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Co-ordination of Research Policies with the Western Balkan Countries

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Report on opportunities to access large scale infrastructures

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Executive Summary

The WBC-INCO.NET project aims to support science and technology cooperation between the EU Members States (EU MS) and the Western Balkan Countries (WBC) in the field of science and technology. An important component of the project was to prepare the investigation on the opportunities to access important medium and large scale research infrastructure in Europe and WBC. Access to the Research Infrastructures (RIs) is an important component to further develop WBC policies in the field of research and to influence underlining these needs also through ESFRI. For this reason, the analysis intends to offer a contribution to the support of coherent approach to offer scientific community important information on the possibilities to establish links with current EU and WBC research infrastructures and also to inform important national and EC policy makers on the important barriers and needs that still needs to be tackled in relation to the development of future Pan-European Research Infrastructures.

In order to strengthen this processes of participation of WBC Pan-European research infrastructures, the consortium needed to identify and assess the state of the art of individual institutions, to ask them about their experiences with the collaboration with WBC researchers, and finally to ask them about barriers and critical issues. In other words, in the context of the WBC-INCO.NET project, the consortium was interested in identifying research infrastructures and areas of mutual interest for researchers from EU MS and the researchers from WBC. The main goals are to continue bi-regional dialogue (through WBC Steering Platform), to enhance the participation of WBC researchers in joint European RTD projects and draw some conclusions, and finally to mark the difficulties and barriers and prepare some recommendations for new policy actions.

The deliverable report “Analysis of Opportunities to Access S&T Infrastructure” was realized through the preparation of an online questionnaire which was the basis for the assessment and examination of access conditions to research infrastructures in the EU MS and in the WBC.

Previous studies (Kozmus, 2005; Uvalić, 2005; Dall, 2008) showed that many excellent experiences were gained in recent years with the support of EC funded projects that supported institution and capacity building on a regional level (ERA-WESTBALKAN, ERA_WESTBALKAN+, SEE-ERA.NET). Still many challenges remained opened.

This report provides an investigation into the possibilities and conditions for European and WBC researchers to access large (and important medium) scale European and WBC research infrastructures.

Our investigation showed that some WBC and EU RI institutions have already established some ties with one another but a lot of the European institutions that participated in the survey expressed that problems of not so intensive collaboration with WBC is lying elsewhere. EU RIs respondents expressed that WBC have very limited possibilities to manage intensive cooperation links with important European medium scale and large scale research infrastructure. The main reason for this is not so good financial situation of research institutions in WBC and the lack of sufficient infrastructure in WBC. EU RIs respondents replied that they are aware that national research systems in WBC are missing sufficient funding, they also recognize a lack of strength in the specific scientific community and a fragmentation of WBC research community.

For WBC it can be noted that these countries are sometimes at the different level of development of the research infrastructures, which results in different level of involvement in the international cooperation. However, regardless of its current potential in this respect, WBC research infrastructure institutions are opened for cooperation with external users, and scientists are eager to deepen the existing cooperation and establish new contacts and start working on joint initiatives with their colleagues from abroad.

EU RIs respondents replied that they are having weak contacts with WBC research institutions, and they are missing proper information about the research facilities and research expertise that is present and available in WBC. EU RIs are facing a problem who to contact at the research institutions in WBC. Survey showed that information problem exists as all EU RIs were not aware that all WBC countries recently became associated countries to the FP7 and that they are on the equal footing for the participation in European research programmes.

These finding calls for proper actions that need to be taken in order to rise the awareness among the EU RIs and at the same time also to rise awareness at WBC research institutions. EU and WBC research institutions need to see where researchers from both groups of countries have the possibilities to establish new scientific links and jointly cooperate. A task of WBC-INCO.NET consortium is to rise the awareness at the Steering Platform for WBC and to widely disseminate results and findings that were gathered through this and also other tasks on the project. Our Workpackage (WP3) is planning to publish this deliverable report in a book format and disseminate it to all major research infrastructure players from WBC and EU that were addressed by our survey.

The accession to the Seventh Framework Programme for Research and Technological Development (FP7) is an important step that was completed for Albania, Bosnia and Herzegovina, Croatia, FYR of Macedonia, Montenegro and Serbia. FP7 is offering financial support for these countries now.

These gives also an excellent opportunity to encourage governments in WBC to find the right balance between restrictive economic policies, clearly necessary for macroeconomic stabilization purposes, and other types of policies with long-term effects which can contribute to raising national systems of research. It should also be mentioned that there are still some legal obstacles that countries of the region have to overcome in order to facilitate engagement of the foreign researchers in their domestic research institutions, but this was already recognized by all the countries and actions are already taken by the WBC governments in order to provide basis for enhancing the international cooperation within the region of the Western Balkans and the EU countries.

Another important prerequisite for better integration of WBC researchers into ERA is modernisation and investment of research infrastructure and providing the resources for maintenance of expensive scientific equipment. This is a prerequisite for all WBC research institutions which will have also better chances to access EU RIs. Facilitation and networking of existing research infrastructures and building up new research facilities at the interregional level can help strengthen the mobility of WBC and EU researchers even further as scientists will have the possibilities of joint usage of infrastructures.

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1 INTRODUCTION

Society faces many new challenges today, this include global warming, energy production, water supplies, a development of sustainable environment, ICT, quality of life, in addition to social issues such as the continuing divide between North and South, East and West, rich and poor which can lead to instabilities in society. Research infrastructures (RIs) of pan-European relevance provide unique opportunities for world level research and training as well as for stimulating knowledge and technology transfer. They help to develop human resources and knowledge and to reverse brain drain. Research infrastructures attract the best students and scientists, thus creating a long-lasting impact on Europe's socio-economic foundations. In this context, access to research infrastructures and specialised services remains a priority for the research community and it is a key pillar of the European Research Area (ERA).

In 2002 the research council invited the European Commission (EC) and EU Member States (EU MS) to build Europe-wide strategy forum to support the development of policies related to research infrastructures. This led to the creation of ESFRI (European Strategy Forum on Research Infrastructures). ESFRI provides a multidisciplinary platform open to all European countries and beyond to monitor the needs expressed by the scientific community on an ongoing basis. It is a forum gathering high level representatives from all member states, associated states and the European commission. Forum can be seen as stronghold for building new social interactions, in addition to foster new research ideas and attracting new young scholars. ESFRI in 2006 gave a commitment (ESFRI, 2006) that it will support and develop three corners of the knowledge triangle (innovation, education, research), but also complete this picture by reinforcing links within the triangle of main actors as people, academia and industry. Under these conditions research infrastructures can be defined as a natural bridge between the different corners.

In 2004 ESFRI included 35 Pan-European projects in the first roadmap and these are treated as the corner stones for the development of pan-European research infrastructures. In parallel the need to further strengthen the quality of European research area, innovation and education systems is further documented in the Commission's Annual Progress Report on the Strategy for Growth and Jobs (EC, 2008).

The development of European research infrastructure is further strengthens through the Seventh Framework Programme calls (FP7). It is important to note that critical to the success of every current and future FP7 project is the support to the electronic infrastructure (e-infrastructure). E-infrastructure is a backbone for science and crucial factor for the majority of projects that are seeking to make best use of high performance computing resources, large and complex digital repositories, capable of crossing thematic and regional borders. Underlying high speed network infrastructure and advanced network services are essential for optimising the capabilities of these projects. The creation of a European roadmap has prompted debate also in countries that are associated countries to the FP7 and with this report we particularly mean Western Balkan countries (WBC). Previous studies and reports showed (Kozmus, 2005; Uvalić, 2006) that WBC researchers lacks access to adequate research infrastructure, sometimes on the very basic level. The support to infrastructure in field of research is of a great importance. Furthermore, the opening up of the world-class research infrastructure in Europe to the researchers from WBC is an important aspect. At the same time promotion of centers of excellence in the WBC and encouragement of visiting researchers from EU member states to come to WBC is an important action to be taken. Also integration of WBC into existing networks of research infrastructure in Europe (e.g. ESFRI) is

still an important task that still needs to be further strengthen through proper policy making channels. WBC Steering Platform is sure one of them.

We can say that some research infrastructures are distributed and reasonably easy to become involved in. But basic preconditions should be met prior to this. First step forward is to establish sufficient and efficient E-infrastructure facilities in these countries which will certainly contribute to further capacity building in other infrastructure facilities. Some of the WBC (Croatia, Serbia) already built high speed Internet connection networks for science and their scientist are already connected into the European GEANT network, but there are still some gaps in some countries that scientist still does not have predispositions to use necessary network services. Building of E-infrastructure in e.g. Albania, BiH, FYR of Macedonia and Montenegro is still one of the most important priorities that need to be addressed.

As already said a possibility to use infrastructure facilities of other countries is an important issue for most of the researchers, especially in the condition where country is lacking of relevant devices or proper scientific equipment. Therefore this study has been carried out in order to investigate possibilities and conditions for researchers from the WBC to use large (and important medium) scale S&T infrastructure in Europe.

Additionally, the possibilities for European researchers to access infrastructure facilities in the WBC have been also recorded, while the ESFRI roadmap and existing national roadmaps have been taken into account.

To this end, an online questionnaire was compiled to gather the relevant information from the most important European and WBC institutions. When no answer was received from one institution considered being part of the most important infrastructure facilities, information has been collected from the home page of individual research infrastructure website.

Report is presenting 60 important medium and large scale EU infrastructure and 36 important research infrastructure actors from WBC and 1 from Turkey. Report is providing explained description of the area of work of the RIs that participated in the survey, provides description on the current cooperation activities, gives an information on the possibilities for cooperation for WBC and EU researchers to participate as a partner at their targeted facilities, gives a presentation of the future plans for cooperation and gives a description of research equipment that is on available at the RIs facilities.

This report is structured from three parts: the first is a methodological approach that was used during the investigation, the second is the summary of the answers received by European Research Infrastructures institutions that have answers to the questionnaire and the third is summary of the answers received from WBC research infrastructure institutions.

Deliverable report that is in front of you is giving researchers and policy makers from EU and WBC unique information on the possibilities to find new partners and establish possible new scientific networks, discuss current FP7 research topics and identify future cooperation needs and priorities.

2 METHODOLOGICAL APPROACH

2.1 Approach to the investigation

The first step of the study started from the consideration that the term "Research infrastructures" (RIs) refers to tools that provide essential services to the scientific community for basic or applied research. This means that RIs concerns the whole range of scientific and technological fields, from social sciences to astronomy, through genomics and nanotechnologies. Starting by this consideration, the consortium engaged in an elaboration of a questionnaire to investigate about the state of the art of RIs and RTD policies in EU and WBCs. Description of work of WBC-INCO.NET foreseen a workshop for the designing a questionnaire. Workpackage leader together with task leader agreed that designing of the questionnaire is to be performed virtually and to plan workshop for a period after the data is gathered with the questionnaire to discuss the results gathered, survey errors and take appropriate actions to finilize the task. Workshop on this topic was organized in November 2008.

Another important preparatory activity of the consortium was to prepare and organize a database with information, contact details and addresses regarding the RIs in EU and WB countries. First of all the scope of the database was to identify contacts but also to organize a strategic plan of action to monitor needs and to have a general point of view of the realised RIs. To best implement the work, the database was structured in two different parts: the first was the database with EU RIs contacts and the second included WBC RIs contacts, both useful to find instant information for the launch of the Internet questionnaires.

After having completed the list of contacts and after having the questionnaires completely elaborated, database and questionnaires were put on the intranet of the WBC-INCO.NET website. This was with close support of Center of Social Innovation and their experts. The next step was to test the online questionnaire and prepare all the necessary things for the launch. In June 2008 consortium sent an invitation to participate in the online survey to all European RIs (Part A). Due to holidays in July and August a second reminder was sent in September 2008. At the same time a database of contacts for WBC infrastructures (Part B) was established and launching was of second part of investigation was completed in September 2008. Second reminder for WBC respondents was sent in October 2008.

The last step in the operational part was to collect the answers given to RIs via Internet. The Internet survey was based on LimeSurvey open source software application and the results were exported in the Excel format, which offers user friendly data handling.

The methodological approach used in preparing the questionnaire intended to investigate all kinds of information accessible through the answers, in order to obtain a general view on the state of the art of RIs in EU and in the WBC and to elaborate a list of crucial aspects in one unique summary.

2.2 The questionnaire

When the questionnaire was under construction, the consortium recognised that they weren't sure about how many people would be willing to dedicate their free-time to answering a long questionnaire, in which they weren't even immediately interested. After this consideration the primary approach adopted was to explain in a short introduction why the consortium and the EC have chosen to launch a project. In this way the emphasis was put directly on the heart of

the matter: on the daily difficulties in establishing both partner-and relationships between EU and the WBC RIs. The online questionnaire was easily compiled and a good means to reach wider range of interested people.

In this section we have drowned the questionnaire that was launched. The questionnaire was targeted to the RIs located in EU and WBC countries. Questionnaire was divided into two parts PART A: Targeting EU RIs therefore we asked the respondents to provide their basic information and provide answer in relation how their institutions/infrastructures are opened towards WBC countries. PART B: We took the same questionnaire and we turned the objective of our examination. We asked WBC institutions with infrastructures to provide basic information about their infrastructure and provide answers how their infrastructure is available for researchers coming from EU. Questionnaire contained the following questions:

1.) A General part with information on

- Institution /organisation name
- Name of the research infrastructure (RI)
- Country where the research infrastructure is located (in case of a distributed RI, indicate the country of the legal/central office)
- Name and surname of the contact person
- Gender
- Position in the organization
- Address
- Telephone number
- E-mail

2.) Specific information on the Research Infrastructure (in order to detect a specific vision of the organization)

- Scientific and technological domain(s) served by the research infrastructure (RI)
- Type of RI (research infrastructure)
- Years already in operation
- What is the RI dimension/relevance (in terms of mission statements, users, research, technologies, co-operations, publications, etc.)
- Main source of operational funding
- Has industry provided any feedback / interest / support to the activity of the RI?

3.) Information on the system to access to the RI from other countries

- Is the RI (research infrastructure) open to external users?
- Is there an access policy defined?
- Is the RI in principle open to third countries researchers (non-EU)?
- Is the RI open to researchers from Western Balkan Countries (part A) / EU researchers (part B)?
- Name the main cooperation countries
- Under what conditions can external users access the RI infrastructure? (Please specify)
- Who is the contact person in the RI as regards access?
- Is there any website publicly available which illustrates your access policy? (please insert the link below)

- Could you please quantify how many external users* your RI welcomes annually in average? (Please specify if in terms of number of visitors or in terms of user-time or other)?
- How often was access granted to researchers from third countries (in particular WBC part A)/(EU researchers (part B) - per year?
- What kind of access to researchers and third countries is allowed (in particular WBC part A)/(EU researchers (part B)?
- Could you describe a typical external user of your RI? (E.g. PhD students using instruments, project partners using laboratories, etc.)
- How open the RI is to international cooperation (E.g. structured through bilateral and/or multilateral contracts or cooperation agreements with other countries /RIs/ organisations, participation in EU/ international programmes, etc; please specify)?
- Has the RI a different access policy for different geographical target groups(e.g. researchers from EU Member States, researchers from industrialised 3rd countries (e.g. US, Canada, Japan) researchers from developing 3rd countries or individual countries (e.g. China, Russia) etc; please specify)? If there are specific aspects in your access policy relevant for researchers from Western Balkan (part A) / EU researchers (part B) countries please highlight them.
- Do you have a strategy and policy by which you will attract new users?
- Are you interested in WBC-INCO.NETs assistance to attract new users from WBC (part A) / EU researchers (part B)?
- What kind of cooperation partners are you interested in?

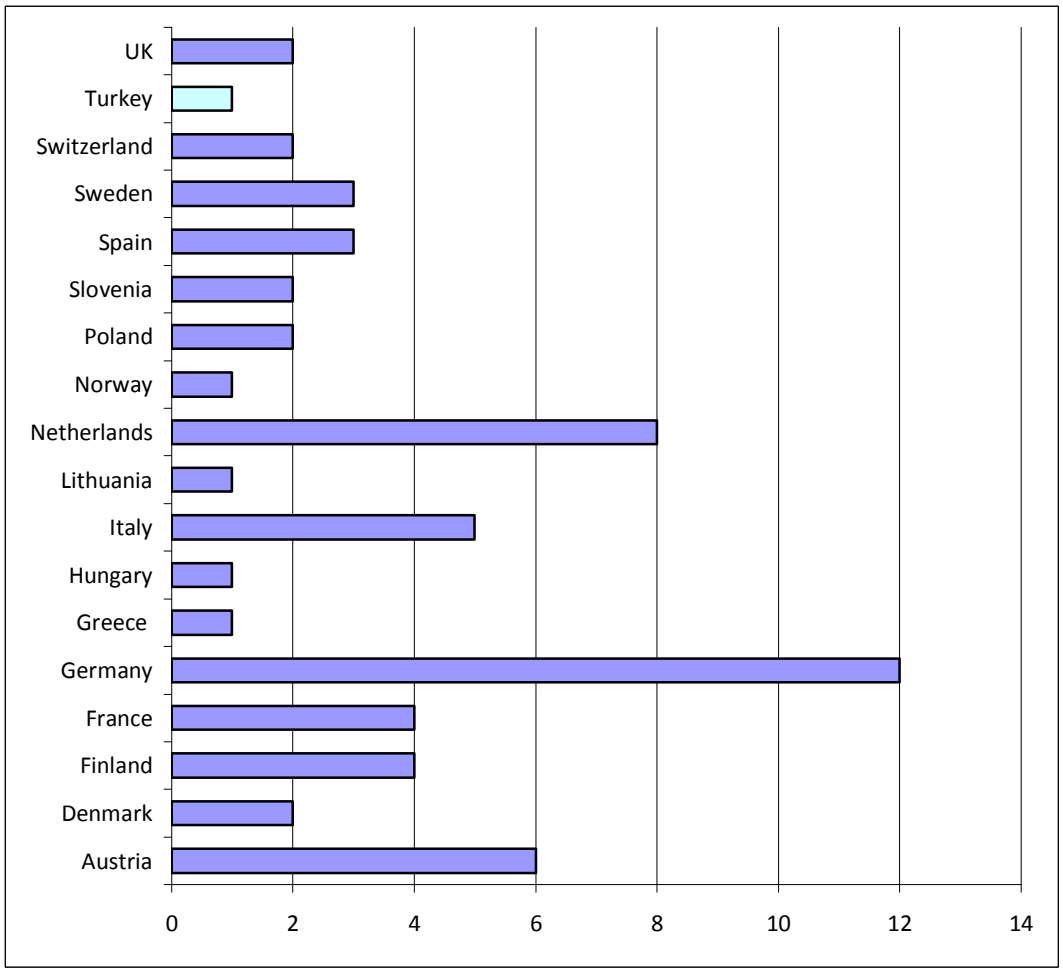
4.) Information about Prospects and partnership with WBC (part A) / EU (part B)

- Have you ever experienced any success stories in working with the WBC (part A) / EU researchers (part B)?
- Have you ever experienced any difficulties in working with the WBC (part A) / EU (part B)?
- Which do you think are the major obstacles for organisations from the WBC to access EU RIs (part A) / EU organisations (part B)?
- Will the development of your RI be important to stimulate existing or future RIs and networks in the WBC (part A) / EU organisations (part B)?

2.3 Data analysis

During the preparatory phase a data base of important European medium scale and large scale research infrastructures was established. Data inside the database was organized in groups by country, scientific area and respondent institutions. The total number of EU RIs contacts inserted into the database was 115. To this number the consortium decided to add JRCs (7 contacts), Slovenia RIs (14 contacts) and FP6 projects that have financed RIs organizations (85). So all together we established a database of 221 contacts for European part of investigation. After a last modification of the data base, the questionnaire was tested and the consortium launched the questionnaire online to all contacts in the database. The consortium received 60 completed responses which means that response rate was 27,1%. The following report is based on the 60 received responses from European contacts. We can resume the information of the Figure 1 with the consideration that the total number of RIs who completed the questionnaire was 62. However, for 2 research infrastructures we received double answers from two different respondents. Double answers were combined and were used in the presentation of their research infrastructure. For 2 completed questionnaires we also need to manually define a location as it was not completed fully.

Figure 1.: European Research infrastructure and response by countries



It is important to note that the consortium has received 59 full answers from the European institutions + 1 from Turkey which we put in this report to the category together with European research infrastructures. In absolute terms the most answers we received from institutions located in Germany, The Netherlands and Austria.

From WBC research institutions that has significant research infrastructure we received 36 full answers. Even though there were 145 invitations sent to participate in the electronic survey and we put three reminders to participate, a response was therefore 25%. In the last phase of collection of answer also the respective national ministries helped in obtaining additional answers from the relevant research institution that have a relevant research infrastructure at their disposal. One of the reasons for relatively low response rate for this part of the questionnaire can be related to the fact that respondents did not recognize their research facilities, equipment and infrastructure to be defined as significant enough in order to be classified as important medium scale or even large scale infrastructures. Consequently, they didn't participate in our survey.

Figure 2.: Research infrastructure in WBC and response by countries

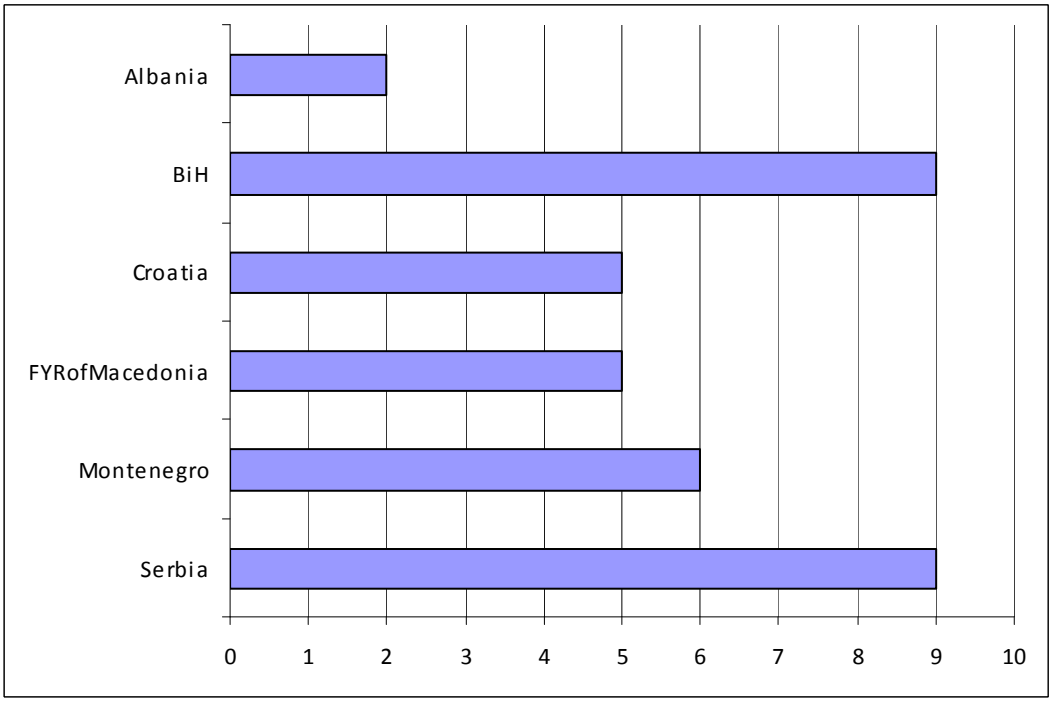


Figure 2 shows the distribution of respondents organized by country. It can be seen that the most answers came from BiH and Serbia (25%). And the less response we received from Albania (6%).

Figure 3.: European Research infrastructure and response by scientific discipline

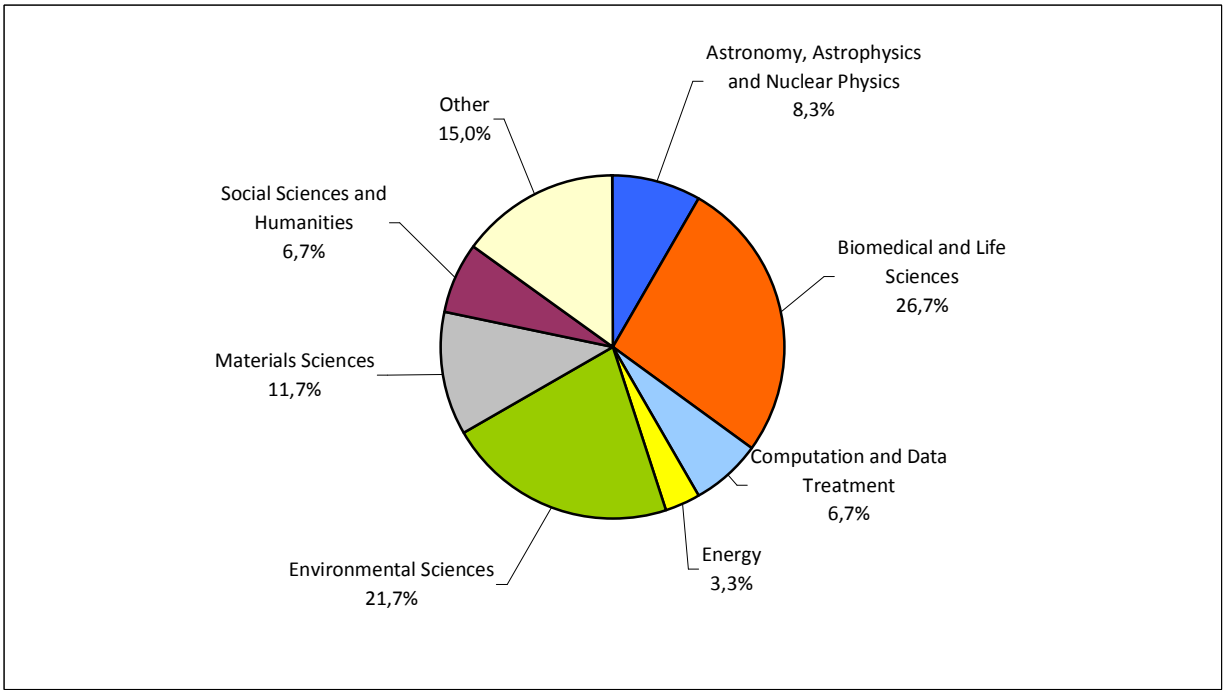


Figure 3 and Figure 4 is presenting the response rate organized by the scientific discipline. Figure 3 is presenting the European research infrastructure. Majority of responses we got from the institutions whose research infrastructure domain is located on the field of Biomedical and Life Sciences, Environmental Sciences and category “Other”. Category “Other” was most frequently defined as multidisciplinary domain that covers two or more scientific fields. From the answers we got, the most frequent combination of disciplines that cross-over two or more scientific fields were between Life Sciences, Environmental Sciences and Materials Sciences.

Figure 4.: WBC Research infrastructure and response by scientific discipline

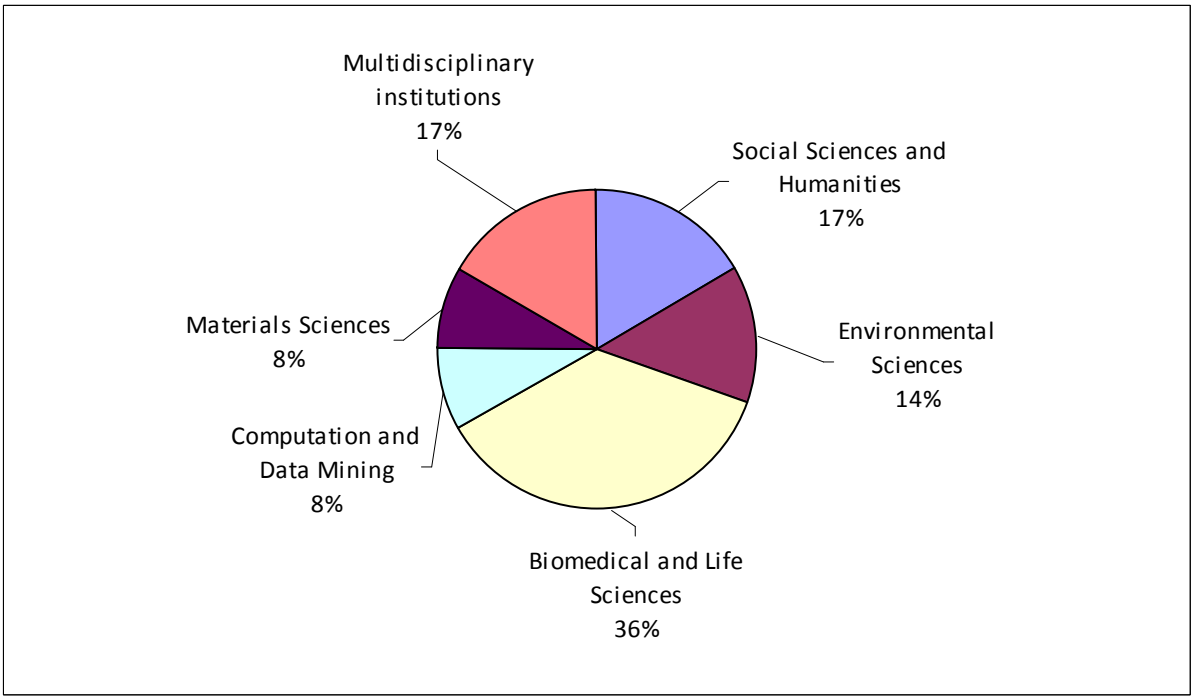


Figure 4 is presenting WBC institutions response rate organized by the scientific discipline. Highest number of responses came from the field of Biomedical and Life Sciences, followed by the Multidisciplinary field, where more frequently respondents classified that their research field covers the field of Biomedical and Life Sciences, Environmental, Sciences and ICT. Graph also shows that there were no response from the institutions that would be classified under the field of Astronomy, Astrophysics and Nuclear Physics and the field of Energy. This does not mean that there is no such research infrastructure present in WBC, but it means that these targeted institutions did not want to participate in the survey so the results response collected are not representative for whole RTD sector in WBC.

Figure 5.: EU RIs and type of research infrastructures – their primary level of orientation

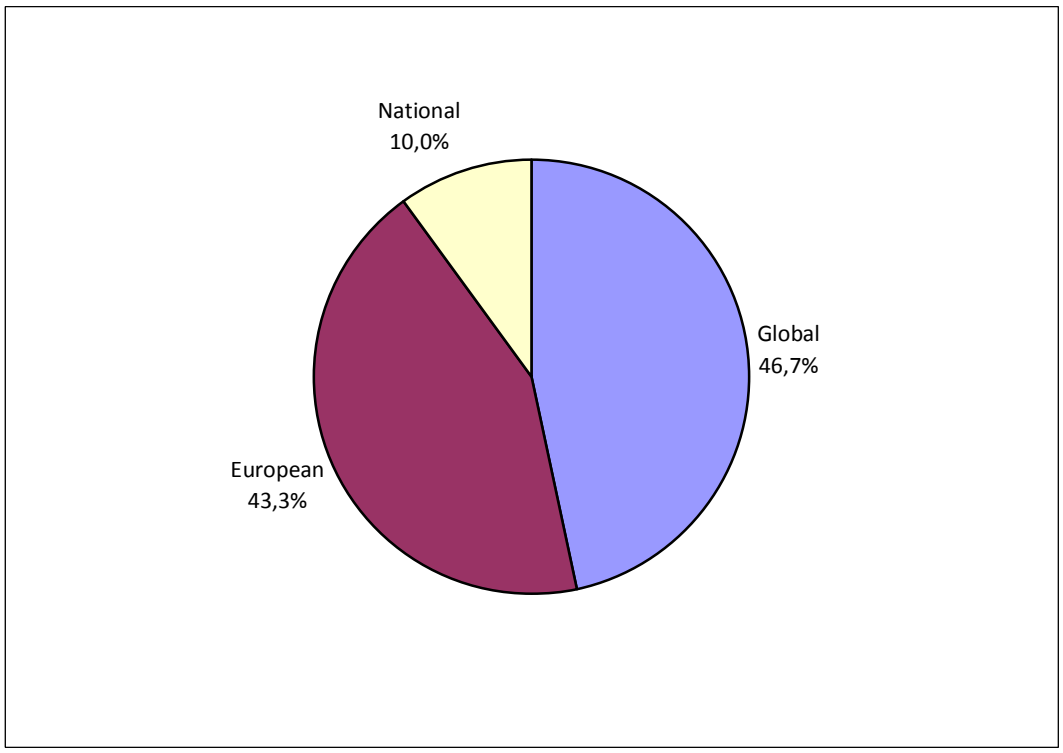
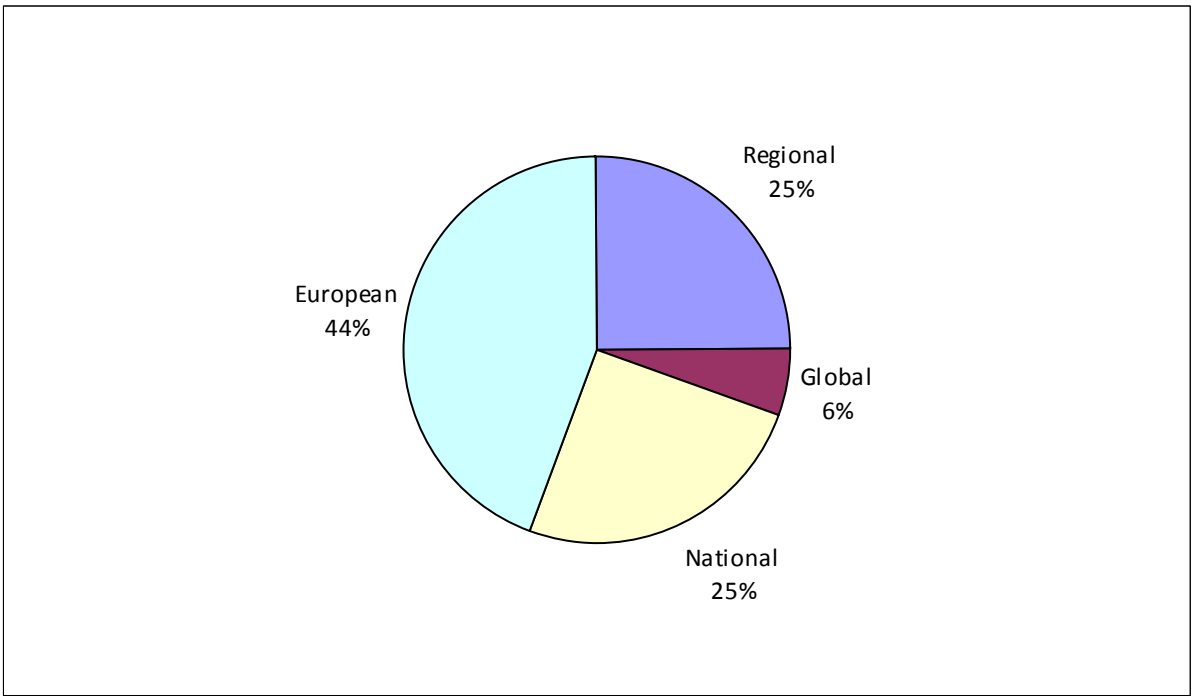


Figure 5 and 6 are showing the type of research infrastructure where we are observing the level of their primary orientation towards external users of RIs. In other words we are observing how the research cooperation oriented is and where are the most dominant partners coming from (are they coming from national, regional, European or global level?). For EU RIs respondents we can see that they mostly classify themselves as global or European oriented research institutions and only 10% of respondents claimed that their most dominant area of work is at their domestic national space. When naming the partners, EU RIs named lots of partners coming from all over the Europe. The most dominant countries of cooperation are the European most developed countries: Germany, UK, France and The Netherlands. It can be concluded that EU RIs are strongly connected into European Research Area and there are strong cooperation links established through different international financial support mechanisms that have their roots in the past. The majority of these respondents also answered that their research institutions are operating for more than 15 years, which means that they already started to cooperate in FP4 in 1994 or even before that (see Figure 8). EU RIs are in majority also overcoming European field of operations and in 47% they are acting on the global field where prominent partners from 3rd countries are collaborating. In particular the most frequent partners here are the most developed countries: Canada, USA and Japan but there are also strong cooperation links established with other important 3rd countries e.g. Russia, India, China and Brazil which are extensive national research systems with large research impact and future opportunities. Survey showed that WBC countries are involved in EU RIs with European and/or Global modalities. 12 of our EU RIs respondents answered that they already had some practical experience with the WBC institutions or researchers coming from WBC. In total this represent a share of 20% of EU RIs that already had collaboration experiences with researchers from WBC.

Figure 6.: WBC RIs and type of research infrastructures – their primary level of orientation



For WBC RIs the picture is a little bit different. It is very interesting to see that 44% of WBC RI institutions classified themselves as European RIs. This can be explained in three different ways. WBC RIs respondents are already have some cooperation established with European researchers and institutions. Second they are opened towards new joint cooperation initiatives that are coming from EU. WBC RIs are also partially financially supported by different EU financial support mechanisms. 25% of RIs respondents classified themselves as national and also regional research infrastructures. For regional we got answers that this cooperation stretches among WBC and wide area of countries in Central and Easter Europe including whole region of South East Europe (SEE). We can say that Regional cooperation is still in principle of the highest importance as it provides cooperation among the partners through decades, provides also stability and economic development of the region. Regional agenda was one of the major objectives that was already set down in Thessaloniki 2003 to strengthen the stabilisation and association processes to the EU. This is one of the most crucial points as WBC committed themselves to continue to develop regional cooperation and to promote a series of specific objectives including research, technology and development. A series of initiatives emerged at that time to further enhance the regional dialogue which brought these countries also to more close cooperation with EU MS. One of the most important initiatives on the field of science and research is SEE-ERA.NET which is integrating EU MS and WBC into ERA by linking research activities and by providing new mechanisms of support to the scientific cooperation. SEE-ERA.NET from the year 2004 plays an important role in the Stabilisation and Association process in SEE and therefore already contributed substantially to integrate WBC researchers and research institutions into the ERA.

