

## DELIVERABLE D1.2.2 FINAL REPORT WITH A PRESENTATION OF COLLECTED AND ANALYZED DATA

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## Introduction

The main objective of Work Package 1 was to carry out a general work of data mining and analysis with respect to any information that may be useful, directly or indirectly, to the QIPC community in Europe. This task is concerned with establishing the framework and content of what is actually of interest for the community. In order to ensure maximum community coverage, and enable an unbiased view, a survey was initiated to collect input from different stake holders. This was the subject of Deliverable D1.1.1.

The poll on the QUIE<sup>2</sup>T public forum<sup>1</sup>, which was also broadcast to the QUROPE mailing list<sup>2</sup>, has not produced any significant new insights as to new or un-covered material that could be collected in addition to the data we already have available. The community contribution to the services offered on our web site has certainly been significant, such that it can be concluded that the community needs in this area are covered to the satisfaction of all interested parties.

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<sup>1</sup> <http://qurope.eu/content/survey-relevant-databases>

<sup>2</sup> <http://qurope.eu/content/qurope-mailing-list>

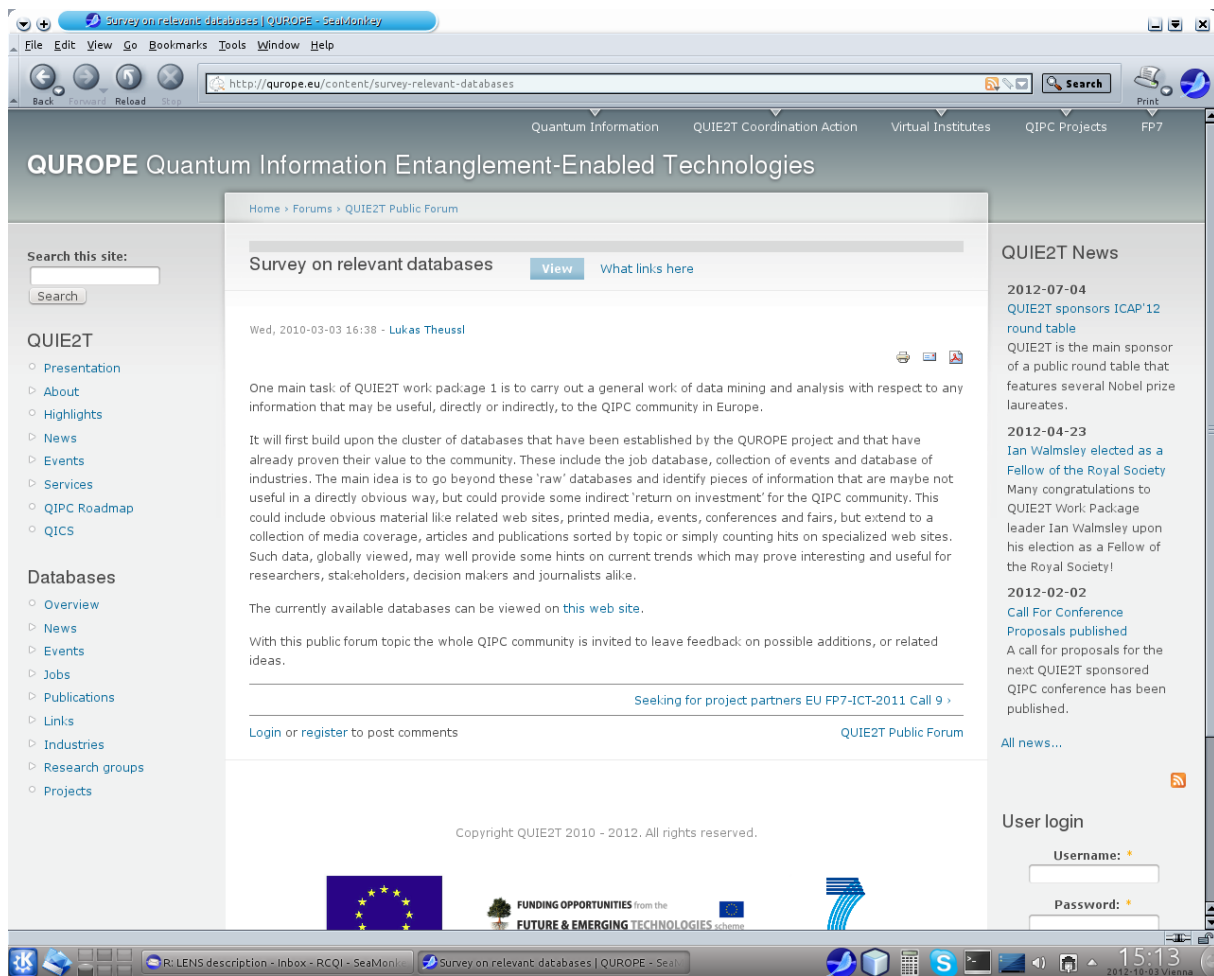


Fig. 1 Screenshot of the on-line community survey

Once the ‘hot’ topics had been identified, a general initial concept was worked out for the procedure of data collection and presentation. This was carried out in collaboration with WP3, whose responsibility it was to publish and disseminate the final analyzed material via the project web site. The preliminary concept of data collection and presentation was the subject of Deliverables D1.1.2 and D3.2.2; it is described in greater detail in this report, together with the final presentation of the data.

The main efforts connected to this task were put into the proper exploitation and visualization of the data collected on the [qurope.eu](http://qurope.eu) web site. Since the beginning of the project, a dedicated space was reserved on the web portal to make available advanced functionalities, both for browsing and searching the databases, as well as submitting new data.

The view of this data via the public [qurope.eu](http://qurope.eu) web site, together with the advanced functionalities like searching, filtering and visualization, constitute a virtual QIPC observatory that is able to serve as a tool to highlight the development and advances in the field. The work on these Virtual Observatories has been the subject of Deliverables D2.3.1 and D2.3.2.

The database main entry point is at

<http://qurope.eu/db>

This page also gives an overview of the latest database entries that is updated dynamically each time an entry is added or modified in the database, see Fig. 2.

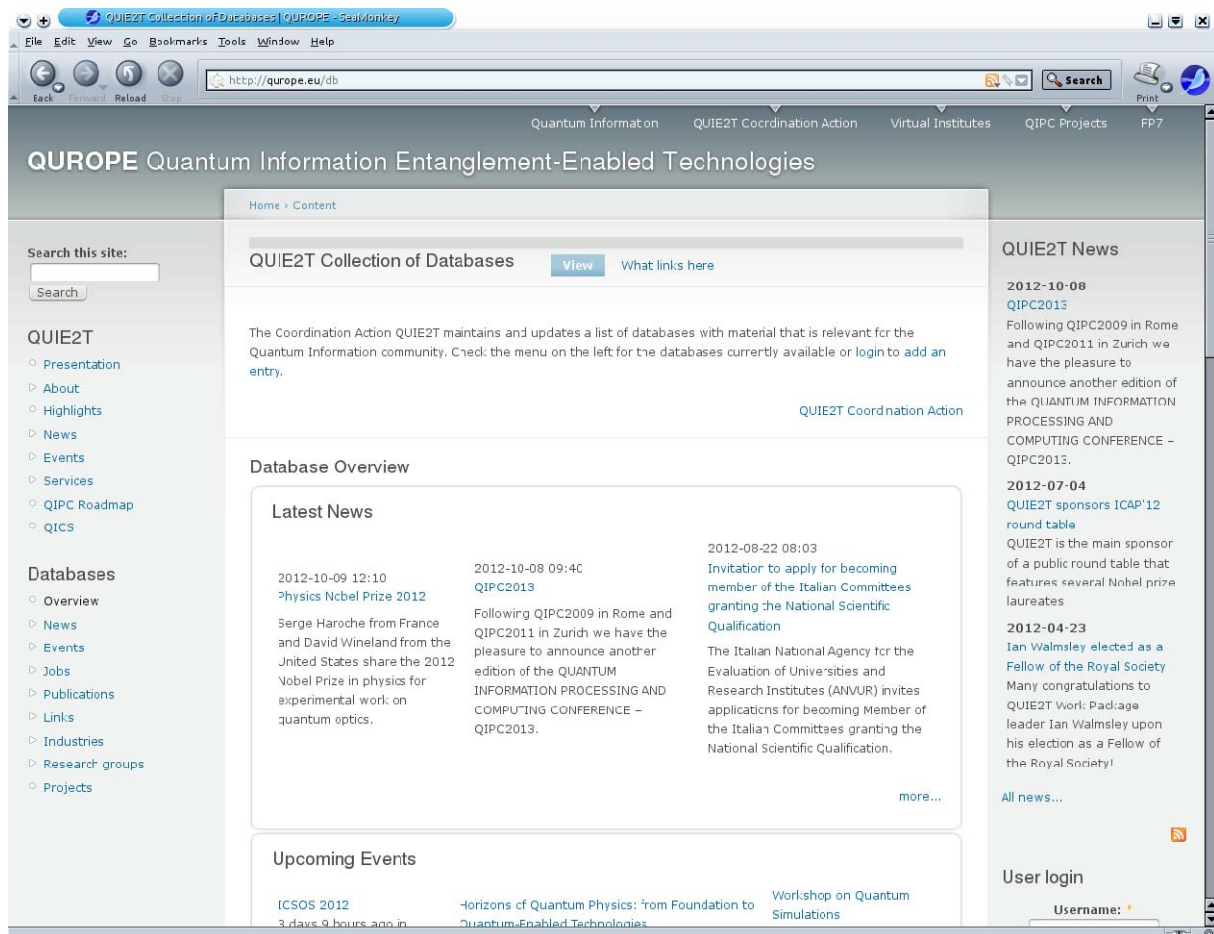


Fig. 2 The main entry point to the database collection.

## Data submission

Any registered user can submit new data via the node submission page<sup>3</sup>, however, in order to minimize the spam rate, we require people to login, i.e. anonymous submissions are not allowed. Registration is free and open to anyone, and can be accomplished quickly and easily by following the link below the *User login* block that is visible on bottom of the right column on every page of the site.

Once logged in, some detailed documentation and help is available for submitting contributions and working with the on-line editor (see the 'Compose tips' link in the menu).

