

**EXTERNAL MONITORING**

**OF THE**

**INFORMATION SOCIETY TECHNOLOGIES (IST)**

**SPECIFIC PROGRAMME**

**FOR**

**2002**

**Report**

## ***Report of the 2002 IST Monitoring Panel***

*This report is one in a series of external annual monitoring reports prepared for the EU Framework Programme, the Euratom Framework Programme, and their constituent specific programmes.*

*The Commission has over the years placed increasing emphasis on the evaluation of Community R&D activities. As part of the process of continuous improvement, a new programme monitoring scheme was introduced in 1995. This scheme involves independent, external monitoring experts and a timely response by Programme Management to the recommendations they produce.*

*This is the fourth and final report covering the IST Programme in the Fifth Framework Programme. It was prepared by:*

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*For earlier monitoring reports covering the IST Programme, see:*

[http://europa.eu.int/information\\_society/programmes/evaluation/index\\_en.htm](http://europa.eu.int/information_society/programmes/evaluation/index_en.htm)

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## **Executive Summary**

This is the EU's Information Society Technologies (IST) Programme's "Monitoring Report" covering the year 2002 and drawn up by a panel of five external experts. It is required by the Council Decision, which established the Programme and has the objective of supporting Programme Management in developing an efficient and effective management, as well as increasing the transparency of the Programme's implementation.

### **A Year of Major Achievements and Radical Change**

The year 2002 has been the final year of the Fifth Framework Programme (FP5) - of which the IST is the largest specific Programme, and the preparatory year for the new Sixth Framework Programme (FP6). As such, it has been a particularly busy year. The major work areas have included:

- Preparation and launch of FP6, including a call for Expressions of Interest, development and definition of the "new instruments" – the new types of projects which will be undertaken in FP6- and the production of associated documentation, as well as the development of the 2003 Work Programme. The first Call for Proposals under FP6 was made on 17<sup>th</sup> Dec 2002.
- Under Framework Programme Five (FP5), 1) The management of two Calls for Proposals with associated evaluation and contracting, 2) The launch of 823 new projects and 3) The continued management of another 1400 FP5 projects. In total, the whole of the IST FP5 budget of €57M has been committed. In addition, the Programme has continued the management of a significant number of still-live, Framework Programme Four (FP4) projects.
- The organisation of support activities for FP5 including the Annual IST Conference, monitoring and evaluation activities, etc.
- A major structural reorganisation of DG Information Society, the initial phase of a new human resources system and the preparation of systems for activity based management.

These are major achievements, and, in reading this report, it should be constantly remembered that this is a €3.3 billion Programme under FP5 transforming itself, over the course of 2002, into a €3.6 billion Programme with different structures and instruments under FP6.

It is employing roughly 1,000 people and working with tens-of-thousands of researchers across Europe.

Indeed, all this, while it works within the sometimes difficult rules and regulations, which govern the overall European Commission.

### **Focus on Four Key Management Issues**

The Monitoring Panel has reviewed IST activities, both in management of FP5 and in preparation of FP6. *Within an overall very satisfactory assessment*, the Monitoring Panel has identified four key areas where improvements are to be recommended. Namely:

- (1) **The general management approaches across the Programme.** Here we found *that greater coherence and consistency* in the approaches, techniques, procedures, and processes used to manage the same activity across the Programme *would be beneficial*. Such an approach would then permit greater integration across the various phases of the research management process (call for proposals, evaluation, selection, contracting, project review, etc.) and a greater effectiveness in implementing feedback to improve the various phases

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of research management. We discuss this under the heading of “improving end-to-end process management”.

- (2) **The preparations for IST-FP6.** Here we found *good, solid work being undertaken* in the detailing of instruments, and the preparation of calls and evaluation procedures. In addition, the preparation of the Programme for the implementation of the ERA is an area in which there will be major challenges requiring, perhaps, major new innovations in working with the Member States.
- (3) **Human Resources.** We recognise that good progress has been made in developing Human Resources management during the last year. However, two issues still require attention: 1) How to develop a common management culture across the Programme and 2) How to improve gender related practices within the Programme.
- (4) **Monitoring.** Since this is the final IST-FP5 Monitoring Report, we reviewed in some depth the experience of IST-FP5 over the last five years, and how to improve its effectiveness.

The detailed recommendations follow these four axes and focus on:

- Moving towards much more strongly integrated management processes within the Programme: “end to end” process management.
- A major effort to build an IST European Research Area across the EU.
- A greater emphasis on human resources management, especially a move to develop a common management culture across Units and Directorates.
- A move towards what we call a “sustained management consultancy” model for the External Monitoring function during IST-FP6.

### **End-to-End Process Management**

The Monitoring Panel believes that *integration* between the different phases of the Programme’s research management activities and feedback/forward loops *needs to be strengthened*, as well as giving greater attention to the project review, valorisation, and impact assessment phases.

- The traditional “operational-research based” division of Directorates makes horizontal co-ordination of the programme and common management processes difficult to achieve. At the next management reorganisation, DG Information Society should consider moving to a “management function” structure, typical of large business organisations.
- The full definition of the overall end-to-end process is necessary, along with associated management procedures. This should be supported by the development of common management tools for use across the whole IST Programme – including a Key Performance Indicator system for project supervision. It should also include a simple, supportive, quality improvement system. A Chief Operations Officer should have the responsibility for the consistent functioning of the overall system.
- In addition, we make recommendations on 1) improving the Information System supporting Management (MIS), 2) developing a strong IST-FP6 communications policy with particular focus on policy makers in Member States, 3) improving the take up of the project research outputs, and the development of a Programme-wide impact assessment system.

### **Building the IST European Research Area**

The main recommendations emphasise rethinking and then strengthening the ways in which the IST Programme works with the Member States. In particular, the IST Programme should:

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- Develop activities (fora, committees, working groups) within Member States, which permit greater interaction and discussion 1) between Member States on their own IST policy development and 2) between Member States and the IST Programme on joint RTD actions and on the development of the IST Work-Programme.
- In this context, the support and resources provided to ISTAG, as well as its role and structure, should be reviewed with a view to strengthening its work with Member States and/or developing complementary structures.
- The IST Programme should review the ERA lines of action and develop a programme to support this greater interaction with Member States. In particular, benchmarking of Member States' IST policies and programmes and networking of national research programmes would be important.
- We make additional recommendations on 1) The management of the new instruments – close monitoring, analysis and action *before* the formal 2004 review, otherwise adjustments will be too late, 2) Ensuring SME participation, 3) Ensuring international co-operation is undertaken in the best interests of the EU.

### **Human Resources**

We recommend:

- Removing as much routine administration as possible from Project Officers and centralising it in dedicated Support Units.
- Providing a programme of supportive training to Project Officers, including continual updating on the changing vision, objectives, and strategy of the Programme.
- Formalising and expanding the activities of the “Project Officers Group” as a support to developing operational management systems and quality improvement across the Programme.
- Strengthening support to Heads of Unit by 1) Establishing a common approach to Unit management and the role of Heads of Unit, and 2) Investing in a strong, common programme of management training for Heads of Unit.
- Improving the compatibility of professional and family obligations for both women and men and developing a family-friendly HR policy – as in the JRC. Forty per cent representation of women in panels and advisory groups should be a target followed in IST-FP6 and whenever panels and advisory groups are appointed.

### **The Monitoring Experience during FP5**

External and independent Programme monitoring should continue into IST-FP6. However, a move to a “sustained management consultancy” model should be made - this would entail a year round cycle of monitoring, a better follow-up along the life cycle of the programme and greater continuity between years. Adequate resources must be devoted to monitoring.

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### **1. INTRODUCTION**

This is the Report of the 2002 Annual Monitoring Panel of the Information Society Technologies (IST) Programme required by the Council Decision establishing the Programme<sup>1</sup>. Its objective is to support the IST Programme Management in its efforts to improve the effectiveness and efficiency of the Programme.

The Report is structured as follows:

- Section 1, this section, provides the Monitoring Panel methodology and a review of the objectives and achievements of the IST Programme during 2002.
- Section 2, focuses on the basic IST Programme Management activities during 2002, the final year of the Fifth Framework Programme (FP5).
- Section 3 examines the work undertaken during 2002 in the planning and implementation of the move to IST under Framework Programme 6 (IST-FP6) including issues related to the European Research Area.
- Section 4 looks at issues related to IST Programme Monitoring during FP5 (IST-FP5) and includes a review of action on last year's 2001 IST Monitoring Panel Report.
- Section 5 provides conclusions and recommendations.
- The Annexes contain:
  - Table of Recommendations
  - Review of Work and Impact of External Monitoring Panels 1999-2001
  - End-to-End Process Management
  - Presentations to Panel, Support Materials & Documentation.
  - Terms of Reference of the Monitoring Panel,
  - CVs of the Monitoring Panel.

#### **1.1. Methodology**

The monitoring exercise was carried out from November 2002 to March 2003. The terms of reference are attached in the Annex. The Panel's work was based on:

- Documentary research (See Annex)
- Presentations by Commission staff (See Annex)
- Round Table between Panel and a number of Project Officers (POs).
- Round Table between Panel and a number of Project participants.
- Individual interviews by Panel Members with POs, Heads of Unit, and Directors.
- Semi-structured interviews by Panel Members with a number of IST Programme Committee (ISTC) members.
- The Panel met on five occasions and included a visit to the Annual IST Conference in Copenhagen. It also held three audio-conferences.

The Monitoring Panel was assisted in its work by the Evaluation Unit of DG Information Society (DG INFSO) and thanks the Unit for its timely and helpful support.

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<sup>1</sup> For relevant papers see: Evaluation Unit, (2003), "Compendium of Official Texts: Evaluation & Monitoring" (Ten various relevant EU papers and texts) Evaluation Unit, January 2003.

## **1.2. IST Programme Achievements**

The IST Programme has undertaken a number of major tasks during 2002:

- Implementing the 2002 Work Programme,
- Preparing for IST-FP6
- Contributing to the broader spread of EU objectives and policies.

### *1.2.1. Implementing the 2002 Work Programme*

The core of the IST Programme is, of course, the implementation of well-targeted, well-managed research projects. And in this, it has continued the good work noted in previous Monitoring Reports through the implementation, this year, of the 2002 Work Programme. The research launched during 2002 has served to:

- Complement and extend research already commissioned – particularly in networks and distributed systems, micro- and opto-electronics and in health systems.
- Reinforce e-Europe 2005 especially in take-up of e-commerce, e-health, e-government and e-learning activities.
- Support Community policy on Third Generation Mobile Communications,
- Preparing for IST-FP6 in areas, such as cognitive vision, reliable software, quantum-scale processing, etc.

The annual Integrated Programme Portfolio Analysis (IPPA – see Section 3.2 for full discussion) has continued to be an important management tool in analysing and planning the research portfolio. The 2002 Analysis highlighted:

- The development of a coherent research programme, which has moved in the last two years towards next-generation technologies and applications and towards “ambient intelligence” research – although some research areas are still somewhat fragmented.
- A move towards longer time-horizon research associated with the “ambient intelligence” strategy developed by the Programme.
- The need for longer-term visions and a better structured research effort in some areas such as software technologies and knowledge engineering – a key challenge for IST-FP6

The year 2002 has been the final year of IST-FP5. In all, over IST-FP5, some 2,700 projects have been launched, involving more than 16,000 direct participants and 6,000 separate organisations. Particularly over the last year / two years of the Programme, a number of management improvements were noted:

- The near halving of the “time-to-contract” to about 140 days – necessary in a programme with short technology life cycles. This was achieved by developing clearer and more credible timetables for evaluation, negotiation, and contract signature, and early communication of the timetables to all concerned and parallel processing of management activities when possible.
- Similarly, time-to-payment was also reduced by better communications and transparency.

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### *1.2.2. Preparing for IST-FP6*

The preparation of the budget, structure, priorities, and instruments for IST-FP6 required a major effort during 2002 including:

- The specification of the objectives and research priorities of the IST Thematic Priority as well as that of the high capacity / high-speed communication infrastructure element of FP6.
- With the Programme management committee (ISTC) and advisory committee (ISTAG), exploring the development of the European Research Area.
- Setting up and running “Internal Reflection Groups” on the implementation of IST-FP6 as well as participating in inter-DG Working Groups for the operational preparation of FP6.
- The organisation of the IST 2002 Conference and Exhibition with the objective of preparing and developing networks for future IST-FP6 activities.
- The major structural reorganisation of DG Information Society in preparation for IST-FP6

In addition, a major effort was undertaken for the definition of the 2003-4 Work Programme for IST-FP6. This included:

- The organisation of some 12 major workshops on future research needs
- The invitation, collection and analysis of some 2,500 Expressions of Interest for participation in IST-FP6
- The development with ISTAG of “Strategic Orientations for IST in FP6”
- The work of the Internal Reflection Groups, already mentioned.

### *1.2.3. Contributing to Broader EU Objectives and Policies.*

The IST Programme, in its Council Decision, is explicitly expected to contribute to wider EU objectives. During 2002, it has achieved this through a number of channels including:

- e-Government activities: The e-Government Conference and the development of associated e-Government Awards and analysis of best practices across the EU.
- e-Health activities have ranged from the preparation of a communication on “Quality Criteria for Health Related Web Sites” to a working document on “Legal Issues in eHealth” as well as running associated workshops and conferences.
- e-Commerce has seen the setting up of the “GoDigital” initiative for SMEs including an associated summit meeting. The programme has also been involved in developing the e-Commerce Directive and the e-Business Portal.

## **2. MANAGING THE IST PROGRAMME**

This section reviews the continuing mainstream IST-FP5 activities undertaken during 2002. The following section, Section 3, goes on to look at the major effort in planning for IST-FP6 undertaken during 2002 by Programme Management.

### **2.1. Overall IST Programme Management**

For historical reasons, and to some extent because of the lack, until recently, of an overall IST Programme Director:

- (1) The Key-Actions of the Programme have operated with a high level of independence. This has produced different systems of indicators, approaches to data and statistics collection and different project monitoring and impact assessment systems. There are even differences across Units within the same Directorate. These differences were reflected in the inconsistency among this year's "Self Assessment Reports", and could give the impression that the various Programme activities do not act as a coherent Programme. The fear in the Monitoring Panel is that such perceived differences could continue into IST-FP6
- (2) There is a need for much greater commonality in the management approach between different Directorates and Units. The work and expectations of Project Officers vary from Unit to Unit. Coherence is needed if common objectives are to be achieved within common framework.

Success in overcoming these challenges can only come from a commitment at the highest levels within the DG. In this section, we discuss some possible approaches to these challenges, as well as the good practices which have been developed within parts of the DG and which deserve diffusion into the wider Programme<sup>2</sup>.

#### *2.1.1. IST-FP6 Organisational Structure*

A major opportunity for profound restructuring occurred in 2002 as the management structures were changed in readiness for IST-FP6. The Monitoring Panel also noted that the restructuring preserved the tradition of dividing operational research areas among Directors, and horizontal functions (strategy and control, finance, HR, marketing, etc) being relegated to a lower management level<sup>3</sup>, which in a commercial company and many public organisations would have been accorded Director-level status. It is possible, even probable, that such strong "operational research-based" - rather than "management function-based" Directorates - cause difficulties in achieving a coherent Programme and introducing more modern management methods.

