**Part B1**

Proposal full title:

# Development of Draft Statistical Standards to a System of
# European Standard Information Accounts

Proposal acronym:

# ESIA

Date of preparation

# January 14, 2000

Proposal number

# IST-00-25139
# C

**Part B2**

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**Part B3**

# Project Objectives

**Considerations**

Multinational Europe should face many information-related tensions and conflicts and should be able to handle them. These tensions and conflicts do not tend to decrease with the enlargement of the Union. Harmonious and sustainable development assumes economic growth, productivity, the fair treatment of the needs of poor, of ethnic and national minorities, just and righteous distribution and redistribution of information, which is a significant contribution to quality of life, just to mention some of them.

While governments and the Commission do not have *a proper tool* to the government-level decision-making, they can not overview interdependencies, and there is the danger that they can not focus at the most important issues. The project should like to provide a solid foundation for an integrated macro-level tool, which - after later reviews and standardization - facilitates the policy formation and agreement among various ministerial/Directorate level and national stakeholders, when allowing to see various aspects in the frames of an integrated system.

As far as diagnosis is the precondition of any effective measure, and various information societies cannot be described and conceptualized in the present frames of SNA, the significance of the project can not be overestimated.

**The objectives of the effort are**

-   *. To create draft European statistical guidelines for the accounting process* to develope a pilot standard methodology, a system of draft statistical standards, which is based upon the System of National Accounts (ESA), and which after later, postproject discussion and approval by EUROSTAT would serve as a set of standards for the European countries to compile their national accounts of information flows and knowledge stocks. ESIA provides guidelines, according to which member countries will supply data to EUROSTAT. ESIA should also be useful for the market information providers.
-   *To create draft European statistical standards* to account information flows and knowledge stocks for commodities that constitute the bulk of information output.
-   *To implement ESIA* in the form of a standard national accounting software
-   *To compile simplified accounts for certain countries* to estimate the magnitudes of certain information flows and knowledge stocks of (at least) two countries in terms of the standard categories and procedures.

The project differs from its precedessors, which focussed at specific indicators describing various aspects of individual industries (telecomm, cable TV etc.) or individual aspects (e.g. SME-s, e-commerce, intellectual property, public opinion about ICT, households) of information economy and society. It helps European countries to respond socio-economic challenges facing the European region and the rest of the world, with providing an intellectual vehicle, a framework, which allows the central governments and the Brussels Commission to see the development of the information societies of the member countries, and the European space in a homogenous framework.

Its objective is *to found a new European satellite system of accounts*, connected to a *reformed* ESA. It aims at founding a coherent, aggregated system, really shaped to emerging European information societies. It allows to cover information related phenomena and processes, in as different problem areas, as cultural policy, education, media, telecom, e-commerce, employment, information poor and many more, in a coherent intellectual framework. Facts, policy objectives and measures should be described in terms of this framework, and statistical surveying of the impacts of various policies could be implemented. It really should help in the treatment of the policy problems at the level of the Commission and central governments.

**Part B3**

The <u>intellectual framework should be</u>
- *apt for* supplying exploratory, background and process-control information *for the functions of governments*
- apt for *defining regulation objectives* in the European countries
- apt for *modelling* of spontaneous processes and impact of regulation:
- *plausible and transparent* enough to be used in providing statistical information for the public
- *relevant*. It should be able to allow to *describe the societal reproduction of information* both in "economy" and in "privacy" in the new millennium at a macro level.
- *stabile*, which on conditions of the rapid technological development, provides solid anchors for thinking and decision making
- *coherent*. It should embed each phenomenon or process in a single and proper way. This is achieved by the application of a unified approach.
- *consistent*. This is achieved by accounting techniques.
- *comprehensive*, its input should cover all subjects, objects, events and processes that are societally significant, particularly events and processes of humans: valuation of human knowledge and skills
- *informative*, its output should extend to all macro processes which are considered by governments
- *auditable*. The figures must be accurate and exact.
- *feasible*. It should be in accordance with micro level information management/sysadm practice
- should be in accordance with and based upon activities of international professional bodies (e.g. financial audit, media audit)
- *distributable*, whose as many "natural-unit" indicators, as possible should be automatically gauged in an increasingly digital world

Actually, the project is to offer draft temporary standards for a future harmonisation, collection and interchange of European official - and proprietary - statistical data. EUROSTAT and national statistical offices should test, improve and adopt these standards. ESIA should adopt statistical concepts to describe the dynamic global environment. It defines and offers techniques to measure statistical indicators on the nature, the dynamics and socio-economic impact of the new information economy and society. It also envisages a multidisciplinary teamwork; an examination of the adequacy, relevance, quality, coherence and comparability of existing statistics on the new economy and suggests a new synthesis of the old and new data.

