

## ESPON

### TERMS OF REFERENCE PROJECT 1.2.3.

#### IDENTIFICATION OF SPATIALLY RELEVANT ASPECTS OF THE INFORMATION SOCIETY (2004 – 2006)

##### (o) Political challenges for the ESPON projects

The Second and Third Report on Economic and Social Cohesion, published in January 2001 and February 2004 respectively, presented for the first time a third territorial dimension of cohesion (beside the economic and social cohesion), which calls for a better co-ordination of territorially relevant decisions. Stressing the persistence of territorial disparities within the Union, the report stated the need for a cohesion policy not limited to the less developed areas as well as the need to promote a more balanced and more sustainable development of the European territory.

The Cohesion Reports represent in that respect a follow up of the European Spatial Development Perspective (ESDP), adopted at ministerial level in May 1999, calling for a better balance and polycentric development of the European territory. The projects launched under the ESPON programme shall follow an integrated approach and, seen together, cover a wide range of issues, such as:

- Identifying the **decisive factors relevant for a more polycentric European territory**; accessibility of a wide range of services in the context of enlargement; integration of wider transnational spaces; promotion of dynamic urban growth centres; linking peripheral and disadvantaged areas with those centres; etc.
- Developing **territorial indicators and typologies** capable of identifying and measuring development trends as well as monitoring the political aim of a better balanced and polycentric EU territory
- Developing **tools supporting diagnoses of principal structural difficulties as well as potentialities**, such as disparities within cities and regenerating deprived urban areas; structural adjustment and diversification of rural areas; strategic alliances between neighbouring cities at transnational, national and regional scale; new partnerships between rural and urban areas; potential support from infrastructure networks in the field of transport, telecommunication, energy; etc.
- Investigating **territorial impacts of sectoral and structural policies** in order to enhance synergy and well-co-ordinated decisions relevant for territorial development within policy fields such as Structural Funds, agriculture, transport, fisheries, environment, research and development as well as impacts to be taken into account in Integrated Coastal Zone Management activities; developing methods for measuring the territorial impact of sectoral and structural policies; etc.

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- Developing **integrated tools in support of a balanced and polycentric territorial development**; approaches to enhance the potential of cities as drivers of regional development, new tools for integrated urban-rural development and planning, etc.

The Third Report on Economic and Social Cohesion included new scientific knowledge and information from a series of ESPON projects. As such the ESPON programme has met one of its objectives by delivering new scientific knowledge and information on European spatial issues as basis for future policy development at EU-level and within Member States.

With the results of all ESPON projects, the Commission and the Member States expect in particular to have at their disposal: **a diagnosis of the principal territorial trends** at EU scale and of the difficulties and potentialities within the European territory as a whole; **a cartographic picture of the major territorial disparities** and of their respective intensity; a number of **territorial indicators and typologies assisting a setting of European priorities** for a balanced and polycentric enlarged European territory; some **integrated tools and appropriate instruments** (databases, indicators, methodologies for territorial impact analysis and systematic spatial analyses) to improve the spatial co-ordination of sector policies.

In this respect, the ESPON projects will serve as a strong scientific basis for the propositions of the Commission in view of the reform of post-2007 Structural Funds.

### i) Relation to the ESPON 2006 Programme

The priorities describing the work-programme of the ESPON 2006 Programme are structured in four strands:

1. **Thematic projects** on the major spatial developments on the background of typologies of regions, and the situation of cities.
2. **Policy impact projects** on the spatial impact of Community sector policies and Member States' spatial development policy on types of regions with a focus on the institutional inter-linkages between the governmental levels and instrumental dimension of policies
3. **Co-ordinating and territorial cross-thematic projects** represent a key component of the programme. These projects evaluate the results of the other projects towards integrated results such as indicator systems and data, typologies of territories and spatial development scenarios. The cross section projects help to thematically co-ordinate the whole programme and add value to the results and to fill gaps, which are unavoidable when different themes are dealt with in different projects.
4. **Scientific briefing and networking** in order to explore the synergies between the national and EU source for research and research capacities.

