

Facilitating Community through Information

A suite of software-enabled participation tools

A proposal to Esprit (DG XII)
'Intelligent - Information - Interfaces'

within the programme schema
'The Connected Community'

Coordinating Partner

Union of International Associations (UIA), Belgium

Partners

Swedish Institute for Social Inventions (SISU), Sweden
Global Ecovillage Network (GEN), Denmark

Associate Partners

International organizations:

Global Action Plan for the Earth International (GAP)
IAPCO Institute for Congress Management Training (IAPCO-ICMT)

National Organizations and Communities

Institute for Social Inventions (ISI, UK)
Lebensgarten (Steyerberg, Germany)
Findhorn Foundation (Findhorn, Scotland)

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SUMMARY

The proposal describes investigations to provoke and reinforce action, by companies and organizations with appropriate resources, to *develop software tools which support real-life communities*. Prototypes, know-how and operating procedures will be developed and tested with communities. These complementary tools involve a variety of overlapping research challenges. The proposal focuses on developing application of tools rather than on the tools themselves.

The proposed research would explore and specify a *suite of 18 complementary modules* which can *enhance community dynamics and the sharing of information* between people in local communities under a variety of conditions.

The immediate research goals would be to *review, examine, test and augment relevant existing software in a variety of community environments*. Much of this work would build on existing initiatives and interests of the proposers.

The modules in the suite are overlapping and interrelated; all have *direct practical relevance to full-featured and complex local geographical communities in Europe*, subject to erosion of quality of community life. However, certain techniques are more easily and rigorously investigated in simplified, rudimentary or transitory communities. The proposal, therefore, extends the definition of 'geographical community' to include other spatially-delineated environments such as: bus stops and airport lounges, multi-session conference venues, office complexes, village administrations, town councils, and other thematic or intentional communities, including refugee camps, hospitals, special care homes, and prisons.

Real meeting, living and working environments will provide 'laboratory' situations for rapid testing of a number of the community process techniques in this proposal, as will pre-existing and proto-groups whose activities in a common geographic territory can be readily augmented with virtual environments (EcoTeams, Eco-villages, LETS communities and their networks).

The modules described include: Crowd-to-community transformation; Territory as the map; Sustainable community database (and content integration); Micro-community facilitation; Commitment database and relationship contracts; Meeting participant contracts; Participant messaging in conferences; Refugee camp satellite link; Interface on community problems and initiatives; Ecology-based role metaphors of opportunities of community participation.

The *research challenges* identified include: Software issues, (especially in relation to profiling and non-hierarchical information); Hardware issues (especially in relation to mixing levels of technology); Database content structure and acquisition; Access and input issues (especially of a non-textual nature); Socio-dynamic issues; Copyright issues; Timing and Production issues.

The work will be performed over a year through a series of meetings, assisted by regular e-mail contact among partners. Module prototypes and operating procedures will be developed by partners where possible, subcontracting software development where work is beyond the their competence. *Modules will be specified and tested through contact with communities that form part of the extended network of the partners*. According to the nature of the challenge for each module, results will take the form of tested prototypes and operating procedures where this has proved possible, or specifications for further developmental work.

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OBJECTIVES

The proposal describes investigations to provoke and reinforce action, by companies and organizations with appropriate resources, to *develop software tools which support real-life communities*. Prototypes, know-how and operating procedures will be developed and tested with communities where possible. The complementary tools involve a variety of overlapping research challenges. The proposal focuses on developing application of tools rather than on the tools themselves.

Socio-cultural objective:

The proposed research would explore and specify a suite of modules which can *enhance community dynamics and the sharing of information* between people in local communities.

Human-centred objective:

A prime goal of the research is to *demonstrate information and communication tools which empower ordinary individuals to initiate, develop and sustain real-life inter-personal relationships*, even in situations where there is no obvious catalyst for community formation or where conditions of social exclusion prevail.

Technical objectives:

In relation to technological investigations, the proposal has two broad objectives:

- to investigate new ways of *using (or adapting) available software*, or that in development, particularly through the *design of new interfaces and interaction paradigms*;
- to investigate *applications of 'groupware' for local people and community groups* (specifically including short-term and intentional communities, and those with environmentally-sensitive ambitions and operating insights).

Immediate research objectives:

The immediate research goals would be to *review, examine, test and augment relevant existing software in a variety of community environments*. This would be experimentally simple at first and then increasingly more sophisticated, socio-dynamically rich and realistic, as the research advances. In the case of certain of the modules, the proposed research is founded on considerable prior work and real-life testing and development (referenced in Annex 1). The mix of investigative and applied (field) research will vary, therefore, depending on the module.

Long-term research objective:

This proposal builds on a number of ongoing research themes which the Coordinating Partner, the Union of International Associations (UIA) has been advancing over many years by using its own small reserve funds and taking advantage of substantial testing opportunities available through its activities with the communities constituted by international conferences. Several of the proposed research modules have been developed with the direct involvement of the present group of Partners. Only four of the modules have ever been able to be invested with sufficient resources to reach prototype and testing stages: Participant messaging (M8),

Networked meetings (M9), Visual minutes (M10), Time sharing (M11).

The consortium's long-term research objective, therefore, is that the further round of investigation through this project, and any other associated work, would *delineate several of the modules* to a degree sufficient to *allow their advanced testing and use in real-life local community settings*.

As the results of the initial year of I³ work emerge, the proposers envisage *re-contracting* (with Esprit or other Commission programmes) *to advance work on individual modules* -- particularly anticipating synergy with other I³ projects and project groups through *I³-NET* -- and also to re-channel research/development of other modules to more appropriate developers -- an expedient strategy in this rapidly advancing area. One of the immediate research goals is identification of further development potentials.

It is expected that the application of results from this research could later be extended throughout the European region and globally. Ideally the 'final' module interfaces would be standardized so that third party innovations can be subsequently developed and used as 'plug-ins' (add-ons etc).

CONTEXT

The Schema 'Connected Community' provides a comprehensive and inspiring framework for the elaboration of research investigations. In addition, the I³ programme, particularly its philosophy and objectives, appears to offer fertile ground for imaginative and genuinely collaborative project work concerning themes of substantial research interest for the Partners. This perceived resonance in research sympathies has attracted the consortium to make its submission and is an important component of the 'real-life' context against which this proposal has been conceived.

Definition of Community:

The modules in the suite are overlapping and interrelated; all have direct practical relevance to full-featured and complex local geographical communities in Europe, subject to erosion of quality of community life. However, certain techniques are more easily and rigorously investigated in simplified, rudimentary or transitory communities. The proposal, therefore, extends the definition of 'geographical community' to include other spatially-delineated environments such as: bus stops and airport lounges, multi-session conference venues, office complexes, village administrations, town councils, and other thematic or intentional communities, including refugee camps, hospitals, special care homes, and prisons.