While this effort clearly can be classified as belonging to the Action Line V.1.4 (CPA4) of New Indicators, it is more than just development of new indicators of the new economy. It is a new theory, which aims to open new avenues to describe economics of households and other sectors which are beyond traditional economy. This is unavoidable, since production gains place in households, and the traditional distinction between production and consumption in information societies can not be held any longer.

New indicators will necessitate new methods and tools for the collection, interchange and harmonization of European official statistical data, for improving data quality and establishing quality assurance standards. Information accounts are related to data collection for virtual enterprise management, and developing data collection and sampling methodologies for assessing accessibility, skills renewal.

Without a common, multilateral European effort, this problem cannot be resolved. The volume of the effort is so large, that it cannot be resolved without a real, large-size European – and later global - cooperation. Furthermore, there are several issues reflecting local specialities - which need local data gathering and collection, which is one more argument for launching the project in the frames of the Programme.

**Part B4**

# Contribution to Programme/Key Action Objectives

In the course of the Project, the participants in an interdisciplinary teamwork will conceptualise, define and measure statistical indicators on the nature, the dynamics and socio-economic impact of the new information economy. They will examine the adequacy, the relevance, the quality, the coherence and comparability of existing statistics on the new economy; and the development and implementation of novel data generation techniques and data collection strategies. Henceforth *this project belongs to the scope of CPA8: New indicators and statistical methods*

The Project has been based upon a visionary approach to information societies. It offers a tool for ranking priorities and valuation of various facts on static and dynamic societal phenomena. . It improves understanding of the organisational, industrial, economic, legal, policy and social challenges faced by European region the global digital economy.

ESIA may serve as a frame at development of new econometric models to assess and predict the impact of major new eCommerce solutions and practices on industrial competitiveness in *Action line I*. ESIA provides a model for inter and intraunit flows and stocks, while vice versa, some workplace technologies may exploit micro-level indicators deduced from the macro level model. Intracompany and inter-organisational working, output, cooperation measures, usefulness of contribution, intensity of work again, should be monitored, and measured, this is again closely related the present system of indicators.

The Project improves understanding of the linkages between IST-enabled work and sustainable development in a global Information Society. Particular attention is given to social relationships in the workplace. It allows for definition of performance indicators for companies with large intangible asset bases and development of management instruments to evaluate possible investments in the intangible assets of an enterprise.

In Action I.3. the Programme envisages systems enhancing the efficiency and user-friendliness of administrations. The Project objective is the development and implementation of a coherent, multipurpose system, which obviously will enhance the efficiency of administrations, hence *contributes to Action I.3*. It also allows for innovative approaches for taxation.

ESIA – from the aspect of substitutable and commensurable iformation goods and indivduals – will describe the impact of ICT on growth and employment, on education and training approaches, on linguistic and cultural diversity, on our cultural/knowledge heritage. This will include the impact of advanced interactive audio-visual systems, complementarities and convergences between networked (e.g. Internet, future Web) and broadcast (e.g. digital interactive) delivery modes, new metrics and quality control criteria for valuing information assets, new business models for multimedia, audio-visual services and disintermediated communication, effective use and management of information, as well as the identification of key areas for new business and trade development. Consequently ESIA assists in handling

the consequences of develepments in *Action line III* concerning cultural heritage, digital content, education and natural language processing.

To conceptualise and classify information commodities, phenomena and processes, the Project will conduct socio-economic research to appraise the key social, economic, organisational and behavioural changes brought by the integration of IST, impacts of new technologies and services on work and biusinesses. It will define the 7-year vision of new modes of service delivery in these areas, and provide new metrics and evaluation criteria for monitoring progress. It also will enable the needs for econometric modelling to inform policy development., revealing new opportunities for economic growth, employment, social inclusion. By this it can provide a background to research in the frames of CPA7.

Statistics on access, traffic, workload should be based on registers, which come from identification and authentication systems. This is, why architectures, protocols, technologies, tools, systems and services, which will be developed and demonstrated in the *Action Line for trust management*, identification, authentication of individuals, services, items of equipment, and agents,.are important.

Obviously there are more action lines which are closely related to the activity within Project ESIA. Due to the interrelationships, the Project should be concertated with other projects in the framework of the Community, to assure the flow of information to and from the project in accordanve with a Concertation Plan.

**Part B5**

# Innovation

## Novelty of the research

### ESIA fundamentals

Information society is based upon and can be charaterised by societal reproduction of information commodities and humans. The best tool for describing national and global processes is national accounting [35],[51],[55]. The Project aims to define standard "information accounts", satellite account as U.N. Statistical Division defiens them.

Concepts and terms of national accounting has already been been applied since the seventies e.g. in [21],[22],[23],[27] and [36] to analyse input and output of "information economy" and "information sectors".

