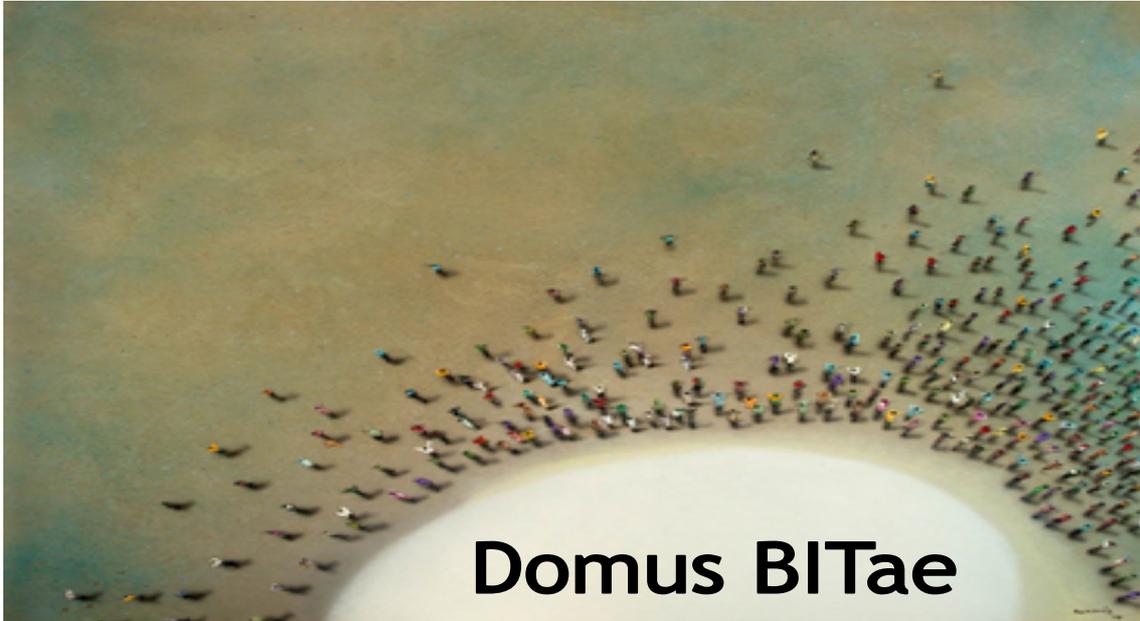


# Domus BITae: Collaborative System for Information Research Studies

## First stages & Preparation for European Support



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### Proposers:

José María Díaz Nafría	Universidad de León	Spain
Francisco Salto Alemany	Universidad de León	Spain
Wolfgang Hofkirchner	Technical University of Vienna	Austria
Mario Pérez-Montoro	Universitat de Barcelona	Spain
Dail Doucette	Science of Information Institute	USA
Arnellos Argyris	University of the Aegean, Syros	Greece

### Abstract:

**First**, the DomusBITae initiative is presented stressing its general objectives, structure and potentials for international funding. **Second**, the proposal for first stages financial support is specified within the general frame of DomusBITae as a means to guarantee the success of the initiative at the international level and competitiveness in European Research Programmes. **Third**, a work plan for the asked support, framed within Domus BITae general work plan, is described specifying work-packages, timing, milestones and deliverables. **Forth**, a shallow design of the core system to be developed under the asked support is given. **Fifth**, a survey on expected national, European and international impacts regarding DomusBITae as a whole and this proposal in particular is outlined. **Finally**, the resources to be committed for the development of this proposal are enumerated. To facilitate distinction between DomusBITae global frame and the proposal for first stages support, the parts of the document concerning the latter are shaded.

## Resumen:

En **primer** lugar se presenta la iniciativa Domus BITae resaltando sus objetivos generales, estructura y viabilidad en la participación en programas internacionales de apoyo a la investigación. **Segundo**, se especifica la presente propuesta de apoyo de la iniciativa Domus BITae en sus primeras fases como medio para garantizar el éxito de la iniciativa a nivel internacional y su competitividad en Programas de Investigación Europeos. **Tercero**, se presenta un plan de trabajo enmarcado dentro del plan de desarrollo de la iniciativa Domus BITae, especificando: paquetes de trabajo, temporización de tareas, hitos y entregables. **Cuarto**, se ofrece una descripción preliminar del sistema a desarrollar bajo la ayuda solicitada. **Quinto**, a tenor de la importancia del impacto respecto a la viabilidad de la iniciativa y la consecución de apoyo institucional, se resume un análisis del impacto esperado respecto a Domus BITae en su conjunto y el correspondiente a esta propuesta. Y en **sexto** y último lugar, se concretan los recursos materiales que han de reunirse para el desarrollo de esta propuesta.