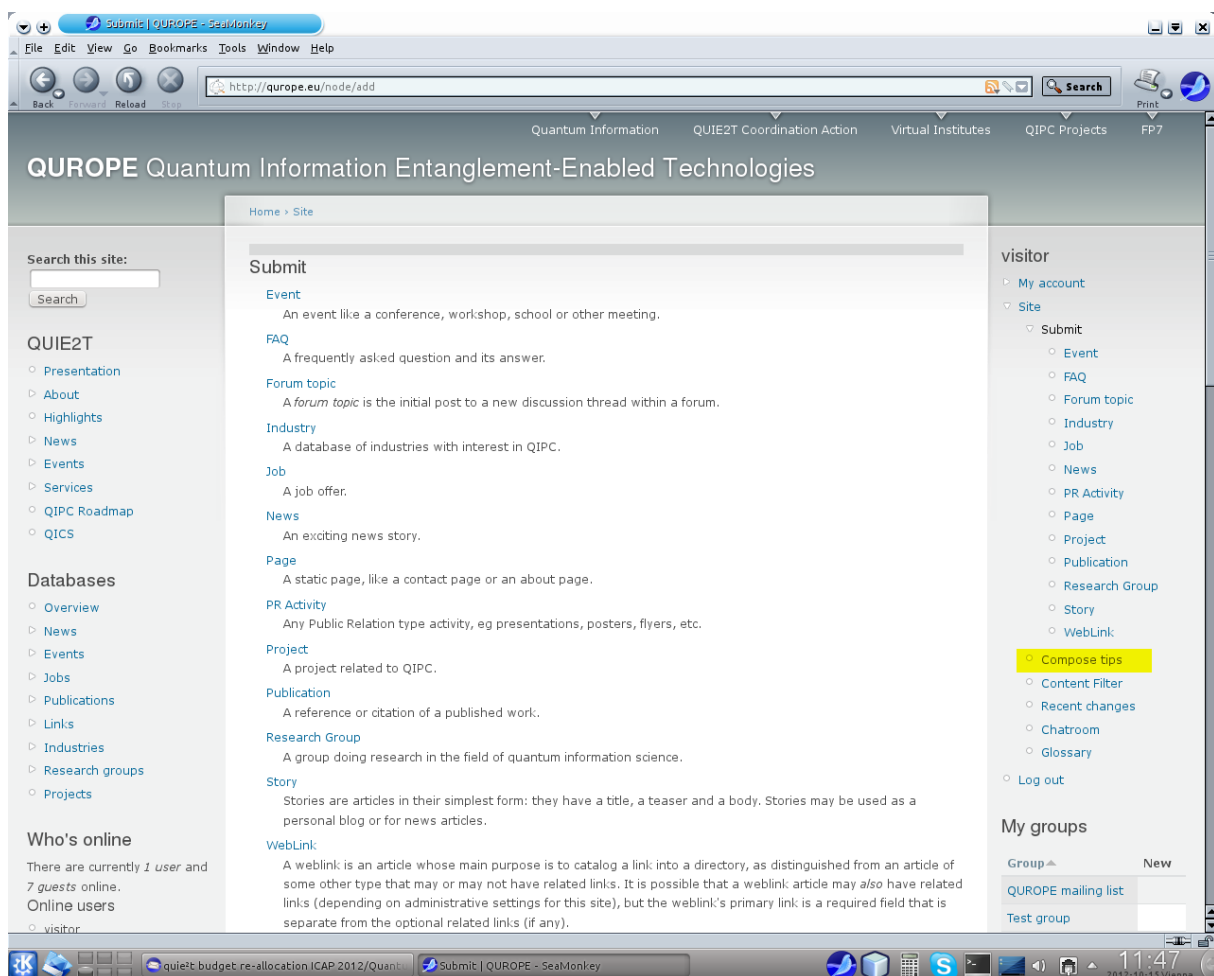


Fig. 3 The main page for data submission.

<sup>3</sup> <http://qurope.eu/node/add>

Apart from the main submission page, there is a link in the header of every database collection front page that goes directly to the data submission page for the corresponding data type. This is illustrated in Fig. 4 using as example the collection of QIPC projects<sup>4</sup>.

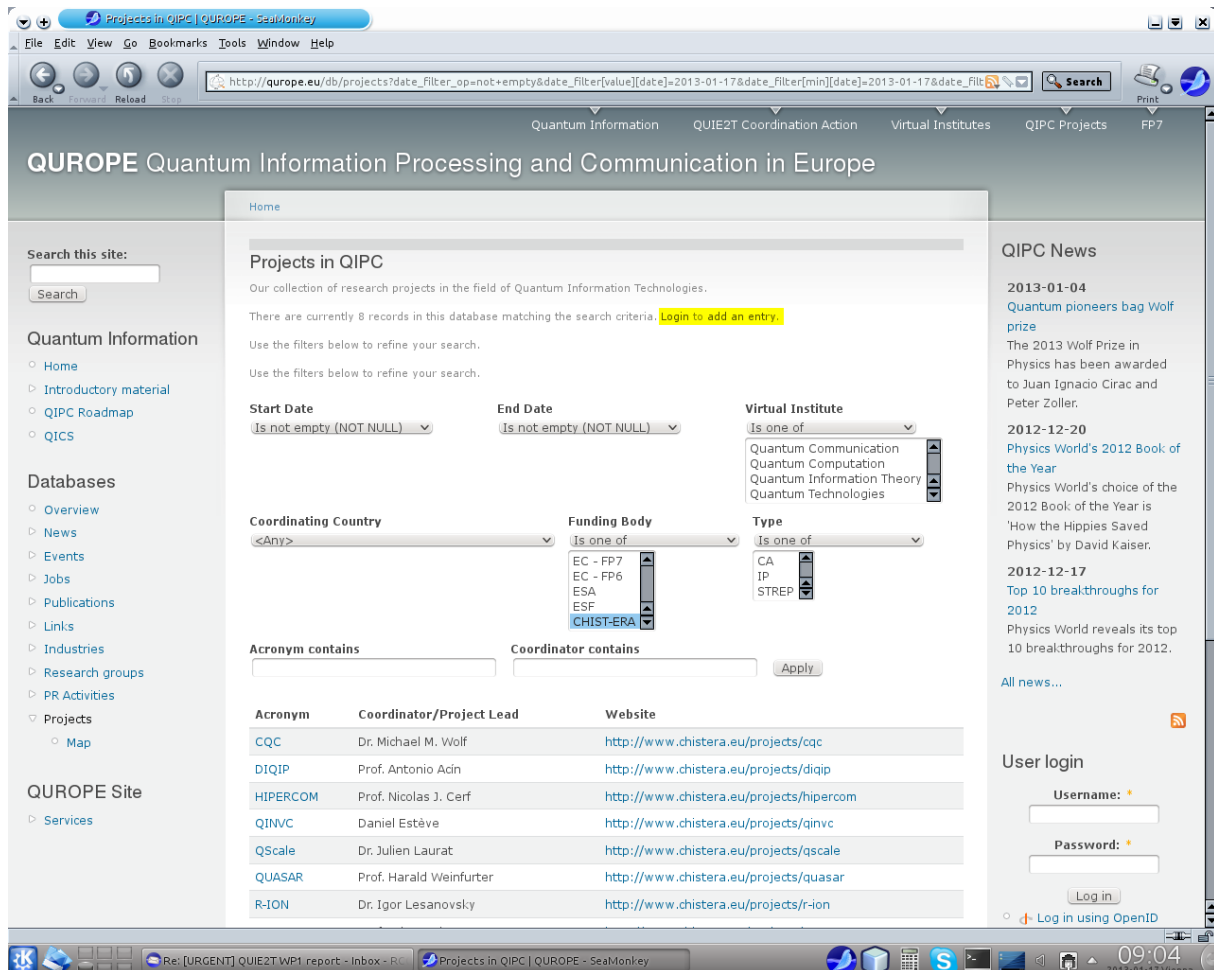


Fig. 4 Example of a link from the database collection to the data submission page,

Different data types offer the choice of various attributes to be specified during submission, some of which are required (indicated by a red asterisk), others are optional. These attributes can be modified any time later by editing the node (i.e. the submitted data type), and are used for filtering and searching on the respective presentation pages. This is illustrated in more detail in the next section, Data presentation.

<sup>4</sup> <http://qurope.eu/db/projects>

The screenshot shows the 'Create Job' page on the QUROPE website. The page has a header with navigation links: Quantum Information, QUIE2T Coordination Action, Virtual Institutes, QIPC Projects, and FP7. The main content area is titled 'Create Job' and includes a note: 'If you also want to send an email with your job offer to the QUROPE mailing list, please contact us.' Below this is a 'NOTE that we do NOT distribute any file attachments to this list!'. The form fields include: 'Job title:' (text input), 'At:' (text input), 'Deadline:' (text input with format 'YYYY-MM-DD'), 'Jobs:' (a small table with columns 'Location' and 'Web site'), and 'Job description:' (a rich text editor with a toolbar). The left sidebar contains a search bar, a 'QUIE2T' menu with links to Presentation, About, Highlights, News, Events, Services, QIPC Roadmap, and QICS, a 'Databases' menu with links to Overview, News, Events, Jobs, Publications, Links, Industries, Research groups, and Projects, and a 'Who's online' section showing 2 users and 7 guests. The right sidebar contains a 'visitor' section with links to My account, Site, Submit, Event, FAQ, Forum topic, Industry, Job, News, PR Activity, Page, Project, Publication, Research Group, Story, Web site, Compose tips, Content Filter, Recent changes, Chatroom, and Glossary, and a 'My groups' section with a dropdown menu and a 'New' button.

The screenshot shows the 'Create Event' page on the QUROPE website. The page has the same header and navigation links as the 'Create Job' page. The main content area is titled 'Create Event' and includes a note: 'If you also want to send an email with your announcement to the QUROPE mailing list, please contact us.' Below this is a 'NOTE that we do NOT distribute any file attachments to this list!'. The form fields include: 'Name/Acronym:' (text input), 'Date:' (a section with 'From date:' and 'To date:' text inputs, both with format 'YYYY-MM-DD'), 'Place:' (text input with a note: 'The place where the event takes place. If this is a geographical location (as opposed to e.g. a web conference, live-stream, etc.), then the exact address can be entered in the "Location" menu below.'), and 'Website:' (text input with a note: 'A corresponding web site. Web page addresses and e-mail addresses turn into links automatically.'). Below the 'Website:' field is a list of allowed HTML tags: 'Allowed HTML tags: <p> <a> <em> <strong> <code> <u> <ul> <ol> <li> <dl> <dt> <dd> <h1> <h2> <h3> <h4> <h5> <h6> <address> <br> <hr> <pre> <div> <span> <blockquote> <table> <tbody> <tr> <td> <td> <img> <strike>'. Below this is a note: 'Lines and paragraphs break automatically.' and a note: 'Each email address will be obfuscated in a human readable fashion or (if JavaScript is enabled) replaced with a spamproof clickable link.' The left sidebar is identical to the 'Create Job' page. The right sidebar contains the same 'visitor' and 'My groups' sections.

Fig. 5 Examples of data submission pages: submit a job offer (above) and an event (below).



## Data maintenance

Once submitted, any data node and its attributes can be modified and edited to an almost arbitrary content. However, in order to avoid abuse and potentially minimize our spam rate, a special permission policy has been put in place for the editing of database items, or in fact, for any page on the `qurope.eu` web site. As mentioned above, only registered users can submit new material, i.e. anonymous submissions are prohibited. This guarantees that we can always track the origin of any site modification.

After that, any submitted data item can only be modified by the user who submitted it, i.e. normal users cannot modify content that has been submitted by another user. Only some users with special permission, called authorized users, or site administrators, can modify any public content. Authorized users are manually designated by a site administrator.

The complete description of our permission and security policy is documented in the *Frequently Asked Questions* on our site<sup>5</sup>.

Presumed a user has sufficient permission for a given node and has logged in to the site, there will be an edit bar visible on top of the page, as illustrated in Fig. 6. The *View* tab is the main page for the data node, it shows the same page that would be visible for anonymous users. The other tabs may only be visible for users with required permissions. There is in particular the *Edit* tab that allows to modify the underlying data node as described above.

Before submitting a modified data node, one has the possibility to view the changes and to preview the final result via buttons on bottom of the *Edit* tab.

