www.iconnecteu.org

Project no. 028416

IConnectEU

Developing and testing a model for integrated dissemination of outcomes from
complementary research projects

Instrument: Specific Support Action

FP6-2004-Citizens-6

Final Activity Report

Period covered:
01.03.2006 to 31.10.2008

Date of preparation: 26.01.2009

Start date of project: 01.03.2006

Duration: 32 month

Project coordinator name: Dr. Maximilian Stempfhuber

Project coordinator organisation name: Gesellschaft Sozialwissenschaftlicher
                                          Infrastruktureinrichtungen e.V. (GESIS)

1 Objectives of the project

IConnectEU aims at increasing the visibility and impact of collaborative research in Europe by improving the dissemination of and the accessibility to research outcomes from projects with similar topics and audience. For such projects, a joint platform for disseminating their outcomes is not available yet. This has negative effects on visibility, accessibility and sustainability for the projects themselves as for the public which wants to access these outcomes.

In the 6th Framework Programme (FP6), the Specific Programme "Integrating and Strengthening the European Research Area" aims at connecting expertise and excellence in multiple fields by instruments like Integrated Projects (IP), Networks of Excellence (NoE) or Specific Target Research Projects (STREP). Due to the size and nature of the thematic priorities covered by FP6, research actions on each topic are carried out by a large number of complimentary projects which focus on specific aspects or try to involve large numbers of individuals interested in or working on a respective topic and related sub-issues. This ensures that thematic priorities are broadly covered and that at the same time connections between local or national expertise are built at a European level, strengthening the European Research Area (ERA).

Moving from a thematic perspective to a perspective concerned with research infrastructures and user needs, the separation of activities into parallel, very loosely coupled projects funded under FP6 turns into a negative point when it comes to dissemination or accessibility of results. Each project has to develop and implement its own dissemination plan with the objective of building a common or shared research infrastructure. However, this kind of integration is limited to the participants of the respective projects. Because of the self-containedness of the individual projects, different policies and support structures for dissemination are established, and the results by themselves are very different across all projects. As a matter of fact, a new kind of fragmentation is caused – although at a higher level – since the intended integration does not spill over the boundaries of the projects and therefore fails to synchronize them and the information about their respective activities.

For the individuals participating in the projects, for users of the projects' results – like other researchers, policy makers or the interested public – and for funding agencies like the European Commission itself, access to the information needed might become a major problem:

- *In CORDIS, the European Commission's research information system, information is currently available at the level of the individual research projects. Persons interested in individual project outcomes, like conferences and publications, are required to visit the web sites of all projects dealing with the topic of interest. The visibility of the projects and of their collective contribution to the realization of FP6 priorities and ERA is therefore rather limited.*
- *Users will not know in advance which type of information or service to expect from each project, forcing them to visit all project websites, including those which are not relevant to them.*
- *Because the individual projects will provide complimentary information, users will have to visit multiple sites, learn the sites' structure, learn how to find and access relevant information – and then integrate the materials found on different sites.*

- *Across all projects, different dissemination strategies and strategies for sustainability beyond the projects' duration will make it difficult to ensure the availability of results on the long run, especially with regards to activities in FP7.*

In short, the lack of a topic-oriented cross-project infrastructure for dissemination of complimentary outcomes does not support the integration of valuable scientific resources at a mezzo-level and can lead to an unnecessary duplication of work at one side, and an increased effort for finding and accessing relevant information on the other. Therefore, there is a general need:
- *to make thematically connected research activities – together with their results – visible at a single place, giving users integrated access to currently distributed resources at a common level of quality of service;*
- *to develop a reusable and adaptable technical infrastructure and a conceptual and organizational framework – a reference model – to facilitate dissemination and communication of heterogeneous outcomes from thematic complementary projects targeted to different audiences; and*
- *to facilitate sustainability and re-use of such information infrastructures.*

The objective of IConnectEU was therefore to create a generic infrastructure for joint dissemination activities across thematically related projects, consisting of a software platform and guidelines on how to implement such an infrastructure. The software platform should be put to use for building a Pilot Internet Portal covering eight FP6 projects carrying out complementary research on the topic of Governance in the EU. The resulting thematic research information system can be seen as an intermediary layer between the European Commission's CORDIS database and the individual projects web site (see Figure 1). It narrows down the interdisciplinary scope of CORDIS to a thematic priority by filtering out complementary research projects and making available detailed information which is currently distributed across several web sites at one location and in an integrated manner.
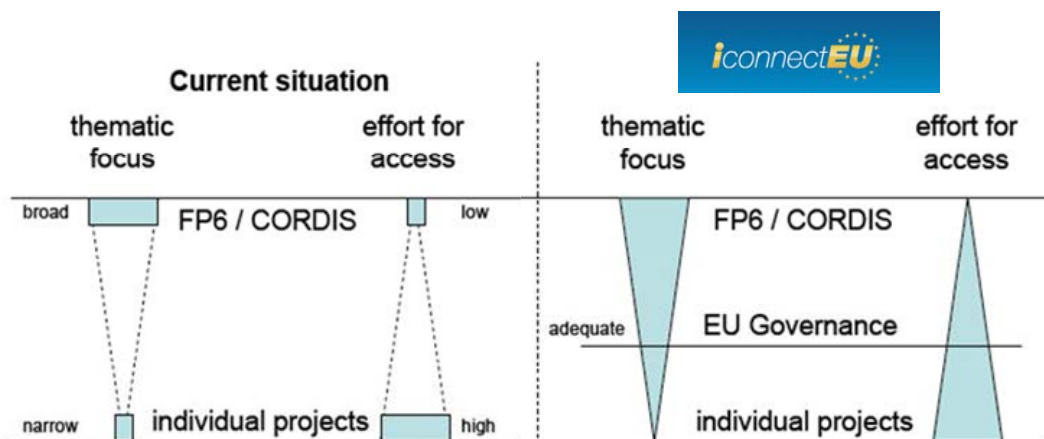

