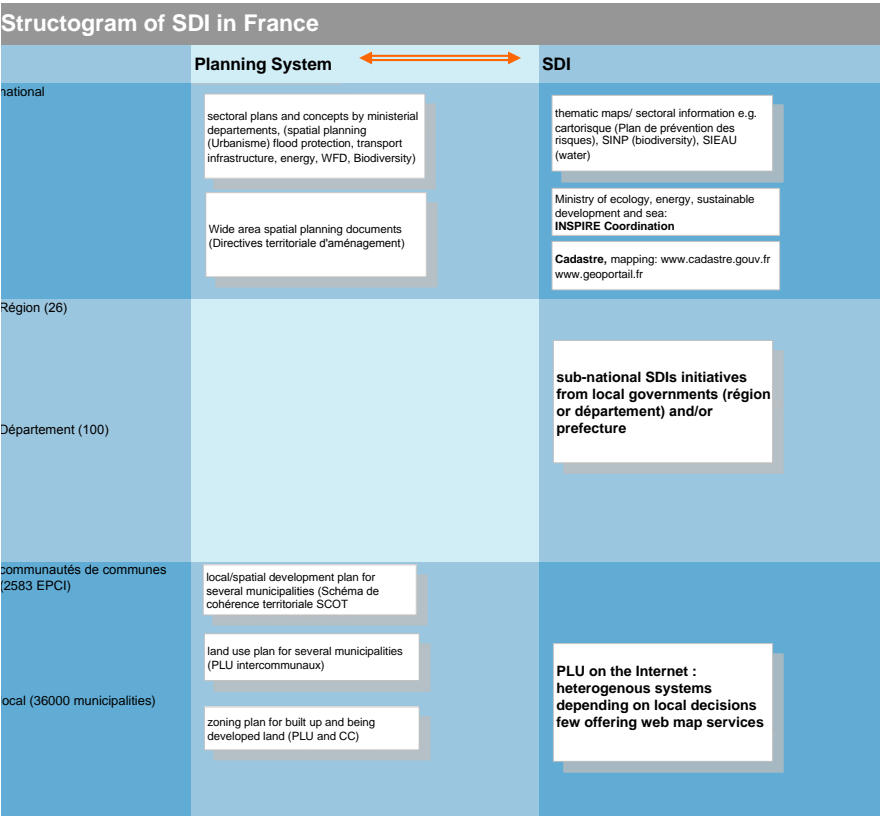
Romania

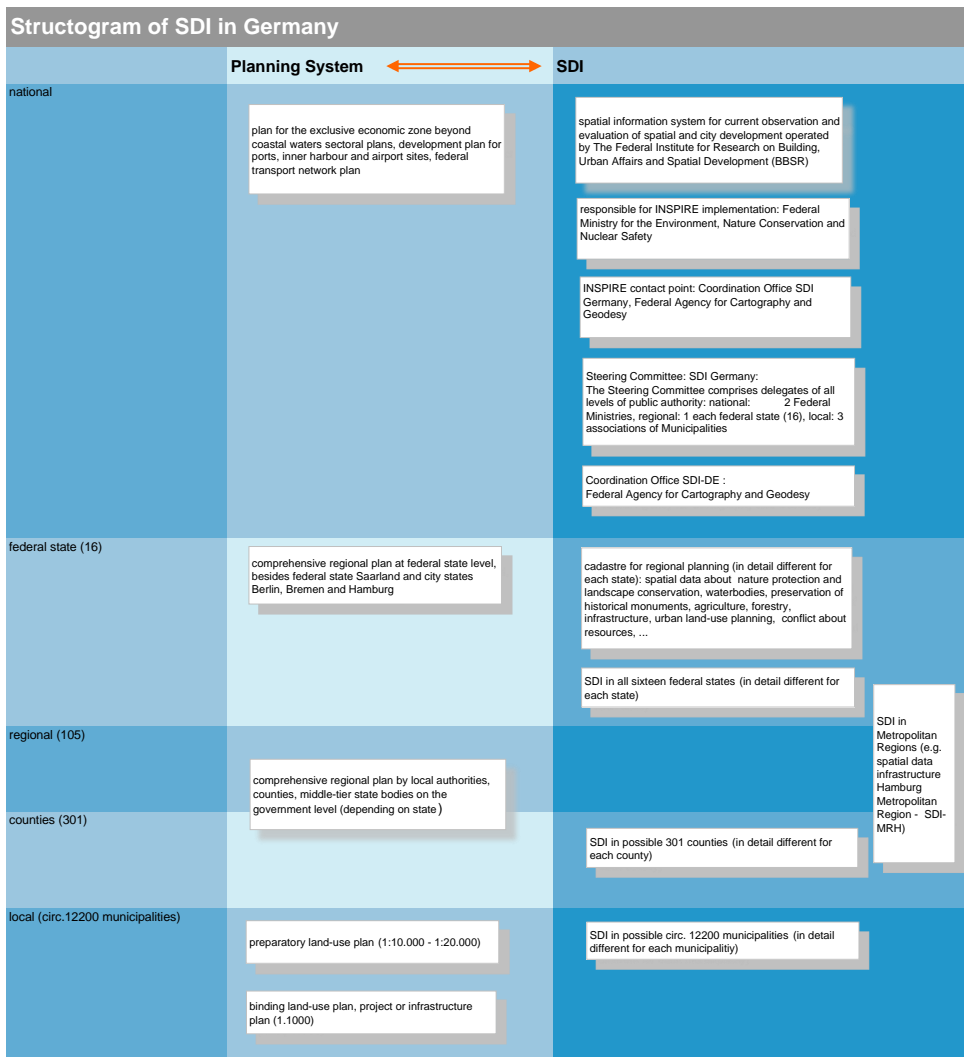


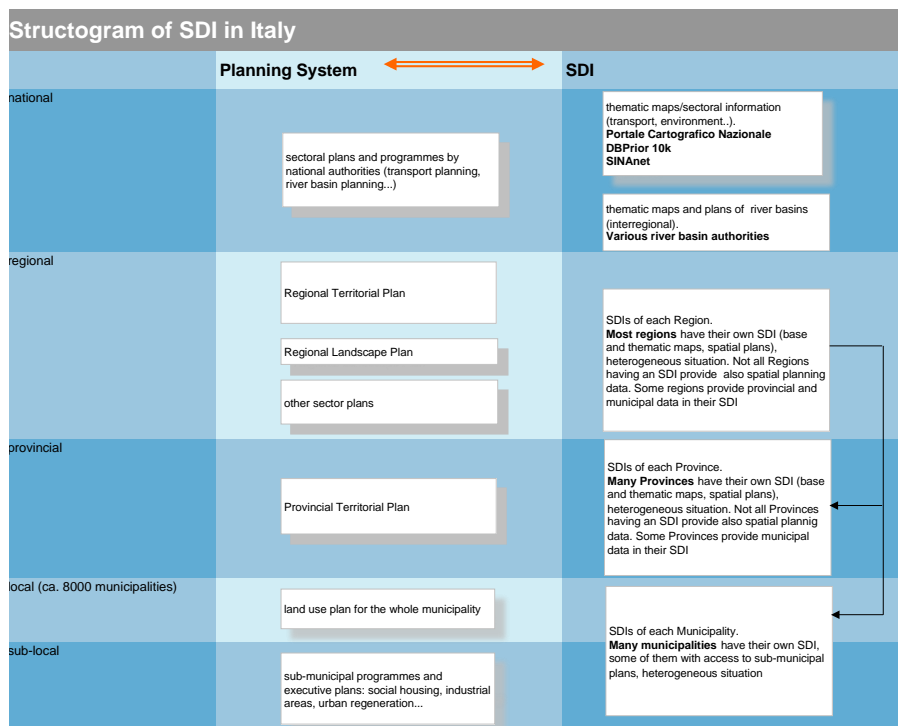
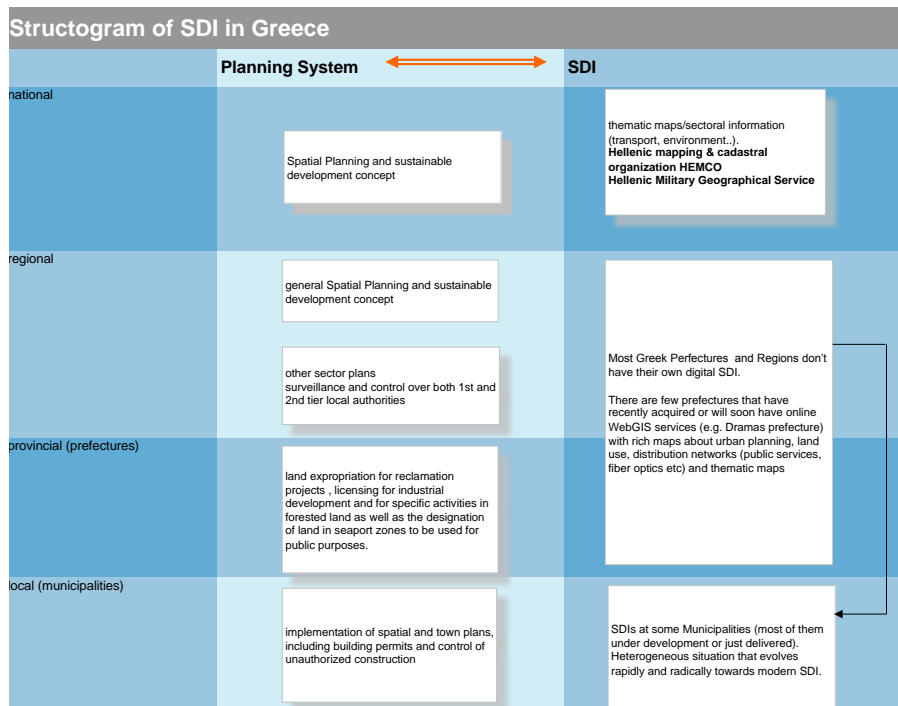
Spain