Note that in order to delete an item, one also has to follow the *Edit* tab where there is a *Delete* button on bottom of the page.

Apart from these basic administration tabs, there are some additional options that are mainly useful for statistical purposes and are only visible to administrators. In particular, there is a tab that lists all the pages on the `qurope.eu` web sites that have a link to the current page (*What links here*), a tab that lists the page visits (*Track*), and a tab that allows to include the current page into a collection of related site pages (a so-called ,Book‘, *Outline*). See Fig. 6 for an illustration.

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<sup>5</sup> <http://qurope.eu/faq#t235n405>

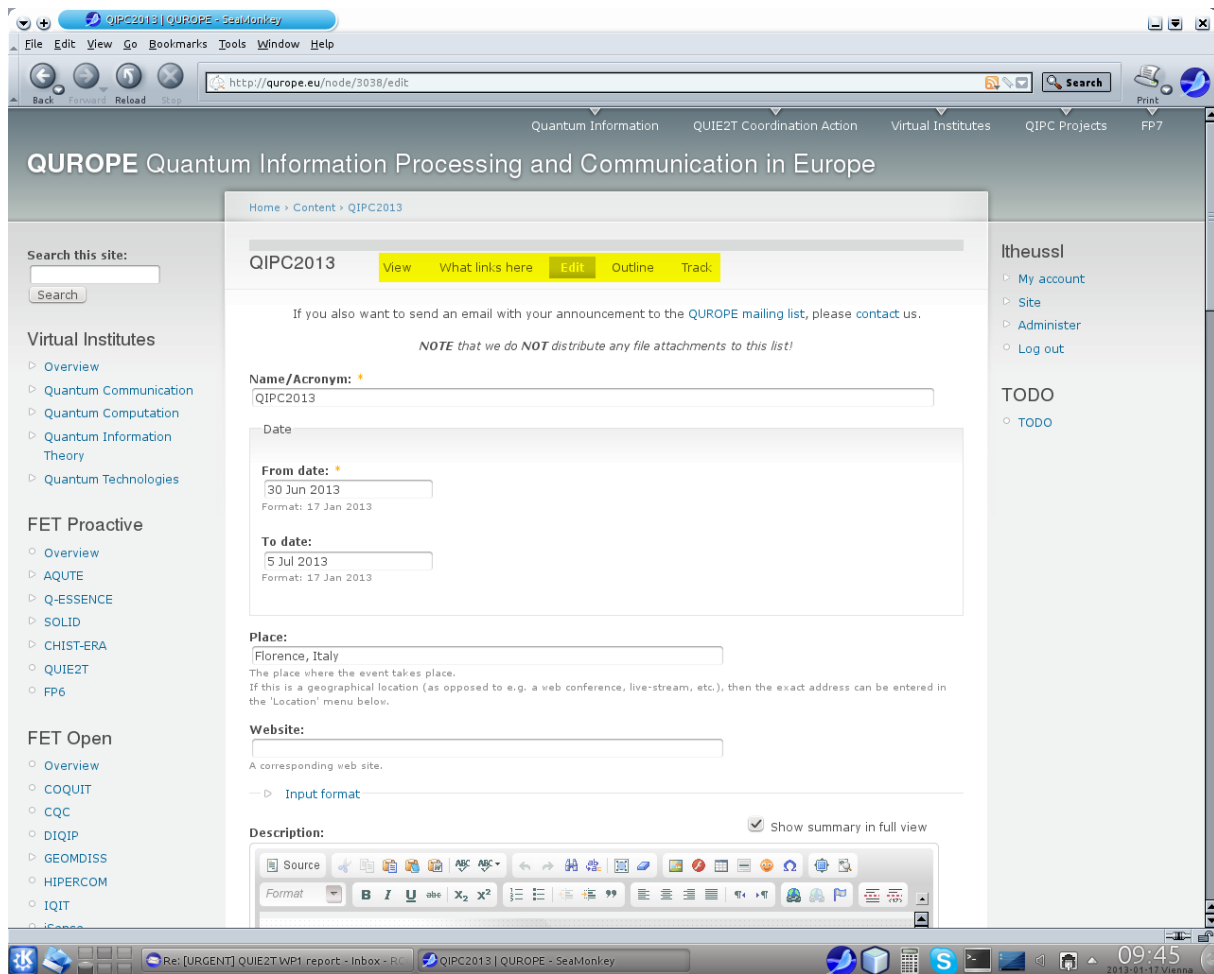


Fig. 6 Illustration of the edit bar that is only visible to registered users. Some of the listed items may only be visible to users with special permission.

## Revision information

It should be noted that there is no general mechanism that allows to track changes on an arbitrary data item, i.e. there is no revision control (*Track changes*) system in place. There is however the possibility to track changes on specific data items, but this has to be explicitly selected by the user during the edit operation. This mechanism is in particular used for tracking changes in the QIPC Roadmap<sup>6</sup> and the QICS scheme<sup>7</sup>.

Otherwise, the only trace of changes in a data node are via the system logs, however, no detailed information about the nature of the changes is logged, and the logs are only kept for two weeks. After that time period, any trace of modifications on a data item is lost.

<sup>6</sup> <http://qurope.eu/content/Roadmap>

<sup>7</sup> <http://qurope.eu/content/qics-book>

## Data presentation

Most data collections can be filtered interactively with respect to some attributes, e.g. news entries<sup>8</sup> can be filtered by date, job entries<sup>9</sup> can be filtered by location, etc. Most of these filters are self-evident, some filters are specific to our infrastructure and are common to many collections. These are in particular:

- The ‚Subject‘ filter, that specifies on which sub-domain of the web site the given entry lives,
- The ‚Virtual Institute‘ filter, that filters by the associated VI (if any),
- The ‚Project‘ filter that filters any associated QIPC project.

Other specific filters are explained at the corresponding database description below wherever they occur.

Calendar views have been added for all data that support a date attribute (news, events,...) and map views for data that support locations (jobs, events,...).

Each database presentation page also gives some basic statistics about the number of entries in the collection (subject to the currently active filter selection).

Most data can be exported directly to an xls Excel stylesheet via a button on bottom of the corresponding page.

At the time of this writing, there are the following top-level database topics available:

- News
- Events
- Jobs
- Publications
- Links
- Industries
- Research Groups
- PR Activities
- Projects

These topics and initial database seeds were mainly taken over from the predecessor projects ERA-Pilot QIST and QUROPE and enhanced with additional items following a public survey among the community members<sup>10</sup>. The newly collected data seeds introduced by QUIE<sup>2</sup>T are the Publications, Web links, Research groups, PR Activities and Projects.

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<sup>8</sup> <http://qurope.eu/db/news>

<sup>9</sup> <http://qurope.eu/db/jobs>

<sup>10</sup> <http://qurope.eu/content/survey-relevant-databases>

The following pages discuss the single databases in more details, highlight the evaluation and analysis tools available for each, and present a preliminary statistic evaluation and analysis of the available data as of the time of this writing. Essentially, this means that the presented data cover the period from **1. February 2010 – 15. January 2013**. However, as database entries are added dynamically, specific numbers in some tables may change rapidly and significantly in real life, so the aim of this analysis is mainly to present an overview and discuss any significant trends that may be visible.

A common feature for all main database pages is the header section, which usually gives the total count of database entries applicable to the current view, and a set of filters, that can be applied to the database set under consideration. This is illustrated in Fig. 5 using the Events database as an example.

The screenshot shows the QUROPE website interface. The main navigation bar includes links for Quantum Information, QUIE2T Coordination Action, Virtual Institutes, QIPC Projects, and FP7. The page title is "QUROPE Quantum Information Entanglement-Enabled Technologies".

On the left, there is a sidebar with a search bar and a menu for QUIE2T (Presentation, About, Highlights, News, Events, Services, QIPC Roadmap, QICS) and Databases (Overview, News, Events, Jobs, Publications, Links, Industries, Research groups, Projects). The "Events" section is currently selected.

The main content area is titled "Events" and contains a text block stating: "A collection of events (conferences, meetings, ...) related to QIFT. There are currently 14 records in this database matching the search criteria. Login to add an entry. You can browse the events per subject on the [overview](#) page or use the filters below to refine your search."

Below this text is a yellow highlighted filter box with the following options:

- Subject filter: <Any>
- Project filter: <Any>
- Virtual Institute filter: <Any>
- Date: Is greater than or equal to (2012-10-12) From: 2012-10-12
- Country: <Any>
- Apply button

Below the filters is a table of events:

Date	Name or Acronym	Conference/Workshop/Place
2012-10-09 - 2012-10-12	ICSOS 2012	Ajaccio, Corsica, France
2012-10-14 - 2012-10-18	Horizons of Quantum Physics: from Foundation to Quantum-Enabled Technologies	Taipei, Taiwan
2012-10-22 - 2012-10-25	Workshop on Quantum Simulations	Bilbao, Spain
2012-10-24 - 2012-10-26	Quo Vadis, Quantum Hybridium?	Ischia, Italy
2012-11-01 - 2012-11-02	Quantum Science Symposium 2012	Cambridge, United Kingdom
2012-11-24 - 2012-11-26	Workshop of Quantum Dynamics and Quantum Walls	Okazaki Conference Center, Japan
2012-11-25 - 2012-11-28	519th WE-Heraeus-Seminar: Hybrid Quantum Systems	Bad Honnef, Germany
2012-12-17 - 2012-12-18	Topical Research Meetings on Physics: Quantum technologies: taking concepts through to implementations	London, UK

On the right side of the page, there are two news sections: "QUIE2T News" and "QIPC News". The "QUIE2T News" section includes a date "2012-10-08" and a link "QIPC2013". The "QIPC News" section includes a date "2012-10-09".

**Fig. 7 Illustration of the filtering and data count functionality using the Events database as an example. Notice the various highlighted search filters, and the data counter in the header above, that adjusts automatically to the currently selected filters. Similar tools are available for all other database collections.**

## News

The complete collection of News submissions is available at <http://qurope.eu/db/news>. A News node is typically a short story or piece of content that can be submitted by site users and classified according to some searchable filter terms. News are most typically used by projects hosted on the qurope.eu site to display the latest submissions in the right column of the project web pages. An example is the News block of the QUIE2T web site itself<sup>11</sup>. However, also news not related to a specific project can be classified, e.g. general QIPC news<sup>12</sup> or news related to the Virtual Institutes<sup>13</sup>.

A particularly useful feature is the availability of RSS feeds for each news collection (e.g. per project), that allows users to subscribe to a feed and get automatic notification of any content addition or change. This is achievable via a small icon on bottom of the view.