Figure 1: Creating an intermediary layer of related research information

By standardizing the way in which actors, activities and results in the context of research are documented across individual projects, common standards are promoted which facilitate the establishment of connections between these entities, both within and across projects. The resulting network maps collaboration structures within the European Research Area and build the foundation necessary to connect EU-funded research with research funded at the national level. Homogeneous structure and presentation of the research information allows user friendly access and re-use of information by third parties and beyond the context of IConnectEU.

2 The project consortium

The IConnectEU project consortium consists, in addition to the coordinating institute GESIS, of eight projects funded under the 6th Framework Programme of the European Commission in Priority 7, "Citizens and Governance in a Knowledge-Based Society". They were selected due to their complementary nature, their size and distribution of activities across Europe, and the inter-project relationships that were already established.

*Network of Excellence **CINEFOGO** „Civil Society and New Forms of Governance in Europe-The Making of European Citizenship" (Coordinator: Thomas P Boje, University of Roskilde)*

*STREP **CIVICACTIVE** "Active Civic Participation" (Coordinator : Richard Sinnott, University College Dublin)*

*Network of Excellence **CONNEX** "Efficient and democratic Governance in a multilevel Europe" (Coordinator: Beate Kohler-Koch, University of Mannheim).*

*STREP **DEMOS** "Democracy in Europe and the mobilization of society" (Coordinator: Donnatella della Porta, Department of political and social sciences European University Institute, Florence).*

*Network of Excellence **EU-CONSENT** "Wider Europe, deeper integration? Construction Europe Network" (Coordinator: Wolfgang Wessels, University of Cologne).*

*Integrated Project **INTUNE** "Integrated and United? A Quest for Citizenship in an Ever Closer Europe" (Coordinator: Maurizio Cotta, University of Siena).*

*Integrated Project **NEWGOV** "New Modes of Governance" (Scientific Director: Adrienne Heritier, Robert Schuman Centre for Advanced Studies, European University Institute, Florence)*

*STREP **PAGANINI** "Participatory Governance and Institutional Innovation" (Coordinator: Herbert Gottweis, University of Vienna).*

Coordinator:

GESIS – German Social Science Infrastructure Services Coordinator: Maximilian Stempfhuber, Bonn)

The IConnectEU project takes an integrative role across the participating projects and over time. As shown in Figure 2, all partner projects have different starting points and duration, such that the need for preserving project outcomes for later use by other projects becomes obvious. The activities carried out in IConnectEU serve both as a bracket for integrating the outcomes of the individual projects and as a sustainable infrastructure for the future.
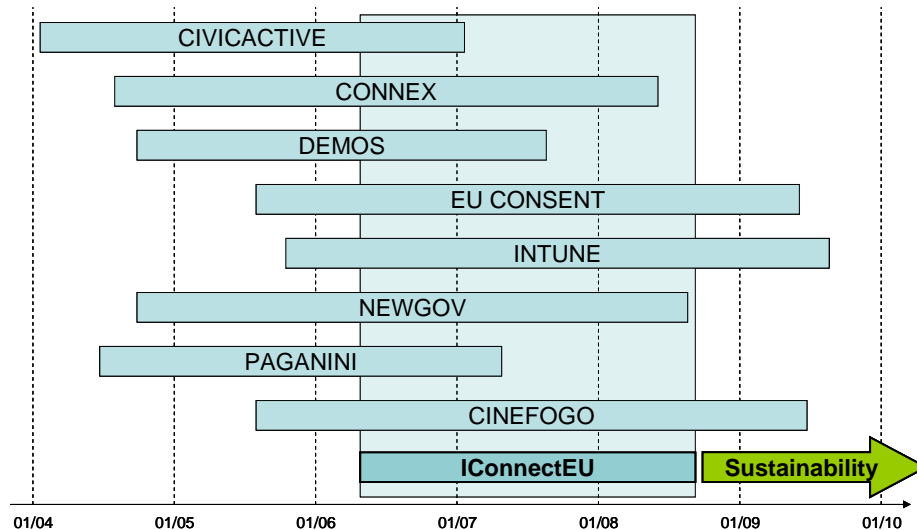

Figure 2: Integrative aspect of IConnectEU over time

3 Work performed and project results

The main pillar of work carried out in IConnectEU focussed on the development of a technical dissemination infrastructure which could document all entities relevant in the context of research information (i.e. actors, activities and results) at a very detailed level and at the same time could interconnect them within the context of an individual project and across project boundaries. To fill the dissemination infrastructure with content and assess the feasibility and cost-effectiveness of such a joint dissemination infrastructure, a Pilot Internet Portal was created on the topic of research on "Governance in the EU". The eight participating projects, each represented by the coordinating institution, took responsibility for filling the Pilot Internet Portal with information about their projects, the participating institutes and persons, and the outcomes achieved (e.g. publications or conferences organized). In addition, all entities described in the portal were interconnected with semantic relationships, i.e. persons were associated with their affiliation, projects with institutes, persons with their role in a specific project, and projects results with the project they resulted from.