So far, no standard European "information society satellite" accounts have been elaborated, which would focus at European priorities and features. Statistical offices and EUROSTAT, except some actions, like [15],[16],[17], for a whole long period made information society equal to the production and penetration of ICT technologies. In the last years, however, influenced by governments' actions for information society, each launched projects aiming at the development of information statistics, which can be illustrated by [28],[33],[37],[14],[24],[25]. The suppliers of the information market so far offered less comprehensible approaches (e.g. "rankings") [33],[39], which celarly are not suitable for serious government-level decision making. Some of the international organisations are active in the field [19],[40],[50],[13],[20], [86]. EC is also operating regular surveys [12],[18], but the effort is not comprehensive.

Hence assumed "knowledge-basedness" and real properties of existing and operating European information societies have never been really justified or identified. International community has no good quality data concerning production and particularly trade with services. Standard nomenclatures, like [4], fail to allow seeing the processes in comprehensible terms, particularly those of digital services and products. As [34] concluded "'software" represents an increasing proportion of the ICT supply sector, and the existing official statistics do not provide adaquate conceptual or operational categories…"

The document [34] discusses input-output matrices and satellite accounts, as which could be used to examine intangibility, value added, productivity and to trace the process of production and intermediate and final consumption. It also underlines that "there might be a need to develop a well-defined, well-focused system of interrelated satellite accounts".

[5] launched an effort to develop value and bit-indicators to measure information output, information consumption etc. by sectors for a certain group of commodities and "information accounting". Then in [7] an attempt was made to define a coherent

satellite system to SNA, in 1994. In the frames of this system, society − including economy − is viewed as the *societal system of reproduction of information*. *Information flows* are treated in accordance with economic flows. *Information* itself is viewed as something carriable by commodities and humans, and whose volume and monetary value can be estimated or measured in various situations. *Commodities* are defined as accounted and (so far) non-accounted goods, and non durable signals. In various qualities, humans, human capital and valuables, are also involved in the system. *Information accounts* show information flows and knowledge stocks in the society of a country, a region or the Community. *Transactions* are valuated and accounted in natural unit and value terms. That means, describes information phenomena and processes not only in the information industries, but also in the whole society in a *coherent way*. It is dealing with all flows and stocks, not only with those in the businesses and those, which are related to consumption by the population. *Main indicators* include information flows, output, final and productive information consumption and use, export, import, various externalities, waste, acquisition and loss of stocks of knowledge in common natural and monetary units. The classifications include public/private/government, profit/non-profit, electronic/non-electronic, human/ machine, domestic/non-domestic, EU/Non-EU and more. The *dual approach* also allows revealing societal importance of phenomena even if they are hidden when viewed in monetary terms as in the case of cultural services. Some of the main aggregates have been tentatively estimated for a country [49], and the results were shown in [8] and [9], but the system as a whole was not implemented.

The objective of the project, as a whole, is the development of a Draft ESIA, a novel European intellectual framework, which will use [7] as a starting point.

The process of development includes activities, whose objective is the testing of certain methods and approaches. However, considering that Draft ESIA, the main output of the effort is not yet a marketable product or prototype, these test elements, even if they are clearly discernible, can not be viewed as "demonstration", and the whole project should be qualified as an R&D project.

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**Part B6**

# Project Workplan

## a) Introduction

The objectives of the project, as approved and contracted by the Commission, will be described in the actual versions of the detailed Project Workplan to be prepared according to the rules of PRINCE. When preparing actual versions of Project Workplan, requirements and needs of the Commission and market demand will be considered and harmonised with the interests of the participants. The actual Workplan will be a part of the normative documentation of the Project. The actual Workplan will provide participant-, and workpackageresource-level lists of all products and activities, which have been described in the documentation standard of Version 1.0. Guideline for each workpackages and each information commodity. It will include weekly plan and various workplan management tools, so that each participant person as well as the Project Management will be able to follow the events.

The output of the Project is an extremely sophisticated product, it should cover the live present and future world of information. The participants from various countries should work in remote offices with a large number of services, and goods, their expertise should extend to most different areas. The Workplan should identify the production processes, in which the effort of the participants and subcontractors can be amalgamated in a most effective way.

The work to be completed, which will be organised in a top-dow and then bottom-up way, will consist of five phases.

*First* – using an existing information accounting system as Version 1.0 of Draft Guidelines of ESIA, ESA and SNA, analyis of needs and references, the Version 1.1 of will be compiled. Then, in the *second phase*, experience will be collected concerning the Version 1.1 and specification of generic classifications and indicators will be given for raw and ESIA indicators and classifications, measurement procedures for various information commodities and Humans. Draft standards will be prepared for these commodities. In the *third phase* Version 1.2. of the Guidelines will be compiled, exploiting the experience, collected in the course of elaboration of draft commodity standards. Version 1.2. will be used in *phase four* to prepare aggregates of simplified accounts and a software implementation of Draft ESIA. Then Version 1.3. of the Draft ESIA Guidelines will be edited using the experience obtained in phase four.