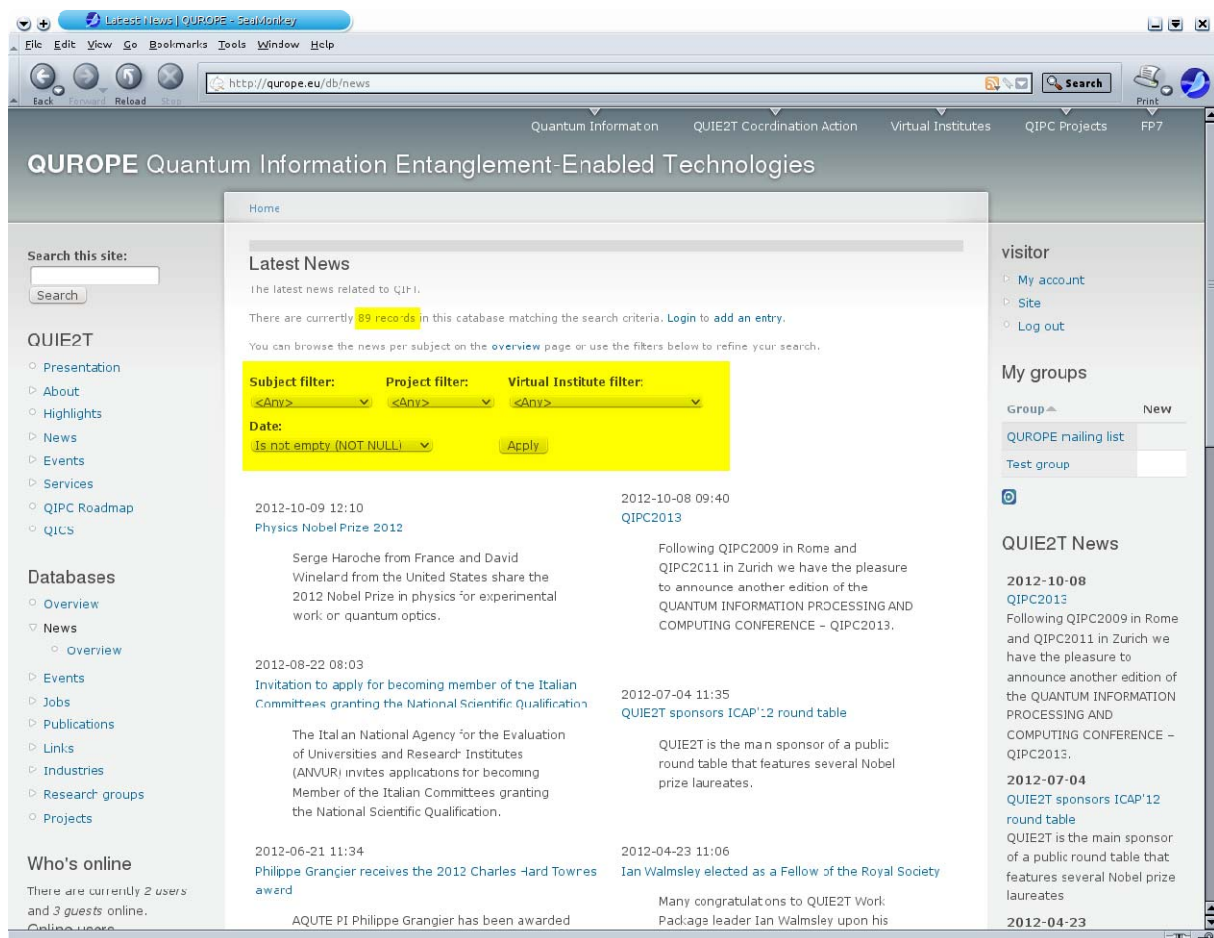


Fig. 8 Screen shot of the News database main page.

<sup>11</sup> <http://qurope.eu/quie2t>

<sup>12</sup> <http://qurope.eu/qipc>

<sup>13</sup> <http://qurope.eu/vi>

The News database can currently be filtered by Subject, Project, Virtual Institute and Date. In addition, an arbitrary text search may be performed on the News title, summary and body.

Currently there are a total of 98 News database items available in the collection, i.e. we had roughly one news submission every two weeks. Evidently, this service is used to a different extend by different projects. The following table gives the number of news records filtered by Subject topic and the most active projects. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Subject</b>	Projects	QUIE <sup>2</sup> T	Virtual Institutes	FP7	QIPC
Nr. of records	27	29	4	7	50
<b>Project</b>	QUIE <sup>2</sup> T	AQUTE	Q-ESSENCE	SOLID	STREPS
Nr. of records	29	16	26	3	3

## Events

The complete collection of Events is available at <http://qurope.eu/db/events>. An event is typically any type of happening like a conference or workshop that can be submitted by site users and classified according to some searchable filter terms. Typically, an event has a specific date and location, but there are exceptions as for example web conferences or on-line PR activities. Also public lectures or review meetings may be classified as events.

Again, a particularly useful feature is the availability of RSS feeds for each event collection (e.g. per project), that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via a small icon on bottom of the view.

The screenshot shows the QUROPE website's Events database page. The page has a navigation bar with links to Quantum Information, QUIE2T Coordination Action, Virtual Institutes, QIPC Projects, and FP7. A search bar is located on the left. The main content area displays a list of events with filters for Subject, Project, and Virtual Institute. The events are listed in a table with columns for Date, Name or Acronym, and Conference/Workshop/Place.

Date	Name or Acronym	Conference/Workshop/Place
2012-10-14 - 2012-10-18	Horizons of Quantum Physics: from Foundation to Quantum-Enabled Technologies	Taipei, Taiwan
2012-10-22 - 2012-10-25	Workshop on Quantum Simulations	Bilbao, Spain
2012-10-24 - 2012-10-26	Quo Vadis, Quantum Hybridium?	Ischia, Italy
2012-11-01 - 2012-11-02	Quantum Science Symposium 2012	Cambridge, United Kingdom
2012-11-24 - 2012-11-26	Workshop of Quantum Dynamics and Quantum Walks	Okazaki Conference Center, Japan
2012-11-25 - 2012-11-28	519th WE-Heraeus-Seminar: Hybrid Quantum Systems	Bad Honnef, Germany
2012-12-17 - 2012-12-18	Topical Research Meetings on Physics: Quantum technologies: taking concepts through to implementations	London, UK
2013-01-21 - 2013-01-24	5th Practical Quantum Cryptography Winter School	Les Diablerets, Switzerland

Fig. 9 Screen shot of the Events database main page.



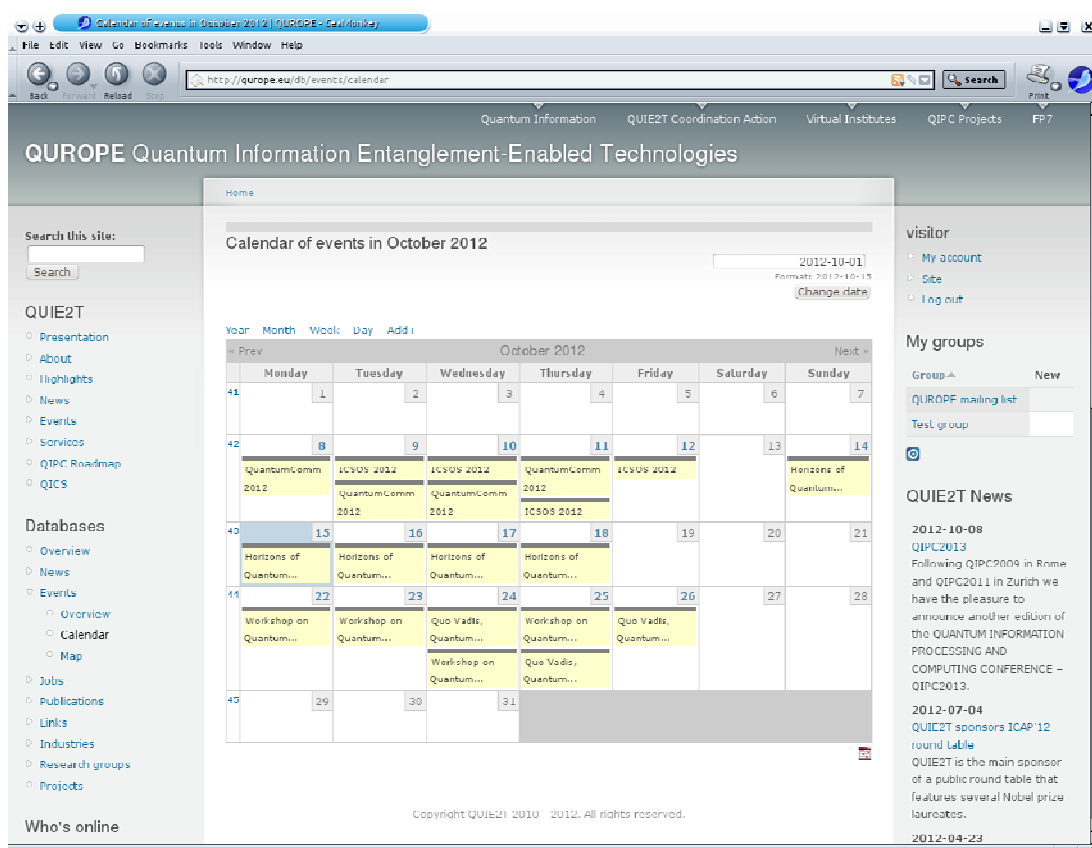
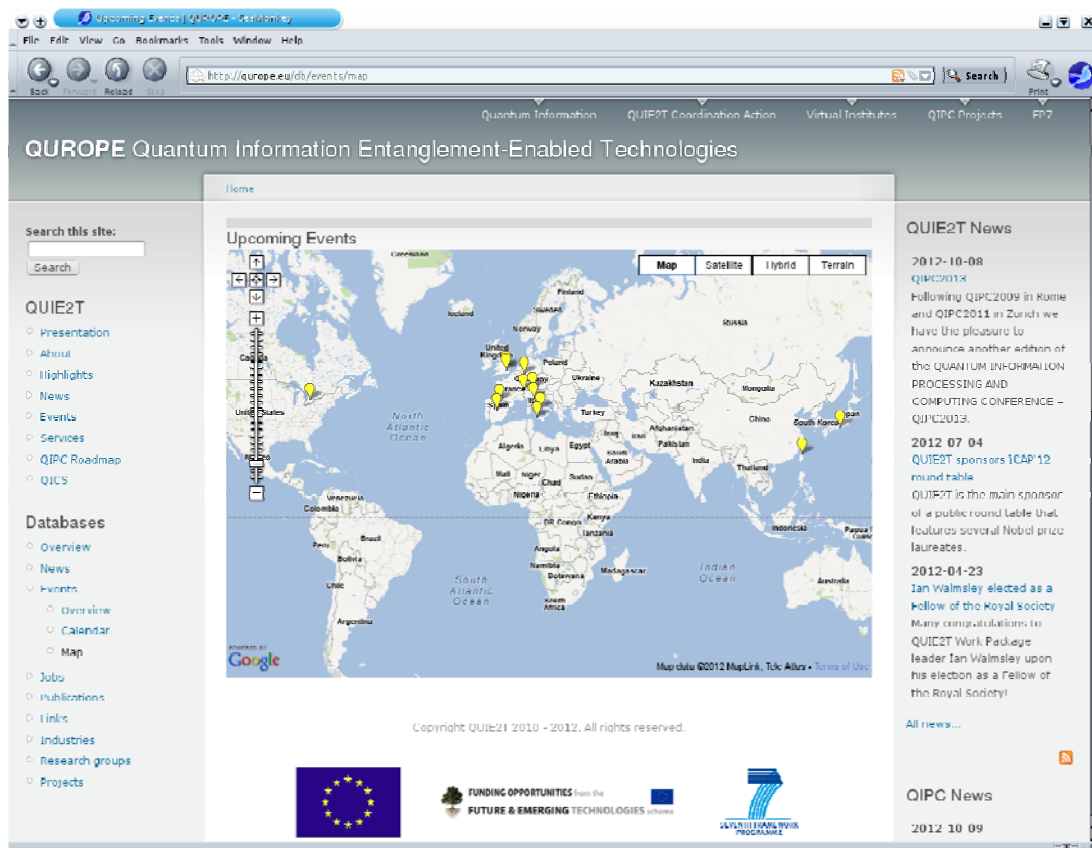


Fig. 10 Screen shots of the Events Google map (above) and calendar view (below).