Para facilitar la distinción de lo que corresponde al marco general DomusBITae respecto a propuesta relativa a la ayuda aquí solicitada, las partes del documento correspondientes a esta última se resaltan mediante sombreado.

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## 1. Domus BITae initiative: achievements & prospective

The DomusBITae initiative has been initially promoted at the end of 2009 by *BITrum Research Group*, in collaboration with the *Spanish National Institute of Communication Technologies (INTECO)*, the *Science of Information Institute (SoII, USA)*, *Foundations of Information Science (FIS)*, *Unified Theory of Information Research Group (UIT, Austria)*, *University of León (ULE, Spain)*, *University of Barcelona (UB, Spain)*, *University of the Aegean (UAE, Greece)* & *Mälardalen University (MDU, Sweden)*. As it has been acknowledged, this initiative converges with several European objectives for research support (RISEPTIS 2009, rec.1, 2; ESFRI 2008, p.5).

It **aims at** developing a **virtual research community in information studies**, fostering the constitution of a unifying new Science of Information as a frame where all the information studies do effectively collaborate in challenging scientific, societal and technological questions concerning information. It pursues horizontally bridging the whole community of information studies in order to share resources and results, improve communication, foster discussion, scientific knowledge & innovation, disseminate results and promoting cooperative research.

The **proposed system**—according to its preliminary design— should be constituted, as illustrated in figure 1 by the following modules:

1. a knowledge oriented web-system adaptable for any community of information studies;
2. a directory of communities to serve as bridge between communities;
3. An institutional and thematic repository in Information Studies;
4. A Toolkit for Working Groups, to facilitate collaborative research;
5. A shared glossary for conceptual clarification, theory disambiguation, and multi-facet approach to informational problems.

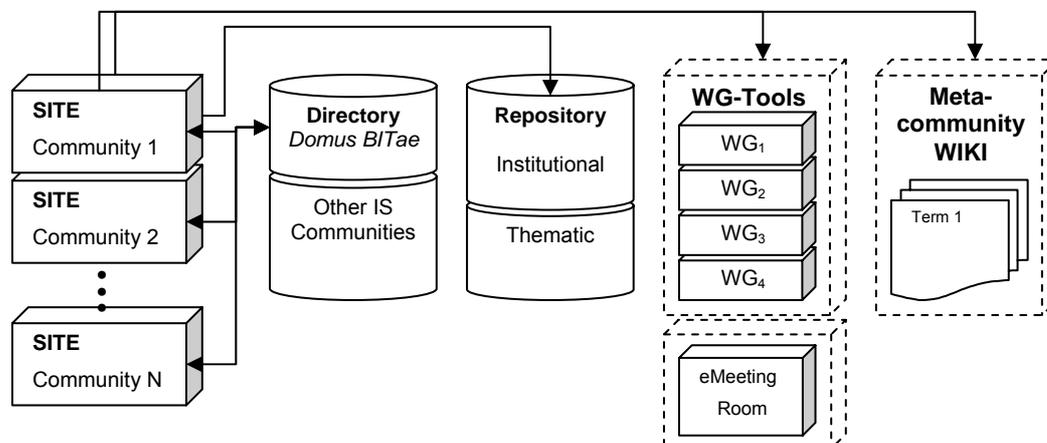


Figure 1: Structure of Domus BITae System

To achieve both a maximal effectiveness and impact of the system, this design is planned to be carried out with a relevant representation of the **Scientific community**, looking for the consent of the community and the adaptation to their necessities. A **Scientific Committee** (representative of the Scientific Community) should bridge the technical development and the scientific usability.