In the first phase of IConnectEU, the different outcomes produced by the eight projects and the target audience of these outcomes were analysed and a data model was defined for documenting these outcomes together with information about participating institutes and persons at a very detailed level. The data model is closely related to the Common European Research Information Format[1] (CERIF), which was developed by the European Commission and is maintained by euroCRIS[2], a professional organization dedicated to improvement of research information availability since the release of CERIF2000. Compatibility to CERIF, in specific to its exchange format CERIF-XML, was essential for the future perspective of

---

[1] http://cordis.europa.eu/cerif/
[2] http://www.eurocris.org

IConnectEU as research information only can exploit its full potential when connected across institutional and geographic boundaries.

The CERIF model is built around five core entities of research information: Projects, Funding Programmes, Organizational Units (Institutes), Persons, and Results (see Figure 3). These core entities are connected with typed links which represent the semantic relationships between these entities, e.g. which persons are working a project, what the affiliation of a person is, from which project a result was produced and which persons were involved in producing the result (e.g. a publication).
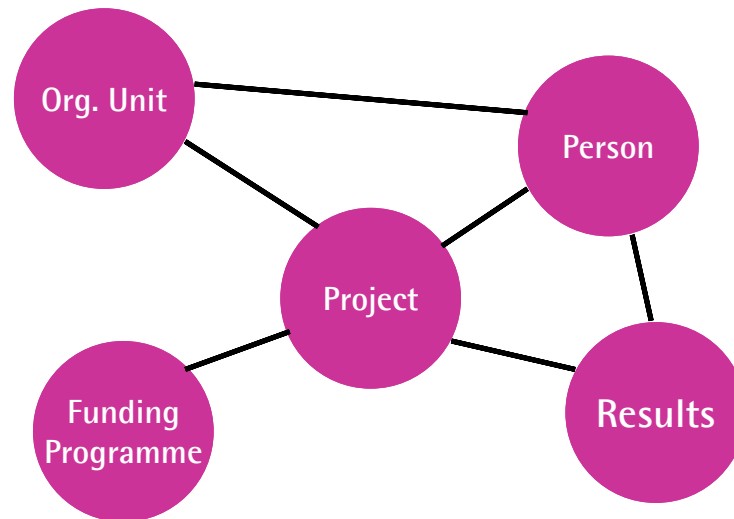
Figure 3: Core entities defined by CERIF

These five entities are reflected in the IConnectEU information architecture, where the attributes used to describe these entities have been expanded in regard to the attribute set defined in CERIF. This not only includes additional information on e.g. project work packages, data collection or scientific methods, but also includes geographic location and coverage of all entities, and of target groups of activities and results. Especially the information on geographic aspects for all entities allows users of the Pilot Internet Portal to get an unmatched view – across all participating projects – on what is happening where in the EU and which information is available for a specific region. Getting this thematic overview of the European Research Area currently involves a large amount of investigation and is an effort which – in respect to the large number of projects involved in social science research under the Framework Programmes – only view users will be able to undertake.

Creating the Pilot Internet Portal on research on Governance in the EU was a multi-phase process where intermediate results were evaluated by the project consortium, with user tests, and in two internal studies, a feasibility study and a cost-effectiveness study. The feedback and insight gained by these reviewing activities led to a cyclic refinement of information architecture and feature set of the portal. In parallel, new content was produced and integrated into the portal.

The technical infrastructure of the Pilot Internet Portal is based on the software system DBClear[3], which was initially developed in a project funded by Deutsche Forschungs-gemeinschaft (German Research Foundation), DFG, between 2000 and 2002. DBClear has successfully been adapted to several use cases where a web-based cataloguing system was

---

[3] http://www.gesis.org/en/research/programs-and-projects/information-science/project-overview/dbclear/

needed to collect and map information, e.g. in the FP5 project "MORESS[4] - Mapping of Research in European Social Sciences and Humanities", in around 10 Digital Libraries in Germany, and only recently in "SSOAR[5] – Social Science Open Access Repository", which was also funded by Deutsche Forschungsgemeinschaft.