The Events database can currently be filtered by Subject, Project, Virtual Institute, Date and Country. In addition, an arbitrary text search may be performed on the Event name and place.

Currently there are a total of 168 database items available in the collection, i.e. we had roughly one event submission per week. The following table gives the number of event records filtered by Subject topic and the most active projects as well as the most frequent host countries. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Subject</b>	Projects	QUIE <sup>2</sup> T	Virtual Institutes	FP7	QIPC
Nr. of records	16	9	1	8	150
<b>Project</b>	QUIE <sup>2</sup> T	AQUTE	Q-ESSENCE	SOLID	STREPS
Nr. of records	9	16	7	3	8
<b>Country</b>	Germany	Austria	Spain	Italy	UK
Nr. of records	20	19	17	15	15

Note that in addition to the filter-enabled default view, there is also a browse-able calendar view<sup>14</sup> and a Google map view<sup>15</sup> as well as a collection of external sites with independent event listings<sup>16</sup>.

<sup>14</sup> <http://gurop.eu/db/events/calendar>

<sup>15</sup> <http://gurop.eu/db/events/map>

<sup>16</sup> <http://gurop.eu/db/events/external>

## Jobs

The complete collection of Job offers is available at <http://quope.eu/db/jobs>. The job collection is by far the most popular database of the quope.eu web site. According to Google analytics it has been hit over 4000 times in the past year, i.e. about 10 times per day, accounting to almost 5% of the total site traffic, which makes it the most visited page on the whole quope.eu site.

Again, a particularly useful feature is the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

The screenshot displays the QUROPE website's 'Jobs' database. The header includes navigation links for Quantum Information, QUROPE21 Coordination Action, Virtual Institutes, and QIPC Projects. The main content area is titled 'Latest Job offers' and shows a collection of job offers in the field of Quantum Information Technologies. A search bar is present on the left, and a sidebar lists various categories like QUIE2T, Databases, and Who's online. The job offers are listed in a grid, showing details such as the job type, deadline, location, and a brief description. The page also includes a 'visitor' section on the right with links for My account, Site, and Log out.

Job type:	Deadline:	Location: Country
<Any>	Is greater than or equal to	<Any>
	2012-10-15	
	format: 2012-10-15	
		Apply

Posted:	Job Title	Location	Deadline
Oct 3rd, 2012	Doctoral Degree Opportunities: Quantum Dynamics	At: Max Planck Research School for Quantum Dynamics, Heidelberg, Germany	Deadline: 6 weeks 4 days from now
Sep 20th, 2012	postdoctoral position, Florence	At: Florence, Italy	Deadline: 6 weeks 3 days from now
Oct 3rd, 2012	Quantum Cryptography Systems	At: Cambridge, UK	Deadline: 6 weeks 4 days from now
Sep 10th, 2012	Post Doc in theoretical Quantum Optics	At: The Niels Bohr Institute, Copenhagen	Deadline: 2 days 11 hours from now
Jul 18th, 2012	PhD/postdoc positions at Institute for Quantum Information, Aachen, Germany		
Oct 2nd, 2012	Postdoctoral position, quantum properties of surface acoustic waves	At: Chalmers University of Technology, Gothenburg, Sweden	Deadline: 2 weeks 1 day from now
Sep 10th, 2012	CQT & UCL Post-doctoral Research Fellow in Quantum Information Science	At: London, UK	Deadline: 6 weeks 3 days from now
Jan 10th, 2012	Post-Doc on Josephson qubits available NOW at CEA Saday (France)	At: Quantronics Group- CEA Saday	

Fig. 11 Screen shot of the Jobs database main page.

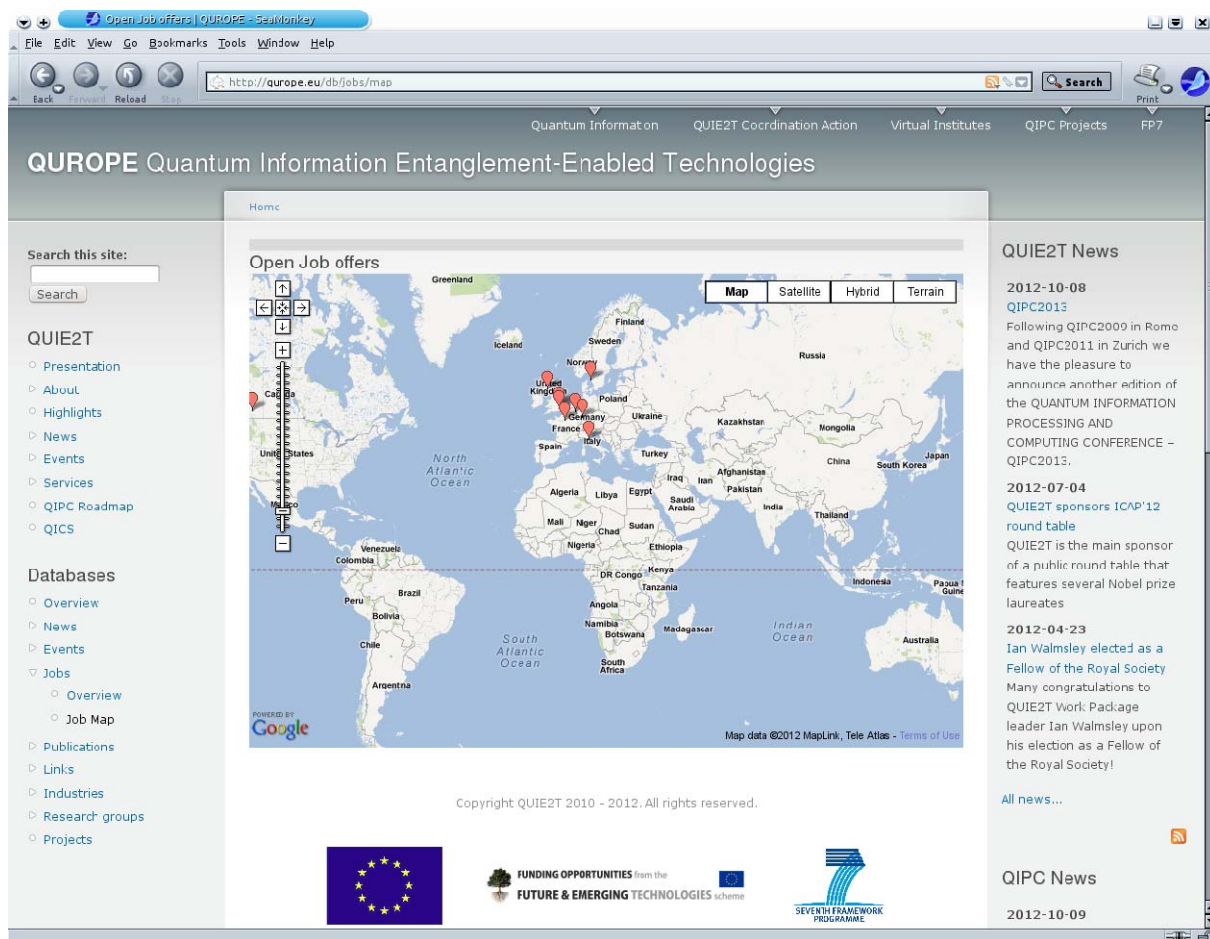


Fig. 12 Screen shot of the Jobs Google map view.

The Jobs database can currently be filtered by Job type (Position, Postdoc or PhD), Application deadline and Country. In addition, an arbitrary text search may be performed on the Job title and place.

Currently there are a total of 220 Job offers available in the collection, i.e. we had roughly three job submission every two weeks. The following table gives the number of job records filtered by job type and the most frequent host countries. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Job type</b>	Position	Postdoc	PhD		
Nr. of records	36	132	71		
<b>Country</b>	Germany	Austria	Spain	USA / France / Australia	UK
Nr. of records	30	18	24	12	50

Note that in addition to the filter-enabled default view, there is also a Google map view<sup>17</sup> as well as a collection of external sites with independent job listings<sup>18</sup>.

<sup>17</sup> <http://gurop.eu/db/jobs/map>

<sup>18</sup> <http://gurop.eu/db/jobs/external>

## Publications

The complete collection of Publications is available at <http://qurope.eu/db/publications>. The publication collection is the largest collection of data items on the qurope.eu web site with currently 612 single records.

Again, a particularly useful feature is the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

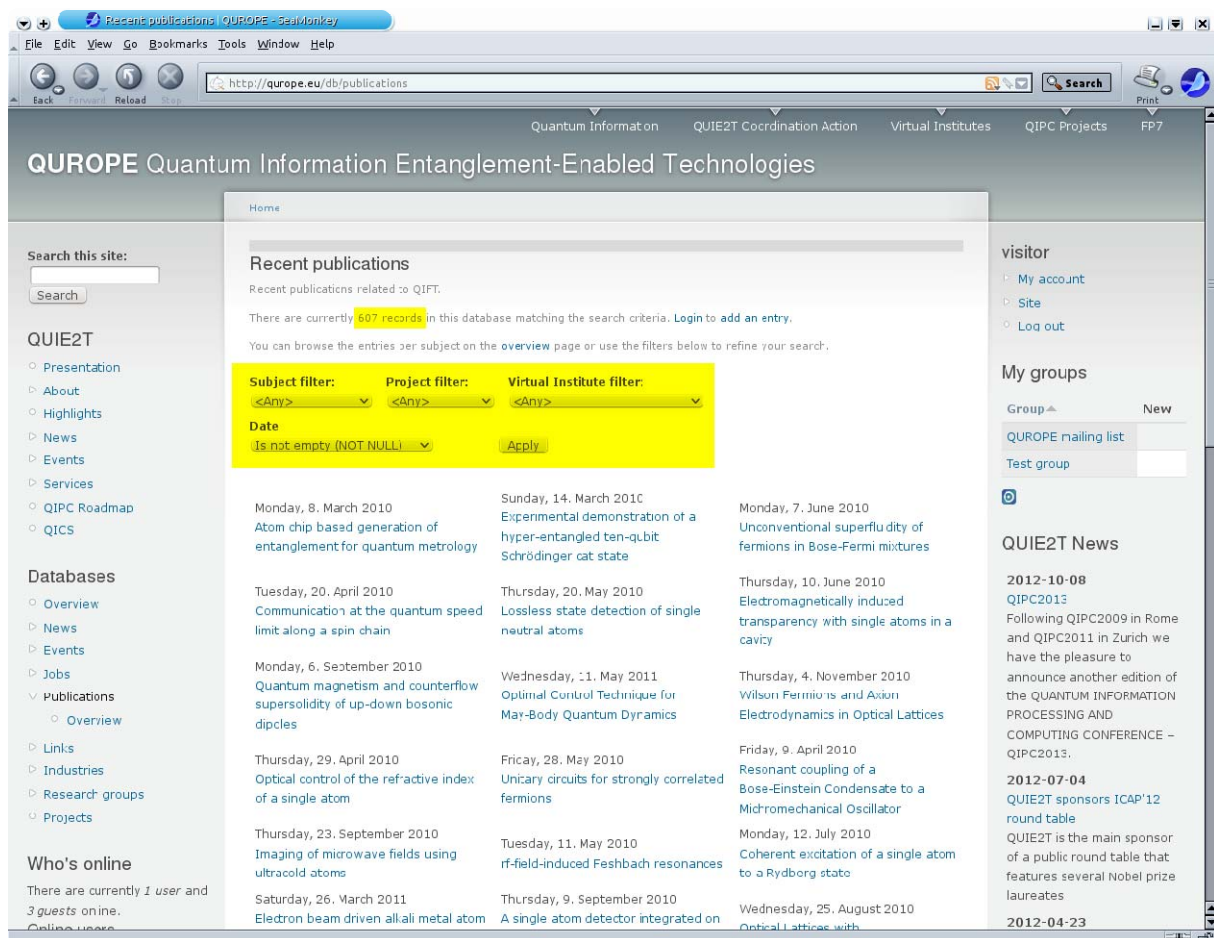


Fig. 13 Screen shot of the Publications database main page.