In order to find a **funding support** in which the initiative matches eligibility criteria, the following programmes have been identified:

- FP7 Infrastructures (theme: Virtual Research Communities) there was a call with deadline in November 2009, more calls are envisaged but not yet convened.
- FP7 Infrastructures (theme: Scientific Data) calls envisaged for 2010, not yet convened.
- FP7 Infrastructures (theme: Repositories and Digital libraries) calls envisaged for 2010, not yet convened.
- FP7 ICT-Challenge 4 (digital libraries and content) opened call with deadline: **13 April 2010**
- FP7 ICT-FET open scheme, there is an open call.
- ICT PSP (theme: Digital libraries and open access) calls envisaged for 2010, not yet convened.
- COST, in whose case the development must be presented as networking activity and autonomous research support proven, open call, next collection: **26 March 2010**.
- For first stages (and national chapter): a Spanish national funding programme of the Ministry of Science and Innovation for Not Targeted Fundamental Research:
  1. Complementary action Type B, aimed at articulating scientific communities to the European Research Area (ERA).
  2. Complementary action Type D, aimed at proposal preparation for engagement of Spanish research teams into the European Research Frame.

## 2. Proposal for first stages support

This proposal asks for support in preparatory and first deployment stages after an explanatory phase in which: a) a critical consortium has been met; b) a full proposal has been developed, following EU support programme criteria and including scientific-technical objectives, work plan and dissemination strategy; c) viable European support programmes has been identified; d) **initial support is necessary** to achieve the required impact, critical community support and to be maximally competitive for European support contests.

Since one of the key factors to be competitive for European Support is the **impact** demonstration, which is also a natural means for developing an effective virtual community with scientific and societal relevance, main effort is aimed at achieving the maximal commitment of

the target community, whose potentials are the main pillar of the initiative viability (see § 5). Therefore, our plan for first stages pursues the following **objectives**:

1. A scientific committee is to be summoned to constitute a significant representation of the scientific and technological needs of the international community;
2. the initiative is to be supported by a critical mass of the international scientific community in information studies;
3. a core system is to be developed to meet the needs of the community;
4. for dissemination of the initiative, the scientific information of two representative communities at the international level is to be dumped in the developed core system;
5. the initiative is to be presented to appropriate combination of national and European support programmes.

The necessity of two of the worldwide most relevant communities in Information Science (*Foundations of Information Science*, **FIS**, and the *Science of Information Institute*, **Soll**, Washington) for renewing their web-systems bring us on an opportunity to achieve the necessary impact. Due to the audience and centrality of these two communities, the expected impact of objective 3 (by extension of the initiative as a whole) would be hard to obtain otherwise.

### 3. Work plan

The work plan for first stages support must be well articulated with the previewed plan for complete system development under EU support. Therefore before description of the work plan for first stages, the role played within the whole system deployment is as follows.

#### 3.1 DomusBITae overall workplan

The plan envisaged for Domus BITae deployment is divided in the following work-packages

- WP-1: Design of the DomusBITae Knowledge System (specification of modules)
- WP-2: Development of Web Template
- WP-3: Development of Directory of Information Studies Communities
- WP-4: Dumping of FIS & Soll into DomusBITae
- WP-5: Development of Repository: institutional and thematic
- WP-6: Dumping of preliminary contents into Repository
- WP-7: Development of Working Group Toolkit
- WP-8: Development of eMeeting Room
- WP-9: Development of Meta-community glossary
- WP-10: Integration and assessment of the DommusBITae system
- WP-11: Launching the DommusBITae system
- WP-12: Coordination and neetworking

The asked support for first stages mainly concern WP1 (for core system), WP2 and WP4. In the PERT diagram (figure 2), the relation among the different tasks for the whole system development and the work related to this first-stages proposal (shaded) is clearly shown.

A network-system for the collaborative work in proposals, fitted to the corresponding calls, has been developed and started to work in January 2010, named StylusBITae and announced to the involved institutions (users StylusBITae).