In the first, third and fith phases a government user – which collects and uses data and regulates - will take part in the work in addition to representatives of official statistical users in the Project Management Board and the opinion of other users will be required before issuing Ver 1.2 and 1.3 Guidelines.

It is a plus, that Version 1.0 already includes detailed standardised lists of activities (of participant persons) and their outputs concerning the parts of the commodity workpackage. This workpackage requires the bulk of the resources. The activities include the collection of a big quantity of relevant background information (references, data-collectors, surveys, questionnaires, indicators, definitions, classifications, figures of indicators, populations observed, price/service-lists, sampling methods, regularity of surveys, authoritative data sources, statistical and commodity standards, regulations, dominant market players, international organisations and so on), critical analysis and definition of raw and ESIA items, and estimation/determination/ imputation of figures.

In the present document, the work will be described by project-level and workpackage-level deliverables, events and milestones. The figures concerning the workload and duration of the activities have been estimated on the basis of the former experience with Ver 1.0.

## b) Project planning and timetable

### Project level Gantt diagram

Months

| Work-package | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |

## d) Detailed project description broken down into workpackages

## d1) Workpackages

B1 Workpackage list

| No | Title | Lead contract or No | Person months sum | Start month | End month | Phase | Deliver-able No |
|---|---|---|---|---|---|---|---|
| 1 | Development of draft standards of commodity-measurements in ESIA | [1] | 192 | 4 | 13 | * | D1.1 |
| 2 | Development of a draft standard of accounting the transactions of humans | [1] | 37 | 4 | 14 | * | D2.1 |
| 3 | Development of draft ESIA Guidelines | [1] | 26 | 1 | 24 | * | D3.1 |
| 4 | Implementation of draft ESIA as a Software Template | [1] | 8 | 17 | 21 | * | D4.1 |
| 5 | Compilation of a set of simplified accounts | [1] | 74 | 16 | 20 | * | D5.1 |
| 6 | Project Management | [1] | 42 | 1 | 25 | * | D6.1, D62.1-2, D6.3.1-3, D6.4.1-9 |
| 7 | Market analysis/Dissemination/Exploitation | [1] | 20 | 1 | 25 | * | D7.1-2 |
| 8 | *Total* | *[1]* | *380* | *1* | *25* | | |

* Each workpackage contains a number of units of various phase.

## d2) Deliverables at the project-level

| B2. Project-level deliverables list |
|---|

| Deliverable No | Title of deliverable | Delivery date MM | Nature | Dissemination level |
|---|---|---|---|---|
| D1.1 | Report on draft commodity mesurement standards of ESIA | 15 | O | PP |
| D2.1 | Report on Draft Guidelines of Accounting of End-User in ESIA" | 16 | O | PP |
| D3.1 | Draft Guidelines of a System of European Standard Information Accounts Version 1.3 | 24 | O | PU |
| D4.1 | Report on the Implementation of ESIA as a Software Template | 24 | R | PU |
| D5.1 | Report on the Compilation of simplified ESIA accounts | 22 | R | PU |
| D6.1 | Project Management Handbook | 1 | O | CO |
| D6.2.1-2 | Six-monthly Progress Reports | 7,19 | R | PP |
| D6.3.1-2 | Annual Reports of the Consortium to the Commission | 13,25 | R | PP |
| D6.4.1-9 | Bi-monthly Management Reports | 3,5,9,11, 15,17,21 ,23 | R | PP |
| D6.5 | Final Management Report | 26 | R | PP |
| D7.1 | Ver 1.3 Market analysis of ESIA products | 25 | R | CO |

**R** - Report
**P** - Prototype
**D** - Demonstrator
**O** - Other

**PU** – Public
**PP** – Restricted to other project participants (including the Commission Services)
**RE** – Restricted to a group specified by the consortium (including the Commission Services)
**CO** – Confidential, only for members of the consortium (including the Commission Services)

### d3) Events and milestones at the project-level

The milestones are printed with bold characters.