Figure 7.: Type of EU research infrastructures – single-sited, distributed or virtual

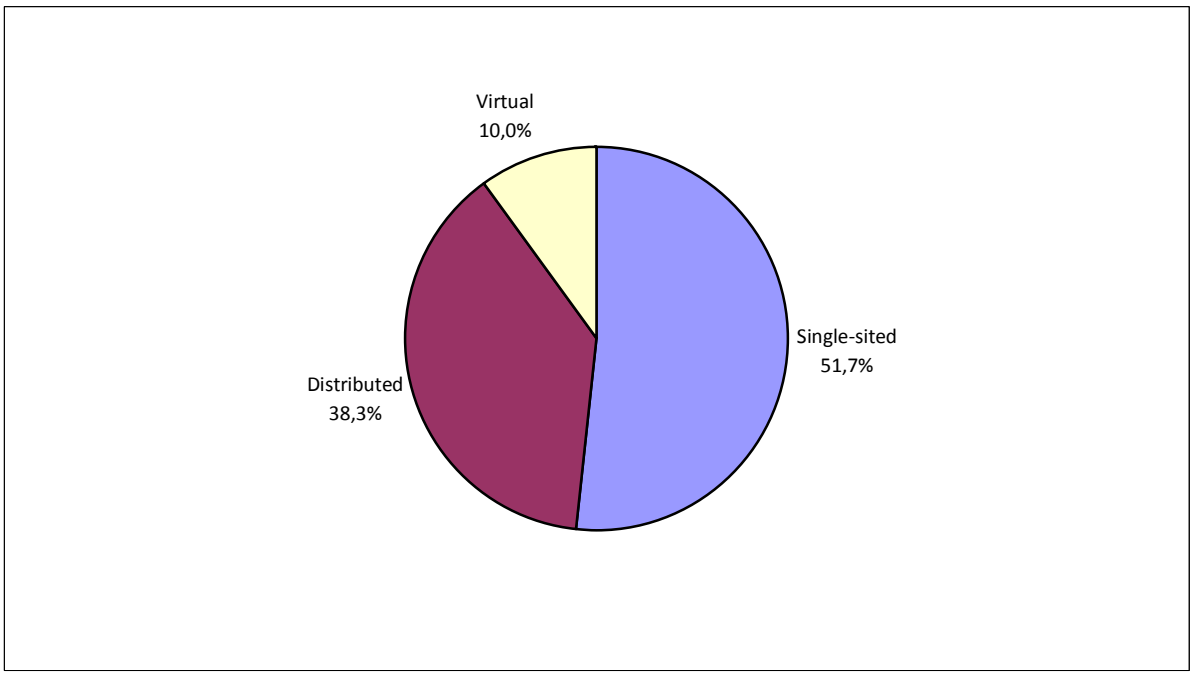


Figure 7 is showing that the majority (52%) of the European institutions (respondents) classified themselves as institutions with single-sited research infrastructure. This means that the research infrastructure is appropriate in fields that require investments in expensive research equipment (e.g. synchrotron light sources, research reactors), special laboratories (e.g. clean rooms) or research materials (e.g. hazardous chemicals). Single-sited infrastructure may include satellite units or it may also permit remote use. Equipment is housed by single institution.

38% of respondents defined their RI as distributed. Distributed RI is suited to fields in which the available resources are geographically dispersed (e.g. meteorological observation networks, bio-banks etc.). A distributed infrastructure may also produce shared, centralized services. Virtual RI are for example, databases, archives etc. that can be used by researchers from their own workstations or research equipment that can be accessed and controlled by a distance. We received a 10% response rate for this category of RIs. None of the EU RIs classified themselves with a regional type of research infrastructure.

Figure 8: Type of WBC research infrastructures – single-sited, distributed or virtual

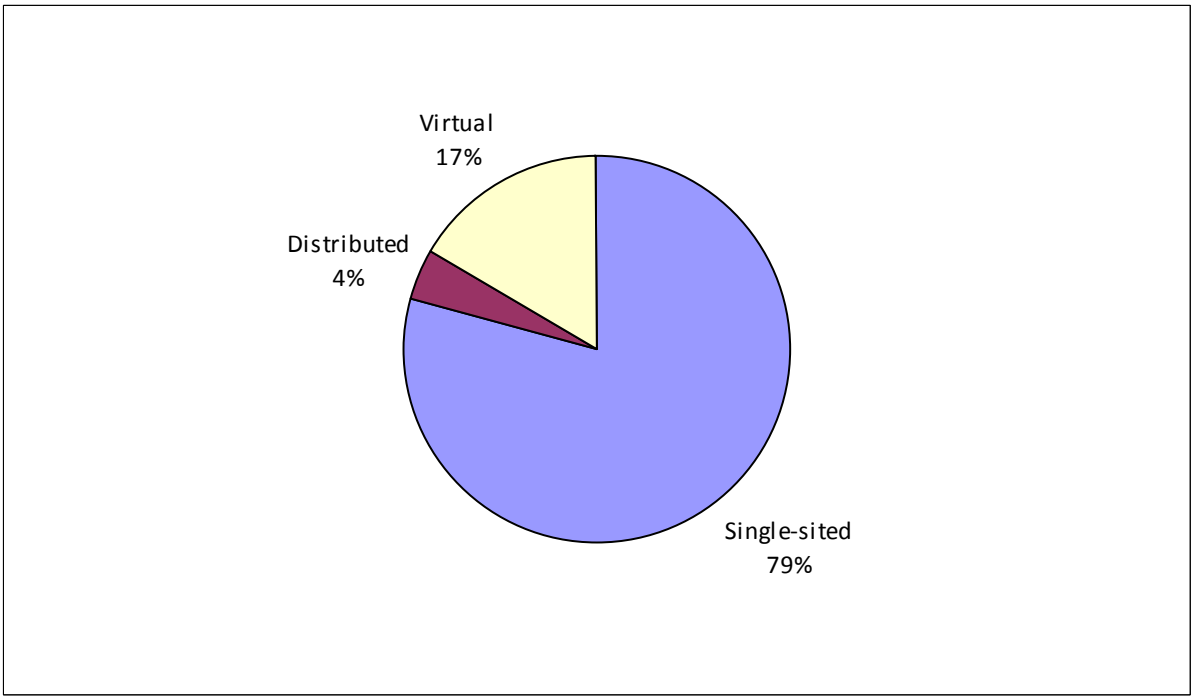


Figure 8 shows that majority (79%) of the WBC research-infrastructures are single-sited, whereas 17% is virtual and only 4% distributed. However, these percentages are to be taken as relative, since, in some cases, the infrastructures can be considered at the same time as virtual (e.g. a data-bases, services provided through the Internet), and single-sited (archives, libraries).

Figure 9: European research infrastructures and years of operation

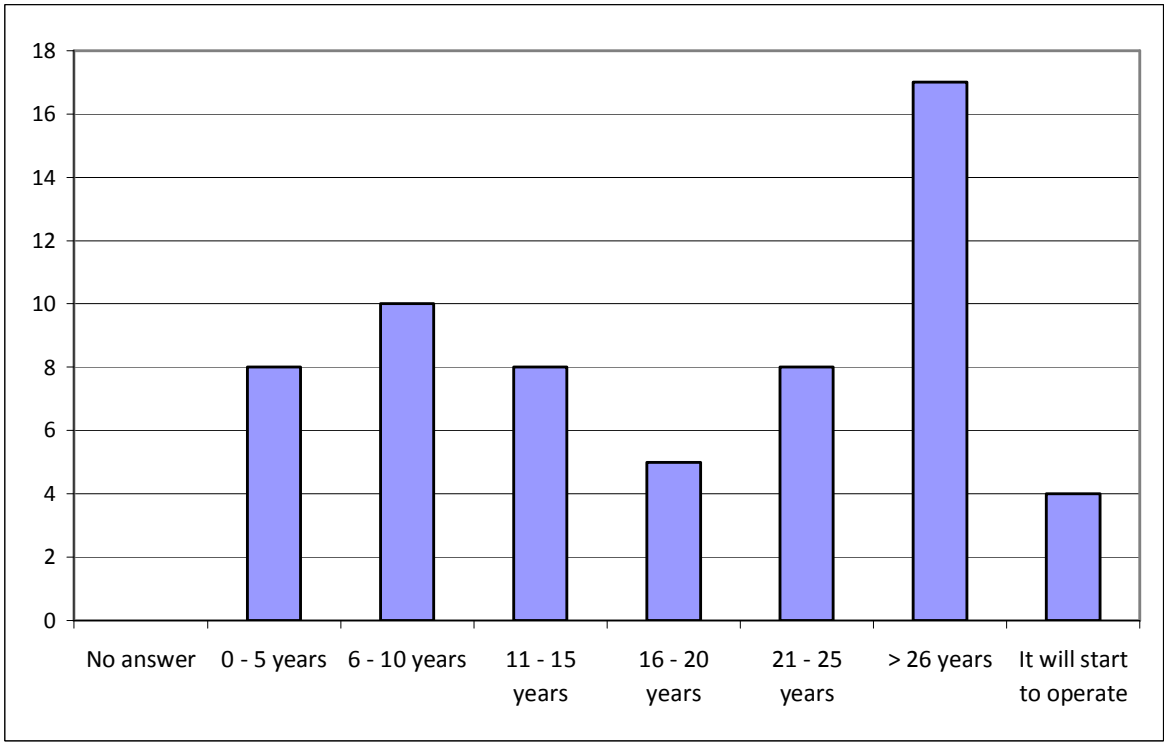


Figure 9. shows that the highest number of RIs is in operation more than 26 years. We also can see that RIs in operation since less than 15 years are 43%, RIs in operation since more than 15 years are 50%. Some RIs (7%) are still in the preparatory phase and will start to operate in the near coming future.

Figure 10: WBC research infrastructures and years of operation

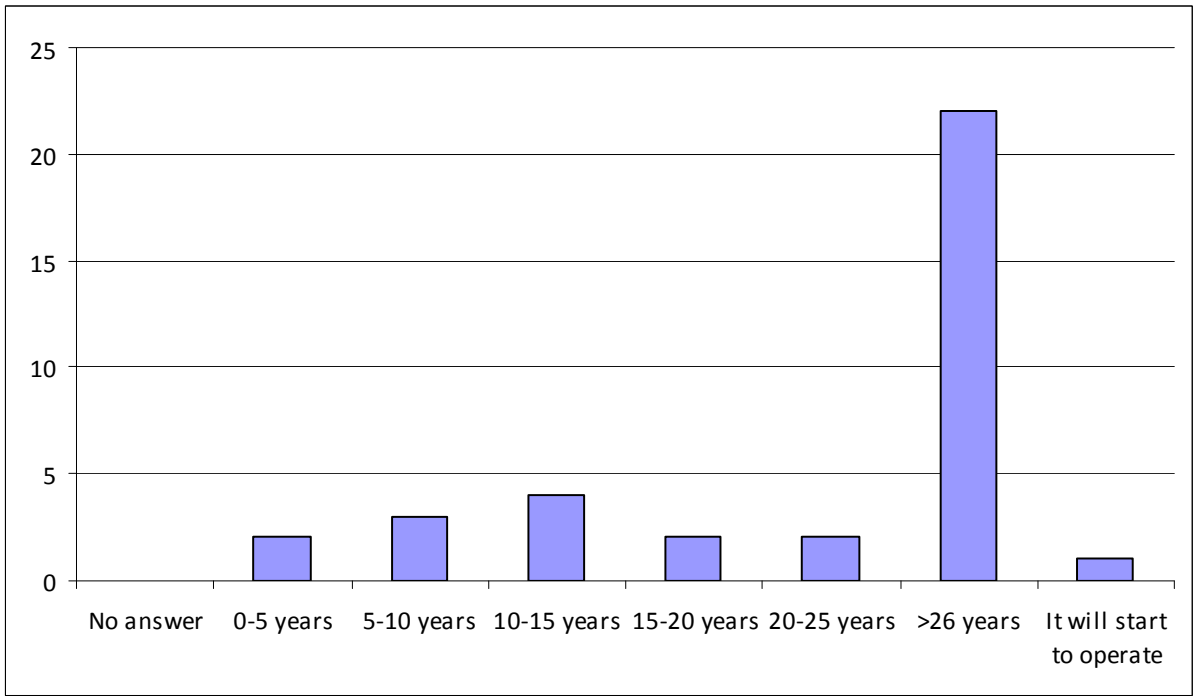
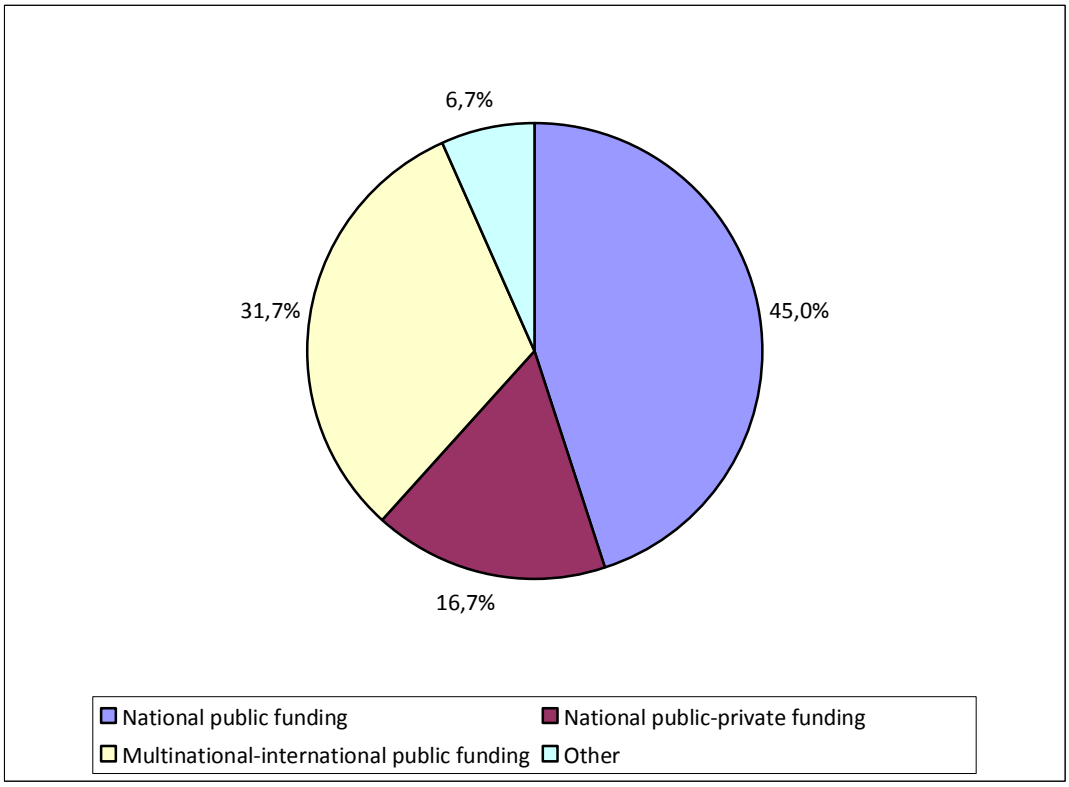


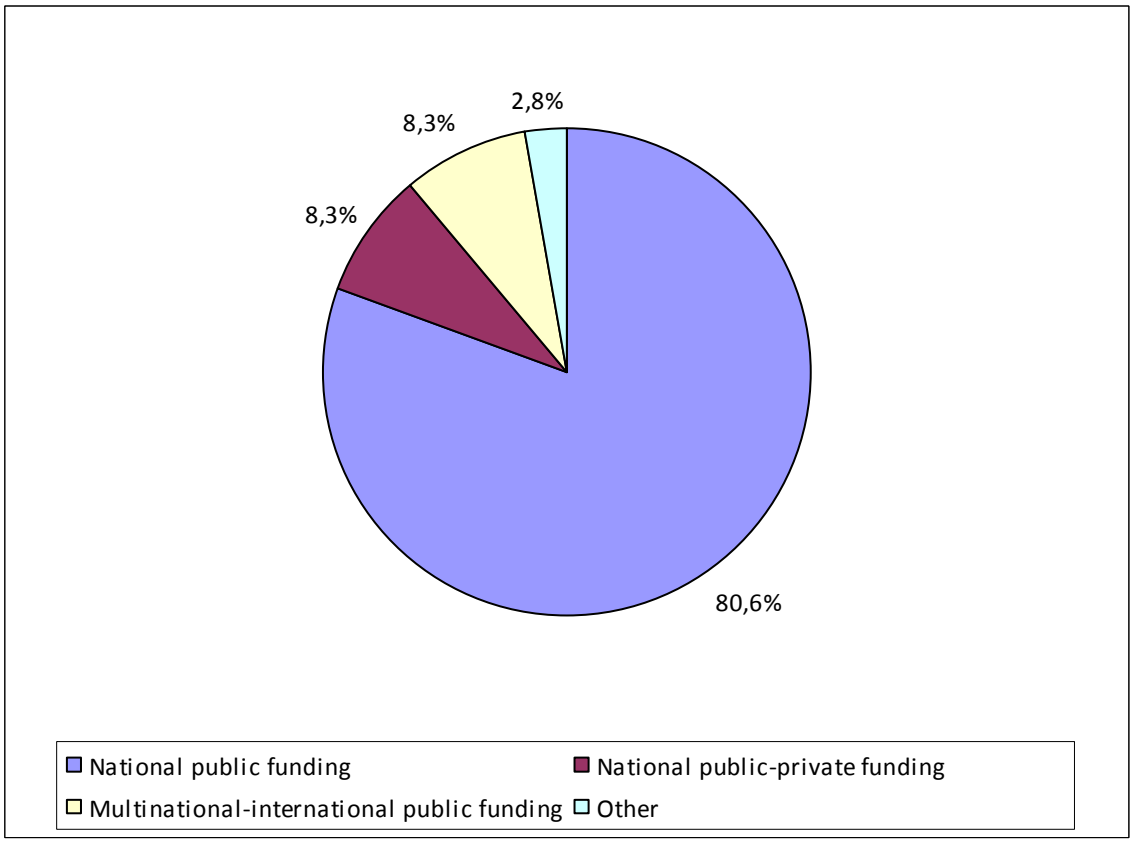
Figure 10 provides similar picture for WBC RIs, where we can observe that the highest number of WBC RIs is in operation for more than 26 years. These institutions are mostly faculties and state research institutes where the core of research lies even today and they are in 80,6 % of answers financed through national public funds.

Figure 11.: EU RIs and main source of operational funding



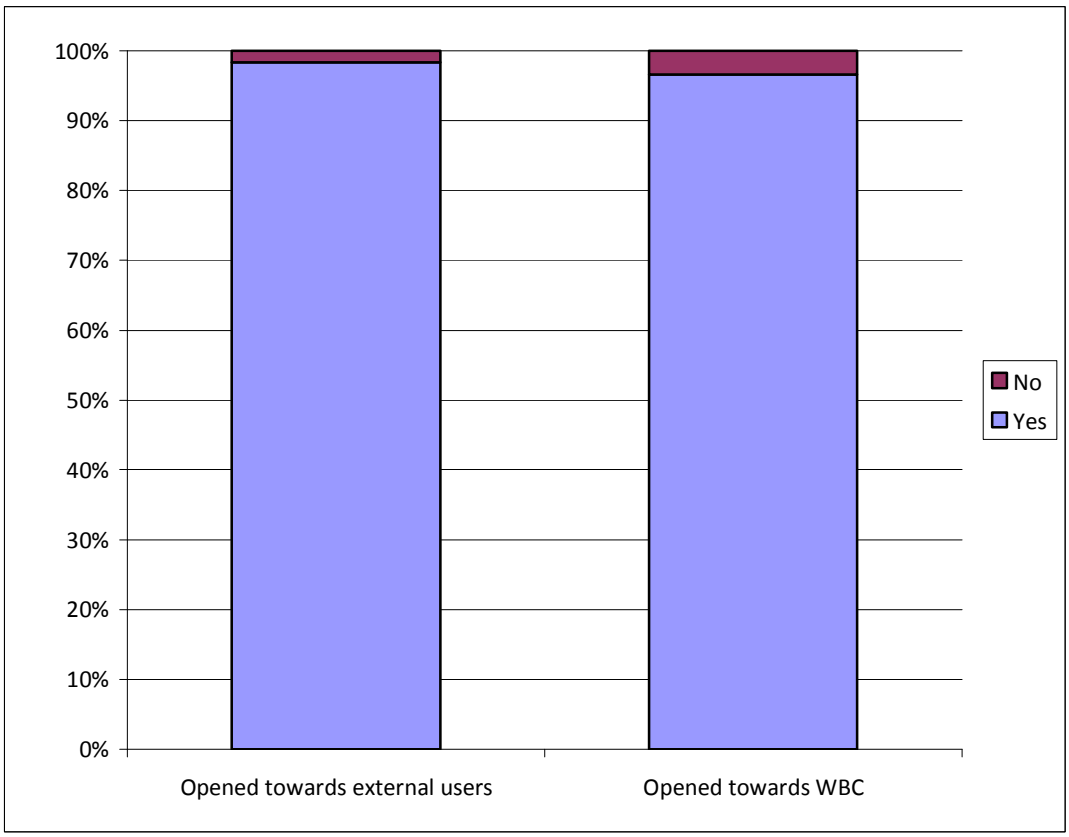
For EU RIs we can see that main source for operational funding is diversified. Still 45% of EU RIs claimed that their main source of funding is coming from the national level. There is also a large group of EU RIs that their main source of funding comes through international and multinational agreements, framework programmes, European Commission's joint research centres – JRC (JRC IPTS, JRC IE, JRC IPSC, JRC IES etc.). Another important infrastructures that needs our special attention and are also supported through multinational-public funding are those infrastructures that are supported through ESFRI programmes (INSERM, KM3Net, ILL, Biobanking, INFRAFRONTIER, Lifewatch, EMSO, SHARE, etc) or sector based initiative (e.g. ECRIN). 17% of respondents are defining a mixture of funding that is coming from public and private sphere (Abisko, CSEM, CESGA, LVA, UNIPRESS, Chalmers, etc.) These EU institutions are mentioning that they are having strong links with industrial sector, industry sector is also in some cases co-establishers and share holder (CSEM). These institutions are providing specialised industry based research for targeted companies by using research infrastructure. 7% of respondents reported that their main source of funding is coming from different sources, including national, public, private and international. The most prominent examples are CERN, DHI, and NERIES.

Figure 12.: WBC RIs and main source of operational funding



Even though RTD funding in WBC is very limited and low (Kozmus, 2005), figure 12 shows, that for majority of WBC RIs respondents main source of funding is still coming from national level (80,6%). Funding for RTD from private sector has remained low and is unlikely to substantially increase over the coming years, whereas international donors have only occasionally shown interest for investing in the modernization of research facilities and laboratories in WBC.

Figure 13.: How EU RIs are opened towards external users and WBC



We also asked our targeted group of respondents if they are open towards external users. In more than 98% respondents have confirmed that they are open for researchers and research cooperation. There is only Lithuanian RI "Vejas" who is operating with the closed consortium of Baltic countries and it is not open for other external users.

Similar results can be identified for WBC RIs institutions where external users are already participating in all research institutions contacted and new are welcomed. When naming European partner countries, the most frequently mentioned were Austria, France, Greece, Germany, Italy, and Slovenia. Regarding the WB region Croatia, FYR of Macedonia, and Serbia were the most frequently mentioned as main country partners of scientific cooperation for WBC.

Another question that was present in the EU RIs questionnaire was "Is the RI open for researchers from Western Balkan Countries?". We can observe that results are almost identical. More than 96% of EU RIs respondents are stating that they are opened for cooperation with researchers from WBC. Only in three cases European RIs are not opened for researchers coming from WBC. One is Lithuanian RI "Vejas" that is only opened for closed regional group of users from Baltic states. And another is ATCRIN (Austrian partner in ECRIN – European Clinical Research Infrastructure Network). ATCRIN is not directly opened for research institutions from WBC. Research institution should contact ECRIN (European Clinical Research Network) to establish network cooperation links. ATCRIN is positive about near future activities with WBC as it can act as a national partner for WBC research.

We also need to mention that WBC countries recently became associated countries to the EU framework programmes and they are strongly connected in many regional initiatives that

have the goal to integrate WBC tightly into ERA. But anyhow the results and answers from EU RIs showed that their participation is rather modest since they do not have sufficient research capacities to participate in FPs at the same footing as EU MS. The main question is – what are the reasons behind such a modest participation in international cooperation. We will elaborate this in the conclusions of our deliverable report where also barriers and difficulties from the perspective of EU and WBC RIs will be introduced.

Before starting with a next chapter we need to stress that the report does not contain every conceivable EU RIs in which WBC scientists might wish to be involved, the report shows the variety of possibilities and presents some of the important medium and large scale EU RIs where possibilities for cooperation are opened also for WBC researchers and research institutions.

3 EUROPEAN RESEARCH INFRASTRUCTURES

3.1 ASTRONOMY, ASTROPHYSICS AND NUCLEAR PHYSICS

Scientific field: Astronomy, Astrophysics, Nuclear Physics	**Country and Type of Infrastructure:** Germany / European / Single-sited
KM3NeT - European Deep Sea Research Infrastructure	
Institution responsible for infrastructure: University of Erlangen	
Home page: http://www.km3net.org	
Full Address: Erwin-Rommel-Str. 1 91058 Erlangen Germany	**Telephone:** +49 9131 8527072
Name of the Contact Person: Uli Katz	**E-mail:** katz@physik.uni-erlangen.de

ABOUT

KM3NeT is a future deep-sea research infrastructure hosting a neutrino telescope with a volume of at least one cubic kilometre to be constructed in the Mediterranean Sea. In 2006, the Design Study for the infrastructure, funded by the EU FP6 framework, started. The KM3NeT research infrastructure has been singled out by ESFRI (the European Strategy Forum on Research Infrastructures) to be included in the ESFRI roadmap. The Preparatory Phase of the infrastructure, funded by the EU FP7 framework, started in March 2008.

Over the past decade the three pilot projects ANTARES, NEMO and NESTOR have been exploring the technologies, building and deploying smaller scale prototype telescopes designed to operate at depths ranging from 2500 to 4500 m. Since May 30th, 2008 the construction of the Antares telescope has been finished. Antares is now the largest neutrino telescope at the Northern hemisphere.

The design, construction and operation of the KM3NeT neutrino telescope will be pursued by a consortium formed around the institutes currently involved in the ANTARES, NESTOR and NEMO pilot projects. Based on the leading expertise of these research groups, the development of the KM3NeT telescope is envisaged to be achieved within a period of about four years for preparatory R&D work, plus four years for construction and deployment.

The Mediterranean Sea appears to be an ideal place for this future installation: it provides water of excellent optical properties at the right depth and excellent shore-based infrastructure for marine operations and on-shore data processing.

COOPERATION

The KM3NeT facility will become part of the ESONET, the European Seafloor Observatory Network. The three possible sites for the KM3NeT facility: the Ligurian site (the ANTARES site near Toulon), the Sicilian site (the NEMO site) and the Hellenic Site (the NESTOR site near Pylos) each are attractive to become a node in the ESONET observatory network. Here you find a cartoon of an ESONET node-configuration. 40 institutes or university groups from the 10 countries constitute the KM3NeT consortium: Cyprus, France, Germany, Greece, Ireland, Italy, Netherlands, Romania, Spain and UK. KM3NeT involves also industrial components so also partners from industry are tightly involved into cooperation activities of their infrastructure. Access policy of KM3NeT is currently in preparatory phase where decision and proper policies still needs to be defined. Research infrastructure and facilities are opened for international cooperation in particular for future partners that can significantly contribute to the construction of KM3NeT, mainly through funding. Therefore also institutions from WBC are welcome to participate as a partner in the development of KM3NeT.

FACILITIES AND SERVICES FOR RESEARCHERS

The KM3NeT neutrino telescope will be unique in the world in its physics sensitivity and will provide access to scientific data that will propel research in different fields, including astronomy, dark matter searches, cosmic ray and high energy physics. The installation of specialised instrumentation for seismology, gravimetry, radioactivity, geomagnetism, oceanography and geochemistry will make the KM3NeT infrastructure an abyssal multidisciplinary observatory for deep sea science that will offer a unique opportunity to explore the properties of a deep Mediterranean Sea site over a period of many years. Construction of the KM3NeT infrastructure is foreseen to start after the three year preparatory phase.

Scientific field: Astronomy, Astrophysics, Nuclear Physics	**Country and Type of Infrastructure:** Germany / Global / Single-sited
Cologne Database for Molecular Spectroscopy	
Institution responsible for infrastructure: I. Physikalisches Institut, University of Cologne	
Home page: http://www.astro.uni-koeln.de/cdms/	
Full Address: Zülpicher Str. 77 50937 Köln Germany	**Telephone:** +49-221-470-3490
Name of the Contact Person: Holger S. P. Müller	**E-mail:** hspm@ph1.uni-koeln.de

ABOUT

The general features of the internet browser-accessible Cologne Database for Molecular Spectroscopy (CDMS) consists of several parts. Among them is a catalogue of transition frequencies from the radio-frequency to the far-infrared region covering atomic and molecular species that occur in the interstellar or circumstellar medium or in planetary atmospheres. As of December 2008, 498 species are present in this catalogue. The transition frequencies were predicted from fits of experimental data to established Hamiltonian models. They present some examples to demonstrate how the combination of various input data or a compact representation of the Hamiltonian can be beneficial for the prediction of the line frequencies. The database can be accessed online free of charge via http://www.astro.uni-koeln.de/site/vorhersagen/.

COOPERATION

Main cooperation partners on the field of research are coming from Germany, France, Italy, USA and Canada. External users can access CDSM data bases and services on a free basis, as almost all services are web based and can be accessed through Internet browser. External users are usually accepted by the official confirmation by the scientific board at INSERIM. Research infrastructure and facilities are opened for international cooperation through collaborations involving the laboratory spectroscopy group of the I. Physikalisches Institut. Recent collaborations within European frameworks include LEA-HiRes and Molecular Universe within FP6 and application for FP7 (COMIS) is under review by the EC. I. Physikalisches Institut, University of Cologne still does not have any practical experiences in scientific cooperation WBC. But their research facilities are opened also for researchers coming from WBC. They are in particular interested in experts that are able to provide analyzed spectroscopic data or spectra that has to be analyzed. Annualy app. 10.000 accesses to the database are granted per year. I. Physikalisches Institut at the University of Cologne has a future plan to stimulate future research infrastructures through national infrastructure (also in WBC), through capacity building programme.

FACILITIES AND SERVICES FOR RESEARCHERS

The catalogue section of the CDMS provides a line list of (mostly) rotational transitions of molecular species of relevance to astrochemistry and astrophysics in order to identify these species in the interstellar medium (ISM), circumstellar shells (CSS) or planetary atmospheres. Frequencies stretch from the radiofrequency and microwave regions to the terahertz, far-infrared, and (to some extent) to the mid-infrared regions. Separate entries for each molecule, each isotopic species, and each vibrational state - as far as detected or possibly detectable. Search and conversion routines are

available. The CDMS is used widely as support for planning and analyses of astronomical observations with instruments such as Effelsberg 100m, IRAM 30m, APEX 12m telescopes and for future missions, in particular Herschel (especially HIFI), and also SOFIA, ALMA. The CDMS is an important source of line frequencies for many web-tools (e.g. Hersche's HSPOT). Besides the JPL catalogue, it is the only such source that is generated directly from laboratory data (plus astronomical observations as far as available and appropriate) and that is public available.

Scientific field: Astronomy, Astrophysics, Nuclear Physics,	**Country and Type of Infrastructure:** Germany / Global / Single-sited
MPIfR Correlator for Very-Long-Baseline Interferometry	
Institution responsible for infrastructure: Max Planck Institute for Radio Astronomy	
Home page: http://www.mpifr-bonn.mpg.de/div/vlbicor/index_e.html	
Full Address: P.O. Box 20 24 53010 Bonn Germany	**Telephone:** +49 (228) 525 - 000
Name of the Contact Person: J.A. Zensus	**E-mail:** ros@mpifr-bonn.mpg.de

ABOUT

The MPIfR in Bonn, the Federal Agency for Cartography and Geodesy (BKG) in cooperation with the Geodetic Institute of Bonn University (GIUB) jointly operate one of the worldwide four Mark IV VLBI data processors. It has been operational since 2000. Different generations of correlators have been operated at the MPIfR since 1977. The VLBI technique contributes to and defines the International Terrestrial and Celestial Reference Frames, and measures earth's orientation in space. The correlator is used for the geodetic International VLBI Service (IVS), as processing centre for the global millimetre-VLBI array, for some projects of the European VLBI Network, and for bi-lateral projects.
Very-long-baseline interferometry, based in the coordination of observations performed by different radio telescopes spread over the world, represents at its best the international cooperation. The European VLBI Network and the Global Millimetre VLBI Network have a clear European dimension on the collaboration and cooperation from different radio astronomical institutes. The correlator is the tool to process the scientific data from this cooperation. The GMVA plans to be included in the TransNational Access program at the FP7, to stress its networking in the European community. The technological developments, the collaboration with the correlator facility in JIVE at The Netherlands, the resulting publications from the data analysed in the correlator, etc., have also an important European dimension.

COOPERATION

The GMVA and the EVN observations are allocated by time allocation committees. Any scientist worldwide can access in this way to the MPIfR correlator. The MPIfR staff supports observers for the preparation, analysis and post processing of the VLBI observations. The EVN is part of the TransNational Access programme of the EU, and the GMVA is planning to joint the program under the RadioNet I3 in the FP7 era.

FACILITIES AND SERVICES FOR RESEARCHERS

Preparation, correlation and first post-analysis of radio interferometric data obtain with very-long-baseline interferometry for astronomy and geodesy.

Scientific field: Astronomy, Astrophysics, Nuclear Physics	**Country and Type of Infrastructure:** Germany / Global / Single-sited
Bonn Isotope Separator (BONIS) Helmholtz	
Institution responsible for infrastructure: Helmholtz – Institut für Strahlen- und Kernphysik	
Home page: http://www.iskp.uni-bonn.de/gruppen/isosep/Isotopenseparator_english.html	
Full Address: Helmholtz – Institut für Strahlen- und Kernphysik, Nußallee 14-16 53115 Bonn Germany	**Telephone:** +49 228 733633
Name of the Contact Person: R. Vianden	**E-mail:** vianden@hiskp.uni-bonn.de

ABOUT

The Bonn Radioisotope Separator (BONIS) is an ion implanter dedicated at the implantation of radioactive isotopes for materials science investigations. It is fully equipped and licensed for the implantation of a wide variety of radioactive ions (all elements except gaseous activities and actinides). Implantation energies range from 0.5 keV to 160 keV. A large flexibility in view of the size and shape of the implanted samples make the installation attractive to research groups from widely different communities. An in-house cyclotron can provide short living (> 6h) radioisotopes.

COOPERATION

BONIS is a comparatively small but dedicated installation, typical for materials science investigation. It offers possibilities that are unique in Europe and the world. Cooperations are mainly bilateral and without formal contracts. It is complementary to the ISOLDE on-line separator at CERN which is entirely dedicated to nuclear properties study of short lived isotopes and to a smaller extent to their use for materials studies.

Currently there are active cooperations with: Univ. Canberra ANU (Australia), Univ. Helsinki (Finland), Univ. Lisbon (Portugal), Univ. Cracow (Poland), Univ. Münster (Germany), Univ. Stuttgart (Germany), Univ. Saarbrücken (Germany), Forschungszentrum Rossendorf (Germany), Univ. Graz (Austria), Univ. of La Plata (Argentina), Univ. Leuven (Belgium), Univ. of Dublin (Ireland), Forschungszentrum Rez (Czech Republic), CADRES (EU co-ordinated action), Univ. of Surrey (UK)

It would be desirable to extend the cooperations with similar installations at the universities of Göttingen und Leuven although at present these laboratories can only implant a rather limited range of isotopes.

FACILITIES FOR RESEARCH

Bonn cyclotron for isotope production, sample preparation facilities, diamond wire saw, activity measurements, FOLBIS (fridge on-line the Bonn isotope separator) for Nuclear Orientation experiments, specialized machine shop integrated into the control area, licensed transport of radioactive samples.

Scientific field: Astronomy, Astrophysics, Nuclear Physics	**Country and Type of Infrastructure:** Switzerland / Global / Distributed
CERN Particle accelerators and detectors	
Institution responsible for infrastructure: CERN - European Organization for Nuclear Research	
Home page: http://public.web.cern.ch/public/	
Full Address: CERN CH-1211 Genève 23 Switzerland	**Telephone:** +41 22 76 765 55
Name of the Contact Person: Jos Engelen	**E-mail:** Jos.Engelen@cern.ch

ABOUT

CERN, the European Organization for Nuclear Research, is one of the world's largest and most respected centres for scientific research. Its business is fundamental physics, finding out what the Universe is made of and how it works. At CERN, the world's largest and most complex scientific instruments are used to study the basic constituents of matter — the fundamental particles. By studying what happens when these particles collide, physicists learn about the laws of Nature. The instruments used at CERN are particle accelerators and detectors. Accelerators boost beams of particles to high energies before they are made to collide with each other or with stationary targets. Detectors observe and record the results of these collisions.

CERN provides most technologically advanced facilities for their research into the basic building blocks of the Universe. Specialist facilities that would otherwise be difficult or impossible for individual nations to build include advanced particle accelerators, such as the Large Hadron Collider, and facilities for the production of exotic forms of matter, including antimatter.

CERN has established a reputation at the forefront of research, proven through its experiments, past and present. The Laboratory is a vibrant meeting place for discussion and debate; around half of the world's particle physicists come here for their research. This is reflected in the experiments, which are usually run by international collaborations, bringing together teams of physicists from different institutes towards a common goal.