The Publications database can currently be filtered by Subject, Project, Virtual Institute, Date and QICS. In addition, an arbitrary text search may be performed on the Publication title, author(s), reference and abstract.

Currently there are a total of 612 Publications available in the collection, i.e. we had roughly four submissions per week. The following table gives the number of publications filtered by Project, Virtual Institute and QICS. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Virtual Institute</b>	Q-Comm	Q-Comp	Q-Info	Q-Tech	
Nr. of records	18	100	129	90	
<b>QICS</b>	00	10	20	30	40
Nr. of records	123	196	23	29	17

On a side note it has to be mentioned that the classification according to QICS (Quantum Information Classification Scheme<sup>19</sup>) terms might not be very representative as not all publication records have been classified by it. It was only in Oct. 2012 that indicating a QICS scheme was made mandatory when submitting a publication, i.e. many older entries do are not tagged with any QICS at the moment. Work to classify the remaining publication records is on-going at the moment.

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<sup>19</sup> <http://guope.eu/content/qics-book>



## Links

The complete collection of Web Links is available at <http://qurope.eu/db/links>.

Again, a particularly useful feature is the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

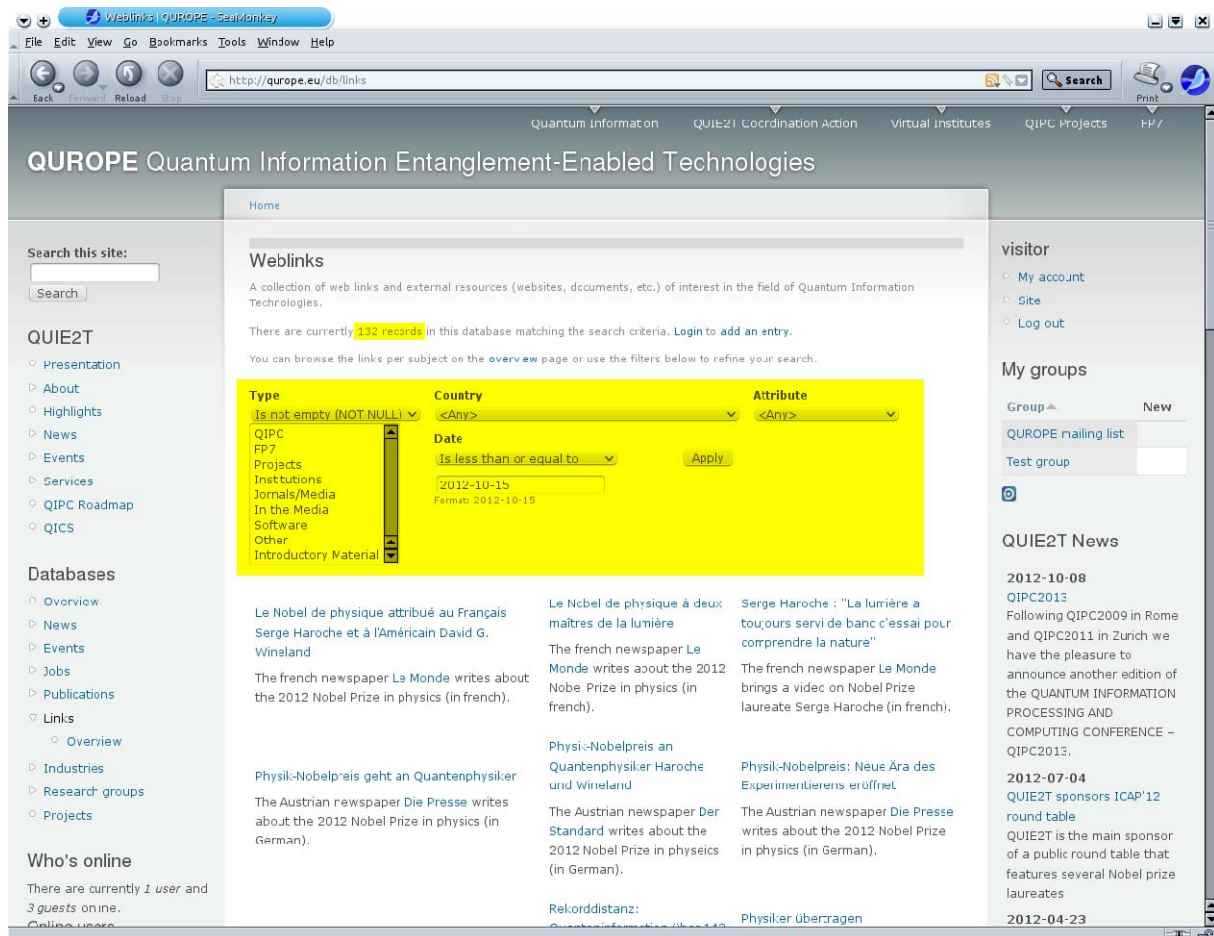


Fig. 14 Screen shot of the Weblinks database main page.

The Links database can currently be filtered by Type, Country, Attribute and Date. In addition, an arbitrary text search may be performed on the Link title and description.

Currently there are a total of 309 distinct links available in the collection, i.e. we had almost two submissions per week. The following table gives the number of web links filtered by Type, and as an interesting sub-category, the number of ‘Media appearances’ per country. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Type</b>	QIPC	In the Media	Introductory Material	Job listing	Software
Nr. of records	30	211	42	16	12
<b>In the Media per Country</b>	Austria	Germany	France	Switzerland	UK
Nr. of records	55	54	54	12	22



## Industries

The complete collection of Industries is available at <http://qurope.eu/db/industries>.

Again, a particularly useful feature is the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

**QUROPE Quantum Information Entanglement-Enabled Technologies**

Database of industries related to QIPC

A collection of industrial organizations interested in QIFT.

There are currently **50 records** in this database matching the search criteria. [Login](#) to [add an entry](#).

Use the filters below to refine your search.

**Country**: <Any> **Virtual Institute**: <Any> **Interests**: Communication cryptography, Fiber Optic Networks, Optics, Q tech, QRNGs, Quantum Cryptography, Quantum Technology

**Apply**

Name	City	Interests	
<a href="#">AIT Austrian Institute of Technology</a>	Vienna	Networks, Q tech	<a href="#">More info...</a>
<a href="#">Alcatel-Lucent</a>	Paris		<a href="#">More info...</a>
<a href="#">Atos Worldline</a>	Bezons		<a href="#">More info...</a>
<a href="#">Atos Worldline</a>			<a href="#">More info...</a>
<a href="#">Belgian Defense</a>			<a href="#">More info...</a>
<a href="#">BSI - Bundesamt für Sicherheit in der Informationstechnik</a>		Security	<a href="#">More info...</a>

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**My groups**

Group	New
<a href="#">QUROPE mailing list</a>	
<a href="#">Test group</a>	

**QUIE2T News**

**2012-10-08**  
**QIPC2013**  
Following QIPC2009 in Rome and QIPC2011 in Zurich we have the pleasure to announce another edition of the QUANTUM INFORMATION PROCESSING AND COMPUTING CONFERENCE - QIPC2013.

**2012-07-04**  
**QUIE2T sponsors ICAP'12 round table**  
QUIE2T is the main sponsor of a public round table that features several Nobel prize laureates

**2012-04-23**

Fig. 15 Screen shot of the Industries database main page.

The Industries database can currently be filtered by Country, Virtual Institute and Interests. In addition, an arbitrary text search may be performed on the name of the Industry.

Currently there are a total of 50 distinct Industries in the collection. This number has stayed roughly constant over the past years as we had a few additions but also a few removals of start-up companies that apparently have disappeared again.

The following table gives the number of industry records filtered by Country, Virtual Institute and Interest. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Country</b>	UK	Germany	France	USA	Switzerland
Nr. of records	7	6	5	7	6
<b>Virtual Institute</b>	Q-Comm	Q-Comp	Q_Info	Q-Tech	
Nr. of records	7	1	0	2	
<b>Interest</b>	Cryptography	Quantum Technology	Security	Communication	Networks
Nr. of records	11	17	12	15	11

Note that in addition to the filter-enabled default view, there is also a Google map view<sup>20</sup> showing the location of company headquarters on a Google map.

<sup>20</sup> <http://guope.eu/db/industries/map>

## Research Groups

The complete collection of Research Groups is available at <http://qurope.eu/db/groups>.

Again, a particularly useful feature is the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

The screenshot displays the QUROPE Quantum Information Entanglement-Enabled Technologies website. The main content area is titled "Research Groups" and shows a list of groups with columns for Group, Institution, City, and Country. A search bar is located at the top left, and a navigation menu is on the left side. A filter box for Country and City is visible, with "Country" selected. The list of groups includes entries like "Quantum Optics and Spectroscopy Group", "Institut für Experimentalphysik", "Quantum Optics Theory Group", "Quantum Information", "Researchgroups of Statistics", "Quantum Foundations and Quantum Information on the Nano- and Microscale", "Institute for Experimental Physics", "Quantum Particle Workgroup", "Atomchip group", "CoQuS", and "Quantum Optics, Quantum Nanophysics, Quantum Information".

Group	Institution	City	Country
Quantum Optics and Spectroscopy Group	Institut f. Experimentalphysik, Universität Innsbruck	Innsbruck	Austria
Institut für Experimentalphysik	Universität Innsbruck, Institut für Experimentalphysik	Innsbruck	Austria
Quantum Optics Theory Group	Institute for Quantum Optics and Quantum Information	Innsbruck	Austria
Quantum Information	Institut für Theoretische Physik	Innsbruck	Austria
Researchgroups of Statistics	Alpen-Adria University Klagenfurt	Klagenfurt	Austria
Quantum Foundations and Quantum Information on the Nano- and Microscale	Faculty of Physics, University of Vienna	Venna	Austria
Institute for Experimental Physics	Institut für Experimentalphysik, Universität Wien	Venna	Austria
Quantum Particle Workgroup	Quantum Particle Workgroup	Venna	Austria
Atomchip group	Atominstitut der Österreichischen Universität TU-Wien	Venna	Austria
CoQuS	Vienna Doctoral Program on Complex Quantum Systems	Wien	Austria
Quantum Optics, Quantum Nanophysics, Quantum Information	Universität Wien	Wien	Austria

Fig. 16 Screen shot of the Research Groups database main page.