B2. Project-level events and milestones list

| Event, milestone No | Event, milestone | Date the end of month |
|---|---|---|
| 1 | Draft Guidelines of a System of European Standard Information Accounts Ver 1.0 closed | 1 |
| **2** | **Draft Guidelines of a System of European Standard Information Accounts Ver 1.1 closed** | **3** |
| 3 | Scientific conference on information accounting, audit, national accounts in the information age and satellite accounts for information society closed | 6 |
| 4 | „Draft Standard of Measuring of Plain Point-to-Point Telecomm Services in ESIA" closed | 7 |
| 5 | „Draft Guidelines of Measuring of Internet services in ESIA" closed | 8 |
| 6 | „Draft Standard of Measuring of Print and Paper Media in ESIA" closed | 9 |
| 7 | „Draft Standard of Measuring of Magnetic Media in ESIA" closed | 10 |
| 8 | „Draft Standard of Measuring of Optical Media in ESIA" closed | 11 |
| 9 | „Draft Standard of Measuring of Broadcasting/Programming in ESIA" closed | 12 |
| 10 | „Draft Standard of Measuring of Education in ESIA" closed | 12 |
| 11 | „Draft Standard of Measuring of Cultural Services in ESIA" closed | 12 |
| 12 | „Draft Standard of Measuring of Advertisment in ESIA" closed | 12 |
| **13** | **Report on the draft commodity measurement standards of ESIA closed** | **13** |
| 14 | „Draft Guidelines of Accounting of User in ESIA" closed | 13 |
| 15 | "Draft Guidelines of a System of European Standard Information Accounts Ver 1.2" closed | 15 |
| **16** | **Report on the compilation of simplified ESIA accounts closed** | **21** |
| **17** | **Report on the implementation of ESIA as a software template closed** | **22** |
| **18** | **Draft Guidelines of a System of European Standard Information Accounts Ver 1.3 closed** | **24** |
| 19 | Scientific conference on a System of European Standard Information Accounts and on the information flows and knowledge stocks in Europe closed | 24 |
| 20 | Ver 1.3 Report on market analysis of ESIA products closed | 25 |

## d3) Project-level activities

B2. Project-level activities list

| Activity No | Activity: | Start on M | End on M | User of the Act.: Act. No |
|---|---|---|---|---|
| **1** | Distribution of Draft Guidelines of a System of European Standard Information Accounts Ver 1.0 | 1 | 1 | 2,4 |
| **2** | Analysis, discussion and development of Ver 1.0 | 2 | 2 | 3 |
| **3** | Edition of Management Handbooks (Documentation Standards, Quality Plan etc.) | 1 | 2 | 3-20 |
| **4** | Edition of Draft Guidelines of a System of European Standard Information Accounts Ver 1.1 | 3 | 3 | 5-17 |
| 5 | Scientific conference on information accounting, audit, national accounts in the information age and satellites for information society | 6 | 6 | 6-17 |
| 6 | Preparation of „Draft Standard of Measuring of Plain Point-to-Point Telecomm Services in ESIA" | 4 | 7 | 16,17 |
| 7 | Preparation of „Draft Guidelines of Measuring of Internet services in ESIA" | 4 | 8 | 16,17 |
| 8 | Preparation of „Draft Standard of Measuring of Print and Paper Media in ESIA" | 4 | 9 | 16,17 |
| 9 | Preparation of „Draft Standard of Measuring of Magnetic Media in ESIA" | 4 | 10 | 16,17 |
| 10 | Preparation of „Draft Standard of Measuring of Optical Media in ESIA" | 5 | 11 | 16,17 |
| 11 | Preparation of „Draft Standard of Measuring of Broadcasting/Programming in ESIA" | 4 | 12 | 16,17 |
| 12 | Preparation of „Draft Standard of Measuring of Education in ESIA" | 4 | 12 | 16,17 |
| 13 | Preparation of „Draft Standard of Measuring of Cultural Services in ESIA" | 8 | 12 | 16,17 |
| 14 | Preparation of „Draft Standard of Measuring of Advertisment in ESIA" | 4 | 13 | 16,17 |
| **15** | Preparation of „Draft Guidelines of Accounting of Humans in ESIA" | 4 | 13 | 16,17 |
| **16** | Preparation of a report on the draft standards for measuring information commodities in the ESIA | 13 | 13 | 17,18,19,21 |
| **17** | Preparation of "Draft Guidelines of a System of European Standard Information Accounts Ver 1.2" | 15 | 15 | 19,20 |
| **18** | Preparation of "Research Report on the Compilation of simplified ESIA accounts" | 21 | 22 | 19,20,21,22 |
| **19** | Preparation of "Report on the Implementation of ESIA as a software template" | 22 | 24 | 20,21,22 |
| **20** | Preparation of "Draft Guidelines of a System of European Standard Information Accounts Ver 1.3" | 24 | 24 | 21,22 |
| 21 | Scientific conference on a System of European Standard Information Accounts and on the information flows and knowledge stocks in Europe | 24 | 24 | 22 |
| 22 | Preparation of Ver 1.3 Report on the market analysis of ESIA products | 1 | 25 | |

## D5) Description of workpackages

Legend: WL=Workload (months), DU=Duration (months). The participant x was denoted by [x].

| **WP1 Development of draft standards of commodity-measurements in ESIA** |
|---|

| Workpackage number: | WP1 | Start date or starting event: | | | | 4. month | | |
|---|---|---|---|---|---|---|---|---|
| Participant number: | | [1] | [3] | [4] | [5] | [6] | | |
| Person-months per participant: | | 84 | 39 | 19 | 15 | 26 | | |

**Objectives: Definition of measurement procedures for raw ESIA indicators**
To define raw, and (value and natural unit) ESIA commodity indicators, which characterise information input, output, transborder flow, use, consumption, accumulation of information added (waste, capital formation, productive consumption, final consumption) and knowledge stocks in accordance with generic definitions of ESIA. To define sample surveys as well as a processing methodology, with the aid of which the value of raw indicators can be estimated and transformed to ESIA commodity indicators.