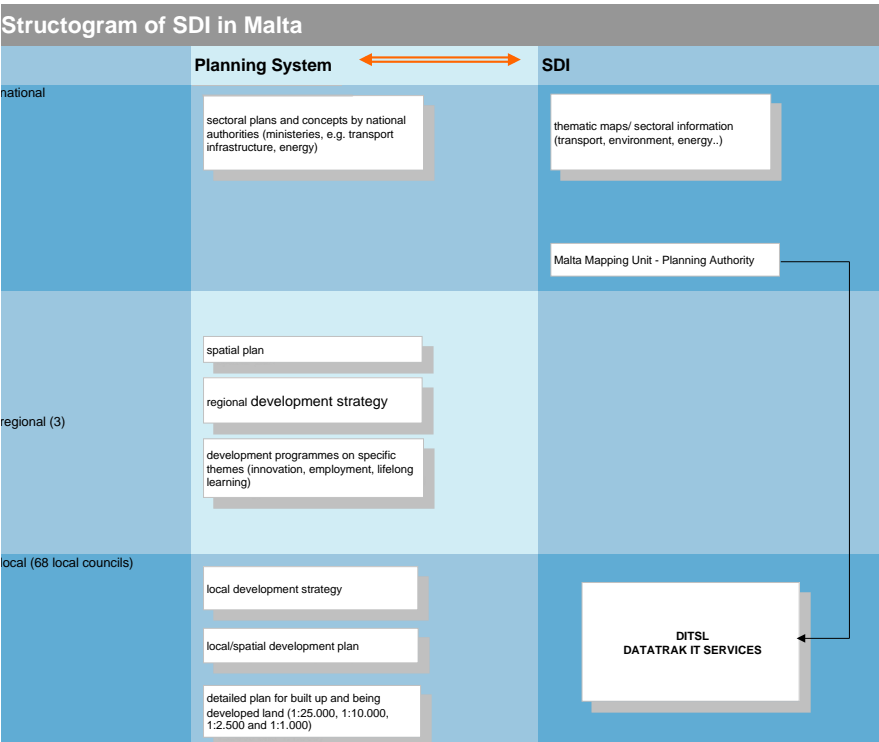
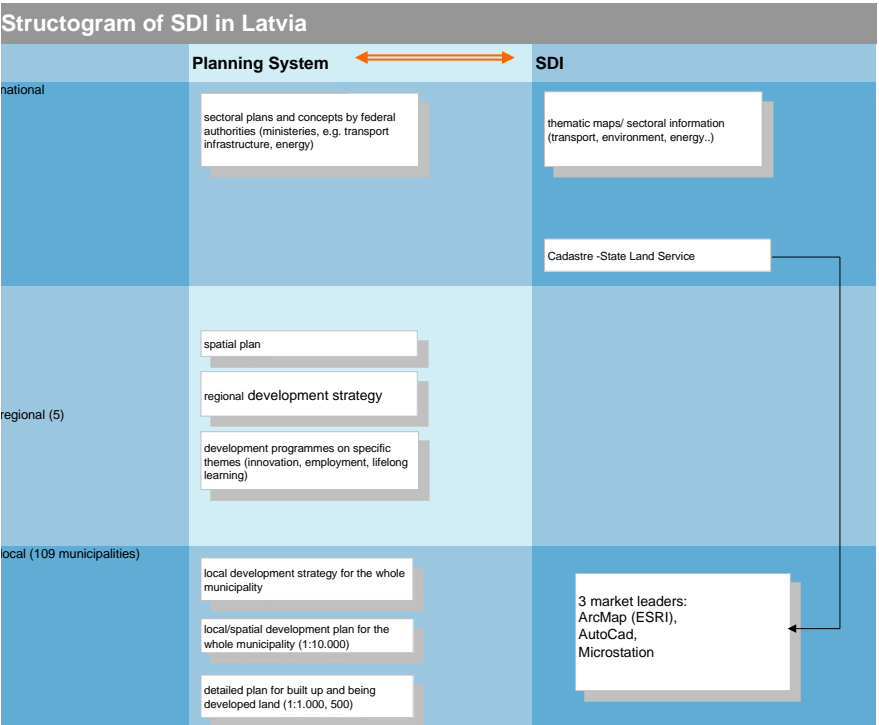


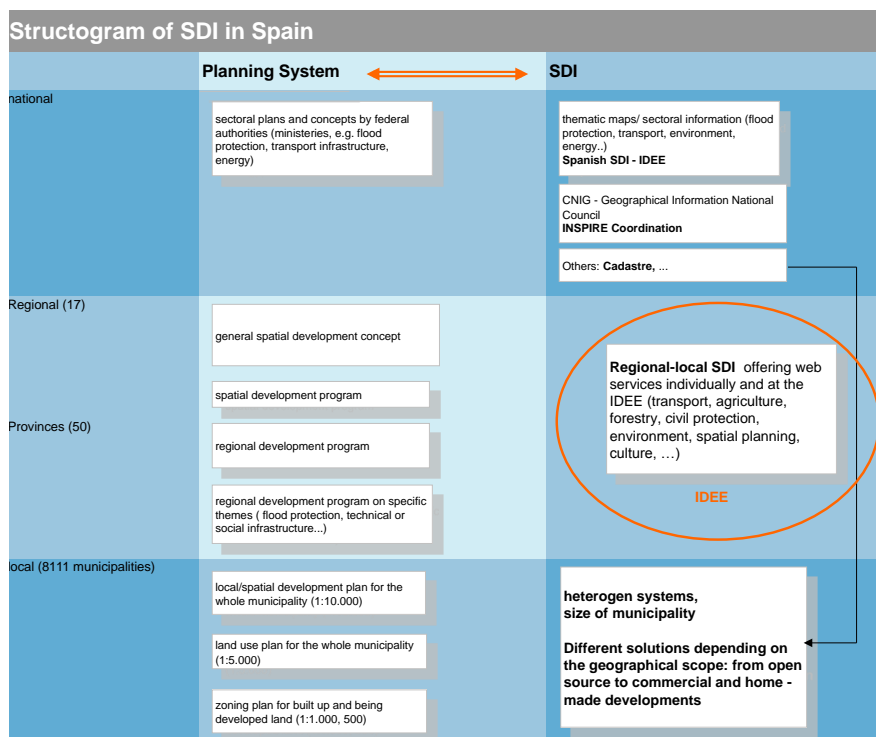
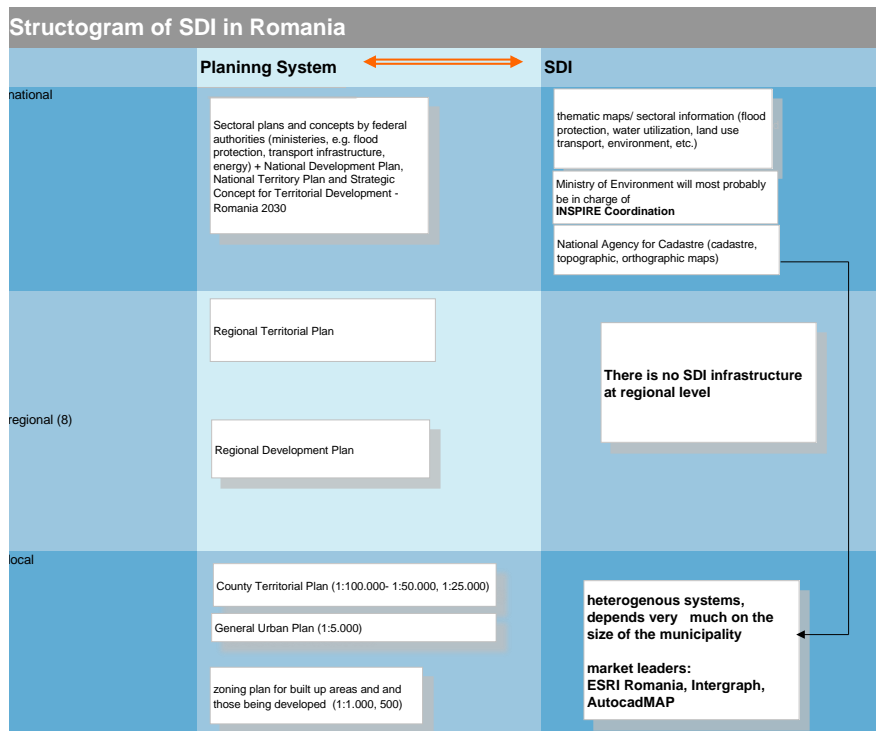



















Online Access of Spatial Planning Documents





Bulgaria





Institution	Plan	national	regional (6) and District (28) level	local (264 municipalities)
GCCA	Cadastre			60% of the municipalities 
Ministry of Regional Development	GIS of MRDHP	wide variety of general spatial data		
Water Basins Directorates	Maps on water protection (over and under ground)			
Sofia Municipality	General master plan			
Varna Municipality	General master plan			
Yambol Municipality	Spatial planning data (not a plan)			










Czech Republic







Institution	Plan	national	regional	local (6249 municipalities)
Ministry of Regional Development	Spatial development policy	instrument of spatial planning, graphic supplement process into schema 		




Centre of Regional Development of the Czech Republic	RIS		RIS is run over all regions of Czech Republic in standard structure. Lots of Thematic layers, base maps, orthofoto ..	
Ministry of the Environment, Ministry of the interior and CENIA - Czech Environmental Information Agency	PORTAL.GOV.CZ (IMS, WMS)	Wide variety of datas: environment, population, Czech Post, bath water, transport, old maps, noise maps, Public Administration, pollution registry, cadastral maps, orotofoto maps		
City of Prague	Local plan Planning analytic materials Atlas of environment Flood 2002 Prague city center from bird's-eye view		map portal id devided into 4 thematic parts: basic maps, thematic maps, specialized maps (for land planning) and other maps. Core dataset – fee is charged	
Středočeský kraj (region)	Planning analytic material (PAM) , made by		(core data from PAM for planning	