The Deputy Director-General has been given responsibility as overall IST Programme Director. This has and will strengthen integration of activities

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<sup>2</sup> Of course, none of this seeks bland uniformity. Programme Activities are wide and varied ("IST for the elderly" works with technical applications for a highly, heterogeneous and fragmented constituency, "Future and Emerging Technologies" seeks basic research excellence) and require varied responses in the field - but *not* in basic internal management.

<sup>3</sup> Head of Units (HoUs) level

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of the various Directorates, in particular through common management tools and procedures. Given the challenges ahead, there must be full coherence between Units, visibly working as a unified Programme.

### **Recommendation**

**R1:** At the next organisational change, during FP6, the DG Information Society should consider moving from Directorates based on operational research areas to Directorates based on management function (strategy and control, finance, HR, etc)

### *2.1.2. The Management Information System*

End-to-end processes – discussed below- common management procedures and the use of management indicators imply the introduction of an adequate Management Information System (MIS).

IST-FP5 has been a major challenge for the development of the MIS system. Three FP4 Programmes, with very strong individual identities, came together to form the IST Programme. Thus, the IST-FP5 was launched without an informatics system and at a time when the model project contracts were not fully defined. The electronic proposal submission system did not work properly. Initial data was captured in a variety of ways. Software had to be continually redesigned and there was a continual process of “catch-up”. Data from Call 1 was not consistent with later data. This created difficulties, which were never fully overcome.

Recognising the future needs for a consistent FP6 information, an informatics Project Office was set up in mid 2001 by DG Research, in conjunction with the other research DGs, to oversee the development of common data capture tools. This seems to be working well. However, software development is slowed due to the late provision of information from the various Programmes Management as to the content of proposal submission, evaluation, contracts, etc. to be used under FP6. The information system architecture now supports the business process through a set of purpose-specific tools. New functionalities including user-friendly tools, integrated information structures and integrated systems for the various processes should now be developed and implemented within a predefined MIS supported framework.

### **Recommendation**

**R2:** There should be strong emphasis in the new information system on system utility and quality of service. A Users’ Group should be formed to guide applications development and provide a base for the systematic evaluation of utility. Assuming the individual tools work well, the emphasis should move to their interfacing and interoperability as a component of an overall MIS.

### *2.1.3. Public Identity and Communications*

While the Annual IST Conference is much appreciated and might be further developed, the public identity of the IST Programme is of concern to the Monitoring Panel. Public identity / awareness is important:

- To inform Parliament, Council and other policy makers of the work of the IST Programme, and promote transparency of Programme

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activities. IST should become a programme which is well understood and whose benefits are known by all.

- To provide a background of information against which EU IST policies can be developed - particularly the ERA.
- To counter the too frequent negative overall images of the EC as simply a purveyor of regulation and bureaucracy, rather than positive benefits.
- To contribute to the development of a society – public, policy makers and researchers - which can better articulate demand and use potential IST benefits in goods and services – a more critical and aware society.

Developing public identity needs the Programme to work with a number of sometimes overlapping groups:

- Researchers where there is a high awareness, understanding and respect for the Programme
- Policy formers, including politicians and those forming a wider industrial and economic development policy. Here awareness is less consistent and understanding less strong.
- The general public where knowledge of the Programme is weak.

The Monitoring Panel would like to see a clear IST-FP6 “Communications Policy”. It should include

- Both 1) IST Programme communications and 2) policy on individual IST project communications, which should be supportive of the overall IST-FP6 communications objectives.
- A clear mechanism for integrating and using the various outputs of the programme as appropriate: results of individual projects, results of impact analysis, the various studies commissioned, etc.
- A particular emphasis on reaching “policy formers” as an element in developing the IST European Research Area.

### **Recommendation:**

**R3:** The Programme should publish by September 2003 an IST “Communications Policy”, including appropriate aspects of communications from projects and with a particular emphasis on reaching policy makers in the Member States.

## **2.2. End-to-End Process Management**

Research programmes, no matter where, have a common structure: work programme development, call for proposals, evaluation, contracting, project execution and monitoring, and then programme evaluation and impact assessment. It is a fairly linear and foreseeable process with appropriate feedback, and one requiring strongly integrated, end-to-end process management.

IST Programme Management has enormous experience in research management, yet there is a persistent sensitivity in Monitoring Panels over the years as to the overall management of the Programme, particularly after project contracts have been signed. For example:

- Individual project monitoring and reporting can be efficient, but it is then difficult, if not impossible to aggregate information for effective steering and management of the Programme.

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- Project results' evaluation and impact assessment and feedback into the Programme are not sufficiently developed functions. They do not form part of a conscious Programme learning and adjustment system.

There is a need for Programme end-to-end process management (see example in Annex). No matter how good individual activity management is – and areas such as setting the work programme and proposal evaluation are excellent – overall efficiency demands an overall, integrated approach. Thus, from the very beginning of IST-FP6, there is a need for the outline of an operational plan, which interfaces and defines the management relationships between the various activities of the Programme and the related feedback, which are to guide the Programme.

In addition, there is a need for common, basic management tools – a need already identified in the previous monitoring exercises<sup>4</sup>:

- Common agreed planning,
- Work force profiling and the easy movement of personnel between Units and Directorates
- An equally high level of achievement in all KAs and Units<sup>5</sup>,
- Building on common best practices to improve overall performances,
- Homogeneous performance appraisal,

The development of common management practices requires cross-Directorate shared objectives and responsibilities. It is expected that the introduction of Activity Based Management in IST-FP6 will support the development of end-to-end process management.

### **Recommendation**

**R4:** An operational end-to-end process management should be put in place. Elements of such a system should include:

- An overall “Chief Operations Officer” to ensure the consistent functioning of such an end-to-end process management system, having full operational responsibility, the necessary resources for developing common management tools across the whole of IST-FP6, and full support from Director General level.
- The definition of the overall end-to-end process: relationships between the different activities and the associated management procedures.
- The development of common tools common across all of IST-FP6 and including the use of standard KPI (Key Performance Indicators) at project and Programme level.
- The development of a simple, supportive, Quality Improvement System

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<sup>4</sup> 1999: request for “core indicators” and common set of document forms, procedures... 2000: request for common procedures (Rec 1) and integrated program operations (Rec 5) 2001: request to improve processes (Rec's 10, 11, 12)

<sup>5</sup> Examples of the variable results include: 1) Time-to-contract: from 111 days in KA1 to 187 in KA3, 2) Time-to-payment: from 73,8% below 60 days in KA2 to 52,3% in KA3, 3) Time-to-amendment is a specific case, its variability depending on number of changes: two changes can be authorised by an amendment letter, while from 3 on a contract amendment is required.

within the Programme.

### *2.2.1. Proposal Evaluation*

The quality of the Commission's proposal evaluation system under FP5 has been the foundation of good working relations with projects and the research community and the general high esteem in which EU research is held. Researchers trust the integrity of the EU evaluation system, and it is essential that such standards of transparency and fairness continue and are seen to continue, as well as maintaining speed of evaluation, level of feedback, and so on.

Under IST-FP5, there have always been severe pressures on IST Programme Management to obtain sufficient and correct evaluators. Only with the closing of the Call for Proposals could the number and type of evaluators be ascertained and a search launched. Pre-registration, signalling the intention to submit a proposal has been tried on a voluntary pilot basis and been very helpful. It is recommended that pre-registration should move to a mandatory and permanent basis.

### *2.2.2. Project Reviews and Monitoring*

Within FP5, project review and monitoring has been too varied and comparability of information coming from projects is made more difficult. Feedback into quality improvement systems, if it takes place, is limited to one Directorate or one Unit.

The expectation of Monitoring Panels was that the project review and monitoring phase would move towards the high quality systems seen in the proposal evaluation phase. Indeed, one Monitoring Panel, following the example of the evaluation phase, requested that an annual review of the performance of the IST Project Monitoring System should be undertaken. This has not been done, and we repeat the recommendation.

Part of developing a good project review and monitoring phase is that it should be integrated with the other phases of a programme management (end-to-end process management) and that it should be reasonably well detailed at the beginning of a programme so that information systems can be put in place.

The Panel believes that a short annual review of the performance of the IST Project Review System should be undertaken by an external expert, and this Project Review System should form an integrated element within the end-to-end process management system and linked to the KPI system.

### *2.2.3. Generating and Measuring Programme Impact*

#### Generating Impact

The final impact of the IST Programme also depends on the extent to which the new-knowledge output is translated into commercial products and services<sup>6</sup>, and more broadly into impacts in areas such as employment, quality of life and health, environment and increases in

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<sup>6</sup> It is recognised that not all aspects of the IST Programme objectives relate to simple commercialisation. The FET activity relates to basic research on a longer time horizon. IT in governance or applied to the elderly may have different criteria for success, than simple commercial returns.

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European 'intellectual and social capital'. A Programme, which does not give major importance to this final transition phase of R&D, will ultimately have a weak impact and not deliver as fully as it might in its objectives.

The Programme has undertaken two types of activity to improve commercialisation:

- Intra-project efforts: requesting clearer indications of commercialisation in proposals and greater emphasis in evaluation, encouraging IPR agreements, the TIPs, etc.
- Extra-project efforts: awards and prizes for commercialisation and most notably bringing projects together with venture capitalists.

The Growth Programme impact studies and general impact analysis, which has been undertaken across the Framework Programme, as well as studies carried out in the Member States, have indicated a number of tangible and intangible impacts from the Framework Programmes. The previous studies have also pointed to difficulties in analysing the impact of the Framework programme (it is still largely so-called pre-competitive) and in attributing impact to the sources of funds. Nevertheless, we ought to know more about the operational fine grain of who, how and when EU projects move from R&D to commercial return.

### **Recommendations:**

**R5:** An in-depth analysis of the parameters associated with success, failure, and non-attempt in commercialising the R&D outputs of IST projects should be undertaken with the objective of providing operationally useful guidance to projects and Programme.

**R6:** The role and utility of the TIPs should be explored and clarified.

**R7:** A system should be put in place to rapidly identify and encourage potentially exploitable RTD outputs.

### Measuring Impacts

Two of the basic reasons for strengthening project results' analysis, and programme impact assessment are:

- To better understand how to develop and operate future programmes and projects, and
- To increase the transparency of EU activities, providing information to individuals, to researchers, and to industry as well as to the Member States, the European Parliament, and the European Commission, itself.

Until now, the tradition has been to accord impact assessment low priority and, when performed, to treat it as a minor, bolt-on activity. This must change. All EC programmes are now being required to provide evidence of the impact and effectiveness of their spending<sup>7</sup>, and in 2004 Integrated Impact Assessment will be formally required for *all* policy and programme initiatives as a part of the policy appraisal process

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<sup>7</sup> Communication to the Commission from Mrs. Schreyer in agreement with Mr. Kinnock and the President. SEC (2000) 1051 – 26/07/2000. Also in the new financial regulations: Article 27.4 and Article 28.1 ex-ante and ex-post evaluations in order to improve decision making for any proposal having an impact on the budget.

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Within the IST programme, it has been up to Directors and even Heads of Unit to decide if and how an impact assessment was undertaken and what use was made of the findings. A survey of work being undertaken on impact assessment across the programme showed a wide variety of approaches ranging from internally generated “success stories”, to reviews by appointed panels to formal, competitively contracted external assessments. It is very difficult to develop an overall IST programme impact assessment based on this work. And, indeed, a small, initial IST-wide impact assessment has been launched, with the immediate objective of supporting the coming 5-Year Assessment<sup>8</sup>.

Currently, entering into IST-FP6, the impact assessment system is just being assembled<sup>9</sup>. Responsibility is divided between two units the Strategy Unit (A2) responsible for implementation and the Evaluation Unit (A4) responsible for developing an overall strategy. Here, impact assessment is seen as operating at three levels: project level, the level of the 23 Strategic Objectives of IST-FP6 and, finally, overall IST Programme level.

Given the uneven record of IST impact analysis during FP5, there is an urgent need to establish a comprehensive FP6 impact assessment system, which is:

- Consistent across all Directorates and Units. This does not mean that all 23 Strategic Objectives use exactly the same questionnaire. It does, however, mean that there is a basic level of comparable data across assessments which are carried out, and that any differences in methodologies do not render such data impossible to consolidate.
- Consistent with the proposal evaluation, project contracting and project review and monitoring processes. That is to say that data from preceding project phases can be used as part of the impact assessment – for example, relating evaluation issues and monitoring issues to final impact of the project.
- Within a recognised management structure which is ready to use the outputs from such impact assessment for the improvement of the content and operation of the Programme.
- Within a recognised external communications structure, which is ready to use and transmit the outcome from such assessment to policy makers, Council, Parliament as well as to a wider public, to ensure the importance of IST-related RTD is widely established.

Already much good work has been done on RTD impact assessment, both in DG Information Society<sup>10</sup> and DG Research. There are already various

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<sup>8</sup> Information Fiche: Study of the Impact of the IST Programme

<sup>9</sup> "Strengthening Evaluation, Monitoring and Impact Assessment of IST RTD."

<sup>10</sup> Johnston P., et al, (2002), "European Research Co-operation as a Self-Organising Complex Network: Implications for Creation of a European Research Area", DG-Information Society. This truly innovative study employing data mining on the IST database allied to network analysis shows the potential benefits for both policy and operations.

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levels of analysis of “best practice” and certain “assessment tools” available. The issue is, as quickly as possible – and certainly before mid-2003 – to agree an IST-wide impact assessment system including detail of the information and data needed and a timetable across FP6 for such activities. By the end of 2003, systematic data and information capture should be in place, the tools for the impact assessment system should be in place and those Heads of Units or Project Officers who are going to operate the system should be trained. A common IST Impact Assessment Manual including system, tools and procedures should be available to the next IST Monitoring Panel.

The impact assessment of FP5 IST Programme and projects has just started with a small pilot project. As the FP6 assessment system unfolds, it should be “retro-fitted” to the greatest extent possible to encompass the assessment of the FP5 projects.

### **Recommendation:**

**R8:** An FP6 IST impact assessment system, and associated tools, consistent across all Directorates and Units, should be documented and available by September 2003.

### **2.3. Human Resources**

DG Information Society has been highly innovative in a number of HR areas, particularly in relation to teleworking, but there is more to do. A fully committed workforce working coherently to achieve communally accepted goals is a necessary element in reaching Programme objectives. However, during IST-FP5, human resources management has been treated essentially as an issue for individual Directorates and individual Units. And there has been a concern expressed about the “macho” culture of late-night working and week-end meetings. This said, during the last year of FP5, the first steps towards a new HR management system were introduced and a number of innovations put in place.

- **New HR System.** A new HR system has been launched on a Commission services-wide basis<sup>11</sup> and the first elements have been developed within the final year of IST-FP5. Job descriptions have been set for all members of staff and on moving into IST-FP6. In connection with this, Project Officers expected that there should be a re-balancing of their work away from routine administration and towards more involvement in “research management” in supporting and controlling in management terms individual project and Programme development.
- **Project Officers as Research Managers.** The setting up by one Directorate of a **specialised administration unit** (Contract Support Unit) to deal with contracts and the paperwork associated with project monitoring has substantially changed the role of the project officers involved, permitting them more time for non-administrative

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<sup>11</sup> European Commission, (2002), “An Administration at the Service of Half a Billion Europeans: Staff Reforms at the European Commission – State of Play Spring 2002”, Brussels.