Figure 4: The IConnectEU Pilot Internet Portal

The main results of IConnectEU are the Pilot Internet Portal on research on Governance in the EU (see Figure 4), and the software system used to build the portal and which is available as Open Source software. The research information collected in the portal by the IConnectEU consortium is freely available and can be accessed with the "EU Governance" menu item.
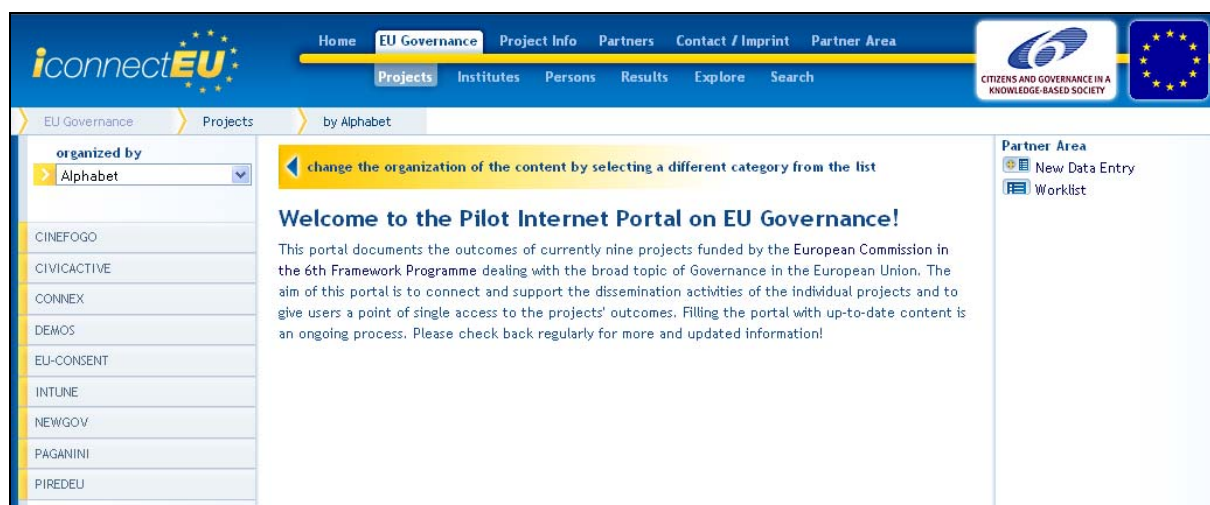
Figure 5: Structure of the research information system

The information system on "EU Governance" is consistently structured according to the CERIF core entities: Projects, Institutes, Persons, and Results (see Figure 5). Each section of the information system consists of a browsing hierarchy – or classification – at the left part of the screen and the middle part used for displaying related information. To accommodate for a broad range of information needs, users can switch between several views on the information contained in IConnectEU. A drop down list right above the classification contains different views to the information and adapts to the user's context (see Figure 6 to Figure 9).
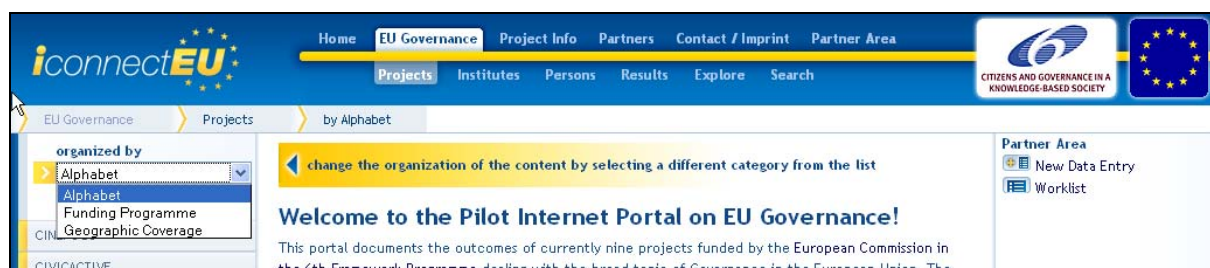
Figure 6: Switching between different views for browsing information (Projects)
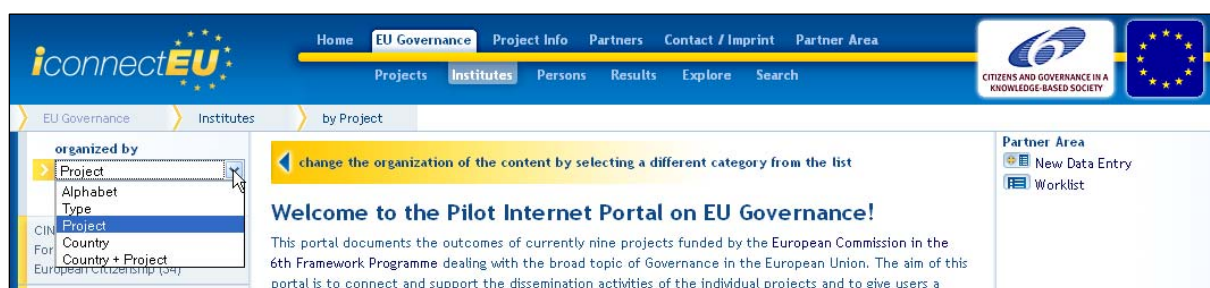
Figure 7: Switching between different views for browsing information (Institutes)

Figure 8: Switching between different views for browsing information (Persons)

Figure 9: Switching between different views for browsing information (Publications)

The consistent use of structure-guided browsing, e.g. by a alphabetical list or a two level hierarchy of project and institute names, facilitates navigation especially in relatively small information collections – which IConnectEU is compared to library catalogues or reference databases with millions of records.

Figure 10: Detailed view of project information

Information on the entities stored in IConnectEU is displayed at two levels of detail: A quick view and an extended details view. Figure 10 presents the details of a project as a structured display of information. Information is entered with a form-based user interface over the Web, which allows persons at different locations to enter and maintain data. In IConnectEU, the coordinators of the participating projects organized this work. The DBClear system allows simple workflows to implement quality control of the data, e.g. where supervised student workers carry out the initial data collection and researchers or the coordinator approve the information and publish it.