**Project 1.2.3** belongs to the first strand of projects and holds an important position for the elaboration of the whole programme by contributing to the preparation of the common ground for the investigation of basic themes in relation to the spatial structure in Europe. Therefore, a strong coordination with all other finalised and ongoing ESPON projects is required in order to reach consistent project results within the ESPON programme. The necessary networking and cooperation will in particular involve the other projects in the same strand on e.g.

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territorial trends and methodological aspects of the territorial impact analysis. Finally, close links will be required with the coordinating and cross-thematic projects under priority three building on a scientific coherence in the ESPON programme as well as with the Coordination Unit.

### ii) Thematic scope and context.

The development of Information and Communication Technologies (ICTs) and the liberalisation of the telecom sector have given a growing number of people the possibility to access to all type of information and also have contributed to promote the communication among citizens, businesses and public administrations, removing the constraints of time, place and distance, making the world a “global village”<sup>1</sup>. Therefore, this technological development is a key for the development of a *knowledge based economy*<sup>2</sup> in which the information can be transmitted and be accessible by all within a “global network” – *The Information Society*.

However, this concept embodies not only the technological issues (develop ICTs) but it should also take into account socio-economic considerations and its contribution to new forms of territorial organisation. Regarding the latter aspect, a lot of evidence shows a transition from traditional, core-dominated and monocentric cities towards a more extended and polycentric city-regions, in which the importance of proximity has been significantly reduced, characterized by a number of superimposed clusters and a complex space of internal and external flows. These observations do not, however, imply that distance has lost its relevance.

Since the early 90's, attention has often been paid to the relevance of the Information Society at a European level, namely by the Maastricht Treaty<sup>3</sup> and through the publishing of the *White Paper on Growth, Competitiveness and Employment: the challenges and ways forward into the 21<sup>st</sup> century* (CEC, 1993), in which ‘the development of an Information-based Society was seen as the key to the development of new job opportunities in the medium term’. Following this White Paper, a report was produced – *The Bangemann Report*<sup>4</sup> (CEC, 1994) – launching practical ways to achieve the objectives already defined. One of the main findings that the Report pointed out was the need to start the process of liberalization of the telecom sector in Europe and it also proposed a list of (10) initiatives<sup>5</sup>, which shows the relevance of the new telematics applications: teleworking, distance learning, university and research networks, telematic services, road traffic management and air traffic control, health care networks, electronic tendering, trans-European public administrations networks and city information highways. Later on, the Green Paper on *Living and Working in the Information Society: People First* (CEC, 1996) addressed the potential risk of producing negative impacts if the Information Society is not supported by investments in the fields of education, awareness, social dialogue and regional cohesion and, consequently, widening the disparities between richer and poorer regions.

The Green Paper on Public Sector Information: Key Resource for Europe (CEC, 1998) was a step forward for raising European awareness to the opportunities created by the availability of

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<sup>1</sup> Marshall MacLuahan.

<sup>2</sup> Information *per se* is not desirable, it should lead to Knowledge, which is information contextualized and understood.

<sup>3</sup> This Treaty provided the development of trans-European networks (TENs) in the transport, telecommunications and energy sectors (Articles 129b-d).

<sup>4</sup> *Europe and the Global Information Society: Recommendations to the European Council*

<sup>5</sup> Included in the Action Plan – *Europe's way to the Information Society* (CEC, 1994), supported by the 4<sup>th</sup> R&D Framework Programme.

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public sector information (PSI) in digital format<sup>6</sup>. One year later, in 1999, the European Council adopted an initiative – eEurope<sup>7</sup> (CEC, 1999) -, which proposed to introduce a social dimension to the concept of Information Society, by bringing all citizens, business and administration on-line. This European initiative was succeeded by the eEurope 2005: *An Information Society for All*, the Action Plan of which was centred on “*the widespread availability and use of broadband networks throughout the Union by 2005 and the development of Internet protocol IPv6...and the security of networks and information, eGovernment, eLearning, eHealth and eBusiness*”<sup>8</sup>

At this moment, it is relevant to assess the main impacts of the emergence of the Information Society on the European territorial structure, focusing the approach on the ESDP key policy development principles and assess the effectiveness of the cohesion policies to provide for a balanced and harmonious European territory. This project is about the further development and deepening of the findings of the ESPON project on telecommunication services and networks, evidently, it is very important to avoid overlaps to the work already done.