	Regional office		<i>engineers only- according to law)</i>	
Jihočeský kraj (region)	PAM , made by Regional office Spatial development principles , procures by Regional office		 Different scale (1:100 000, 1:50000) 	
Plzeňský kraj (region)	PAM , made by Regional office Spatial development principles , procures by Regional office		 Different scale (1:100 000, 1:50000) 	

Karlovarský kraj (region)	PAM , made by Regional office Spatial development principles , procures by Regional office (the matter in hand)		 Different scale (1:100 000, 1:50000) 	
Ústecký kraj (region)	PAM , made by Regional office			
Liberecký kraj (region)	PAM , made by Regional office			

Pardubický kraj (region)	PAM , made by Regional office			
Kraj Vysočina (region)	PAM , made by Regional office Spatial development principles , procures by Regional office		 Different scale (1:100 000, 1:500 000) 	
Jihomoravský kraj (region)	PAM , made by Regional office			
Olomoucký kraj (region)	PAM , made by Regional office Spatial development principles , procures by Regional office		 Different scale (1:200 000, 1:1 000 000) 	
Zlínský kraj (region)	PAM , made by Regional office Spatial development principles , procures by Regional office		 Different scale 	
Moravskoslezský kraj (region)	PAM , made by Regional office Spatial development principles ,		 Different scale (1:100 000)	

	procures by Regional office			 *Project – “Planning documentation of Moravskoslezský kraj” – supported by a grant from Iceland, Lechtenstein and Norway throught the EEA
Municipality with extend power	PAM , procured by planning offices			available for each municipality with extend power (accorditn to law) 
Municipality office, Planning office	Land use plans and Regulatory plans procured by municipalities			Some of the plans  are available on internet, same are available only in paper form. (Except  all municipalities belonging to Moravskoslezský kraj – these municipalities have internet acces thanks project *
Czech office for Surveying, mapping and Cadastre (COSMC)	Cadastral maps, base maps, orthophoto, ZABAGED	Geoportal COSMC - Cadastre data is accessible by using the following services: cadastre viewing, remote  access and remote access web services.		


		Core dataset – fee is charged		
Czech geological survey (OGS)	map applications, which allow access to geoscientific data from geodatabases and the Digital Archive of the CGS	Map Server  Core dataset – fee is charged		
The Agency for Nature Conservation and Landscape Protection of the Czech Republic (ANCLP) - a governmental body established by the Ministry of the Environment 	WEB PORTAL			







Note to Planning analytic materials (PAM):

Accessible for public is above all graphic part – drawing of area value, a drawing of limits on an area use, a drawing of intentions to perform changes within an area and a drawing of problems.

Core data from PAM can be provided (according to law) only for planning activity, establishing and keeping the technical map and for the activity of the designer of the planning documentation and the planning study

FRANCE

Institution	Plan	national	Regional (26 régions)	NUTS 3 (100 départements)	local (36 000 municipalities)
MEEDDM	PLU&CC SUP	National initiative GeoADS			Initiative connected with the building permits instruction
GeoPAL	PLU&CC		Regional		Initiative

			initiative between Regional council and Région prefecture		coordinated with the municipalities and handled operationally by DDEA
DDEA72	PLU&CC SUP			All municipalities of Sarthe (72) 	
Municipalities (Boulogne-Billancourt, Nice, Poitiers, Rouen, Vannes, ...) Group of municipalities CC Vallet, CU Bordeaux, CU Brest ...)	PLU				PLU on web mapping services 
Municipalities (Meaux, ...) Group of municipalities CU Lille, CU Lyon ...)	PLU				PLU on the Internet as CAD data services (...) 
Municipalities (Grenoble, Jouy en Josas, Reims, St Nom la Bretèche, Chambourcy, Souffelweyersheim ...) Group of municipalities (CC Bièvre Est, CC du pays d'Argentan ...)	PLU				PLU on the Internet as PDF files (...) 
Group of municipalities (CC Rhône Vistre Vidourle, ...)	PLU&CC SUP				PLU as a „restricted Web mapping service” 

PLU on the Internet: List of URL

Name	Population (inhabitants)	URL	
DDEA de la Sarthe		http://ads72-dev.cete-ouest.i2/	GIS
Communauté urbaine de Lyon	1 253 179	http://plu.grandlyon.com/	CAD
Communauté urbaine de Lille	1 107 861	http://www.lillemetropole.fr/index.php?p=126&art_id	CAD
Communauté urbaine Marseille Provence Métropole	1 023 972	http://www.marseille-provence.com/	PDF
Communauté urbaine de Bordeaux	702 522	http://www.lacub.fr/projets/02_plu.asp	GIS
Ville de Nice	347 060	http://carte.ville-nice.fr/ig/default.asp	GIS
Communauté urbaine de Brest	210 117	http://www.cub-brest.fr/plu/plu_online.htm	GIS
Ville de Reims	183 837	http://www.ville-reims.fr/fr/urbanismelogement/plan-local-d-urbanisme/consultation-du-plu-en-ligne/index.html	PDF
Ville de Grenoble	156 107	http://www.ville-grenoble.fr/jsp/site/Portal.jsp?page_id=503	PDF
Ville de Boulogne-Billancourt	110 000	http://www.boulognebillancourt.com/cms/index.php?option=com_content&task=view&id=356?&leftid=532&mpid=2&submid=2&Itemid=532	GIS
Ville de Rouen	107 904	http://plu.rouen.fr/index.php	GIS
Ville de Poitiers	88 776	http://sig.agglo-poitiers.fr/caplu/SetTabActiveButtonInTabs.do?GROUP=activeTab&ACTIVE_BUTTON=legend#	GIS
Ville de Vannes	53 079	http://www.mairie-vannes.fr/la_mairie/amenagements_urbains/urbanisme/plan_local_d_urbanisme/1004/index.html	GIS
Ville de Meaux	48 842	http://www.carto.meaux.fr/apps/accueil_internet/index.php	CAD
Communauté de commune de	22 570	http://www.cc-rhony-vistre-vidourle.fr/	GIS

Rhony-Vistre-Vidourle			
Communauté de communes Bièvre-Est	19 000	http://www.cc-bievre-est.fr/rubrique.php3?id_rubrique=186	PDF
Communauté de commune du pays d'Argentan	18 402	http://www.argentan.fr/plu.php	PDF
Communauté de commune de Vallet	17 860	http://www.cc-vallet.fr/index.php?id=11162	GIS
Ville de Jouy-en-Josas	8 055	http://www.jouy-en-josas.fr/plu.php	PDF
Ville de Souffelweyersheim	6 219	http://www.souffelweyersheim.fr/plan_local_urbanisme.asp	PDF
Ville de Chambourcy	5 812	http://www.chambourcy.fr/spip.php?article58	PDF
Ville de Saint-Nom-la-Bretèche	4 845	http://www.mairie-saint-nom-la-breteche.fr/vm_Dossier_PLU.html	PDF
Ville de Les Hermites	547	http://www.ville-leshermites.fr/services_plu.php	PDF

Progress in PLU creation

<http://www.territoires.gouv.fr/zonages/carto/cete.php>

http://cartelie.application.equipement.gouv.fr/cartelie/voir.do?carte=DocUrba_cartelie&service=DDEA_14

http://cartelie.application.equipement.gouv.fr/cartelie/voir.do?carte=planification_jourJ&service=DDE_33

Germany

Institution	Plan	national	Federal state level (16 states)	regional level (105 regions)	local (12.200 municipalities)
GeoDatenZentrum	Offering harmonised large- and medium-scale data in the scale range from about 1:25,000 to 1:100,000 produced by the Surveying Authorities of the Federal States. The small-scale data and map series from the scale 1:200,000 on and smaller are generated and maintained at the Federal Agency for Cartography and Geodesy.	✓ At no charge: 1:1.000.0000 1:500.000 1:200.000			
Federal Institute for Research on Building, Urban Affairs and Spatial Development	current observation and evaluation of spatial and city development	✓ spatial planning data and a wide variety if data			
Baden-Württemberg	comprehensive regional plan at federal state level,		✓ pdf Format	✓ For two regional	✓ For large cities WMS available

	comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities			plans WMS available	(e.g. Heidelberg)
Bavaria	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ pdf Format	✓ WMS	✓ For large cities and other selected cities WMS available (e.g. Regensburg)
Berlin	binding land use plans and preparatory land-use plans				✓
Brandenburg	comprehensive regional plan at federal state level, sectoral regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓	✓ For one regional plans WMS available	✓ For selected cities WMS available

Bremen	binding land use plans and preparatory land-use plans				✓
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Hamburg	binding land use plans and preparatory land-use plans				✓
Hessen	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ WMS	✓ WMS	✓ For large cities and other selected cities WMS available (e.g. Frankfurt)
Lower Saxony	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ WMS	✓ For some regional plans WMS available	✓ For large cities and other selected cities WMS available (e.g. Hannover)
North Rhine-Westphalia	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓	✓ pdf Format	✓ For large cities and other selected cities WMS available (e.g. Bonn)
Mecklenburg-Western Pomerania	comprehensive regional plan at federal state		✓ pdf	✓ pdf Format	✓ For large cities





	level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		Format		and other selected cities WMS available (e.g. Rostock)
Rhineland-Palatinate	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ pdf Format	✓ WMS	✓ For large cities and other selected cities WMS available (e.g. Mainz)
Saarland	comprehensive regional plan at federal state level, binding land use plans and preparatory land-use plans made by municipalities		✓ WMS		✓ For selected cities WMS available (Saarbrücken)
Saxony	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ WMS	✓ pdf Format	✓ For large cities and other selected cities WMS available (e.g. Leipzig)
Saxony-Anhalt	comprehensive		✓	✓	✓

	regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		pdf Format	pdf Format	For large cities and other selected cities Mapping Services available (e.g. Magdeburg)
Schleswig-Holstein	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ WMS	✓ WMS	✓ For large cities and other selected cities WMS available (e.g. Kiel)
Thuringia	comprehensive regional plan at federal state level, comprehensive regional plan, binding land use plans and preparatory land-use plans made by municipalities		✓ pdf Format	✓	✓ For large cities and other selected cities Mapping Services available (e.g. Erfurt)