The Proton Synchrotron (PS) and Super Proton Synchrotron (SPS) are two major components of the CERN accelerator complex, providing proton and ion beams for the needs of various experiments. The PS and SPS are able to accelerate protons with energies up to 24 GeV/c and 450 GeV/c, respectively. While some PS and SPS beams have been designed and implemented for the purpose of stand-alone international particle physics experiments, a main use of the PS and SPS beamlines has been for testing and calibration of detector equipment, subsequently to be installed at CERN (typically at the LHC experiments) or at other particle physics laboratories in Europe.

COOPERATION

Project DIRAC is a good example of international scientific cooperation, involving 15 European and several Japanese research institutions. The goal of the experiment is to measure the lifetime of pi+ pi- atoms in the ground state using the 24 GeV/c proton beam. COMPASS, involving 25 European and several Japanese and Indian research institutions. A fixed target experiment at the SPS to study hadron spectroscopy with hadron beams (up to 300 GeV/c) and hadron structure with polarized muon beams (100-200 GeV/c). Project NA-48 is involving more than 20 European and several American research institutions. The NA-48 experiments aim at studying rare kaon decays for the purpose of measuring CP-violation parameters.

The experiments using CERN Photon Synchrotron and SPS beamlines are good examples of world-class particle physics collaborations, involving many European universities and research institutes and fostering active international scientific cooperation between CERN member and non-member states from all around the globe. Presently the PS-SPS complex is one of the very few places in the world where advanced particle detectors can be tested and calibrated: equipment to be used not only in CERN experiments, but also in other major particle physics laboratories, such as DESY in Germany or Fermilab in the US. In addition the PS-SPS complex is used by a number of collaborations operating particle detectors in space like AMS, GLAST and PAMELA, for particle detector developments, tests and simulation studies. The LHC, one of the largest and most complex scientific machines made in the history of mankind, will rely crucially on the PS and SPS for the delivery of proton and heavy ion beams for its experiments.

FACILITIES AND SERVICES FOR RESEARCHERS

Interconnected accelerators for producing proton and ion beams for the needs of various particle physics experiments - irradiation facilities - different targets for producing secondary beams (electrons hadrons, muons) - 8 test beamlines (PS and SPS have 4 test beamlines each).

3.2 BIOMEDICAL AND LIFE SCIENCES

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Austria / National / Distributed
ATCRIN – The Austrian Clinical Research Network	
Institution responsible for infrastructure: Medical University Vienna	
Home page: http://www.atcrin.at	
Full Address: Währinger Gürtel 18-20 1090 Wien Austria	**Telephone:** +43 1404002981
Name of the Contact Person: Michael Wolzt	**E-mail:** michael.wolzt@meduniwien.ac.at

ABOUT
The Austrian's Clinical Research Infrastructures Network ATCRIN provides support to biomedical clinical research. The interaction between non-commercial sponsors, independent physicians and experts in the field shall enable integration of national research groups in Austria into an EU-wide network. Together with its partners who are assembled in the European Clinical Research Infrastructures Initiative ECRIN, ATCRIN will participate in a proposal within the Seventh Framework Programme (FP7) to build research infrastructures based on national networks.

COOPERATION
Main countries of cooperation are all those countries that are working in ECRIN network, where also most of the scientific collaboration is done. Researchers and institutions involved in the network are signing multinational contracts with EC FP7. Networking of clinical research centres in each country share common tools (data management, regulatory affairs) and to harmonise the best practice, to set-up a common quality assurance system, and to support and coordinate the conduct of multicentre studies. For their future research activities they are in particular interested for the industry (pharmaceutical industry and industry from the field of chemistry). ATCRIN is not directly opened for research institutions from WBC. Research institution should contact ECRIN (European Clinical Research Network) to establish network cooperation links. ATCRIN is positive about future activities with WBC as it can act as a national partner for WBC research initiatives and it is therefore opened for future cooperation.

FACILITIES AND SERVICES FOR RESEARCHERS
Clinical research centre supports investigators and sponsors in the preparation and conduct of clinical research. Their infrastructures provide support to many types of clinical research, in any disease field. ATCRIN is offering their users modern clinical research centres, clinical trials units, biotherapy manufacturing units, data management centres.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Austria / European / Distributed
Biobanking and Biomolecular Resources Research Infrastructure	
Institution responsible for infrastructure: Medical University of Graz	
Home page: http://www.bbmri.eu	
Full Address: Universitätsplatz 3 A-8010 Graz Austria	**Telephone:** +43 316 380 4404
Name of the Contact Person: Zatloukal Kurt	**E-mail:** kurt.zatloukal@meduni-graz.at

ABOUT

The biobank of the Medical University of Graz (BioResource-Med) is specifically designed to support the needs of systems biology approaches to human diseases, drug discover, and public health. This main goal is building a coordinated, large scale European infrastructure of bio-medically relevant, quality-assessed mostly already collected samples (with the possibility to link to related clinical and epidemiological information), to enhance therapy and prevention of common and rare diseases, including cancer. In this area of unique European strength, valuable and irreplaceable national collections typically suffer from underutilisation due to fragmentation. Major synergism, gain of statistical power and economy of scale will be achieved by interlinking, standardising and harmonising – sometimes even just cross-referencing - a large variety of well-qualified, up-to date, existing and de novo national resources. The network will cover (1) major European bio-banks with blood, serum, tissue or other biological samples, (2) molecular methods resource centres for human and model organisms of biomedical relevance, (3) and bio-computing centres to ensure that databases of samples in the repositories are dynamically linked to existing databases and to scientific literature as well as to statistical expertise.

COOPERATION

Main cooperation partners on the field of research are coming from Medical University of Graz, Austria, National Public Health Institute, Finland, National Research Center for Environment and Health, Germany, Uppsala Universitet, Sweden, Karolinska Institutet, Sweden and University of Manchester, United Kingdom. Besides university partners also partners from industry are involved into scientific cooperation. Industry partners are also participating as a full member in the advisory board and as a stake holder in planning of new activities. BBMRI still does not have any practical experiences in scientific cooperation with researchers from WBC, but their research facilities are opened also for researchers coming from WBC. They are in particular interested in researchers from academia and industry that high quality research projects. Future goal of BBMRI is to fulfil an incubator role for the establishment of new infrastructure components in Europe and neighbouring countries, targeting also countries from the Balkans. To further establish this resource and develop associated technologies in a standardized/coordinated way, a European. core-infrastructure (Biolog. Resource Centre) is proposed. Main goal of establishment of a common European Biological Resource Centre (BRC) will be to support the needs, in particular, of Systems Biology approaches to a better understanding of diseases and a more efficient drug discovery process.

FACILITIES AND SERVICES FOR RESEARCHERS

BBMRI is providing tissue and blood samples (in cooperation with scientific partners), database with anonymized medical annotation of tissue samples, genomics, proteomics and histo-pathological data. Activities that are undertaken by the BBMRI are also to provide a support to processing of the measurements and support to users during experiments.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Austria / European / Single-sited
Food Sector Technology Research Infrastructure	
Institution responsible for infrastructure: LVA - Lebensmittelversuchsanstalt	
Home page: http://www.lva.co.at	
Full Address: Blaasstrasse 29 1190 Wien Austria	**Telephone:** +43 1 368855520
Name of the Contact Person: Julian Drausinger	**E-mail:** lva@lva.co.at

ABOUT

The LVA is a partner and advisor to the food industry in chemical and microbiological analyses, hygiene and plant inspections and bears responsibility within interest groups. LVA is authorized to issue expert evaluations on every issue regulated by food laws. The products of LVA customers are evaluated by experts from the opening and labelling to the composition. Expert evaluations are performed at the order of our customer and are based on the results of technical analyses. LVA provides also international audits. This reliability of results is ensured through constant monitoring of their processes and equipment through validation, control cards, monitoring samples and calibration according to statistical methods and by internal and external audits. LVA is acting also as a know-how transfer interface between industry and science. As an accredited institute, the LVA fulfil the function of a state authorized institute. The LVA is private entity that works independently, guarantees confidentiality and has a modern research infrastructure.

COOPERATION

LVA has already taken part as a R&D performer in several international R&D projects funded by the EC. Most frequent partners of scientific cooperation are coming from Germany, Italy, Hungary, Spain, Poland and France. LVA is the scientific translator to the Austrian Food industry and works as Technology Transfer Centre on national and international level. LVA has 45 collaborative national research projects and 7 EU cooperative research projects where partners are also actors from the industry. Users can enter LVA facilities within signed contracts and common funded schemes. Facilities are opened also for researchers coming from the Western Balkan countries. For the future development o European Food Research LVA gives major input in facilitating and forming the Strategic Research Agenda for the European Technology Platform "Food for Life".

FACILITIES AND SERVICES FOR RESEARCHERS

LVA houses modern facilities for chemical and microbial analysis, certification, inspection of foods in the sense of hygiene or organic products as well as training and coaching for food producing companies and retailers.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Austria / Global / Distributed
Synchrotrons and Radiation facilities	
Institution responsible for infrastructure: Austrian Academy of Sciences - Institute of Biophysics and Nanosystems Research (IBN)	
Home page: http://www.ibn.oeaw.ac.at/ http://www.elettra.trieste.it/ http://www.hecus.at/	
Full Address: Schmiedlstr. 6 8042 Graz Austria	**Telephone:** +43 316 4120 302
Name of the Contact Person: Dr. Gudrun Wakonigg	**E-mail:** gudrun.wakonigg@oeaw.ac.at

ABOUT

The mission of the IBN is to provide scientific insight into structure and interactions of matter at the submicroscopic scale, at the level of nanosystems. The focus lies in the nano-bio-sciences, where the IBN conducts an innovative, flexible program of interdisciplinary research, interlaced into a network of national and international cooperations. The methodological core competence of X-ray nanoanalytics, with an outstanding strength in synchrotron radiation technology, is complemented by innovative approaches to biomedical and industrial applications. The values lie in the pioneering spirit of the IBN which is nurtured by the cross-over from fundamental biophysical chemistry with innovation in experimental techniques and novel applications. Another important field of their research lies in the area of biomedicine, especially in the investigation of the molecular basis of diseases. With the outstation at the synchrotron light source ELETTRA, located in Trieste, Italy, their institute plays an important role for the development and maintenance of co-operations and synergies within the international Scientific Community.

COOPERATION

IBN together with ELETTRA have very rich scientific cooperation in particular with research institutions from Australia, Bulgaria, Canada, Czech Republic, Finland, France, Germany, Greece, India, Italy, Netherlands, Poland, Russia, Singapore, Slovenia, Spain, Sweden, Switzerland, USA and UK. They still do not have any scientific cooperation with researchers coming from WBC, but their research cooperation is also interested with the cooperation with the researchers coming from WBC. To use their research infrastructure, users have to do an application describing their research project. To stay in the IBN in Graz, and an invitation is needed. An average of 60 users are invited per year to work at IBN or ELETTRA. Besides cooperation with other scientific institutions from other countries they have also rich experience with cooperation with industry. Besides that IBN and ELETTRA are encouraging their scientist to establish their own spin offs. Currently e.g. the spin-off company Hecus X-Ray Systems was founded and soon a second spin-off company will start its work.

FACILITIES AND SERVICES FOR RESEARCHERS

Institute of Biophysics and Nanosystems Research houses spectroscopy and calorimetry facilities in Graz, synchrotron beamline ELETTRA and X-ray laboratories that are located in Trieste, Italy. These facilities allow an advanced methodological research in the field of X-ray analytics that is one of the most meaningful and most precise techniques to visualize submicroscopical nanostructures and structural changes. ELETTRA features a 2.4 GeV, third-generation synchrotron radiation source, also named Elettra, and a fourth-generation light source based on a free-electron laser. It is currently under construction and will come online in 2009.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Denmark / European / Distributed
DCRIN (Danish Clinical Research Infrastructures Network)	
Institution responsible for infrastructure: Copenhagen Trial Unit	
Home page: http://www.ecrin.org/index.php?option=com_content&task=view&id=76&Itemid=	
Full Address: CTU Blegdamsvej 9, Panum 2100-DK Copenhagen Denmark	**Telephone:** +45 34 45 7168
Name of the Contact Person: Kate Whitfield	**E-mail:** kate.whitfield@ctu.rh.dk

ABOUT
This integrated, EU-wide DCRIN infrastructure supports the conduct of multinational trials in Europe, taking advantage of the EU population and competencies, unlocking latent expertise, and combining and connecting patients currently scattered across the EU member states. DCRIN is part of the ECRIN network. ECRIN in global is designed to bridge the fragmentation of clinical research in Europe through the interconnection of national networks of clinical research centres and clinical trial units. ECRIN plans extension to national infrastructure networks in other member states, and stimulates the set-up of new national networks for further connection to ECRIN.

COOPERATION
Main cooperation partners on their field of research are coming from Austria, Belgium, Finland, France, Germany, Hungary, Ireland, Italy, Spain, Sweden, Switzerland and UK. External users can access DCRIN facilities on the basis of ECRIN scientific board access criteria. International scientific cooperation is opened through ECRIN participation. DCRIN together with ECRIN is therefore opened for excellent, unbiased scientific investigators and it is also opened for researchers coming from WBC. Currently they are involved with cooperation with researchers from WBC in particular through training and collaboration on the scientific projects. Future plan of DCRIN is to participate in the FP7-funded ECRIN-PPI (European Clinical Research Infrastructures Network and biotherapy facilities: preparation phase for the infrastructure) project. During the project, the ECRIN network will change into a sustainable European institution, with a legal status of pan-European infrastructure, able to provide high-quality services to multinational clinical research.

FACILITIES AND SERVICES FOR RESEARCHERS
This integrated clinical research infrastructure, unique in the EU, provides support to any type of clinical research, and in any medical field. Main goal of DCRIN and ECRIN network is to establish contacts in other world regions to promote connection with regional clinical research infrastructures worldwide, with the objective of sharing best practices and developing interoperability.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Finland / Global / Single-sited
Cognitive brain research Infrastructures	
Institution responsible for infrastructure: University of Helsinki	
Home page: http://www.cbru.helsinki.fi/	
Full Address: Siltavuorenpenger 20c 2100 Helsinki Finland	**Telephone:** +358 40 501 5740
Name of the Contact Person: Risto Näätänen	**E-mail:** risto.naatanen@helsinki.fi

ABOUT

Cognitive brain research unit (CBRU) primarily aims at determining the function and dysfunction of the central auditory system as well as its development. In addition, CBRU work includes research on attention, speech-sound representation, and brain plasticity. The major research areas of CBRU are as follows: Speech and language perception, Noise and auditory perception, Disorders of speech-sound processing, Development of central auditory processing, Fetal auditory processing Neuropharmacological studies, Cross-modal brain plasticity, Neural basis of music perception and musical expertise, Auditory sensory memory, Selective and involuntary attention and Theoretical framework of pre-attentive auditory processing. Clinically oriented research mainly conducted in our side laboratories located in the Helsinki University Central Hospital where they also have an access to magnetoencephalographic facilities.

COOPERATION

CBRU has a majority of scientific cooperation established with Russia, Ukraine, Netherlands, Germany, Spain, Italy and UK. In the research field of cognitive brain research, the unit currently is a world leader continuously receiving visitors even outside the EU such as the US and Japan. New researchers are welcome to participate together with their research teams in joint research projects through individual contracts or through EU funded projects and programmes. Also new researchers and research teams from WBC are welcome to establish scientific cooperation with CBRU. They are specially targeting young researchers preparing doctoral thesis and post doctoral researchers. CBRU is main partner and grant holder of the master degree programme in neuroscience: From Neuron to Cognition. This is EU funded project that was launched in the University of Saint-Petersburg (Faculty of Biology and Soil Sciences). In last year they had 3 external users working at their facilities.

FACILITIES AND SERVICES FOR RESEARCHERS

CBRU houses modern computer equipment, technical and other guidance in the conduction of the experiments. They also provide an access to magnetoencephalographic (MEG) facilities (the 300-channel Vector-View device of Electa-Neuromag Company).

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** France / European / Distributed
European Clinical Research Infrastructures Network (ECRIN)	
Institution responsible for infrastructure: INSERM - Institut national de la sante et de la medicale	
Home page: http://www.ecrin.org	
Full Address: 101 rue de Tolbiac 75654 Paris France	**Telephone:** +33 1 44 23 62 85
Name of the Contact Person: Demotes-Mainard Jacques	**E-mail:** jacques.demotes@inserm.fr

ABOUT

ECRIN is the pan-European Infrastructure for clinical trials (ESFRI roadmap for research infrastructures) providing, high-quality services to multinational clinical research (ECRIN mission statement). As a distributed infrastructure linking national networks of clinical research centres and clinical trials units, ECRIN provides integrated 'one-stop shop' services to investigators and sponsors in multinational studies, with the local contribution of staff embedded in each national coordination. Such support is particularly relevant for academic clinical research, research on rare diseases, neglected diseases, and for clinical trials sponsored by biotechnology, drug, and device enterprises that may face difficulties in conducting multinational studies in the EU. ECRIN will be a major tool for FP7- or Innovative Medicines Initiative (IMI)-funded projects. Hereby ECRIN will stimulate EU research on prevention, diagnosis and treatment, hence improving healthcare delivery to patients and citizens. ECRIN currently covers Sweden, Denmark, Germany, Italy, Spain and France, and plans to extend to other countries ECRIN is coordinated by INSERM.

COOPERATION

Main cooperation partners on the field of research are coming from Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Spain, Sweden, Switzerland and UK. External users can access INSERM facilities on the basis if they are coming from the field of clinical research and that they financially contribute to the services of INSERM. External users are usually accepted by the official confirmation by the scientific board that is in charge of examining the scientific soundness of the clinical research project, the regulatory and ethics aspects, the logistics and feasibility, and the financial aspects. International cooperation is exclusively involved with the multilateral research studies. INSERM still does not have any practical experiences in scientific cooperation WBC. But their research facilities are opened also for researchers coming from WBC. They are in particular interested in the development of new relations as information from the WBC region is still missing inside ECRIN. ECRIN has a goal to stimulate the structuring of a national infrastructure (also in WBC), through its capacity building programme. Networking at the whole European level allows ECRIN to connect the various national networks and to harmonise the practice, bridging the fragmented organisation of clinical research in the EU, improving the structuring and quality assurance systems in each country, and providing support to multinational clinical research in the EU through services and through its capacity to coordinate the studies.

FACILITIES AND SERVICES FOR RESEARCHERS

ECRIN with its network is supporting researchers in the preparation and at the phase of conduction of clinical research, mainly through a professional team, specific beds and equipment, and its know-how. These infrastructures provide support to many types of clinical research, in any disease field e.g.

clinical trials units, biotherapy manufacturing units, data management centres. Networking of clinical research centres in each country established allows sharing of common tools (data management, regulatory affairs) and to harmonise the best practice, to set-up a common quality assurance system, and to support and coordinate the conduct of multi-centre studies.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Germany / Global / Distributed
EMMA - European Mouse Mutant Archive	
Institution responsible for infrastructure: EMMA organisation	
Home page: http://www.emmanet.org/strains.php	
Full Address: Ingolstädter Landstrasse 1 85764 Neuherberg Germany	**Telephone:** +49 89 31873628
Name of the Contact Person: Dr Michael Hagn	**E-mail:** michael_hagn@helmholtz-muenchen.de

ABOUT

The European Mouse Mutant Archive (EMMA) is a non-profit repository network for the collection, archiving (via cryopreservation) and distribution of relevant mutant strains essential for basic and applied biomedical research. The current membership includes the CNR in Monterotondo, Italy (project co-ordinator), the CNRS in Orleans, France, the MRC in Harwell, UK, the Karolinska Inst. in Stockholm, Sweden, the Inst. Gulbenkian in Oeiras, Portugal, the GSF in Munich, Germany and the EMBL EBI in Hinxton, UK. EMMA is supported by the partner institutions and by the European Union's Framework Programmes. EMMA's primary objective is to establish and manage a unified repository for maintaining medically relevant mouse mutants and making them available to the scientific community. In essence, EMMA's main function is to archive mutant strains of mice and distribute them to researchers on request. However, EMMA also hosts courses in cryopreservation in order to promote the use and dissemination of frozen embryos and spermatozoa. Dissemination of knowledge is also fostered by a dedicated resource database.

COOPERATION

Main cooperation partners on the field of research are coming from European three most developed countries France, Germany and UK and USA. EMMA is by its structure distributed type of research infrastructure that is providing mouse resources via online service. Requests form customers and users are therefore coming from researchers from all over the world. Access to the services is open and free of charge. Partners in EMMA are cooperating on the basis of cooperation agreement which is opened also to new partners, also partners coming from the WBC. Particular target groups of cooperation are academic research institutes involved in mouse genetics research, also from WBC.
One of the major future planned activities of EMMA is to participate in Infrafrontier (http://www.infrafrontier.eu) which is a distributed European Infrastructure for phenotyping and archiving of model mammalian genomes. Infrafrontier is also open for new partners to join and is interested cooperation with research institutions from new EU member states and research institutions from WBC. More than 300 service requests (frozen embryos or live mice) are granted annually.

FACILITIES AND SERVICES FOR RESEARCHERS

The EMMA network comprises all the major European public repositories for mouse mutant research and archiving. They all operate under specific-pathogen-free standards (FELASA regulations), and include the most advanced facilities for quarantine/importation/SPF-rederivation/cryopreservation and

distribution of mouse mutant strains. The present EMMA total capacity for archiving is about 250 new strains/year. EMMA strains are cryopreserved as frozen embryos and/or sperm, which can be shipped to requesting researchers. Highly requested strains are maintained as small colonies, from which 2-3 breeding pairs can be obtained. Annually app. 300 services requests are coming from external users (frozen embryos or live mice) and app. 200 for deposited mouse mutant lines.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Germany / Global / Virtual
BioCASE - A Biological Collection Access Service for Europe	
Institution responsible for infrastructure: Botanic Garden and Botanical Museum Berlin-Dahlem, Freie Universität Berlin	
Home page: http://search.biocase.org	
Full Address: Koenigin-Luise-Str. 6-8 14191 Berlin Germany	**Telephone:** +49 30 83850 100
Name of the Contact Person: Walter Berendsohn	**E-mail:** w.berendsohn@bgbm.org

ABOUT

The Botanic Garden and Botanical Museum Berlin-Dahlem (BGBM) research collections (botanical garden, herbarium and library) rank among the most important world-wide and offer excellent access to taxonomic primary information. Apart from its traditional role in taxonomy and the acquisition, preservation, and investigation of scientific collections of botanical specimens, the BGBM early recognized the new role in development and exploration of data collections and thus build a powerful IT infrastructure. Today, the BGBM sustains a department of Biodiversity Informatics which contributes significantly to many national, European and global initiatives aiming at providing access to primary biodiversity information. BGBM is providing the Biological Collection Access Service for Europe (BioCASE). BioCASE is a transnational network of biological collections of all kinds. BioCASE enables widespread unified access to distributed and heterogeneous European collection and observational databases using open-source, system-independent software and open data standards and protocols. BioCASE builds on the predecessor projects (CDEFD), BioCISE and ENHSIN). These laid the groundwork for implementing a fully functional service unlocking the immense biological knowledge base formed by biological collections.

COOPERATION

Partners from 31 countries established the BioCASE network, starting with meta-information on thousands of biological collections, and followed by a unit level access network. Cooperation agreements with international organisations such as GBIF (Global Biodiversity Information Facilities) and CETAF (Consortium of European Taxonomic Facilities) are signed. Incorporation in ongoing EU projects in the area of biodiversity information (e.g. SYNTHESYS Infrastructure network, EDIT NoE) is on the way and it is expanding. Target groups for scientific cooperation are in particular individual national research centres of biodiversity information dissemination; centres that covers the fields of biodiversity informatics. There is still no research cooperation activities established with national research institutes from WBC but they are invited to join the network. Future activity of BGBM will be to extend and create new GBIF nodes.

FACILITIES AND SERVICES FOR RESEARCHERS

BGBM is providing researchers a herbarium collection Botanical garden living collection Biodiversity informatics research facilities. The information that is provided through BioCASE comes in formats ranging from XML and text data to high-resolution images and even video files.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Germany / European / Distributed
EU-NMR (Nuclear Magnetic Resonance spectroscopy infrastructures)	
Institution responsible for infrastructure: Center for Biomolecular Magnetic Resonance	
Home page: http://www.eunmr.eu	
Full Address: Max-von-Laue-Str. 7 60438 Frankfurt Germany	**Telephone:** +49 6979829737
Name of the Contact Person: Harald Schwalbe	**E-mail:** mail@eu-nmr.eu

ABOUT
EU-NMR aims at providing an integrated approach to support research in Life-Sciences by mobilising the unique tools and expertise available in Europe. 5 leading Research Infrastructures and 21 among the largest European national laboratories operating in the field of magnetic resonance spectroscopy participate in this infrastructural initiative. Biomolecular magnetic resonance spectroscopy is of importance for the determination of structure and function of biological macromolecules like proteins, RNA, and DNA.

COOPERATION
Center for Biomolecular Magnetic Resonance (BMRZ) is a partner in the European Large Scale MR facilities in Florence and Utrecht and participates in many European Structural Proteomics projects. Structural Biology is of importance for the development of novel drugs. The BMRZ is involved in joined projects with industrial partners in particular with pharmaceutical industry. External users are accepted by sending their research proposal, showing preliminary data and overall relevance to the Life Science research area. Access to external users can be collaborative or service based depending on the experience of individual user. More than 80 different principal investigators are external users and approx. 1000 days of measurement time is offered to external users each year. BMRZ also has scientific cooperation together with research institutes from WBC. Currently they are building new research alliance in the newly funded I3: East-NMR initiative. Through interaction and networking with WBC, they will generate a combined European platform for structural biology and molecular systems biology.

FACILITIES AND SERVICES FOR RESEARCHERS
EU-NMR provides individual researchers and research teams from European Countries with access to a distributed Research Infrastructure (dRI) of five major national centres with some 200 scientific and technical support staff, representing over 100,000,000 EUR in investments in state-of-the-art, fully equipped NMR spectrometers and ancillary equipment, and modern laboratories for bio-NMR. It is the world's largest centre for bio-NMR devoted to deciphering the structure, function and activity of biomolecules at the molecular and macroscopic level. The complementary and research in the dRI ensures that research teams from all over Europe will have access to the most advanced tools available for answering their research questions. The combined RIs can provide access to instruments best suited to solve the posed questions, have dedicated educational programs for training researchers on the use of NMR, and have a tradition in furthering the awareness of the potential of bio-NMR. They are able to provide in-depth education for PhD students, post-docs and external users

on the potential of NMR for structure/function/pathway analysis. The scientific support for users is extensive.
The Center of Biomolecular Magnetic Resonance in Frankfurt (BMRZ) houses NMR spectrometers at 900, 800 and 700MHz, three instruments at 600 MHz, two at 500MHz and 400MHz for solution NMR, plus 850MHz (end 2006), 600MHz and two 400MHz wide bore systems for solids. In addition, four high field EPR machines including the world highest pulsed EPR spectrometer (180GHz) are available. Biological samples are prepared from pro- and eucaryotic hosts, as well as cell-free protein synthesis and peptide synthesis. Biophysical instrumentation is including mass spectrometry, ITC, CD, fluorescence (with stopped-flow devices), quench-flow apparatus, analytical ultracentrifugation and large computational cluster.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Hungary / European / Single-sited
Phytotron	
Institution responsible for infrastructure: Agricultural Research Institute of the Hungarian Academy of Sciences	
Home page: http://www.mgki.hu	
Full Address: Brunszvik u. 2. 2462 Martonvásár Hungary	**Telephone:** +36 22 569 506
Name of the Contact Person: Ottó Veisz	**E-mail:** veiszo@mail.mgki.hu

ABOUT

The profile of the Agricultural Research Institute of the Hungarian Academy of Sciences involves complex, interdependent, basic, methodological and applied research projects culminating in practical applications. The basic aim is to use the internationally renowned germplasm accumulated over the past fifty years, combined with up-to-date methods from the fields of genetics, physiology, cell and reproduction biology, functional genomics, biotechnology, plant breeding and crop production, in order to develop new, generic plant genotypes satisfying the future demands of society, and to carry out research on production technologies and the environment. Ongoing projects include an analysis of the agroecological equilibrium, the preservation and expansion of genetic variability, the production of raw materials for healthy nutrition, the development of durable stress resistance, and improvements in seed safety in order to meet the requirements of sustainable development.

COOPERATION

The facilities for phytotronic research can also be used by external researchers, who need to contact the Head of the Phytotron (e-mail:koszegi@mail.mgki.hu) to discuss the details of the required experiments. These details will then be set out in a two-party bilateral contract. Main partners of cooperation are mainly Central European countries. The plant varieties bred at the institute which have been registered are widely used by European farmers and agricultural industries. Collaboration with Agricultural research institute is possible through different European financial support mechanisms FP7 programme. Institute is currently actively participating in joint SEE-ERA.NET project. Through this project they are cooperating with the research partners coming from Western Balkan countries.

FACILITIES AND SERVICES FOR RESEARCHERS

The Phytotron, established in 1972, contains fifty plant growth units, in which the main environmental factors required for plant growth and development (temperature, light, humidity) can be programmed reproducibly at any time of the year, irrespective of the external weather conditions. The Canadian climatic equipment installed during the reconstruction in 1990 is capable of simulating the weather in any part of the world, over a range of temperature stretching from -25°C to +45°C. The main RI at Agricultural Research Institute are 50 climatic plant growth chambers.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Netherlands / Global / Single-sited
NMR, MRI and ESR spectrometers at Wageningen NMR Infrastructure Centre	
Institution responsible for infrastructure: Wageningen University, Wageningen NMR Centre: NMR in Agriculture, Food and Biology	
Home page: http://www.wnmrc.nl	
Full Address: Dreijenlaan 3 6703 HA, Wegeningen Nehterlands	**Telephone:** +31 317482034
Name of the Contact Person: Henk Van As	**E-mail:** henk.vanas@wur.nl

ABOUT

The Wageningen NMR Centre is a unique NMR facility in Europe for application of NMR in Agriculture, Food and Biology. The facility offers access to and training on various NMR and MRI spectrometers (ranging from low to higher magnetic fields, including imaging, solid state (MAS) and liquid state NMR, LC-NMR-MS), databases (metabonomics), data processing, and interpretation of NMR data (such as complex mixture analysis, image processing, molecular dynamics, molecular modeling calculations). Especially in new post-genomic applications (in vivo) NMR spectroscopy, LC-NMR-MS methods and functional MRI will play an important role. The available 3T MRI and LC-NMR-MS systems are prepared for new applications on (post)genomics, metabonomics, functional imaging, food authenticity and food safety.

COOPERATION

Part of the research facilities at Wageningen NMR centre acts as a national facility. Cooperation with external users is given highest priority. Commercial serves without cooperation is limited to a max of around 20 % of the measurement time to protect academic users. 40% of users are external users. Main cooperation partners on their field of research are coming from Germany, Greece, Spain, Italy, Slovenia and USA. Besides research institutions their facilities are frequently used by several industrial partners. Within the framework of the EU contract RITA users from industry has been given access to the research infrastructure. Cooperation with Wageningen NMR research centre is possible through various bilateral programmes and EU framework programmes. External users need to have a scientific project which makes it necessary to use the scientific collections or the laboratories at Wageningen. Wageningen NMR still does not have experience with the cooperation with research institutions from WBC, but they are opened for this kind of cooperation. Selection is based on the criteria of quality of research, practicability, know-how and available experience of applicant, strategic fit into focus of Infrastructure, available machine and data-processing time, available finances Selected Users are integrated in the local working groups. Major enhancements are in the collaborations with new NMR Users in Europe, covering unexplored applications. A number of these collaborations have already turned into stable long-term collaborations via a.o. EC funded projects in the field of food safety issues, genomic research and nano-analytical technology. They are in particular motivate researchers from the field of agriculture, biology, food sciences and environmental sciences to establish new modes of scientific cooperation.

FACILITIES AND SERVICES FOR RESEARCHERS

Wageningen NMR Centre houses various NMR and MRI spectrometers (including MRI, solid and liquid state and LC-NMR-MS), covering applications on molecular to intact organism level in

agriculture, food sciences, biology, environmental and soil sciences, biotechnology and bio-physics. The unique MRI and LC-NMR-MS systems are prepared for new applications on (post)genomics, metabonomics, intact plant and food imaging, food authenticity and safety. The facility offers access to and training on the NMR spectrometers and related analytical facilities (i.e. high sensitivity ESR, advanced mass spectrometry and optical micro-spectroscopy techniques, databases, data processing, and interpretation. Research Centre is offering the following services to scientific community: Portable NMR spectrometer for correlated T1, T2, diffusion and flow studies; Microscopy MRI, objects max 2 cm diameter; Vertical bore MRI system, different gradient insert systems (up to 1 T/m), climate control, max 30 cm diameter objects (e.g. reactors, foods, plants, soils); Wide bore NMR spectrometer for in vivo metabolic studies of living organisms, solid state NMR; NMR for analytical NMR for molecular structure elucidation, and non-targeted screening of bio-fluids; LC-NMR-MS system equipped with SPE storage unit for triple-hyphenated analysis; NMR, 2- and 3-D spectroscopy.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Netherlands / European / Single-sited
Life Science Trace Gas Research Facility	
Institution responsible for infrastructure: Radboud Univesity	
Home page: http://www.ru.nl/tracegasfacility	
Full Address: Toernooiveld 1 6525 ED, Nijmegen Netherlands	**Telephone:** +31 24 3652128
Name of the Contact Person: Frans J.M. Harren	**E-mail:** F.Harren@science.ru.nl

ABOUT

The Life Science Trace Gas Facility operates a variety of unique state-of-the-art trace gas detectors that allow real time measurements at unprecedented detection levels. The strength of the Facility lies in 20 years of experience with applications to problems in Life Science. During the last 5 years access has been given to 63 European users under FP4 and FP5. Access to this Facility, training, and support is given to researchers from all fields of Life Science. They are carrying out trace gas experiments that cannot be performed with conventional instrumentation using the highly sensitive detectors that were developed at the facility. The strength of these instruments resides in the possibility to perform non-invasive, fast and on-line detection of ultra low gas concentrations under rapidly changing external conditions. In Europe such a measuring facility is unique and definitely not commonly used by Life Scientists due to the required expertise and high operational costs. Trace Gas Facility offers access to researchers engaged in experiments where a quantitative change of small gas emissions forms an important asset to determine the character and the timing of the observed processes.

COOPERATION

The 6th Framework Programme of the European Union is offering European researchers of all levels of experience the unique opportunity to obtain free access to the laboratory facilities at the Life Science Trace Gas Facility at Radbound University in Nijmegen. Travel, accommodation and subsistence costs for the visiting scientists are covered by EU funding programme. The application procedure is available through their web page. Till today their most frequent partners of cooperation are coming from Belgium, France, Germany, Italy, Spain and UK. Radbound is offering 400 instrument day per year. They are also having scientific cooperation contracts established with WBC. In particular researchers from the field of life sciences and medical sciences are invited to submit their research proposals.

FACILITIES AND SERVICES FOR RESEARCHERS

This Facility operates a variety of unique state-of-the-art trace gas detectors that allow real time measurements at or below ppbv level of trace gases released by various biological samples in a seconds time scale. The infrastructure is equipped for trace detection of gases of interest in Plant physiology, Post harvest research, Soil science, Microbiology, Ecology, Molecular biology, Medicine, and Human health. Amongst these gases are ethylene, ethane, methane, NO, CO, CO_2, water vapour, aldehydes, alcohols, ketones, acids, terpenoids, and many other hydrocarbons, all at or below ppbv level. Access is given to 5 CO_2-laser-, 2 CO-laser-, 1 Quantum cascade laser-, and 1 Optical Parametric Oscillator-based detection systems, next to 2 Proton-transfer-reaction Mass Spectrometer setups.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Turkey / Global / Single-sited
Plant, Drug and Scientific Researches Center of Anadolu University (AUBIBAM)	
Institution responsible for infrastructure: Anadolu University	
Home page: http://www.aubibam.anadolu.edu.tr	
Full Address: Anadolu University, Plant, Drug and Scientific Researches Center of Anadolu University(AÜBIBAM) 26470 Eskiehir Turkey	**Telephone:** +90 2223350580 /3661
Name of the Contact Person: Dr. Rudvan Say	**E-mail:** rsay@anadolu.edu.tr

ABOUT

The Plant, Drug and Scientific Research Center of Anadolu University (AUBIBAM) contributes to the scientific and educational development in Pharmacy and in related fields. It houses the well known Medical and Aromatic Plant and Drug Research facilities. The faculty and the centre are equipped with modern laboratories and research facilities. Researchers are mostly cooperating with the pharmaceutical industries, forensic and other international research laboratories. Most of the research is to cover the field of plant science and microbiology. Their main mission is to carry out fundamental and strategic research, to train scientists and to make findings available to society. The scientific research at the Centre makes use of a wide range of disciplines in the biological and chemical sciences, including cell biology, biochemistry, chemistry, genetics, molecular biology, computational and mathematical biology.

COOPERATION

AUBIBAM main cooperation partners are coming from Germany, Italy, Ireland, UK, Spain, South Africa, India and Uzbekistan. External users can access Anadolu scientific research facilities mainly on the basis of bilateral agreements between the partners in the frame of official records. Typical external users are usually project partners, university researchers, PhD and MSc students who are taking also training at the Anadolu University. Research cooperation is also opened for researchers and post graduate students from WBC.