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interaction with projects as well as for policy-related work. This could serve as a model, even if other Directorates, which have a different view of the role of the PO, have not implemented a similar structure. Again, the Monitoring Panel strongly encourages going in that direction to make better use of the capabilities of the POs.

- **Project Officer Training.** In addition to mainstream training necessary for the operation of the Programme management systems and the likely increase in team-working, a system of rolling seminars will be necessary to keep Project Officers aligned on the various and changing Programme objectives.
- **The Project Officers Group:** Most striking has been the first formal attempt to develop a structure, which captures the knowledge, experience, and insight of the Scientific Officers and incorporates it into developing better management practices and procedures. A “Project Officers Group” has been formed which has provided management support analysis in a number of areas ranging from career development to operational mechanisms for the new instruments. This innovative approach to developing management is most welcome. It should be formalised and developed as a mainstream IST-FP6 management tool.

### **Recommendations:**

The moves towards developing Project Officers as research managers, rather than administrators, should be further strengthened by:

**R9:** Removing as much routine administration as possible from Project Officers and centralising it in dedicated Support Units.

**R10:** Providing a programme of supportive training, including continual updating on the changing vision, objectives, and strategy of the Programme.

**R11:** Formalising and expanding the activities of the “Project Officers Group” as a support to developing operational management systems and quality improvement across the Programme.

### *2.3.1. Heads of Units*

The “Unit” is the first significant operational management level. However, very rarely have operational Heads of Unit, at appointment, been able to acquire the necessary management tools to run a Unit with multi-million euro annual budget and associated staff. There are strong differences from Unit to Unit in the approaches to HR management and communications and to organisational and administrative tasks in general. Sometime the management is excellent, but overall, this diversity causes problems in directing the Programme, in flexibility and openness to change and, generally, may lower the external impact of the Programme. There is need to make a much greater investment in Heads of Unit in light of the obligations resulting from the EC reform. This should entail building up the necessary management skill levels, and developing a better understanding and a more common approach across the IST-FP6 as to the role of the Head of Unit

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### **Recommendation**

**R12:** As part of establishing greater Programme coherence and Programme impact, there is a need to establish a common approach to Unit management and the role of Heads of Unit and continue to invest in a strong, common programme of management training for Heads of Unit both for general management quality and for IST management coherence.

### *2.3.2. Gender Issues*

The figure below shows the gender of the IST staff in grades A8-A1 at the end of the year 2002:

	<b>Tot.</b>	<b>F</b>	<b>M</b>	<b>%</b>
<b>A1</b>	1	0	1	0%
<b>A2</b>	3	1	2	33%
<b>A3</b>	25	0	25	0%
<b>A4</b>	78	7	71	9%
<b>A5</b>	63	9	54	14%
<b>A6</b>	62	16	46	26%
<b>A7</b>	21	5	16	24%
<b>A8</b>	15	6	9	40%
	<b>268</b>	<b>44</b>	<b>224</b>	<b>16%</b>

As could be expected, the proportion of women is higher in the lower grades and there is still a serious imbalance in the career patterns of women and men in the DG Information Society. Contributing to this imbalance have been:

- The need for IST Human Resources practices and guidelines,
- The need for explicit targets in redressing the imbalance, as well as
- The system of late-night working and late-night and week-end meetings, already mentioned as a general HR issue.

There is also a serious imbalance in the operation of the IST-FP5<sup>12</sup>. It had the lowest figures among all the specific programmes whenever the data was given, probably reflecting the scarcity of women in the IST field. For utilisation of skills, and legal as well as equity reasons, this must be rectified.<sup>13</sup> It is a question of ensuring that the needs of women and men are addressed within research and that gender-relevant research is undertaken.

With regard to promoting women's careers in the DG Information Society,

- The adoption of a gender friendly Human Resources policy, and good-practice guidelines meeting with the general EC-wide objectives, and
- The adoption and implementation of relevant official policies to improve the current situation would be helpful.

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<sup>12</sup> Gender in Research – Gender Impact Assessment of the specific programmes of the Fifth Framework Programme. Directorate General for Research, 2001, EUR 20022

<sup>13</sup> Communication from the Commission (2000) Community Framework Strategy on Gender Equality (2001-2005). COM (2000) 335 final. Also the Amsterdam Treaty.

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More generally in IST-FP6

- Even though the Commission's target of 40% women in FP5 might be ambitious in IST, it is important that it be taken forward to FP6 – and used as targets.
- Special promotional measures need to be taken to increase the registration by women in databases.

The IST high level group on socio-economic aspects of the programme should ensure that gender relevant topics will be incorporated in the IST programme and that the appropriate expertise in the gender aspect is incorporated.

### **Recommendations:**

**R13:** To enhance the compatibility of professional and family obligations for both women and men, DG Information Society should seek to develop and adopt Human Resources practices, which allow for flexible and family-friendly working structures and conditions. These include, among other things, avoiding late meetings and working non-standard hours. Following the Joint Research Council pilot, IST might develop its own "Family-Friendly Practices".

**R14:** Forty per cent representation of women in panels and advisory groups should be a target followed in FP6 and whenever panels and advisory groups are appointed, special attention should be paid to make sure that these incorporate a sufficient number of women. In order to ensure a sufficient pool of expertise, the IST Programme Management should specifically promote women's registration in the experts' databases. This can be done, for example, by alerting research organisations of a special need to increase women's registration in the databases.

**R15:** To ensure that attention will be paid to the gender aspects of ICT, the high-level group on socio-economic aspects of the IST Programme should incorporate sufficient expertise in gender questions.

### **3. PLANNING FOR IST-FP6**

As well as the operation of IST- FP5 reviewed in the last section, the other major work areas of IST Programme Management was the continued planning for IST-FP6. This was undertaken in the context of the Lisbon (ERA) and Barcelona (Boosting EU R&D investment) Declarations. It included the preparation of the new instruments and the 2003 Work Programme. In addition, planning for horizontal issues such as SME involvement and international co-operation has had to be developed.

#### **3.1. Relating IST-FP6 activities to EU Strategy**

IST-FP6 has its own Council Decision, which DG Information Society must respect, yet it is asked at the same time to respond to developing EU RTD policy as seen in the Lisbon and Barcelona Declarations. Currently, the European Research Area (ERA) is a reasonably well defined concept while the translation of the Barcelona Declaration - boosting EU R&D investment – is only in its first stage of development.

##### *3.1.1. Developing the ERA*

The development of ERA requires the strong engagement of IST-FP6 with the Member States in their own IST research programmes and activities.

The IST-FP6 Programme should develop:

- **Benchmarking** of Member State ICT (Information and Communications Technology) programmes and research strategies would be helpful by providing a comparative baseline for both Member State's own policies/programmes and for the development of IST Work Programmes. At a more detailed level, benchmarking of ICT RTD programme management practices in the private and public sector would contribute to the diffusion of good operational knowledge across the EU. Benchmarking between Commission RTD Programmes and with private and public sector practices would be particularly helpful to FP Programme Management.
- **Mapping of excellence** of the IST related RTD in the private and public sector would help in providing a better understanding of EU IST resources. This contributes to the discussion and development of effective EU RTD policy and operations, particularly the development of ERA.
- **Supporting objective-driven research** on a European scale by developing specific, end-to-end, objective-driven management processes, including KPIs (Key Performance Indicators), supported by an efficient informatics based system (Management Information System - MIS); this would allow the Commission to allocate funding to priorities and to better follow progress, costs, and results.
- **Electronic networks for research**, based on GRID and GEANT, have to move from a cluster of FP5 projects, to a fully functional communication tool for the scientific community, promoting co-operation with the major European Telecom operators.

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- **Networking<sup>14</sup> of national research programmes** to tackle the fragmentation of European research. As the major challenge to IST-FP6, the task of managing the IST Programme requires a higher level of visibility and commitment to networking national research programmes. Currently, there is a need for 1) improving the articulation of the tactical strategy, and 2) better and efficient co-ordination of the operational support. A number of actions are recommended:
  - Initiate discussions with those responsible for ICT research policy and programmes in the Member States, with the objective of creating appropriate permanent IST/ICT fora / groupings in the Member States.
  - These fora/mechanisms should permit Member States' IST Authorities: a) to contribute more effective inputs to the shaping of the IST Work Programmes, and b) to discuss each others' ICT policy and related programmes. These discussions will open up greater possibilities for direct, multilateral and joint co-operation with the IST Programme, and will allow for possible joint or synchronised or co-ordinated calls. The annual IST Conference might be rethought in this context.
  - To further reinforce this increased interaction with Member States by 1) strengthening the general network of European activities: EUREKA, e-Europe and 2) strengthening the public image of the IST-FP6 Programme in the Member States – particularly towards policy makers and, opinion formers.

IST Advisory Group (ISTAG)<sup>15</sup> has provided good service under IST-FP5 in providing strategic advice, direction, and policies to the Programme, despite some concern as to the correct experiential balance among its members. Under IST-FP6, the focus of ISTAG has moved from advising on the IST Programme towards advising on EU-level IST research strategy, including the development of ERA<sup>16</sup>. Despite the increase in ISTAG membership, there are some concerns as to its ability in its present form as an independent advisory group to have sufficient resources and reach to contribute to the development of an effective ERA.

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<sup>14</sup> For example see: European Commission, (2002), "Research Networking in Europe: Striving for Global Leadership", DG Information Society, Sept 2002

<sup>15</sup> ISTAG has been set up to advise the Commission on the overall strategy to be followed in carrying out the IST thematic priority and related activities of research as well as on the orientations with respect to the European Research Area by helping to stimulate the corresponding European research communities. In the context of building an IST European Research Area, a key role of ISTAG will be to reflect and advise on the definition and implementation of a coherent research policy in Europe. This policy should ensure the mastering of technology and its applications and should help strengthen industrial competitiveness and address the main societal challenges. It is through such an exercise that recommendations on priorities and activities of Community-funded research in IST (IST in FP6) would be drawn.

<sup>16</sup> See for example - European Commission, (2003), "Notes of the Meeting of the Information Society Technologies Advisory Group", 21<sup>st</sup> Jan 2003, Brussels.

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As part of its response to developing the ERA, DG Information Society should review the support and resources provided to ISTAG, as well its structure and role.

At the same time, DG Information Society should also carry out a parallel review of the IST Committee (ISTC) with a view to strengthening its role with respect to the development of ERA.

The Barcelona Council objective of boosting EU R&D investment to 3% of GDP by 2010 is currently being discussed at EU policy level and being translated into operational objectives and activities. The IST-FP6 - as 1) the largest Thematic Priority in FP6 2) a very strongly industrially oriented programme, as well as being 3) a programme working with an industry with extremely high R&D levels – should have a major voice in these decisions and should develop its own clearly articulated position. A strong profile for IST-FP6 is required in these debates – it will have to implement the outcomes.

### **Recommendations:**

The IST-FP6 should develop a stronger role to the development of the IST-ERA, including a formal, operational response and in particular should:

**R16:** Develop a programme of benchmarking and identification of best practices within the EC related to IST issues.

**R17:** Develop operational systems (committees, fora), which will permit much greater opportunities for co-operation between Member States IST activities as well as with the activities of IST-FP6.

**R18:** Review the support and resources provided to ISTAG as well as its role and structure, in order to ensure that ISTAG members have both: i) the R&D community's recognition required to represent a commonly agreed vision of ERA, and ii) the capability to help integrate Member States' RTD in the context of ERA.

**R19:** At the same time, review how the ISTC might be strengthened to provide a stronger support for the development of the ERA.

### **3.2. Developing the Work Programme**

The development of the annual Work Programme within the FP5 IST Programme has usually been regarded by Monitoring Panels as a good model of:

- Appropriate external consultation, particularly via ISTAG and forward-looking external studies combined with
- Good internal feedback mechanisms, particularly the IPPA<sup>17</sup>. These are good mechanisms and should be adapted to FP6.

This year, however, with the move to new instruments and the new FP6 Programme, there was a need for additional tools. A Call for

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<sup>17</sup> The Integrated Programme Portfolio Analysis (IPPA) is a IST Programme Management tool that provides an overview on the portfolio of projects. It is updated following each call for proposals and is conducted by a group of external experts. A report on the findings of these experts is issued after each exercise and includes, in addition to the observations, a list of possible project clusters that could be of value to the programme. See also European Commission, (2002), "Integrated Programme Portfolio Analysis: Calls 1 to 8", April 2002, IST Programme, Brussels.

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“Expressions of Interest” was launched in March 2002 and the response used to support IST Programme development at a number of levels:

- To provide an opportunity for the European research community to ‘shape’ the priority content of IST-FP6 - providing insight and inputs into the setting of priorities and definition of the Work Programme,
- To gain a better understanding of what might be possible with the New Instruments and what form the operational support systems would need to take: essentially to improve the definition of New Instruments.
- To anticipate possible areas of misunderstanding as to the nature and operation of the New Instruments,
- As an awareness exercise across the Member States for FP6 and its New Instruments.

Overall, the process of work programme definition has continued to improve. However, if the ERA is to become a reality, the setting of the Work Programme will need to be more closely associated and seek synergy with the research programmes of Member States.

### **Recommendation:**

**R20:** IST Programme Management should set up mechanisms, which will permit formal linkages between the IST programmes of Member States and the annual setting of the IST Work Programme.

Under IST- FP5, the ability to develop flexible work programmes was assisted by reserving 12.5% of the budget Cross Programme Actions – indeed this was the source of many particularly innovative projects. Under FP6, similar work programme flexibility is to be achieved by retaining 20% of each Call’s budget for possible allocation to another field by the Commission. The use of at least half of the 20% budget reserve in IST-FP6 to fund innovative actions across the horizontal “research priorities” and to create cross-Programme flexibility and integration across strategic objectives should be considered.

### **3.3. Small and Medium Sized Enterprises<sup>18</sup>**

The IST Programme has the highest SME participation rates across all FP5 specific programmes – nearly 21% of participants, nearly 18% of budget and accounting for 2425 SMEs in all – and emphasising one of the important dimensions of the Programme’s industrial character. In addition, the Programme has carried out a number of studies, which permit better understanding of the very particular nature of SME participation in IST-FP6<sup>19,20,21</sup> and the challenges, which they may face in

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<sup>18</sup> European Commission, (2002), “Support to the Participation of SMEs in the Sixth Framework Programme”, 18<sup>th</sup> Dec 2002, DG Research, Brussels.

<sup>19</sup> SME participation in the FP5/IDT Programme, DG Information Society Unit F4, October 2001.

<sup>20</sup> SMEs and EC RTD Programmes, Idealist Survey, November 2001.

<sup>21</sup> Final Report for the Study on Key issues and Questions Associated with ‘Big’ Projects in the ICT Area, Executive Summary, Berkeley Associates S.P.R.L., Oakland, 9 November 2001.