AA. Context theme: Territory as interface

In treating the territory as interface, the proposal is specifically concerned with the following geographical communities:

- neighbourhood, village and small town communities;
- intentional communities, specifically those oriented to sustainable development and notably eco-villages, EcoTeams and LETS communities;
- community centres and office complexes (notably in the case of voluntary associations);
- potential *ad hoc* communities (waiting rooms, hotels, holiday resorts, conference centres, public transport vehicles);
- refugee camps, especially those involving longer-term occupation;
- shelters for the homeless or vulnerable;

- short- and long-stay homes for the sick, disabled, elderly, criminal etc.

Real meeting, living and working environments will provide 'laboratory' situations for rapid testing of a number of the community process techniques in this proposal, as will pre-existing and proto-groups whose activities in a common geographic territory can be readily augmented with virtual environments (EcoTeams, Eco-villages, LETS communities and their networks). Well-resourced technical environments, such as conference centres and prisons, may prove to be especially valuable for testing purposes. An ultimate test is seen as ensuring the relevance of the techniques under investigation for catalyzing 'instant community', such as may be tested in time-constrained waiting environments (characterized by disconnected clusters of people) and emergency situations which are both chaotic and erosive of any sense of quality of life. Some such communities are especially enthusiastic about exploring tools which will enable them to counteract community fragmentation.

Module 1 (M1): Crowd-to-community transformation: There are many instances where people find themselves gathered, by choice or by force of circumstances, and remain each in an alienated condition. Examples are an airport lounge during long delays, a large conference in which no interaction facilities have been envisaged outside formal arrangements (analogously a hotel lobby, passenger ship or train carriage), or public spaces like a town square, shopping mall or the grounds of a school when a pattern of mutual interaction has not developed or has declined.

The challenge is to design immediately operational software to facilitate worthwhile patterns of interaction. As facilities offering a competitive advantage to sponsors, these could be available as piggy-back options on local networks installed for other purposes (eg info systems in shopping malls, public transport ticketing systems, bank terminals, cafe video games etc), or on notebook computers or 'organizers' carried by some people present. The vision is to enable people to input profile information (possibly via smart cards) and to indicate fruitful communication clusters and interactions in a form that evokes participation. Creative ideas on which to base such systems would be sought *inter alia* through the British and Swedish Institutes for Social Inventions.

One concept is that airline companies would hold information about their passengers (as they now do for food preferences of their frequent fliers). People who so choose could interact with the database, adding additional information about themselves (possibly via smart cards). Side tables in waiting lounges might offer touchscreens (also touchscreens in seatbacks of planes) or 'piggy-back' use might be made of multi-media information kiosks. In planes with passenger telephones, calls might be scheduled between passengers on request.

Another concept is that clients could submit profiles to telephone companies, for calls to be scheduled to others in their local geographical region whose profile 'matched' their requests. On the basis of such conversations meetings might be initiated, with the intention of enriching the pattern of real-life community activity. This outcome has much in common with *M5 'Networked face-to-face meetings'* and with certain of the objectives of *M4 'Community database content integration'*.

Module 2: Territory as the map¹: A technique potentially supportive of 'crowd to

¹ This approach reverses Korzybski's dictum 'the map is not the territory', which has encouraged the expectation that users of information be obliged to learn to use abstract mapping and ordering systems for the information they require

community transformation' envisages the geographical territory itself, and in its entirety, as a form of direct spatial interface providing a mnemonically significant map for the interactions of community members. Such a technique, if appropriately translated and visualized, should be readily comprehensible in traditional rural communities where local lore still carries meaning. It would take as its objective the design of a common reality-based virtual framework, comprehensible to long-term inhabitant and visitor alike. As an extension of this initiative, features of the community environment could also be treated as mnemonic triggers to embed and hold understanding of complex community relationships, relying on the practice and theory of metaphor -- reinforced by local symbols and lore. This information, whether in text, visual or audio form, could be built into a database capturing insights about community relationships. These would be meaningfully 'mapped' onto the common geographic territory, using landforms, landmarks, routes, personalities and other local characteristics.

Ground-location satellite technology could have a role in this concept. A potential overlap here is with *M15 'Refugee camp satellite link'*. Records in the database could be linked to patterns of traditional tales valued as illustrating wisdom on local community dynamics, overlapping with investigations for *M3 and M4 'Community as database'* and *M17 'Ecology-based role metaphors for community participation'* described below).

B. Context theme: Community as database

Module 3: Sustainable community database facility: Software and hardware are available to serve as community archive, reference library and statistical repository, and to capture data, insights and lore of local people (including photos, sketches, sound clips and maps -- linking here with *M2 'Territory is the map'*). Such content can already be organized and indexed at the time it is input (eg via database software such as *Folio Views*, *FirstClass* or *FoxPro*). However, mindful of the underlying I³ philosophy, a sensitive interface is required (possibly multilingual in a European context). This would facilitate real-life links between the people and information: actively engaging them in the database creation and evolution, feeling it to be a 'living' part of their community, augmenting their own knowledge capabilities and supporting their daily lives.

This module would address the specific research and design issues for interactive databases for community sustainability: environmental systems and status, ecological actions and results, local economic systems, ideas banks and wisdom banks etc. which would be usable by communities involved with Local Agenda 21, GAP's Community lifestyle programmes, LETs communities, intentional eco-villages etc.

The choice of sustainable community as the subject for detailed database development is for two reasons:

- **Creative potentials** - the presence of ecologically-sensitive data is likely to strengthen the systems and holistic aspects of the interface developed, and
- **Relevance** - the product will directly respond to the participation needs of the broad population and communities as espoused in Agenda 21 and its complementary regional agendas in Europe (such as the *Environmental Programme for Europe (EPE)* [1995, UNECE/CEP/25, as submitted to the Ministerial Conference *Environment for Europe*,

to articulate behaviour within a community. Such methods often involve simplistic or sterile checklists, menus or systems of categories, which are usually remote from, and insensitive to, the richness and complexities of community behaviour in practice.

Sofia October 1995]).

Regarding the relationship of this module to other existing and proposed EU-funded work, two GAP national organizations are currently undertaking EU-supported work (DG XXIV) within their countries -- GAP Flanders is applying the Household EcoTeam Programme to community campaigns and GAP Ireland is working on a children's programme. Generally, there is a significant amount of compatible work being undertaken in the European communities to which the Partner group has direct access.