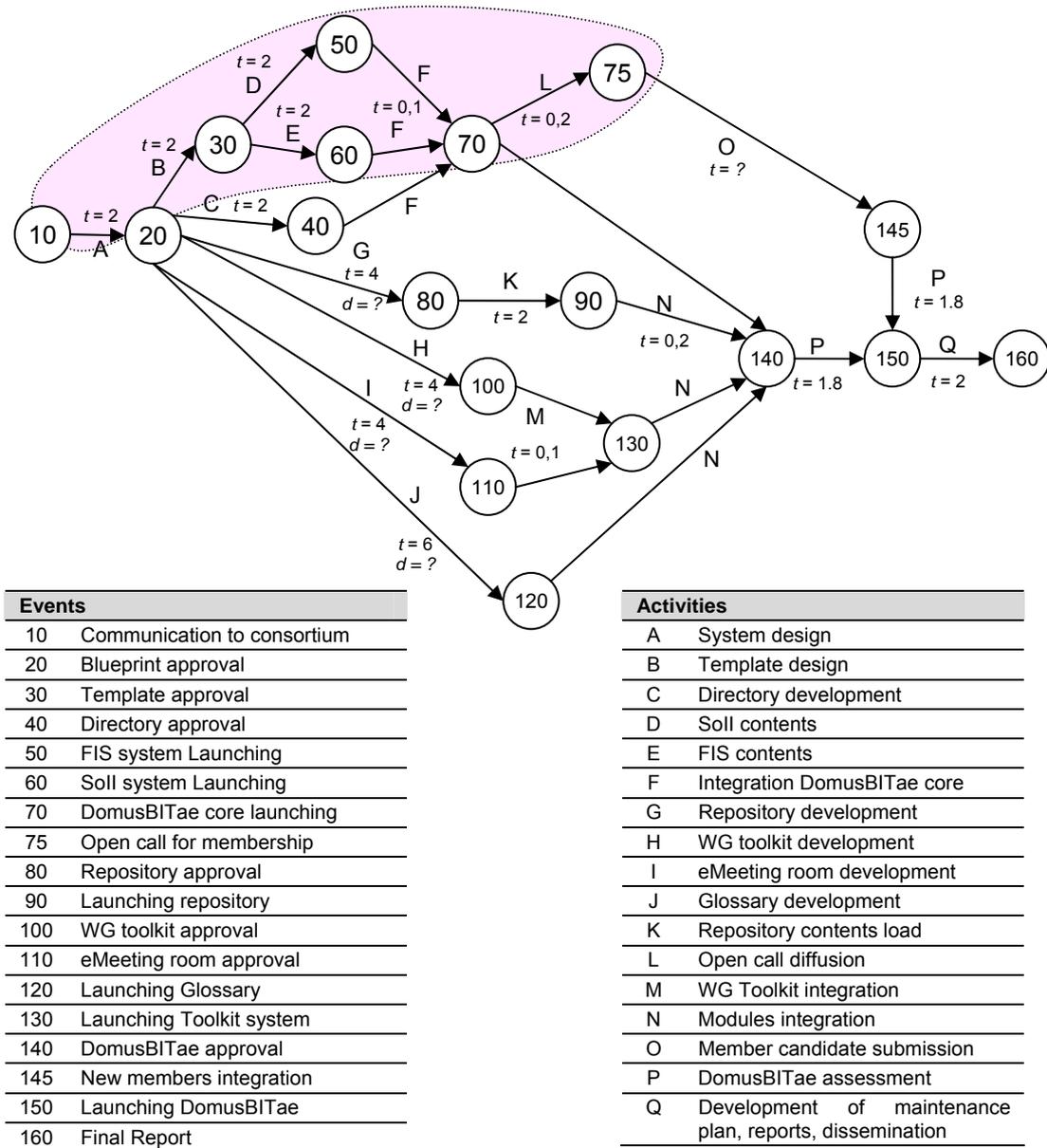


Figure 2: PERT diagram for Domus BITae development. Shaded the work corresponding to first stages proposal

### 3.2 Strategy for first stages development

To engage the necessary parts to develop the virtual community, we plan to make a combination of system development, community gathering and proposal advance, following next steps:

**First**, a critical team must be committed for the development of the demonstration and training system (including module 1 of the system depicted in figure 1); and a scientific and technical committees must be gathered for the supervision and approval of design and developments.

**Second**, the system is designed following target necessities and knowledge oriented system criteria.

**Third**, the core system is developed and launched after instantiation of well centred international communities (FIS and Soll)

**Forth**, the initiative is prepared for competition in national and international support calls (submitting to the open calls); it is also presented to international fora for gathering critical support;

**Five**, a consortium is elected and a kernel proposal (adaptable to different calls) agreed for international competition, and subsequently submitted to proper support calls.

### 3.3 Work packages, Milestones and deliverables

#### **Work-packages:**

WP1: Knowledge oriented system design, led by UB

WP2: Development of web-templates according to system design and dumping of first communities for demonstration (Soll and FIS)

WP3: Preparation and submission to national and international support programmes

The participation in the support programmes listed in § 1 is planned.

WP4: Call for international community support: scientific committee, open community, including design approval and consortium constitution

The participation in three international gathers, where coordinators act as co-organisers, are planned for promotion of DomusBITae: eIRG (Barcelona, April 2010), Annual Meeting of the ICT & Society Network (Barcelona, June 2010), Foundations of Information Science International Meeting (Beijin, August 2010).