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operating the new instruments. This is important progress in the management of the Programme. Important in this context is:

- The particularly research-intensive nature of IST SMEs and their participation in mainstream IST Programme Activities rather than CRAFT Activities.
- Their active role in participation, in initiating and managing the projects in which they participate – a trend which may be more difficult in IST-FP6 due to the scale of IPs in particular.
- One of the major differences between SMEs and other companies, however, was the fact that SMEs participate less in large IST projects and less in long projects, since they expect the research to produce tangible impact on their business quickly. The ‘Big Projects’ study further reinforces this point, finding that SMEs participate less in large projects, though there are successful examples of their integration in big projects.

It is, in particular, this latter challenge, which IST-FP6 Programme Management now faces. Participation by SMEs in IST-FP6 should be actively encouraged and closely monitored, quantitatively and qualitatively, from the outset by Programme Management.

In addition, previous IST Monitoring Panels have drawn attention to the various procedural and administrative issues hampering SME participation (time-to-contract, speed of payment, variable quality of National Contact Points, etc.) These challenges should also be addressed from the launch of IST-FP6.

Finally, and it is far more an issue for the 5-Year Assessment Panel, there is a general concern as to the most effective mode of participation of SMEs in the IST Programme – both from their own point of view and from the viewpoint of maximising Programme impact. A strategy-level paper on alternative forms of IST SME participation should be prepared for the 5-Year Assessment.

### **Recommendations:**

**R21:** Participation of SMEs in the new instruments of IST-FP6 is actively encouraged and should be monitored on a Call by Call basis.

**R22:** A strategy-level paper on alternative forms of SME participation should be prepared for the 5-Year Assessment, taking into account the results of the First IST-FP6 Calls.

### **3.4. The International Dimension**

The internationalisation of the Framework Programme is set to increase under IST-FP6, with dedicated funding rising from about 2% to 5%. This will be directed in two main directions: co-operation with competing economies (e.g. NAFTA, Japan) and with emerging economies (Brazil, China, India, Latin America, ...)

The Monitoring Panel fully supports increased co-operation with competing economies – the potential benefits to both parties are large. However, the large, unified, highly flexible North American RTD market has significant advantages over the – as yet - somewhat fractured RTD effort, which characterises the EU. For many reasons, co-operation should be focused on areas, which, while beneficial to both sides, visibly

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complement EU developmental, knowledge and skill needs. Co-operation should be on the basis of proven utility and explicitly directed towards areas in which the EU benefits are likely to be greatest. This requires two supports:

- An explicit view as to the areas of RTD in which co-operation with competing economies can be most beneficial to the EU.
- A systematic approach, with appropriate indicators, to ensure funding goes to those projects, which promise the greatest returns to the EU.

**Recommendation:**

**R23:** DG Information Society should undertake an assessment of potential technical areas of international co-operation and publish a priority list. A system should be put in place, which would channel funding to projects, which would maximise the benefits of international co-operation to the EU.

### **3.5. Project Transition & Legacy**

Finally, in reviewing the move to IST-FP6 there is the legacy of IST-FP5 and indeed FP4 ongoing projects to be managed. In December 2002, there were over 2200 IST-FP5 projects requiring project review and evaluation, followed by payments and the oversight of Technology Implementation Plans, final reports, exploitation and ultimately impact assessment. For the remaining 287 IST-FP4 projects, the focus is on final payments and then impact assessment for the whole FP4 cohort.

This legacy of projects gives rise to a number of issues.

- The provision of adequate resources and particularly IST Programme Management attention to ensure the fulfilment of the IST-FP5 projects.
- The clearing as quickly as possible of operationally (but not administratively) completed projects from the system. There is an impression with the Monitoring Panel that projects at this final stage devour a large amount of Project Officer time relative to their numbers and relative to any additional value added.
- FP5 projects will continue to be active for another 3 or 4 years. Consideration should be given as to how such projects can contribute to IST-FP6 objectives.

**Recommendation:**

**R24:** The development of an administrative “clearing system” which would remove operationally complete projects from the system in line with the new financial regulation.

### **3.6. The New Instruments**

The New Instruments (Integrated Projects and Networks of Excellence<sup>2223</sup>) of FP6 represent discontinuous change<sup>24</sup>. The IST-FP5

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<sup>22</sup> For important views on possible future of networking see - Johnston P., et al, (2002), “European Research Co-operation as a Self-Organising Complex Network: Implications for Creation of a European Research Area”, DG-Information Society.

<sup>23</sup> European Commission, (2002), “Provisions for Implementing Integrated Projects”, 11<sup>th</sup> Nov 2002, DG Research, Brussels.

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Programme Management is to be congratulated in its preparation for the implementation of these radically new instruments. Late in IST-FP5, they used clustering activities, CPAs and a special Call for Tenders to develop some familiarity as to how the new instruments might best work, and indeed, to contribute early to IST-FP6 objectives. In addition, they carried out the “Big Projects” Report<sup>25</sup> to help anticipate some of the problems in operating the new instruments.

While the Monitoring Panel congratulates DG Information Society on its preparation, the future operation of the new instruments still holds major uncertainties. It is essential that IST Programme Management launches a number of small, rapid investigations focused on pertinent, short-term management issues. Waiting until the results of the large New Instruments review to be launched in 2004 will be too late.

### **Recommendation:**

**R25:** A number of small, project and Programme management-support projects should be launched immediately to assist all participants in understanding the best ways to develop and manage the new instruments. Such analysis might also produce management tools ranging from legal supports to future impact tools. Leaving such analysis until the results of the 2004 Review will handicap the scope for action of projects and Programme alike.

### **3.7. Towards the 5-Year Assessment**

A number of strategic issues and issues of substance arose which were outside the remit of the 2002 External Monitoring Activity, which may be of interest to the 5-Year Assessment. These included:

- The level of “pro-activity” necessary for the IST Programme in achieving EU world leadership, and what changes might be necessary in its structure and functioning to make it a more “initiative led” activity.
- The need for an aggressive policy on “Open Software” to ensure EU leadership,

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European Commission, (2002), “Provisions for Implementing Networks of Excellence”, 11<sup>th</sup> Nov 2002, DG Research, Brussels

<sup>24</sup> European Commission, (2002), “Introduction to the Instruments available for Implementing the FP6 Thematic Priority Areas”, 11<sup>th</sup> Nov 2002, DG Research, Brussels. Some Issues Raised in “Big Projects” Report: 1) Potentially longer time frames in negotiating and launching projects, 2) Contract negotiation and change in Big Projects, and allowing for flexible structures. 3) Greater time for project networks to crystallise and start functioning, 4) Front loading Project Officer support at initial project launch, 5) Need to support and train Project Officers to work with big projects, including legal and financial supports, 6) Dealing with risk in Big Projects, 7) The potential dominance of the more Northern European partners, and project coordinators in big projects, 8) Potential difficulties for SME participation in large projects.

<sup>25</sup> Oakland Berkley Associates, (2001), “Final Report for the Study on Key Issues and Questions Associated with “Big” Projects in the ICT Area”, Contract 27171, DG Information Society, Brussels

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- The need for IST Programme structures to allow for more frequent / more profound / rolling strategy reorientation in the face of such rapidly changing technologies.

In addition, Programme Management may wish to consider preparing the following as support to the 5 Year Assessment.

- A short document giving an integrated and consistent statistical overview of the IST-FP5 Programme Activities indicating proposal application rates, success rates, time to contract on the different Calls, final payments, etc. Along with data giving normalised participation rates of the different types of participant by Member State. And other relevant statistical analysis.
- A brief historical analysis of the IST policy changes, their logic, and the associated structural Programme developments from IST-FP4 to IST-FP6.
- A consideration of the synergies and relationships between DG Information Society and DG Research in terms of research strategy and policy.
- An overview of the global ICT industries, their research strategies, and a comparative analysis of the EU position within the global context. Allied to this should be an analysis of what the Programme Management / ISTAG see as being challenges for IST-FP activities over the coming decade.
- A simple support document to accompany the IST organigram, outlining the operations and procedures of the IST Programme.

5-Year Assessment Panel Members, no matter how expert, will have varying levels of knowledge of the IST Programme as part of the EU research policy and research in the ICT industries.

It is useful to develop early common background knowledge.

#### **4. EXTERNAL PROGRAMME MONITORING**

##### **4.1. Previous External Monitoring Exercises**

The Panel has examined the impact of the previous three monitoring exercises (1999-2001). A detailed matrix and commentary on the impact of External Monitoring is given in the Annex. The Panel noted in general that the monitoring exercises have had impact. However, a closer examination revealed that in many cases, the causality of the impact was difficult to establish. It seems that the Monitoring Panels have identified important problems and have reinforced arguments for redressing these problems. Therefore, the Monitoring Panel considers that the exercises have been useful for improving the effectiveness and efficiency of the implementation of the IST-FP5.

As a summary of the monitoring recommendations and their impacts, the Panel noted that a great many recommendations of previous three monitoring panels centred on the various phases of process management, on management information system, and on evaluation and monitoring in general. This is to be expected given the general remit of monitoring as an evaluation of the implementation of the framework programme. The weaknesses of the information system are also felt in the monitoring exercises, where the information provided is heterogeneous.

The fact that the monitoring exercises are carried out by external panels requires efforts at information transfer to the panel members but has an important advantage in providing new ideas, objectivity and perspective and adds to the legitimacy and credibility of the exercise. In order to improve the understanding by the panel of how the Commission and the FP work, the principle evident in the 2002 IST panel that several members have been involved in monitoring in previous years, seems a good one<sup>26</sup>. Stronger interaction with the IST programme committee and the ISTAG might also be helpful. These groups could then press for changes in the problems identified. The monitoring panels should also aim to formulate recommendations that are more ambitious than just the conduct of studies.

Thus, the Panel believes that:

- There should be greater interaction between the Monitoring Panels and Programme Management in the consistent development of information and indicators as well as developing relevant and “implementable” recommendations for effective and efficient Programme Management.
- There should be stronger interaction between the Monitoring Panel and ISTAG and a presentation of the Final Report to ISTAG should be made by the Chairperson.

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<sup>26</sup> Gender Impact Assessment of the Specific Programmes of Framework Programme 5 (User Friendly Information Society (IST), European Commission, Information Society Directorate General, October 2001), however, noted that a selection of experts with previous experience of the IST Programme may discriminate against women, since they have been a tiny minority in the panels. This problem might be redressed by a careful selection of the panel with attention to previous experience and sufficient representation of women.

#### **4.2. Follow up of 2001 Recommendations**

The 2001 External Monitoring Report<sup>27</sup> was delivered to the IST Programme Management in April 2002. The formal submission of the response to the Report on the part of the Programme Management has been rather late. This was found to be disappointing by the Monitoring Panel on the one hand, but on the other, most of the recommendations have been addressed during the Monitoring exercise.

A more usual practice, across FP5, has been for the Programme Management

- To make a formal response to the Monitoring Report within four to six weeks of the report presentation. This response indicates: 1) agreement with a certain areas of analysis and associated recommendations and makes concrete commitments to undertake the associated tasks, 2) disagreement with other areas and provides justification, and 3) areas and recommendations, which are either outside the Monitoring Panel's mandate or outside the capability of the Programme to influence.
- To follow up actions taken to implement on the Programme's commitments to the Monitoring Panel and report on these to the following year's Panel.

The Panel believes that the Programme Management should make a timely and formal response to the Monitoring report following its formal submission

#### **4.3. External, Independent Monitoring**

Monitoring is undertaken for two basic reasons:

- To contribute to the transparency of EU activities and their legitimacy – this it has done through the publication of the Panel Reports and the Commission services' replies,
- To improve the effectiveness and efficiency of the management of the Programme.

Overall, the Panel believes that monitoring is a more than worthwhile activity, which should be maintained in IST-FP6. The issue is how might monitoring's own efficiency and effectiveness be improved. A number of issues are involved.

##### The Monitoring Model

The monitoring model can range from using monitoring as an “external, verification-of-management tool” (largely the current model) to integration of the monitoring function into internal management processes. In general terms, the greater the integration, the weaker the impartiality, and the depth of perspective, which can be brought to the process. On the other hand, the greater the externality, the weaker the knowledge of management processes by those undertaking the monitoring and the more the “not-invented-here” difficulties in having recommendations implemented. A balance is required.

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<sup>27</sup> European Commission, (2002), “2001 External Monitoring Report: IST Programme”, Brussels, July 2002.

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A “sustained management consultancy” model has much to recommend it. In this model, the monitoring is used as an external, ongoing support to top IST Programme Management. The monitoring panel retains the independence of being external experts but works directly to the IST Group of Directors on an *ongoing* basis. The annual monitoring becomes *a constant* within the management structures of DG Information Society, and becomes part of the developing quality improvement system of the Programme. The stop-start nature of current monitoring is disruptive for the Commission services and Monitoring Panel alike.

### Monitoring Resources

A monitoring system can be effective and function well only if it is given sufficient resources and sufficient information inputs. These information inputs include the following aspects.

- A well-functioning Management Information System will be an important provider of information inputs to Monitoring. It provides statistics and metrics on the central issues to be examined. Concise and consistent self-evaluation reports from the directorates are also needed. These should not just be descriptive reports of the substance areas of the programmes (as some of this year’s input were), but should be evaluative and address the central issues related to the performance of the directorate.
- There is also a need for qualitative information obtained through interviews with various groups of informants. These include the following:
  - IST Managers, Project Officers
  - Project participants (such as the participant panel interviewed by the IST panels in the IST Conference)
  - Industrial interest groups or representatives of industrial companies (partly can be covered by the participants panel, but partly covers participants at a somewhat higher level in the organisations concerned; possibly members from ISTAG)
  - Country representatives in programme committees or NCPs.

In order to ensure an open and honest expression of views, it is important that the Panel meet the latter groups without the presence of Commission officials (as has been done with the participant panel in Copenhagen).

The number of Monitoring Panel members should be sufficient for a proper examination of the difficult issues. It should not be reduced to two to three, since the workload of the panel members would become too heavy. This can adversely affect the availability of qualified experts for the exercise.

### Monitoring Operations

A number of areas of monitoring could be reviewed in setting up IST-FP6 monitoring:

- A move to a continual, year-round cycle of activity, rather than over the five-months per year and the more “stop-start” pattern.
- Greater regularity of contact / meetings with IST Programme Management.
- A greater continuity in Panel members. Contracts might be for two-years with possible renewal, particularly for the chairperson.

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- Greater focus on a more limited number of key, identified management issues, (e.g. MIS, end-to-end process management, quality systems, human resources, etc.)
- The Monitoring Report and Commission Services' formal response might function as a form of annual, mutually agreed, "contract to deliver" of management improvements.
- The development of IST-FP6's own internal key performance indicators (KPIs) – at a Programme and Unit level - and their publication in the annual Monitoring Report, so that improvements in management performance can be monitored.

### "Operationalising" Monitoring Recommendations

A major difficulty in IST-FP5 monitoring has been the need for a transparent, follow-up of Panel recommendations. Such a system would identify, with Programme Management,

- The priority recommendations
- The resources necessary to undertake any agreed changes,
- A commitment and integration of those who will have to undertake the changes, as well as
- Agreed criteria for fulfilment and associated deadlines.

This year, the IST Monitoring Panel, in agreement with Programme Management, has suggested a pilot process to "operationalise" Panel recommendations. The process is centred on a structured analysis of the implications of each recommendation in terms of: 1) The operational criteria / actions which would indicate the fulfilment of the recommendation, 2) A timetable / deadlines for actions to take place, 3) Indications of the resources and contributions needed from the various Directorates, and 4) An indication of the person / Unit / Directorate responsible for fulfilment.