Module 4: Community database content integration: Complementing *M3* above, this module focuses on how the database material could be fruitfully supplemented by representation of what might be termed 'higher order' community processes. There is inherent merit in free input and exploration, based on keywords and topic menus, but there is also a further level of challenge. This lies in the ways information flows are used as carriers to evoke more integrative orderings, capable of reinforcing the sense of community identity and the significance of membership in that community.

In the territorial contexts envisaged, especially for facilitating 'instant community' (*M1* 'Crowd-to-community transformation'), the challenge is to find ways for potential participants to enter extended personal profiles and stories into a shared database. Individuals could, for example, build up and maintain a personal (or group) profile (on disk, smartcard or downloadable from a website) that could be integrated where needed into such a database (eg in an airport waiting room using airline telecommunications systems). In this way the potential for community formation could be graphically displayed. Questions to be explored include:

- the kind of information that most appropriately catalyzes, or inhibits, such processes;
- how the information can be presented most appropriately;
- the forms of abuse to which it may lend itself if safeguards are not built in from the start, or definable by potential participants (riddles etc).

This module would be especially valuable in times of collective crisis (emergencies, strikes, civil strife, refugee camps, etc) when rapid coalition formation may even make the difference between life and death.

C. Context theme: Computer-supported real-life

Module 5: Micro-community facilitation: Computers are widely used for match-making, whether for friendships or employment. Recognizing the isolation experienced by many in urban environments, this module takes the rationale of these techniques a step further, whilst also addressing some of their limitations.

This module explores the possibility of using computer and/or tele-networks to hold and match profiles within a relatively large pool of people in the same geographic location. On request, or when good matches emerge, a multiplicity of small-group meetings are continually enabled by computer to explore the significance of the profile-based match. People may choose to continue meeting (face-to-face or otherwise) without computer prompting. Additionally they may refine and resubmit their profiles, possibly based on the specific exclusion or inclusion of people of the type clustered at the last such gathering (profiling 'by example'). This Module also supports *M4* 'Community database content integration'.

Refinements in the profiling would also allow people to pursue various optimization strategies, individually or together with named individuals. They could, for example, explore particular kinds of dialogue maturation, subject matter, or activities (for example EcoTeams). The approach could also be extended to meta-communities and community networks using representatives of community groups. Cultural barriers might be spanned by facilitating dialogues between individuals and groups in twin towns, or across the socio-economic divides of large cities. Enabling prisoners to build a qualitatively richer sense of community through such techniques may contribute significantly to their rehabilitation.

The relative unsophistication of profiling techniques could be an issue. A specific challenge is to develop more accurate and subtle algorithms, particularly which can hold contradictory profile elements and cross-cultural boundaries. The issues are related to creative counterpoint rather than matching preferences. The starting inquiry might address what it would take to create viable encounters across stereotypes in larger communities. This work would also be relevant to *M1 'Crowd-to-Community'*.

Module 6: Commitment database and relationship contracts: Many community projects 'crash' catastrophically because inter-personal boundaries were unclear or based on wishful thinking. This module would develop an interactive database enabling those people establishing collaborative relationships to articulate informal and semi-formal contracts with each other.

This initiative would confront people with the issues relating to bilateral and multilateral undertakings, their content, boundaries and limitations -- minimally to enable them to have a checklist of things to worry about, or additionally to have model clauses for a friendly or semi-formal contract to clarify their relationships under a variety of circumstances. The facility would allow modifications to suit the participants in any particular configuration and over time (possibly building understanding of the operation of a type of 'catastrophe theory for personal relationships'). The software should also assist people in recognizing potential relationship difficulties and how they may be guarded against. This Module also supports *M4 'Community database content integration'* and *M7 'Meeting Participant Contracts'*.

Module 7: Meeting participant contracts: Meetings are organized and attended on the assumption that participants operate out of similar mind-sets and meeting behaviour patterns; also that an agenda means the same to all participants. Lack of clarity on such matters wastes meeting time and antagonizes both those who behave insensitively (who may feel they are not appropriately heard) and those with considerable meeting skills (who may feel unable to move discussions to a more fruitful level). Participants may also feel manipulated by organizers through lack of clarity on the dynamics of the meeting.

This initiative would develop a database of clauses enabling participants and/or organizers to assemble semi-formal contracts prior to an event. The focus would be a form of 'social contract' between participants and with the organizers that would foresee a variety of circumstances.

Module 8: Participant messaging in conferences: The physical layout of conference halls (podium, seating, etc) and conventional conference processes (pre-defined programme, key speakers, panels, etc) inhibit unscheduled communication amongst attendees. 'Multi-tasking' by participants, especially in parallel with the scheduled processes, is frequently perceived as undermining the declared purpose of the gathering. Many participants are consequently

organized into passivity, unproductivity, isolation and boredom.

The UIA has experimented with use of computer technology to provide messaging between participants in parallel with conventional sessions. At the simplest level, enhanced communication be achieved using text processing and copying, based on manual collection and dissemination of groups of messages. Depending on availability and resources, such facilities can be extended to scheduling face-to-face encounters in small groups (see **M5** '*Micro-community exploration*'). Also of interest are the ways in which groupware can be used through networked notebooks in meeting complexes with parallel sessions (see **M9** below).

The particular practical challenge at such events is to find ways to mix levels of technology, access and skills, according to the resources assembled, often spontaneously. Specifically, how can participants 'hit the ground running' and 'hook into a shared space' when arriving at such a meeting. In a European, multi-cultural setting, the challenge of language and communication style also merits careful attention.

Module 9: Wired (or wireless) face-to-face meetings: As an extension of *M8 'Participant Messaging'* and where formal meeting processes permit, this module is concerned with groupware run on local area networks in meetings. It envisages notebook-equipped participants communicating in support of the basic 'non-computer-supported' meeting processes. A pertinent setting might be a town or regional council meeting, although the relevance to enhanced effectiveness of the community of parliamentarians in national assemblies is also recognized.

The aim is to optimize insight capture (even from the most marginalized), through better clarifying meeting options, configuring topics, feedback, sifting and filtering (to avoid 'spamming' and overload of key participants). Decision-making processes should be facilitated. The major concern is to ensure that infrastructure questions are streamlined in order to highlight higher order communication issues (normally obscured) that merit attention through new software developments. It is expected that these will increasingly be addressed by imaginative plug-in modules.

Module 10: Meeting commentary tracks: This module considers the possibility of commentary on a meeting process (of new groupware potentials *M9 'Networked meetings'* or the interpretation channels in multilingual conference centres). Can community processes be facilitated and enhanced by commentary tracks to which participants can optionally choose to "lend an ear" whilst listening to discussion? Such running commentary could range from insights into the politics of the event, cross-cultural challenges of the communication processes, educational explanation for the less specialized, psychological explanations as to why some things are (not) being said, suggestions by representatives of vested interests reinforcing particular patterns of intervention, to humour and friendly encouragement appropriate in any community setting.