The main intention is to assess where and to what degree ICT can be used as an instrument for strengthening territorial cohesion in particular with regard to FUA's, rural and geographically handicapped areas. The basis for this will be the cross analysis of results from the 1.2.2 project (*Telecommunication Services and Networks: Territorial Trends and Basic Supply of Infrastructure for Territorial Cohesion*) with results and typologies of other ESPON projects such as 1.1.1 (polycentrism), 1.1.2 (urban-rural relationship), 1.2.1 (transport trends), 2.1.1 (transport impact) and/ or 2.1.2. (R&D impact)

The territorial aspects of the Information Society need to be explored through an integrated approach in order to formulate adequate policy recommendations – both at EU- and national level. The recommendations should on the one hand focus on options that can support existing positive development, and on the other hand, options for assisting territories in decline in opposing negative development trends. However, the fact that many initiatives may have more importance at regional and local level than at a national or even European level should be taken into consideration since they might put in evidence conditions for local competitiveness of peripheral regions.

In general terms, the policy recommendations of the study should be build on policy orientations from the European Spatial Development Perspective (ESDP) and on the relevant elements linked to the objective of Territorial Cohesion at European level.

It is important to pay attention to the socio-economic aspects of the Information Society and identify possible relationships between e-initiatives, population structure, level of education, characteristics of the local workforce and GDP. Concerning this aspect a lot of evidence suggests that “regions differ not only according to the speed and intensity with which the local economy and the population adopt ICTs, but also according to whether they can make productive use of the possibilities opened up by the Internet and related technological innovations” (Gillespie et al, 2001).

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<sup>6</sup> The liberalization of the telecom sector and the success of the European standard for mobile telephony (GSM) have also contributed to improve the access to PSI.

<sup>7</sup> eEurope is also part of the Lisbon strategy to make the EU the world's most dynamic and competitive economy with improved employment and social cohesion.

<sup>8</sup> Barcelona European Council, Presidency Conclusions.

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Moreover, the project will have to comply with the developed tools, guidance and coordination provided by the ESPON programme in several Guidance Papers on the ESPON scientific Platform and to provide input for the achievement of the horizontal projects under priority 3.

In order to ensure continuity to existing research, analyses and policy development linked to the information society, other European projects on this subject (such as BISER, SIBIS, JANUS, UNDERSTAND, SPECTRE), the orientations produced at a European level (Bangemann Report, White and Green Papers, eEurope Action Plans), and more general documents resulted from the World Summit on the Information Society (the Declaration of Principles and the Plan of Action) should be taken into consideration.

### *iii) General objectives*

The general objective of this project is to characterize the information society from a territorial perspective and analyse its territorial aspects at macro, meso and micro level. In spatial terms special attention should be given to the unequal provision of and access to ICTs in Europe and in social and economic terms to the unequal access and ability to use ICTs and the Internet among different economic activities and socio-economic groups.

The research should also put into evidence both the decentralised and centralised territorial effects of the information society at short-term and mid-term/long-term perspective and relate it with the goals and policy options defined in the ESDP. This project should also cover rural and peripheral areas of the European Union, where the information society could be an important step towards their development, as well as the role of the information society in the development of urban-rural functional relations<sup>9</sup>.

The underlying objective is to assess the possible contribution of the information society to balanced spatial development, territorial cohesion and polycentricity.

The project should consider two interdependent and complementary “components” that mutually affect one another and are relevant to improve the understanding of the spatial dimension of the Information Society:

(1) The first one is related with the technological component or the “physical” infrastructure of the Information Society, it represents “the state of technology”. In respect with this, a full analysis on ICTs in terms of availability and penetration, at different territorial levels and by economic sectors, is required. This component of the Information Society is largely developed in the ESPON Project 1.2.2 – *Telecommunication Services and Networks: Territorial Trends and Basic Supply of Infrastructure for Territorial Cohesion*, as a matter of fact, it is necessary to take into account the achievements already made by that project, mainly concerning the “territorialities of technologies”, since they are a relevant input and an important support to the development of the present Project.