Greece

Institution	Plan	national	regional (perfectures)	local (municipalities)
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Hellenic mapping & cadastral organization HEMCO (A new national organization responsible for GIS data in Greece)	land use plans, regional plans, municipality plans	✓ Digitization Under development	✓ Digitization Under development	✓ Digitization Under development
Hellenic military Geographical Service (HMGS) (The only functional organization responsible for GIS data in Greece - military)	Regional plans	✓ Possibility to choose a region and order online a digital or paper copy.	✓ Possibility to choose a region and order online a digital or paper copy.	✓ Possibility to choose a region and order online a digital or paper copy.
EEET (Hellenic Telecommunications and Post Commission)	thematic maps – data networks	✓ possible to view and access the data online, but there is no option to take an offline copy	✓ possible to view and access the data online, but there is no option to take an offline copy	✓ possible to view and access the data online, but there is no option to take an offline copy
Ministry of Health	thematic maps	✓ possible to view and access the data online, but the data you can download is only partial		
Municipality of Patras (in the city where Georama main offices are, 3rd largest city in Greece)	Urban plans, land use, thematic maps (fiber optics network, water supply network, roads, city			✓ Digitization Under development; finalized within 1 st semester 2010


	details etc)			
Municipality of Kalamata (Capital of Region, Medium Town of Greece in terms of population)	thematic maps			 <p>possibility to view and download maps of the urban plans (coordination plans, sector plans), thematic networks, public service transportation networks etc.</p>
Municipality of Kavala (Capital of Region, Medium Town of Greece in terms of population)	Urban plans , thematic maps, land use			 <p>possibility to view and download maps of the urban plans (coordination plans, sector plans), thematic networks, public service transportation networks etc.</p>
Municipality of Rethumno (Capital of Region, Medium Town of Greece in terms of population)	Urban plans , thematic maps, land use			 <p>possibility to view and download maps of the urban plans (coordination plans, sector plans), thematic networks, public service transportation networks etc.</p>
Municipality of Sofades (Small Town of Greece in terms of population)	Urban plans, thematic maps			 <p>possibility to view and download maps of the urban plans (coordination plans, sector plans), thematic networks, public service transportation networks etc.</p>
Perfectures - town	Regional plans, urban		✓ Possibility to	✓ Possibility to get a paper

planning agencies	plans, land use		get a paper copy only. Some plans are partly available also in digital format for special groups only	copy only. Some plans are partly available also in digital format for special groups only
RoadExplorer.gr	Urban plans	✓ possible to view and access the data online, but there is no option to take an offline copy	✓ possible to view and access the data online, but there is no option to take an offline copy	✓ possible to view and access the data online, but there is no option to take an offline copy
Navigation.gr	Urban plans	✓ possible to view and access the data online, but there is no option to take an offline copy	✓ possible to view and access the data online, but there is no option to take an offline copy	✓ possible to view and access the data online, but there is no option to take an offline copy

Ireland

Institution	Plan	national	regional	local municipalities
Department of Communications, Energy and Natural Resources	ISDE ² (Irish Spatial Data Exchange) – OGC/ISO19115	1. Coastal and Marine Resource Centre at	✓	

² www.isde.ie

Institution	Plan	national	regional	local municipalities
	compliant & likely to be INSPIRE compliant.	UCC ³ 2. Department of Communications, Energy and Natural Resources ⁴ 3. Environmental Protection Agency ⁵ 4. Geological Survey of Ireland ⁶ 5. Department of Environment, Heritage and Local Government ⁷ 6. Marine Institute ⁸ .		
Regional Authorities (1) Border Region, (2) Dublin and Mid East Region, (3) Midlands Region, (4) Mid West Region, (5) South East Region, (6) South West Region (7) West Region	Regional Planning Guidelines (RPGs) to support strategies for regional development (1:25,000)		Available on paper & as PDF downloads. 	
All 29 County Councils and 5 City	land use plan (1:5.000)		All are available on	

³ <http://cmrc.ucc.ie>




⁴ www.dcenr.gov.ie

⁵ www.epa.ie

⁶ www.gsi.ie













⁷ www.environ.ie/en









⁸ www.marine.ie/Home

























Institution	Plan	national	regional	local municipalities
Councils.			paper, and most have PDF downloads. 	
All 88 Local Planning Authorities (consisting of 29 County Councils, 5 City Councils and 49 Town Councils)	zoning plans 1:1.000 - 500		All are available on paper, some by PDF download & some interactively online (see next) 	
County Council Planning On-line Planning service in the following County Councils Donegal, Galway, Mayo, Monaghan, Waterford, Wexford & Wicklow. And following Town Councils: Bray Arklow Wicklow	gPlan – based on GeoMedia WebMap (GWM).	Provided Nationally by the Local Government & Computer Services Board (LGCSB) ⁹		7 of the 29 County Council Planning Authorities, and 3 of the 49 Town Councils, allows full interactive Public access. More are likely in the future. 



















Italia

⁹ www.lgcsb.ie




Institution	Plan	national	regional (20 regions)	provincial (ca. 100 provinces)	local (ca. 8000 municipalities)
Regione Piemonte	Regional and provincial plans; land use plans of the municipalities		 possibility to download shape files of the regional plans (territorial plan, sector plans)	 possibility to download shape files of the provincial plans	 mosaic of the urban land use plans available on the regional WebGIS
Regione Toscana	Regional plans		 possibility to download some of the regional sector plans		
Regione Veneto	Regional plans		 possibility to view and download maps of the Regional Territorial Coordination Plan in pdf		
Regione Lombardia	Regional and provincial plans; land use plans of the municipalities		 possibility to view and	 possibility to download	 mosaic of the urban land use

			download maps of the regional plans (coordination plan, sector plans)	shape files of the provincial plans	plans available on the regional WebGIS
Regione Liguria	Regional plans; land use plans of the municipalities		 possibility to view and download maps of the regional plans (coordination plans, sector plans)		
Regione Val d'Aosta	Regional plans		 possibility to view maps of the Regional Landscape Plan		
Regione Friuli-Venezia Giulia	Regional plans		 possibility to view and download maps of the regional plans (coordination plans, sector plans)		

Regione Emilia-Romagna	Regional and provincial plans; land use plans of the municipalities		 possibility to view and download maps of the regional plans (coordination plan, sector plans)	 possibility to view and download maps of the provincial plans	 mosaic of the urban land use plans available on the regional WebGIS
Regione Umbria					
Regione Abruzzo					
Regione Marche					
Regione Molise					
Regione Lazio	Regional plans		 possibility to view maps of the Regional Landscape Plan		
Regione Campania	Regional plans; land use plans of the municipalities		 possibility to download Regional Territorial Plan		 mosaic of the urban land use plans available on the regional WebGIS
Regione Puglia					







Regione Basilicata					
Regione Calabria					
Regione Sardegna	Regional plans; land use plans of the municipalities		 possibility to view maps of the Regional Landscape Plan		 possibility to view the urban land use plans on the regional WebGIS
Regione Sicilia					
Provincia Autonoma di Bolzano	land use plans of the municipalities				 mosaic of the urban land use plans available on the provincial WebGIS
Provincia di Roma	provincial plan; land use plans of the municipalities			 General Provincial Territorial Plan	 possibility to view and download the urban land use plans on the provincial WebGIS
Comune di Mantova	Piano Regolatore Generale				 Possibility to view and download the urban land use plan

Latvia

Institution	Plan	national	regional (5 region)	local (109 municipalities)
The Ministry of Regional Development and Local Government of the Republic of Latvia	Sustainable Development Strategy of Latvia	 Development corridors; Polycentric development; Accessibility; Energetics		
All 5 regions of Latvia	Territory Plans		wide variety of plans spatial planning, development axis, accessibility, science and technology centres, tourism development, woodlands	
All 109 municipalities of Latvia	land use plan (1:10.000), made by municipalities			

Romania

Institution	Plan	national	regional	local
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			(8 regions)	(municipalities)
ANCPI	The digital map of Romania	layers:  planimetric elements such as railways, road-network, settlements, administrative boundaries and place names; hydrography such as main rivers, lakes, the Black Sea and Danube Delta		
ANCPI	topographic map database	 not all the elements were digitized		
APIA	Digital map	 for monitoring the agricultural land use by photogrammetry (restricted access, password required)	 also at regional level (restricted access, password required)	also at local level (restricted access, password required)
Bistrita City Hall	Ortophotoplan (map of municip.)			 not online
Bistrita City Hall	Digital map of city			 Available to the public
Bistrita Nasaud County	N/A			
Maramures County	N/A			

Spain

It exist in Spain several initiatives working for improving efficiency in managing of Urban information.

- Regional scope systems: Navarra (SITNA), Basque Country (UDALPLAN), Rioja (SIU), Extremadura (SIGCAT), Castilla y León (PLAU), Murcia (SITMURCIA), Galicia (Web Xunta de Galicia), Madrid (GEOMADRID), Asturias (SITPA).
- Provincial scope systems: Huelva, Almería, Sevilla, Valencia, Barcelona (SUDOE).
- Municipal or local scope systems: Including the Town Councils of the principal cities in Spain.
- Professional College of Architects: Alicante, Almería, Canarias, Ciudad Real, Extremadura, Jaén, La Rioja, León, Sevilla, Galicia, Salamanca, Ávila.

The previous initiatives are working for Improving urban planning management and dissemination and can be divided in two levels

- Systems publishing static information:

These Systems usually are including pdf or jpg documents allowing navigation through the documents and in some cases some interactivitvty with users (zooming, panning)

Some others use additionally web map services with digital plans, but are a minority.

- Systems providing a real digital planning linked with legal information
 - Canarias: (SDPUSIPU).

It includes legal planning documents and graphical information according to specific requirements.

It's an initiative for building Planning systems

- Castilla y León: (ITPLAN)

Similar to Canarias graphical and documents should be incorporated according to specific requirements in order to create digital planning. It also includes some extension from CAD applications allowing preparing final documents.