Module 11: Meeting and interaction discipline: Face-to-face meeting and community processes continue to be unproductively dominated by the few (the powerful, the eminent, the old) whose interventions it has proved difficult to curtail. Such phenomena limit full participation and alienate potential participants, especially the young, thus leading directly to community fragmentation. In response to this, the module envisages two computer-supported techniques:

- A 'time economy' system, allocating trade-able 'air time' units to all participants. Relatively simple software can be used to manage this.
- A voice pattern analysis program would total the intervention time of each participant, providing a graphic display for any part of the event, or for the event as a whole. Suitable warnings could be selected for various thresholds of dominance.

The two techniques are complementary and could be adapted to the simplest computers, including pocket organizers.

Module 12: Issue tracking and trajectories: Whether focused on a particular meeting or on the longer term development of issues within a community, this module of the proposal is concerned with possibilities of visual tracking or mapping of topics. The question is how to move beyond linear text flows and to configure points made by one community participant in relation to those other interventions. The key argument is that participants should, as the dialogue evolves, be responding increasingly to the 'community issue map' as a whole rather than to the most recent linear text presentation of points. The intention is to raise the level of debate and interaction.

This is a form of visual, dynamic minute-making, where computers are used to build up and maintain 'on the fly' time-independent 'air traffic control' maps of a dialogue, the participants associated with particular parts of it, and their various "trajectories". Some mind-mapping software exists for such purposes. However, it tends to be contrary to the associative structure of many meetings. It is also not well adapted to fast-flowing meetings.

Module 13: Dialogue support: There is widespread and increasing interest in dialogue processes, also as a research topic. This module envisages using software to highlight and support new patterns of dialogue that may prove more sustainable than those operating within current paradigms. Preliminary investigations have, for example, shown the potential of music to hold, and render comprehensible, more complex patterns of interaction. This work could potentially support several of the modules, with particular interaction with **M4** '*Community database content integration*', **M10** '*Meeting commentary tracks*', **M11** '*Meeting and interaction discipline*', and **M14** '*Configuration patterning*'

Module 14: Configuration patterning, design and support: It is useful to distinguish between:

- the interaction flows vital to community (and meeting) processes and
- the emergence of interaction patterns, the design and development of community structures, and the possibility for their computer support.

This module attaches special importance to the second point as a higher order process vital to the integrity of the community. Attention will be given to the potential of graphic and design-type software as a non-verbal language for community design. This approach may offer communities the means of moving beyond 2-dimensional organization charts into hitherto unsuspected structures whose integrity is inherent in a 3D structure and whose properties cannot be adequately represented in 2D. (This could constitute a community equivalent to the recent revolution in chemistry through the discovery of 'buckyballs' -- the theme of a Nobel Prize in 1996). Such software may also prove relevant to lifestyle design. This work is supportive of **M17** '*Ecology-based roles*' and **M18** '*Navigating conceptual complexity*'.

Module 15: Refugee camp satellite link: Given the increasing numbers and permanence of people now in refugee camp situations and 'holding centres', in Europe or using European resources, this module investigates the possibility that a minimum resource satellite link-up can be provided to distant computer resources from such locations (as is provided for media broadcasts).

Can such a link-up can be used by aid workers to facilitate community processes within the geographical location, as with **M1** and **M5**? These processes could include assisting people to trace and make contact with relatives, friends or advisers (this might involve rapid voice input of names of relatives and children into a database). In more permanent camps, such a link up would facilitate micro-community formation as described in **M4** '*Community database content integration*'. Note that in a chaotic situation, the merit of this approach is that the data could be stored (backed up) on another continent.

D. Context: Active participation

Module 16: Interface on community problems and initiatives: This module is conceived as a human-centred 'front-end' for people to access and augment collective information on community problems and solutions. Such information can be downloaded onto local

computers. The front-end should make it easy for people to create and leave traces of information; ensure that people can comment on, modify or add to the information; trigger and accommodate individualized knowledge and expression. Conflicting views, reflecting the dynamics between community members or factions, could also be held.

It is proposed to develop a prototype of an interactive CD-ROM/Web product based on the community-relevant entries in the databases of the *Encyclopedia of World Problems and Human Potential* (UIA). The prototype would be supplemented and tested by GEN, GAP and other community-based groups. A similar project in the area of biodiversity conservation, also headed by the UIA with a different Partner group, is the subject of another EC grant for prototype development under the INFO2000 programme (DG XIII, STM 505 Conservation); it would provide a significant informatics 'kick-start' to this module.

Module 17: Ecology-based role metaphors of opportunities (styles) of community participation: The idea here is to distinguish, recognize and appreciate a wide variety of styles of community participation -- through which the ecology of a sustainable community is formed and enriched. It may be thought of as a geographic community 'twinning' itself to a virtual one, with the myriad interactions between the (real) human community system and the (virtual) eco-system informing and gradually enriching each other. An add-on extension for communities which have built up a sophisticated ecosystem would be the virtual equivalent of role play and psychodrama, calling to mind the *Transformation Game* developed by the Findhorn community or conflict resolution processes practised by neighbourhood dispute consultants such as Mediation, UK.

The range of such community roles could be 'marked' by appropriate animal/plant metaphors (simplistically equivalent to tribal totem groups) for mnemonic reasons. The module would develop the means to hold the roles in what is effectively a social ecology database, enabling people to understand and explore roles and relationships that can enhance the life of the community -- and which can contain disruptive dynamics -- through the richness of the ecological metaphors. In effect this is the psycho-social equivalent of permaculture as applied to community design.

Module 18: Art of navigating conceptual complexity: The focus is providing an interface to enable people to structure and integrate information in ways that are not dependent on hierarchical nesting and text. The question is whether advances in mind-mapping software and clickable images can be effectively used to facilitate cross-sectoral contacts that are more supportive of the organic quality of evolving community. Work for this module is also supported by many other modules, especially *M2 'Territory as the map'*, *M12 'Issue tracking and trajectories'*, *M17 'Ecology-based roles'*, *M14 'Configuration Patterning'*

RESEARCH CHALLENGES

There are research challenges common to many of the above modules. These include the following broad groupings:

R1: Software issues (and algorithms):

- a• Profile-matching issues relevant to facilitating and sustaining community initiatives (including encounter scheduling);
- b• Distribution of associative information across surfaces and images in cognitively

- significant ways;
- c• Piggy-back issues associated with adapting use of existing packages;
- d• Appropriately, holding of cross-sectoral information;
- e• Industry standards.