**Description of the work:** Preparation, submission to the PS and critical analysis of relevant contributions to economics and macrostatistics, of an inventory of information services and goods and their classifications**, of i**nternational legal, professional and technical backgrounds (standards), regular national and international data collectors, sample surveys, methods, indicators and standard aggregated data sources in the concerned countries.
a)    Plain point-to-point telecomm services
b)    Internet services
c)    Newspapers, journals and magazines, posters
d)    Books and other paper based products
e)    Unrecorded and off-the-shelf recorded tapes, diskettes and cards and memory chips
f)    Unrecorded and off-the-shelf recorded disks, films, and photopapers
g)    TV-, and radio programming, cable-TV programming, SMATV, TV-, radio broadcasting, cable TV services
h)    Advertisement services
i)    Education and learning
Data for various transactions to be aggregated by sectors (households, businesses, public, government, domestic/foreign) will be collected and studied. Groups and kinds of actors as well as big actors on the European services market will be identified and their services lists will be collected. Methods for revaluation of indicators in bit terms will be defined, implemented and analysed. Criteria, for production/consumption/accumulation boundaries will be analysed. Conceptual frameworks of European markets, of information commodities, and an accounting methodology of information flows and knowledge stocks will be developed for ESIA.

**Deliverables**
D1.1 Report on draft commodity-mesurement standards of ESIA

| **Workpackage level milestones and expected results** |
|---|

| No | Activity | WL MM | DU M |
|---|---|---|---|
| 1.1 | „Draft Standards of Measuring Plain Poin-to-Point Telecomm Services in ESIA | 20 | 9 |
| 1.2. | „Draft Standards of Measuring Internet Services in ESIA" | 20 | 9 |
| 1.3. | „Draft Standards of Measuring Print Media in ESIA" | 20 | 9 |
| 1.4. | „Draft Standards of Measuring Books and Other Paper Media in ESIA" | 20 | 9 |
| 1.5. | „Draft Standards of Measuring Magnetic Media and Chips in ESIA" | 20 | 9 |
| 1.6. | „Draft Standards of Measuring Photo and Optical Media in ESIA" | 20 | 9 |
| 1.7. | „Draft Standards of Measuring Broadcast Media in ESIA" | 20 | 9 |
| 1.8. | „Draft Standards of Measuring Advertisement Services in ESIA" | 20 | 9 |
| 1.9. | „Draft Standards of Measuring Education and Learning in ESIA" | 20 | 9 |

| **WP2 Development of a draft standard of accounting the transactions of humans** |
|---|

| Workpackage number: | WP2 | Start date or starting event: | | | | 4. month | | |
|---|---|---|---|---|---|---|---|---|
| Participant number: | | [1] | [3] | [4] | [5] | [6] | [8] | |
| Person-months per participant: | | 41 | 3 | 1 | 4 | 17 | 12 | |

**Objectives:**
Elaboration of accounting the processes at the interface of machine and of human end-user

**Description of the work:**
*References for definition of user groups* will be collected and reviewed. Big user groups, with their typical machine environment, inputs, outputs and processing habits will be identified to collect raw extensional and intensional ESIA data. A set of surveys will be defined. *References* in human behavioral psychology, psychology of learning, computer ergonomy, cognitive sciences etc. concerning human input, output, processing and accumulation. rates of speaking, reading, writing, browsing, watching, mousing, keyboarding, writing, typewriting, acccessing, recording, speaking, viewing/watching, spontaneous learning and understanding will be analysed. Known measurement situations will be classified, the data critically reviewed. Then the most appropriate methodologies and figures will be selected. Principles of information accounting, and related law issues, technical standards of digital recording, access, transfer, processing and displaying, will be studied. *Raw extensional indicators* will be identified that are to measure information input and output, consumption, use, accumulation and assets of the corporate or private user in typical PC end-user environments. References will be collected concerning metering software, and the opportunities of the available operating systems software will be studied to meter applications and monitor the user. Related good system management practice and rules will be studied. A monitoring software will be defined and implemented to meter the average performance and other parameters of users, considering privacy rights. A sample survey to determine the average performance and activity of humans of members of dominant user groups in typical situations will be defined and executed. ESIA indicators to characterise the users, transformation and accounting rules will be developed, for the man, machine and man-machine interface in accordance with the principles of information accounting