*To expand the degree of freedom for data input and presentation, for projects an alternative way of data entry has been realized which uses content management system technology. Coordinators can describe their project much in the same way they would when creating a dedicated project web site. **Fehler! Verweisquelle konnte nicht gefunden werden.** shows such a project description which is maintained in parallel to the formally structured project*

details (see Figure 10) and may include formatted text, graphics and links to further pages. This feature not only enhances the user friendliness of the information system but yields the potential of including essential parts of the dedicated project web site which is normally created by each consortium as part of dissemination. In cases where a web site can not be maintained after the project's end, the parts intended for long-term access by the public can be transferred to IConnectEU, which then acts as a "safe harbour" for such information.

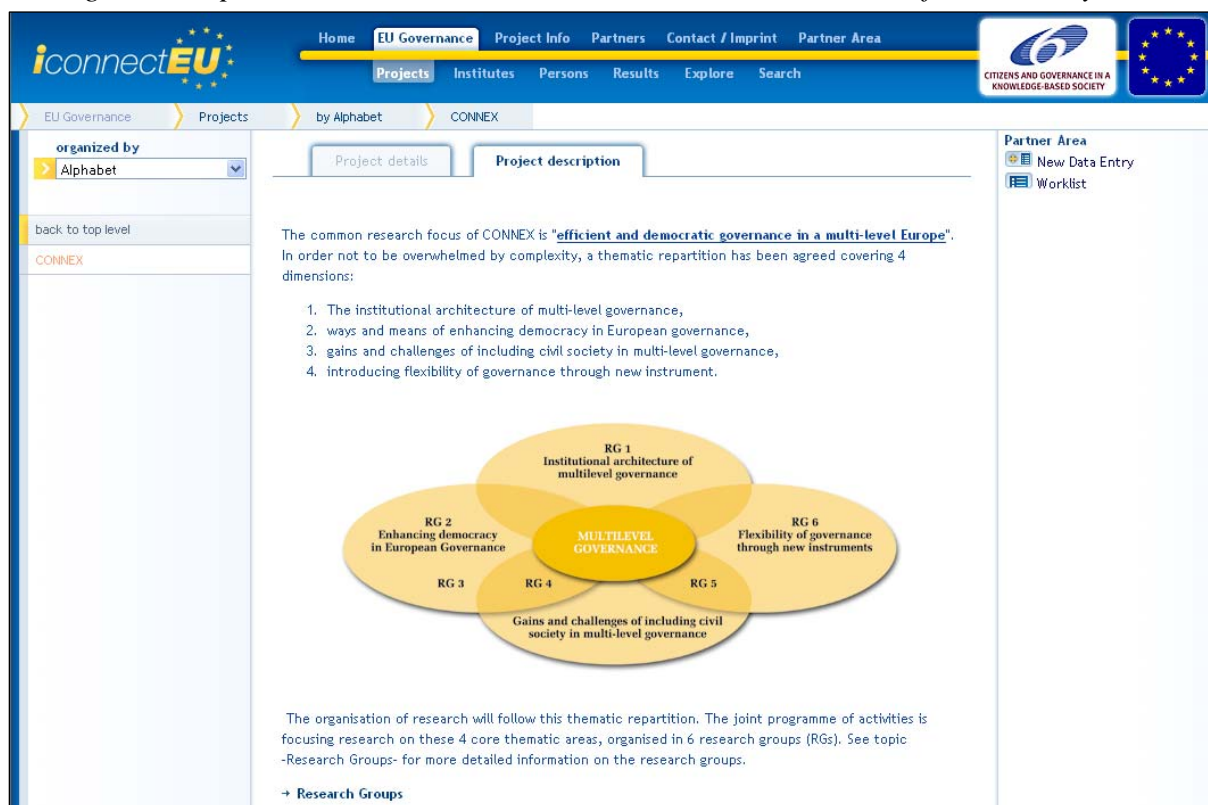During data input, relations to other entities in the research information system are

Figure 11: Freeform layout of a project description

established. This means that projects are connected to the funding programme, persons are connected to their affiliation (institute) and the project they work in (together with their role in the project), institutes are connected to the projects they participate, publications are connected to persons (authors) etc. The resulting semantic network is displayed to the user as links and can actively be used for browsing e.g. collaboration networks of persons and institutes. Relationships between entities are consistently marked with iconic links (see Figure 12) everywhere they appear in the data.