#### **Recommendations:**

##### **R26:**

- External and independent Programme monitoring with the publication of an annual External Monitoring Panel Report and a Commission Services formal response should continue. The Commission response should be provided in a timely fashion.
- However, a move to a "sustained management consultancy" model should be made. This model emphasises closer working with IST, with a year round cycle of monitoring, greater continuity of monitoring personnel between years, and greater integration into the Programme's quality improvement system.
- Adequate resources must be devoted to monitoring. Concentration of Panel efforts on a smaller number of key management issues would also be useful.
- A system to operationalise Panel recommendations should be put in place, consisting of, at a minimum, indications of fulfilment criteria, deadlines, resource requirements and attribution of responsibility.
- Links with ISTAG and ISTC should be strengthened during the monitoring process and by a formal presentation of the annual Monitoring Report by the Monitoring Panel Chairperson.

## 5. CONCLUSIONS AND RECOMMENDATIONS

### 5.1. Conclusions

The year 2002 has been one of major change within the IST Programme. The IST Programme Management has prepared and launched IST-FP6 with all the associated detailed programme design and documentation. At the same time, it has launched the last Calls under IST-FP5 and continued to administer existing IST-FP5 and even IST-FP4 projects. It has also undergone major internal structural reorganisation ahead of IST-FP6, at the same time as introducing Commission-wide reforms in human resources management and moved to activity-based management. It has been a busy year. And all are to be congratulated on the hard work undertaken and the success achieved.

The Monitoring Panel has reviewed IST activities, both in management of FP5 and in preparation of FP6. Within an overall very satisfactory assessment, the Monitoring Panel has identified four key areas where improvements are to be recommended. Namely:

- **The general management approaches across the Programme.** Here we found that greater coherence and consistency in the approaches, techniques, procedures, and processes used to manage the same activity across the Programme would be beneficial. Such an approach would then permit greater integration across the various phases of the research management process (call for proposals, evaluation, selection, contracting, project review, etc.) and a greater effectiveness in implementing feedback to improve the various phases of research management. We discuss this under the heading of “improving end-to-end process management”.
- **The preparations for IST-FP6.** Here we found good, solid work being undertaken in the detailing of instruments, and the preparation of calls and evaluation procedures. In addition, the preparation of the Programme for the implementation of the ERA is an area in which there will be major challenges requiring, perhaps, major new innovations in working with the Member States.
- **Human Resources.** Based on the previous year monitoring exercise, we then focused on human resources management. We recognise that good progress has been made in developing Human Resources management during the last year. However, two issues still require attention: 1) How to develop a common management culture across the Programme and 2) How to improve gender related practices within the Programme.
- **Monitoring.** Since this is the final IST-FP5 Monitoring Report, we reviewed in some depth the experience of IST-FP5 over the last five years, and how to improve its effectiveness.

### 5.2. Recommendations

The detailed recommendations follow these four axes and focus on:

- Moving towards much more strongly integrated management processes within the Programme: “end to end” process management.
- A major effort to build an IST European Research Area across the EU.

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- A greater emphasis on human resource management, especially a move to develop a common management culture across Units and Directorates.
- A move towards what we call a “sustained management consultancy” model for the External Monitoring function during IST-FP6.

### End-to-End Process Management

The Monitoring Panel believes that integration between the different phases of the Programme’s research management activities and feedback/forward loops need to be strengthened, as well as giving greater attention to the project review, valorisation, and impact assessment phases.

- The traditional “operational-research based” division of Directorates makes horizontal co-ordination of the programme and common management processes difficult to achieve. At the next management reorganisation, DG Information Society should consider moving to a “management function” structure, typical of large business organisations.
- The full definition of the overall end-to-end process is necessary, along with associated management procedures. This should be supported by the development of common management tools for use across the whole IST Programme – including a Key Performance Indicator system for project supervision. It should also include a simple, supportive, quality improvement system. A Chief Operations Officer should have the responsibility for the consistent functioning of the overall system.
- In addition, we make recommendations on 1) improving the MIS, 2) developing a strong IST-FP6 communications policy with particular focus on policy makers in Member States, 3) improving the take up of the project research outputs, and the development of a Programme-wide impact assessment system.

### Building the IST European Research Area

The main recommendations emphasise rethinking and then strengthening the ways in which the IST Programme works with the Member States. In particular, the IST Programme should:

- Develop activities (fora, committees, working groups) within Member States, which permit greater interaction and discussion 1) between Member States on their own IST policy development and 2) between Member States and the IST Programme on joint RTD actions and on the development of the IST Work Programme.
- In this context, the structure, role, and resources of ISTAG should be reviewed with a view to strengthening its work with Member States and/or developing complementary structures.
- The IST Programme should review the ERA lines of action and develop a programme to support this greater interaction with Member States. In particular, benchmarking of Member States’ IST policies and programmes and networking of national research programmes would be important.

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- We make additional recommendations on 1) The management of the new instruments – close monitoring, analysis and action *before* the formal 2004 review, otherwise adjustments will be too late, 2) Ensuring SME participation, 3) Ensuring international co-operation is undertaken in the best interests of the EU.

### Human Resources

We recommend:

- Removing as much routine administration as possible from Project Officers and centralising it in dedicated Support Units – as has been done in one Unit.
- Providing a programme of supportive training to Project Officers, including continual updating on the changing vision, objectives, and strategy of the Programme.
- Formalising and expanding the activities of the “Project Officers Group” as a support to developing operational management systems and quality improvement across the Programme.
- Strengthening support to Heads of Unit by 1) Establishing a common approach to Unit management and the role of Heads of Unit, and 2) Investing in a strong, common programme of management training for Heads of Unit.
- Improving the compatibility of professional and family obligations for both women and men and developing a family-friendly HR policy – as in the JRC. Forty per cent representation of women in panels and advisory groups should be a target followed in IST-FP6 and whenever panels and advisory groups are appointed.

### The Monitoring Experience during FP5

External and independent Programme monitoring should continue into IST-FP6. However, a move to a “sustained management consultancy” model should be made - this would entail a year round cycle of monitoring and greater continuity between years. Adequate resources must be devoted to monitoring.

6. ANNEXES

6.1. Table of Recommendations

<b>Overall Management</b>
<b>R1:</b> At the next organisational change, during FP6, the DG Information Society should consider moving from Directorates based on operational research areas to Directorates based on management function (strategy and control, finance, HR, etc.)
<b>R3:</b> The Programme should publish by September 2003 an IST “Communications Policy”, including appropriate aspects of communications from projects and with a particular emphasis on reaching policy makers in the Member States.
<b>End-to-end Process Management</b>
<b>R4:</b> An operational end-to-end process management should be put in place. Elements of such a system should include: <ul style="list-style-type: none"> <li>– An overall “Chief Operations Officer” to ensure the consistent functioning of such an end-to-end process management system, and with the necessary resources and full support from Director General and Deputy Director General level.</li> <li>– The definition of the overall end-to-end process: relationships between the different activities and the associated management procedures.</li> <li>– The development of common tools common across all of IST-FP6 and including the use of standard KPI (Key Performance Indicators) at project and Programme level.</li> <li>– The development of a simple, supportive, Quality Improvement System within the Programme.</li> </ul>
<b>R5:</b> An in –depth analysis of the parameters associated with success, failure, and non-attempt in commercialising the R&D outputs of IST projects should be undertaken with the objective of providing operationally useful guidance to projects and Programme.
<b>R6:</b> The role and utility of the TIPs should be explored and clarified.
<b>R7:</b> A system should be put in place to rapidly identify and encourage potentially exploitable RTD outputs.
<b>R8:</b> An FP6 IST impact assessment system, and associated tools, consistent across all Directorates and Units, should be documented and available by September 2003.
<b>R2:</b> There should be strong emphasis in the new information system on system utility and quality of service. A Users’ Group should be formed to guide applications development and provide a base for the systematic evaluation of utility. Assuming the individual tools work well, the emphasis should move to their interfacing and interoperability as a component of an overall MIS.
<b>R24:</b> The development of an administrative “clearing system” which would remove operationally complete projects from the system in line with the new Financial regulation.
<b>Valorising Human Resources</b>
The moves towards developing Project Officers as research managers, rather than administrators, should be further strengthened by: <ul style="list-style-type: none"> <li>• <b>R9:</b> Removing as much routine administration as possible from Project Officers and centralising it in dedicated Support Units.</li> <li>• <b>R10:</b> Providing a programme of supportive training, including continual updating on the changing vision, objectives, and strategy of the Programme.</li> <li>• <b>R11:</b> Formalising and expanding the activities of the “Project Officers Group” as a support to developing operational management systems and quality improvement across the Programme.</li> </ul>
<b>R12:</b> As part of establishing greater Programme coherence and Programme impact, there is a need to establish a common approach to Unit management and the role of Heads of

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Unit and continue to invest in a strong, common programme of management training for Heads of Unit both for general management quality and for IST management coherence.

### **Gender issues:**

**R13:** To enhance the compatibility of professional and family obligations for both women and men, DG Information Society should seek to develop and adopt Human Resources practices, which allows for flexible and family-friendly working structures and conditions. These include, among other things, avoiding late meetings and working non-standard hours. Following the Joint Research Council pilot, IST might develop its own “Family-Friendly Practices”.

**R14:** Forty per cent representation of women in panels and advisory groups should be a target followed in FP6 and whenever panels and advisory groups are appointed, special attention should be paid to make sure that these incorporate a sufficient number of women. In order to ensure a sufficient pool of expertise, the IST Programme Management should specifically promote women’s registration in the experts’ databases. This can be done, for example, by alerting research organisations of a special need to increase women’s registration in the databases.

**R15:** To ensure that attention will be paid to the gender aspects of ICT, the high-level group on socio-economic aspects of the IST Programme should incorporate sufficient expertise in gender questions.

### **Developing the E.R.A.**

The IST-FP6 should develop a much stronger role response to the development of the IST-ERA, including a formal, operational response and in particular should:

- **R16:** Develop a programme of benchmarking and identification of best practices within the E.C. related to IST issues.
- **R17:** Develop operational systems (committees, fora), which will permit much greater opportunities for co-operation between Member States IST activities as well as with the activities of IST-FP6.
- **R18:** Review the support and resources provided to ISTAG as well as its role and structure, in order to ensure that ISTAG members have both: i) the R&D community’s recognition required to represent a commonly agreed vision of ERA, and ii) the capability to integrate Member States’ RTD in the context of ERA.
- **R19:** At the same time, review how the ISTC might be strengthened to provide a stronger support for the development of the ERA.

**R20:** IST Programme Management should set up mechanisms, which will permit formal linkages between the IST programmes of Member States and the annual setting of the IST Work Programme.

**R21:** The participation of SMEs in the new instruments of IST-FP6 should be monitored on a Call by Call basis.

**R22:** A strategy-level paper on alternative forms of SME participation should be prepared for the 5-Year Assessment, taking into account the results of the First IST-FP6 Calls.

**R23:** The IST-FP6 should undertake an assessment of potential technical areas of international co-operation and publish a priority list. A system should be put in place, which would channel funding to projects, which would maximise the benefits of international co-operation to the EU.

**R25:** A number of small, project and Programme management-support projects should be launched immediately to assist all participants in understanding the best ways to develop and manage the new instruments. Such analysis might also produce management tools ranging from legal supports to future impact tools. Leaving such analysis until the results

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of the 2004 Review will handicap the scope for action of projects and Programme alike.

### **External, independent Monitoring**

**R26:** External and independent Programme monitoring with the publication of an annual External Monitoring Panel Report and a Commission Services' formal response should continue. The Commission response should be provided in a timely fashion.

- However, a move to a “sustained management consultancy” model should be made. This model emphasises closer working with IST, with a year round cycle of monitoring, greater continuity of monitoring personnel between years, and greater integration into the Programme's quality improvement system.
- Adequate resources must be devoted to monitoring. Concentration of Panel efforts on a smaller number of key management issues would also be useful.
- A system to “operationalise” Panel recommendations should be put in place.
- Links with ISTAG and ISTC should be strengthened by a formal presentation of the annual Monitoring Report by the Monitoring Panel Chairperson.



**6.2. Review of Work and Impact of External Monitoring Panels 1999-2001**

As a summary of the recommendations and their impacts, the Panel noted that a great many recommendations of the previous three monitoring panels centred on the various phases of process management, on management information systems, and on evaluation and monitoring in general. This is to be expected given the general remit of monitoring as an evaluation of the implementation of the framework programme. The Panel could note improvements in the process management, in the internal IT system, and some impact on evaluation and monitoring. By contrast, the IST-FP5 management information system remained fragmented, and as indicated by management response to 2001 monitoring, it is not regarded as important by IST management. The weaknesses of the information system are also felt in the Monitoring exercises, where the information provided is heterogeneous.

It is to be noted that when the previous Monitoring Panels have drawn attention to any particular part of the end-to-end process management, there have been improvements in part, but problems elsewhere. This calls for a more holistic view of and recommendations for the whole process.

Programme integration was devoted attention in both 1999 and 2000 monitoring reports. There have been certain improvements in programme integration in terms of common procedures and cross-programme actions. However, as the experiences of 2002 Panel indicate, the “collegiate” management model, as identified by 1999 Panel, largely still survives. Each directorate apparently has its internal culture and preferred ways of doing things, as demonstrated by the diversity in the quality of inputs to the Monitoring Exercise from the various directorates.

SMEs have attracted attention in all three Monitoring reports. The Panels have regarded the proposal procedures and financial viability checks as cumbersome for the SMEs and have suspected that these might have decreased their participation rates and reduced their possibilities for participation from what they might have been. The IST Management has pointed out that SME participation rates in IST are already a benchmark for other specific programmes. Some minor measures have been taken to reduce the difficulties of the procedures, such as the financial viability check has been postponed to the contract negotiation phase, some specific measures aimed at SMEs have been maintained in FP6 and new ones developed. The issue of SME participation has nevertheless re-emerged in connection with FP6, given the uncertainty concerning the potential impacts of the new instruments.

The 2001 Panel was given new types of issues related to ERA and FP6. The recommendations (concerning dissemination of information, new measures to support the participation of new groups/countries) seem to have led to impacts. The 2001 Panel also addressed a new type of issue concerning placing greater emphasis on civil society. Overall, however, it can be surmised that to-date there is not much progress - though the role of the new socio-economic group and secretariat is an interesting development.

There is little improvement in women’s careers or participation in the IST programme. The 2000 Panel first identified a problem with gender balance in IST staff and management. The 2001 Panel identified a problem in women’s participation in IST in general. The latter panel also recognised a more

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general problem of the gender aspect of ICT development and use. The recommendations of the latter panel, however, only concerned the participation of women in IST. The recommendations concerning women's participation or a gender balance in the programme or IST staff have not been followed up with formal policy measures, though the Panel was reported that initiatives had been taken to improve women's careers. Still, changes in women's career patterns or participation levels could not be detected. There have also been some improvements in Human resources issues and policy, though further measures are needed.