R: Hardware issues:

- a• Mixing levels of technology to allow for differently-resourced participants;
- b• Potential of holding profile information on electronic media (smartcards, floppies) for immediate use;
- c• Constraints on links (satellite, networked portables);
- d• Constraints on piggy-backing on systems and information devices built and/or installed for other purposes (commercial, military, etc);
- e• Physical location of hardware for information exchange
- f• Voice pattern related issues (recognition, database storage/retrieval in absence of text keys);
- g• Graphics issues.

R3: Database content:

- a• Contract clauses;
- b• Symbols system significant to community processes, including stories, images, metaphors;
- c• Multilingual variants, and susceptibility to automatic translation;
- d• Profiling techniques;
- e• Identification of useful content.

R4: Access and input issues:

- a• Open, intuitive input at user-chosen levels of complexity;
- b• Voice input;
- c• Language flexibility and language constraints;
- d• Normative characteristics of software and interfaces, covert and explicit;
- e• Accommodation of social, cultural, ethical and spiritual dimensions (eg. censorship/appropriateness, democracy/'free-for-all', rights/responsibilities...)
- f• Simple access, especially in dynamic and chaotic situations.

R5: Socio-dynamic issues

- a• The dynamics of individual behaviour change;
- b• How behaviour change diffuses;
- c• How people relate to 'strangers';
- d• Dynamics governing behaviour shifts within existing power structures;
- e• Concepts of territoriality and membership;
- f• Human multi-processing capacity;
- g• Distortion of communication and behaviour patterns under stress.

R6: Intellectual copyright and data ownership issues:

- a• Common property/private property (individual, community and Web);
- b• Negotiating intellectual property rights;
- c• Negotiating development rights;
- d• Proprietary versus free software.

R7: Timing issues:

- a• Scheduling work streams in appropriate sequence, as results emerge and to maximize synergistic development of modules;
- b• Keeping aware of software and general infotech developments.

R8: Production and use issues:

- a• Financing public domain interface resources;
- b• Identifying appropriate partners for development and production;
- c• Involving general public and/or specific participant groups in final product definition;
- d• Safeguarding against abuse;
- e• Providing physical, psychological and social fail-safes in the event of dependency.

Table 1: 'Research Challenges -- Detailed by Module' and Table 2: 'Research Challenges -- Overlap Between Modules' present the research challenges likely to be met in the first year of investigations across the entire suite of modules.

METHODOLOGY

The proposers agree with the suggestion made in the 'Call for Proposals' for an iterative and non-linear methodology. In this proposal, the recommended components of: 'Understanding a local community', 'Concept generation', 'Development of prototypes' and 'Participatory evaluation' are systemically incorporated in the procedures for developing the modules (though not under these specific headings, as is explained below).

This proposal has objectives relating to all four themes of this schema. For simplicity each module has been assigned to its dominant theme. However, the actual research methodology will not follow strict thematic or modular paths; it will begin with the more well-founded, simple or generalized investigations common to more than one module or fundamentally necessary for the development of a single module which is interlinked with others. The procedure will successively integrate understandings common to two or more modules.

Based on a solid body of prior work and existing software, the research will investigate promising development areas. If rewarding or encouraging, each tentative investigation will be strengthened and broadened. If results are not readily apparent or encouraging, the investigation will withdraw and refocus itself without great loss of resources.

An initial focus of the research is to clarify development options in the light of existing research and technologies. This will require a back-to-back meeting of both the Core Research Group and the Research Support Group, as well as continuing e-mail and telephone exchanges. But mostly this work will be typical of the early stages of development research -- researchers investigating professional networks (formal and informal), the Internet, computer magazines and the like. Proprietary software will be purchased, freeware downloaded from the Web, and other promising purpose-designed software acquired from academic and other research institutions. Certain items will be distributed between partner organizations. The potential of each piece of software to meet the needs of the various modules would be assessed against a set of criteria (a preliminary listing is given below) and prioritised for further modifications. Reports would be prepared using a standardized report form.

A parallel set of investigations will be undertaken to endeavour to understand the true human needs for software support for communities and groups within the range of direct involvement of the partners and as covered by the modules. In some cases larger consultative meetings will be scheduled, but in most instances the members of the Core Research Group will investigate individually or in small teams (sometimes with other staff members of their partner organizations), collaborating with their Associate Partners and other community constituencies. They will explore and then document the perceived requirements of each community or group. Their own interpretations will be added.

At the end of the first phase of the research, which may take between 3 and 6 months, the research group will meet again to discuss its findings and plan for the next phase of work. It is not possible at this stage to define the actual course of this phase of work. Generally and where feasible the research during this second phase will include:

- summarizing the progress made on the research challenges;
- matching existing interfaces with expressed human needs for support;
- outlining development potentials for the various modules;
- identifying modules amenable to immediate further work by the team;

- locating additional resources or cooperation partners for modules, where appropriate.

It is expected that some of the challenges may be fairly easily addressed through the adaptation of existing technologies. Some may call for careful specification of required algorithms in the light of compromises that may be necessary. The strategy will exploit any opportunities for early results, postponing other initiatives if it is clear that these can benefit from well-resourced research being undertaken elsewhere.

Development of some of the modules may prove to fall outside the province of the research group, others may be relatively easy to implement. Research will therefore clarify the probable time-lines and feasibility of each module in terms of the following criteria:

- Achievable with existing software or by special adaptation of it;
- Low-cost, low-resource features, preferably piggy-backing on widely used existing software and platforms, or those in development;
- Using more intuitive systems of categories familiar to ordinary people and community environments;
- Effortless integration of actual and virtual realities, but grounded in the physical and real;
- Attractive to the broadest range of community members (old and young alike across the local socio-cultural spectrum, and not just the segment of computer-literates).
- Adaptation to a range of environments with different levels of resources;
- Module complementarity, notably in testing environments;
- Adaptation to real-world environments for testing in a supportive (rather than invasive or artificial) manner, such that participants will derive early benefits, even from prototype versions.

In the light of the above work, it should prove possible to identify opportunities for the development of one or more prototypes that would serve to refine the subsequent task. To the extent that the budget permits, these would be developed in the second phase of the year's work.

COMMUNICATION (Module 20)

This section describes Module 20 'Information Dissemination and Application of Results.

The consortium of research Partners will prepare research reports for the use of themselves and the Commission on a three monthly cycle. There will also be a final summary report at the end of the year's work.