- Junta de Extremadura: Is working now for preparing digital information in this area according to specific characteristics and tools that takes part as mandatory in all the calls for Planning launched by Junta de Estremadura.

It pursues the harmonization in digital planning information but it's only applied in new planning.

Other regions are working for providing these real Planning information systems and also at National level there is an initiative working for preparing Urban Information system in a collaborative way with the participation of the regional Governments.

ANNEX II – Description Users’ requirements questionnaire results

Private Actors

1. In which activity and responsibility are you working?	Urban Planner / International Consultant, Academic Teaching and Training, Community Based Organizations / Public Company working in the area of territorial information analysis and management / Engineering and Consultancy for infrastructure planning (roads, railroads, water supply, sewerage, airports), urban development, regional planning, environmental planning (strategic assessment, environmental impact assessment) / Urban Designer involved in design, municipal sanctions and coordination of master planning and architecture projects / Consultant in Real Estate / Consultant in Industry, energy supply companies, local authority district / Consultant in EU – UN policy processes / Real Estate Advisor / Planner industrial (production, office and logistic) sites / GI Organisation, manager - relations, marketing, coordinering, projects, informing / Consulting on the use of spatial data for planning (and other businesses)
2. For which purposes do you use urban/regional planning data?	Land use, environment and equipments / Land Use planning, Housing and Land Administration / Urban Regional Land Use / Production of urban and regional planning data as well as providing services and applications to use and further exploit this data / Regional and urban spatial planning, land use planning, environmental base data, transport planning, social data for environmental and social impact assessment / Urban Development Plans and Land Use concepts / land use, zoning regulations, typology study, transport networks / Valuation, Feasibility Studies, Land Use, EIA, Housing Stock and Research / Planning and documentation of mains system (gas, water, electricity) - Documentation of housing stock, infrastructure and forestry / Population; Education and Employment; Wealth; Business environment; Land use; Energy profile; Greenhouse gases; Transport/accessibility; Development demands; and Quality of life / Property market portfolio investment strategies and relating to specific development projects (Real Estate investment advisor and property development advisor) / Valuation of local/regional labour and real estate markets / conservation planning of heritage areas / Disaster risk reduction planning, post-disaster reconstruction, environmental planning /
3. What kind of Urban / Regional Data Services do you use / need?	Information - Datasets / Data Center / Database and general information from other countries for extrapolation / Urban information: cartography 1:500, 1:1000, also scanned information of all urban planning by all the municipalities (mapped documents), own produced data such as Baseline data, land use data, environmental data / Useful

	<p>to have all on a single platform, not many different providers, databases (in the background yes, but not obvious for the user) - information datasets and databases statutory master planning data, building codes Databases and information - datasets / WMS and WFS Shape-Format / Urban Atlas 2009 (DG REGIO, EEA), Urban Audit (EUROSTAT), ESPON database, Thematic regional statistical data (EUROSTAT), Thematic database (EEA), Available national and regional statistical data / Economic analysis (national and global such as economic growth, employment, retail sales, bank lending & interest rates etc...), property investment market valuation and supply & demand trend data, demographic trends & data, opinions research data on trends such as retail behaviour or traffic/transportation usage. By blending this type of data it has been possible to give geographic rank order information to investors and government to aid decision making / statical data from country, region and city departments and from chambers of commerce / Wide variety of data with emphasis on physical planning data Densities, Land use, Transport flows and capacities, Weather, Climate, Age, Social mix, Economic activity, condition of building stock / Data sets from provider / specifically geo-information, aerial information / Planning can be divided into three main components, Forward Planning, Development Management (applications and appeals), and Enforcement. We need an information service which is user friendly and which covers all three aspects. Given the wide scope of planning it is necessary to have a wide variety of datasets (flooding, land use, serviced land, community facilities etc etc) readily available in a single browser based environment / Standard services as provided by central and local governments and by associated private sector suppliers /</p>
4. What kind of services should, in your opinion, the plan4business platform offer?	<p>statistical analysis, mapping tools and 2D/3D tool "-GIS / Mapping tools, CAD / 3 D visualisation / EU-wide technology information and communication platform, including statistical analysis, mapping tools & 3D tools / mapping tools, 2D tools, 3D tools for buildings (cadastral information) / statistical analysis, maps and mapping tools, raw data (shape files), 2D/3D simulation tools / statistical analysis which will also enable and enhance mapping mapping tools, GIS data / Databank / storage, mapping tools, statistical analysis, research and 2D / 3D tools / Visualisation of analysis results, 2D, 3D with temporal assessment capabilities Support Socioeconomics-economic in esti Atkins and Impact analysis Link repository on best practices / Mapping tools / The platform could also show the cities and performances. Each city could compare its performances both with single values showed by other cities and average values of clusters selected according to the city size (big, medium, small) or the geographic position (north, south, east, west) / Local governments could use the tool to find similar cities for</p>

	<p>cooperating and sharing experiences; the possibility of selecting the urban areas showing the best performances for each indicator, could help local governments setting new targets for their cities / EU institutions could use the tool to have an overview of urban sustainability in different Countries or regional areas, having a feedback about the implementation of the EU policies at the urban level / Researchers could use the tool not only to collect raw data, but also to visualize (map) and elaborate raw data using elementary statistical functions related to different clusters of cities and analyse trends / Investors could use the tool to make a first evaluation of cities and potentials and needs, searching for the best performing areas where to develop reliable and bankable projects and, at the same time, identifying cities showing weaker features that would require investments to potentiate specific areas/sectors - All the above including geographic location & use of maps. To my mind the core question is; why should an investors invest in a specific location and a specific type of building (a structure) or property (a legal interest in land)? / mapping tools (in 2D), since statical informations are available / Statistical demographic and social/economic data and mapping of such data / statistical analysis, mapping tools and the possibility to combine sets of data easily, 3d information of cities, data projected into the future statistical anaysis and mapping tools / The Department for which I work has produced Myplan.ie (www.myplan.ie) which sets out the types of data and services which are useful to professional planners, councillors, business people, lawyers, and last but by no means least, the general public. Myplan.ie was launched on 4 April 2012 and is currently receiving an average of about 600 visits per day, 70 - 80% of which are return visitors. In an Irish context this is regarded as a relatively high hit rate. As Myplan.ie evolves into a more comprehensive system (we are currently considering a significant range of enhancements) and gets better known we believe that the number of new and return visitors will increase significantly / Keep it simple - lowest common denominator! Basic 2D mapping and statistical analysis</p>
<p>5. For your purposes, what would be an acceptable pricing system for data service?</p>	<p>Price-volume / price-package / less costly alternative deagregated in possible uses / Only data for free, added value data or services: price / package price for a specific dataset / package; on-demand-pricing, flatrate only interesting for permanent use (authorities), as a private company, we use the data project-specifi / free share ware for educational use at Low resolution.....price / package (dataset) for commercial use / Affordable flat rate / Preferably, academic applications should be free of charge / It depends on individual case, e.g. area for planning or quantity for cadaster, in no case volume / Price-package (dataset) / The Investment Property Databank has become (over the last 35 years), the leading International provider of</p>

	<p>property investment data, but this can always be supplemented by Cadastral, Census and Land Registry data and that from the Government Valuation Office / There is no clear pricing structure if this is being sold; large investors may be able to pay, but clear market data in a "public good" and should be readily available to all tax payers, especially if it's data collected by public authorities. It should NOT be seen as a private sector money making project / Creating market transparency is the main aim, which has been so lacking since the advent of global Financial & Market De-Regulation starting in the USA in the 1970s. This lack of market transparency (such as with the Credit Rating Agencies) directly created the Credit Crunch and economic Great Recession we have today, especially across Europe. NO ONE KNEW what was going on until the markets descended into chaos, and even now some banks don't fully understand what they have learnt, to whom and where, and on which properties / Creating publicly accessible transparent data is vital for the efficiency of markets in the future / a very low price level, because most of those planning data are delivered free by the cities and regions, who want to develop industries / Not involved in purchasing data. Data is supplied by local government clients / flatrate or price/Package / provide data in commonly-used, machine-readable formats, to ensure data can be effectively re-used / Myplan.ie is a free service for all users, including value adding businesses. We are committed to continuing with this access model as we are of the view that it is in the overall Irish public interest and the benefits (financial and otherwise) outweigh any monetary benefits which could be gained if a charging scheme for value adding businesses were to be adopted / Is the intention to provide data for download and use by the client - in which case the license conditions are important and will affect the price charged (if any). Pricing and licensing should be kept as simple as possible - in particular with respect to onward use for display, presentation and value adding / If the idea is only to provide a service (with no raw data downloads) then the price should also be kept as simple as possible and should NOT attempt to profit from scarcity or 'value' of a particular service / There should probably be a registration fee (to access the services) and then some sort of volume and/or time sensitive charging structure. (Faster services command a higher price)</p>
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Public Actors