FACILITIES AND SERVICES FOR RESEARCHERS

The laboratories at AUBIBAM are consistent with the current technological state and background for both student practices and advanced research activities. AUIBIBAM is providing training courses for post graduate students, PhDs, by providing multidisciplinary knowledge such as nanotechnology, biotechnology especially in chemical and life sciences. The laboratories at AUBIBAM houses new technology instruments such as GC, GC-MS HPLC, 4000-1-400CL-1 FTIR, 90 MHz., UV-VIS spectrometer, ICP-OES, 500 MHz multinucleus FTNMR, 300 MHz solid NMR, TEM and MALDI-TOF-MS. Biotransformation experiments in microbiology laboratories and the effect of plant extracts on particular cancer cells in cell culture laboratories are possible.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** UK / Global / Distributed
Data Resources for Biological Information	
Institution responsible for infrastructure: European Molecular Biology Laboratory - European Bioinformatics Institute EMBL-EBI	
Home page: http://www.ebi.ac.uk/Information/About_EBI/about_ebi.html	
Full Address: Wellcome Trust Genome Campus CB10 1SD, Hinxton UK	**Telephone:** +44 1223 494648
Name of the Contact Person: Janet Thornton	**E-mail:** thornton@ebi.ac.uk

ABOUT

European Molecular Biology Laboratories and their institutes collects, organises and disseminates bio-molecular information for the academic and commercial research community throughout Europe and the world. EMBL-EBI has several hundred collaborators in Europe and world wide. Databases and services are available over the web. It is in operation for 24 years. EMBL-EBI is providing crucial information and services for all aspects of commercial and academic life science research in Europe and the World. They support also the European Patent Office in originality searches. EMBL-EBI is European player in a wide range of global information exchange agreements.

COOPERATION

The EMBL-EBI runs 6 major core resources, with many more smaller associated data resources. This is funded in part through the 19 member states of EMBL and all these are involved in cooperation. Almost all the resources also have sister sites in USA and Japan. There is also a special industry programme, with members from 16 major pharmaceutical and other related industries. Industrial institutions participate with a yearly subscription. External users can access EMBL-EBI data bases and services through internet and are in public domain available through Internet services. App. 200.000 unique users per month and over 3 million web hits per per day is allocated in EBI data base system. Target groups of future cooperation are invited to participate through ELIXIR project and EMBL-EBI is very interested to contact also countries from the WBC and involve them in the project. They currently signed a cooperation agreement with Croatia which is already engaged through ELIXIR. EMBL-EBI has a plan to create access to data by allowing deposition of data in global resources through strengthening expertise in bioinformatics for life science research and medicine.

FACILITIES AND SERVICES FOR RESEARCHERS

EMBL-EBI is providing databases of DNA sequence, protein sequence, macromolecular structures, genome annotation, gene expression, molecular interactions, biochemical pathways, chemical entities of bio-molecular interest and scientific literature. European Networks of Excellence coordinated by the EBI include - BioSapiens: Human genome annotation - EMBRACE: Database Interoperability - ENFIN: computational approaches in systems biology. EMBL-EBI is providing a support to processing of the measurements, support to users during experiments, upgrade of the attached instruments and/or associated software, upgrade of the core facility and information and informatics support.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** UK / National / Virtual
GARNet - platform for international *Arabidopsis research* and for *research* on other plant species	
Institution responsible for infrastructure: GARNet - Genomic Arabidopsis Resource Network	
Home page: http://garnet.arabidopsis.org.uk/	
Full Address: University of Bristol BS8 1UG, Bristol UK	**Telephone:** +44 117 928 7480
Name of the Contact Person: Ruth Bastow	**E-mail:** ruth@arabidopsis.info

ABOUT

GARNet was created as part of the biotechnology and biology sciences research Investigating Gene Function (IGF) to ensure that functional genomic technologies are available to wide audience. GARNet is promoting and supports services such as transciptome analysis, bioinformatics, metabolite profiling, proteome analysis and reverse and forward genetics for the Arabidopsis community All GARNet services and resources are publicly available, and data created using the GARNet resources are freely distributed via databases designed and held at NASC (http://nasc.nott.ac.uk)and AtIDb (http://atidb.org/cgi-perl/index). GARNet is therefore playing an important part in promoting the adoption of functional genomics methods in the UK Arabidopsis community. However as plant scientists begin to make the transition from functional genomics to systems biology GARNet must also evolve and assist the community in adopting integrative systems levels approaches that will be required to remain competitive.

COOPERATION

GARNet is an open access network. Main forms of cooperation inside GARNet are events, workshop, conferences and scientific activities organised and are usually open to participants from all countries. GARNet ensures that the UK Arabidopsis/plant community is well coordinated and supported, so that it can effectively interact with other researchers in the EU or further a field. Collaborations between plant scientists at the EU level is providing cost effectiveness for funding agencies by avoiding duplication of research, promote complementarities between countries and ultimately speed up plant research across the EU, making the EU plant community more competitive on a global scale. GARNet is also opened for researchers from WBC.

FACILITIES AND SERVICES FOR RESEARCHERS

GARNet is offering functional genomic tools and technologies in research of Arabisopsis genome sequence.

3.3 COMPUTATION AND DATA TREATMENT

Scientific field: Computation and Data Treatment	**Country and Type of Infrastructure:** Finland / European / Single-sited
High Performance Computing Network infrastructures	
Institution responsible for infrastructure: CSC, the Finnish IT center for Science	
Home page: http://www.csc.fi/english/	
Full Address: Keilaranta 14 2100 Helsinki Finland	**Telephone:** +358 503819777
Name of the Contact Person: Kimmo Koski	**E-mail:** kimmo.koski@csc.fi

ABOUT

CSC — Finnish IT Center for Science is administered by the Ministry of Education. CSC is a non-profit company providing IT support and resources for academia, research institutes and companies: modeling, computing and information services. CSC provides Finland's widest selection of scientific software and databases and Finland's most powerful supercomputing environment that researchers can use via the Funet network. CSC's services are meant primarily for the use of the national research community. According to the contract between CSC and the Finnish Ministry of Education the services for university and polytechnic researchers are mainly free of charge. Services for research institutes and companies are commercial use and the invoicing is based on organization's service agreement with CSC. CSC main aim is to improve the operational qualifications of the national research system by providing globally competitive IT infrastructure, high-quality specialist services, and collaboration that enhances active exchange of skills.

COOPERATION

CSC has a majority of scientific cooperation established with Sweden, Norway, Denmark, Iceland, Holland, Germany and Switzerland. They are also tightly connected with industrial sector as they are offering them computational modelling, computational and informational services. Most of the cooperation relations are realized through GRID projects and responsibilities are defined by contract on a case by case basis. Infrastructure facilities are opened for European collaboration and strong centres with competence in computational infrastructure, networks, data infrastructures are invited to participate. App. 1000-3000 external users are accessing CSC in relation to computing services and 350.000 for research network (FUNET), and other figures in between depending on the service. Till today CSC did not have many cooperation experiences with WBC but is opened for future cooperation with similar centres in WBC.

FACILITIES AND SERVICES FOR RESEARCHERS

CSC provides modelling, computing, and information services for universities, polytechnics, research institutions and industrial companies. The expert services in the field of science are meant for the academic research community as a whole. Researchers can use the largest collection of scientific software and databases in Finland through Funet network. Researchers have remote login access to CSC's computing resources that is Finland's most powerful supercomputing environment. CSC is offering approximately 200 scientific programs and 60 scientific databases for research use. Users of these programs receive information from CSC professionals regarding HPC and software usage.

Scientific field: Computation and Data Treatment	**Country and Type of Infrastructure:** Slovenia / Global / Single-sited
Research infrastructure for research on advanced automation, intelligent and service robotics and in life-sciences oriented areas of biocybernetics and environmental ergonomics.	
Institution responsible for infrastructure: Jozef Stefan Institute - Department for Automatics, Biocybernetics and Robotics	
Home page: http://abr.ijs.si/index_en.html	
Full Address: Jamova 39 1000 Ljubljana Slovenia	**Telephone:** +386 1 4773 565
Name of the Contact Person: Bojan Nemec	**E-mail:** bojan.nemec@ijs.si

ABOUT

Many of institute's projects cover areas as: **Automation** which is their basic activity. Projects from this field are mainly applied research projects aimed to solve needs for special or non-conventional manufacturing processes for which there is no known or publicly available technology. **Robotics**- their competence includes robot kinematics, dynamics, modelling, and control. **Cognitive robotics** research is focused to achieve cognition, intelligence and other capabilities of the human mind. Also, they are designing humanoid robots components. **Environmental ergonomics** – their task is to study the influences of the environment on the human body in normal and special conditions. They are therefore providing a design devices and special equipment for comfort, health and protection. **Biocybernetics** this is their strong research program where the primary goal was the rehabilitation of individuals with locomotion and other disabilities using functional electrical stimulation.

COOPERATION

Department for Automatics, Biocybernetics and Robotics at the Institute Jozef Stefan, Slovenia has rich scientific cooperation with countries as: Austria, Denmark, France, Germany, Italy, Netherlands, Sweden, Switzerland, UK, Australia, Japan and from WBC with Serbia. In regards to cooperation with industry they managed to complete more than 50 projects supported by national and foreign private corporations in the past 20 years. External users can enter IJS facilities when they have a common project and sign a contract. This is usually done through bilateral agreements and cooperation in joint EU research programmes (FP6 and FP7 programmes). Target groups of cooperation are normally researchers from the field automatics and robotics, PhD students and post doc researchers, partners from industry and they are allowed to use all facilities at their department.

FACILITIES AND SERVICES FOR RESEARCHERS

ABR IJS is offering researchers modern experimentation facilities for work on advanced automation, intelligent and service robotics and in life-sciences oriented areas of biocybernetics and environmental ergonomics. Department is housing fast wireless connections, modern computer network, robotics open software for development and testing, software for motion planning and software for perception.

Scientific field: Computation and Data Treatment	**Country and Type of Infrastructure:** Slovenia / Global / Virtual
COBISS - Co-operative Online BIbliographic System and Services	
Institution responsible for infrastructure: Institute for Information Sciences	
Home page: http://www.izum.si/en/izum_eng.htm	
Full Address: Prešernova 17 2000 Maribor Slovenia	**Telephone:** +386 2 2520 331
Name of the Contact Person: Tomaž Seljak	**E-mail:** tomaz.seljak@izum.si

ABOUT
The Institute of Information Science (IZUM) is a public institution. IZUM is public infrastructural institution and registered as a research organisation as well. According to the Librarianship Act, it is defined also as a library information service in the COBISS.SI national bibliographic system. On the basis of consortium agreements, signed with foreign information services, IZUM provides the users in Slovenia free access to different foreign databases and services (Web of Science, OCLC FirstSearch, ProQuest, etc.).

COOPERATION
On the scientific and professional basis, IZUM co-operates with similar organisations worldwide; in accordance with the guidelines of its founder, it has also expanded its activities abroad.
The activities of IZUM are mainly engaged in the development and operation of the COBISS system and services (Co-operative Online BIbliographic System and Services), which represents the core of the library information system in Slovenia and of library information systems in some other countries linked in the COBISS.Net network (Bosnia and Herzegovina, Macedonia, Serbia and Montenegro).
IZUM develops the Information system on research in Slovenia - SICRIS (Slovenian Current Research Information System), which includes data on research projects, research institutions, teams and researchers.

FACILITIES AND SERVICES FOR RESEARCHERS
Extensive educational activity and well developed relations with the users of IZUM's products and services are a component of understanding of how the information society is arising.

IZUM performs the following activities:

- in its field of work, co-ordination of the development and operation of the shared bibliographic system and services,
- co-ordination of the development and application of standards for computer support to meet the requirements of the shared bibliographic system and services,
- software development and maintenance to meet the requirements of the shared bibliographic system and services,
- determination of the suitability of library staff for shared cataloguing purposes, in co-operation with the National Library,
- planning and maintenance of the central computer and communications capacity to enable the functioning of the system,

- management of the offer of databases on electronic data carriers, with direct access by agreement with their producers,
- organisation of professional training and counselling in the fields covered by the national shared bibliographic system,
- preparation of fundamental principles from its field of work for the work of the National Council for Librarianship,
- development, organisation and maintenance of the information system for monitoring research activities in Slovenia,
- participation in public programmes for the development of Slovenia as an information society,
- engineering for the development and maintenance of a computer and communications infrastructure in educational, research and cultural organisations,
- research, development and counselling in its field of work,
- other tasks based on the adopted long-term development guidelines and annual Action Plans.

Scientific field: Computation and Data Treatment	**Country and Type of Infrastructure:** Spain / National / Single-sited
Centro de Supercomputacion de Galicia (CESGA)	
Institution responsible for infrastructure: Fundación Centro de Supercomputacion de Galicia	
Home page: http://www.cesga.es/en/defaultE.html	
Full Address: Avda. de Vigo s/n 15705 Santiago de Compostela Spain	**Telephone:** +34 981 569810
Name of the Contact Person: Javier Garcia Tobio	**E-mail:** jgtobio@cesga.es

ABOUT

The Supercomputing Center of Galicia (CESGA) is the center for high-performance computing, communications and advanced services used by the scientific community. CESGA works through two institutions: (1) CESGA Foundation and (2) S.A.X. CESGA. **CESGA Foundation** aims to promote, disseminate and render high performance computing and communications services to the research communities. **S.A.X. CESGA** aims to promote support services for research, development and innovation in the field of IT and communications both in Galicia and the scientific community of CSIC. CESGA's research infrastructure is based on supercomputers.

COOPERATION

Most of the cooperation is done through European supported projects. Their main partners of cooperation are coming from Portugal, Sweden, Switzerland and USA. Using co-operation agreements between CESGA and other European institutions, this powerful system is making science to cross cut itself. Supercomputer facilities at CESGA are enabling science to increase number of scientific publications. CESGA has a collaboration agreement also with private corporations in particular from the field of ICT. HP and Intel are two examples of this cooperation activities. These companies are providing hardware and software for free. HP has a contract with CESGA for two software research projects. In 2007 they had 625 licences provided to external users. Access to enter CESGA facilities is through specific cooperation agreements, specific and common projects and, in short term, through international (EU FP7) calls for projects. Target groups for the cooperation are researchers involved in Computational Science applied in particular to the fields of Ocean Science, Nanotechnology, Health, New Energies and HPC. CESGA is also opened for cooperation initiatives coming from Western Balkan countries.

FACILITIES AND SERVICES FOR RESEARCHERS

CESGA's main equipment consists of SVG, Compaq HPC 320 and SUPERDOME. CESGA is offering scientific community computer based simulation services, massive data storage facilities and providing scientific community technical infrastructure, online service and training. CESGA is also offering access to GRID (collaborative super-computer based science e-infrastructure), GIS (Geographical Information System).

3.4 ENERGY

Scientific field: Energy	**Country and Type of Infrastructure:** France / Global / Single-sited
Processes, Materials and Solar Energy Laboratory; PROMES-CNRS SOLFACE Facilities FP6 EU Transnational Access	
Institution responsible for infrastructure: CNRS (Centre National de la Recherche Scientifique)	
Home page: http://www.promes.cnrs.fr/solface/index.php	
Full Address: 7 rue du four soalire 66120 Odeillo France	**Telephone:** +33 468306972
Name of the Contact Person: Gabriel Olalde	**E-mail:** gabriel.olalde@promes.cnrs.fr

ABOUT

SOLFACE is contributing to the creation of the European Research Area as follow in three different aspects: (1) they are opening the facilities to scientists from Europe and extended Europe to improve the scientific cooperation between researchers, (2) they are improving the development of scientific critical mass in domains where the knowledge is now widely dispersed and (3) they are generating strong projects at the European scale to increase their competitiveness. SOLFACE is hosted by the PROMES-CNRS laboratory. It is established in Odeillo in the south of France, at an altitude of 1550m in the Eastern Pyrenees, favourable for the quality of sunshine. High-temperature research may be performed using highly concentrated solar energy (3000 to more than 15000 "suns") in many domains. Among these, the more interesting areas are thermo-chemical cycles for energy storage, production of environmentally benign energy carriers (H_2, Syngas), high flux photo-chemistry, high value added material synthesis (nano-structured materials, ceramic, glass), knowledge-based behaviour of multifunctional materials under extreme conditions.

COOPERATION

Most frequent partners of scientific cooperation are coming from Spain, Germany, Switzerland, Greece, Italy, Romania, Poland and Portugal. They are also involved in industry related scientific projects from the fields of Energy and Material Sciences. SOLFACE offers European research community or industrial scientists an access to modern research equipment and facilities, free of any charge (travel, stay). Selection procedure for external users/researchers is done on the annual basis. The candidates wishing to access SOLFACE facilities express their interest by filling the User Proposal Form at the web site of SOLFACE. Annually app. 25 researchers are granted to work at SOLFACE facilities. SOLFACE is also opened for researchers from WBC. SOLFACE is interested for industrials and research workers in the area of energy and materials sciences. Future plan of SOLFACE is to expand the research field to research actions in the area of clean energy (utilisation of solar energy applications).

FACILITIES AND SERVICES FOR RESEARCHERS

Users have access to a whole range of high and very high flux solar furnaces, from the Megawatt Solar Furnace (MWSF), to the 12 Medium Size Solar Furnaces (MSSFs), and to the high scientific level and experimental equipment of the laboratory. These installations are associated to a large variety of modular reactors and specific devices, designed and developed at the Institute, to perform high level researches in numerous scientific domains. The MWSF is the most powerful solar furnace worldwide, adaptively featuring power from 10 kW to a maximum of 1 MW, with heat flux up to 10000 kW/m2 and temperature up to 3500°C. The MSSFs are a set of 12 medium size solar furnaces from 1 to 6 kW.

Scientific field: Energy	**Country and Type of Infrastructure:** Netherlands / European / Distributed
High Flux Reactor, High Pressure Tank Testing infrastructure, Fuel Cells Testing facilities	
Institution responsible for infrastructure: JRC IE – Institute for Energy	
Home page: http://ie.jrc.ec.europa.eu	
Full Address: Westerduinweg 3 NL-1755 LE Petten Netherlands	**Telephone:** +31 224 565656
Name of the Contact Person: Giovanni De Santi	**E-mail:** jrc-ie-info@ec.europa.eu

ABOUT

The Institute for Energy provides scientific and technical support to different stages of European policy-making in the energy area, on issues related to environmental protection, safety and security of the citizens, and sustainable development. The Institute provides scientific and technological contributions where a European perspective and independence of commercial and national interests are essential.

To implement its mission, IE has identified three main research themes/networks with the following objectives:

- **Nuclear Activities:** To develop, provide and disseminate S&T knowledge in selected safety issues in support of EU policies and Commission Services on nuclear safety.
- **Non-Nuclear Activities:** To support the EU policy on the security of energy supply, with special emphasis on performance in terms of efficiency, safety, environmental compliance, and on hydrogen.
- **Nuclear Medicine** As a spin-off of the nuclear energy and safety related research projects, the Institute has built up expertise in the area of nuclear medicine, where the objective is: To support the EU public health policies through the development of high quality and safe medical applications of nuclear technologies and methodologies used for diagnosis and treatment.

COOPERATION

These networks involve national R&D institutions, universities, international normative and standardisation organisations, regulatory bodies and European industries. Institute (JRC IE) acts as a gateway for Commission services to the world of energy-related science and technology.
According to its Mission the Institute provides support to EU policies. This takes place both through direct support to policy Directorates General and supporting community policies related to Energy. An example of the first is the Institute's strong contribution to safety of Eastern nuclear reactors through DG AIDCO. Examples of the latter include the support to DG ENV for the revision of the Waste Framework Directive, to DG RTD in the formulation of the Commission's position in signing the US-led international action "Carbon Sequestration Leadership Forum", and to DG TREN in the follow-up of the bioenergy activities of the International Energy Agency.

FACILITIES AND SERVICES FOR RESEARCHERS

The Institute possesses internationally recognised state-of-the-art laboratories and facilities which form the basis for the generation of scientific output, thus providing reference results to the Commission services and contributing to scientific knowledge and understanding.

All activities involve networking in line with the Commission's initiative for a European Research Area (ERA).

Another important Institute activity is training of EU New Member State and Candidate Country scientists, which is achieved by hosting and providing access to Institute facilities to grant holders, visiting scientists, or seconded national experts.

3.5 ENVIRONMENTAL SCIENCES

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Austria / European / Distributed
LTER = Long-term Ecosystem Research; LTSER = Long-term socio-ecological research	
Institution responsible for infrastructure: Federal Environment Agency Austria (Umweltbundesamt) Ecosystem Monitoring	
Home page: http://www.umweltbundesamt.at/en/	
Full Address: Spittelauer Lände 5 1090 Wien Austria	**Telephone:** +43 1 31304 3410
Name of the Contact Person: Michael Mirtl	**E-mail:** michael.mirtl@umweltbundesamt.at

ABOUT
Within the scope of environmental control, the Umweltbundesamt records, analyses and evaluates data on the state and development of the environment in all areas. The main task of Umweltbaudesamt is primarily to support the environmental policy of the federal government. The Umweltbundesamt is a sought-after partner of international organisations such as the EU Commission, the European Environment Agency, UNEP, OECD and ECE. They are publishing the results of its work in its studies and reports. In addition to our printed publications, all our publications can be found online, and you may also conduct database queries online for information on a wide range of subjects including air, water or contaminated sites.

COOPERATION
Their cooperation activities are aiming at the development of integrated and harmonised networks of multi-functional long-term ecosystem research platforms to support interdisciplinary investigation of long term processes related to the different components of biodiversity at relevant spatial and temporal scales in Europe. The cooperation is possible through global network ILTER. Their main partners of cooperation from SEE region are Bulgaria, Romania and Serbia. Other WBC are invited to join ILTER network in order to complete distributed European research infrastructure.

FACILITIES AND SERVICES FOR RESEARCHERS
Federal Environmental Agency in Austria is providing access to the following infrastructures and services: measuring towers; gouging weirs; permanent measuring plots; meteorological stations with exhaustive equipment (cloud deposition, UV radiation); radio transceiver installation; detailed DEM (6000 geodetically surveyed points); object-relational information system (central ontology mapping); consistent time and space referencing across about 100 projects and their data that can be obtained through their databases.

Scientific field: Environmental Sciences	**Country of Infrastructure:** Denmark / Global / Single-sited
DHI Shallow Water Basin and DHI Ocean Basin	
Institution responsible for infrastructure: DHI Collaborating Centre	
Home page: http://www.dhigroup.com/	
Full Address: Agern Allé 5 DK-2970 Hoersholm Denmark	**Telephone:** +45 45 16 92 00
Name of the Contact Person: Jens Kirkegaard	**E-mail:** jkj@dhigroup.com

ABOUT

The DHI Shallow Water Basin and DHI Ocean Basin facilities are ideal for studies of wave-structure interaction with controlled wave impact. The research and studies conducted are particularly relevant for the offshore industry and marine engineering. European enterprises are key suppliers within these disciplines on the world market. DHI is actively promoting realistic modelling of waves in the offshore and coastal environment and the facility was a pioneer in deterministic wave generation technology. The facility serves as reference for development of numerical tools for wave simulation applications in marine engineering. This combination of physical and numerical methods at DHI is recognised by the industry.

COOPERATION

Their main cooperation partners are coming from Germany, Portugal, UK and Belgium. They developed cooperation networks also with industries that shown interest in access to the facilities under large scale Infrastructure programs. and are customers of their commercial studies. New users can access research infrastructures under the HYDRALAB III rules that are published on the website: http://www.hydralab.eu/access_rules.htm. DHI is part of HYDRALAB-III initiative that started as an Integrated Infrastructure Initiative (I3), i.e. an integrated programme of Networking activities, Transnational Access to 22 unique and rare facilities and two Joint Research Activities. International cooperation at DHI is mainly done through research projects that are funded through FP6 and FP7 research support programmes. Annualy from 5 to 15 external users are coming to collaborate with DHI. Research infrastructure is also opened for partnership with institutions with similar research infrastructure from WBC.

FACILITIES AND SERVICES FOR RESEARCHERS

Facilities available for researchers: Multidirectional shallow water wave basin. 35m wide, 25m long, and maximum water depth of 0.8m Equipped with a 3D wavemaker with unique wave generating and wave absorbing characteristics. Conventional type 2D wavemakers can be mounted for secondary wave directions. In addition to the wave generation capabilities, steady current (through flow) and wind loading is available in this facility. Necessary basic peripherals such as instruments, amplifiers, and computers for wavemaker control and data logging are available.

Scientific field: Environmental sciences	**Country and Type of Infrastructure:** France / Global / Single-sited
IFREMER – Major facilities for oceanography	
Institution responsible for infrastructure: Ifremer - French Research Institute for Exploitation of the Sea	
Home page: http://www.ifremer.fr/anglais/	
Full Address: BP 79 29217 Plouzane France	**Telephone:** +33 298224154
Name of the Contact Person: Jack Pichon	**E-mail:** jpichon@ifremer.fr

ABOUT
Through studies and expert assessments, Ifremer contributes to knowledge about the oceans and its resources, the monitoring of marine and coastal zones and the sustainable development of maritime activities. For these goals, it designs and operates observational, experimental and monitoring tools and facilities. IFREMER manages the French ocean research fleet for the whole scientific community. Main missions of IFREMER is to deal with the scientific examination as climate change effects, marine biodiversity, pollutions prevention, seafood quality, etc. The results are scientific knowledge and technological innovations, but also ocean observation and exploration systems. Development management and open access of large research infrastructures – fleet, calculation means, data centres, experimental facilities – which are made available to the whole National and European scientific community, as well as to private partners.

COOPERATION
IFREMER has contacts with partner organisations in many countries. Cooperation focuses on international research programmes with key countries (USA, Canada, Japan, China, Australia, Russia) and on a Mediterranean policy associating Europe with the South coast of the Mediterranean sea. Research cooperation is usually done through exploitation of EC-funded research projects and working on joint research projects, participation in international research programmes that are extending beyond Europe and through bilateral cooperation agreements. Numerous EU funded European projects use the IFREMER fleet of ships and underwater vehicles (most important presently HERMES concerning European margins). This fleet is also used in cooperation with oil industry (e.g.Total). IFREMER is also inviting new groups of future cooperation. They are in particular interested for experts from the area of ocean energy. Infrastructure at IFREMER is opened also for researchers from Western Balkan countries.

FACILITIES AND SERVICES FOR RESEARCHERS
IFREMER manages the major part of the French oceanographic fleet for the benefit of the whole of the scientific community. This activity is organized in two programs: (1) the construction and development of the vessels, vehicles, and oceanographic equipment (scientific vessels, underwater vehicles, equipment and the embarked software) and (2) centres of data (objective is to manage the data collected in order to make them available and to develop them, and to give access to the long time series under the shape of products of synthesis. Centres of data make also accessible software and information systems).

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Germany / Global / Single-sited
Technical research infrastructures for studying biodiversity, morphology, molecular genetics, ecology, geosciences	
Institution responsible for infrastructure: Humboldt-Universität zu Berlin, Museum fur Naturkunde	
Home page: http://www.museum.hu-berlin.de/index.html	
Full Address: Invalidenstrasse 43 10115 Berlin Germany	**Telephone:** +49 30 20938690
Name of the Contact Person: Andreas Kunkel	**E-mail:** Andreas.Kunkel@museum.hu-berlin.de

ABOUT

The Museum für Naturkunde hosts over 30 million objects and it houses one of the most important natural history collections in the world. The scientific collections include mineralogical, geological, palaeontological and zoological specimens. They are the raw material for the research carried. Research collections are ranked among the most important world-wide and offer excellent access to taxonomic primary information. Apart from its traditional role in taxonomy and the acquisition, preservation, and investigation of scientific collections of specimens, the Museum für Naturkunde early recognized the new role in development and exploration of data collections and thus build a powerful IT infrastructure. Today, the Museum für Naturkunde sustains a department of Biodiversity Informatics which contributes significantly to many national, European and global initiatives aiming at providing access to primary biodiversity information.

COOPERATION

Main partners of scientific cooperation are coming from the European Union. But their network of cooperation is extending also to Indonesia, Kenya etc. Cooperation with private sector is mainly based on funding of projects of public outreach and education. New collaborators are accepted and also researchers from WBC are welcome to participate in joint initiatives. International cooperation is possible on the basis of a) participation in EU programmes b) participation in international projects c) bilateral contracts with foreign universities d) joint research projects with partners in other countries. They are in particular targeting researchers from the following research fields: biological evolution, biodiversity and biodiversity changes in time and space, ecology, meteorites and meteorite impacts, applied aspects of the topics mentioned afore, history of science.

FACILITIES AND SERVICES FOR RESEARCHERS

Museum für Naturkunde is offering science modern equipped research facilities: DNA-Sequencer, 3-D reconstruction technologies, facilities, facilities for microscopic anatomy, embryology, and histology, scanning electron microscope with kryo-transfer equipment, analytical transmission electron microscope, electron microprobe, Raman microscope spectrometer, X-ray diffraction instruments etc.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Italy / Global / Distributed
EARLINET-ASOS (European Aerosol Research Lidar Network - Advanced Sustainable Observation System)	
Institution responsible for infrastructure: Consiglio Nazionale delle Ricerche - Istituto di Metodologie per l\'Analisi Ambientale	
Home page: http://www.earlinet-asos.org/	
Full Address: C.da S. Loja 85050 Tito Scalo (Potenza) Italy	**Telephone:** +39 0971427265
Name of the Contact Person: Gelsomina Pappalardo	**E-mail:** pappalardo@imaa.cnr.it

ABOUT

EARLINET-ASOS is European Aerosol Research Lidar Network specialized in Advanced Sustainable Observation System. EARLINET is an Integrated Activity implemented as Coordination Action within the EC Sixth Framework Programme. EARLINET goal is to build a quantitative comprehensive statistical database of the horizontal, vertical, and temporal distribution of aerosols on a continental scale. The main objective of this activity is to provide effective means to improve the EARLINET infrastructure through a comprehensive and organized flow of information both between the participants and between the participants and the external scientific and general community.

COOPERATION

Partners on EARLINET-ASOS are coming from Germany, Greece, Spain, Netherlands, Belarus, Norway, Switzerland, Poland, Bulgaria, France and Serbia. External users can use the EARLINET-ASOS data and expertise of the EARLINET-ASOS consortium for developing lidar technologies. Choice of EARLINET-ASOS is do not involve a particular private company in the consortium but to offer to all the existing companies knowledge and expertise. Private companies involved in lidar technologies are users of their knowledge and there is a strong cooperation in progress. EARLINET is using bilateral agreement (e.g. NASA, ESA) to support international research cooperation. There is also cooperation with other EC projects and ESA programmes. New institutions are also invited to join the consortium also institutions from WBC. Network is mostly targeting research institutions that are interested into developing lidar technologies for the study of atmospheric aerosols. Researchers are working at individual stations of the network. Senior scientists can use both laboratories and data for specific experiments or statistical studies. About 100 institutions access research facilities inside EARLINET-ASOS per year. This number include also large agencies such as ESA and NASA.

FACILITIES AND SERVICES FOR RESEARCHERS

The objectives of the network are reached by operating a network of presently 15 stations distributed over most of Europe, using advanced quantitative laser remote sensing technologies that directly measure the vertical distribution of aerosols, supported by a suite of more conventional observations. Special care is taken to assure data quality, including inter-comparisons at instrument and evaluation levels. EARLINET-ASOS is building a common database that is automatically and continuously updated through a software system which automatically collects the data products provided by the individual stations and makes them available to the community. In addition to the continuously updated quality-controlled lidar data, the database is including auxiliary data allowing searching for data meeting specified criteria. Database is accessible through a web-based interface that provides easy access to data products for all internal and external users.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Italy / Global / Distributed
EMSO - European Multidisciplinary SeaFloor Observatory	
Institution responsible for infrastructure: Istituto Italiano di Geofisica e Vulcanologia (IIGV)	
Home page: http://www.esonet-emso.org/emso/index.htm	
Full Address: Via di vigna murata 143 Rome Italy	**Telephone:** +39 0651860428
Name of the Contact Person: Paolo Favali	**E-mail:** emso-pp@ingv.it

ABOUT

The research facility EMSO deep sea-floor observatories are deployed on specific sites offshore European coastline to allow continuous monitoring for environment and security. EMSO in currently in the preparatory phase and it is not fully operational yet. The basic scientific objective of EMSO will be to make real-time long-term monitoring of environmental processes in the geosphere, biosphere and hydrosphere of European seas. Major advances in understanding of environmental processes require to identify temporal evolution and cyclic changes and to capture episodic events relative to oceanic circulation, deep-sea processes and ecosystems evolution. Long-term monitoring will allow the capture of episodic events such as earthquakes, submarine slides, tsunamis, benthic storms, bio-diversity changes, pollution and other events that cannot be detected and monitored by conventional oceanographic sea-going campaigns. Cabled sea-floor observatories are foreseen and these units will collect long time series of simultaneous data relative to: seismology, geodesy, sea level, fluid and gas vents, physical oceanography, biodiversity imaging at different scales.

COOPERATION

The EMSO development is based on synergic collaboration between the academic community and industry for the development of technology, both presently working within the European Seas Observatory Network of Excellence (ESONET). A future network of observatories around Europe will lead to unprecedented scientific advances in knowledge of submarine geology, the ecosystem of the seas and the environment around Europe. Cooperation with industry will be tightly incorporated with research activities. Oil industry already provided a positive interest in the activities of EMSO. EMSO is envisioned to become a research infrastructure with scientific impact on a global level. Scientists from different disciplines (geology, geophysics, marine biology, oceanography) could be interest in the research infrastructure. This approach will contribute to further extend the network. Research institutions from WBC are much welcome to participate in common research projects of EMSO.

FACILITIES AND SERVICES FOR RESEARCHERS

IIGV offers researchers and research groups a support to processing of the measurements and among the equipment very high resolution, big size, flat bed scanners will be available, large databases with digital storage facility. Implementation of EMSO is based on evolution of existing systems by connecting previously autonomous systems, and providing power and long-term real-time data capability, integrating in the wider system of mobile and re-locatable seafloor lander platforms. Development of seafloor observatories with multi-disciplinary capability (geophysical, including seismological, oceanographic and environmental) has been pioneered under the EC GEOSTAR project.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Italy / European / Distributed
Transport and Air Quality Research Facilities (Vehicle Emission and Air Pollution laboratories), Climate Change Unit, Greenhous Gas Flux Towers	
Institution responsible for infrastructure: JRC IES – Institute for Environment and Sustainability	
Home page: http://ies.jrc.ec.europa.eu/	
Full Address: Via E. Fermi 2749 21027 Ispra (VA) Italy	**Telephone:** +39 332 786660
Name of the Contact Person: Leen Hordijk	**E-mail:** leendert.hordijk@ec.europa.eu

ABOUT

The activities of the Institute for Environment and Sustainability (IES) are outlined in the Multiannual Framework Programme of the Joint Research Centre (JRC) which is funded through the specific programme of the JRC within the FP7 of the European Union. Besides being the European Commission's main research-based policy support provider in the field of environment and sustainability, IES is also one of the leading environmental research institutes in Europe. Together with its partners in the Member States, IES is at the forefront in advancing environmental knowledge, having a considerable record of cutting-edge research achievements.

The IES is at the forefront of developing the infrastructure for Spatial Information in Europe (INSPIRE) which will revolutionise the way we use and exchange geographic information. INSPIRE will streamline reporting obligations and avoid generation of data that is already existing. One of the key challenges in Europe is how to ensure sustainable cities and transport systems. The IES monitors urban sprawl and develops concepts for greener transport. In particular, the Institute supports the development of vehicle emissions standards, both in Europe and globally, and assesses the options for alternative fuels and power trains with respect to their contribution to climate change. The IES has a major task in fostering sustainable production and consumption by co-ordinating the "European Platform for Life Cycle Assessment" and developing relevant databases. Close collaboration with major players from industry ensures a wide acceptance of life cycle thinking. The Institute serves also as a reference in the field of renewable energies, in particular photovoltaics. On the one hand, the IES hosts the Scientific – Technical Reference System for Renewable Energy and End-use Efficiency, on the other hand it provides certified reference for solar cells through the European Solar Test Installations.

COOPERATION

The pull of the European Union has helped to transform the countries of Central and Eastern Europe into modern, well-functioning democracies that encourage peace, stability, prosperity, human rights and the rule of law across Europe. More recently, the process has inspired far-reaching reforms in the Western Balkans, Turkey and the Ukraine.

The Joint Research Centre (JRC) is playing an important role in providing scientific and technological support to the enlargement process by actively supporting the Candidate Countries towards their accession to the Union while promoting the integration of the new Member States which joined the EU in 2004 and 2007.

The JRC Enlargement and Integration Action aims to accelerate the uptake of scientific and technical aspects of European legislation in these countries through a range of measures that includes

participation in workshops, specific training courses and collaboration in projects within the JRC work programme that reflect priority enlargement needs.
Since 2000, the number of experts from the new Member States and Candidate Countries hosted by the IES has risen constantly from 5 persons in 2000 to more than 60 in 2006. Since the launch of the Call for Visiting Scientists and Detached National Experts issued by the JRC, the IES has consistently attracted the highest number of applicants throughout all the JRC Institutes. In 2006, the IES organised more than 20 workshops and advanced training courses under its Enlargement and Integration Action involving around 600 participants.
In addition, the IES has been recently developing and strengthening co-operation with scientific organisations from potential Candidate Countries of the Western Balkans with the objective of anticipating and addressing pre-accession priority needs. Furthermore, there is an increasing collaboration with other countries in the European Union Neighbourhood, e.g. the Russian Federation and Northern Africa.
Examples of activities carried out by the IES to support the integration and enlargement process include:

- Ecosystem Health Assessment of the Black Sea and Baltic Sea;
- Guidance on the implementation of the Water Framework Directive in the new Member States;
- Flood forecasting in the Danube River Basin;
- Support to soil protection policies in South-Eastern Europe;
- Assessment of mining waste in the new Member States;
- Air quality and population exposure in the new Member States;
- Integration of European monitoring networks for environmental radioactivity;
- National Information Days on the Infrastructure for Spatial Information in Europe (INSPIRE);
- Assessment of sustainable energy resources in the new Member States, Candidate and Neighbourhood Countries.