WP5: Coordination of development, scientific and management committees.

### Timing:

WP	Months:	1	2	3	4	5	6	7	8	9	10	11	12
1 Design		█	█	▲1									
2 Development			█	█	█	█	▲3						
3 Proposals		█	█	█	█	█	█	█	█	█	▲5		
4 Community		█	█	█	▲2	█	█	█	█	█	█	█	
5 Coordination		█	█	█	█	█	█	█	█	█	█	█	█
	Months:	1	2	3	4	5	6	7	8	9	10	11	12

### Milestones:

M1: System design approval

M2: Constitution of scientific committee

M3: Launching demonstration system with two representative communities

M4: Constitution of consortium for EU support competition

M5: Competition into international programmes

### Deliverables:

D1: System blueprint (wireframes), WP1

D2: Template, WP2

D3: Core system demonstrator (with two communities), WP2

D4: Scientific committee constitutional agreement, WP4

D5: DomusBITae consortium constitutional agreement, WP4

D6: Proposal, WP3

## 4. Preliminary core system design

After a **survey** on the necessities of several communities of information studies, a preliminary system design has been developed, conceived as a basis for further improvement and collaborative design through agreement of the target community.

The collection of tools of the proposed Domus BITae (illustrated in fig.1) aims at improving the virtual resources for the target global community in information studies. These tools should be specified in the competitive proposal but are not to be developed here. The technical-development purpose of this first stages proposal concerns what has been called "**core system**", i.e. which gives access to activities and resources within the community itself and to the other communities and resources within DomusBITae frame (showed on the right of fig.3).

According to preliminary design, the web site of any community within Domus BITae should be articulated in the **main sections**: Home, About us, Resources, Activities, Groups, News,

Partnership & Links; and each section, should provide access to the following information, resources or facilities (if DomusBITae is mentioned, it concerns access to some of the modules to be developed under international support programme):

1. HOME should give a first and fast glance of:
  - Brief description of What is the community about?
  - What is going on? brief description of activities.
  - What is new? Latest news headlines.
  - Access to main site areas and pages.
  - Brief contact information and rights commentaries (CC, disclaimer link).
  - LOGIN box, giving the possibility to broaden accesses, tools.Which could be arranged as shown in the wire-frame of figure 2.

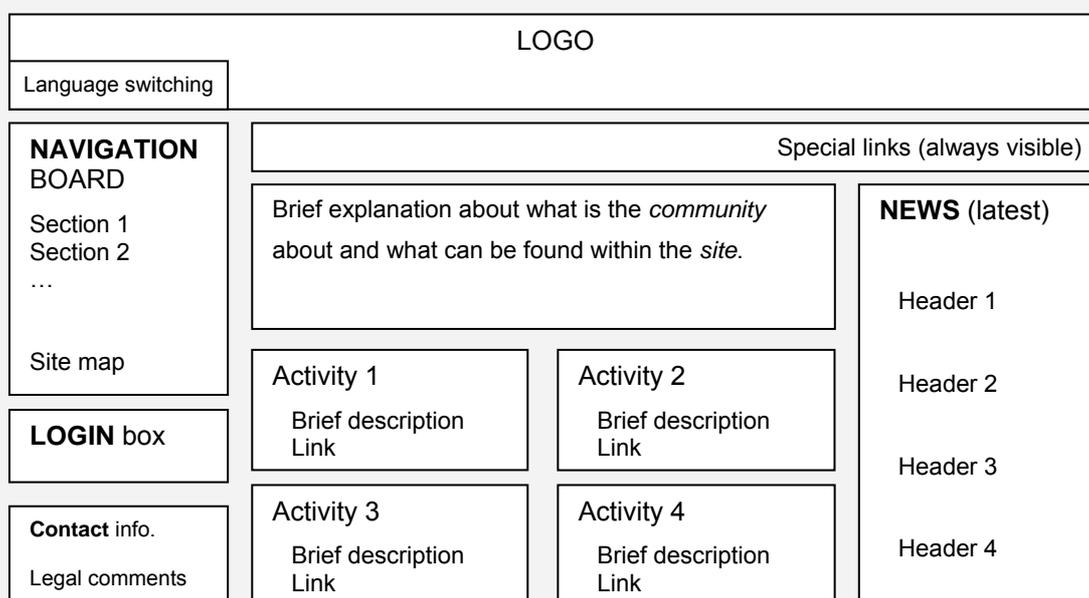


Figure 3: Home wire-frame

2. ABOUT US, should give access to information concerning the structure, project and people integrating the community:
  - Community STRUCTURE (boards...)
  - PURPOSES
  - MEMBERS: a) Membership types; b) LIST of members giving access to personal pages;
  - Information for APPLICANTS: information & application form
  - Contact us
3. RESOURCES, should provide open access to resources of scientific and social relevance and also to others of private scope concerning the activities within the community:
  - Access to REPOSITORY (Domus BITae)