(2) The second component regards the “content” of the Information Society, which comprehends information (available through ICTs), communication (levels of interactions: information, one-way interaction,...) and users (who are able to transform information into knowledge). An integrated analysis of both types of “components” (previously pointed out)

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<sup>9</sup> See the Final Report of the Project 1.1.2 – Urban-Rural Relations in Europe (2002-04), p. 16.

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will permit to understand the territorial aspects of the information society and assess whether the ICTs and initiatives on information society are making space more even and promoting a balanced and sustainable development of the territory of the EU or are exacerbating disparities between regions, both inside and across countries.

Furthermore, this project is expected to define concepts and to find appropriate territorial indicators, typologies and instruments as well as methodologies to identify trends with special reference to regions (preferably below NUTS 2) concerning the development of the information society and taking into account typologies developed by other ESPON projects (on polycentrism, urban-rural relationship, transport trends and R&D impact). Therefore, the project should be sustained by empirical, statistical and/or data analysis. In this context, it is important to outline that the purpose is not to use all indicators available in different sources, but instead, the project would probably benefit from an inductive hypothesis approach to indicators definition.

### ***iv) Primary research issues envisaged***

- Provision of a review of the scientific literature on the research issue.
- Provision of an operational concept of Information Society (based on the components selected in section ii) building upon existing research that could be practicable and measurable at different levels (macro, meso and micro) and also taking into account the diversity of the European territory regarding the use of ICTs. This definition should also encapsulate the European orientations on this subject. Regarding this point it is important to identify, gather and propose indicators and map-making methods to measure and to display the state and trends of the development of the information society. Moreover, the project should also pay attention to existing European studies as basis for the development and identification of an operational common platform and methodology for approaching the territorial dimension of the information society.
- Definition of typology of areas (preferably at NUTS 3 or 2 level) regarding the incorporation or development of the information society taking into account the concept previous defined.
- Analysis of the effects that the information society has on spatial development. Regarding this point the aim is to analyse the role of the information society as an instrument for strengthening territorial cohesion in particular with regard to FUA's, rural and geographically handicapped areas. In this issue the three level approach developed by ESPON should be applied. Furthermore, typologies developed in other ESPON projects, as well as used in the field of European spatial policies (e.g. mountain areas) should be taken into consideration.
- Assessment of the contribution of the Information Society to the relocation of economic activities (industry and services) and households, as well as to reduce transport demand and traffic congestion. Regarding this issue the project should take into consideration not only the positive effects but also the rebound effects (i.e. the unintended and unforeseen effects) that may support the concept of sustainable information society<sup>10</sup> or not.

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<sup>10</sup> See Spangenberg, J. and Mesicek, R. (2002).

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- Identification of a possible correlation between e-initiatives, traditional indicators on regional competitiveness and contextual factors such as age structure and educational attainment.
- Definition of policy recommendations taking into account the three level approach in order to overcome traditional disadvantages deriving from remoteness and distance and enhance and support the sustainable introduction and use of ICT and ISTs

### ***v) Expected results and timetable***

The research undertaken is supposed to work on the data and information available from the EU, transnational, national and regional level and normally be based on existing administrative units.

One of the main objectives of the ESPON 2006 Programme is to focus on research with policy relevance and to contribute to the development of relevant policies. Therefore, deliverables of the project should be highly operational and as far as possible fit into the relevant political agenda. The following timetable and specification of output is reflecting this objective:

#### **September 2005 (first interim report):**

- (a) First description of the methodology and preliminary presentation of the hypothesis taking into account the objectives envisaged and the availability of data. The geography to be covered by the project includes EU 25 plus Bulgaria, Rumania, Norway and Switzerland.
- (b) Brief review of the scientific literature addressing the concept, main authors, theories and results developed up to date.
- (c) Review and presentation of an operational definition of the information society concept taking into consideration the availability and the comparability of data and indicators on this subject at different geographical levels and the European orientations and guidelines.
- (d) A first detailed and comprehensive list of statistical and geographical data to be collected from European Institutions (e.g. Eurostat, EEA, DG Information Society) and National Statistics Offices - NSO), taking into consideration that some data are already available in the ESPON Database. Regarding this point, it is important to outline that the purpose is not to use all indicators available in different sources, but instead, the project would probably benefit from an inductive hypothesis approach to indicators definition.