Further details of the JRC enlargement and integration programme can be found at http://www.jrc.ec.europa.eu/enlargement/ .

FACILITIES AND SERVICES FOR RESEARCHERS
In order to deliver high-class research and targeted policy support, the JRC's Institute for Environment and Sustainability (IES) hosts unique research facilities. The research activities of the IES are presently divided into 23 different Research Actions distributed amongst the Scientific Units. Among the most prominent ones are the following:
European Solar Test Installation (ESTI)
The European Solar Test Installation (ESTI) is a European centre of excellence in the field of solar energy, and specifically in photovoltaics, the direct conversion of sunlight into electrical energy. The primary objective is to provide the technological basis for a sound and credible assessment of all aspects of photovoltaic energy, assisting both policymakers and industry, but also standards organizations and national agencies. In the past 20 years ESTI developed into one of the world's leading laboratories for photovoltaic reference measurements. In 2004, ESTI became the world's first laboratory obtaining the accreditation for the calibration of photovoltaic devices.
Vehicle Emissions Laboratory (VELA)
The Vehicle Emissions Laboratory (VELA) is equipped with the most advanced instrumentation, allowing the physical, chemical and toxico-logical characterization of the emissions from all types of transport fleet. Tests are conducted on engines, from small hand-held to large heavy-duty engines, and on full vehicles such as mopeds, motorbikes, passenger cars, 4WD cars and small trucks. In addition, a new truck and bus roller bench will allow simulating the on-road emissions of heavy-duty vehicles. The research lines of VELA cover all environmental aspects related to advanced technologies, new engines and after-treatment systems, on-board diagnostics, new or reformulated fuels, bio-fuels, gaseous fuels and technology foresight.
European Reference Laboratory for Air Pollution (ERLAP)
The need to refer to an independent laboratory on the development and the correct implementation of Air Quality Directives in Europe led to the creation of the European Reference Laboratory for Air Pollution (ERLAP), based at the IES. The highly specialized laboratory works on the harmonisation and

standardization of measurement techniques, carries out measurement campaigns with mobile laboratories in sites of particular interest, analyses the chemical composition of toxic and carcinogenic compounds in air pollution and develops reference and equivalent measurement methods.

EMEP super-site at the JRC Ispra

The IES runs one of only two stations based on Italian territory in the framework of the Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP). The concentrations of carbon monoxide (CO), ozone (O3) and secondary aerosol precursors ($S0_2$, NOx) are continuously monitored. Daily aerosol samples are collected to determine PM10 and PM2.5 concentrations and chemical compositions. The aerosol measurement programme is being enhanced turning the JRC-EMEP station into a super-station where all the parameters needed to understand the interplay of ozone, aerosol and greenhouse gases are measured.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Lithuania / National / Single-sited
Research vessel "Vejas"	
Institution responsible for infrastructure: Center of Marine Research	
Home page: http://www.jtc.lt	
Full Address: Taikos av. 26 LT-91449 Klapeida Lithuania	**Telephone:** +370 46 410450
Name of the Contact Person: Nijole Remeikaite	**E-mail:** jtc@jtc.am.lt

ABOUT

The main tasks of Center of Marine Research is focused on the collection, analysis and evaluation of data and information about natural processes in the Baltic Sea, the impact of anthropogenic activity on the state of the environment and living organisms, implementation of the environmental monitoring of surface fresh water and air quality in the western part of Lithuania, obtaining and storage of the operative information from coastal hydro-meteorological stations and monitoring buoys, performance of special research into the impact of harbours dredging, hydrotechnical construction and soil dumping into the sea on the environment. Laboratory at Center of Marine Research controls the pollution sources caused by industrial objects in the western region of Lithuania and it is responsible for the implementation of EC Water Framework Directive in the coastal and transitional waters.

COOPERATION

Center of Marine Research already collaborates with similar research infrastructures located in Denmark, Latvia, Estonia, Poland, Finland, Sweden and other countries. They are offering further opportunities to collaborate with same or new similar or related research infrastructures. In particular they are interested to invite new researchers that are covering the scientific fields of chemistry. Annually 2 to 3 external users are invited to work on their research vessel.

FACILITIES AND SERVICES FOR RESEARCHERS

The main aim of this infrastructure is to provide the Lithuanian scientific community with the marine data it requires in the fields of geology, environment monitoring, geophysics, physical or biological oceanography and fishery research. Fixed equipment is installed on board vessels »Vejas«.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Netherlands / European / Distributed
Observatories and Research Facilities for European Seismology	
Institution responsible for infrastructure: ORFEUS - Observatories and Research Facilities for European Seismology	
Home page: http://www.orfeus-eu.org	
Full Address: Wilhelminalaan 10 P.O. Box 201 3730 AE De Bilt	**Telephone:** +31 30 2206780
Name of the Contact Person: Torild van Eck	**E-mail:** vaneck@knmi.nl

ABOUT

ORFEUS (Observatories and Research Facilities for European Seismology), founded in 1987, is the non-profit foundation that aims at co-ordinating and promoting digital, broadband (BB) seismology in the European-Mediterranean area. ORFEUS is funded and governed by corporate founders from 13 European countries. ORFEUS currently coordinates archiving of and access to earthquake waveform data from seismic stations in the European Mediterranean region through a European Integrated Waveform Data Archive in Europe. ORFEUS also coordinates the EC Infrastructure I3 project NERIES (Network of Research Infrastructures for European Seismology).

COOPERATION

In general, all institutes/organisations interested in seismology can become an ORFEUS participant. An institute/organisation can participate in ORFEUS if there is a corporate founder in its country. The following countries are presently corporate founders: Austria, Belgium, Denmark, France, Germany, Greece, Italy, Norway, Netherlands, Portugal, Slovenia, Spain, Switzerland, United Kingdom. If particular country is not included, the ORFEUS board of Directors may decide upon participation. The annual fee for an institute/organisation participant is EUR 140. ORFEUS data contribution is organized through agreements with the observatories. ORFEUS has established contacts with all seismological observatories located in the Western Balkan region. ORFEUS has also good scientific collaborations, established mainly through several of our corporate founders and participants who have specific collaborative projects with individual WBC. Future plans of ORFEUS is to include WBC into their research infrastructure developments. This will have a significant impact on earthquake research in their region.

FACILITIES AND SERVICES FOR RESEARCHERS

The Orfeus Data Center (ODC) provides access to high-quality seismological broad-band waveform data from stations and observatories in the European-Mediterranean region. The data is provided by observatories and research institutes in the European-Mediterranean region, since 2002 mostly in (near) real-time. At the ODC they provide a secure archive of the data and perform a quality control on the data. ORFEUS offers both data (SEED, GSE and SAC) and metadata (instrument responses) through different protocols (FTP, WWW, E-mail). Recent waveform data is offered both continuously and event oriented. This data can be downloaded directly from FTP. However, special requests can be submitted as well.

Scientific field: Enviromental Sciences	**Country and Type of Infrastructure:** Netherlands / European / Distributed
Network of Research Infrastructures for European Seismology	
Institution responsible for infrastructure: NERIES - Network of Research Infrastructures for European Seismology	
Home page: http://www.neries-eu.org	
Full Address: Wilhelminalaan 10 P.O. Box 201 3730 AE De Bilt	**Telephone:** +31 30 2206780
Name of the Contact Person: Torild van Eck	**E-mail:** vaneck@knmi.nl

ABOUT

NERIES is an Integrated Infrastructure Initiative (I3) project in the FP6 of the European Commission, aiming at networking the European seismic networks, improving access to data, allowing access to specific seismic infrastructures and pursuing targeted research developing the next generation of tools for improved service and data analysis. The core of the NERIES project organization lies with the Observatories and Research Facilities for European Seismology (ORFEUS) and the European Mediterranean Seismological Centre (EMSC). Both organizations are working under the auspices of the European Seismological Commission. The NERIES Project Office is situated at the Royal Netherlands Meteorological Institute.

COOPERATION

The NERIES consortium consists of 25 participants (European universities and research centres) executing networking activities, joint research activities, and activities that are dealing with the trans-national access. NERIES is planned as a long-term sustainable project that is supported through European organisations. New institutions are invited to join their network. Target groups for the cooperation are institutes and public bodies working with earthquake data, either production and/or research, also from WBC. Future plan of NERIES is to jointly develop the next generation earthquake data access and exchange tool for whole Europe. Currently about 15 external users are collaborating inside NERIES. They are expecting to rise this number as they are planning to expand their research initiatives towards EMSC and ORFEUS. WBC countries are prone to earthquake hazards and with cooperation inside NERIES would benefit from their research infrastructure.

FACILITIES AND SERVICES FOR RESEARCHERS

NERIES is virtual network that integrates seismology observatories into the global earthquake monitoring network. By this they improve real-time data availability. All research facilities provided by NERIES network are: (1) Swiss Digital Seismic Network (SDSN) of seismometers. It is the most homogeneous and dense regional broadband network in the Euro-Med region; (2) transnational access to the French seismological part of the Département Analyse, Surveillance, Environment (DASE) facilities, that is a world leader in verification seismology; (3) transnational access to the Italian SISMOS, the only European facility dedicated to the preservation and distribution of historical valuable seismological material; (4) transnational access to Norwegian NORSAR, the premier seismological array in Europe and a world-leader in array seismology; (4) access to the new Austrian underground Conrad Obersvatory (COBS), a well-equipped, ultra-quiet facility for testing and calibration of seismic instrumentation and acquisition electronics.

Scientific field: Enviromental Sciences	**Country and Type of Infrastructure:** Netherlands / European / Single-sited
LifeWatch - Research Infrastructures Network for Research in Biodiversity	
Institution responsible for infrastructure: University of Amsterdam	
Home page: Mauritskade 61 1092 AD, Amsterdam Netherlands	
Full Address: http://www.lifewatch.eu/	**Telephone:** +31.20 5256498
Name of the Contact Person: Wouter Los	**E-mail:** synthesys@nhm.ac.uk

ABOUT

The research infrastructure LifeWatch is currently in the preparatory phase. LifeWatch main goal is to construct and bring into operation the facilities, hardware, software and governance structures for all aspects of biodiversity research. Mission of LifeWatch is to provide researchers and wider community following services: (1) to operate as a single portal for pure and applied researchers, policy makers, industries and the public at large, (2) enable new scientific practices and inspire a new generation of scientists, (3) structure the scientific community with new opportunities for large scale projects and data capture priorities, (4) offer knowledge-based decision-support for the rational management of our ecosystems on land and in the seas, and to policy makers and the public, (5) innovate biodiversity based industry towards sustainable practices, (6) educate to catalyze the discovery and innovation process, (6) Provide on-line and off-line user support. The European Strategy Forum on Research Infrastructures (ESFRI) identified LifeWatch as an essential facility to be supported by European countries.

COOPERATION

The implementation of LifeWatch will be only possible through international cooperation. The sheer size of the infrastructure with respect to costs, functionalities and user communities requires large-scale collaboration. The European Strategy Forum on Research Infrastructures (ESFRI) identified LifeWatch as an essential facility to be supported by European countries. Currently 19 European countries expressed their interest in LifeWatch. LifeWatch cooperates with other international infrastructures to add value to its services. Such cooperation will include the connection to a variety of data repositories, or providing analysis of ground-level data with Earth-observation data from satellites. At the global level the LifeWatch partners are already interacting with the relevant knowledge centres to work together on targeted long-term strategies. Overall 2500 research days are spent by external users of their facilities. LifeWatch is in particular opened for selected (applied) researchers and other professionals from all over the Europe (also WBC). They are in particular targeting the researchers from the field of system biology. Subject of study must be known in advance and be approved. For EU citizens with innovative plans exists limited financial support.

FACILITIES AND SERVICES FOR RESEARCHERS

It will consist of: facilities for data generation and processing; a network of observatories; facilities for data integration and interoperability; virtual laboratories offering a range of analytical and modeling

tools; and a Service Centre providing special services for scientific and policy users, including training and research opportunities for young scientists. The infrastructure has the support of all major European biodiversity research networks.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Norway / Global / Single-sited
Trondheim Marine Systems RI	
Institution responsible for infrastructure: Norwegian University of Science and Technology - NTNU Marine Systems	
Home page: http://www.ntnu.no/trondheim-marine-RI/	
Full Address: Henry Thingstadsvei 12 7025 Trondheim Norway	**Telephone:** +47 73591596
Name of the Contact Person: Alexandra Neyts	**E-mail:** alexandra.neyts@bio.ntnu.no

ABOUT

The goal of the Trondheim Marine Systems Research Infrastructure is to advance the development of marine measurement, monitoring and modelling related to the man-sea interactions. The facility provides a complex array of facilities and sophisticated instrumentation, both within technology and marine sciences. This gives scientists the opportunity to conduct interdisciplinary research at the boundary of the marine environment and advanced instrument development. The infrastructure enables researchers to validate their results, obtained in small-scale experimental facilities or through numerical modelling, in large-scale installations and furthermore in the natural environment, thereby increasing the physical completeness of the experiment.

COOPERATION

Access to the infrastructure facilities is offered through announcement of the possibilities at seminars, conferences, through communication with potential users at research institutes and private companies, and through information dissemination on the web site. An extensive announcements campaign was set up to attract new international users and existing networks were used to inform about the existing possibilities. An independent user selection panel along with an infrastructure representative evaluated the feasibility of the experiments and the scientific quality of the submitted proposals. The applications receiving a positive evaluation were then offered transnational access to the facilities. Priority was given to first-time users. Main cooperation partners are coming from Sweden, Spain and UK. Several facilities and the NTNU are frequently used also by the partners from the industry. New external users/researchers from the field of marine sciences (including WBC scientists) are welcome to participate in new projects, mainly through participating in joint EU projects and programmes. NTNU is seeking collaboration with other marine research infrastructures in WBC to jointly address important global issues in a different marine environment. Annually 40 researchers are working at their research institution.

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FACILITIES AND SERVICES FOR RESEARCHERS

Highlights of the Trondheim Marine Systems research infrastructure: Ocean environment basin for the testing of platforms and mobile structures, and for studying hydrodynamic processes; Towing tank to test ship performance and wave behaviour; Coriolis rotating basin for studying physical processes affected by the earth rotation; Marine cybernetics laboratory for testing of ships, rigs, propulsion systems; Outdoor seawater basin for instrumentation testing, sedimentation or bio-optical studies; Multifunctional research vessel; Field station.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Sweden / Global / Single-sited
Abisko Scientific Research Station	
Institution responsible for infrastructure: Royal Swedish Academy of Sciences	
Home page: http://www.ans.kiruna.se	
Full Address: Abisko Scientific Research Station SE 981 07 Abisko Sweden	**Telephone:** +46 98040071
Name of the Contact Person: Terry Callaghan	**E-mail:** ans@ans.kiruna.se

ABOUT

The Abisko Scientific Research Station, ANS, is an institution belonging to The Royal Swedish Academy of Sciences. The Station's mission is to provide Swedish and foreign visiting scientists with the opportunity of conducting scientific work based on the particular conditions of the subartic environment surrounding the Station and also to conduct such research with its own personnel. Investigations within many areas of biosciences and geosciences are carried out at the station. The emphasis of staff research is on plant ecology and meteorology. The main objectives of the ecological projects are to study the dynamics of plant populations and to identify the controlling factors at their latitudinal and altitudinal limits. The meteorological projects deal with recent climate changes in the region, and also with local variations of the microclimate in subalpine and alpine ecosystems. Much of the plant ecology research is based on experimental studies. The effects on plants caused by increased temperature, enhanced UV-B radiation and increased atmospheric CO2 content are being studied. The geo-science studies are focused on geomorphic processes and their variation during the Holocene.

COOPERATION

The station is open for any scientist, also for researchers from WBC, interested in carrying out research in the surroundings. The emphasis of staff research is on plant ecology, climate impacts, climatology and geo-science. Therefore excellent researchers with novel approaches to environmental science and ecology are welcome to cooperate with Abisko. The most frequent cooperation partners are coming from Denmark, Finland, Norway, Netherlands, UK, USA. There is about 700 visiting scientists each year at their facilities, spending about 10.000 research days. More than half are from countries other than Sweden. Each new applicant need to apply formally and cover their costs of accommodation and bench fees. A 4 year EU transnational access grant has been extremely successful in allowing new researchers (e.g. Eastern European nationals) to access the RI for the past 4 years. Electronic proposals are requested by April 1st each year. The Director and Deputy Director then review the proposals based on quality of science, feasibility, relevance to the mission of the Station, impacts on the environment and availability of space. Abisko offers possibilities from joint funding ventures (bilateral, multilateral, EU) to simply hosting an external project funded elsewhere to strengthen the international cooperation.

FACILITIES AND SERVICES FOR RESEARCHERS

The station consists of new or recently renovated buildings and is kept open throughout the year. The 37 workrooms and laboratories cover a total area of 1000 m², including for example, chemistry, radio- and geolaboratories, microscopy, drawing and computer rooms, an integral greenhouse, a darkroom and a growth room. Cold rooms (–30°C –5°C +5°C) and rooms with balances and drying ovens (for biological materials, soil samples etc.) are also available. Near the meteorological observatory, there are two experimental gardens, measuring approximately 5 by 10 m and 10 by 10 m. The laboratories contain general equipment, such as basic chemicals and instruments, as well as more specialized equipment, for example, for eco-physiological and meteorological research.

3.6 MATERIALS SCIENCES

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** France / European / Single-sited
ELYSE, Picosecond Pulse Radiolysis	
Institution responsible for infrastructure: Université Paris-Sud, ELYSE	
Home page: http://www.lcp.u-psud.fr	
Full Address: Laboratoire de Chimie Physique 91405 Orsay France	**Telephone:** +331 69 15 78 87
Name of the Contact Person: Mehran Mostafavi	**E-mail:** mehran.mostafavi@lcp.u-psud.fr

ABOUT

ELYSE, (University of Paris-Sud) is the only one picosecond pulse radiolysis research centre in Europe. It offers to European researchers from a wide range of scientific disciplines access to the new generation of a laser triggered accelerator delivering 5ps electron pulses. It provides transient observations in UV-visible and NIR in the range from ps to a few seconds with state-of-the art detection system (Pump-probe, Sreack camera, ultrafast digitizers). This program will strengthen European collaboration and help to maintain Europe in the forefront of researches in the field of ultrafast kinetics.160 experimental days are offered to access.

COOPERATION

Most frequent partner of scientific at ELYSE research infrastructure are partners coming from Italy (ISOF lab in Bologna) and Japan (Tokyo University). Several new partners from Russia and Ukraine are interested to use ELYSE facilities. ELYSE just recently opend their facilities to the external users. 20 weeks are dedicated for external national users and 2 weeks for external European users. External users are allowed to access the ELYSE facilities under signed agreement. Prior to working at the facilities users are obliged to send a one page project proposal to the head of facility. Scientific council at ELYSE is checking the feasibility of the proposal and deciding upon invitation. Their facilities still did not have any cooperational activities with Western Balkan countries, but they are also interested to future initiatives with WBC countries.

FACILITIES AND SERVICES FOR RESEARCHERS

The central instrument of ELYSE is a pulsed photogun that delivers 5ps electron pulses. The original conception of this new generation accelerator brings to a perfect synchronization between the picosecond laser used to extract the photoelectrons, and the hyperfrequence wave accelerating the electron bunches to their final energy. The performances, such as beam emittance, pulse duration, synchronization with a laser beam, compact machine and shielding volume …. are higher than those of instruments of previous conception. This opens new promising possibilities by using laser pulses for the transient measurements and also by combining ultrafast radiolysis and photolysis experiments.

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Germany / Global / Distributed
Fraunhofer Semiconductor laboratory equipment (processing, metrology and analytics)	
Institution responsible for infrastructure: Fraunhofer Institute of Integrated Systems and Device Technology (IISB)	
Home page: http://www.iisb.fraunhofer.de/de/homepage.htm	
Full Address: Schottkystrasse 10 91058 Erlangen Germany	**Telephone:** +49 91 31 7610
Name of the Contact Person: Anton Bauer	**E-mail:** anton.bauer@iisb.fraunhofer.de

ABOUT

The equipment pool enables complete processing and metrological evaluation of silicon wafers with a diameter of up to 150 mm, mostly for 200 mm, and partially for 300 mm. Also the cassette-to-cassette wafer handling meets the high standards required by the semiconductor industry. The IISB has the following equipment at its disposal: (1) Processing Equipment, (2) Metrology and Analytics, (3) Software and Computers facilities. Together with its industrial partners, the Fraunhofer Institute of Integrated Systems and Device Technology (IISB) is developing new equipment and processes for semiconductor manufacturing, as well as simulation tools to characterize the process steps involved in modern microelectronics manufacturing. As a center of competence for power electronics, IISB develops power electronic devices and systems - from discrete diodes up to complex prototypes for switch-mode power supplies, drives etc. The Institute employs a full-time staff of over 80. It was established in 1985 on the joint initiative of the Bavarian State and various industrial sponsors. IISB institute covers the following research fields: (1) Technology Simulation, (2) Semiconductor Manufacturing Equipment and Methods, (3) Technology, (4) Power Electronic Systems and (4) Crystal Growth

COOPERATION

Coordination and participation in several EC Projects EC networking with CEA-Leti, IMEC, Tyndell, CSEM Participation in European Center for Power Electronics (ECPE) Participation in space flight project MICAST Heading several national and international Working Groups Heading two Working Groups of the ITRS (International Technology Roadmap for Semiconductors) Member in a plenty of Program Committees of International Conferences.

FACILITIES AND SERVICES FOR RESEARCHERS

The entire equipment enables processes and metrological evaluation of silicon wafers with a diameter of up to 150 mm. Also the cassette-to-cassette wafer handling meets the high standards required by the semiconductor industry. A detailed list of the equipment can be found under: http://www.iisb.fraunhofer.de/en/profil/equipment.htm . IISB institute covers the following research fields: (1) Technology Simulation, (2) Semiconductor Manufacturing Equipment and Methods, (3) Technology, (4) Power Electronic Systems and (4) Crystal Growth.

Scientific field: Material Sciences	**Country and Type of Infrastructure:** Germany / European / Single-sited
ANKA – Synchrotron Facility	
Institution responsible for infrastructure: Forschungszentrum Karlsruhe GmbH**,** Institut für Synchrotronstrahlung (ISS)	
Home page: http://ankaweb.fzk.de/	
Full Address: Hermann-von-Helmholtz-Platz 1 D-76344 Eggenstein-Leopoldshafen Germany	**Telephone:** 2.3.1.1.1 +49 7247 82 6287
Name of the Contact Person: Tilo Baumbach	**E-mail:** tilo.baumbach@iss.fzk.de

ABOUT

ANKA is the synchrotron light source of the Forschungszentrum Karlsruhe, providing light from hard X-rays to the far-infrared for research and technology. ANKA focuses on specific fields of science and is operated as a user facility for the national and international scientific community, for the Helmholtz Association research programs and for industrial customers. The mission of ANKA is to serve as national and European user facility for research with synchrotron radiation in the specific science areas of Condensed Matter, Nano and Micro Technologies, Actinide Research and Environmental Research, and Synchrotron Technology and Instrumentation. This mission will be realized through the model of a synchrotron facility embedded in the rich scientific infrastructure provided by the institutes at the Forschungszentrum Karlsruhe, and strengthened by strategic links with excellent nearby universities, national institutes of the Max Planck Society and the Fraunhofer Society, cooperation with European research institutions and synchrotron facilities as well as through strategic collaborations with industrial partners.

COOPERATION

At present, the ANKA-Labs are initiatives of participating institutes and external collaboration research groups, and will be developed to form dedicated networks. These will integrate synchrotron methods, complementary techniques and the expertise of the participating partners, and will coordinate the associated resources in the respective research fields. ANKA invites all user groups to participate in these networks. Current most active partner in network is ESRF from Grenoble, France.
Further needs for cooperation: Install support structures for the exchange of scientists between synchrotron facilities. A European user community at ANKA is currently forming in actinide research and nano & micro technology, where the attractiveness of the facility will be enhanced through its planned dedicated application labs. Access channels for European users are provided via European Networks of Excellence such as ACTINET, via the EU I3 project IA-SFS, and in the future via the European Initiative GENNESYS.

FACILITIES FOR RESEARCH

With its unique advantage of being embedded in a large interdisciplinary research center, ANKA is providing essential services to the FZK research programs and to a broad external user community, and is also contributing to the development of future synchrotron technologies. ANKA already provides an indispensable analytical and technological basis for the centre's research projects within the HGF

programs. For example, the program NANOMIKRO is served by the lithography beamlines and the x-ray analytical beamlines. Examples on research in nanotechnology are nanostructured materials, hydrogen storage materials, study of self assembling processes. The program Condensed Matter investigates electronic correlations by the infrared stations and the soft x-ray beamline WERA. Synchrotron light produced by the ANKA 2.5 GeV electron accelerator is used for a wide range of analytical methods as well as for microfabrication techniques on currently 12 beamlines. The methods can be divided into the competence areas X-ray Spectroscopy, X-ray Diffraction & Imaging, Infrared Spectroscopy and X-ray Lithography.

Scientific field: Material Sciences	**Country and Type of Infrastructure:** Italy / European / Distributed
High Resolution Radar, Microwave facilities, Optical Systems for Characterization of objects and Surfaces, Pulsed Neutron facilities, Tank Measurement facilities, Stress Testing facilities	
Institution responsible for infrastructure: JRC IPSC – Institute for the Protection and Security of Citizens	
Home page: http://ipsc.jrc.ec.europa.eu/	
Full Address: Via E. Fermi 2749 21027 Ispra (VA) Italy	**Telephone:** +39 033278 9947
Name of the Contact Person: Stephen Lechner	**E-mail:** ipsc@jrc.it

ABOUT

The Institute for the Protection and Security of the Citizen (IPSC) is one of the seven institutes of the European Commission's Joint Research Centre (JRC). Located in Ispra, Italy, the Institute provides scientific and technological support to European Union policies in many different areas, including global stability and security, crises management, maritime and fisheries policies, monitoring of agricultural resources, compliance monitoring, protection of critical infrastructures and nuclear safeguards. Moreover, the Institute performs statistics and information analysis for the evaluation of the effectiveness of policies. IPSC's core competencies are in the field of engineering and information technologies, including satellite image processing and analysis, open source information analysis structural mechanics, risk assessment and nuclear safeguards.

COOPERATION

Besides institutional activities, the IPSC is involved in a range of competitive and technology transfer activities, which take the form of contract research work through partnership in shared-cost actions – under the EC Research Framework Programme, competitive support for the European Commission and third-party work.

Competitive projects under FP7 (2007-2013)

- E-FAST - Design Study of a European Facility for Advanced Seismic Testing
- GENESI-DR - Ground European Network for Earth Science Interoperations Digital Repositories
- OPERAMAR - An Interoperable Approach to European Union Maritime Security Management
- WALTER - Wireless Alliances for Testing Experiment and Research
- WIMAAS - Wide Maritime Area Airborne Surveillance

FACILITIES AND SERVICES FOR RESEARCHERS

The Institute for the Protection and Security of the Citizen hosts a number of unique experimental facilities.

- European Laboratory for Structural Assessment – ELSA
- European Microwave Signature Laboratory – EMSL
- Linear Synthetic Aperture high-resolution radar – LISA
- Optical Systems for the Characterization of Objects and Surfaces
- Performance Laboratory – PERLA
- Pulsed Neutron Interrogation Test Assembly - PUNITA
- Sealing and Identification Laboratory – SILab
- Tank Measurement Laboratory – TAME
- Test Facility for Humanitarian Demining Technology
- Thermal, Electro-Magnetic, Physical Equipment Stress Testing – TEMPEST

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Netherlands / Global / Single-sited
IR User Facility FELIX (Tunable Radiation Beams)	
Institution responsible for infrastructure: FOM - Institute for Plasma Physics Rijnhuizen	
Home page: http://www.rijnhuizen.nl/felix	
Full Address: Edisonbaan 14 3439 MN Nieuwegein Netherlands	**Telephone:** +31 306096999
Name of the Contact Person: Lex van der Meer	**E-mail:** meer@rijnh.nl

ABOUT

The research at the FOM-Institute for Plasma Physics Rijnhuizen focuses on Fusion physics, Generation and Utilization of THz radiation (GUTHz) and nanolayer Surface and Interface Physics (nSI). Rijnhuizen is the national home-base for fusion research and exploits the free-electron infrared laser FELIX/Felice, an international users facility. Also advanced multilayer optics for extreme ultraviolet radiation are developed for the computer chip industry. The primary application of the FELIX facility is to observe non-linear spectroscopic studies of gas-phase molecules and clusters as well as solids but other applications requiring a very bright source are equally appropriate.

COOPERATION

Users can be grouped into three different categories: **(1)** In-house user group on Molecular dynamics**; (2)** UK research programme (The United Kingdom maintains a permanent station at FELIX, directed and operated by two facility scientists. As a consequence of the FOM-EPSRC agreement users from the UK take more than 20% of the total available FELIX beam shifts.)**; (3)** External users (most frequent users of FELIX facilities are coming from Canada, France, Germany, Russia, UK and USA. Users from these countries are usually using 70% of the beamtime available at FELIX. This is app. 1500 hours that are typically used by external users. Access is granted on the basis of an evaluation of research proposals by an external committee. Access to the facilities is free of charge for all non-proprietary research. Researchers from EC and associated countries other than the Netherlands are eligible for support for travel and subsistence under the FP6 of the European Community, in the new Integrated Infrastructure Initiative (I3) "Integrated Activity on Synchrotron and Free Electron Laser Science (IA-SFS)". FOM still does not have any experiences with the cooperation with researchers from WBC, but their facilities are opened also for them.

FACILITIES AND SERVICES FOR RESEARCHERS

Two beamlines at **FELIX**, FEL1 and FEL2, provide continuously tunable radiation in the spectral range of 2500-40 cm^{-1} (4-250 □m), at peak powers ranging up to 100 MW in (sub)picosecond pulses, and is being used for scientific research in (bio-)medicine, (bio-)chemistry and (bio-)physics. Another important facility at FOM is **FELICE** stands for Free Electron Laser for Intra-Cavity Experiments. This project involves the construction of a third beam line which can be operated interleaved with one of the two existing beam lines at a maximum repetition rate of 10 Hz for each line and therefore is in fact doubling the amount of beam time available to the users. The purpose of FELICE is to provide significantly higher infrared energies for low-absorption, gas-phase experiments. The expected increase as compared to FELIX is a factor of up to fifty in the spectral range from 3 to 100 μm.

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Poland / Global / Distributed
High Pressure Physics Research Infrastructure (Cereal Breeding Cereal Biotechnology Cereal Quality Cereal Pathology Cereal Physology)	
Institution responsible for infrastructure: UNIPRESS - Institute of High Pressure Physics of the Polisy Academy of Sciences	
Home page: http://www.unipress.waw.pl/cms/	
Full Address: Sokolowska 29/37 01 142 Warszawa Poland	**Telephone:** +48 22 6328497
Name of the Contact Person: Bogdan Palosz	**E-mail:** palosz@unipress.waw.pl

ABOUT

The Institute of High Pressure Physics is dedicated to a development of high pressure techniques and methods for research and applications. The Institute developed from research in physics and most of the scientific staff are physicists. However, interdisciplinary research combining physics, chemistry and biology is strongly encouraged and the staff includes chemists, biologists, mathematicians, and materials scientists. Unique experimental facilities in various areas of high pressure research have attracted a number of scientists from abroad to conduct their own research.

COOPERATION

UNIPRESS centre offers to the international scientific community collaboration in high-pressure research. The visitors have at their disposal unique high-pressure equipment, in scientific environment with highly qualified staff. They accept visitors which are collaborators engaged in research on national and international research projects. There are between 50 and 100 visitors per year, about 10 of them staying longer than one month. Most frequent partners of scientific cooperation are coming from Canada, France, Germany, UK, Ukraine and USA. Some of the partners are also coming from the private sector. External users can enter UNIPRESS facilities within collaboration agreements which is usually based on previous personal contacts. Annually app 20 – 50 users are granted an access to the facilities. There were still no researchers coming from WBC, but the facility is opened also for researchers coming from Western Balkan countries.

FACILITIES AND SERVICES FOR RESEARCHERS

The Institute houses unique high pressure equipment for crystallization, sintering, hydroextrusion, and for characterization of physical properties: electrical, optical, mechanical. There are seven research laboratories dedicated to: (1) Semiconductor Research, (2) Crystallization, (3) Nanocrystalline Materials, (4) Biological Materials and Food Processing, (5) Superconductivity, (6) Hydroextrusion, and (7) High Pressure Equipment Laboratory.

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Switzerland / Global / Distributed
CSEM - Swiss Center for Electronics and Microtechnology	
Institution responsible for infrastructure: CSEM - Swiss Center for Electronics and Microtechnology	
Home page: http://www.csem.ch	
Full Address: Jaquet-Droz 1 2000 Neuchâtel Switzerland	**Telephone:** +41 327205347
Name of the Contact Person: André Perret	**E-mail:** andre.perret@csem.ch

ABOUT

CSEM, the Swiss Center for Electronics and Microtechnology, Inc., is a privately held research and development company active in: (1) Applied Research, (2) Product Development, (3) Prototype and Low-volume Production, (4) Technology Consulting. Its main fields of activity are micro- and nanotechnologies, microelectronics, systems engineering, microrobotics, photonics, information and communication technologies. In providing its high-tech know-how and technological expertise, CSEM strives to anticipate the future needs of different markets in terms of new technologies and offers its services to industrial customers. It also develops its own commercial activities, either together with existing companies or through the creation of spin-offs and start-up companies. CSEM actively contributes to developing Switzerland as a high-tech industrial location. In July 2007, a major of the Neuchâtel Observatory was integrated into CSEM to continue to develop space-related technologies.

COOPERATION

CSEM developed Strong partnership and networking with industrial sector. Main partners of their cooperation are: ABB, Alcatel, Bosch, ESA, HP, IBM, IMT, Logitech, Phonak, Sextant Tech., Sysmelec, Ascom, Agilent Technologies, Elmicron, ETA, EPFL, Fisba Optik, IEE, Leti, Maxon Motor, Rolex, Swatch, Uni etc. Together with industry partners they are specalised in developing and promote micro-nano technologies. Cooperation with external researchers is possible through bilateral agreements, cooperation contracts and participation through FP7 projects. CSEM is hosting WBC PhD students at their location who are using their facilities in research and educational purposes. CSEM is opened for new research initiatives coming from Western Balkan countries. CSEM's future plan is that together with other EU institutions will make business acquisition in Western Balkan countries.

FACILITIES AND SERVICES FOR RESEARCHERS

Heterogeneous Technology Unit (HTU) is planned in Neuchâtel for the development of heterogeneous micro-nanosystems. Technologies foreseen are polymer, glass, quarz structuring and forming and/or others; assembly and packaging and large scale integration. Si technology will be minimal. Managed by CSEM but shared with others like CEA-Leti, FhG or others. The vision is to create a unique centre of tech. competency in Switzerland to serve European industry and academic needs, to produce devices in small and medium series. The mission of the HTU is to share in one place a quite exhaustive list of non-Si technologies mainly for optical and bio applications. Realization will be executed in 2009. At the present time, a non exhaustive list on HTU technologies and tools to be made available will include: microsystem laboratory, polymer forming laboratory, infrastructure for

polymer (opto) electronics, hot embossing, injection moulding, screen printing, stamping, ink-jet printing, roll-to-roll equipments, different assembly equipments, different packaging equipments, optical, electrical characterizations. A special laboratory will be dedicated to the realization of product made with nanoparticles.

3.7 SOCIAL SCIENCES AND HUMANITIES

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Austria / Global / Single-sited
Phonogrammarchiv	
Institution responsible for infrastructure: Austrian Academy of Sciences	
Home page: http://www.pha.oeaw.ac.at/home_e.htm	
Full Address: Liebiggasse 5 1010 Vienna Austria	**Telephone:** +42 77 29601
Name of the Contact Person: Clemens Gütl	**E-mail:** Clemens.Guetl@oeaw.ac.at

ABOUT

The Phonogrammarchiv, an institute of the Austrian Academy of Sciences, is the oldest sound archive in the world. Austria's audiovisual research archive was established in 1899. Since September 2001 the activities of the Phonogrammarchiv also include the archiving and preservation of videographic research documents. Activities of the Phonogrammarchiv are: preserving, producing, collecting, accessioning and processing as well as making available research sound and video recordings by predominantly Austrian scholars and institutions, without disciplinary or regional restrictions. The Phonogrammarchiv also supports scientific field research by technical and methodological advice and the loan of adequate recording equipment. Over the past years the Phonogrammarchiv has specifically engaged in low cost models of digital audio archiving, the implementation of digitizing projects and the development of uncomprising linear video file archiving. European engagement concentrates on Eastern Europe (otherwise the engagement of the Phonogrammarchiv is international).

COOPERATION

Phonogrammarchiv is opened for international cooperation on different levels. Through bilateral and multilateral projects, joint participation in EU programmes like Network of Excellence on Digital Libraries (DELOS) or Training for Audiovisual Preservation in Europe (TAPE). Target groups for the cooperation are academies of sciences, universities, (digital) libraries and archives and qualified researchers. Typical users coming abroad to Phonogrammarchive are MA and PhD students and researchers from different disciplines using equipment for their field research; trainees from countries like Romania, Albania, Philippines and China. Phonogrammarchive have already experience in cooperation with Western Balkan countries. Till today they cooperated with Albania, Croatia, Kosovo/UNMIK and FYR of Macedonia. The most significant cooperation among these was cooperation with Albania where digitisation of the Audio Archive of the Institute for Folk Culture, Tirana, Albania, was financed by the Austrian Development Agency (ADA) and Phonogrammarchive took an active part in this project. Approximately 250 users are granted to work on the infrastructure annually.