Figure 12: Links from project information to other entities

Clicking a link to another type of entities (e.g. persons) results in the immediate display of the information requested (see Figure 13) within the context of the current project (CONNEX). The user is not like in many other systems automatically transferred to some other part of the web site (where information about persons is displayed) but stays with his topic of interest (exploring the entities linked to the project). This greatly improves usability as the user always stays in control.
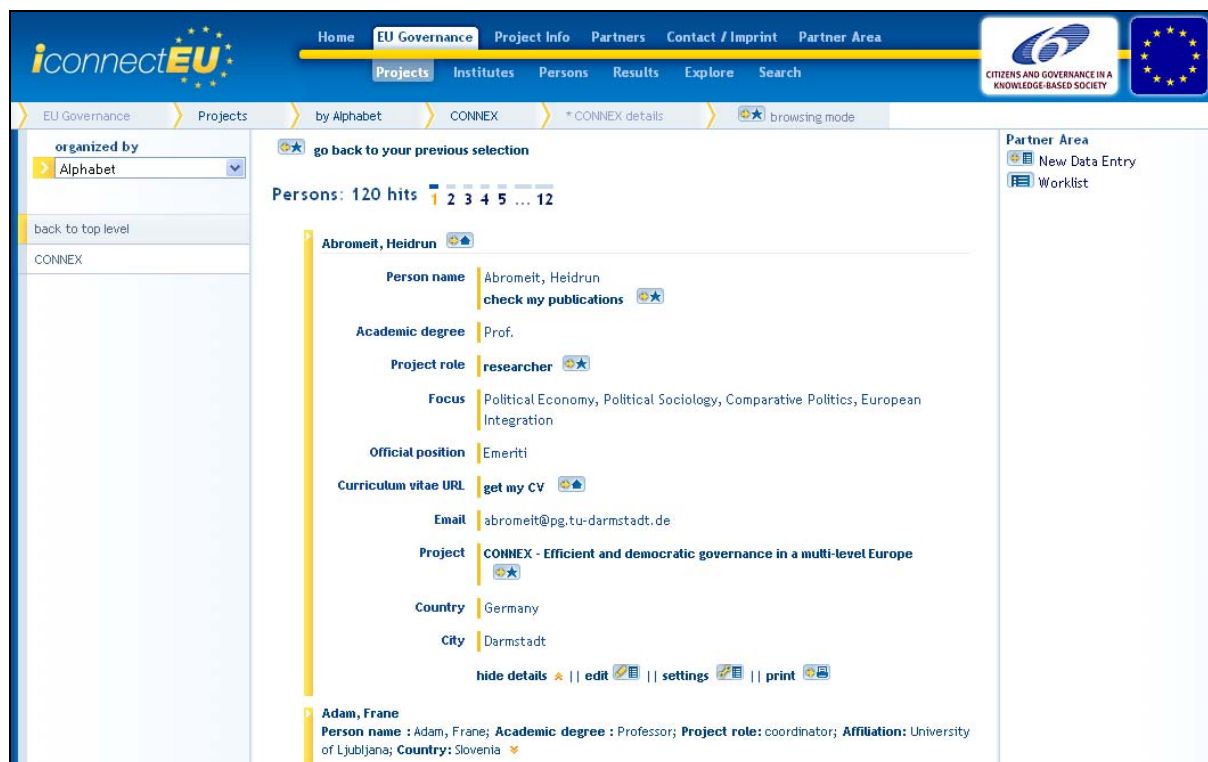
Figure 13: Browsing persons related to a project

To support dissemination especially towards political stakeholders, means of communication besides scientific publications and conferences have to be used. One instrument used in this context are policy briefs, which summarize research results in a way more accessible to non-researchers. In contrast to research papers, policy briefs may also contain policy implications and options together with suggestions for measure to be taken by the political stake holders. While they should be consistently structured to meet the information needs of their target audience, good graphical design and information graphics are essential to reach the audience and to efficiently communicate complex semantics.

In IConnectEU, a test case for producing and publishing such policy briefs has been developed in collaboration with the Scientific Officer in charge. Though not foreseen in the work plan, it was felt by the project consortium, that the support for managing structured data available in the technical infrastructure of the IConnectEU portal should be evaluated and put to use at least for some of the participating projects.

As with the project descriptions, two parallel ways of producing and presenting policy briefs were realized. The first builds on form-based entry and presents to the user a number of pre-defined fields where the standard parts of a policy brief can be entered: Summery, Statement, Policy implication, Policy option, Measures. The information entered is presented to the user based on the standard layout of the IConnectEU portal (see). It makes use of relationships to other information entities, like persons, institutes and projects and therefore integrated policy briefs in a transparent way into the research information system.

To integrate a second, maybe extended version of a policy brief, a PDF version can be uploaded in addition. This alternative, graphically more appealing version of the policy brief is tightly connected to the formally structured one, giving both a concise overview of the policy brief's main message and direct access to a more sophisticated, downloadable version.

Figure 14: Structured policy brief

Besides project information and policy briefs, institutes, persons and project results, like publications and events, are documented in the portal. Up to the end of the IConnectEU project, the project consortium has documented a large amount of research-related information not available at some other place, in this consistent form, and interlinked for browsing across projects, institutes, persons etc. At the time of writing, the Pilot Internet Portal contains information on:

- *9 projects,*
- *233 institutes,*
- *804 persons,*
- *616 publications,*
- *264 events,*
- *22 databases,*
- *87 public relation materials, and*
- *8 other resources (spreadsheet files etc.).*

The Structure-guided browsing used throughout the portal helps users in more efficiently find the needed information and at the same time allows new perspectives on the collected data.