1. In which activity and responsibility are you working?	<p>Estonian Land Board, Dept of Geoinformation. Geoportals (incl planning geoportal), base topographic map database of Estonia, ... Former planning and GIS consultant (private company) - Head of the Bureau of Geoinformation / To facilitate the access and use of GI and related technologies in any relevant R+D and application areas with</p>
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	<p>emphasis on interdisciplinary fields. To prepare the annual action plan for the General Assembly of the National GI Association HUNAGI and implement the approved actions. Forging International links for the benefit of HUNAGI members and communicate the developments using newsblogs and eNewsletter / Academic field, associate professor in University of Bucharest, Faculty of Geography / Ministerial department in charge of defining, implementing and evaluating the national policies related to spatial planning, construction, housing, landscape protection, biodiversity, water, mineral resources and its application at sub-national levels / Publicly appointed surveyor, President of IGS (surveyors of Switzerland) Chair of IG PARLS (European group of countries with appointed surveyors) / Land Use, Natural Resources and Community Development / Educator and researcher in the area of urban planning. I have taught analysis of spatial data (GIS and Remote Sensing) in my field for many years. I frequently used spatial data in my teaching and research / Teaching assistant at Faculty of Architecture, University of Belgrade (Engaged in courses called Urban Structure, History and Theory of Urbanism and Studio Project III) - Also research assistant in project organized by Ministry of Science, called Climate Change and Impact on the Environment - Monitoring of Impacts, Adaptation and Mitigation) / Member of GINorden and ProGIS (Finnish GIS association) and coordinating the regional GI centre of Southwest Finland called Lounaispaikka (located in Regional Council of Southwest Finland) / I'm working in the ministry of planning and urban development as an urban planner I used to link and implement theory and practice as a real cases, with considering the policies, and applying the principles of planning and urban roles / Research and lecturing in Urbanism (Master and PhD levels) Ass. Professor Dr / Collecting, analyzing and writing on developments in advanced, automated transit worldwide.</p>
2. For which purposes do you use urban/regional planning data?	<p>Providing planning data (county and comprehensive planning data and detailed plans) through the geoportal to other departments of our Board and for open use. Land use, technical infrastructure, constraints, etc. / Our members and partners are using these data for a side Range of applications. VATI operates a comprehensive territorial information system while an Urban Knowledge Center is operational to support Local and central governments / Land use, housing stock, demographics, transport, environment for evaluation of the environmental impact of different categories of urban structure, and for ecoplaning / urban/regional planning data is used mainly for evaluating the local planning policies, their elaboration process and their effects on land, economy and society at large / Land use / Land Use, Natural Resources Inventories and Impacts, Buildable Lands Inventories, Transportation Planning, Parks Planning, Housing Stock and Affordability, Food Access, Health Impacts, etc / Land Use,</p>

	<p>Transport, Ecologically Sustainable Development, Sustainable Resource Use / Land use. Assessment on the quality of urban activities (housing, commerce, recreation, work, communicating, etc.), in relation to the changing values, judgments and interests of different stakeholders / In GINorden and ProGIS we aim to increase the knowledge of using GI in different fields. Planning is only one of the subjects. In courses and seminars arranged by these associations spatial planning has been touched in various subjects like social GIS (soft GIS), 3D-modeling, map services and transportation - In my own work in Regional Council of SW Finland, spatial planning is one of the major themes we are working on. We make the regional land use plan, use local planning datasets to find out the current situation in planning in our region, gather these datasets into one map service and try to find how different research data could be used in spatial planning and decision making. One important new field is the marine spatial planning, which should be taken into account better in different regions and countries / when I used to plan a new neighborhood, in rehabilitation an existing place and the relocation and replanning projects / Land use, Transports, definition of strategies / Mostly for transport, travel patterns, mode split calculations / Provision of harmonised national geospatial reference information as data and data as a service offerings for all (geographical) European countries</p>
3. What kind of Urban / Regional Data Services do you use / need?	<p>Different kind of data for a better state land management / www.teir.hu www.terport.hu / Romanian National Institute for Statistics, EUROSTAT, European Environmental Agency databases, regional and local databases managed by regional and local administration. / the planning regulations and associated geographical datasets are digitised by the local departments of the ministry (for the building permits instruction). They are also used via web services (where available) / Database of official measurement Databases with official informations such projects in construction, land planification, transports, 3D data / Data standardization and coverage in order to do regional analyses; data at smallest geography possible / Spatial Information Exchange, Australian Bureau of Statistics Spatial Data, USGS data / I use different kind of databases / In GINorden and ProGIS we do not need these datasets, but aim generally in better access and use of the datasets for our members. In an ideal situation the information should be accessed easily, harmonized, and used across institutional borders; In Regional Council of Southwest Finland we need local detailed plans from the municipalities and consultants (town/city plans, master plans) and regional plans from our neighboring regions in order to achieve better planning information. The GI datasets gathered come usually in various formats and very seldom from data services like WMS. We act also as the provider for INSPIRE accordant datasets (regional plans) for national spatial data infrastructure in Finland / In Khartoum, Sudan</p>

	the Data Center do not active yet but I use the databases which was provided in the ministry databases / Much from the US TRB, but other sources as well /
4. What kind of services should, in your opinion, the plan4business platform offer?	<p>Visualisation of analysis results, 2D, 3D with temporal assessment capabilities Support Socioeconomics-economic in esti Atkins and Impact analysis Link repository on best practices / Statistical analysis, mapping tools, raw data used for statistical analysis, simulation / the plan4business plateform should first indicate which administrative area spatial plan exists over either in non-digital form or in digital form (either downloadable or viewable via web services). It should also provide a "geographical continuum" of existing spatial plan when they are available via web services (web geoportal) viewed in a consistent way (accordinbg to the INSPIRE Land Use data specification). By connection with land cover data, statistics on the building residual capacity per area may be provided. Where dimensioning indication from spatial plan are available a 3D tool should be provided / if the datas are harmonized : none / Mapping and statistical analyses with clear assumptions, limitations and caveats. Modeling tool could be helpful but have questions / Geostatistical analysis, web-based spatial analysis services, use of and integration with google's spatial data and engine.../ Mapping tools, in purpose of learning techniques of presentation activities, distribution in space, as well as distribution of actors – stakeholders / Dataset harmonization and visualization tools: datasets could be uploaded to the service and WMS/WFS-interface could be provided. The municipalities who have problems with achieving INSPIRE demands should be helped. The service should include tools for commenting the plans in different phases thus increasing the level of public participation which in turn enhance the sustainable planning / When the datasets are available in interfaces, all the additional tools described above could be provided. The most challenging task is to gather the datasets in harmonized format because of the quality of the original datasets. Due to the constantly evolving situation in detailed planning, the datasets should be provided to the service automatically when facing updates / I think Plan4business can offer all kind of services which I'm looking for when I start a new project from the stage of data analysis to the modeling stage / Database of mode split patterns for cities worldwide / Development of the service should be user driven with an appropriate focus in the project of identifying what users are trying to do and a related analysis of the requirements which drive this.</p>
5. For your purposes, what would be an acceptable pricing system for data service?	<p>Special data policy for non-profit Civil Societies, researchers and education. Enabling re-use of public Sector information.Applying internationally accepted licensing model to ensure maximum benefits on Society level / For academic field, I think that the some date must be without money / access to spatial planning data and view services</p>

	<p>should be free of charge. "downstream" services should be priced at low level when the user are individuals but high level when the user are professional (with higher service-level). Pricing should be according to the service complexity / price/package / Package and number of licenses / subscriptions / The provision of one interface service from one dataset should be moderate so that the service would be used. The datasets and service quality should be high level / The business model is likely to be highly complex given the various source data providers models and IPR which must be respected. Freemium is probably the way to go with a entry level service supporting citizens 'right to know' and professionals 'ability to pay'.</p>
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Users' requirements questionnaire results: individual responses

In which activity and responsibility are you working? Please describe.	For which purposes do you use urban/regional planning data? Please describe (e.g. Land Use, Housing Stock, Demographics, Transport, etc.)	What kind of Urban / Regional Data Services do you use / need? Please describe (e.g. information/Datasets from Data Provider, Databases, Data Centre, etc.)	What kind of services should, in your opinion, the plan4business platform offer? (e.g. statistical analysis, mapping tools, 2D/3D tool, etc. - refer to project description above) Please describe.	For your purposes, what would be an acceptable pricing system for the service? (e.g. price / volume package (dataset), flatrate, etc.) Please describe.
Estonian Land Board, Dept of Geoinformation. Geoportals (incl planning geoportal), base topographic map database of Estonia, ... Former planning and GIS consultant (private company) - Head of the Bureau of Geoinformation	We provide planning data (county and comprehensive planning data and detailed plans) through the geoportal to other departments of our Board and for open use. Land use, technical infrastructure, constraints, etc	Different kind of data for a better state land management.	?	?
University _urban planning and sustainable development	studies on Land Use	Databases	variety of urban planning services	3-5 Eur/datasets
Associate Director in the RICS Land Group which covers a wide range of areas extending from Geomatics, Environment, Minerals, Waste, Rural and Planning and Development. These areas of professional practice have a very high demand for quality information which is capable of being interrogated in a variety of different ways at different spatial scales. They are also closely related to the practice areas of Construction and Property which are both significant originators and users of information.	Our members use data across a wide range of services including land use, housing conditions, demographics, transport, mapping, land values, local and national taxation, engineering infrastructure, green infrastructure, flood risk, environmental, minerals, agricultural land classification etc.	Our members use Data Services from both public and private sources and we are exploring the use of 'crowd-sourcing' as a way of getting data which typically has not been easy to capture. Numerous opensource public data services are being employed.	Essentially the platform should enable the interrogation of a wide variety of data on a spatial basis in both 2D and 3D. There is a large number of data bases in private control with information which is commercially sensitive but which has enormous potential from a point of view of generating new enterprise and serving a public interest function. There is also an issue about governance of data. Being able to access this data on the basis of agreed protocols for access and payment would be very beneficial.	Difficult to be categorical about because some of the data may be more dynamic than others. Is the platform intended to provide a commercial return? Some processing of data may result in higher costs which could potentially demand for a pay as you go rather than a flat rate.
- International Consultant - Academic Teaching and Training - Community Based Organizations	- Land Use planning - Housing - Land Administration	Data Center	-GIS, -Mapping tools, CAD - 3 D visualisation	price / package
Consultant	Land Use	Local and regional development plans; reference data	mapping tools with consistent semantic land use descriptions across borders (within as well as between Member States)	Somehow related to users per value. Public data should be free and free of charge. Physical use) planning information is made available free of charge