FACILITIES AND SERVICES FOR RESEARCHERS

Phonogrammarchive houses audiovisual archive with audio and video contents. Technical facilities at the phonogrammarchive consists from three transfer studios listening-stations for users, recording studio, re-recording laboratory, signal-processing workstation, equipment service laboratory copying plants field research equipment and two video archiving studios stations for video viewing.

Scientific field: Social Sciences and Humanities	**Country of Infrastructure:** Germany / European / Virtual
SHARE - Survey of Health, Ageing and Retirement in Europe	
Institution responsible for infrastructure: Mannheim Research Institute for the Economics of Aging	
Home page: http://www.share-project.org	
Full Address: L13,17 68131 Mannheim Germany	**Telephone:** +49 621 181 1892
Name of the Contact Person: Doerte Naumann	**E-mail:** naumann@mea.uni-mannheim.de

ABOUT

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a multidisciplinary and cross-national panel database of micro data on health, socio-economic status and social and family networks of more than 30,000 individuals aged 50 or over. SHARE's scientific power is based on its panel design that grasps the dynamic character of the ageing process. SHARE's multi-disciplinary approach delivers the full picture of the ageing process. Rigorous procedural guidelines and programs ensure an ex-ante harmonized cross-national design.

COOPERATION

Eleven countries have contributed data to the 2004 SHARE baseline study. They are a balanced representation of the various regions in Europe, ranging from Scandinavia (Denmark and Sweden) through Central Europe (Austria, France, Germany, Switzerland, Belgium, and the Netherlands) to the Mediterranean (Spain, Italy and Greece). Further data have been collected in 2005-06 in Israel. Two "new'" EU member states - the Czech Republic and Poland - as well as Ireland have joined SHARE in 2006 and participated in the second wave of data collection in 2006-07. The survey's third wave of data collection, SHARELIFE, will collect detailed retrospective life-histories in sixteen countries in 2008-09, with Slovenia joining in as a new member. SHARE is connecting with similar global survey networks in Asia, South America, and North America. Typical users of SHARE studies and data are academic researchers from the following disciplines: medicine, epidemiology, sociology, economics and psychology. SHARE group is currently discussing the extension of SHARE project also to Western Balkan countries. Number of registered users is steadily increasing. Per month about 25 new users around the globe (mainly Europe) are registering with SHARE. In total SHARE has almost 1000 registered users (since 2004) which equals 2000-2500 users who are accessing their database repositories.

FACILITIES AND SERVICES FOR RESEARCHERS

SHARE projects offers their users a public-use file of the SHARE data, data documentation and documentation of results on the project's webpage, as well as personal user support. Data collected in SHARE include health variables (e.g. self-reported health, health conditions, physical and cognitive functioning, health behaviour, use of health care facilities), bio-markers (e.g. grip strength, body-mass index, peak flow), psychological variables (e.g. psychological health, well-being, life satisfaction), economic variables (current work activity, job characteristics, opportunities to work past retirement age, sources and composition of current income, wealth and consumption, housing, education), and social support variables (e.g. assistance within families, transfers of income and assets, social networks, volunteer activities). The data are available to the entire research community for no costs. Data can be accessed through their official web page: http://www.share-project.org/.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Netherlands / European / Virtual
CLARIN: Common Language Resources and Technology Infrastructure for the Humanities and Social Sciences	
Institution responsible for infrastructure: Utrecht University - CLARIN	
Home page: http://www.clarin.eu	
Full Address: Trans 10 3512 JK Utrecht Netherlands	**Telephone:** +31 30 253 6050
Name of the Contact Person: Steven Krauwer	**E-mail:** clarin@clarin.eu

ABOUT

The CLARIN project is a large-scale pan-European collaborative effort to create, coordinate and make language resources and technology available and readily useable. CLARIN offers scholars the tools to allow computer-aided language processing, addressing one or more of the multiple roles language plays (i.e. carrier of cultural content and knowledge, instrument of communication, component of identity and object of study) in the Humanities and Social Sciences. CLARIN is working on a general architecture to establish a research infrastructure. It is based on a layered setup with each layer offering web services. CLARIN will offer research community (1) web based applications (the infrastructure including new language resources will allow humanities researchers and in particular linguists to tackle the grand challenges of cross-cultural and cross-lingual work and to create a semantically rich domain; (2) semantic web services (powerful search engines, conversion and interoperability infrastructures); (3) grid integration services (domain wide identity for authentication purposes, exchange of user credentials for authorization purposes, navigating in a joint metadata domain) all these services will be connected to the GEANT backbone; (4) repositories & Centers **(**expertise centers that can help the different user communities)

COOPERATION

CLARIN is a pan-European community of institutions emerged from an open and bottom-up driven formation process. It is not exclusive and open for extensions. To become a member an institution has to support the CLARIN mission, has to have a strong national and international position to be able to contribute to the CLARIN mission and has to be represented by an expert who is known for his/her contributions to the field. The membership is expected to be active. The CLARIN Consortium includes partners from 22 European countries, including Croatia. The CLARIN network has members in 32 EU countries, including Western Balkan countries such as Croatia and Serbia. Although the CLARIN research infrastructure specifically addresses the Social Sciences and Humanities research community a number of commercial companies have asked whether they could participate in collaborative initiatives. As one of CLARIN's leading principles is that all languages are equally important and that porting of knowledge and expertise between languages should be stimulated participation in CLARIN might give a significant boost a research on the field of linguistics and stimulate a development of new language research technologies.

FACILITIES AND SERVICES FOR RESEARCHERS

CLARIN will integrate a number of key technologies coming from the major initiatives advancing the eScience paradigm: (1) It includes Data Grid technology to connect the repositories as being implemented in the DAM-LR pilot project and web services the various centres provide; (2) It builds on ideas launched by the Digital Library community to create Live Archives, and will further such initiatives; (3) It incorporates, and contributes to, Semantic Web technology to overcome the structural and semantic encoding problems; (4) It incorporates advanced multi-lingual language processing technology that supports cultural and linguistic integration.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Spain / National / Virtual
ASEP/JDS Databank	
Institution responsible for infrastructure: ASEP	
Home page: http://www.jdsurvey.net	
Full Address: Av Manoteras 8 Esc3 2A 28050 Madrid Spain	**Telephone:** +34 913 923 396
Name of the Contact Person: Jaime Diez-Medrano	**E-mail:** jdiezmed@terra.es

ABOUT

ASEP/JDS have been working since 1990 and it is providing researchers in the social sciences with friendly and easy to use data bases, including both statistical data and survey data files. Users can interactively work with hundreds of surveys conducted in more than 100 countries since the early 80's, as the World and European Values Surveys, the Latinobarómetro, the CSES and the ISSP surveys, as well as several Spanish collections. Users can interactively browse questionnaires, see question texts, frequency distributions, cross tabs with any other Q in the questionnaire, and produce graphics, with many options for each utility. The interface is very friendly and most of the contents are bilingual (English/Spanish). ASEP/JDS also provides many documents for downloading as PDF files that help interpret the data. Geographical coverage: Covers all European countries and provides comparison with more than 60 countries outside Europe. Time coverage: Covers more than 25 years of surveys, from 1981 to 2009. Thematic coverage: Covers many important areas of social research (Religion, Family, Values, Political views, Policital culture, National Identity, Economic attitudes, Environment, Education) Relevance: Covers some of the more used and cited surveys of the world.

COOPERATION

International Cooperation of ASEP/JDS is based on international survey research projects: Comparative Study of Electoral Systems, World-European Values Surveys, International Social Survey Program and Latinobarometer. Cooperation expected with other international barometers as the Eurobarometer, the Afrobarometer and the Asiabarometer. Cooperation with different public and private survey organizations/institutions in Spain and different individual countries is expected to extend. Cooperation will continue with Zentral Archiv and other European institutions/organizations to seek funds from the European Union to develop and enhance standardization of variables and data archiving procedures. ASEP/JDS is a virtual type of infrastructure is virtual and they are measuring that more than 150.000 users are using their services.

FACILITIES AND SERVICES FOR RESEARCHERS

ASEP/JDS is offering scientific communities survey databases, online survey browsers, question search engine, PDF documents, survey files, publications database; technical reports and pre-designed Questionnaires.

3.8 OTHER

Scientific field: Other: Multidisciplinary: Life Sciences and Environment	**Country and Type of Infrastructure:** Finland / Global / Distributed
Sodankyla Geophysical Observatory (SGO)	
Institution responsible for infrastructure: University of Oulu	
Home page: http://www.sgo.fi	
Full Address: Tahtelantie 62 FI-99600 Sodankyla Finland	**Telephone:** +358 16619824
Name of the Contact Person: Jyrki Manninen	**E-mail:** Jyrki.Manninen@sgo.fi

ABOUT

Sodankyla Geophysical Observatory (SGO) performs geophysical measurements and research based on the observation results. Since August 1997 the observatory has been an independent research department of the University of Oulu. Sodankyla Geophysical Observatory performs continuous measurements of magnetic field, magnetic pulsations, cosmic radio noise, upper atmosphere radio soundings, ionospheric tomography, seismic recordings and cosmic rays. Altogether SGO has measurements in 19 different locations from southern Finland to Svalbard. Local magnetograms and the latest picture of All-Sky Camera are available in real time. Latest results of continuous measurements are easiest available in the latest data base which can be accessed from their official web page. The facility produces high added knowledge of global change from the thermosphere to biosphere and ecosystems. This is not possible in any other facility on the northern hemisphere, which is an area where global change, including the polar stratospheric spring time ozone loss, is expected to increase in the near future.

COOPERATION

Access to the facilities is provided free of charge to the user groups selected under the contract including all infrastructural, logistical, technical and scientific support that is normally provided to external users. The grants for the selected users are covering travel and subsistence costs for the visits of up to three months. Only researchers of EU nationality, conducting their research in the Member States of the Community or Associated Countries or Candidate Countries, are eligible for support under this contract. Applications are reviewed by the User Selection Panel twice a year. Annually app. 100 users are granted to enter the SGO facilities and they are spending app. 500 research days to work at their facilities. Typical users of their facilities are post-docs who are using SGO data and instruments for their own studies and research. SGO already hosted researchers from WBC and they encourage new researchers from these countries to join common research projects to achieve mutual scientific benefit.

FACILITIES AND SERVICES FOR RESEARCHERS

Visiting scientists can do multidisciplinary research on the thermosphere, mesosphere, stratosphere, troposphere and biosphere and study the relationships between the atmosphere and ecosystems. This is only possible with highly specialized equipment and the excellent technical and scientific

knowledge available at the facility. SGO is offering interested users and researchers data on the campaign based measurements, data on general aeronomy, data on atmospheric chemistry**,** applications and facilities of tomographic in ionospheric research, VLF measurements and analysis**,** experimental facilities of incoherent scatter radar for experiments and analysis, possibilities for ionospheric heating experiments using EISCAT Heating facility.

Scientific field: Other: Physics, Biotechnology, Natural Sciences, Materials Sciences	**Country and Type of Infrastructure:** France / European / Single-sited
Neutron beams and instrument facilities	
Institution responsible for infrastructure: Institut Laue Langevin (ILL)	
Home page: http://www.ill.eu/	
Full Address: 6 rue Jules Horowitz 38000 Grenoble France	**Telephone:** +33 4 76 20 70 82
Name of the Contact Person: Anne Dale	**E-mail:** dale@ill.eu

ABOUT

The Institut Laue-Langevin is an international research centre at the leading edge of neutron science and technology with modern research facilities. The Institute operates the most intense neutron source in the world, feeding intense beams of neutrons to a suite of 40 high-performance instruments that are constantly upgraded. As a service institute the ILL makes its facilities and expertise available to visiting scientists. Every year, some 1200 researchers from over 30 countries visit the ILL. Over 700 experiments selected by a scientific review committee are performed annually and research focuses primarily on fundamental science in a variety of fields; these include condensed matter physics, chemistry, biology, nuclear physics and materials science.

COOPERATION

The ILL is owned and operated by three founding countries - France, Germany and United Kingdom - whose grants to the institute's budget of approximately 70 million EUR per year are enhanced by Scientific Membership contributions from Austria, the Czech Republic, Italy, Russia, Spain, Switzerland and newly Sweden and Hungary. International partnerships with other countries can be set up with individual countries or consortiums, such as the MENI - Middle Europe Neutron Initiative. It is also opened for cooperation with Western Balkan countries. ILL has also an active industrial R&D programme and is developing neutron technology for industrial applications. Typical users of ILL facilities are scientist, post-doc or PhD student from a university or research institute department of physics, chemistry, life sciences, materials science. ILL neutron beams and instrument facilities are free of charge for applicants of accepted experiments. Scientists affiliated to ILL member countries are assisted with necessary travel and daily subsistence for a limited period. Applications for beam time are submitted electronically. Proposals can be submitted to the ILL twice a year. Proposals are reviewed by external experts. ILL supports very wide user community (>2500 individuals in the last three years) from many diverse laboratories (>1000 worldwide) and many countries (app. 45). It is recognised as the world leader in the field of neutron science.

FACILITIES AND SERVICES FOR RESEARCHERS

There are various types of instrument, each designed for a particular material or a specific type of analysis at ILL. ILL is offering scientists instruments (spectrometers, diffractometers), monochromators, detectors, all kind of sample environment (furnaces, cryostats, high pressure cells, etc.) test facilities, chemical laboratories, deuteration laboratory, facility for material engineer support and High Flux Reactor.

Scientific field: Other: Multidisciplinary: Materials Sciences, Physics and Astronomy	**Country and Type of Infrastructure:** Germany / European / Single-sited
User research facilities for synchrotron radiation: DORIS, FLASH, PETRA III, DESY Testbeam, HERA	
Institution responsible for infrastructure: Deutsches Elektronen-Synchroton DESY	
Home page: http://hasylab.desy.de/user_info/index_eng.html	
Full Address: Notke str. 85 22607 Hamburg Germany	**Telephone:** +49 40 8998 4508
Name of the Contact Person: Ute Krell	**E-mail:** hasylab@desy.de

ABOUT

A Research Centre of the Helmholtz Association, in Hamburg (Germany). The research at HASYLAB is focused on photon science. At HASYLAB synchrotron radiation emitted from positrons in the **DORIS** and **PETRA** storage rings is used for fundamental and applied research. Three new projects are under construction or in preparation: the storage-ring-based X-ray source **PETRA III**, and the two linear-accelerator-based free electron lasers: the **FLASH** as a VUV and soft X-ray source and the **XFEL**, planned in cooperation with European Partners, as a X-ray source. Another important infrastructure is **DESY test beam** facility, which is one of the few places in Europe where high energy beam test for R&D of particle detectors can be performed. It has been extensively used in the past for the development of new detectors and prototype tests from European groups and international groups that are participating in detectors located in Europe. In interplay with CERN it allows a continuous detector development while one of the facilities is overloaded or maintained.

COOPERATION

Access to the HESYLAB facilities is free of charge for all interested researchers. Users of the research facilities have to apply for their experiments well in advance and have to pass a scientific evaluation. New users are welcomed. They will be invited to perform common experiments with experienced users to become acquainted to the use of the infrastructure. Currently researchers from all over the Europe are working together with experts from HESYLAB. One of HESYLABs most distinguishing trademarks is the close collaboration between scientists and engineers from different industries. The availability of highly intense X-ray synchrotron radiation from the DORIS storage ring provides powerful instrumental techniques. The combination of both, experienced scientists and sophisticated method, is of interest for a wide range of industrial applications to solve analytical problems or to conduct research. Industry pays beamtime used at the facilities. Annually around 2000 individual visits of researchers are into DESY facilities. Typical users of their facilities are senior scientists with many years of experience at synchrotrons. Collaboration with WBC is very active and many of them is based on high scientific quality. Infrastructure is opened for all participants (WBC included) who like to use the synchrotron and other DESY facilities or contribute in providing instruments, e.g. via inkind like at the European XFEL. Future plan of HESYLAB and DESY is to be involved in the project International Linear Collider (ILC). This international project consists of a 20–40-kilometer-long linear accelerator. An international consortium decided to build it with the technology originally developed for the TESLA project.

FACILITIES AND SERVICES FOR RESEARCHERS

The 37 beamlines at DORIS III are equipped with instrumentation for a wide variety of experiments using a spectral range from the vacuum ultraviolet to the hard X-ray regime (about 50 eV to 300 KeV). DESY Test beams are equipped with huts to house data acquisition and control electronics and data connections to the DESY computer centre. The beam areas are shielded providing working space for operators. Safety equipment is in place such that gaseous detectors can be used even with flammable gases. Translation stages are available for remote controlled positioning of test equipment in the beam lines. A European project in collaboration with HESYLAB is planning the construction of an X-ray laser, the European x-ray free electron laser (XFEL), which is supposed to be 3 km long when finished. It will produce extremely short and powerful X-ray flashes which will have many applications. Furthermore the accelerator PETRA, which was used as a pre-accelerator for HERA, is being reconstructed to be a source of synchrotron radiation for HASYLAB. The PETRA III synchrotron will take up user operation in 2009.

Scientific field: Other: Multidisciplinary: Humanities, Life Sciences, Medical Sciences, ICT	**Country and Type of Infrastructure:** Greece / National / Single-sited
National Documentation Centre (EKT/NHRF)	
Institution responsible for infrastructure: National Documentation Centre/ National Hellenic Research Foundation (EKT/NHRF)	
Home page: http://www.ekt.gr/en/	
Full Address: 48 Vasileos Constantinou Avenue 11635 Athens Greece	**Telephone:** +30 210 7273906
Name of the Contact Person: Paraskevi Sachini	**E-mail:** ekt@ekt.gr

ABOUT

The National Documentation Centre (EKT) is the national institution for documentation, information and support on science research and technology issues. EKT offers a variety of information & digital content services to the Hellenic R&D community. For a long period, being involved in various projects and collaborative schemes, the Centre has adopted & expanded bibliographic standards, library tools and developed specialized content tools. Digital collections concerning the Greek R&D and culture are developed & offered to R&D community. International R&D content is acquired and made available to researchers through R&D institutions collaboration agreements and the Academic & Research libraries Network – HealLink. EKT also coordinates the Network of R&D libraries and develops a National Archive infrastructure on R&D, through repositories.

COOPERATION

EKT is a bridge infrastructure for the involvement of other NHRF institutions into R&D projects and their participation in Centres of Excellence. EKT is involved in many horizontal R&D projects (acting as Hellenic IRC, coordination of Euro-MedaNet. Through a series of technology transfer activities, the EKT channels innovative Greek products and technologies into the international market, and provide Greek enterprises with European technologies so as to modernise and improve their competitiveness and enhance their level of international collaboration. The IRC Hellenic has established its position as an important innovation and technology transfer pole in the Greek research and business community, with its client list exceeding 7.000 enterprises and organisations. Given the close cooperation with GRNET and the exploitation of GRID infrastructure, EKT enhances its potential into offering useful content services in the European R&D community. EKT is also opened for common projects and joint activities with similar network institutions from WBC.

FACILITIES AND SERVICES FOR RESEARCHERS

EKT provides open access to information, via the digital library, as well as personalised S&T information services: (1) Electronic Reading Room, (2) Print Collection Reading Area, (3) Wireless Broadband Network, (4) Intermediary Information Services, (5) Bibliographic references and citation index, (6) Full-text scientific publications on demand, (7) EKT operates as National Contact Point for the European Framework Programmes and other competitive research programmes of the EU, (8) EKT is also the coordinator of the Greek Innovation Relay Centre (IRC Hellenic), a member of the European network of 71 IRCs in the EU.

Scientific field: Other: Multidisciplinary: Physics, Astrophysics, Life Sciences, Environment, Economics	**Country and Type of Infrastructure:** Italy / Global / Distributed
Abdus Salam ICTP training research infrastructures on all applicable fields	
Institution responsible for infrastructure: Abdus Salam International Centre for Theoretical Physics	
Home page: http://www.ictp.it	
Full Address: Strada Costiera 11 34014 Trieste Italy	**Telephone:** +39 402240232
Name of the Contact Person: Claudio Tuniz	**E-mail:** ctuniz@ictp.it

ABOUT
Abdus Salam International Centre for Theoretical Physics (ICTP) operates under a tripartite agreement between the Government of Italy and two UN agencies, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Atomic Energy Agency (IAEA).
Mission of ICTP Foster the growth of advanced studies and research in physics and mathematics, especially among researchers from developing countries. ICTP provide an international forum for the exchange of information and ideas among scientists across the Europe. Maintain excellent research facilities for visitors, associates and fellows, principally from developing countries, who participate in the Centre's research and training activities.

COOPERATION
In recent years, about 6,000 scientists per year from almost all nations have visited ICTP to participate in the Centre's research and training activities. Approximately half of the scientists have come from the developing world. The main researchers are coming from USA, China, India, Germany, Brasil, Iran etc. The Centre sponsors a number of initiatives, including an Associates Programme, to provide research and training opportunities in physical sciences. Researchers from WBC are also active participants in these initiatives. In 2007 there were visits of researchers from the following WBC countries: Albania (5), Croatia (39), FYR Macedonia (4), Montenegro (1), Serbia (19). ICTP is targeting also new groups of researchers in particular partners that can develop local research infrastructures and that can support regional research and education activities. ICTP is planning to create similar regional centres in Western Balkan countries. They also have plans for the development of joint projects with EU funding, together with WBC. Aim is also to use WBC RI and networks to support other developing countries in specific areas (environment, agriculture, marine life, energy). Each year around 6000 users visit their institution and work on the infrastructure they are providing.

FACILITIES AND SERVICES FOR RESEARCHERS
ICTP is offering visiting researchers modern communication networks, databases, aeronomy and radiopropagation Laboratory, Microprocessors Laboratory, Library, lecture rooms and guesthouses.

Scientific field: Other: Multidisciplinary: Physics, Life Sciences, Materials Sciences	**Country and Type of Infrastructure:** Poland / European / Single-sited
Megajoule Plasma-Focus PF-1000	
Institution responsible for infrastructure: Institute of Plasma Physics and Laser Microfusion	
Home page: http://www.MJPF-1000.pl	
Full Address: Hery 23 01-497 Warsaw Poland	**Telephone:** +48 22 638 14 78
Name of the Contact Person: Ryszard Miklaszewski	**E-mail:** rysiek@ifpilm.waw.pl

ABOUT

Institute of Plasma Physics and Laser Microfusion (IPPLM) was established in 1976. Since June 2001, the IPPLM is under supervision of the Ministry of Economy and Labour. The main financial source for the IPPLM is a general grant from the Ministry of Scientific Research and Information Technology which covers a half of the minimum living costs of the Institute. The IPPLM carries out research in the following fields: (1) physics of intense laser beams interaction with matter, including selected problems of controlled inertial confinement fusion; (2) physics of dense magnetized plasma produced in high current pulse generators of the plasma focus type; (3) theory of tokamaks, theory and numerical modelling of physical processes in hot plasmas; (4) physics and technology of high-peak-power lasers; (5) pulsed power generator's technology; (6) application of laser-produced plasma in material science and technology; (7) modern methods for diagnostics of fast-varying processes.

COOPERATION

Europe does still does not have large-scale high current discharge facilities at present. There is a renewal of international interest in such research in Europe. Most of the interest into PF-1000 is coming from Germany, Czech Republic, Bulgaria, Estonia; Hungary, Romania and Russia. External users can enter facilities on the basis of bilateral agreements. Interested researchers should provide the staff of the Center with the following documents: (1) Description of the experiment to be performed with goals to be achieved and physical foundation of a phenomena to be investigated, (2) List of suggested diagnostics to be involved in the experiment, (3) Detailed description (together with layouts) of diagnostics. Typical research group consist from 2-3 experienced scientists and 2-3 PhD or masters students using PF-1000 plasma generator and diagnostic equipment. Usually users bring with some specific diagnostic equipment necessary for experiments they planned. The research facilities at the institute are opened to any interesting ideas of using its unique capabilities. In 2007 9 external users (teams) used the infrastructure, in total 45 experimental days. Researcg facilities are also opened for researchers coming from WBC.

FACILITIES AND SERVICES FOR RESEARCHERS

Institute of Plasma Physics and Laser Microfusion is housing PF-1000 which is the world's largest Plasma-Focus device. Its operation is based on the pulsed electrical discharge through gases

contained between two coaxial electrodes separated with an insulator. High voltage applied to the electrodes immersed in a low pressure gas causes an electrical break-down along the insulator. Fast rise of the current (with ~5microsec time scale) I aids to the formation of a plasma sheath, which, driven by force, moves along the electrodes towards their open end. During this process, the plasma sheath accelerates to a velocity of ~107 cm/s and the current rises up to ~3 MA. After reaching the central electrode edge the sheath collapses toward the axis forming a dense (up to 1020cm-3), hot (~1 keV), elongated plasma structure called “pinch”. Rapid development of MHD instabilities causing disruption of the pinch is accompanied by an intense burst of ionizing radiation: soft and hard X-rays, electrons, ions and neutrons. The neutrons are from D-D reaction when deuterium is used as a fill gas. Fast (> 100km/s) plasma stream is also generated along the axis.

Scientific field: Other: Multidisciplinary: Social Sciences, Sustainable development, Knowledge for Growth, Information Society, Agriculture and Life Sciences in the Economy	**Country and Type of Infrastructure:** Spain / European / Distributed
Scientific and technical facilities to support the EU policy-making process	
Institution responsible for infrastructure: JRC IPTS – Institute for Prospective Technological Studies	
Home page: http://ipts.jrc.ec.europa.eu	
Full Address: Isla de la Cartuja Calle Inca Garcilaso, 3 E-41092 Seville Spain	**Telephone:** + 34 954 48 83 18
Name of the Contact Person: Central Office Contact	**E-mail:** jrc-ipts@ec.europa.eu

ABOUT

The Institute for Prospective Technological Studies (IPTS) is one of the seven scientific institutes of the European Commission's Joint Research Centre (JRC**)**.

The mission of IPTS is to provide customer-driven support to the EU policy-making process by developing science-based responses to policy challenges that have both a socio-economic as well as a scientific/technological dimension.

The Institute's activities mainly contribute to the conception and development of EU policies, but some IPTS projects also support the monitoring and implementation phases of the policy cycle.

The Institute's main competences consist in providing policy option analysis and policy impact assessment, analysing the socio-economics of new technologies, delivering techno-economic tools and platforms to our customers, and managing information exchange and consensus-building among policy-makers and stakeholder on highly complex techno-economic issues (something that we call "bureau services").

The Institute's work programme, based on "Actions" (or macro-projects), cover the fields of research policy and techno-economic foresight, sustainable development, industrial and clean technologies, energy, transport, agriculture and rural development, life sciences and the information society.

COOPERATION

The work undertaken by IPTS is mainly done at the request of other Directorates General of the European Commission. In addition in recent years several assignments have been carried out for the European Parliament. IPTS collaborates closely with the other Institutes of the Joint Research Centre and multiple partners across Europe. The Institute’s main activities relate to providing strategic support for the conception and development of EU policies. Its core competence is the ability to work at the intersection between the socio-economic aspects of an issue and the science and technology involved. The Institute's work is structured along the lines set out in the Community Research Framework Programme and takes the form of a series of Scientific Actions in a range of areas, including the research and innovation policy and techno-economic foresight, environment, energy and transport, information society, and agriculture and life sciences.

FACILITIES AND SERVICES FOR RESEARCHERS

Sustainable development

IPTS provides support to a range of customers in the European Commission engaged in policy making on long term, high priority environmental issues, including prevention and control of industrial pollution, climate change policies, integrated product policy and EU environmental thematic strategies on natural resources and on waste recycling.

3 Energy and transport

To achieve this objective, the Commission has proposed a number of energy related measures, like improving energy efficiency, raising the share of renewable energy in the energy mix, etc. IPTS is contributing to this objective providing reliable information on energy and transport technology trends.

Research and innovation

IPTS supports the achievement of the re-launched Lisbon objectives and contributes to building and strengthening the European Research Area by broadening the knowledge on role and dynamics of industrial research and innovation, understanding national and regional research systems and related policies, analysing human resources in research in terms of career path and mobility and looking into the possible future development of science and technology.

Information society

The Lisbon objective, with regard to the Information Society, is framed by the i2010 policy initiative. The i2010 policy framework has 3 main pillars which specify the overall short to mid term goals (2010 and beyond) of the European Commission in realising the Information Society:

- to create a Single European Information Space, which promotes an open and competitive internal market for information society and media services,
- to strengthen investment in innovation and research in ICT,
- to foster inclusion, better public services and quality of life through the use of ICT.

Each of these pillars calls for specific techno-economic research which the IPTS, building on its competences, is providing to EU policy makers and Member States through different projects.

Agriculture and rural development

Agriculture is also the subject of IPTS' research activities from the perspective of the application of new biotechnologies to this area: namely the socio-economic assessment of genetically modified crops and organisms.

Life sciences

In support of the revision of the Community's Strategy on Life Sciences and Biotechnology (2002), IPTS is performing research in the following areas:

- The evaluation of the consequences, opportunities and challenges of modern biotechnology for Europe, in terms of economic, social and environmental aspects.
- The assessment of new bio-medical technologies such as tissue engineering, pharmacogenetics or genetic testing, and specially their deployment across Europe, their quality standards and, the optimal use of bio-banks as they condition the progress in European biomedical science.

Scientific field: Other: Multidisciplinary: Material and Life Sciences	**Country and Type of Infrastructure:** Sweden / European / Single-sited
Nanofabrication Laboratory	
Institution responsible for infrastructure: Chalmers University of Technology	
Home page: http://www.chalmers.se/mc2/EN/laboratories/nanofabrication	
Full Address: Chalmersplatsen 1 41296 Gothenburg Sweden	**Telephone:** +46 317721881
Name of the Contact Person: Stefan Bengtsson	**E-mail:** stefanb@chalmers.se

ABOUT

The Nanofabrication Laboratory at Chalmers is a state-of-the-art university clean room facility. Locally in the Goteborg area it serves an academic community of around 400 persons. In addition it serves European researchers through a trans-national access program (MC2ACCESS) and local industry through industrial access as well as process service. The laboratory is organised as a user access facility with enough supportive engineering staff to be able to give researchers and industry needing local as well as remote access enough support to reach their needs. The facility has a capacity to act as a European node, serving users not only locally or nationally but on a European level.

COOPERATION

The laboratory is run by the department of Microtechnology and Nanoscience at Chalmers, but is an open user facility for external as well as internal academic and industrial interests. The research infrastructure at Chalmers has extensive industrial use, in terms of companies using the facility by there own staff and by companies supported by services from the research infrastructure. Partners are coming from all European countries. Users from EU member states (including associated and candidate countries) can apply for free access under the EC transnational access program MC2ACCESS (026029). Industrial users are granted access on commercial conditions. Around 20% of users are external users. Total number of annul users are around 200, meaning that of the order of 40 external users are welcomed every year. Typical users of research infrastructures at Chalmers are postdocs and PhD students from academy and industrial staff (mostly national industries). Nanofabrication laboratory already has some minor experiences with WBC, but number of researchers that were at their facilities was rather very low. Future initiative for cooperation with WBC is welcome, as they are willing to provide WBC scientific groups their advanced research infrastructure and to share knowledge.

FACILITIES AND SERVICES FOR RESEARCHERS

The Nanofabrication Laboratory offers three partnership options for commercial and academic interests: (1) Clean room Access, (2) Research Collaboration, (3) Processing, Prototypes & Consultancy. Among the facilities they are offering access to advanced processing for microwave electronics, photonics and nanotechnology through MC2ACCESS. The Laboratory is a state-of-the-art facility with 1240 m2 of clean room classified area with process and measurement tools providing a broad platform for the development and testing of new ideas in micro and nano technology. MC2's two strategic focus areas have recently resulted in the launch of two processing lines in the Laboratory to complement the flexible processing and materials environment. The lines increase the quality, throughput, and stability of the microwave & nano quantum devices and components fabricated in the Laboratory. In total there are around 160 tools in the laboratory.

Scientific field: Other: Mulidisciplinary: Life Sciences, Material Sciences and Environmental Sciences	**Country and Type of Infrastructure:** Sweden / European / Single-sited
MAX-Lab synchrotron	
Institution responsible for infrastructure: Lund University	
Home page: http://www2.maxlab.lu.se/members/proposal/index.jsp	
Full Address: Olle Romersvag 1 S22100 Lund Sweden	**Telephone:** +46 46 2224584
Name of the Contact Person: Marjolein Thunnissen	**E-mail:** marjolein.thunnissen@mbfys.lu.se

ABOUT

MAX-lab is a national facility operated jointly by the Swedish Research Council, and Lund University. MAX-lab is one of the few advanced third generation synchrotron radiation facilities in Europe. The laboratory has achieved excellent operation at moderate costs due to several novel designs. There has been an intense development together with user groups, aiming at optimizing the total performance of the experimental set-ups at the beamlines. MAX-lab is a synchrotron radiation facility that produces electromagnetic radiation for research in many scientific disciplines. MAX-lab supports three distinct research areas: Accelerator Physics, research based on the use of Synchrotron Radiation and Nuclear Physics using energetic electrons.

COOPERATION

The laboratory is a highly international forum. Nearly half of the scientists working at the laboratory are from foreign countries. Most frequent external researchers at MAX-Lab are researchers from Denmark and Finland. MAX-Lab during their activities invites also private companies to participate in building common research projects. The build up of their life-science beamlines were financially supported by Astra Zeneca and Novo Nordisk which are two big pharmaceutical private companies. New users of MAX-Lab research facilities can start their work under the conditions of quality and feasibility of proposed research. Proposals are reviewed by application committee at MAX-Lab. Research cooperation is possible in the forms of bilateral agreements and through the participation in joint EU international programmes. MAX-Lab is currently inviting experts from the field of protein crystallography. MAX-Lab does not have any cooperation agreements with the WBC but their facilities are opened also for the researchers coming from these countries.

FACILITIES AND SERVICES FOR RESEARCHERS

The facility has three storage rings (MAX I-III) and more than fifteen beam lines. MAX I operates at electron energy of 0.55 GeV and it is also a source of energetic electrons for nuclear physics. MAX II (1.5 GeV) is a modern third-generation light source equipped with undulators and wigglers. There are soft X-ray beam lines for spectroscopic measurements and hard x-ray beam lines for structural studies. MAX III (0.7 GeV) is a new machine now under commissioning, optimized for lower photon energies than MAX II. MAX IV is under preparation. MAX IV is planned to be the next generation Swedish synchrotron radiation facility that will replace the existing laboratory.

4 RESEARCH INFRASTRUCTURES IN WBC

4.1 ASTRONOMY, ASTROPHYSICS AND NUCLEAR PHYSICS

No respondent or no data available for this scientific discipline and type of infrastructure

4.2 BIOMEDICAL AND LIFE SCIENCES

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Albania / Regional / Single-sited
Agriculture and Food Research Infrastructure	
Institution responsible for infrastructure: Agricultural University of Tirana	
Home page: http://www.ubt.edu.al/	
Full Address: Universiteti Bujqesor i Tiranes Koder-Kamez Tirane	**Telephone:** +355 47200353
Name of the Contact Person: Ms Bizena BIJO, Vice-rector	**E-mail:** bizenabijo@yahoo.it

Agricultural University of Tirana has been carrying out activities in the field of agricultural and food research for more than 55 years.

It is a governmental, non-profit research institution, supported mostly by public partnership, of, as stated, regional importance. The mission of AUT is to realize the professional training of the specialists in the field of agriculture and food. In order to establish and strengthen collaboration with centres of excellence or laboratories, joint research projects with Western European Universities are mentioned as possible ways of realization. Also, need for additional assistance in establishing partnerships with potential regional and EU partners has been indicated.

Its research infrastructure is open towards external users, which is enabled through bilateral agreements and participation in EU programmes. There are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned. Foreign lecturers and researchers have access to the institution.

The cooperation is being carried out in the fields of research and education. Main cooperation partners are Germany, Italy, France, Greece, Kosovo/UNMIK, FYR of Macedonia, Croatia, Montenegro, Serbia, Bosnia and Herzegovina.

Bilateral agreements are signed with Italy, Germany and France, and it is planned to enhance cooperation with the region and with EU countries in the period to come.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

No specific example of a success story is described, however, there are 25 ongoing projects in accordance with respective agreements, and overall experiences in international cooperation are positive.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Croatia / Global / Single-sited
Infrastructure for biocatalysation and fermentation	
Institution responsible for infrastructure: University of Zagreb - Faculty of Chemical Engineering and Technology	
Home page: http://smotra.unizg.hr/en/sudionici/Kemijsko_inzenjerstvo.html	
Full Address: Maruličev trg 19 10 000 Zagreb	**Telephone:** +385 1 4597157
Name of the Contact Person: Ms Ana VRSALOVIĆ PRESEČKI, research associate	**E-mail:** avrsalov@fkit.hr

Faculty of Chemical Engineering and Technology, at the University of Zagreb have been active in the field of Biocatalysts and Fermentation technology for several years now.

Main pieces of equipment at this institution would be:

Bioreactor, BIOSTAT MD®
Refrigerated Incubator Shaker, INNOVA 4330
High performance liquid chromatography
Gas chromatograph
Spectrophotometer, Manufacturer: SHIMADZU UV-1601

It is a non-profit research organization, supported mostly by public partnership, of, as stated, prevailingly global importance. One of its research groups is working in the field of applied biocatalysis, with isolated enzymes as catalysts, as well as with the whole cells. Another area of interest is fermentation technology. Also, mathematical models are a very important part of the work. Need for additional assistance in establishing partnerships with potential regional and EU partners has been indicated.

Its research infrastructure is open towards external users, which is enabled mainly through bilateral agreements. There is no specific access policy, and there are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned.

The cooperation is being realized mainly through bilateral agreements. Main cooperation partners are Slovenia, Hungary, Germany. There are data provided on access granted, which show that there is ongoing cooperation, but that there is room for improvement.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

No specific example of a success story is described. However, cooperation with EU member states up to this point has been successful.

