PART II

Future Research priorities for
IST-Environment
(2002-2006)

Objectives

- Identify priority actions for the next five to ten years
  - with a clear EU dimension and added value
  - taking into account the new instruments
- (Identify lines of action for the work-programme 2002 if budget is made available)

Participation

- 30 Experts from 10 different countries
- 25 position papers presented
- Report available on paper and on the web (www.cordis.lu/ist/ka1)

Structure

- Three overlapping themes
  - Theme 1 : data acquisition and pre-processing, sensors, telematics infrastructure
  - Theme 2: representation and communication of environmental information and knowledge
  - Theme 3 : generic applications making use of the above
- Expected results
  - documented and ranked priorities

Workshop Results 1

The Data Problem

- Europe is good at collecting environmental data
  - low take-up of modern sensor technology
- Accessing data is an increasingly laborious process
  - lack of data transparency
  - cumbersome data access policies
  - lack of univocal Geographical Information at EU level
  - cross-border issues are extremely difficult to tackle
- Production of value added information is low
  - Limited activities in knowledge extraction and DSS

Workshop Results 2

The Tool Problem

- Industry is reluctant to invest a significant amount of money in developing applications for narrow markets
- The focus should shift from specific applications development to multi-disciplinary application enablers
- Technology transfer to end-users is a major issue
- Quality of service, data, product, telematic infrastructure

Workshop Results 3

- Technology Gap
  - sensor development
  - data standards formal data models
  - metadata
  - Software tools
- Political Gap
  - EU standards for data type
  - data policy, costs
  - Partly addressed by the E- ESDI initiative

Priorities for Future work (2002-2006) 1

Recommendations

① Develop an Environment Open Architecture

- searchable by means of semantically meaningful metadata
- offering sophisticated methods for auto-classification
- building on existing international standards

② Define a conceptual infrastructure for Environment Data Warehouse

- accepting data sets from many sources and format
- physically distributed but logically centralized

Priorities for Future work (2002-2006) 2

Recommendations

③ Build Environment Knowledge Base

- data mining, automated detection of interesting patterns in large databases, integration of knowledge discovery tools, environmental DSS methods
- innovative visualization of spatial data and data mining results
- classification indexing and search of non-structured environmental information
- intelligent data fusion, multiple models integration

Priorities for Future work (2002-2006) 3

Recommendations

④ Environment Workbench for Tool Development

- to lower the development costs while ensuring compatibility with defined interfaces and standards
- to develop a library of common application routines
- to ensure interoperability at all level by building on GRID technology

⑤ Environment Data Acquisition

- explore potential :suitable technology transfer from military to civilian domain
- explore the potential of digital radar technology
- develop smart sensors and sensor networks

Recommendation for implementation

- Maximal benefit if all recommendations are implemented
- Few large integrated projects to ensure co-ordination and adherence to standards
- Accompanying measure for dissemination of best practices
- Thematic network to help building sub-communities
- A few small high risk RTD to explore new technologies