				completely incompatible (analogue) formats. Perhaps subscription model?
Architect, Urban Designer, Chair of Board Movement for Israeli Urbanism	Research, Planning	Any Urban Data	statistical analysis, mapping tools, 2D/3D tool	as an NGO - I usually need F
Administration of a national organisation representing and supporting professional planners.	Comparisons between countries. Recent requests have been for data on development consents e.g. length of time taken to grant consent, cost and complexity of process, and on housing starts broken down by sector e.g. public sector/private sector/hybrid/self-build	Publicly available databases	Mapping tools especially custom overlays	If the data has been publicly we would not expect to pay
Engineering for urban infrastructure; urban design	design of urban infrastructure (transport, water, energy...) and urban projects and spaces	topography, infrastructure, uses of underground	2D/3D tools would be useful, good information about the location of infrastructures especially for underground infrastructures	
<p>I am a consultant in territorial & environmental planning now working in:</p> <p>1.the master plan of an international realstate tourism resort community in the north coast of dominican rep.</p> <p>2.an environmental strategic evaluation of a province of dr as a context to a wordbank loan for a sanitary system.</p> <p>3.a proposal for the strategic development plan for the commonwealth of great santo domingo [dr]</p> <p>4.a proposal for the restoration of the greenbelt of great santo domingo.</p> <p>5. a proposal for the rescue of main rivers surrounding great santo domingo [rio ozama]</p>	FOR URBAN/REGIONAL LAND USE [TERRITORIAL] MANAGEMENT WITH MY SPECIALTY AS A PLANNER .	I USE DATA BASE AND GENERAL INFORMATION FROM OTHER COUNTRY AS A MEAN TO EXTRAPOLATE DATA AND FOR MODELISTIC....	I THINK THAT IT WOULD BE USEFUL TO HAVE AN IN-LINE PLATFORM OF TECHNOLOGY INFORMATION AND COMMUNICATION FROM ALL COUNTRIES AS I UNDERSTAND YOU PROPOSE, IN EVERY FIELD [STATISTICAL ANALYSIS, MAPPING TOOLS & 3D TOOLS AS A MEANS TO PROVIDE GUIDES FROM OTHERS FOR TERRITORIAL MANAGEMENT, SPECIALLY FOR MEGAPROJECT.	AS WE ARE A DEVELOPING COUNTRY WE WOULD PREFER THE LESS COSTLY ALTERNATIVE DESAGGREGATED IN POSSIBLE USES FOR EACH PURPOSE
strategic land use planning and urban planning	strategic planning, land use, demographics, transport, infrastructure, regional development, urban planning	databases, information/datasets, scenario modelling, land use supply statistics	statistical analyses, mapping tools, scenario modelling, datasets, 2D/3D tools	package, flat rate, or price per

Public Company working in the area of territorial information analysis and management. My responsibility is as director of European Projects and also commercial activities. The company provides services working for public administrations and private companies.	We produce urban and regional planning data as well as provide services and applications to use and further exploit this data.	Urban information: cartography 1:500, 1:1000, also scanned information of all urban planning by all the municipalities (mapped documents). We have produced all this information and made available: siun.navarra.es	mapping tools, 2D tools, 3D tools for buildings (cadastral information)	Only data for free, added value for services: price / package
academic research, data analysis	Land Use, Housing Stock, Demographics, Transport, cultural and natural resources, protection			
Engineering and Consultancy for infrastructure planning (roads, railroads, water supply, sewerage, airports), urban development, regional planning, environmental planning (strategic assessment, environmental impact assessment)	Regional and urban spatial planning, land use planning, environmental base data, transport planning, social data for environmental and social impact assessment	Baseline data, land use data, environmental data; Useful to have all on a single platform, not many different providers, databases (in the background yes, but not obvious for the user).	statistical analysis, maps and mapping tools, raw data (shape files), 2D/3D simulation tools.	price for a specific dataset / on-demand-pricing, flatrate interesting for permanent use (authorities), as a private company we use the data project-specific
currently involved in managing and leading a planning agency	Planning data is used primarily for the making of land use related decisions, but, importantly data will be required for the preparation of development plans	information datasets and databases	statistical analysis which will also enable and enhance mapping	
I am currently employed as an architect +urban designer in a large multidisciplinary consultancy. My work profile involves design, municipal sanctions and coordination of master planning and architecture projects.	landuse, zoning regulations, typology study... transport networks	statutory master planning data, building codes	mapping tools, GIS data	free share ware for education Low resolution.....price / package (dataset) for commercial use
Real Estate and Urban Planning - Teaching, Research and Consultancy.	Valuation, Feasibility Studies, Land Use, EIA, Housing Stock and Research.	Databases and information / datasets.	Databank / storage, mapping tools, statistical analysis, research and 2D / 3D tool.	Affordable flat rate. Preferable for academic applications should be of charge.
TÃ³ facilitate the access and use of GI and related technologies in any relevant R+D and application areas with emphasis on interdisciplinary fields. TÃ³ prepare the annual action plan for the General Assembly of the National GI Association HUNAGI and implement the	Our members and partners are using these data for a wide range of applications. VATI operates a comprehensive territorial information system while an Urban Knowledge Center is operational tÃ³ support Local and central governments.	www.teir.hu www.terport.hu	Visualisation of analysis results, 2D, 3D with temporal assessment capabilities Support Socioeconomics-economic in estimation and Impact analysis Link repository on best practices	Special data policy for non-profit Civil Societies, researchers and education. Enabling re-use of Sector information. Applying internationally accepted license model tÃ³ ensure maximum impact on Society level.

approved actions. Forging International links for the benefit of HUNAGI members and communicate the developments using newsblogs and eNewsletter				
GIS & Utility Infrastructure	Utility infrastructure: planing and maintaining	data providers and databases	transformation tools e.g Extract, transform and load (ETL) with geographic capabilities	per meter/ kilometer
Industry, energy supply companies, local authority district	Planning and documentation of mains system (gas, water, electricity) Documentation of housing stock, infrastructure and forestry	WMS and WFS Shape-Format	Mapping tools	It depends on individual case area for planning or quantity cadaster, in no case volume
<p>Involvement in international and European Policy processes around local sustainability and its close interaction with individual cities over the last 20 years</p> <p>Development of frameworks and tools for sustainable cities in the past years, and test with cities from across Europe. Examples are the Aalborg Commitments (a set of 50 qualitative objectives signed up to by ~650 cities), Local Evaluation 21 (an internet-based tool for the self-assessment of local governance and management for sustainability, tested by ~100 cities), or Local Targets 21 (an internet-based set of indicators based on both the Aalborg Commitments and the EU Thematic Strategy for the Urban Environment, for cities to set individual quantitative targets and monitor their achievement).</p> <p>Involvement in all relevant UN policy processes related to sustainable development, representing local governments in international negotiations e.g. on climate change mitigation or biodiversity. As 'Local Authority Major Group Organizing Partner' ICLEI</p>	The following areas are likely to be useful to us: Population; Education and Employment; Wealth; Business environment; Land use; Energy profile; Greenhouse gases; Transport/accessibility; Development demands; and Quality of life.	<p>We use:</p> <ul style="list-style-type: none"> â€¢ Urban Atlas 2009 (DG REGIO, EEA) â€¢ Urban Audit (EUROSTAT) â€¢ ESPON database â€¢ Thematic regional statistical data (EUROSTAT) â€¢ Thematic database (EEA) â€¢ Available national and regional statistical data 	<p>The platform could also show the citiesâ€™ performances. Each city could compare its performances both with single values showed by other cities and average values of clusters selected according to the city size (big, medium, small) or the geographic position (north, south, east, west).</p> <p>Local governments could use the tool to find similar cities for cooperating and sharing experiences; the possibility of selecting the urban areas showing the best performances for each indicator, could help local governments setting new targets for their cities.</p> <p>EU institutions could use the tool to have an overview of urban sustainability in different Countries or regional areas, having a feedback about the implementation of the EU policies at the urban level.</p> <p>Researchers could use the tool not only to collect row data, but also to visualize (map) and elaborate row data using elementary statistical functions related to different clusters of cities and analyse trends.</p> <p>Investors could use the tool to make a first evaluation of cities potentials and needs, searching</p>	Price/package (dataset)

channelled local government input into the Rio+20 process and organised events at and around the Rio+20 UN Summit on Sustainable Development in June 2012.			for the best performing areas where to develop reliable and bankable projects and, at the same time, identifying cities showing weaker features that would require investments to potentiate specific areas/sectors.	
Provision of harmonised national geospatial reference information as data and data as a service offerings for all (geographical) European countries	Currently we don't but we see the opportunity to support the effective use of this with the European Location Framework http://www.eurogeographics.org/news/european-location-framework-white-paper		Development of the service should be user driven with an appropriate focus in the project of identifying what users are trying to do and a related analysis of the requirements which drive this.	The business model is likely highly complex given the various source data providers models which must be respected. From probably the way to go with a level service supporting citizens to know' and professionals 'to pay'.
<p>I am a Real Estate advisor and Fellow of the Royal Institution of Chartered Surveyors, nowadays acting as a Consultant with Real Estate Forecasting and as a Visiting Professor to Oxford Brookes University where I teach on the International Post Graduate Course. I'm also involved with the British Council for Offices, the Investment Property Forum and the British Council for Shopping Centres.</p> <p>I was previously with Healey & Baker (now Cushman & Wakefield), Richard Ellis (now CBRE) and King Sturge (now part of Jones Lang LaSalle).</p> <p>I worked in the private sector, planning industrial (production, office and logistic) sites</p>	As a Real Estate investment advisor and property development advisor - looking at property market portfolio investment strategies and relating to specific development projects.	<p>Over the years my use of data has included:</p> <p>Economic analysis (national and global such as economic growth, employment, retail sales, bank lending & interest rates etc...), property investment market valuation and supply & demand trend data, demographic trends & data, opinions research data on trends such as retail behaviour or traffic/transportation usage. By blending this type of data it has been possible to give geographic rank order information to investors and government to aid decision making.</p>	All the above including geographic location & use of maps. To my mind the core question is; why should an investors invest in a specific location and a specific type of building (a structure) or property (a legal interest in land)?	<p>The Investment Property Data has become (over the last 35 years) the leading International property investment data, but it always be supplemented by Census and Land Registry data that from the Government Valuation Office.</p> <p>There is no clear pricing structure for this is being sold; large investors can't be able to pay, but clear market in a "public good" and should be readily available to all tax payers, especially if it's data collected by public authorities. It should not be seen as a private sector money making project.</p> <p>Creating market transparency is the main aim, which has been so since the advent of global Financial Market De-Regulation starting in the USA in the 1970s. This lack of market transparency (such as Credit Rating Agencies) directly created the Credit Crunch and the economic Great Recession we are today, especially across Europe. ONE KNEW what was going on in the markets descended into chaos and even now some banks don't understand what they have lost to whom and where, and on what properties.</p> <p>Creating publicly accessible transparent data is vital for the efficiency of markets in the future.</p>
I worked in the private sector,	Valuation of local/regional	statical data from country, region	mapping tools (in 2D), science	a very low price level, because