#### **December 2005 (second interim report):**

- (e) A detailed presentation of the methodology and of the hypothesis taking into account possible evolution on political measures and their impacts.

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- (f) First results of the research undertaken including a database, indicators and maps supporting a preliminary analysis/diagnosis of the information society in Europe. The analyses shall display the current situation and possible evolution on existing territorial imbalances and regional disparities within the ESPON space taking into account the main objectives defined in the ESDP. A second revised and extended list of data and indicators envisaged in the project should also be included.
- (g) Presentation of indicators and typologies of regions taking into consideration the different components of the information society and the possible relationship between ISTs indicators and traditional indicators on regional competitiveness
- (h) Preliminary results on the relevance of the development of the information society for spatial development regarding different types of regions and taking into account typologies developed by other ESPON projects such as 1.1.1 (polycentrism), 1.1.2 (urban-rural relationship), 1.2.1 (transport trends), 2.1.1 (transport impact) and/ or 2.1.2. (R&D impact)
- (i) Proposals of possible thematic adjustments regarding the Community policies in order to avoid unintended spatial effects and benefit from synergy and potentials in relation to the ESDP and the Structural Funds policy.
- (j) Draft policy recommendations aimed to improve parity of access to infrastructure and knowledge, including institutional settings and instruments. Particular attention should be paid to peripheral, mountain and rural areas.

### **May 2006 (draft final report):**

- (k) An executive summary of the main results of the research undertaken and recommendations for policy development.
- (l) Comprehensive presentation of the state, trends and impacts of the information society in relation to a polycentric and balanced development of an enlarged European Union
- (m) Presentation of access points and concrete ideas for policy responses to the territorial trends at different scales and in different parts of the Union, that could improve territorial cohesion;
- (n) Presentation of the developed definitions, territorial indicators, concepts and typologies linked to information society, including maps and data to the ESPON database;
- (o) Presentation of the database and the mapping developed covering as far as possible the EU 25 plus Bulgaria, Rumania, Norway Switzerland and the neighbouring countries.
- (p) Proposal for selection of good practise and positive outcome of integrating ISTs in strategies for territorial development.
- (q) Production of a glossary of technical terms related with the Information Society and used/produced along the development of the project;

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- (r) Listing of further data requirements and ideas of territorial indicators, concept and typologies and further developments linked to the database and mapping facilities.

Taking into consideration the internal evaluation process of the final reports made by the CU regarding contractual compliance, as well as the comments made by members of the Monitoring Committee and by the ESPON Contact Points, this final report should be considered as a draft version since a request for clarifications, asking for amendments and improvements might be made.

### ***vi) Rationale and structure***

The following text has the role of further shaping the mind of thinking in developing a proposal for undertaking the ESPON project 1.2.3. The text is not meant to be exhaustive, but to serve the purpose of guiding the tenderer.

#### **1. Elaboration of an appropriate methodology.**

The methodology should take account of the spatial concepts developed under priority 1, 2 and 3. The methodology should also allow indicating different policy levels (European, transnational/national, regional/local) and policy fields (especially regional and structural policies) in order to identifying the relevant actors and procedures for a better territorially coordinated policy. It should indicate the access points on how to measure the territorial effects of the policy investigated.

At present the ESPON project under priority 1 make use of several assessment methods and models. Besides developing operational assessment tools, this project should also draw upon these existing assessment methods. Further the project should keep in mind the specific needs of the end users (policy – and decisions makers).

#### **2. Indicators, data and spatial concepts.**

The concrete measurement of the concepts addressed above requires the definition of appropriate indicators and the collection of the relevant data in order to identify the spatially relevant aspects of the information society covering EU 27 + 2 (Norway and Switzerland). This work will take into account the findings of the ESPON final report on “Telecommunication and Energy Services and Networks: Territorial Trends and Basic Supply of Infrastructure for Territorial Cohesion” (Project 1.2.2) as well as the spatial concepts defined in other ESPON Projects (1.1.1, 1.1.2, 1.2.1, 2.1.1 and 2.1.2).