To, for example, find persons with experiences as project coordinator, a users switches to the "Persons" area of the portal and selects the information to be organized by "Role + Project". The resulting browsing hierarchy immediately lists all distinctive roles which have been defined for the over 804 persons contained in the database (e.g. coordinator, researcher, student etc.) and beneath these roles the projects in which persons are involved with the regarding role or qualification (see Figure 15).
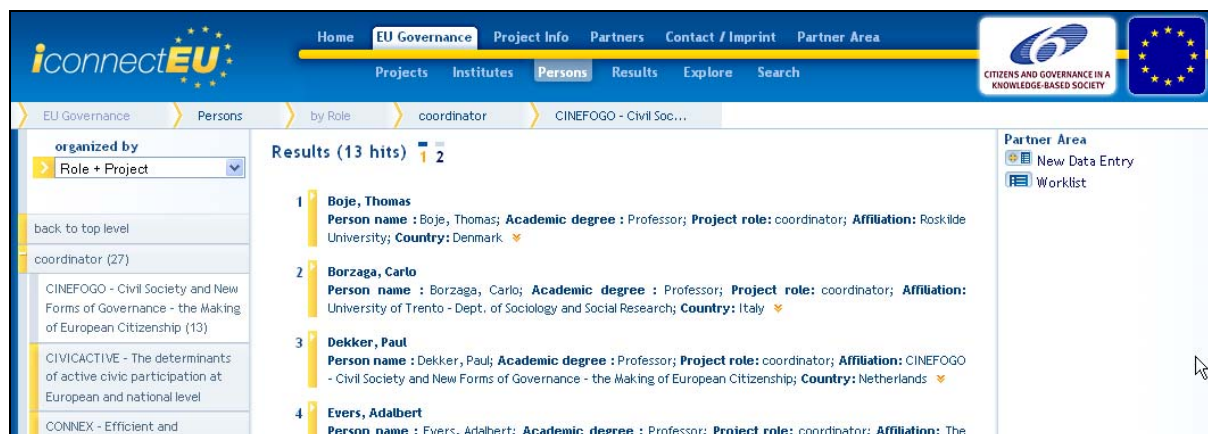
Figure 15: Browsing persons by role and project

To bridge the overall organization of information into dedicated information entities (projects, persons, publications etc.) and to allow queries covering all information types, an experimental "Explore" feature has been realized which makes accessible all information by its geographic coverage or location (see Figure 16).

Figure 16: Browsing all content from IConnectEU by geographic coverage and location

The Explore feature, though experimental, shows the power of standardized research information when it comes to create a new and integrated view to currently fragmented

information. Not only can users find out at a single click which conferences are taking place in a region, also participation of a region in research activities (institutes located there) or coverage of a region by research projects can be analyzed and gives valuable information on how research shifts its attention to European regions over time. For the FP5 project "MORESS – Mapping of Research in European Social Sciences and Humanities" – which is based on the same technical system as IConnectEU – such map visualization has already been developed for internal research purposes at GESIS (see Figure 17).
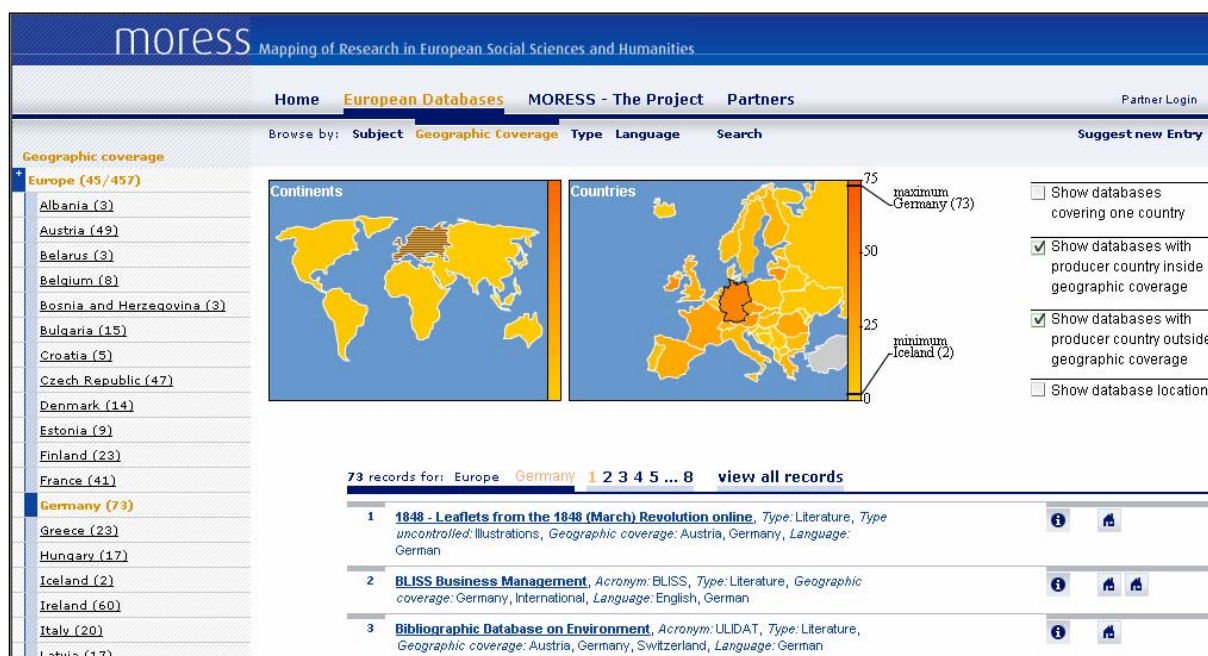

Figure 17: Mapping reserach information (example: MORESS)

The data collected in IConnectEU adds – beyond the perspective of time generated through research carried out in different Framework Programmes – several new dimensions to geographical analysis, e.g. mobility of researchers, development of collaboration networks, and inclusion of regions in European funded research.