During the course of their work, the Partners will use the *F³-NET* facility, the *LTR Brokerage Page* and other network connections to inform potential partners of their work (including international foundations, commercial partners and sponsors). They will also seek contact with potential external developers for any of the modules which have proceeded through the feasibility stage of development but which are beyond their own resources.

Should any of the modules have advanced to demonstration level during the course of this programme, the UIA and its consortium partners will take advantage of any suitable European or international meetings, or other gatherings, to demonstrate the developments.

By the conclusion of the programme's first year, it is intended that modules with extended developmental promise will be written up as the subjects of individual software development proposals, commercial or otherwise, or at as least research reports or papers. The UIA routinely publishes its research work on its Web page, in its quarterly Journal *Transnational Associations*, and in other appropriate periodicals.

WORK PLAN

Because this proposal covers the early stage development of 18 distinct modules, all of which are interrelated but will show varying development promise, it is not amenable to structuring in discrete work packages. Arguably, the Research Challenges are more akin to conventional work packages than the Modules (some of which are still at the conceptual level). However, neither category comfortably fits the mold of a work package.

It is important to describe the Work Plan in a coherent manner. The general research approach, procedures and phases are described in the Methodology section; it remains to specify the tasks and who will undertake them. This is done below as Module Investigation Teams, with the addition of two extra 'Modules' covering 'Project management' and 'Information dissemination and application of results'.

The deliverables associated with each Module cannot be precisely stated at this time. As a minimum final deliverable, there will be a final report specifying status and potential for each module. On an intermediate basis, there will be consolidated progress reports relevant to the entire suite of modules, issued quarterly and sent to the Commission together with the claims for fund reimbursements.

This is an interdisciplinary research programme involving several partners in different geographic locations. Most of the day-to-day work will be done by the personnel within the domain of their host organization. However, for almost every module there is a collaborative effort. This will be effected by frequent communication: usually email or telephone, but occasionally requiring bilateral visits for a few days to a week at a time.

Structurally the work will be accomplished by three distinct groupings of people:

- a Core Research Group;
- a Research Support Group; and
- Module Investigation Teams.

Core Research Group:

The Core Research Group is comprised of senior individuals from each Partner organisation who will take responsibility for their organizations' overall contribution. Their CVs are in the respective attachment sections dealing with their Partner organization. Members of the Core Research Group will personally undertake a good deal of the research, including review of other's work and ensuring interaction between modules. They will meet every three months.

The Core Research Group comprises:

- Tim Casswell (IAPCO-ICMT)
- Anthony Judge (UIA)
- Declan Kennedy (GEN)
- Nadia McLaren (UIA)
- Marilyn Mehlmann (SISU/GAP).

Research Support Group:

The Research Support Group is of flexible composition comprising the Core Research Group and up to five others from the Associate Partner group or elsewhere. Its purpose is for feedback of human and community needs, brainstorming ideas and identifying further

potentials. This Group will meet periodically during the one-year contract period (3 meetings are budgeted), for economy's sake back-to-back with a Core Research Group meeting.

Module Investigation Teams:

There are 18 Module Investigation Teams. Each comprises at least one person from the Core Research Group plus other colleagues from the principal Partner organizations and/or an affiliated testing partner or constituency. The Module Investigation Teams have the specific responsibility to move forward the research on their module, or to explain why it is better to halt its development at any point. The Module Investigation Teams and task assignments of their members are listed below:

Module 1: Crowd-to-Community transformation

Casswell, Fleck, Judge

Module 2: Territory as the map

Judge, McLaren +/- subconsultant

Module 3: Sustainable community database facility

Fischer, Kennedy, Mehlmann, McLaren , + GAP + GEN

Module 4: Community database content integration

Kennedy, Judge +/- LETS

Module 5: Micro-community exploration

Judge, Fischer, McLaren + GAP +/- LETS groups

Module 6: Commitment database and relationship contracts

Casswell, Judge, Kennedy

Module 7: Meeting participant contracts

Casswell, Fleck, Judge

Module 8: Participant messaging in conferences

Casswell, Judge, Fischer, McLaren

Module 9: Networked face-to-face meetings

Judge, Casswell, Fischer + IAPCO-ICMT

Module 10: Meeting commentary tracks

Casswell, Judge

Module 11: Meeting and interaction discipline

Casswell, Judge, McLaren

Module 12: Issue tracking and trajectories

Casswell, Judge

Module 13: Dialogue Support

Casswell, Judge, McLaren

Module 14: Configuration patterning, design and support

Kennedy, Judge

Module 15: Refugee camp satellite link

Judge, McLaren

Module 16: Feedback on community problems and initiatives

Kennedy, Judge, McLaren + GAP + GEN

Module 17: Ecology-based roles of community participation

Judge, McLaren + Lebensgarten + Findhorn

Module 18: Art of navigating conceptual complexity

Kennedy, Judge

Module 19: Project management

McLaren + Core Research Group

For further details see the Project Management section below.

Module 20: Information dissemination and application of results

Judge, McLaren +/- Core Research Group

For further details see the Communication section above.

PROJECT MANAGEMENT (Module 19)

Management of the project would follow normal procedures for a multi-disciplinary project with several participants. A single agent (the project coordinator -- UIA) will provide the formal link with the Community, being responsible for all contractual obligations, periodic progress reporting (3-monthly), final reporting, financial management, invoicing, work programme description and monitoring, time sheet accounting, adherence to schedule, and other such matters. The project coordinator will also schedule meetings of the research team for planning and review.

The Coordinating Partner, the UIA, is well known to all the Partners. For this project, its role may be visualized as the hub of a wheel (not to diminish the importance of the many other cross-connections within the Partner Group). Importantly, the UIA has a substantial stake in, and has demonstrated long-term commitment to, the completion of the project. It possesses a sufficient range of skills and resources to manage this project and has the confidence and support of the other Partners.

Nadia McLaren, a consultant with considerable experience in multi-discipline team and study management, will be the Project Manager on behalf of the UIA and its Partners. Ms McLaren knows personally all members of the Core Research Group. She will be supported by them (as principal agents of their respective Partner organizations) and by the administrative staff of the UIA.

Quarterly meetings of the Core Research Group and three meetings of the Research Support Group are anticipated during the project period. Because it is central and the home of the

Coordinating Partner, Brussels is the probable venue for most of the meetings. The representation of the Commission would be very welcome at these meetings.

Less formal, but as important, will be the day-to-day and week-to-week communications between the Partners. All the Partners use email communication on a daily basis and have the capability and intention to be in contact as frequently as is needed. An adequate budget has been allocated for frequent communication, including person-to-person bilateral visits, and electronic and mail services. In addition, the project coordinator will make a fortnightly check of activities and developments (by telephone, fax or email as considered appropriate).