Bad infrastructure and bureaucracy are main obstacles to more successful cooperation.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** FYR of Macedonia / European / Single-sited
Infrastructure for development and Quality Control	
Institution responsible for infrastructure: Alkaloid AD – Skopje, Pharmaceutical Chemical Cosmetic Industry	
Home page: http://www.alkaloid.com.mk	
Full Address: Blvd. Aleksandar Makedonski 12 1000 Skopje FYR of Macedonia	**Telephone:** +389 2 31 04 000
Name of the Contact Person: Sonja UGARKOVIC	**E-mail:** sugarkovic@alkaloid.com.mk

Alkaloid AD is a pharmaceutical chemical cosmetic industry and generic producer of pharmaceuticals, existing since 1936.
Institute for Development and Quality Control is organised within PC Pharmaceuticals, and covers activities which are performed during development of generic drug products- preformulation studies, formulation, process, analytical method development and transfer to industry.
The institute covers 1540 square meters of used area. It is equipped with newest laboratory and pilot manufacturing equipment, as well as highly sophisticated analytical instruments that enable the development of new modern forms of generic drugs implementing the latest advances in the field of pharmaceuticals. The institute was officially launched in mart 2009. The necessary funds were provided mostly from resources of Alkaloid AD and partly from allocated credit lines.
The establishment of the Institute is actually an added value to the drugs in terms of development and introduction of new technologies and methods, maintenance of the quality, continuous improvement and meeting the strict reference demands of the European regulatory bodies.

As for the main cooperation partners, the following are listed:
Ss. Cyril and Methodius University in Skopje;
Faculty of Medicine, Department of Preclinical and Clinical Pharmacology & Toxicology - Skopje;
Faculty of Pharmacy, Skopje;
Faculty of Mathematics and Natural Sciences, Institute for Chemistry, Skopje;
Rudjer Boskovic Institute, Croatia

In terms of the research infrastructure, there are two main laboratories organised within the institute: laboratory for preformulation studies and laboratory for method development and validation, equipped with HPLC instruments, UPLC, spectrophotometers, dissolution testing equipment, FTIR, morphology analysers, stability/ photo stability chambers etc.
The area where the technological development take place has been furnished according to the cleanliness class ISO 8, and equipped mainly with laboratory equipment needed for producing solid dosage forms – lab fluid bed granulator, high shear mixer, blenders, in-process testing equipment, R&D tableting machine etc.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** FYR of Macedonia/ Regional/ Single-sited
Facilities on the field of Molecular medicine, Genetics, Biotechnology	
Institution responsible for infrastructure: Research Center for Genetic Engineering and Biotechnology, (RCGEB) Macedonian Academy of Sciences and Arts	
Home page: http://www.manu.edu.mk/rcgeb/	
Full Address: Blv. "Krste Misirkov", 2 1000 Skopje FYR of Macedonia	**Telephone:** +389 2 32 35 411
Name of the Contact Person: Prof. Georgi D. EFREMOV	**E-mail:** gdefremov@yahoo.com ; gde@manu.edu.mk

The Research Centre for Genetic Engineering and Biotechnology (RCGEB) is a research unit of the Macedonian Academy of Sciences and Arts founded 1986/1987. The main goal of the RCGEB is to promote genetic engineering and biotechnology in the Republic of Macedonia through research, education and training. Within the RCGEB, the National Rererence Laboratory for Hemoglobinopathies, founded in 1970, is acting. Since 1995 this laboratory became an International Reference Laboratory for Hemoglobinopathies and International Hemoglobin Information Centre (www.manu.edu.mk/icgib). Since 1998 the RCGEB is the coordinator of Postgraduate studies on molecular biology and genetic engineering, organized by the University "Ss. Ciril and Methodius", Skopje.

Since its establishment, the primary interest of the RCGEB has been molecular basis of the most common monogenic diseases: Thalassemias and other hemoglobinopathies, Cystic fibrosis, Hemophilia, Duchenne and Backer muscular dystrophy, Spinal muscular atrophy, Huntington's disease, Cystinuria, Fragile X mental retardation syndrome, Non-syndromic hearing loss, Genetics of male infertility and other less common monogenic diseases. The RCGEB collaborators have also been studying the molecular basis of colon cancer and breast cancer, as well as the molecular epidemiology of Hepatitis C virus and Hepatitis C virus, Human papilloma virus and Chlamidia trachomatis infection. RCGEB is the first institution in the R. Macedonia that started to use the techniques of recombinant DNA technology in the diagnosis and prevention of inherited, malignant and infectious diseases and in forensic medicine. The DNA methods for prenatal diagnosis of the most common monogenic diseases and chromosomal aneuploidies, determination of the origin of biological materials were in use in the RCGEB since its foundation. RCGEB has participated in many quality control programs for molecular DNA testing of the most common inherited diseases (External *Quality* Assessment scheme for *Cystic Fibrosis, etc*), as well as for quality assessment of forensic DNA (IQAS organized by Cellmark diagnostics).

During the past 20 years more than 30 research projects dealing with molecular characterization of monogenic diseases, molecular epidemiology of infectious diseases, molecular basis of the most common malignancies, DNA markers for human identification, were completed or are in progress in the RCGEB. The financing of the activities of the RCGEB is primarily through research projects and services to medical institutions. The main sources of the grants were the former YU-USA Joint Funds for Science, The US Ministry of Agriculture, The US Ministry of Health, former Federal Secretariat for development, FEBS, UNESCO/UNDP, Faculty of Medicine Stara Zagora, Bulgaria, Macedonian

National Health Fund, Ministry of Science of the R. Macedonia, etc. Most of the funds were allocated for equipment, materials, chemicals and expendables for the needs of the projects.

One of the main goals of the Center is to foster collaboration with institutions from the country region, Europe, and USA and to train the employees in the world leading institutions. Almost all scientists that were employed in the RCGEB in the late 1980's and early 1990's spent 1-2 years as research fellows in leading EU or USA institutions.

The RCGEB collaborates with numerous institutions from the Republic of Macedonia, medical institutions from the neighbouring countries and with over 30 scientific institutions from over 20 different countries. The collaboration encompasses joint research activities, specialization and training, invited lectures and exchange of literature. The RCGEB was a focal point of the ICGEB-Trieste from 1994 to 1998.

The RCGEB has been coordinating the activities for creation of the SEE Network for molecular biology and genetics. These activities were supported by UNESCO-ROSTE within the framework of the UNESCO-ROSTE's programme "Support to Scientific Networking in SEE countries". The Network was created with an aim to organize and facilitate the exchange of knowledge and training of young scientists in the field of molecular biology and genetics.

Since 2000 the RCGEB is the publisher of the international journal Balkan Journal of Medical Genetics.

Location: The RCGEB is located within the new building of the MASA in the centre of Skopje and has laboratory space of ~500m2, offices of ~200m2 and its own library with ~50m2.
Equipment: RCGEB equipment includes: HPLC (Perkin Elmer Series 200) and Automated Amino Acid Analyser AAA (Biochrom - 30); Spectrophotometers (UltraSpec 6300pro and NanoVue, GE Healthcare); ABI-PRISM 310 Automated Genetic Analyzer (Applied Biosystems); ABI 7700 Real-time PCR (Applied Biosystems), Tissue culture facility: Laminar-flow, CO2 incubator, Shaker (Hereus), Innova 40 thermal shaker; Ultracentrifuge (Beckman); Wallac Victor II 1420 multilabel counter (Perkin Elmer life sci.); PCR machines: GeneAmp PCR Systems 2700 (x2); PE 480 thermal cycler (PE Cetus); LabCaire PCR work station (x2); GelDoc Mega digital camera; Freeze Dryer (Virtis); Wallac 1410 Liquid scintillation counter (Pharmacia); Refrigirators [-80, -20 (several); +4 (several)]; Deionizator (Millipore - Milli RO and Milli Q water purification system); Centrifuges with cooling; Minicentrifuges with cooling; Bio-Rad DCode Universal Mutation Detection System; chromatographic and electrophoretic equipment; numerous routine laboratory equipment (balances, pH-metres, thermal baths, ovens, power suppliers) etc. In the recently obtained infrastructure grant from the European commission EP7 programme, RCGEB has purchased the following equipment: Ettan DIGE System, 2-D Fluorescence Difference Gel Electrophoretic system, Ettan DIGE Imager and Image Master Platinium 7.0 software (LKB Austria); DNA microarrey scanner system (Agilent technologies); 4-capilary Genetic Analyzer 3130 (Applied Biosystems) and system for DNA/RNA isolation QuickGene 810 (Fuji Film Life).
Staff: The research staff of the RCGEB is composed of six scientists working on a permanent base (paid by the Govermental funds) (two full professors, one senior scientist, two assistants and one research fellow), five young scientists working on a particular project/ programme (paid by RCGEB funds), two postgraduate students (working on their MSc or PhD thesis), as well as scientists that are affiliated with other institutions, but work part-time in the RCGEB.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** FYR of Macedonia / European / Single-sited
Infrastructure on the field of Epidemiology and Microbiology, Environmental Health, Food safety and Nutrition, Social Medicine, Eco-toxicology, Radiology, Drug testing and Control, Risk Assessment, Climate change and Health	
Institution responsible for infrastructure: Institute of Public Health	
Home page: http://www.iph.mk	
Full Address: 50 Devision No. 6	**Telephone:** +389 3 125 044
Name of the Contact Person: Dr. Aziz POLLOZHANI, Director Assoc. Prof. Vladimir KENDROVSKI, MD, PhD	**E-mail:** a_pollozhani@yahoo.com kendro@mt.net.mk

Institute for Public Health of Republic of Macedonia in Skopje (IPH) – is one of the oldest institutions in Macedonia, established in 1924, which performs specialised public health, epidemiological, microbiological and hygiene activities; laboratory and other testing of the environment; microbiological (bacteriological, parasitological, virusological), chemical (toxicological, radiological), biochemical and other laboratory analyses; professional and scientific investigations; and implements scientific and professional achievements. The mission of the institute is the improvement of the population's health through control and prevention of diseases, injuries and violence, at all levels and in all environments, applying health promotion, risk assessment and risk management, organisation of healthcare and evidence-based policy interventions.

IHP is a national focal point for WHO international health regulations.
IPH – IANPHI member
IPH - WHO/FAO Codex Alimentarius focal point
IPH - WTO SPS Enquiry point
IPH-Environmental Health Collaborative Center of Balkan Environmental Association, Greece
WHO/ Council of Europe- Stability pact collaborative Center for SEE countries for public health policy.
IPH – FP7 focal point.

The institute of public health of Republic of Macedonia has a continual cooperation with WHO, UNICEF, UNDP, WORLD BANK, EUROPEAN UNION, NATO, BENA, IAEA, SNSF. The main cooperation country partners are EU countries and countries in Western Balkan region: Albania, Bosnia and Herzegovina, Kosovo, Croatia, Montenegro and Serbia. We have fruitful cooperation with the various institutions from these countries on scientific field, exchange of knowledge and building capacities. Cooperation with EU is mainly based through the opportunities for training and learning program grants of the EU for building capacities. Also, as a contact point and consultative body for the MoH in our country, we cooperate with EU institutions in exchange information about issues from our competence. IPH is partner institution in the Focus-Balkans project, funded by the EC (FP7), which deals with food consumer science, frameworks, protocol and networks for better understanding of food behaviour in the Balkans region. The project is ongoing, started in 2008 until 2011. IPH has strong collaboration with partner institutions in the project from WBC.

IPH is equipped with wide variety of laboratory equipment which covers all of the area of its work. Laboratories for food and water examining are accredited according to the ISO standard 17025 for laboratory work. Some of the most important equipment in the institute laboratories is HPLC, GC,

spectrophotometers and GCLC in the laboratories for food and drugs examination. Gamma and gross alpha and beta spectrometers, early warning monitory system and radon detection equipment in the laboratory for radioecology. TLD dosimeter detectors and calibration laboratory for instruments with radioactive sources in the laboratory for dosimetry. Microbiology and virusology laboratories are using high quality real time PCR in their work as referent laboratories for confirmation of several communicable diseases in the country.
All of this equipment used in the Institute is covered with highly educated professionals, educated in the country and abroad, which guarantees high level of quality of the services delivered and timely health risk assessment of the population.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Montenegro / National / Single-sited
Infrastructure in the field of Agriculture	
Institution responsible for infrastructure: University of Montenegro, Faculty of Biotechnology	
Home page: http://www.btf.ac.me/	
Full Address: Cetinjski put bb 81 000 Podgorica	**Telephone:** +382 20 268 429
Name of the Contact Person: Dr Slavko MIRECKI, vice-dean for research Dr Natasa MIRECKI, Field crops and vegetable production	**E-mail:** milklab@t-com.me mirecki@t-com.me

Faculty of Biotechnology at the University of Montenegro (BIP), former Biotechnical Institute has the longest research tradition in the country (70 years). As a leading research organization in the agriculture, it significantly contributes to the adequate supply of safe and healthy food and protection of nature through implementations of research results in balancing ecosystem with a large variety of plants and animals. The combination of knowledge and experience enables BIP staff to contribute actively in solving scientific, social and practical problems in agriculture production on the national level.

Apart from being a research institution, it is also involved in higher education and provision of different services to the farming sector in the country, as well as providing advisory services. Therefore, it is funded by public funds and part of its financial resources comes from providing services. Also, so far numerous international players have fianced BIP activities:UNDP/FAO, American, Canadian, Russian, Italian funds. EC is one of the significant investors, especially in the fields of infrastructure (CARDS, IPA)

There are 10 active centres and departments within the Faculty: agricultural economy (contacts: dr Miomir JOVANOVIC, miomirj@t-com.me and dr Aleksandra DESPOTOVIC, alexd@t-com.me), land and melioration (dr Mirko KNEZEVIC, knez@t-com.me), forestry (MSc Milic CUROVIC, curovic@t-com.me), plant protection (dr Zora VUCINIC, zoravucinic@t-com.me), field crops and vegetable production (dr Natasa MIRECKI, mirecki@t-com.me), livestock production (dr Milan MARKOVIC mmarkoni@t-com.me), veterinary, vineyard, fruit growing and enology department (dr Radmila PAJOVIC, radapa@t-com.me), subtropical fruit (dr Momcilo RADULOVIC, rmomo@t-com.me), continental fruit (dr Mijo JOVANCEVIC, mijojovancevic@t-com.me). There is also a laboratory for dairy products, whose primary role is still in the service provision (dr Slavko MIRECKI, milklab@t-com.me).

Research component of the BIP is the oldest one, not only in the Institute but in the whole Montenegrin science society. BIP is broader recognized by its research and results achieved so far. BIP activities are carried out through the organization of fundamental, applied and developmental research in many field of plant production, animal husbandry, forestry and in the related production technologies. BIP researches are carrying out the national and international research projects and closely collaborate with different stakeholders in the agricultural sector.
Organizational structure of BIP is corresponding to the main research activities.

Its research infrastructure is open to external users. There are important different pieces of equipment within each of the centres, and here are listed only some of them:
Atomic absorption spectrophotometer – *FAAS* and *GFAAS* (Shimadzu), Lamps for Na, K, Ca, Mg, Fe, Al, Mn, Zn, Cu, Ni, Pb, Cr and Cd
Flame photometer (Jenway)
UV/Vis Spectrophotometer (Jenway)
Centrifuge with Cooling System (Nuve)
pH meter (WTW)
Soil augurs for nematode sampling
ELISA plate reader
Elutriator for the extraction of free living nematodes from soil
Elutriator for the extraction of nematode cysts from moist soil
Equipment for the extraction of active nematodes from plant material
MilkoScan 4200
BactoScan FC 100 H
MilkoScan 120 FT
Delvotest Accelerator
Cryoscope 4D3
Kjeldhal System
Fossomatic 5200 basic
CombiFoss 5200

Scientific field: Biomedical and life sciences – public health	**Country and Type of Infrastructure:** Montenegro / National / Single-sited
Research infrastructure in the field of Public Health	
Institution responsible for infrastructure: Institute for Public Health	
Home page: http://www.ijzcg.me	
Full Address: Ljubljanska bb 81000 Podgorica Montenegro	**Telephone:** +382 20 412 888
Name of the Contact Person: Boban MUGOSA, MD, MSc PhD	**E-mail:** Ijzcg@ijzcg.me

The Institute started with work in 1922, as a permanent Bacteriological station. Hygienic Institute was established in Cetinje, 1st March 1927 as an institution of special importance. After the Second World War, in 1946, Hygienic-epidemiological Institute was established in Cetinje. For the first time this institution was established in Podgorica on 1st January 1956, as a Central Hygienic Institute. From 1st March 1962 this institution worked as a Republic Institute for Public Health of Montenegro. In 1991 Medical Institute was reorganized, by the Decision of the Government of the Republic of Montenegro (Official Gazette, No 21/91 and 34/91), into the Institute for Public Health of Podgorica. The Institute for Public Health was established by the Decision of the Government of the Republic of Montenegro (Official Gazette of Montenegro, No. 79/2004), put into force on 31st December 2004, as a health care institution of particular interest for Republic.

Institute for Public Health of Montenegro represents a referent national institution for public health issues. IPH is the public institution with main goal to promote and protect health of population of Montenegro. Scientific and research work of the Institute is aimed at research in the field of public health, environment and improvement and development of health care services.
As a preventive-medical-health organization, it deals, among other tasks, with healthy lifestyles, quality of nutrition and nutrition habits, analyzing of health quality of foods, consumer goods and drinking water. IPH monitors, analyses and evaluates influence of environment (air, soil and noise) on population health. IPH covers: monitoring, research and conducting studies of population health and health culture; influence of environment on protection of population health; causes, spreading and prevention of infectious diseases; factors of risk of chronic, non- infectious diseases and other diseases of high social-medical significance as well as organization, working and development of health service and proposing and carrying out appropriate measures for prevention and improvement of population health.

The main source of funding is national funds.

Institute of Public health is opened for external users in terms that it provides health care services within domain of Institute's activities. IPH is a basis of the Medical faculty, Podgorica and it has significant cooperation with all governmental and nongovernmental institutions and organizations in projects realization.

There are lots of ways to grant access to external users. The most important relates to relations between users and providers regulated by the Law on health Care, Law on Health Insurance, regulations and Statute of the Institute of Public Health. In addition, the relations with international

collaborators are defined by international agreements and agreements for defining relations with domestic collaborators in accordance with regulated rules for cooperation. Users in accordance with defined rules may access our facilities. During one year, there is a large number of collaborators per each of the indicated levels.

Cooperation is being conducted in different ways, such as: provision of services, work on joint projects, programmes.

Cooperation with industry is made in terms of monitoring health determinants and participation in defining access for reducing their impacts, participation in implementation HASAP system in the industry of food and water.

Developing concept of high quality services in the Institute is the mode for attracting new users. Next, stimulating cooperation with governmental and nongovernmental organizations and institutions, the IPH maintains successful cooperation with during many years, is the way to make networks with the aim to have successful realization of projects and programmes.

The main cooperation partners on national level are: Ministry of health, Ministry of labour and Social Welfare, Ministry of Science, and all other ministries, schools, health care institutions and other governmental and nongovernmental organizations. As for the international partners, the most prominent ones are: WHO, ECDC, UNICEF, GFATM, School of Public Health “Andrija Stampar, Zagreb, Institut Jozef Stefan, Ljubljana. The Institute has significant experience in cooperation with EU countries, and the main partner are: WHO- European Region, Stability pact, FOCUS BALKANS project EU FP7, Institute Jozef Stefan-Ljubljana, Instituto Superiore di Sanita- Rome, Italy

IPH successfully realized all initiated projects and programs. Successful cooperation with WHO, UNDP, UNICEF, Imperial College London, CPHA, Stability pact, Institute Jozef Stefan-Ljubljana, Instituto Superiore di Sanita- Rome, Italy. IPH is one of the partner of EU FP7 project, FOCUS BALKANS, where some of the project partners are: University of Newcastle, Wageningen University, University of Parma, University of Ljubljana, public health institutes and universities form the region of the Western Balkans, and is coordinated by Swiss Agridea.

Scientific field: Biomedical and life sciences	**Country and Type of Infrastructure:** Montenegro / Regional / Single-sited
Facilities for examination of hydrography, chemistry and microbiology of marine water	
Institution responsible for infrastructure: University of Montenegro Institute for Marine Biology, Kotor, Montenegro	
Home page: http://www.ibmk.org	
Full Address: Dobrota bb P Box 69 85330 Kotor, Montenegro	**Telephone:** Tel +382 32 334 569 Fax +382 32 334 570
Name of the Contact Person: Director, dr Aleksandar JOKSIMOVIC	**E-mail:** acojo@ac.me

Institute for Marine Biology has a long research tradition of almost 50 years (it is funded in 1961.). Main objective is research of the South Adriatic area, with special focus on Montenegrin coast; protection and maintenance of biodiversity, valorisation and sustainable management of marine resources (marine fisheries and mariculture).

It is engaged in different types of research, such as that of flora and fauna, protection of biodiversity, protection from marine pollution and making list of pollutant hot-spots, proposition for ecosystems protection, biomass estimation of living economically important marine resources (fish, crustaceans, cephalopods, shells). These imply: control of water, sediments and marine biota quality, systematic and ecology of marine species (phytoplankton, zooplankton, phytobenthos, zoobenthos, microbiology, ichthyology) and mariculture

Institute for Marine Biology consists of the following laboratories:

1. General biology and protection of the sea;
2. Chemistry, biochemistry and molecular biology;
3. Development center and mariculture;
4. Ichthyology and marine fisheries;
5. Neurobiology and ecophysiology

Besides scientific-research activities, the Institute has also a role in education through mentoring of young researchers working on their PhD Thesis. Currently, there are 12 PhD students supported within the Institute, which provides significant research human resources basis, necessary for future development and growth of the Institute.

Institute is a part of the University of Montenegro, therefore, basic funding is provided from the University resources. Other types of funding are provided through national and international projects and cooperation.

Institute activities are exclusively scientific research for the needs of Governmental Institutions (Government of Montenegro, Ministry of education and science, Ministry of ecology, Ministry of agriculture, forestry and water management and Academy of science). On the international level Institute is the scientific focal point for Montenegro for many organizations, networks and projects (GFCM – General Fishery Commission of Mediterranean, FAO AdriaMed, Forum Adriatico-Ionico

initiatives, AFO - Adriatic Fishery Observatory etc.). There are some initiatives with some companies from Italy and Croatia for developing fishery of pelagic resources where Institute for Marine Biology would have role of a consultant. Future plans are building of referent national Laboratory for water quality for mariculture and biotoxines (the project has already been approved and will be financed by the World Bank) and building of scientific and educational centre for biodiversity preservation of Boka Kotorska Bay and South Adriatic (project will be financed by the FAO).

The Institute is open for international cooperation in particular for future partners that can significantly contribute to strengthen the network of Adriatic countries in all the aspects of preservation and conservation of biodiversity, prevention of pollution and sustainable fishery of the shared stocks.

The Institute for Marine Biology owns complete laboratory equipment for hydrography, chemistry and microbiology of marine water, equipment for sampling and proceeding of plankton, invertebrate and fishes (appropriate nets, regular and inverted microscope with camera, CTD probe, otolits cutting and polishing machine). However, currently the biggest problem in the Institute is a lack of a research vessel.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Serbia / European / Single-sited
GMP in Pharma industry	
Institution responsible for infrastructure: University of Belgrade, Chemical Engineering	
Home page: http://www.tmf.bg.ac.yu/index.php?p1=5&p2=11&p3=0&p4=0&p5=0&lang=en	
Full Address: Karnegieva 4 11 000 Belgrade	**Telephone:** +381 11 3370 472
Name of the Contact Person: Mr Branko BUGARSKI, Head of Pharmaceutical Departmant	**E-mail:** branko@tmf.bg.ac.yu

Chemical engineering department at the University of Belgrade has been operating for almost two decades, with main objectives oriented towards regulation GLP, and GMP in pharma industry. It is a governmental institution, supported by public partnership.

The research activities at the Department of Chemical Engineering cover various areas of chemical engineering: transport phenomena in complex-flow, heterogeneous and multi-component systems, heat and mass transfer, separation processes, thermodynamics of multi-component systems, energy management, mathematical modeling and informatics, bioreactors and cell/tissue cultures, pharmaceutical and biomedical engineering, and process dynamics and control. This diversity of interests provides active involvements of graduate students in traditional chemical engineering research extended to exciting new areas of science and technology.

The research is carried out through realization of numerous fundamental as well as applied projects funded by national institutions and various partners from industry. The applications can be made in chemical process industry, petrochemical industry, environmental engineering, pharmacy and medicine.

Its research infrastructure is open towards external users, with France and Greece identified as main cooperation partners. Broad scientific collaborations with a number of universities and research centers in Europe, USA and Canada have been established. These include: Columbia University, USA; Oregon State University, USA; Twente University of Technology, Netherlands; Dechema Institute, Germany; Max-Planck Institute in Magdeburg, Germany; Rice University, USA; ENITIAA, Nantes, France; Laboratoire des Sciences du Genie Chimique, Nancy, France; University of Pensylvania, USA, University of Ottawa, Canada, etc.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Serbia / European / Single-sited
Research infrastructure in the field of agriculture	
Institution responsible for infrastructure: University of Belgrade, Faculty of Agriculture	
Home page: http://agrifaculty.bg.ac.yu/	
Full Address: Nemanjina 6 11080 – Belgrade, Zemun	**Telephone:** +381 11 316 8499 +381 11 2615315
Name of the Contact Person: Mr Zoran MARKOVIC, professor Ms Radmila STIKIĆ, professor	**E-mail:** zoranmm@agrifaculty.bg.ac.yu rstikic@agrifaculty.bg.ac.yu

Faculty of Agriculture, University of Belgrade, has been operating in the general area of agriculture for more than two and a half decades, and in the area of food production for almost a decade. Within the latter, the main objectives oriented towards research in the area of the carp production, training and establishment of network with producers and other stakeholders.

It is a research institution, supported by both, public and private partnership. Among possible activities aimed at establishing collaboration with centres of excellence or laboratories, this department identifies research cooperation, training, scientific meetings and networking.

Its research infrastructure is open towards external users. However, when it comes to differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialised countries such as US, Canada, Japan and researchers from other countries), differences in required financial resources and quality assessment criteria are mentioned, as regards incoming researchers from EU and industrialized countries. On the other hand, there are no specific requirements or limitations for researchers from WBC and third countries when coming to the institution.

The faculty itself does not have any signed agreements with similar institutions, nor clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

Currently, the cooperation is realized through specific research projects, with Norway and Hungary identified as main cooperation partners, along with US, Canada, Japan and researchers from other countries, and the willingness and openness to all kinds of cooperation with all EU and other countries is clearly stated. Special preference has been given to joint collaborative projects and networking activities.

EU international programmes, bilateral cooperation, as well as all other types of international cooperation are recognized as possible ways for carrying out the international cooperation. Special emphasis has been put on participation in Framework programmes. As an example of a success story, participation in a FP6 project (WATERWEB) was mentioned, thanks to which the institution has been invited to take a part in another FP project (SAFIR).

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Serbia / National / Single-sited
Research facilities and equipment for research in the field of medical sciences	
Institution responsible for infrastructure: Institute for Medical Research	
Home page: http://www.imi.bg.ac.yu/	
Full Address: Dr Subotica 4, POBox 102 11129, Belgrade	**Telephone:** +381 11 685788
Name of the Contact Person: Mr Pavle MILENKOVIC, Head of Experimental hematology	**E-mail:** mpavle@imi.bg.ac.yu

Institute for medical research has been operating for more than two and a half decades.

It is a public research institution, supported mostly by public partnership. It is already coordinating an INCO FP6 project, thus having established collaboration with centres of excellence or laboratories.

Its research infrastructure is open towards external users, namely medical, biomedical and university institutions as well as other interested parties. There are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialised countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when coming to the institution, only when they are to be employed by the institutions, the general national requirements are to be met.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

Currently, France is identified as main cooperation partner, and the willingness and openness to all kinds of cooperation with all EU and other countries is clearly stated.

As main possible ways for carrying out the international cooperation, the institution mentions possible bilateral projects and joint FP7 applications. In addition, the existing bilateral cooperation with partner in France, through a project \"Pavle Savic\" under FP6 INCO, as well as SSA project FP7 in preparation is described. As an example of a success story, coordinating the mentioned FP6 project is introduced, with general comment that the main difficulty in cooperation both, within the FP and with EU countries is complexity of administrative procedures.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Serbia / European / Single-sited
Research Facilities for Microscopy	
Institution responsible for infrastructure: University of Belgrade, Faculty of Biology	
Home page: http://www.bio.bg.ac.yu/centri/centar_laserska_konfokalna_mikroskopija/centar_laserskakonfokalna_mikroskopija.htm	
Full Address: Studentski trg 3 11 000 Belgrade	**Telephone:** +381 11 3032356
Name of the Contact Person: Mr Pavle ANDJUS, head of laboratory	**E-mail:** pandjus@bf.bio.bg.ac.yu

Faculty of Biology at the University of Belgrade has been operating in the field of neuroscience and physiology for almost a decade. As addition to these resources, it has been equipped with a laser scanning confocal microscope that will present the core facility for the project research management.

It is a research institution, supported mostly by public partnership. Exchange of young researchers and experts, transfer of know-how, networking towards mutual FP-type grants are mentioned as possible ways of establishing stronger international cooperation.

Its research infrastructure is open towards external users, which is enabled through bilateral third party contracts and time lease agreements. As differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries), specialized offices and personnel within research institutions are mentioned. Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned. As for the time lease, cost of working hours has to be covered.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

Currently, Croatia, Slovenia, Italy, Belgium, Norway, France are identified as main cooperation partners, and the willingness and openness to all kinds of cooperation with all EU and other countries is clearly stated.

As main possible ways for carrying out the international cooperation, the institution mentions possible R & D demonstration and management activities. It is open to cooperation thanks to the existing bilateral and/or multilateral contracts, inter-University and inter-Academy agreements, and, of course, EU programmes. The existing bilateral agreements are with institutions from Pisa, Turin, Ljubljana, Zagreb, Oslo, and there is also a bilateral agreement with CNRS. As prospective partners, the following institutions are numbered: Neuroscience lab for Novel Microscopy, INSERM/CNRS (Paris) - Neurobiological Knowledge Center of the University of Szeged and the Biological Research Center of the Hungarian Academy of Sciences - LAGENBIO, Facultad de Veterinaria. Universidad de Zaragoz. As examples of success story, successful FP6 project and COST activities are given, and main obstacles to further cooperation are separate and slow customs regulations and visa administration.

Scientific field: Biomedical and Life Sciences	**Country and Type of Infrastructure:** Serbia / National / Single-sited
Infrastructure for the research on the field of food technology	
Institution responsible for infrastructure: Institute for Food Technology Novi Sad	
Home page: http://fins.ns.ac.yu/	
Full Address: Bulevar Cara Lazara 1 21 000 Novi Sad	**Telephone:** +381 21 485 3845
Name of the Contact Person: Ms Jovanka LEVIĆ, Head of Centre for Feed and Animal Products,	**E-mail:** jovanka.levic@fins.ns.ac.yu

Institute for Food Technology in Novi Sad has been active for more than 25 years.

It is a research organization, supported mostly by public partnership, of, as stated, national importance. As a modern, development oriented, stable institution, it is well positioned and recognized in ERA and global research networks and widely present and influential in food and feed production in the region. Networking and research activities are main envisaged ways of establishing international cooperation. Need for additional assistance in establishing partnerships with potential regional and EU partners has been indicated.

Its research infrastructure is open towards external users, which is enabled mainly through participation in EU programmes, and bilateral and multilateral cooperation. There is no specific access policy, and there are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned, except from interest in similar research area.

The cooperation is being realized mainly through bilateral agreements. Main cooperation partners are Germany, Italy, France, Norway, Romania, Lithuania, UK, Bulgaria, Greece. As an example of an existing agreement, one from FP7 was presented (Grant Agreement No 207043, REGPOT-2007-3-01, Reinforcement of FEED-TO-FOOD research center at Institute for Food technology of the University of Novi Sad).

There are data provided on access to the research infrastructure granted, which show that there is rather developed ongoing cooperation, but that there is room for improvement.

As for strategic approach or policy to attract researchers from EU member states or from other countries, the institution has envisaged several types of activities, such as: organization of conferences, workshops, trainings for researchers. USA and Ukraine are mentioned as first in line of future prospective partners.

No specific example of a success story is described. However, cooperation with EU member states up to this point has been successful.

Main obstacle to more successful cooperation is poor socio-economic conditions in the country.

4.3 COMPUTATION AND DATA TREATMENT

Scientific field: Computation and Data Mining	**Country and Type of Infrastructure:** Bosnia and Herzegovina / National / Single-sited
Fast data mining and computing centre	
Institution responsible for infrastructure: University "Džemal Bijedić" - Faculty of Information Technologies	
Home page: http://www.fit.ba/eng/	
Full Address: M. Tita bb 88 000 Mostar	**Telephone:** +387 36570730
Name of the Contact Person: Mr Safet KRKIĆ, Dean	**E-mail:** info@fit.ba

Faculty of Information Technologies, at the University "Dzemal Bijedic", namely its Fast data mining and computing centre, have been carrying out education and research activities in the field of information technologies for more than a decade.

It is a public research organization, supported mostly by public partnership, of, as stated, prevailingly national importance. In order to establish and strengthen collaboration with centres of excellence or laboratories, software engineering and distance learning are mentioned as possible joint fields. Also, need for additional assistance in establishing partnerships with potential regional and EU partners has been indicated.

Its research infrastructure is open towards external users, which is enabled through participation in EU/international programmes and through cooperation agreements with other countries. There is no specific access policy, and there are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned.

The cooperation is being realized through Tempus and other programmes, and in research especially in the fields of software engineering and distance learning. Main cooperation partners are Spain, Germany and Austria, and it is planned to establish cooperation with Slovenia. There are no data provided on access granted.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

No specific example of a success story is described, however, cooperation with EU member states up to this point has been successful.

Lack of contacts and interest for cooperation from other countries are main obstacles to more successful cooperation.

Scientific field: Computation and Data Mining	**Country and Type of Infrastructure:** FYR of Macedonia / National / Single-sited
Laboratories in the field of Electrical Engineering and Information Technologies	
Institution responsible for infrastructure: Faculty of Electrical Engineering and Information Technologies at The University Ss. Cyril and Methodius in Skopje	
Home page: http://www.feit.ukim.edu.mk	
Full Address: Rugjer Boskovic bb Karpos II 1000 Skopje. Macedonia	**Telephone:** +389 2 3062 224
Name of the Contact Person: Prof. Dr Mile STANKOVSKI, Dean	**E-mail:** dekan@feit.ukim.edu.mk

The Faculty of Electrical Engineering and Information Technologies (FEEIT) at The University Ss. Cyril and Methodius in Skopje is established in 1959 as the Electrical and Mechanical engineering department of The Technical faculty in Skopje. In 1965 this department evolved to The Faculty of Electrical and Mechanical and from 1978 the faculty is performing its operation as independent Faculty of electrical engineering. Following the science tendencies and development, the faculty transformed to Faculty of Electrical engineering and Information technologies in 2006.

The basic goal and mission of FEEIT is university education at all three levels (under graduate, MSc, Ph.D.) in accordance with Bologna process and European Credit Transfer System (ECTS), scientific research and industry related applied work.

In the 50 years of operation, the faculty evolved to highest state institution in the field of EE and IT, resulting in more than 7000 engineers, 250+ Masters of Science, 80+ doctors of technical sciences, numerous domestic and international scientific/research projects as well as high level of cooperation with industry. Today the Faculty is operating with the staff of 138 teaching/research employees, out of which 35 are full professors, 23 are associate professors and 14 are assistant professors.

The FEEIT is part of the integrated, state owned University Ss Cyril and Methodius in Skopje. Main source of funding is the Ministry of Science and Education (roughly 60%). The rest is financed by student participation fees and the projects realised in collaboration with national and international companies.

Basically, research facilities are intended to undergraduate, MSc and PhD students. Where applicable, in the frame of common projects with companies, the research infrastructure is opened to external users.
Usually the projects are defined and proposed by mutual work of interested parties from the faculty and external user. After defining the project goals, contract is signed between the involved parties, defining the scope of work, responsibilities and financial issues.
Cooperation in all research fields of interest in the scope of electrical engineering and information technologies is possible.
As main partners, different types of institutions are mentioned: private and public companies in ICT sector, industry automation, power engineering, equipment manufacturers, research institutes from Macedonia and abroad.
As for the types of collaboration with industry, the Faculty performs numerous activities: development, research and implementation of new technologies; testing of existing and new equipment, calibration,

common research/development/design projects in EE and ICT, revision of projects and other consultancy services.

Providing basis for cooperation is under the responsibility of the vice dean for finances and industry relations, covering realising contacts and establishing cooperation. The vice dean for science and international cooperation acts similarly with prospective international partners.

FEEIT collaborates with many countries, from region and outside of it, where small domination is addressed to former Yugoslav countries. Main cooperation country partners outside the region are United Kingdom, Denmark, Finland, Greece, Portugal, Germany, Netherlands etc. Also, great cooperation is established with public/private sector in Norway.

The success in cooperation is proved by great level of mobility from Macedonia to EU countries for both educational staff and students within the frame of TEMPUS projects and implementation of ECTS at the faculty; Research activities within the FP and NATO projects; student internships in private/public companies; Development of MSc and PhD study programs; Implementation of state-of-the-art technologies in private/public sector; Participation in human resources improvement in private/public companies.

FEEIT is organised in 10 institutes covering educational, research and application activities. Within the institutes, there are laboratories where most of the practical work and research are performed. The laboratories are basically dedicated, but not limited to the following fields of interest: Automation and system engineering, Basics of electrotechnics, Digital signal processing, Electromagnetic compatibility, Electromotive drives, Electrical machinery, transformers and apparatuses, Electrical measurements and materials, Electronics, Electrothermia, High voltage and transmission lines, Telecommunications, Relay protection, Physics. There is also central computer laboratory with 100 working places, equipped with multiprocessor and multi-core server computer systems on SUN Microsystems, IBM and HP platforms. There is Fast Ethernet based LAN and optical connection to the university computer centre.