- Specific resources: a) public (documents published by the community); b) private (formats & procedures)
- *SHARED GLOSSARY* (Domus BITae) for conceptual clarification, theory disambiguation, and multi-facet approach to informational problems
- 4. **ACTIVITIES**, should provide access to information concerning activities in which the community is or has been involved:
  - **RESEARCH** activities: a) Areas of interest; b) Projects; c) Applications (enterprises and public funding).
  - **PUBLISHING**
  - **ACADEMIC** / educational
  - **DISSEMINATION**
  - **FORUMS**
  - **GATHERINGS**
- 5. **GROUPS**, should provide access to facilities enabling collaborative work, by sharing information, agenda, etc.:
  - Access to *WORKING GROUPS* (Domus BITae) sites
  - Access to *MEETING ROOM* (Domus BITae)
- 6. **NEWS**, related to community activities or the area of interest :
  - Resume panel
  - Archive of news
- 7. **Partnership & LINKS**
  - Access to *DIRECTORY OF COMMUNITIES* in Information Studies (Domus BITae)
  - Links to the most involved communities / institutions

Within this structure, any particular section might be highlighted in visible menus, in order to improve visibility, e.g., research, publishing or forum, depending on the importance within the group activity (for example, Discussion list in FIS, Glossarium in BITrum)

## 5. Expected Domus BITae Impacts

As mentioned in § 2, the potentials of the target community summarized in tables 1 and 2 (compiled from a non exhaustive Soll's survey on relevant Communities of information studies, classified according to their field of research, 2007) concerning over 300 organizations in more than 40 countries, is a major pillar to achieve the impacts pursued in EU support programmes and therefore a guarantee to be supported.

The geographical and academic divide of the target community is a hinder to tackle important scientific and societal problems of our time (as for example in the frontiers between physical and biological sciences, between biological and cognitive sciences, between cognitive and social sciences, and between all of them and Technology). Thus the proposed Domus BITae e-

Infrastructure, bringing together the target community, could contribute to **increase the effectiveness of European Research**.

**Table 1:** Number of communities of Information Studies classified in types (accounted by Soll)

Type of studies	Nº of communities
Artificial Intelligence	50
Cognitive Science	39
Communication Science and Media Studies	27
Computer Science	52
Cybernetics	26
Information Science	38
Information Society Research	64
Internet Research	16
Knowledge Studies	18
Library Science	16
Philosophy of Information and Information Ethics	20
Research on ICTs	12
Science of Complexity	22
Semiotics	13
Systems Theory	27

As shown in table 2, while in a global dimension the amount of communities is significant for erecting an appropriate stance to tackle the problems posed by the emerging Science of Information, in national levels (with the exception of the USA) the amount of initiatives are not enough to bring about the critical mass for confronting the regarding problems. Therefore the proposed infrastructures **empowers the European communities** (about the half) **to drive the emergence of a global virtual community** in information studies.

Much of the work wasted in the scientific research regarding information science concerns the redundancy of discussions, the dispersion of background, thought and proposals, the misunderstanding about used terms or scientific models, the relevancy of problems or phenomena, etc. Thus we believe the proposed **common tools** within Domus BITae infrastructure –by means of giving the possibility to share results, foundations, approaches, terminology disambiguation, etc.– might be a key factor to achieve the pursued effectiveness in information research as well as to foster effective synergies with education and industry. Concerning the appropriateness of **procedures & best practices**, the expertise of the proposed Scientific Committee will steer as well the architecture of the system as the conditions to participate in the different Domus BITae areas (Working Groups, Repository, Meta-Glossary).

By bringing in the managing structure the design councils concerning the issues of knowledge oriented design (UB), security, accessibility and software quality (Inteco) the consortium pursues to achieve the **increase of quality and attractiveness** of the proposed e-infrastructure.