Discussions will be held and agreements recorded in writing at any stage of the project where issues of concern or potential conflict arise for any of the Partners. It may be noted that all the individuals within the project management group have, in different combinations, worked together or been professional colleagues for a number of years. This predisposes the partnership to a stable and responsible working relationship. In addition, one individual within the Core Research Team (Casswell) works professionally in areas of negotiation and conflict resolution and another (Mehlmann) has several years of relevant training as a counsellor.

In particular, clarification will be sought (and duly recorded) at an appropriate early stage concerning any copyright or intellectual property rights matters which could be relevant to the eventual production and dissemination of a product. The development Partners would also want to ensure their rights are protected should any research development be assigned to any other party for commercial or other development.

PROPOSERS

Coordinating Partner

The project would be coordinated by the **Union of International Associations (UIA)**, based in Brussels since 1910 (website: <http://www.uia.org/> and Annex 1). This non-government, non-profit body has world-wide reputation in the fields of documentation, research and publishing on international organizations and their meetings and activities (more than 300 publications and publication series). It has for many years been pushing standards in information management and communications, notably through use of computers since the early 1970s, and supporting editorial/research work through a 20-station LAN since 1984; in 1986 the UIA won an international award for the most advanced application of computer techniques to typesetting. Since 1996, the *Yearbook of International Associations* is published also in a multilingual CD-ROM format (including a French translation specially funded by French-speaking governments); the *Encyclopedia of World Problems and Human Potential* is also published on CD-ROM and preparations are in place to put it on the Web.

The UIA is largely self-financed through sale of information services and has supplemented its income with a range of consulting and development work for clients which include UNESCO, the International Facilitating Committee of the Global Forum (Rio Conference), the United Nations University and the Agence de coopération culturelle et technique (ACCT). Consultative and collaborative relations have included ECOSOC, ILO, FAO, the Council of Europe, UNITAR, the United Nations University and the Commonwealth Science Council.

The proposed project manager is Nadia McLaren, a senior environmental consultant (social

and ecological impact assessment, management and monitoring), and editor of the most recent edition of the *Encyclopedia of World Problems and Human Potential*. Ms McLaren will also be involved with substantive work on several of the modules. Anthony Judge will lead the UIA's research team. As Director of Communications and Research of the UIA, he developed the UIA's LAN-based information system and coordinates the UIA's information projects and research activities. He has published extensively in the fields of information systems and knowledge organization, transformative conferencing, metaphor, non-governmental organization and future studies. A list of papers and projects relevant to this proposal appear in Annex 1).

The UIA will engage subconsultant expertise in the areas of programming and application development where they are outside its own capabilities. The organizations Antenna Foundation (Netherlands) and Map Maker Ltd (UK) are likely to be significant providers of such services.

Partners

The **Swedish Institute for Social Inventions (SISU)** is a private foundation with a number of open activities (including annual prizes for social inventors, inventors' days and occasional courses) and a few projects. The projects concern social inventions which SISU is helping to establish in concrete form. There is extensive collaboration with organizations throughout Europe and elsewhere. Marilyn Mehlamn, Director of SISU, is actively involved with research in social, cultural and community areas.

Major recent projects of SISU are:

- GAP Sweden -- which is infusing into Sweden an international programme directed at modifying the lifestyle of the western world in a more sustainable direction. GAP became a foundation of its own in January 1995.
- Life Skills in School -- a project to help schools help pupils acquire constructive life skills (defined as positive self-image and an active image of the future).
- Sustainable Housing for St Petersburg -- aimed at helping the NW region of Russia to produce ecologically sound building materials and train people to build their own (reasonably sustainable) homes in groups/new communities.

New projects are:

- IT as a means to convert social inventions into jobs.
- Participatory methods for Agenda 21.
- Research into social diffusion and the stability of behavioural change.
- FIA (Futures Inventions Associates) is introducing into Sweden methods developed by Warren Siegler in the USA for 'enspirited envisioning'.
- A database of social inventions (in collaboration with several similar organizations around Europe).

The **Global Ecovillage Network (GEN)** is an evolving network of eco-village projects around the globe, with its coordinating secretariat in the Gaia Villages offices of Gaia Trust, Denmark (<http://www.gaia.org>). Members of GEN are eco-villages, community associations, organizations and individuals. In 1996, GEN was formally incorporated as an association of autonomous regional networks and is registered as a nonprofit organization in Denmark.

The secretariat for GEN Europe currently resides at Lebensgarten (Steyerberg, Germany) and is coordinated by Prof Declan Kennedy, President of GEN). Professor Kennedy is an architect

who has specialized in ecological design and planning. He currently teaches permaculture and eco-village design, consults on urban regeneration, community processes and local economic and employment systems, and has authored numerous publications on these subjects. Professor Kennedy would be supported in his research by Matina Hau (Lebensgarten).

An important part of GEN's strategy is the promotion of sustainable technologies and businesses. It has identified three key criteria in assessing appropriate technologies for eco-villages:

- Ecological sustainability;
- Human scale, decentralised production;
- Support for a non-stressful, mediative life style.

As is stated in GEN's brochure: 'An important eco-village issue is how to make technology ecologically, socially and spiritually responsive to human needs ... A closely related issues is the creation of jobs in eco-villages. Technology tends to determine the structure and organisation of society. Contemporary society's technology promotes unlivable megacities, separation of work and home, institutionalisation of family support functions ... in a centralised hierarchical structure.' Reversing these tendencies is part of the GEN vision and why GEN it is particularly enthusiastic and well-positioned to provide research capability and testing platforms for several of the modules in this proposal.

Associate Partners

International organizations:

Global Action Plan for the Earth International (GAP) is associated with the project team as a project of SISU (and is currently in the process of independent registration as an NGO in Sweden). GAP International is the international coordination, support and research umbrella organization for 14 autonomous GAP national organizations, 11 of them European. Both Marilyn Mehlmann and Nadia McLaren are Directors of GAP International; Ms Mehlmann is also its General Secretary.

GAP was founded in 1989 to develop structured support for people wishing to adopt sustainable lifestyles. GAP's EcoTeam programme is a community-based programme enabling large numbers of ordinary people to make a significant contribution to the solution of environmental problems by consciously modifying their way of life. The basis of the programme is the concept of the EcoTeam: a small group of households, usually neighbours, who meet over a period of weeks or months and, with the help of a trained coach, examine and modify their own consumption patterns.

The primary role of GAP in each country is to help build local programme campaign groups in selected neighbourhoods and communities. The local groups achieve synergy and diffusion effects by recruiting and supporting a significant proportion of the population (about 10% of all households) through the EcoTeam programme. Currently this is done by word-of-mouth. GAP is enthusiastic about investigating software-assistance to enhance and enrich this process.