The focus will lay on the quantitative and qualitative analysis of concepts. Therefore the selection of indicators and data, which are accessible and meaningful at the same time, should be regarded as a reference for the further update and development. Regarding this point other European and national studies on this subject should be taken into consideration, as well as the orientations and guidelines defined at European level.

On the basis of these data, the study should provide a first analysis /diagnosis of the telecommunication and energy sector in Europe as well as the existing territorial imbalances and regional disparities in the related infrastructure.

### 3. Typologies.

On basis of the collection and analysis of relevant data, and the development of indicators, the project should consider what regionalised typologies can be developed describing the European territory. In doing this the project should explore typologies already developed by other ESPON projects as well as take into consideration previous scientific work done.

With reference to the developed indicators the typologies should be able to give an impression of the various aspects and variations at NUTS III level concerning the development of information society and identity as well as interesting cross relations between typologies.

### 4. Orientations for policy recommendations

In the light of the results of the analysis carried through, improvement of a territorial dimension of relevant policies at community, transnational and national/regional level should be proposed in the both Interim and in the Final Report. “Obviously, these recommendations have to be grounded in the ESDP policy objectives and as for all ESPON research, they should be applicable in a three-level approach including reflections on the macro, meso and micro scale. Another important element of the policy recommendations is the temporal dimension. Recommendations can be more or less valid for different time scales and the latter needs to be explicitly included in the policy recommendations. Just as with the macro, meso, micro approach concerning space, ESPON policy recommendations are expected to contain short-term, medium-term and long-term elements”. (Nijmegen Guidance Paper).

In addition, special effort should be made to differentiate recommendations to the spatial diversity of Europe providing (as far as possible) targeted proposals for interventions in particular territories taking into account the three level approach (macro, meso and micro).

Finally, it should be considered how policy recommendations and policy coordination could be ensured through relevant delivery mechanisms and how an integrated system for better implementation could look like.

### *vii) Existing access points*

The access points listed below can serve the purpose of providing the tenderer useful information for preparing a proposal. It is by no means meant to be exhaustive, but only as information that can be helpful in tracing additional useful background information:

1. The ESDP document, Potsdam 1999, [www.espon.lu](http://www.espon.lu)
2. The ESPON Website; [www.espon.lu](http://www.espon.lu)
3. ESPON 1.2.2 Final Report “Telecommunication and Energy Services and Networks: Territorial Trends and Basic Supply of Infrastructure for Territorial Cohesion”
4. The SPESP project, 1998-2000, [www.nordregio.se](http://www.nordregio.se)
5. Europe and the Global Information Society: Recommendations to the European Council -Bangemann Report (CEC, 1994)
6. Action Plan – Europe’s way to the Information Society (CEC, 1994)
7. Green Paper on Living and Working in the Information Society: People First (CEC, 1996)
8. The Green Paper on Public Sector Information: Key Resource for Europe (CEC, 1998)
9. eEurope 2002 Action Plan endorsed by the Feira European Council (June 2000)

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10. eEurope + 2003 Action Plan - A co-operative effort to implement the Information Society in Europe (June 2001)
11. eEurope 2005 Action Plan - An Information Society for All (January 2003)
12. Final eEurope Progress Report 2001-2003 (February 2004)
13. Communication from the Commission COM(2004) 757 - Challenges for the European Information Society beyond 2005 (November 2004)
14. BISER Project - <http://www.biser-eu.com/about.htm>
15. SIBIS Project - <http://www.empirica.biz/sibis/>
16. JANUS Project - [http://www.janus-eu.org/temp\\_info/home.htm](http://www.janus-eu.org/temp_info/home.htm)
17. UNDERSTAND Project - <http://www.understand-eu.net>
18. SPECTRE Project – Vision on ICT and Space

In addition, an ESPON Data Navigator creating an overview, a handbook, giving information on principal data sources, contact points etc, is under elaboration. The Data Navigator covers all countries in an enlarged European Union as well as neighbouring countries.

### ***viii) Project time table and finance.***

The project is scheduled to be carried out within approx. 12 months period and the estimated amount set aside in the ESPON programme budget is max. 150.000 €