It may rightly be pointed out that both (gender and human resource) issues are not only problem of the DG Information Society. Particularly the gender issue, when it pertains to women's participation in IST, is related to the relative scarcity of women in the IST field in general. However, gender and human resource issues at the Commission level and the membership of women in various committees and panels can be influenced by action taken by the Commission. An argument that an issue is a more general, FP issue, and therefore cannot lead to impacts at IST, is not valid since there are other examples of recommendations, such as those related to procedures, which have led to changes at FP level. There is a need to address the gender and human resources issues as official policy matters in the EU both at IST and Framework Programme levels.<sup>28</sup>

Monitoring Panels often recommend very concrete and small measures, namely studies on various wider issues they have identified. This is rational and understandable given a scarcity of information and indicators on many issues and the difficulty to devise concrete recommendations. It is not, however, prone to lead to major changes.

As a conclusion, monitoring reports have had an impact, though one can argue about the causalities. The fact that the monitoring exercises are carried out by external panels requires efforts at information transfer to the panel members. Being external is, however, an important advantage in the provision of an objective and outsider's viewpoint. It is basically a question of legitimacy and credibility of the exercise. In order to improve the understanding by the panel of how the Commission and the FP work, the principle evident in the 2002 IST panel that several members have been involved in monitoring in previous years, seems a good one<sup>29</sup>. However, monitoring can have more impact if the IST programme Committee and the

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<sup>28</sup> The principle of equal opportunities for career advancement for women and men was enshrined as one of the European Union's objectives in the Treaty of Amsterdam, signed in 1997. In 2000, The European Commission adopted a Community Framework Strategy on Gender Equality (2001-2005) to advance the matter. See Communication from the Commission (2000) Community Framework Strategy on Gender Equality (2001-2005). COM (2000) 335 final.

<sup>29</sup> Gender Impact Assessment of the Specific Programmes of Framework Programme 5 (User Friendly Information Society (IST), European Commission, Information Society Directorate General, October 2001), however, noted that a selection of experts with previous experience of the IST Programme may discriminate against women, since they have been a tiny minority in the panels. This problem might be redressed by a careful selection of the panel with attention to previous experience and sufficient representation of women.

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ISTAG regard this activity as important. These groups should press for changes in the problems identified. The monitoring panels should also aim to formulate recommendations that are more ambitious than just the conduct of studies.

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Table 6-1

Review of Monitoring Panel Recommendations & Their Impact: 1999, 2000, 2001

ISSUES	RECOMMENDATIONS		
	1999	2000	2001
<b>1. STRATEGY AND OBJECTIVE</b>			
Overall strategy and objectives	(Rec 2) More programme focus and creation of critical mass: in practice, fewer action lines with more resources per call. <a href="#">Impact in FP6</a> (Rec 4) Study of shortfall of 5-10 yr proposals <a href="#">IPPA 2002 study finds that there is an increase of 5-10 yr proposals as programme evolves</a>		(Rec 3) FP6 Strategy and Planning Documents widely distributed; ensure advisory bodies reflect different participant types <a href="#">Ongoing process. Expressions of interest were a valuable part of this process. New ISTAG has been appointed. Further changes in structure and resources still needed for the implementation of ERA</a>
ERA			(REC 1) ERA examples in the context of IST <a href="#">Ongoing; further efforts needed</a>
Policy/intervention instruments		(Rec 13) Policy-oriented analysis of cluster activities <a href="#">Big projects study has been carried out. It showed that big projects are feasible and can be successful. However SMEs had a small role and big projects seldom represented new research lines</a>	
Candidate countries		(Rec 14) Medium-term plan for integration of Applicant Countries into FP <a href="#">Various measures taken; 2001 Panel found only partial results</a>	(Rec 5) Special Package Measures for Supporting NAS Inclusion in FP6 <a href="#">Implemented</a>

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International co-operation			(Rec 8) Raising the level of International Co-operation, participation from Third Countries is low <a href="#">New measures at FP level plus special IST measure in FP6</a>
SME's	(Rec 3) Encourage SME participation; simplify procedures and require minimum level of SME participation per consortia <a href="#">Efforts made. Procedures still a problem for SMEs. No minimum criteria defined</a>	(Rec 11) Review of Take-Up Measures to reduce their number, simplify procedures and develop synergy with RTD projects <a href="#">IST Management assesses that the number has decreased; simplification is left for FP6</a> (Rec 12) Policy-oriented analysis of SME participation in IST programme <a href="#">Done.</a>	(Rec 6) Develop an IST Policy for SMEs <a href="#">Some progress made; ongoing activity to ensure sufficient SME participation.</a> (Rec7) Encourage SME participation in FP6; more appropriate procedures and contractual models for SME participation. <a href="#">Measures taken</a>
Innovation (including patenting)			
Gender awareness		(Rec 16) Explicit targets for better gender balance in IST staff should be formulated <a href="#">There are explicit targets for certain functions</a>	(Rec 9) Policy for the Participation of Women in IST <a href="#">Initiatives for promoting women's careers in the IST directorate</a>
Public awareness			(Rec 4) Greater Emphasis on Civil Society <a href="#">Because of unclear formulation of the issue, difficult to judge the progress made</a>
Socio-economic aspects			

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2. IMPLEMENTATION , MANAGEMENT AND PROCESSES			
Procedures and tools in general	<p>(Rec 1) Define and measure Cross Programme Integration and provide success criteria and metrics.  <a href="#">Impacts in common procedures, clustering activities, and increase in cross programme actions as programme evolves</a></p> <p>(Rec 5) Management review leading to integrated operations and implementation  <a href="#">Evolution of the management structure</a></p> <p>(Rec 7) Work Programme Update            Timetable transparent to help inputs  <a href="#">Implemented</a></p>	<p>(Rec 7) Deputy Director-General be given responsibility as overall IST Programme Director  <a href="#">Implemented</a></p> <p>(Rec 10) Composition of Advisory Group reflect the concerns of programme activities  <a href="#">Implemented</a></p>	
Launch of activities (calls for proposals, information to proposers, application tools...)	<p>(Rec 12) Usability Study of Call and Evaluation Documents leading to simplification  <a href="#">Simplification Memorandum; there is still a continued need to simplify.</a></p>		<p>(Rec 2) Strengthening the Learning and Consultation Process  <a href="#">Ongoing process, partially implemented</a></p>

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<p>Evaluation and selection of proposals (evaluation manual, time to contract...)</p>	<p>(Rec 10) Evaluation Criteria to be clarified <a href="#">Partly still a problem (EAV and socio-economic criteria difficult)</a> (Rec 11) Consensus and Ranking Study required <a href="#">Improvements in clarifications</a></p>	<p>(Rec 1) Customer Satisfaction Survey as part of proposal evaluation quality improvement system <a href="#">Report on how to measure customer satisfaction plus an end-user satisfaction survey carried out; needs to become a regular activity</a> (Rec 2) Policy for treatment of proposal budgets <a href="#">No evidence of impacts</a> (Rec 3) Further efforts at clarification of EAV and socio-economic selection criteria <a href="#">Some improvement; further measures left for FP6</a> (Rec 9) Milestones for proposal submission and contract process – the Time to Contract <a href="#">Progress in time to contract</a></p>	<p>(Rec 10) Continuous Process Improvement; extend achievements of time-to-contracts to other domains <a href="#">Concerns about the challenge posed by new instruments in FP6; ongoing process</a></p>
<p>Management Information System/ Internal IT system</p>	<p>(Rec 13) Integrated Software Tools for administrative activities <a href="#">A review has been done</a></p>	<p>(Rec 8) Task-force to overcome barriers to electronic submission <a href="#">Implemented. Electronic submission will be fully implemented in FP6</a></p>	<p>(Rec 12) Management Information for Monitoring Projects and Programmes <a href="#">A new project monitoring tool, CETO, has been introduced</a></p>
<p>Specific cases /programmes</p>			
<p>Dissemination of information and results</p>	<p>(Rec 6) Strategic Communications Plan <a href="#">Has been drawn up</a> (Rec 8) Rejected proposals to be notified within 6 weeks <a href="#">Implemented</a> (Rec 9) Evaluation Summary Reports to be clearer <a href="#">Implemented</a></p>		<p>(Rec 11) Achieving a Consistent Communications Policy <a href="#">The implementation of plans ongoing</a></p>

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Evaluation and monitoring	(Rec 14) Project Monitoring Procedures and Core Indicators to be developed <a href="#">Some progress</a>	(Rec 4) An IST Project Monitoring System should be put in place <a href="#">Improvements</a> (Rec 5) An annual review of the performance of the IST Project Monitoring System <a href="#">Has not been done</a> (Rec 6) Integrated Plan for the operation, under FP6, of Research Targeting, Proposal Evaluation, Project Monitoring, Tracking of Outputs, and Assessing Impacts. Plan for IT support. <a href="#">Still ongoing</a> (Rec 17) Responses to Monitoring Panel recommendations should incorporate implementation timetable; continuity from one Monitoring Panel to the next; one member of Monitoring Panel should be a member of the FP Monitoring Panel <a href="#">Implemented</a>	
Human resources		(Rec 15) IST Human Resources Policy should be developed <a href="#">See the box to the right</a>	(Rec 13) A Strategic Policy and Plan for Human Resource Management <a href="#">Career development review system and job descriptions; initiatives for further development of the system</a>
<b>3. IMPACT OF POLICY AND PROGRAMMES</b>			
Impact assessment (incl.TIP)			(Rec 14) Implementing an Impact Assessment Methodology <a href="#">The first impact assessment study has been launched</a>
<b>4. OTHERS</b>			

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### 6.3. End to End Process Management

End-to-End process management is the operational mechanism linking Vision, Mission, Strategy and Control to insure that a specific process is attaining the expected objectives with the level of quality expected from the “customers” of the process deliverables.

The **Vision** at the basis of the European Community’s Sixth Framework Programme (FP6) is that the contribution of RTD to economic growth and competitiveness is vital to the socially, environmentally, and culturally sustainable development of Europe. It is, therefore, critical to make Europe the most competitive knowledge-based society in the world for 2010.

Therefore, the **Mission**: increasing RTD investments across the EU from today’s 2% of gross domestic product to 3 % by 2010 indicating the willingness of the European Community to develop that vision by supporting European industrial competitiveness and reinforcing its technological and scientific basis.

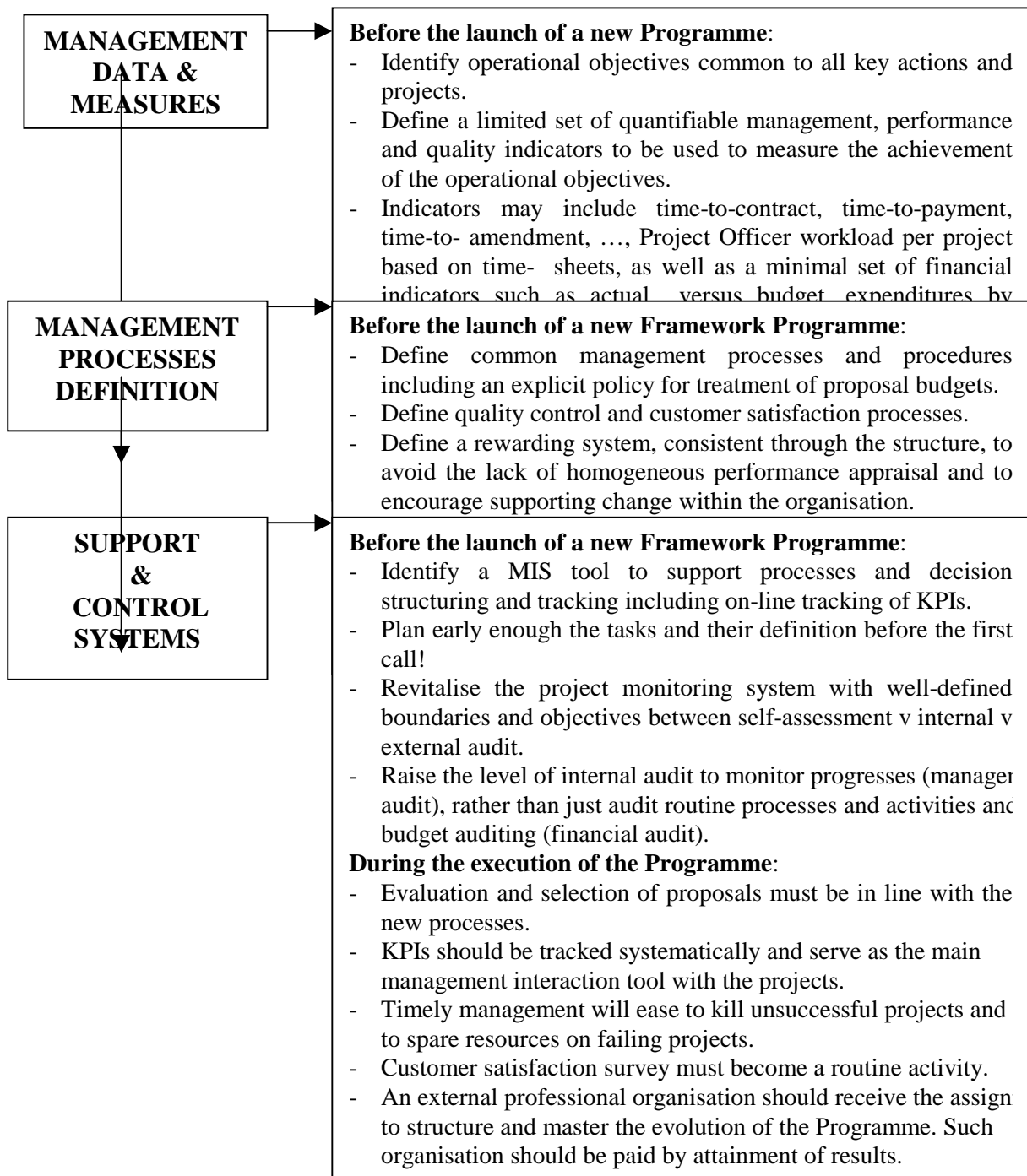
The **Strategy** (EC funding of RTD projects) of the Sixth Framework Programme (FP6) is based on the introduction of new instruments: integrated projects and networks of excellence. It should contribute to reach the objectives stated in the vision.

The **End-to-End Process** of Research programmes, such as FP6, has a common structure:

- Work programme development setting the strategic priorities of the research and allocating budget targets to specific domains
- Call for proposals, evaluation and contracting for specific research projects
- Implementation and project monitoring
- Project and then programme evaluation and impact assessment.

It is a fairly linear and foreseeable process with appropriate feedbacks, and one requiring strongly integrated, end-to-end process management. This will request, to be efficiently managed, **Control** mechanisms based on management data & measures, a precise management processes definition and support & control systems.

A schematic view of such a process and associated support & control systems is given in the table on the following page:



## 6.4. Presentations, Support Materials and Documentation Documents

### Monitoring Documents

- Broad Draft Guidelines for Monitoring Panels 2002.
- Evaluation Unit, (2003), “Compendium of Official Texts: Evaluation & Monitoring” (Ten various relevant EU papers and texts) Evaluation Unit, January 2003.