*Finally, the IConnectEU project results also include the **DBClear software system** used to build the Pilot Internet Portal. The software, which was developed and extended with funding from Deutsche Forschungsgemeinschaft (DFG) and the European Commission in several research projects over the last eight years, is maintained by GESIS and made freely available for non-profit purposes. The software package include a reference guide on how to set up dissemination infrastructures similar to IConnectEU and documents the information architecture and data model developed in detail. Access to the software is realized by contacting the coordinator at the IConnectEU web site at **www.IConnectEU.org**.*

4 Impact of the project

The main objective of IConnectEU was to test the feasibility and potential of thematically focussed dissemination of results from complementary projects. As IConnectEU was not meant to replace the actual dissemination activities of the projects who supplied research information, but support them at the technical level to increase the quality and consistency of their documentation and dissemination work, the results achieved in IConnectEU have to be seen under the aspect of creating a sustainable infrastructure on which future dissemination activities can build.

With regard to this perspective, IConnectEU was successful in creating such an infrastructure. The development of the Pilot Internet Portal was driven both by the requirements of the participating projects and the Commission. Adapting already existing software allowed for efficient development of a flexible and powerful infrastructure far beyond of what normally can be realized in a (social science) research project – and only requiring a fraction of the financial resources spent on technological development in the partner projects. By re-using the IConnectEU infrastructure for dissemination purposes in social science research projects on a large scale therefore yields the potential of significantly reducing the need to build up individual infrastructures and frees a considerable amount of resources which can be spent for actual research.

The feedback received from projects outside the IConnectEU consortium indicates broad acceptance for the idea of building a thematically focussed dissemination infrastructure which integrates results across projects and over time. Several already finished projects expressed the willingness to contribute their results to make access to them sustainable beyond their project's duration. The focus of IConnectEU on a single research topic closely resembles existing communication structures within the scientific community and brings together actors and research outcomes which have to be considered as a complementary whole when it comes to disseminate research results from the social sciences to target groups like policy makers or the general public. Here, IConnectEU can help not only in supporting researchers in finding complementary projects and colleagues working on the same thematic area, it can also help policy makers and the media to identify groups of experts distributed across the European Research Area and to stimulate active dissemination by having a prominent place they can efficiently approach with their information needs.

IConnectEU at the same time makes a valuable contribution towards monitoring trends in research at the level of a single research topic – not a discipline as a whole – and towards integrating the European Research Area at the European and the national levels. Especially the thematic focus allows more easily connecting European and national research activities, as especially researchers involved in both see an immediate benefit of making their outcomes more visible at both levels and of networking their activities with those of their colleagues.

5 Dissemination and use of project results

The project results of IConnectEU consist mainly of two components: The Pilot Internet Portal on research on the topic of Governance in the EU and of the software system which is freely available and can be used for building similar portals for other research topics and in other domains.

*The **Pilot Internet Portal** on Governance in the EU available at www.IConnectEU.org is actively maintained by GESIS as part of its offerings to the scientific community in the social sciences. All information contained in the portal will be integrated into sowiport.de, one of the largest information portals for the social sciences in existence. Sowiport.de in return is connected to vascoda.de, an interdisciplinary portal for scientific information in Germany and to WorldWideScience.org, a global science gateway accelerating scientific discovery and progress through a multilateral partnership to enable federated searching of national and international scientific databases and portals. This integration of IConnectEU into international information infrastructures will enhance the visibility of EU-funded research at the international level and may serve project coordinators and researchers as an incentive for making their results available in IConnectEU. Besides this, the technology used for*

creating the Pilot Internet Portal allows crawling and indexing by search engines such that the content produced is visible to all users on the Web.

IConnectEU partners can maintain and update information about their projects and the resulting outcomes and can expand the information base with new projects as they become available. In addition, IConnectEU is now open to all projects carrying out research on Governance in the EU for documenting their activities and results. Intended as a pilot project for cross-project dissemination, the IConnectEU platform now is open to host project information from other thematic priorities within the social sciences. Presentations at conferences and publications will be used to advertise the project throughout the social sciences in Europe and to strengthen the contacts already established to the maintainers of similar systems at the national level.

With the Open Access Pilot, the European Commission has only recently launched an activity to support the free access to scientific results in the social sciences. IConnectEU will, therefore, connect to the Social Science Open Access Repository, SSOAR.info which was created by GESIS in a project funded by Deutsche Forschungsgemeinschaft, DFG. Giving the researchers involved in the projects covered by IConnectEU the means to easily deposit their research publications and make them Open Access will both enhance the visibility of scientific results and promote the idea of Open Access.

Projects specialized in actively disseminating available research results, like the project PLATON+ funded under the 7th Framework Programme, have already expressed their interest in re-using the information collected in IConnectEU for their project objectives. Building on this information reduces their efforts in finding experts in specific thematic areas and collecting related research results. The infrastructure available with the IConnectEU portal can be used for disseminating also the results produced in PLATON+, therefore initiating a cycle of information collection, aggregation, transformation and re-dissemination in different forms and media (e.g. policy briefs).

*The **software infrastructure** developed in IConnectEU is made freely available as Open Source software to third parties. Using the software for dissemination in other projects and for other research areas (also outside the social sciences) will significantly reduce the amount of technical resources needed. Collaboration with users of the software will lead to the development of new features, which can than be made available to all contexts in which DBClear is used. This maximizes the investments of the Commission and other funding agencies in whose projects the software is involved. Access to the software is realized by contacting the coordinator at the IConnectEU web site at **www.IConnectEU.org**.*