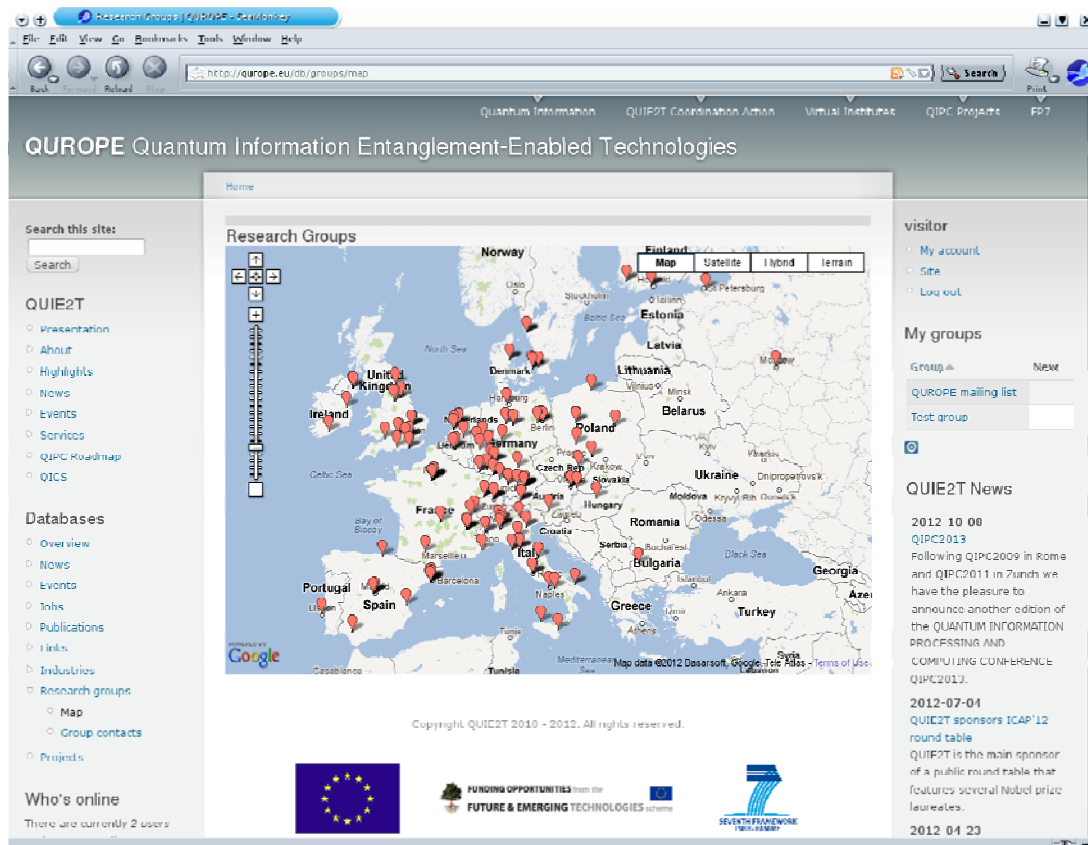
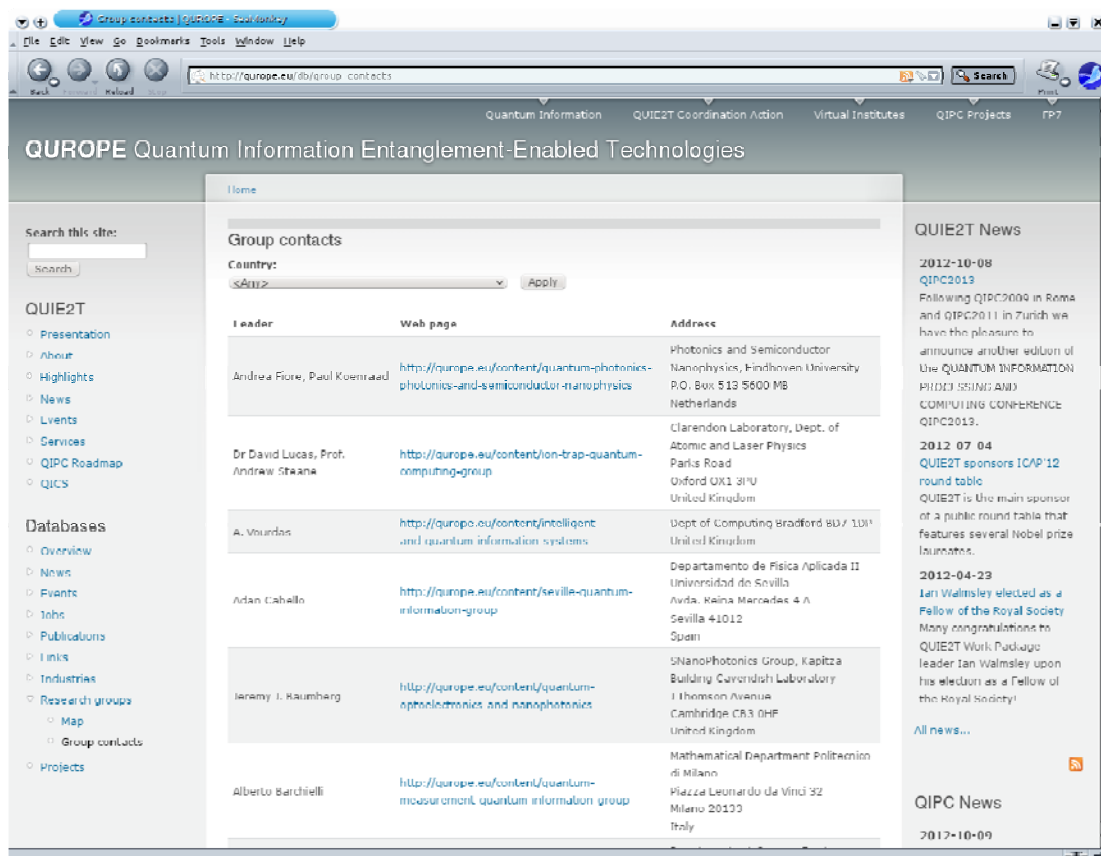


Fig. 17 Screen shots of the group contacts page (above) and the groups Google map view.

The Research Groups database can currently be filtered by Name, Research Type, Expertise, Country, City and Group leader.

Currently there are a total of 203 distinct Research Groups in the collection. This number has only slightly increased over the past years as we had already a rather complete coverage of groups when the database was taken over from previous projects, and there were only a few newly emerged groups in addition.

The following table gives the number of Research Groups records filtered by Country, Research Type and Expertise (selected by some prominent key words). Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Country</b>	UK	Germany	France	Italy	Spain
Nr. of records	22	48	17	30	16
<b>Research Type</b>	Theory	Experiment			
Nr. of records	105	112			
<b>Expertise</b>	Cryptography	Spectroscopy	Optics	Communication	Networks
Nr. of records	24	8	55	20	6

Note that in addition to the filter-enabled default view, there is also a Google map view<sup>21</sup> showing the geographic location of research groups on a Google map.

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<sup>21</sup> <http://guope.eu/db/groups/map>

## PR Activities

The complete collection of PR Activities is available at <http://gurop.eu/db/pr-activities>.

Under PR Activity we initially understood any type of activity that was directed towards an extra-scientific audience, in particular the general public. So this could be for instance public talks, TV/Radio interviews, exhibitions or links to introductory material on the web, in particular videos on youtube.com or articles in the popular press. Due to the wide subject nature, and also in particular due to different interpretations and needs of various projects, we were soon forced to loosen that definition and introduce a range of subject tags that are not always immediately attributable to a conventional PR activity as described above. This makes it especially difficult to arrange, present and analyze the data.

As a particularly confusing topic, there exist two types of 'PR Activities' in our collection: one that is particularly defined as such (in Drupal terms: a PR Activity *Content Type*), and one that only carries the attribute of 'PR Activity' (i.e. in Drupal terms: a *Taxonomy Term*). The latter may be any data node or content type (e.g. an event, a news story, a web link, etc.) that has been tagged with an attribute of 'PR Activity'. As an example, the database for web links<sup>22</sup> includes an Attribute filter that contains a 'PR Activity' tag.

As a consequence, not all data submissions that have been tagged as a 'PR Activity' are necessarily included on the main page of the PR Activity database. To keep the search and filter functionality as general as possible without paying too much in terms of usability, we have added a few sub-categories in the navigation menu of the database that contain some special, but commonly used cases. Those sub-categories are 'In the media'<sup>23</sup>, 'Presentations'<sup>24</sup>, 'Communications'<sup>25</sup> and 'Other Activities'<sup>26</sup>. The latter page includes all data with a 'PR Activity' tag, irrespective of its data type. Like above, this does not necessarily include all the 'proper' PR Activities, i.e. the content types. All these sub-categories may be filtered separately by some common terms.

As for all other databases we note the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change, as well as the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