A **roadmap to reach expected impacts** is planned within DomusBITae strategy. The present proposal for first stages support aims at achieving the first steps in such road. As mentioned in § 2, the opportunity of bringing FIS and Soll into DomusBITae system is a key measure to achieve the necessary impact for the effectiveness of the proposed system and to succeed in European support competition. Also the opportunities of the mentioned meetings for dissemination of the initiative and community gathering –considered within this proposal– are relevant in this sense.

**Table 2:** Number of communities of Information Studies per countries (accounted by Soll)

Country	No.	Country	No.	Country	No.
Argentina	1	France (EU)	3	Romania (EU)	1
Australia	7	Georgia	1	Singapore	1
Austria (EU)	10	Germany (EU)	25	Slovakia (EU)	1
Belarus	1	Greece (EU)	1	Slovenia (EU)	3
Belgium (EU)	6	Hungary (EU)	2	Spain (EU)	5
Brazil	1	Ireland (EU)	3	Sweden (EU)	8
Bulgaria (EU)	2	Israel	1	Switzerland	12
Canada	8	Italy (EU)	4	Taiwan	1
Chile	1	Japan	6	Thailand	1
Croatia	1	Lithuania	1	United Kingdom (EU)	43
Czech Republic (EU)	3	Netherlands (EU)	4	U.S.A.	106
Denmark (EU)	6	New Zealand	1	Venezuela	1
Estonia (EU)	1	Norway	1	No located	27
Finland (EU)	4	Portugal (EU)	1	<b>Total</b>	<b>319</b>

## 6. Resources to be committed

We specially ask for support in the WP1 & 2 (direct and indirect costs), and also gatherings in the WP 4 (indirect costs). The needs corresponding to these work-packages:

WP1: 1 Person-Month, 2 Working-Meetings (Developing team & Scientific Committee)

WP2: 2 Person-Month, some specific SW and HD needs.

WP4: Participation in 3 Meetings (Presentation of DomusBITae initiative in World forums of Barcelona and Beijing)

Other relevant resources to be committed (not asked for support) for the development of this proposal:

- Space in ULE web server (including maintenance)
- Direct costs of preliminary design for the development of proposal (UB: 0.5 person-month; ULE: 1 person-month; INTECO: 0.5 person-month; UAE: 0.5 person-month)
- Direct costs of proposal development (ULE: 4 person-month)
- Direct costs of coordination and networking (6 person-month)
- Indirect gathering-costs in Barcelona and Beijing (over 100 participants)

## Conclusions

The **development of Domus BITae Initiative** to date, including:

- 1) the formalisation of a proposal matching EU support eligibility criteria;
- 2) consortium commitment for development (see letters of intent);
- 3) acknowledged viability of European support;
- 4) good reception by the addressed target community; and
- 5) the development of a collaborative system for DomusBITae initiative furthering;

in **concurrence** with:

- a) the opportunity of renewing Soll and FIS web-systems; and
- b) the opportunity of the mentioned international Meetings (2010 International Meeting on Foundations of Information Science in Beijing, and the ICT & Society Network Meeting in Barcelona) where a significant representation of the target community will be gathered and to which we are invited to co-organise;

establishes **optimal conditions** to develop a system with proven impact and to be maximally competitive for European Support.

Furthermore it brings on **for Inteco the opportunity**:

- 1) to gain a central position as main part of an International Project and as a main actor in the target community;
- 2) to establish a durable and close collaboration with the Soll and FIS and by extension the community in information studies, which according to the RISEPTIS survey it is a condition of the development of a trustworthy Information Society, to which Inteco is committed;
- 3) to use for other purposes the developed collaborative environment;
- 4) of being sponsor of the 2010 International Meeting on Foundations of Information Science in Beijing.

The **necessity of the asked financial** support is rooted in the necessity to guarantee impact for both the usability of Domus BITae and the competitiveness for achieving European support. If it were not supported now, the expected impacts, brought on by the opportunity of housing Soll and FIS and the partaking in the mentioned international Meetings, would be hard to obtain otherwise.

The **asked financial support** corresponds partially to only three workpackages including:

3 person-months; indirect costs for two working-meetings; SW & HW specific needs; travel costs to 3 international meetings (1 abroad)

For carrying out this proposal the following resources are also committed (not to be financed):

Web housing and maintenance; 12 person-months (design + proposals + coordination); indirect costs of community gathering (over 100 participants)