**Deliverables:**
D2.1 Report on „Draft Guidelines of Accounting of End-User in ESIA"

| **Workapcakage level milestones and expected results** |
|---|

| No | Activity/result | WL MM | DU M |
|---|---|---|---|
| 2.1 | Analysis and definition of homogenous groups of users in the next 7 years, for the purposes of ESIA [1],[4],[6],[5], | 2 | 1 |
| 2.2. | Analysis of relevant statistics and regulations of human resource, labour and intellectual property, forecast [1],[6],[5] | 12 | 2 |
| 2.3. | Analysis of relevant models of humans as information processing machinery. [1],[6],[5],[8] | 12 | 3 |
| 2.4. | Compiling a provisional conceptual ESIA framework for humans and his/her activities including raw and ESIA indicators and classifications [1],[6][5],[8] | 2 | 1 |
| 2.5. | Analysis of relevant software metering methods and packages, system/network operating and management and supervising tools, user monitoring software, that can be utilised in ESIA [1],[6],[5],[8] | 8 | 2 |
| 2.6. | Design of a monitoring software [1],[6],[5] | 4 | 2 |
| 2.7. | Implementation and testing of the software [1],[6],[5] | 8 | 3 |
| 2.8. | Surveying, drawing clonslusions [1],[4],[6],[5] | 2 | 3 |
| 2.9 | Edition of the Draft Guidelines of Accounting Humans in ESIA [1] | 1 | 1 |

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| WP3 Development of Draft ESIA Guidelines |
|---|

| Workpackage number: | WP3 | Start date or starting event: | 1. month |
|---|---|---|---|

| Participant number: | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | |
|---|---|---|---|---|---|---|---|---|---|
| Person-months per participant: | 12 | 1 | 2 | 2 | 5 | 3 | 1 | 1 | |

| **Objectives:** To compile Draft Guidelines of a System of European Standard Information Accounts. |
|---|

**Description of the work**

The concepts, definitions, classifications, methods, accounts, commodities defined in ESIA Guidelines Ver 1.0 will be reviewed and thoroughly discussed in the context of new (digital) commodities, e-economy, European statistical system, and recent user needs at EC and European governments. Then Ver 1.1 will be compiled. Then in the frames of the commodity-workpackages and of „User" workpackage of the present Project, details of Ver 1.1 will be tested and elaborated. Recommendations will be incorporated and Ver 1.2 will be drafted and circulated. Ver 1.2 will be improved exploiting the experience gained from implementation of ESIA as a software templateand compiling the aggregates of simplified accounts. Then Ver 1.3 will be edited.

**Deliverables**

D3.1 Draft Guidelines of a System of European Standard Information Accounts Ver 1.3

| **Workpackage level milestones and expected results** |
|---|

| No | Activity/result | Work-load MM | Durat-ion M |
|---|---|---|---|
| 3.1 | Draft Guidelines of a System of European Standard Information Accounts Ver 1.1 | 8 | 3 |
| 3.2 | Draft Guidelines of a System of European Standard Information Accounts Ver 1.2 | 9 | 3 |
| 3.3 | Draft Guidelines of a System of European Standard Information Accounts Ver 1.3 | 9 | 3 |

| **WP4 Implementation of Draft ESIA as a software template** |
|---|

| **Workpackage number:** | WP4 | **Start date or starting event:** | | 17. month |
|---|---|---|---|---|

| **Participant number:** | [1] | [2] | | | | | |
|---|---|---|---|---|---|---|---|
| **Person-months per participant:** | 4 | 4 | | | | | |

| **Objectives:** |
|---|
| Implementation of the core of the Draft ESIA as a software |

| **Description of the work** |
|---|
| An off-the-shelf national accounts compilation software package, will be used for the implementation of a pilot version of the ESIA Ver 1.2. This package promises the required flexibility needed to be able to implement the ESIA in terms of software. Data concerning a country and relating to the years 1997-98 will be loaded in and utilised to assess the system and the package. Subsequent to the implementation, recommendations will be formulated. |

| **Deliverables** |
|---|
| D4.1 Research Report on the Implementation of ESIA as a software template, using IAS'96 package |

| **Workpackage level milestones and expected results** |
|---|

| No | Activity | Work-load MM | Durat-ion M |
|---|---|---|---|
| 4.1. | Acquisition of programming skills with the program package, consulting [1],[2] | 1 | 1 |
| 4.2. | Implementation of ESIA accounts, design data model, classifications, consulting [1],[2] | 2 | 1 |
| 4.3. | Loading the data into the system [1] | 3 | 2 |
| 4.4. | Testing and improvement [1], [2] | 1 | 1 |
| 4.5. | Report writing [1], [2] | 1 | 1 |

<div align="center">**WP5 – Compilation of a set of simplified accounts**</div>

| Workpackage number : | WP5 | **Start date or starting event:** | | | | 16. month | |
|---|---|---|---|---|---|---|---|
| **Participant number:** | [1] | [3] | [4] | [5] | [6] | [7] | |
| **Person-months per participant:** | 35 | 15 | 2 | 6 | 15 | 1 | |

**Objectives:** To determine some figures of ESIA aggregates in three different EU member countries and in an associated country in common natural units and according to the methods of Ver 1.2 for the commodities that will be covered by Draft ESIA standards and "users" as well as totals for the period l997-98 will be compiled. Value terms will be related to the figures in bits providing estimations of productivity.