### Main Open Distribution Documents

- Council and Parliament of the European Union, (2002), “Decision 1513/2002/EC of the European Parliament and of the Council of 27<sup>th</sup> June 2002, concerning the sixth framework programme of the European Community for research, technological development and demonstration contributing to the European Research Area 2002-2006”, Official Journal.
- Council of the European Union, (2002), “Council Decision of 30<sup>th</sup> September 2002, adopting a specific programme for research, technological development and demonstration: Integrating and Strengthening the European Research Area 2002-2006”, 2002/834/EC
- Council of the European Union, (2002), “Council Decision of 30<sup>th</sup> September 2002, adopting a specific programme for research, technological development and demonstration: Structuring the European Research Area 2002-2006”, 2002/835/EC
- European Commission, (2000), “Reforming the Commission: A White Paper”, Com (2000) 5.4.2000 final, Brussels.
- European Commission, (2001), “IST 2002 Work Programme”, Brussels.
- European Commission, (2002), “2001 External Monitoring Report: IST Programme”, Brussels, July 2002.
- European Commission, (2002), “An Administration at the Service of Half a Billion Europeans: Staff Reforms at the European Commission – State of Play Spring 2002”, Brussels.
- European Commission, (2002), “Integrated Programme Portfolio Analysis: Calls 1 to 8”, April 2002, IST Programme, Brussels.
- European Commission, (2002), “Introduction to the Instruments available for Implementing the FP6 Thematic Priority Areas”, 11<sup>th</sup> Nov 2002, DG Research, Brussels.
- European Commission, (2002), “IST 2003-2004 Work Programme”, Brussels.
- European Commission, (2002), “Provisions for Implementing Integrated Projects”, 11<sup>th</sup> Nov 2002, DG Research, Brussels.
- European Commission, (2002), “Provisions for Implementing Networks of Excellence”, 11<sup>th</sup> Nov 2002, DG Research, Brussels.
- European Commission, (2002), “Provisions for Implementing Specific Targeted Research Projects”, 11<sup>th</sup> Nov 2002, DG Research, Brussels.
- European Commission, (2002), “Research Networking in Europe: Striving for Global Leadership”, DG INFSO, Sept 2002.
- European Commission, (2002), “Support to the Participation of SMEs in the Sixth Framework Programme”, 18<sup>th</sup> Dec 2002, DG Research, Brussels.
- European Commission, (2003), “Notes of the Meeting of the Information Society Technologies Advisory Group”, 21<sup>st</sup> Jan 2003, Brussels.
- European Commission, (2003), “Provisions for Implementing the ERA-NET Scheme: Background Document”, DG Research, Jan 2003, Brussels.
- European Commission, (nd), “Article 169 – Explanatory Note”, DG Research, Brussels.

### Main Internal DG Information Society Documents

- Final Report: Expression of Interest, Sept 2002
- DG Information Society – Input to the 2002 IST Monitoring Panel (Various presentations, notes to file, statistics, etc. from the different Directorates.)
- Gender Statistics Requirements for DG INFSO.
- Information Fiche: Study of the Impact of the IST Programme
- Johnston P., et al, (2002), “European Research Co-operation as a Self-Organising Complex Network: Implications for Creation of a European Research Area”, DG-Information Society.
- Key Action I, (2001), “How to Improve the Responsiveness of the IST Programme by Reducing by more than half the Time-to-Contract: Results of the Pilot”, 17<sup>th</sup> Oct 2001.
- Oakland Berkley Associates, (2001), “Final Report for the Study on Key Issues and Questions Associated with “Big” Projects in the ICT Area”, Contract 27171, DG INFSO, Brussels.

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- Optimat, (2002), “Study on Measuring IST Programme End-User Satisfaction with Programme Management Mechanisms: Final Report.” Evaluation Unit.
- Overview of Activities 2002 – Self-Assessment Element.
- Strengthening Evaluation, Monitoring and Impact Assessment of IST RTD.
- The Future Roles of Project Officers: 25<sup>th</sup> June 2002.

### **Presentations**

- DG INFSO Directorate B: Key Action I Activity Report 2002.
- DG INFSO Directorate C: Key Action II, Activities and Achievements
- DG INFSO Directorate D: Key Action III Activity Report 2002.
- DG INFSO Directorate E: Key Action IV Activity Report 2002.
- DG INFSO Evaluation Unit: The IST Network of Research Collaborations
- DG INFSO: Cross Programme Actions
- DG INFSO: Future and Emerging Technologies
- DG INFSO: IST in the 6<sup>th</sup> Framework Programme: Context, Rationale, Content of IST in FP6, Given in Copenhagen.
- DG INFSO: Response of the Programme Management; IST Monitoring Exercise 2001.
- DG INFSO: Strategy and Work Programme
- DG INFSO: Transition to FP6
- DG INFSO: End-to-end Process Management: Round Table with Programme Management.
- DG INFSO: Human Resources Management in IST.
- DG INFSO: Working Session with Project Officers
- DG RTD: FP6 and the Barcelona & Lisbon Declarations (P. Kind, 7 Nov 02)
- DG RTD: Management of FP6 (R. Escritt, 7 Nov 02)
- European Commission: Reform of the Commission (7 Nov 02)
- Monitoring Panel 2001: Report of the 2001 Monitoring Panel

### **Individual Interviews**

- Individual members of Programme Management.
- Individual Project Co-ordinators and participants.
- Members of NCPs.
- Members of the ISTC.
- Scientific and Technical Experts in the Member States.

## 6.5. Terms of Reference of the Monitoring Panel

### Terms of reference of the independent experts assisting the Commission in its task of continuous, systematic monitoring of the implementation in 2002 of the specific programmes under the Fifth Community research Framework Programmes (1998-2002)

#### Introduction

Since 2000, Community research policy has broadened its horizons as it has taken on the dimensions of the European Research Area (ERA).

In response to the Communication from the Commission "Towards a European Research Area",<sup>30</sup> the Lisbon European Council in March 2000 reached conclusions aiming, with a view to generating employment and economic growth, at rapid establishment of a European Area of Research and Innovation. The following European Councils, the European Parliament,<sup>31 32</sup> the Council,<sup>33 34</sup> the Economic and Social Committee<sup>35</sup> and the Committee of the Regions<sup>36</sup> also endorsed the creation of the European Research Area. In 2001<sup>37</sup>, the Stockholm European Council "focussed on how to modernise the European model and attain the Union's strategic goal for the next decade decided at Lisbon: to become the most competitive and dynamic knowledge-based economy in the world", underlining in particular that "the shift to a knowledge-based economy is of crucial importance for competitiveness".

In 2002<sup>38</sup>, the European Council in Barcelona agreed that "frontier technologies are a key factor for future growth" and that "overall spending on R&D and innovation in the Union should be increased with the aim of approaching 3% of GDP by 2010".

In the context of its reform, the Commission has reinforced the role of evaluation<sup>39</sup> in the decision-making and the implementation of activity-based management (ABM).<sup>40</sup>

On this account, strategic evaluations have in particular been launched.

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<sup>30</sup> COM (2000) 6 final of 18 January 2000.

<sup>31</sup> Resolution of 18 May 2000 PE 290.465, p. 48.

<sup>32</sup> Resolution of 15 February 2001.

<sup>33</sup> Resolution of 15 June 2000, OJ C 205, 19.7.2000, p. 1.

<sup>34</sup> Resolution of 16 November 2000, OJ C 374, 22.12.2000, p. 1.

<sup>35</sup> Opinion of 24 May 2000, OJ C 204, 18.7.2000, p. 70.

<sup>36</sup> Opinion of 12 April 2000, OJ C 226, 8.8.2000, p. 18.

<sup>37</sup> 23 and 24 April 2001

<sup>38</sup> 15 and 16 March 2002

<sup>39</sup> Communication to the Commission on strengthening the evaluation system. SEC(2000)1051/3 of 27 July 2000.

<sup>40</sup> Communication to the Commission on implementing activity-based management in the Commission. SEC(2001)1197/6&7 of 25 July 2001.

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The year 2002 is both the last year of implementation of the Fifth Framework Programme (1998-2002) and the first of the Sixth Framework Programme (2002-2006). Adopted mid-2002, the Sixth Framework Programme has been especially designed to help the implementation of the European Research Area.

The Five Year Assessment of the Community research activities undertaken during the years 1999-2003 will be launched in 2003.

This monitoring mechanism provides a quick response offering an annual review in progress of the research programmes and activities. External experts give an independent opinion to help the Commission ensure cost-effective implementation of the activities. It also provides factual data for the Five Year Assessment. The expert groups examine the implementation of the ERA and of the programmes, and in particular, whether the objectives, priorities, and financial resources are still appropriate to any changes in the situation. In particular, they take account of management aspects, in so far as they influence attainment of the objectives. Where appropriate, expert groups make recommendations to the Commission to adapt or supplement the research programmes and activities in the light of the results of their review.

### Term of reference

On the basis of all these factors, the 2002 monitoring exercise should focus on the following main issues:

- *Analysis and synthesis of recommendations and their follow up and results, from the 1999 to 2001 monitoring exercises*

This analysis, produced using a standardised matrix, should display the changes, which followed the recommendations of the reports from the years in question, concerning the objectives and the strategy, management processes and the impact of the research undertaken. In addition, it should focus on the monitoring process itself.

The results of this evaluation will be part of the data delivered to the experts in charge of the Five Year Assessment in 2003.

- *Monitoring of the implementation in 2002.*
  - Follow up of the recommendations of the experts of the 2001 exercise;
  - The attainment of objectives in terms of implementation as set out in the workprogrammes for 2002;
  - Questions linked to the transition phase between two successive framework programmes (final phase of projects, in particular the follow up and closure of current contracts);
  - Legacy aspects, in particular the follow-up of the impacts from finished contracts of successive Framework Programmes , including the Technological Implementation Plans (TIPs), (where applicable to the Specific Programmes);
  - Preparation of implementation of the Sixth Framework Programme (new instruments, calls for expression of interest, model contract, evaluation and selection criteria, advisory structures, information ...)

### Practical arrangements:

Experts are contracted to monitor the implementation of the European Research Area, of the (EC and Euratom) Framework Programmes and of each of the Specific Programmes concerned. Fourteen experts monitor the Framework Programme. With the exception of the chairperson, the rapporteur, and one expert from a candidate country, these experts are also

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the spokespersons of the experts monitoring the specific programmes and the European Research Area. For the follow-up of Specific Programmes and ERA, between three and six experts should participate.

Indicative timetable:

Work will start in the last quarter of 2002. All reports should be delivered by the end of April 2003.

The monitoring of the implementation of the European Research Area, the Framework Programmes, and the Specific Programmes will be closely co-ordinated.

**6.6. 2002 IST Programme Monitoring Panel**

**Georges Wanet** (B) (*chair and member of Framework Monitoring Panel*) Professor in corporate management, business strategy and entrepreneurship at the Solvay Business School and Managing Director of 1A Consulting. Previously he was a senior manager and a member of the Group Leadership Committee of Belgacom, and a Director of various companies within the Belgacom Group. He came to Belgacom from General Bank, where he held several positions in management control and strategy. Prior to joining General Bank, he spent 10 years working in information technology and data communications for American multinational companies, including Control Data and Motorola. He holds a Ph.D. in Applied Sciences and a Master of Science degree in Telecommunications and Electronic Engineering.

**Tom Casey** (IRL) (*rapporteur*) Director of CIRCA Group Europe Ltd, a company specialising in research and policy analysis. Educated Imperial College (Physics), Manchester University (Science & Tech Policy) and Université Paris - Dauphine (Economics). Worked for the OECD, and, in Ireland, for the National Board for Science & Technology and the National Enterprise Agency. Experience in evaluation and monitoring work for DGs Research and Information Society (*rapporteur* of the IST 2000 Monitoring Panel). Has also undertaken research and policy analysis for DGs Education and Employment-Social Affairs and the European Union Research Advisory Board, especially in the areas of human resources, R&D and industrial change.

**Fulvio Casali** (I) President of Alcanet International since 1999, where he had earlier been technical director and general manager. 1992-1996, chief information officer of Alcatel Italia. He had previously spent several years in Brussels managing the RACE Industrial Consortium project following work in Telettra, SECI and ITT-Face. He served for a period as European industry representative at CEPT/Groupe Large Bande. He received the first ITT Fellowship Professional Award in 1985 for studies on broadband services, and is the author of more than 30 papers, mainly on network planning and broadband services. He edited the book *IBC: Strategies and Technologies* (North-Holland, 1992). He was a member of the IST 2001 Monitoring Panel.

**Terttu Luukkonen** (SF) Head of Unit, Research Institute of the Finnish Economy. Until November 2001 she was Chief Research Scientist, and for a period, Director of VTT Group for Technology Studies. Her work has focused on the impact of national or European initiatives to raise the competitiveness of industries through technological change. She was an evaluator of two major programmes (one in electronics and the other telecommunications) of the National Technology Agency in Finland, 2001-2002; a member of one of the European Commission benchmarking expert groups (2001) and has advised national or EU-level agencies on the measurement of excellence in science and programme impact. She has also been a consultant to the OECD, UN ECE and Nordic Council of Ministers and is the author of nearly hundred publications in the field of science and technology studies. She holds a PhD in sociology.

**Susan Hedigan** (IRL) Director of the Office of Funded Research Support Services at the University College Dublin since 1994. As such, she is responsible for all pre and post award functions relating to research activities including policy synthesis and dissemination for both nationally and internationally funded activities. She has extensive experience in both Commission activities and RTD: as *rapporteur* to the expert group on the monitoring of the 4FP; member of the IST 1999 Monitoring Panel; a National Contact Point (HCM and TMR Programmes) and as a proposal evaluator. She is a founder and member of Earma-European Association of Research Managers and Administrators - and a member of the International Committee of the (US) SRA - Society of Research Administrators International.