planning industrial (production, office and logistic) sites	labour and real estate markets	and city departments and from chambers of commerce	statistical information are available	of those planning data are de free by the cities and regions want to develop industries
Academic field. I am associate professor in University of Bucharest, Faculty of Geography	Land use, housing stock, demographics, transport, environment for evaluation of the environmental impact of different categories of urban structure, and for ecoplanning.	Romanian National Institute for Statistics, EUROSTAT, European Environmental Agency databases, regional and local databases managed by regional and local administration.	Statistical analysis, mapping tools, raw data used for statistical analysis, simulation.	For academic field, I think th some data must be without n
Ministerial department in charge of defining, implementing and evaluating the national policies related to spatial planning, construction, housing, landscape protection, biodiversity, water, mineral resources and its application at sub-national levels.	urban/regional planning data is used mainly for evaluating the local planning policies, their elaboration process and their effects on land, economy and society at large.	the planning regulations and associated geographical datasets are digitised by the local departments of the ministry (for the building permits instruction). They are also used via web services (where available)	the plan4business platform should first indicate which administrative area spatial plan exists over either in non-digital form or in digital form (either downloadable or viewable via web services). It should also provide a "geographical continuum" of existing spatial plan when they are available via web services (web geoportal) viewed in a consistent way (according to the INSPIRE Land Use data specification). By connection with land cover data, statistics on the building residual capacity per area may be provided. Where dimensioning indication from spatial plan are available a 3D tool should be provided.	access to spatial planning da view services should be free charge. "downstream" service be priced at low level when are individuals but high level the user are professional (with service-level). Pricing should according to the service com
Planning consultation. Now retired mainly	Urban master plans and strategic plans. Also for conservation planning of heritage areas	Wide variety of data with emphasis on physical planning data	Statistical demographic and social/economic data and mapping of such data	Not involved in purchasing is supplied by local government clients
Director running a mid size architecture and planning practice	Design and development of masterplans, architectural design	Densities, Land use, Transport flows and capacities, Weather, Climate, Age, Social mix, Economic activity, condition of building stock	statistical analysis, mapping tools and the possibility to combine sets of data easily, 3d information of cities, data projected into the future	flatrate or price/Package
GI Organisation, manager - relations, marketing, coordinating, projects, informing,	do not use it directly in my work, but my members do need all kind of land use categories	Data sets from provider	statistical analysis and mapping tools	provide data in commonly-used machine-readable formats, to data can be effectively re-used
Publicly appointed surveyor, President of IGS (surveyors of Switzerland) Chair of IG PARLS (European group of countries with appointed surveyors)	Land use	Database of official measurement Databases with official information such projects in construction, land planning, transports, 3D data...	if the data are harmonized : none	price/package

Land Use, Natural Resources and Community Development	Land Use, Natural Resources Inventories and Impacts, Buildable Lands Inventories, Transportation Planning, Parks Planning, Housing Stock and Affordability, Food Access, Health Impacts, etc.	Data standardization and coverage in order to do regional analyses; data at smallest geography possible.	Mapping and statistical analyses with clear assumptions, limitations and caveats. Modeling tool could be helpful but have questions.	Package and number of licenses
Consultant international agencies (EU, UN, WB, etc...)	disaster risk reduction planning, post-disaster reconstruction, environmental planning	specifically geo-information, aerial information	mapping, 2D/3D tool	N/A
I am an educator and researcher in the area of urban planning. I have taught analysis of spatial data (GIS and Remote Sensing) in my field for many years. I frequently used spatial data in my teaching and research.	Land Use, Transport, Ecologically Sustainable Development, Sustainable Resource Use	Spatial Information Exchange, Australian Bureau of Statistics Spatial Data, USGS data...	Geostatistical analysis, web-based spatial analysis services, use of and integration with google's spatial data and engine...	subscriptions
I work as a spatial planner at the national government level in Ireland. I am involved in planning policy matters, have 10 counties for which I am responsible at the national level and am engaged in information matters (planning information service and INSPIRE)	- land use planning policy development, and implementation monitoring - reviewing City/County Development Plans and Local Area Plans	Planning can be divided into three main components, Forward Planning, Development Management (applications and appeals), and Enforcement. We need an information service which is user friendly and which covers all three aspects. Given the wide scope of planning it is necessary to have a wide variety of datasets (flooding, land use, serviced land, community facilities etc etc) readily available in a single browser based environment.	The Department for which I work has produced Myplan.ie (www.myplan.ie) which sets out the types of data and services which are useful to professional planners, councillors, business people, lawyers, and last but by no means least, the general public. Myplan.ie was launched on 4 April 2012 and is currently receiving an average of about 600 visits per day, 70 - 80% of which are return visitors. In an Irish context this is regarded as a relatively high hit rate. As Myplan.ie evolves into a more comprehensive system (we are currently considering a significant range of enhancements) and gets better known we believe that the number of new and return visitors will increase significantly.	Myplan.ie is a free service for users, including value adding businesses. We are committed to continuing with this access model as we are of the view that it is in the overall Irish public interest and the benefits (financial and otherwise) outweigh any monetary benefits which could be gained if a commercial scheme for value adding businesses were to be adopted.
Teaching assistant at Faculty of Architecture, University of Belgrade (Engaged in courses called Urban Structure, History and Theory of Urbanism and Studio Project III). Also research assistant in project organized by Ministry of Science, called Climate	Land use. Assessment on the quality of urban activities (housing, commerce, recreation, work, communicating, etc..), in relation to the changing values, judgments and interests of different stakeholders.	I use different kind of databases.	Mapping tools, in purpose of learning techniques of presentation activities, distribution in space, as well as distribution of actors - stakeholders.	

Change and Impact on the Environment - Monitoring of Impacts, Adaptation and Mitigation)				
Member of GINorden and ProGIS (Finnish GIS association) and coordinating the regional GI centre of Southwest Finland called Lounaispaikka (located in Regional Council of Southwest Finland).	<p>In GINorden and ProGIS we aim to increase the knowledge of using GI in different fields. Planning is only one of the subjects. In courses and seminars arranged by these associations spatial planning has been touched in various subjects like social GIS (soft GIS), 3D-modeling, map services and transportation.</p> <p>In my own work in Regional Council of SW Finland, spatial planning is one of the major themes we are working on. We make the regional land use plan, use local planning datasets to find out the current situation in planning in our region, gather these datasets into one map service and try to find how different research data could be used in spatial planning and decision making. One important new field is the marine spatial planning, which should be taken into account better in different regions and countries.</p>	<p>In GINorden and ProGIS we do not need these datasets, but aim generally in better access and use of the datasets for our members. In an ideal situation the information should be accessed easily, harmonized, and used across institutional borders.</p> <p>In Regional Council of Southwest Finland we need local detailed plans from the municipalities and consultants (town/city plans, master plans) and regional plans from our neighboring regions in order to achieve better planning information. The GI datasets gathered come usually in various formats and very seldom from data services like WMS. We act also as the provider for INSPIRE accordant datasets (regional plans) for national spatial data infrastructure in Finland.</p>	<p>Dataset harmonization and visualization tools: datasets could be uploaded to the service and WMS/WFS-interface could be provided. The municipalities who have problems with achieving INSPIRE demands should be helped. The service should include tools for commenting the plans in different phases thus increasing the level of public participation which in turn enhance the sustainable planning.</p> <p>When the datasets are available in interfaces, all the additional tools described above could be provided. The most challenging task is to gather the datasets in harmonized format because of the quality of the original datasets. Due to the constantly evolving situation in detailed planning, the datasets should be provided to the service automatically when facing updates.</p>	<p>The provision of one interface from one dataset should be n so that the service would be The datasets and service qua should be high level.</p>
<p>I'm working in the ministry of planning and urban development.</p> <p>as an urban planner I used to link and implement theory and practice as a real cases, with considering the policies, and applying the principles of planning and urban roles.</p>	<p>when I used to plan a new neighborhood, in rehabilitation an existing place and the relocation and replanning projects.</p>	<p>In Khartoum, Sudan the Data Center do not active yet but I use the databases which was provided in the ministry databases</p>	<p>I think Plan4business can offer all kind of services which I'm looking for when I start a new project from the stage of data analysis to the modeling stage.</p>	<p>I do not participate in the pri phase. Sorry for being useles question.</p>
<p>Consulting on the use of spatial data for planning (and other businesses). Mainly in UK and with the constraints placed on data availability and use by various licenses at central and local government levels.</p>	<p>Mainly in the field of land use and demographics</p>	<p>Standard services as provided by central and local governments and by associated private sector suppliers</p>	<p>Keep it simple - lowest common denominator! Basic 2D mapping and statistical analysis</p>	<p>Is the intention to provide da download and use by the cli which case the license condi important and will affect the charged (if any). Pricing and should be kept as simple as p in particular with respect to use for display, presentation adding.</p>

				<p>If the idea is only to provide (with no raw data download) price should also be kept as possible and should NOT attempt profit from scarcity or 'value' particular service.</p> <p>There should probably be a registration fee (to access the services) and then some sort of volume and/or time sensitive structure. (Faster services cost higher price).</p>
<p>Research and lecturing in Urbanism (Master and PhD levels)</p> <p>Ass. Professor Dr</p>	Land use, Transports, definition of strategies	Databases	perhaps all the ones you mentioned	N7A
Collecting, analyzing and writing on developments in advanced, automated transit worldwide.	Mostly for transport, travel patterns, mode split calculations.	Much from the US TRB, but other sources as well.	Database of mode split patterns for cities worldwide.	Don't really know. Should it be Isocarp membership?

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