**Description of the work**
Figures for the value of raw output and input indicators for the commodities will be collected from various sources. Raw output and input indicators will be identified, whose value can be determined on the basis of the data that will be available. Per unit equivalents will be estimated. The value of aggregates will be determined from extensional and intensional indicators and accounting rules and imputation.

**Deliverables**
D5.1 Report on the compilation of simplified ESIA accounts

**Workpackage level milestones and expected results**

| No | Activity | Work-load MM | Durat-ion M |
|---|---|---|---|
| 13.1. | Additional data collection for the years 1997-98, [7],[1],[3],[5],[6] | 14 | 1 |
| 13.2. | Execution of the transformations, preparation of standard tables, and accounts, productivity figures | 39 | 3 |
| 13.3. | Report generation on the findings | 6 | 1 |

| Workpackage number : | **WP6 – Management and Co-ordination** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Start date or starting event:** | 0 -Project start | | | | | | |
| **Participant number:** | [1] | [2] | [3] | [4] | [5] | [6] | [7] |
| **Person-months per participant:** | 24 | 1 | 1 | 1 | 1 | 1 | |

**Objectives**

WP0 is a non technical work package concerned with the general administration and co-ordination of the project throughout its life cycle. The objectives of this work package are:

- Resource allocation and financial administration
- Progress and problems monitoring of each work package
- Troubleshooting and project plan refinements
- Co-ordination and co-operation amongst the workpackages
- Definition of project-internal standards and a quality plan for approval by the consortium

**Description of work**

The work will be executed by the members of the Management, which consists of the Board, Co-ordinator, , Secretariat, and Local Project Managers. The operation of the management is outlined in the Part C5 "Project Management"

**Deliverables**

The documents recommended in PRINCE and by the Commission (Project Management Handbook, Six-monthly Progress Reports, Annual Reports, bi-monthly Management Reports, Final Management Report, etc.)

**Milestones and expected result**

Main milestones of the project will be also milestones for the management workpackage. The expected result of this workpackage is that the project will progress on time and to budget, and the foreseen deliverables will be realised.

| Workpackage number : | WP7 - Market Analysis/ Dissemination/Exploitation | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Start date or starting event:** | 0 – Project Start | | | | | | | | | |
| **Participant number:** | [1] | [2] | [3] | [4] | [5] | [6] | [8] | | | |
| **Person-months per participant:** | 20 | 1 | 1 | 1 | 1 | 1 | 1 | | | |

**Objectives**:
The goal of this WP is to get an overview of the state of the art and characteristics of the markets which are relevant to the project, either as markets for the system developed by the project, or as markets in which the project results can be deployed.
Other WP7 workpackage actions include the dissemination and exploitation of project results and co-ordination with other EU funded projects and actions.

**Description of work**:

**Task 1** *Market Analysis*
It is the most important interest of the partners in the ESIA project, that they can exploit the opportunity, which will be created by setting-up a working intellectual framework, software and database, which they will keep on operating and developing after the end of the project. This means that all the partners have real interest in the provision of some kind of ESIA related services in a commercial basis, and believe that the service will be self-supporting, from the economical point of view.
The market analysis will clarify the opportunities, domains and conditions for the introduction of various products developed in the project. The work of this task will be aimed to the collection and integration of studies and researches in this field. Other projects and several firms have already carried out market analyses that can be re-used to provide a valid overview. The market analysis will concentrate on:
- size and characteristics of the markets, relevant segments and players
- need for the services provided by various ESIA applications
- review of and comparison with competitors
- likely developments over the next five years after 2002
- identification of expected economic benefit
- conclusions and recommendations for development of various ESIA based systems (eg system architecture, functionality, underlying business model, technology choices, etc)

**Task 2** *Exploitation*
Measurement standards, a software and database products are expected to be the results in the period after 2002. Results will be exploited for providing consultancy, software and database services. Standards will be used by statistical institutions, users of statistics, information management software developers and database developers, operators and users. The software will be used by databse operators and users. Database products will be used by analysts, observers, decision makers in the administration and businesses. Products will be marketed through media and techniques adapted to their potential market.

**Task 3** *Dissemination*
The consortium will actively participate in dissemination activities and orientated events. These will be undertaken both at national and European levels. The consortium will also co-operate and undertake concertation activities with other projects in the same sector or cross-sector funded by the European Commission.

**Deliverables**
D7.3 Market Analysis and Exploitation Plan of ESIA products

**Milestones and expected result**
The three Versions of Market Analysis and Exploitation Plan will investigate the business opportunities for deployment of various ESIA applications. Results will be disseminated at European and international level in concertation with other EU projects according to the Dissemination and Concertation Plans.