**PART B:**

**Responses of the Programme Management to the  
external Monitoring Report**

Experts Recommendations	Commission Services' Responses	Services' Commitments (if any)	Deadline
<b>OVERALL MANAGEMENT</b>			
<p><b>R1:</b> At the next organisational change, during FP6, the DG Information Society should consider moving from Directorates based on operational research areas to Directorates based on management function (strategy and control, finance, HR, etc.).</p>	<p>It should be noted that public sector organisations have distinctly different aims from private business. In addition, private sector organisations are not organised by management function only, most have 'business units' that correspond to a sector with specific needs and services, supported by horizontal 'service units', under a single corporate responsibility. The recently adopted organigramme, which includes already two function based "horizontal" Directorates is currently designed to accomplish the complex mission of the Directorate General, which includes also non-RTD activities.</p>	<p>To be considered at the next organisational review.</p>	<p>No date yet fixed for next organisational review.</p>
<p><b>R3:</b> The Programme should publish by September 2003 an IST "Communications Policy", including appropriate aspects of communications from projects and with a particular emphasis on reaching policy makers in the Member States.</p>	<p>INFSO in 2002 has adopted a "Communication strategy and framework", which includes a roadmap periodically updated. These documents, which also cover IST-related activities, are internal management tools and are therefore not intended for a wider publication. A broader scheme could be envisaged but preferably without creating burdensome additional work for the projects.</p>	<p>To develop a wider policy from the "Communication strategy and framework" initiative. An important result should be to facilitate the project results dissemination (see also R6 and R7).</p>	<p>September 2003.</p>
<b>END-TO-END PROCESS MANAGEMENT</b>			
<p><b>R4:</b> An operational end-to-end process management should be put in place. Elements of such a system should include: An overall "Chief Operations Officer" to ensure the consistent functioning of such an end-to-end process management system, and with the necessary resources and full support from Director General and Deputy Director General level.</p> <p>The definition of the overall end-to-end process: relationships between the different activities and the associated management procedures.</p> <p>The development of common tools across all of IST-FP6 and including the use of standard KPI (Key Performance Indicators) at project and Programme level.</p>	<p>A form of "COO" already exists (IST Operations Unit 02). If a broader solution is adopted it must have clear links to the existing structure (IST Operations, O2 and A2) and should take into account what is going on beyond IST (i.e. other DGs in charge of FP6 implementation RTD).</p> <p>This is necessary for the COO function. This recommendation could be developed in the context of the Quality Improvement System suggested below.</p> <p>The consistency beyond IST with other DG in charge of FP6 implementation RTD will be considered with regard to the tools, procedures, reporting &amp; KPIs. Use will be made of the expertise in the monitoring panel to suggest</p>	<p>To develop further along the lines suggested in the response.</p> <p>To define all end-to-end steps, and the links between them</p> <p>Tools and procedures are under development and will be improved based on experience of implementing IST call 1 projects</p>	<p>Proposal will be elaborated at the end of year 2003.</p> <p>October 2003</p> <p>Various deadlines through 2003-2004 according to tools planning.</p>

Experts Recommendations	Commission Services' Responses	Services' Commitments (if any)	Deadline
The development of a simple, supportive, Quality Improvement System within the Programme.	concrete steps to identify such indicators.  Unit A4 is co-ordinating work in the area of performance indicators. This QIS could be built on the basis of the experience gained by the PO group.	Scoping study in 2003	Review outcome of scoping study end 2003
<p><b>R5:</b> An in –depth analysis of the parameters associated with success, failure, and non-attempt in commercialising the R&amp;D outputs of IST projects should be undertaken with the objective of providing operationally useful guidance to projects and Programme.</p> <p><b>R6:</b> The role and utility of the TIPs should be explored and clarified.</p> <p><b>R7:</b> A system should be put in place to rapidly identify and encourage potentially exploitable RTD outputs.</p>	<p>This is also partially covered by the impact assessment activities studies planned by units A2 and A4</p> <p>TIPs are required by the Commission Decision setting up FP6. However, a review of FP5 TIPs has recently been completed by DG RTD, and the detailed requirements for TIPs in FP6 will be revised in the light of it.</p> <p>The identification of exploitable outputs was a key goal of the TIP requirement.</p>	<p>In agreement: first analysis detailed analysis, based on output of unit A4 strategic study -</p> <p>The implications and options for DG INFSO and impact assessment will be reviewed</p> <p>The development of such a system could be considered as a topic for a Specific Support Action in a future workprogramme</p>	<p>End 2003 Sept 2004</p> <p>November 2003</p> <p>2004</p>
<b>R8:</b> An FP6 IST impact assessment system, and associated tools, consistent across all Directorates and Units, should be documented and available by September 2003.	Impact assessment methods and indicators for the Strategic Objectives are being developed by all IST Directorates in co-operation with unit A4. Consideration will be given to both FP5 projects and the new FP6 projects See also R5	In agreement to develop a consistent impact assessment system. Internal reflections will be complemented by an external study	First proposal October 2003  Study output September 2004
<b>R2:</b> There should be strong emphasis in the new information system on system utility and quality of service. A Users' Group should be formed to guide applications development and provide a base for the systematic evaluation of utility.... the emphasis should move to interfacing and interoperability	Strong agreement on the need to stress interfacing and interoperability. User groups are already routinely set up to develop and monitor the development and implementation of significant IT tools. Also the Project Officers group will be continued, to examine both tools and procedures from a user point-of-view..	In agreement, but interfacing and interoperability has to be 'built in' from the beginning to be feasible and successful and not <i>a posteriori</i> , and the associated business processes must be established in good time Fast prototyping and if possible use of previous systems as functional specs will be pursued.	Ongoing activities
<b>R24:</b> The development of an administrative "clearing system" which would remove operationally complete projects from the system in line with the new Financial regulation.	Any such system must be compatible with the overall management responsibility of the PO.	Options will be reviewed, in relation also to R9	October 2003

Experts Recommendations	Commission Services' Responses	Services' Commitments (if any)	Deadline
<b>VALORISING HUMAN RESOURCES</b>			
<p>The moves towards developing Project Officers as research managers, rather than administrators, should be further strengthened by:</p> <p><b>R9:</b> Removing as much routine administration as possible from Project Officers and centralising it in dedicated Support Units.</p> <p><b>R10:</b> Providing a programme of supportive training, including continual updating on the changing vision, objectives, and strategy of the Programme.</p> <p><b>R11:</b> Formalising and expanding the activities of the "Project Officers Group" as a support to developing operational management systems and quality improvement across the Programme.</p>	<p>In agreement but project officers have the responsibility for all project aspects. DG INFSO has explicitly chosen financial circuits in which PO is both operational and financial initiating agent.</p> <p>In agreement. PO group recommendations will be followed up.</p> <p>Updating on the objectives is mainly based on informal but regular training and briefings . For example, the strategic vision is always discussed in all call briefings, and a number of initiatives have been taken in Directorates to reinforce internal communication, training , team building and strategy development.</p> <p>An activity report of the PO group has been released for the period Sept 2001 to Dec 2002. This group, which involves POs from across the Directorate General will continue. (See also R4 on Quality Improvement System).</p>	<p>Lessons learns from the current practices will be studied. The practicality of splitting the two functions will be examined.</p> <p>The impact and practicalities of such a practice will be closely studied. (The overall reduction in the number of projects in FP6 must also be taken into account). Compare units and develop a set of best practices</p> <p>Continue and expand current "Training map" initiatives as part of the CDR system.</p> <p>In agreement.</p>	<p>Interim assessment end 2003.</p> <p>Interim assessment end 2003.</p> <p>Review requirements, end 2003</p> <p>2003</p>
<p><b>R12:</b> As part of establishing greater Programme coherence and Programme impact, there is a need to establish a common approach to Unit management and the role of Heads of Unit and continue to invest in a strong, common programme of management training for Heads of Unit both for general management quality and for IST management coherence.</p>	<p>This is consistent with training initiatives taken in the context of the ongoing Commission Administrative Reform.</p> <p>Deputy Heads of Unit, Operations Sectors and other staff with key management roles should also be involved.</p>	<p>Continue and strengthen management training activities.</p>	<p>An evaluation of management training is underway in 2003</p>
<b>GENDER ISSUES</b>			
<p><b>R13:</b> To enhance the compatibility of professional and family obligations for both women and men, DG Information Society should seek to develop and adopt Human Resources practices, which allows for flexible and family-</p>	<p>Practices must be consistent with the initiatives taken for the whole Commission in the context of the Administrative Reform, and the principles of good management.</p>	<p>To assess the extent to which current working practices inhibit a greater participation of women</p>	<p>Initial assessment results by end 2003</p>

Experts Recommendations	Commission Services' Responses	Services' Commitments (if any)	Deadline
<p>friendly working structures and conditions. These include, among other things, avoiding late meetings and working non-standard hours. Following the Joint Research Council pilot, IST might develop its own "Family-Friendly Practices".</p> <p><b>R14:</b> Forty per cent representation of women in panels and advisory groups should be a target followed in FP6 and whenever panels and advisory groups are appointed, special attention should be paid to make sure that these incorporate a sufficient number of women.</p> <p>In order to ensure a sufficient pool of expertise, the IST Programme Management should specifically promote women's registration in the experts' databases... for example, by alerting research organisations to the need to increase women's registration</p> <p><b>R15:</b> To ensure that attention will be paid to the gender aspects of ICT, the high-level group on socio-economic aspects of the IST Programme should incorporate sufficient expertise in gender questions.</p>	<p>To increase women's participation in panels and advisory groups, other measures need to be defined in addition to targets. For instance, increased use of remote evaluation would certainly increase the participation of women but also of top level and very busy people irrespective of gender.</p> <p>This should be co-ordinated with the MSs via the ISTC and NCPs. The EMM (Expert Management Module) explicitly allows each MS R&amp;D administration to populate the expert database with additional names (e.g. of women)</p> <p>The High-level group has no mandate to address operational issues</p>	<p>Units will increase their ongoing efforts to ensure the highest possible representation of women experts. The Figure of 18% women experts in evaluation call 1 will be exceeded in call 2</p>	<p>2nd Call : November 2003</p> <p>Ongoing</p>
<b>DEVELOPING THE E.R.A.</b>			
<p>The IST-FP6 should develop a much stronger role in response to the development of the IST-ERA, including a formal, operational response and in particular should:</p> <p><b>R16:</b> Develop a programme of benchmarking and identification of best practices within the EC related to IST issues.</p>	<p>The IST priority intends to assess the status of ERA in each domain and to propose a number of targeted actions in each to stimulate the realisation of ERA in the coming years. The creation of an ERA pilot action in Grid Research is under discussion with MS. Best practices from an area such as Research infrastructure (Géant) where the ERA is already well addressed will be highlighted to serve as a possible showcase to other domains.</p> <p>Various options will be verified, with the eEurope benchmarking as one reference.</p>	<p>Develop existing actions and consider further initiatives as described in the response. The central role of the ISTC in this will be taken into account.</p> <p>Agreed</p>	<p>End 2003</p> <p>End 2003</p>

Experts Recommendations	Commission Services' Responses	Services' Commitments (if any)	Deadline
<p><b>R17:</b> Develop operational systems (committees, fora), which will permit much greater opportunities for co-operation between Member States IST activities as well as with the activities of IST-FP6.</p> <p><b>R18:</b> Review the support and resources provided to ISTAG as well as its role and structure, in order to ensure that ISTAG members have both: i) the R&amp;D community's recognition required to represent a commonly agreed vision of ERA, and ii) the capability to integrate Member States' RTD in the context of ERA.</p> <p><b>R19:</b> At the same time, review how the ISTC might be strengthened to provide a stronger support for the development of the ERA.</p>	<p>Special activities are ongoing, such as setting up ERA pilot actions, technology platforms, links with Eureka etc. An important priority should be to put in place coordination mechanisms to exploit the work of existing groups.</p> <p>This recommendation seems to diverge from the personal advisory role of ISTAG members and to trespass on the role of the ISTC. Support and resources for the ISTAG are kept under review and must be commensurate with their activity and role.</p> <p>The duties of the ISTC are defined in the Council Decision adopting the specific programme.</p>	<p>Existing initiatives will be further developed</p> <p>Further discussions with ISTAG and the ISTC</p> <p>Discuss with the ISTC</p>	<p>End 2003</p> <p>October 2003</p> <p>October 2003</p>
<p><b>R20:</b> IST Programme Management should set up mechanisms which will permit formal linkages between the IST programmes of Member States in setting up the IST Work Programme for 2005-6.</p>	<p>The current IST Committee, representing the interests and programmes of the Member States is consulted on the draft Work Programme.</p>	<p>Review existing consultation procedures with the ISTC</p>	<p>Mid 2004</p>
<p><b>R21:</b> The participation of SMEs in the new instruments of IST-FP6 should be monitored on a Call by Call basis.</p> <p><b>R22:</b> A strategy-level paper on alternative forms of SME participation should be prepared for the 5-Year Assessment, taking into account the results of the First IST-FP6 Calls.</p>	<p>This is routinely done at present, as part of the Evaluation reporting</p> <p>In agreement. But the strategy to get maximum benefit from SME participation will need to be implemented within FP6, before the 5-year assessment is complete</p>	<p>Initial evaluation of SME participation</p> <p>Strategy proposals to maximise the benefit of SME participation</p>	<p>October 2003</p> <p>April 2004 (to take into account results of call 2)</p>
<p><b>R23:</b> The IST-FP6 should undertake an assessment of potential technical areas of international co-operation and publish a priority list. A system should be put in place, which would channel funding to projects, which would maximise the benefits of international co-operation to the EU.</p>	<p>In agreement to undertake an assessment and to develop a strategy for maximum benefit from International co-operation. Strategic targeting of funding could be considered as an aspect of the "repair" call IST call 3, or for Workprogramme 2005-6.</p>	<p>Assessment in late 2003.</p>	<p>April 2004 (to take into account results of call 2)</p>

Experts Recommendations	Commission Services' Responses	Services' Commitments (if any)	Deadline
<p><b>R25:</b> A number of small, project and Programme management-support projects should be launched immediately to assist all participants in understanding the best ways to develop and manage the new instruments. Such analysis might also produce management tools ranging from legal supports to future impact tools. Leaving such analysis until the results of the 2004 Review will handicap the scope for action of projects and Programme alike.</p>	<p>There are serious difficulties in launching projects achieving worthwhile goals within the proposed timeframe. In addition, such studies would need to be implemented in conjunction with other FP6 Directorates. Alternative ways of achieving the goal will be proposed</p>	<p>Assessment of the effectiveness and management of the new instruments</p>	<p>Exploratory discussions with other DGs commencing September 2003</p>
<b>EXTERNAL, INDEPENDENT MONITORING</b>			
<p><b>R26:</b> External and independent Programme monitoring with the publication of an annual External Monitoring Panel Report and a Commission Services' formal response should continue. The Commission response should be provided in a timely fashion.</p> <p>However, a move to a “sustained management consultancy” model should be made. This model emphasises closer working with IST, with a year round cycle of monitoring, greater continuity of monitoring personnel between years, and greater integration into the Programme’s quality improvement system.</p> <p>Adequate resources must be devoted to monitoring. Concentration of Panel efforts on a smaller number of key management issues would also be useful.</p> <p>A system to operationalise Panel recommendations should be put in place.</p> <p>Links with ISTAG and ISTC should be strengthened by a formal presentation of the annual Monitoring Report by the Monitoring Panel Chairperson.</p>	<p>The new legal base for FP6 requires continuous and systematic monitoring, with a stronger element of self-assessment – as also required by the new financial regulations.</p> <p>This recommendation has to be considered in light of other requirements for continuous self-assessment and monitoring; ‘impact assessment’, ‘management reporting / ABM management’ and internal and external audits.</p> <p>The level of resources (in particular Human Resources) currently devoted to various monitoring systems is already significant. Concentration on key issues rather than dispersion of effort is always desirable.</p> <p>The format of the response to recommendations, and the arrangements for their follow-up have been revised.</p> <p>Formal presentation of the annual monitoring report already happens at the ISTC together with the reaction of the Commission. The Monitoring report is less relevant to the activities and role of ISTAG.</p>	<p>More systematic self-assessment, with focused external monitoring as required, on a two-year cycle</p> <p>External independent monitoring has been re-positioned as “peer review” rather than “management consultancy” . To bring in a fresh viewpoints a rotation of experts will be ensured.</p> <p>There is a tighter focus in the monitoring exercise for 2003-4</p> <p>Done</p> <p>Done</p> <p>The ISTC will continue to be fully informed</p>	<p>New strategy implemented in 2003</p> <p>Implemented in May 2003</p> <p>Ongoing activity</p> <p>2003</p> <p>May 2003 and July 2003, and ongoing</p>