The **IAPCO Institute for Congress Management Training (IAPCO-ICMT)** is associated with UIA through shared staff and office premises and organisation members.

The International Association of Professional Congress Organizers (IAPCO) was founded in

1968 by and for professionals engaged in organization and management of international and national congresses, conventions and special events. Its objectives are to provide a code of conduct for the congress industry and to raise the standard of professionalism within the industry through education and interaction between members and with colleagues in associated activities.

IAPCO's aims include to:

- undertake and promote the study of theoretical and practical aspects of international congresses;
- undertake research work concerning all problems confronting professional organizers of international meetings, and to seek and promote relevant solutions.

IAPCO-ICMT organizes an annual seminar on professional congress organization. It will serve as the collaborative partner for this project and a potential venue for demonstration and production of the prototypes relevant to meetings. In 1996 IAPCO-ICMT was represented at an experimental networked-notebook meeting of Associate members of the UIA.

The **Institute for Social Inventions (ISI)** (London) is a registered educational charity in the UK, set up in 1985 and funded via the Fourth World Educational and Research Association Trust (Reg. Charity #283040). SIS collects visions, ideas and projects, and fosters social creativity through workshops and competitions. It stresses the importance of projects at the neighbourhood level and helps members of the public put their own ideas into action and supports them into reality, a process it calls 'earthing visions'.

Communities:

Lebensgarten community (Steyerberg, Germany) is associated with the Partners as a member of GEN. It started as an intentional community in 1984 and now comprises 130 people (85 adults and 45 children) operating on the basis of individual economic and social responsibility. Amongst other strengths it is a centre of permaculture, education and healing.

Findhorn Foundation (Forres, Scotland), is also associated as a member of GEN. The Foundation started as an intentional community in 1962. Now 34 years old, it has 375 members. It has a full workshop and education programme. In 1995 the Community held the conference *Ecological Villages and Sustainable Communities: models for 21st Century Living*. In 1995, the Foundation's Ecological Village Project was one of 50 communities from 33 countries receiving an award as part of the *We the People's 50 Communities Awards*, sponsored by the Friends of the United Nation. The awards recognize demonstration of positive and practical solutions to global problems and the lessons they can offer to other communities.

Interest in this project has been expressed also by several LETS communities and associations, including LETS LINK, UK; Shankhill Community, Ireland; and groups in Germany and Switzerland. These community groups are examples of Local Employment Trading/Energy Transfer System (LETSystems), a local economic system practised by several hundred communities around the world.

Every member of the Core Research Group is currently associated with experimental initiatives at least one real-life community. These include :

- Lebensgarten (Germany), Findhorn (Scotland) and 31 other GEN communities (9 in

- Europe);
- 53 GAP Communities (43 in Europe) with Community Lifestyle Programmes.

The personnel and organization resources described above are considered sufficient to cover the tasks required for the year of research described in this proposal. Additional needs, and the best means of meeting them, would be evaluated during the research period of this current contract.

The proposed project is a natural extension of current programme areas of all the five Partners (though it is highly unlikely that these particular activities would have been given funding priority in the foreseeable future -- partly relating to the interdisciplinary nature of the work).

This means that the proposed project, if funded, would interface smoothly with the normal operations of the organisation Partners. Experienced and motivated personnel would do the work; no additional staffing would be needed in the Partner organizations. One clear benefit of this is that very efficient use could be made of the Community's financial resources invested in this project. Another is that the work milieu of the Partners would provide contextual support for the new project, eg general staff would redirect any potentially relevant information to the project, certain in-house technical capability may be advanced in anticipation of the needs of the new project, etc.

DURATION AND RESOURCES

The research development of the entire suite of modules has been tentatively scheduled over three years. Only the first research year of 12 months is fully detailed and costed and the subject of this proposal (Table 3 details the Partners' labour costs). Budget estimates are given below for the second and third years.

First Year Budget (this proposal)

| | | | |
|---|--------------|--------------|--------------------------------|
| PERSONNEL COSTS | | | |
| Partners (Refer to Table 3) | | 311,490 | |
| Subconsultant Services (contracted to UIA) | | | |
| Systems Consultancy | | 4,000 | |
| Application Programming | | <u>8,000</u> | <u>12,000</u> |
| | | | 323,490 |
| OTHER COSTS | | | |
| Meetings | | | |
| <i>Core Research Group</i> | | | |
| 4 meetings (1 day/night) x 5 people (ca 500 ECU) | 10,000 | | |
| <i>Research Support Group</i> 3 x 5 people (ca 400 ECU) | 6,000 | | |
| <i>Module Research Teams</i> , 10 bilateral exchanges, | | | |
| Travel @ 300 ECU + 90 ECU accommodation per night | | <u>5,700</u> | 21,700 |
| Other communications | | | |
| Telephone, email, courier, post, @300 ECU per month | <u>3,600</u> | 3,600 | |
| Equipment | | | |
| Rental 10 notebooks @ 100 ECU/2 days | 1,000 | | |
| IBM-type desk-top computer (UIA) | 1,700 | | |
| MacIntosh desktop (SISU) 2,000 | | | |
| Software | <u>2,500</u> | <u>7,200</u> | <u>32,500</u> |
| | | | COSTS for YEAR 1355,990 |
| | | | ==== |

The proposed project (as detailed for one year) is estimated to cost 355,990 ECU. 177,995 ECU is sought in funding from the Commission; an identical amount would be provided by the Partners.

The Partners are choosing to allocate matching funds for the undertaking of this project because it represents for them an exciting opportunity to further their objectives and contribute to the development of interfaces which are human-centred. None of the Partners could afford to do so, nor would the consortium and development work be possible to sustain, without the matching funds of the Commission. All the Partners are not-for-profit institutions, and so the funding support is needed to maintain organizational operations and services. The research strategy for Year 1 relies on the equipment investments already made by the Partners and will take full advantage of shareware and proprietary packages made available for testing. The cost of software to local communities is recognized as an important constraint.

Invoicing will be according to Commission guidelines. Cost statements for reimbursement by the Commission will be made against actual timesheets and receipts. An ECU account will be used by the Coordinating Partner to standardize bank transfers across borders.

Financial estimates for Years 2 and 3 of the Research Programme are of a similar order to that for Year 1. It is intended that the budget and Partner group for the Year 2 of this research programme and for any individual project development would be detailed to Esprit at end of

Year 1. The objective is that by the end of Year 3, all the modules will have been investigated to the point where their feasibility has been proven (or not) and they are ready for production/distribution and use.