---

<sup>22</sup> <http://gurop.eu/db/links>

<sup>23</sup> <http://gurop.eu/db/pr-activities/media>

<sup>24</sup> <http://gurop.eu/db/pr-activities/presentations>

<sup>25</sup> <http://gurop.eu/db/pr-activities/communications>

<sup>26</sup> <http://gurop.eu/db/pr-activities/other>

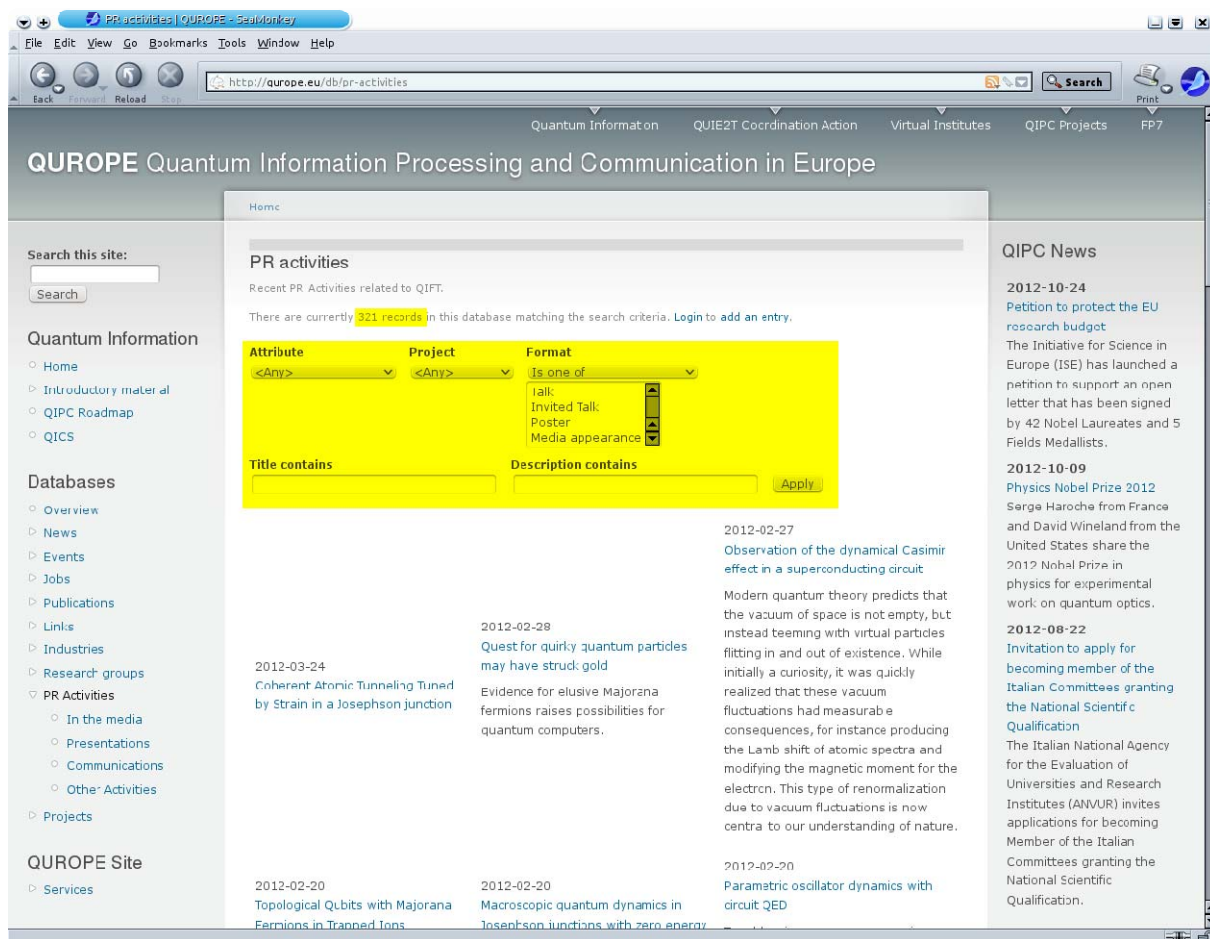


Fig. 18 Screenshot of the main PR activities database page.

The ‘proper’ PR Activities database can currently be filtered by Attribute, Project and Format. In addition, an arbitrary text search may be performed on the PR activity title and description.

Currently there are a total of 321 distinct PR Activities in the collection, i.e. we had about 2 submissions per week. Note however that some projects classify, say, normal conference presentations as PR Activities, which is not the initial intent of the category.

The following table gives the number of PR Activity records filtered by Attribute, Project and Format. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Attribute</b>	PR Activity	Presentation	Results	Communications	Highlight / Reports
Nr. of records	37	286	31	4	1
<b>Project</b>	AQUTE	Q-ESSENCE	SOLID	QUIE2T	
Nr. of records	0	142	168	1	
<b>Format</b>	Talk	Invited Talk	Poster	Media appearance	
Nr. of records	21	53	8	3	



## Projects

The complete collection of QIPC Projects is available at <http://qurope.eu/db/projects>.

The start of data collection for this data base is somewhat 6 years ago, i.e. 2007 with the start of the predecessor project QUROPE. That means that projects from the pre-FP6 era are usually not contained in the database.

Again, a particularly useful feature is the availability of RSS feeds for the whole database collection that allows users to subscribe to a feed and get automatic notification of any content addition or change. Another useful feature is the possibility to export the current view of the database to an Excel XSL style sheet. This is achievable via small icons on bottom of the view.

**QUROPE Quantum Information Entanglement-Enabled Technologies**

Search this site:

**QUIE2T**

- Presentation
- About
- Highlights
- News
- Events
- Services
- QIPC Roadmap
- QICS

**Databases**

- Overview
- News
- Events
- Jobs
- Publications
- Links
- Industries
- Research groups
- Projects

**Who's online**

There are currently 1 user and 5 guests online.

Online users

- visitor

**Projects in QIPC**

Our collection of research projects in the field of Quantum Information Technologies.

There are currently 24 records in this database matching the search criteria. [Login](#) to add an entry.

**Filters:**

- Start Date:** Is less than 2012-10-15 (Format: 2012-10-15)
- End Date:** Is greater than 2012-10-15 (Format: 2012-10-15)
- Virtual Institute:** Is one of Quantum Communication, Quantum Computation, Quantum Information Theory, Quantum Technologies
- Coordinating Country:** Afghanistan, Aland Islands, Albania, Algeria
- Funding Body:** Is one of EC - FP7, EC - FP6, ESA, ESF
- Type:** Is one of CA, IP, STREP

Acronym	Coordinator/Project Lead	Website
AQLTE	Tommaso Calarco	<a href="http://aqlte-ip.eu/">http://aqlte-ip.eu/</a>
CHIST-ERA	Dr. Edouard Geoffrois	<a href="http://www.chistera.eu/">http://www.chistera.eu/</a>
CQC	Dr. Michael M. Wolf	<a href="http://www.chistera.eu/projects/cqc">http://www.chistera.eu/projects/cqc</a>
DIAMANT	Prof. Dr. Fedor Jelezko	
DIQIP	Prof. Antonio Adn	<a href="http://www.chistera.eu/projects/diqip">http://www.chistera.eu/projects/diqip</a>
HIPERCOM	Prof. Nicolas J. Cerf	<a href="http://www.chistera.eu/projects/hipercom">http://www.chistera.eu/projects/hipercom</a>
IQIT	Christof WUNDERLICH	
iSense	Prof. Dr. Kai Bongs	<a href="http://www.isense-gravimeter.com/">http://www.isense-gravimeter.com/</a>
MALICIA	Prof. Francesco Saverio Cataliotti	<a href="http://www.maliapiaproject.eu/">http://www.maliapiaproject.eu/</a>
PHCRBITECH	Lorenzo Marrucci	<a href="http://www.phorbitech.eu/">http://www.phorbitech.eu/</a>
QIPC	Giovanna Morini	<a href="http://onbys.uni-saarland.de/firdev.php/qipc">http://onbys.uni-saarland.de/firdev.php/qipc</a>

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Group  New

QUROPE mailing list

Test group

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QUIE2T is the main sponsor of a public round table that features several Nobel prize laureates

**2012-04-23**

Fig. 19 Screen shot of the QIPC Projects database main page.

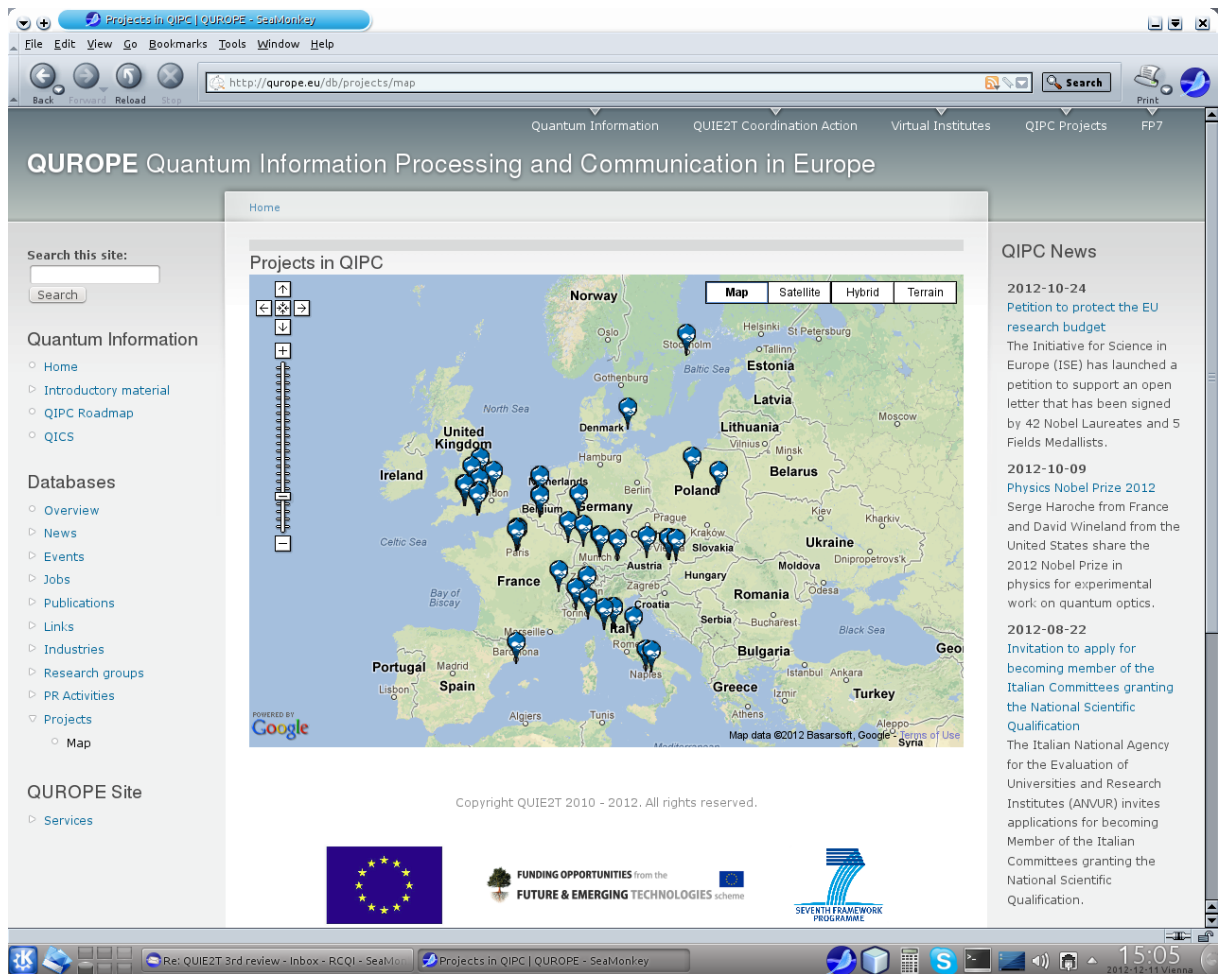


Fig. 20 Screenshot of the QIPC projects Google map page.

The Projects database can currently be filtered by Start/End Date, Virtual Institute, Coordinating Country, Funding Body and Type. In addition, an arbitrary text search may be performed on the Project acronym and coordinator.

Currently there are a total of 54 distinct Projects in the collection. This number has steadily increased over the past years with an almost constant number of projects being added each year.

The following table gives the number of Project records filtered by Virtual Institute, Coordinating Country, Funding Body and Type. Note that single numbers do not necessarily add up to the total number of records because some nodes may be classified within several categories.

<b>Country</b>	UK	Germany	France	Italy	Austria / Sweden
Nr. of records	9	7	5	11	4
<b>Virtual Institute</b>	Q-Comm	Q-Comp	Q-Info	Q-Tech	
Nr. of records	4	12	10	13	
<b>Funding Body</b>	EC – FP7	EC – FP6	ESA	ESF	CHIST-ERA
Nr. of records	40	12	1	1	8
<b>Type</b>	CA	IP	STREP		
Nr. of records	4	7	40		

Note that in addition to the filter-enabled default view, there is also a Google map view<sup>27</sup> showing the geographic location of the project coordinating country on a Google map.

<sup>27</sup> <http://guope.eu/db/projects/map>