In accordance with Bologna process and ECTS implementation, building the new research capacities is planned for near future. In the last few months negotiations and conversation with leading companies in EE and ICT sector in the country and abroad, as well as with some ministries took place. They resulted in the idea of strengthening the connections between academia and industry through building the Centre of excellence where student in undergraduate, but especially in graduate studies will perform practical experience and research.

Scientific field: Power engineering, telecommunications, electronics devices, computer engineering and technologies	**Country and Type of Infrastructure:** Montenegro / Regional / Single-sited
Laboratories in the fields of power engineering, telecommunications, electronics devices, computer engineering and technologies	
Institution responsible for infrastructure: Faculty of Electrical Engineering, University of Montenegro	
Home page: http://www.etf.ac.me	
Full Address: Džordža Vašingtona bb 81 000 Podgorica	**Telephone:** +382 20 245 839
Name of the Contact Person: Prof. Dr Srdjan STANKOVIC, Dean	**E-mail:** etf@ac.me

Electrical Engineering Department (EED) is one of the oldest units at the University of Montenegro. The Faculty cherishes both, fruitful research activities and high teaching standards. It is dedicated to the advancement of knowledge, learning and understanding in the service of society. For almost 48 years the Faculty of Electrical Engineering has made an eminent contribution to the modern life in the various aspects of modern information society in Montenegro: power engineering, telecommunications, electronics devices, computer engineering and technologies.

Responding to the needs of the environment, EED has diversified its study profiles and curricula during the past 40 years. Currently, the EED has three divisions: Division for Power Systems and Automatic Control, Division for Electronics, Communications and Computer Engineering, and School of Applied Computer Engineering. So far, more than 2100 students have graduated at the EED.

The EED has proven to be one of the most significant scientific institutions in the region. For instance, the research output from the EED in the last five years was about 200 scientific papers, 50 in leading world journals and 150 at international conferences. Furthermore, through the participation in several European Commission funded projects, the EED has gained the experience that recommends it as a referent and reliable partner in international initiatives and projects.

The Faculty employs more than 30 teachers (professors, associated professors, and assistant professors) and 28 teaching and research assistants. Approximately 70% of teaching staff has experience in teaching and research activities abroad, mainly in the USA and EU countries.

There are several laboratories within the Faculty:

1) Laboratory for digital signal processing (devoted to the different aspects of digital signal processing, filtering, non-stationary processing, spectrum estimation, time-frequency analysis, radar signal processing, radar imaging -SAR and ISAR applications)
2) Laboratory for multimedia systems (equipped with modern multimedia computers, software packages and other data processing technology)
3) Laboratory for telecommunications (contains a separated computer network and devices for Internet telephony testing - VoIP. The research within the laboratory is related to the forthcoming 4G mobile communications and new generation of wireless internet.)
4) Laboratory for automatics (It is equipped with state-of-the-art control systems and modern software development packages that enable applied research in a number of application

domains such as biomedical engineering, diagnostics and prognostics, and unmanned aerial vehicles.)
5) Laboratory for electronics (The Laboratory is equipped with state-of-the-art test and measurement equipment from reference producers like Tektronix, Agilent, Instek, Fluke)
6) Laboratory for electrical machines and drives (The laboratory is devoted to testing and evaluation of quality and design of various electrical machines. It is equipped with electrical motors, transformers, and instruments for electromechanical energy conversion)
7) Laboratory for electrical measurements (The Laboratory is equipped with test equipment electrical measurements and measurements in electronics.)

It is open to external users, and cooperation is conducted under various programmes, either within the interuniversity cooperation, or other existing programmes (FP6, FP7, NATO SPS, PELIKAN). Apart from the cooperation with the countries from the region, the EED cooperates with EU countries (such as France, Greece), Japan, USA, etc.

The FEE has participated, and is participating in several European Commission funded projects: “South East Europe Research and Education Network –SEEREN2”, EC-FP6; “South East Europe Grid – SEE GRID 2”, EC-FP6; ICT-WEB-PROMS, SeeGrid.Sci, SEERA.EI, Geant3 (FP7), “Introduction of a new study programme in Applied Electronics”, EC, TEMPUS – JEP 40017 2005, “Curriculum Development of Graduate Studies in Applied Computer Engineering and Internationalization of FEE Studies”, EC, TEMPUS – JEP 40105 2005.

EED research facilities and research infrastructure are opened for the external users. Many guest researchers are coming to EED to do joint research. The visits are possible in the frame of bilateral cooperation or joint research projects.
EED has also cooperation with the local industry. EED works on projects and studies, performs necessary measures, gives certificates for the imported equipment, etc. for the telecommunication, electronic and power system companies in Montenegro.
Many joint research projects, in different areas, have been realized, or are still ongoing, in the cooperation with the partners from the EU countries. Some of the partner institutions are: Grenoble INP/GIPSA-lab, Grenoble, France; Bonn-Rhein-Sieg University of Applied Sciences, Germany; Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece; L’ENSIETA (L’Ecole Nationale Superieure d’Ingenieurs des Etudes et Techniques d’Armement), France; University of Patras, Faculty of EE and Computer Technologies; National Technical University of Athens, Faculty of EE and Computer Engineering, Greece; University of L’Aquila, Faculty of Engineering, Italy; University of West Bohemia in Pilsen, Faculty of EE, Czech Republic; University of Liverpool, Department of Physics, U.K., etc.
There is also cooperation with some institutions from the non-EU countries, such as the National Aerospace University in Kharkov, Ukraine, and institutions from the region, Faculty of Electrical Engineering, University of Belgrade; Faculty of Technical Sciences, University of Novi Sad; University "Luigj Gurakuqi" Shkoder, etc.

The policy of EED is to enable all interested researchers to come to our institution, as well as to help the employed researchers to go abroad, in order to achieve new experience, which could be useful for improving the quality of research process at the EED.

4.4 ENERGY

No respondent or no data available for this scientific discipline and type of infrastructure

4.5 ENVIRONMENTAL SCIENCES

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Albania / European / Single-sited
Environmental pollution research facilities	
Institution responsible for infrastructure: University of Tirana, Faculty of Natural Sciences	
Home page: http://www.fshn.edu.al/	
Full Address: Bulevard ZOGU I, Tirana	**Telephone:** +355 682066409
Name of the Contact Person: Mr Ilirjan MALOLLARI, Dean of the Faculty of Natural Sciences	**E-mail:** ilir.malo@excite.com

Faculty of Natural Sciences at the University of Tirana has been active in the field of environmental sciences, or, more precisely, in the areas of control of environmental pollution and chemical engineering for more than twenty years.

It is a research institution, supported mostly by public partnership. As one of the most important methods of establishing stronger international cooperation, this institution emphasizes development of multilateral initiatives. However, need for additional assistance in establishing partnerships with both, potential regional and EU partners has been indicated.

Even though it is indicated that the research infrastructure of the institution is not open towards external users, several international partners are mentioned, Greece and Italy being most important among them. Its research infrastructure is open towards external users, which is enabled through bilateral third party contracts and time lease agreements. There are no difference whatsoever with regards to access policy to different groups. Next, there no specific requirements or limitations are imposed to researchers from WBC and third countries when scientific collaboration (short and long term) is concerned. No specific data on access granted are provided.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

Currently, Greece and Italy are identified as main cooperation partners, and the willingness and openness to all kinds of cooperation with all EU and other countries is clearly stated.

As main possible ways for carrying out the international cooperation, the institution mentions the following: exchange of information, staff mobility and performing experiments in the chosen topics of the said scientific field. The cooperation is realized mainly within bilateral cooperation, i.e. through calls for proposals published by the Ministry of Education and Science. On the other hand, the institution itself does not have signed agreements. What is planned for the near future are agreements with the Ministry of Foreign Affairs of Italy and General Secretariat for Research and Technological Development in Greece. When it comes to success stories, cooperation with the University of Patras – Greece is pointed out.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Bosnia and Herzegovina / National / Single-sited
Infrastructure for Water management, hydro-engineering and environmental protection	
Institution responsible for infrastructure: Hydro Engineering Institute Sarajevo	
Home page: http://heis.com.ba/home.php?kategorija=1&lang	
Full Address: Stjepana Tomica 1 71 000 Sarajevo	**Telephone:** +387 33 212 466
Name of the Contact Person: Mr Branko VUCIJAK, Executive Director	**E-mail:** heis@heis.com.ba

Hydro Engineering Institute in Sarajevo has been operating in the field of environmental sciences, namely in the area of water management, hydro-engineering and environmental protection for more than 25 years.

It is a research institution, supported mostly by private partnership, of, as stated, national importance. The Institutes scope of work includes scientific and research activities, education, planning, consulting services, as well as the revisions of technical-investment documentation from the domain of water management, hydro-engineering and environmental engineering. Establishment of multinational project consortiums is mentioned as a main possible way of strengthening international cooperation. Also, need for additional assistance in establishing partnerships with both, potential regional and EU partners has been indicated.

Its research infrastructure is open towards external users, which is enabled through bilateral third party contracts and time lease agreements. There are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned. The infrastructure is open to international cooperation mainly through participation in EU and international programmes, consortiums for specific ToRs

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries. Bilateral agreements of BiH and other countries on exchange of researchers, EC mobility funds are mentioned as existing funding possibilities to enable access to their infrastructure to researchers from third countries.

The issue of specific requirements for researchers coming from WBC is tackled briefly from three different standpoints: if relating to employing them, legal conditions are set by BiH, if it considers access to project results, they are accessible with the client permission. Last, communication access has no constraints

Currently, Greece, Italy, Slovenia, Croatia, Serbia are identified as main cooperation partners, with willingness and openness to broaden the cooperation with all EU and other countries. No data are given on access to infrastructure granted. As for plans for future cooperation, no specific countries are mentioned. However, depending on the open calls for the projects, the institution is open to cooperation possibilities, especially within specific calls for environment and water management.

No specific example of a success story is described, but general overview of the cooperation being successful, without major difficulties, is emphasized.

Scientific field: Earthquake Engineering and Engineering Seismology	**Country and Type of Infrastructure:** FYR of Macedonia / European / Single-sited
Two-component programmed seismic shaking table for dynamic testing of structures Equipment for geophysical, soil dynamics and strong motion investigation	
Institution responsible for infrastructure: University "St. Cyril and Methodius", Skopje Institute of Earthquake Engineering and Engineering Seismology	
Home page: http://www.iziis.edu.mk/	
Full Address: 73 Salvador Aljende, P.O. Box 101 1 000 Skopje	**Telephone:** +389 2 3107 701
Name of the Contact Person: Prof Dr Mihail GAREVSKI, Director	**E-mail:** garevski@pluto.iziis.ukim.edu.mk

The Institute of Earthquake Engineering and Engineering Seismology (IZIIS), Skopje is an internationally well-known institution in the field. It was established in 1965 within the University "SS Cyril and Methodius" in Skopje, to organize research and education primarily concentrated on earthquake engineering and engineering seismology. In following these tasks, the Institute received support from the UN and its specialized agencies UNDP and UNESCO during many years following the disastrous Skopje earthquake of July 26, 1963. While meeting the immediate needs for reconstruction of the city, the Institute created conditions for permanent progress in research, education and training, as well as in consultancy activities. The Institute's employees are permanently keeping pace with the most recent achievements in the sphere of protection against natural and man-made disasters.

The almost 45 years of IZIIS's mission and practical involvment in Macedonia, Balkan, Mediterranean and worldwide is summarized bellow by categories being the strategic orientation and mandate of the Institute:

- research, development, education and training in the field of earthquake engineering and engineering seismology;
- assistance (to Governments) in mitigating the consequences of earthquakes and post-disaster recovery;
- development and improvement of technical regulations, standards and codes;
- laboratory and field testing for defining the technical base of earthquake risk reduction;
- seismic monitoring and disaster forecasting;
- promotion of a risk prevention culture, general public and community awareness and participation and publications;
- Consulting services in design of more important structures in Skopje, Macedonia, former Yugoslavia, and beyond.

The Institute is a part of the University "SS Cyril and Methodius" and thus comes under the aegis of the Macedonian Ministry of Education and Science, which, despite substantial budget cuts over recent years, remains one of the Institute's main sources of funding. In terms of funding, 25% of the regular annual budget of the Institute is, still, provided by the Macedonian Ministry of Education and Science. The remainder originates from research, education and consultancy activities.
IZIIS performs three main types of activities: (1) Scientific activities; (2) Education activities, and (3) Applicative activities.

Partner-organizations in the domain of scientific activities are: the Ministry of Education and Science, the Ministry of Transportation and Communications, the Ministry of Ecology, the Ministry of Culture and other ministries as well as the local self-management authorities. It also realizes scientific projects in cooperation with foreign governmental and non-governmental organizations (EU, USA, NATO, JICA, etc.)

In the domain of education activities, the partner-organizations of IZIIS are: the members of the SS Cyril and Methodius University and other universities in R. Macedonia as well as the foundations and bodies that support educative activities (Government of the Royal Netherlands, TEMPUS, DAAD, etc.)

In its applicative activities, IZIIS cooperates with numerous domestic and foreign enterprises in the field of construction, design, water economy, culture, materials, etc.

Upon request of the Government, the University and other institutions, we contribute to preparation of regulations, laws and by-laws as well as elaboration of projects like UNESCO projects etc.

The listed research infrastructure is opened for external users in applied and development research projects, commercial projects, training and education as well as in consulting services.

The IZIIS's two-component programmed seismic shaking table for dynamic testing of structures shall become part of the Seismic Engineering Research Infrastructures for EU Synergies.

IZIIS facilitates four laboratories used for development of experimental methods and techniques for investigations of behaviour of structures, explosions, wind and other static and dynamic loads.

Dynamic Testing Laboratory is a part of the Dynamic Testing Laboratory and Informatics Department. The primary testing facility is the two-component programmed seismic shaking table for dynamic testing of structures. Also the laboratory is equipped with two smaller shake tables, material testing frames equipment for quasi-static testing, data acquisition, and transducers. Laboratory is also equipped for field measurements.

Geophysical Laboratory is equipped for specialized field measurements in engineering seismology and geophysics, such as seismic refraction, reflection and direct illumination surveys, measurements of micro seismic noise and geoelectrical resistivity.

Soil Dynamics Laboratory provides data on soil dynamics properties necessary for determining the dynamics strength and stability of soils, the soil liquefaction potential and soil-structure interaction. In cooperation with other IZIIS's laboratories it performs in-situ testing foundation and foundations models and other specific testing in the field of soil and foundation dynamics.

Strong Motion Laboratory provides maintenance of the Macedonian Strong Motion Network; collection, processing, acquisition and archiving of recorded strong motion data and maintenance of the instruments installed in special capital facilities in neighboring countries.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Montenegro / Regional / Single-sited
Seismology Observation	
Institution responsible for infrastructure: Montenegro Seismological Observatory	
Home page: http://www.seismo.cg.yu/	
Full Address: Radoslava Burica 81 000 Podgorica	**Telephone:** +382 20 648 146
Name of the Contact Person: Ms Jadranka MIHALJEVIC, adviser	**E-mail:** mihaljevic@seismo.cg.yu

Seismological Observatory of Montenegro has been operating in the field of environmental sciences, namely in the area of seismology for more than 25 years.

It is a governmental institution, supported mostly by public partnership, of, as stated, regional importance. Its main activities are aimed at improving regional seismotectonical model, investigating seismogenic zones, and assessing seismic hazard. Among other tasks, it observes and studies earthquake phenomenon on the territory of Montenegro and surrounding regions. MSO performs monitoring, analysis of weak and strong earthquake motion data. It is in charge of maintaining state seismic network of ten short-period stations and currently reports earthquake parametric data to many local and international agencies. Also, MSO performs real-time seismic way form data exchange with the number of surrounding national networks.

Besides the instrumental and fundamental seismology, this institution realizes engineering seismology studies, field seismic and other geophysical research of the shallow earth crust. It is also involved in planning of earthquake prevention and preparedness measures.

They consider that provision of everyday practice of exchange of near real time seismic data, first help establishing mutual contacts, and later provide contacts necessary for further strengthening of international cooperation. Also, need for additional assistance in establishing partnerships has been indicated, especially in order to enhance cooperation with EU partners. There, as a potentially efficient method support to study visits and training of the younger staff is seen. Considering cooperation with the WBC, no additional support is required.

Its research infrastructure is mainly open towards external users from the region. The infrastructure is open to international cooperation mainly through participation in international programmes.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

Willingness and openness to broaden the cooperation with all EU and other countries exist. Data on access to infrastructure granted show that international cooperation still needs to be enhanced. As for plans for future cooperation, apart from strengthening the ongoing cooperation with seismological institutions in the region, Italy is mentioned as a country with which there are clearly set plans.

As an example of a success story, or more of a positive experience with an EU country, recent obtaining of one MEDNET station from INGV – Italy is described. The seismic station is installed in the facility, and it provides data to both seismic networks.

Scientific field: Environmental Sciences	**Country and Type of Infrastructure:** Serbia / Regional / Single-sited
Geochemical characterization of solid pollutant material	
Institution responsible for infrastructure: University of Belgrade - Faculty of Mining and Geology	
Home page: http://www.seismo.cg.yu/	
Full Address: Djusina 7 11 000 Belgrade	**Telephone:** +381 11 3219101
Name of the Contact Person: Mr Vladica CVETKOVIC, professor	**E-mail:** cvladica@rgf.bg.ac.yu

Faculty of Mining and Geology has been operating within University of Belgrade for several decades. However, Geo-chemical characterization of solid pollutant material department center will start with its work in the field of environmental sciences during 2009.

Its most important equipment is scanning electron microscope equipped with an EDS analytical technique. This equipment is used for mineralogical and chemical characterization of natural and industrial solid material, with special emphasis on solid pollutants.

It is a governmental institution, supported mostly by public partnership, and is going to be of, as stated, regional importance. Its main activities are aimed at will be a center for geochemical characterization of solid pollutant materials. For further strengthening of international cooperation, participation in bilateral projects or collaborative projects through FP7 is seen as a main tool. Also, need for additional assistance in establishing partnerships with regional and EU partners has been indicated, emphasizing that it is needed to allocate money for the purpose timely, if any progress in this respect is to take place.

Since this research infrastructure is still not operational, it is not yet possible to speak of its openness towards external users. As for the ongoing cooperation, the cooperation of the faculty as a whole has been described. Also, there exist major plans for future activities with regards to the specific infrastructure.

At the moment, there is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries. Still, it is clearly stated that no specific requirements other than sharing the same scientific interests are required from the researchers the institution cooperate with.

As possibilities for cooperation, bilateral projects, joint projects, joint PhD studies, participation in projects coordinated by RI from EU are mentioned. The institution has experienced different ways of international cooperation. However, the volume of that cooperation must be larger, and data on access to infrastructure granted support that statement.

Current main partners are from Germany, Slovenia, Hungary, Bulgaria, Switzerland, and in future, it is planned to enhance cooperation with the researchers from Germany, Netherlands and Slovenia, as well as from the countries of the WB region, such as FYR of Macedonia and Bosnia and Herzegovina.

Speaking of experiences, the institution is at the beginning of the implementation of a FP7 project. In general, both success and difficulties occur.

4.6 MATERIALS SCIENCES

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Montenegro / Regional / Single-sited
Equipment in the field of materials science	
Institution responsible for infrastructure: University of Montenegro - Faculty of Metallurgy and Technology	
Home page: http://www.mtf.ac.me/	
Full Address: Cetinjski put bb 81 000 Podgorica	**Telephone:** +382 20 245 406
Name of the Contact Person: Mr Kemal DELIJIC, Dean of the Faculty	**E-mail:** kemal@cg.ac.yu

Faculty of Metallurgy and Technology at the University of Montenegro has been providing services for material science, technology, engineering, environmental protection and education for more than 25 years.

It is equipped with the following: equipment for qualitative and quantitative chemical determination, AAS, Spectrophotometer, equipment for characterization of waters, pH, Oxygen, temperature, common chemical equipment, devices for optical microscopy with digital image processing, equipment for metallographic preparation of specimens, equipment for macro and micro hardness testing, equipment for ten silo testing of materials, Sharpie testing, all types of laboratory furnaces, Laboratory press for hot pressing, common casting devices and furnaces

It is a public research institution, supported mostly by public partnership, of, as stated, regional importance. In order to establish and strengthen collaboration with centres of excellence or laboratories, scientific projects, exchange of researchers, providing of modern equipment, financial support are mentioned as possible ways of realization. Also, need for additional assistance in establishing partnerships with potential EU partners has been indicated, with following concrete proposals: provision of modern equipment, financial support, provision of access to the specific data bases in the field of material science and environmental protection. There are no obstacles to partnerships within the region.

Its research infrastructure is open towards external users, which is enabled through cooperation agreements, bilateral and multilateral contracts. Agreement of Cooperation between Slovenian Faculty of Natural Science and Engineering and Montenegrin Faculty of Metallurgy and Technology illustrates this statement. Serbia, Slovenia, Poland, Ukraine, FYR Macedonia are main cooperation partners. There are no differences in access policy for different groups (e.g. researchers from EU Member states, researchers from other Western Balkan Countries, researchers from industrialized countries such as US, Canada, Japan and researchers from other countries). Also, there are no specific requirements or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned. The infrastructure is open to international cooperation mainly through participation scientific projects in the field of material science and environmental protection. No data are given on access to infrastructure granted. The Faculty is open to cooperate with any interested research institution in the field of material science and environmental protection.

There is no clearly defined strategic approach or policy to attract researchers from EU member states or from other countries.

Previously defined scientific projects and signed agreements are a prerequisite for access of incoming researchers.

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Serbia / European / Single-sited
Nanoscience research infrastructure	
Institution responsible for infrastructure: University of Belgrade – Faculty of Physics	
Home page: http://bmw.ff.bg.ac.yu/default.htm	
Full Address: Studentski trg 12 11 000 Belgrade	**Telephone:** +381 11 630152
Name of the Contact Person: Mr Milan DAMNJANOVIC, Professor	**E-mail:** yqoq@afrodita.rcub.bg.ac.yu

Faculty of Physics at the University of Belgrade is an institution several decades old, and is active in the field of nanosciences.

It is a public, non-profit research institution, supported mostly by public partnership, of, as stated, European importance. Its infrastructure is used for research, spreading of the knowledge, education of students and researchers in the industrial research departments. In order to establish and strengthen collaboration with centres of excellence or laboratories, joint research, exchange of knowledge, people and resources are mentioned as possible ways of realization. Also, need for additional assistance in establishing partnerships with potential EU and regional partners has been indicated.

Its research infrastructure is open towards external users, which is enabled through bilateral contracts multilateral contracts. There are no formal procedures for access. Next, no specific requirements, apart from expertise, or limitations for researchers from WBC and third countries when scientific collaboration (short and long term) is concerned are foreseen.

Currently, Germany, Greece, France, Slovenia are identified as main cooperation partners, and the willingness and openness to all kinds of cooperation with all EU and other countries is clearly stated.

As main ways of carrying out the international cooperation, the institution mentions joint research (with 10-15 joint papers published in leading journals) and exchange of young scientists. Among existing agreements and contracts, the following are listed: 1) Prof. Maja REMSKAR, Nanophysics & Surfaces Laboratory, Jozef Stefan Institute, Ljubljana, Slovenia, bilateral project BI-CS/04-05-037 2) Prof. Pierre TRONC (ESPCI, Paris, France). 3) Prof. Stergios LOGOTHETIDIS, Lab for Thin Films – Nanosystems. No data on granted access to the infrastructure are provided.

As prospective partners, no specific institutions are given. However, there is interest in collaboration in the field of modern research of grapheme, and an experimental group will be useful in their theoretical research.

Scientific field: Materials Sciences	**Country and Type of Infrastructure:** Serbia / European / Single-sited
Center for Integrated Microsystems and Components	
Institution responsible for infrastructure: University of Novi Sad - Faculty of Technical Sciences	
Home page: http://www.ftn.ns.ac.yu/english/	
Full Address: Trg Dositeja Obradovica 6 21 000 Novi Sad	**Telephone:** +381 21 4852552
Name of the Contact Person: Mr Goran STOJANOVIC, head of the Laboratory	**E-mail:** sgoran@uns.ns.ac.yu

Faculty of Technical Sciences at the University of Novi Sad is active in the field of micro and nano-electronic materials characterization for more than a decade.

Research infrastructure, which presently exists at Center for Integrated Microsystems and components, covers all its major research directions. Some of the specific pieces of equipment are presented in the table below:

N5230A Agilent PNA-L Network Analyzer, 10MHz-50GHz
E5071B Agilent Vector Network Analyzer, 300 kHz - 8.5 GHz
N4693A 2-port MW Electronic Calibration Module, 2.4mm
RF/Microwave Wafer Probe Station, PM5, SUSS
Signatone DC Wafer Probe Station
HP 4194A Impedance/Phase Gain Analyzer, 100Hz - 40MHz
HP 4277 A LCZ Meter to 1 MHz
HMS-3000, Hall effect measurement system
HP 1650 A Logic Analyzer
16901A 2-slot Modular Logic Analyze
16911A 68-Channel 4 GHz Timing/250 MHz State Logic Analysis Module
16720A 300 M Vector/Sec Pattern Generator Module
Tektronix 576 Curve Tracer
HP 3652 Dynamic Signal Analyzer
HP 54110D Color 1 GHz Digital Oscilloscope
HP 3314A Programmable Function Generator
HP 81519A Optical Receiver DC - 400 MHz
E6000 Agilent Mini-OTDR
HP 3478A Digital Multimeter
ERSA SMT Station ESS 8000
Keithley 103A Nanovolt Amplifier 23.
Agilent 82357A USB/GPIB Interface

It is a research institution, supported mostly by public partnership, of, as stated, European importance. The goal to be reached is to become a regional leader in the field of different characterization techniques of micro- and nano electronic materials. In order to establish and strengthen collaboration with centres of excellence or laboratories, collaboration through FP7 (REGPOT1), EUREKA, SEE-

ERA.NET project are mentioned as possible ways of realization. Also, need for additional assistance in establishing partnerships with potential EU and regional partners has been indicated.

Its research infrastructure is open towards external users, which is enabled through bilateral cooperation, e.g. with France or multilateral cooperation, with Austria, Slovenia, Poland. Next, no specific requirements, or limitations for researchers from EU, WBC and third countries when scientific collaboration (short and long term) is concerned are foreseen. As for the access policy, open access to our equipment in the filed of characterization of different types of electronic materials is enabled. There are no differences to access to different groups of researchers.

Currently, Austria, Slovenia, Poland, France, Italy are identified as main cooperation partners. Slovakia, Romania are the next countries in line the institution intends to establish cooperation.

Knowledge and technology transfer through organization of appealing trainings, workshops and conferences are main ways of carrying out the international cooperation. Among existing agreements and contracts, the following are listed: bilateral with France, multilateral with Austria, Slovenia, Poland. No data on granted access to the infrastructure are provided.

There are no specific examples of cooperation described, but there is general satisfaction with the existing cooperation in the institution.

4.7 SOCIAL SCIENCES AND HUMANITIES

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Bosnia and Herzegovina / Global / Virtual
Database and archives	
Institution responsible for infrastructure: University of Sarajevo - Human Rights Centre	
Home page: http://www.see-hrc.net/	
Full Address: Zmaja od Bosne 8 71 000 Sarajevo	**Telephone:** +387 33668251
Name of the Contact Person: Mr Sasa MADACKI, Director	**E-mail:** sm@hrc.unsa.ba

Human Rights Centre, University of Sarajevo is active in the field of social sciences for more than a decade. The Centre has comprehensive data bases and archives.

It is a research institution, supported mostly by public partnership, of, as stated, global importance. As an organizational unit of the University, it was founded with aim to provide University with a possibility to organize and enable itself for the confident and expert realization of international activities in the field of humanities, i.e. human rights research. In order to establish and strengthen collaboration with centres of excellence, collaboration through joint research projects and exchange of research staff are mentioned as possible ways of realization. Also, need for additional assistance, especially financial incentives, in establishing partnerships with potential EU and regional partners has been indicated.

Its research infrastructure is open towards external users, which is enabled mainly through FP projects. Next, no specific requirements, or limitations for researchers from EU, WBC and third countries when scientific collaboration (short and long term) is concerned are foreseen. As for the access policy, it is open to all researchers interested in Human Rights Research focused on WB. There are no differences to access to different groups of researchers.

Currently, Austria, Serbia, Croatia, FYR of Macedonia, Montenegro are identified as main cooperation partners.

Exchange of researchers and joint research projects are main ways of carrying out the international cooperation. No data on granted access to the infrastructure are provided.

There are no specific examples of cooperation described, but there is general satisfaction with the existing cooperation in the institution.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Bosnia and Herzegovina / National / Virtual
Database and archives	
Institution responsible for infrastructure: Historical institute in Sarajevo	
Home page: http://www.iis.unsa.ba/v2/index.php	
Full Address: Alipasina 9 71 000 Sarajevo	**Telephone:** +387 33 209 364
Name of the Contact Person: Husnija KAMBEROVIĆ, Director	**E-mail:** nauka@bih.net.ba

Historical Institute in Sarajevo is active in the field of social sciences for several decades. It has comprehensive data bases on the history of Bosnia and Herzegovina and history of Balkans region.

It is a research organization, supported mostly by public partnership, of, as stated, prevailingly national importance. In order to establish and strengthen collaboration with centres of excellence, common researches about history of the Balkan is mentioned as possible ways of realization. Also, need for additional assistance, especially financial incentives, in establishing partnerships with potential EU and regional partners has been indicated.

Its research infrastructure is open towards external users, which is enabled mainly through cooperation agreements. Next, no specific requirements, or limitations for researchers from EU, WBC and third countries when scientific collaboration (short and long term) is concerned are foreseen. There are no differences to access to different groups of researchers.

Currently, Croatia, Germany and Austria are identified as main cooperation partners. In order to illustrate the existing agreements, New and Ambiguous Nation-building Processes in South-eastern Europe: Collective Identities in Bosnia-Herzegovina, Macedonia, Moldova and Montenegro in Comparison (1944 – 2005) is mentioned.

Common research projects are indicated as a main way of carrying out the international cooperation. No data on granted access to the infrastructure are provided.

There are no specific examples of cooperation described, but there is general satisfaction with the existing cooperation in the institution.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Bosnia and Herzegovina / Regional / Single-sited
Institute for Research and Development	
Institution responsible for infrastructure: University for Business Engineering and Management, Banja Luka, Bosnia and Herzegovina	
Home page: www.univerzitetpim.com	
Full Address: Despota Stefana Lazarevića bb 78 000 Banja Luka BiH	**Telephone:** +387 51 378 300
Name of the Contact Person: Marijana MLADENOVIĆ, PhD (deputy managing director of the University)	**E-mail:** marijana.mladenovic@fakultetpim.com

University for business engineering and management was established in 2003 as a first privately financed university in social sciences in the Republic of Srpska. From the beginning of the University, its Institute for research and development started with the integration in the regional research context.

So far, the Institute have performed numerous projects for the Ministry of Science and Technology of the Republic of Srpska (some of them are: "Development of the Republic of Srpska's economy competitiveness in the process of Bosnia and Herzegovina's integration in WTO and EU", "Contribution of economic diplomacy to the development of the Republic of Srpska's economy competitiveness in the process of Bosnia and Herzegovina's integration in WTO and EU ", " Building the tourist image of Banja Luka and the role of diplomacy in promotion of tourist potentials of Banja Luka", "Study of establishing business incubators in Republic of Srpska", etc.). Apart from these, the Institute has made a "Strategy for development of trade in Republic of Srpska until year 2018." for Ministry of Trade in the Republic of Srpska Government.

The Institute is financed from individual projects and the University provides material infrastructure.

All the professors, assistant professors and assistants with master grade that are engaged at the University (34 professors and assistant professors, 21 assistants with master grade and 12 administrative assistants) work on projects at the Institute, depending on the project topic and their expertise.

As for the openness to external users, the research facilities and infrastructure are the property of the University for business engineering and management, and only units of the university (and the Institute is one of them) can use the infrastructure. However, cooperation with other research institutions is possible on contractual basis (joint venture projects, consortiums, etc.).

Interested parties from industry (business) contact representatives of the University (Institute) and Institute perform the task (usually analysis, market valuations, etc.).

New users are being attracted by promoting university and experts that are working on it.

Currently, several cooperation agreements (or memoranda of understanding) are in force: with Zagreb School of Economy and Management (Croatia), University "Braca Karic" Belgrade (Serbia), University of Banja Luka (BiH) and work very closely with University in Sarajevo (BiH). In the beginning, big contribution to university was given from the Bled School of Management (and its director Prof. Danica Purg), which still remains the main EU partner of the Institute.

University (and Institute) have around 2.800 m^2 modern, sophisticated and, for our environment, elite classrooms, library, and other interior needed for making presentations and meetings in projects. We have 2 classrooms with 30 PC each, and every office and classroom is equipped with PC, projectors, and when necessary TV and DVD equipment.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Croatia / Global / Virtual
Database and archives	
Institution responsible for infrastructure: Institute for International Relations	
Home page: http://www.imo.hr/	
Full Address: Lj.F. Vukotinovica 2/2 10 000 Zagreb	**Telephone:** +385 1 4877-475
Name of the Contact Person: Ms Nevenka ČUČKOVIĆ, Senior Research Fellow	**E-mail:** nena@irmo.hr

Institute for International Relations from Zagreb is active in the field of social sciences for several decades. It has comprehensive data bases and archives.

It is a research organization, supported by both, public and private partnerships, of, as stated, global importance. There is already established strong international cooperation, through ongoing Network of Excellence project, supported under FP6. However, need for additional assistance in establishing partnerships with potential EU and regional partners has been indicated. As main means of assistance, administrative support for preparing project proposals is underlined, especially since outsourcing that to specialized consultants is, among other issues, very much connected with financial resources

Its research infrastructure is open towards external users, which is enabled through different funding schemes, such as FP7, CARDS, PHARE, CIP. As to access policy, there is possibility of free-of-charge access to databases.

Currently, UK, Germany, Austria, Italy, Slovenia, Hungary, Poland, Czech Republic, Belgium, Denmark, Slovakia, France, Bulgaria, Romania and Turkey are identified as main cooperation partners. There are plans to extend this cooperation to other EU countries and to the countries of the Western Balkans.

Networking, common research, publishing activities, organization of conferences are indicated as main ways of carrying out the international cooperation. No data on granted access to the infrastructure are provided. Next, project based cooperation is encouraged, visiting fellowships etc. Regrettably no office space or administrative support is provided, while use of RI and equipment that increase institute overhead costs are to be avoided.

Being part of NOE project enabled access to vast number of research data and publications, which otherwise would be limited to the organization.

But, limited office space and IT capacity, as well as insufficient administrative support are identified as main obstacles to access the research infrastructure.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Croatia / Regional / Virtual
Studia Mediterranea	
Institution responsible for infrastructure: Institute for International Relations	
Home page: http://www.ffst.hr/	
Full Address: Sinjska 2 21 000 Split	**Telephone:** +385 1 4877-475
Name of the Contact Person: Ms Tamara LJUBIČIĆ, dean's office-department for international cooperation	**E-mail:** tamara.ljubicic@ffst.hr

The Faculty of Philosophy is a legal successor of the Higher School for Teachers which was founded in Split in 1945. The University of Split was founded in 1974. Department of Social Sciences and Humanities was established in Split in 1978. Studia Mediterranea research programme is one of its new programmes.

It is a research organization, supported by public private partnership, of, as stated, regional and national importance. The researchers at the Faculty of Philosophy in Split are mainly orientated in Mediterranean and Adriatic themes. The research framework programme named Studia Mediterranea, consists in 8 projects so far. In order to establish international cooperation, the institution foresees common research projects with various universities and research centers in the Mediterranean area, Europe and elsewhere. Next, need for additional assistance in establishing partnerships with potential EU and regional partners has been indicated.

The Faculty of Philosophy in Split is one of the fastest growing research and higher education institutions in the area, with a great potential in people and also a great tradition in humanistic and social research. That, and attractive geographical position are the two main arguments the Faculty relies on when trying to attract new users.

Its research infrastructure is open towards external users, which is enabled through several cooperation agreements with EU based universities and research centers. As to access policy, the results of the research are available to all interested parties. The institution is also open for all sorts of external cooperation. No differences in access policy to different research groups exist.

Currently, UK, Germany, Austria, Italy, France, Greece, Hungary, Slovenia, Austria, Germany, Australia are identified as main cooperation partners. There are ongoing activities on establishing the cooperation with the University of Aix Marseille in France. Also, more cooperation agreements with universities in Italy and Slovenia can be expected. Some of the existing agreements are: INTERREG III A/ PHARE NEPTUNE COMENIUS C21ITQ IDENTIFYING TEACHER QUALITY ERATO-EUR-2006-059 BARCA NELLE ADRIAS KOLPOS TEMPUS PROJECT CD-JEP 17076-2002 INTERREG EUROPA ADRIATICA: ROTTE E PRECEZIONI NELLA STORIA E NELLA CULTURA DEL MARE COMUNE DAS SUDOSTEU

Common research projects in the field of social and human sciences and interdisciplinary projects are indicated as main ways of carrying out the international cooperation. No data on granted access to the infrastructure are provided. Next, Being part of NOE project enabled access to vast number of research data and publications, which otherwise would be limited to the organization. But, insufficient information provided in international languages on its own research work is identified as a main obstacle to access the research infrastructure.

Scientific field: Social Sciences and Humanities	**Country and Type of Infrastructure:** Croatia / European / Virtual
Library capacities	
Institution responsible for infrastructure: Institute Ivo Pilar	
Home page: http://www.pilar.hr	
Full Address: Marulicev trg 19 10 000 Zagreb	**Telephone:** +385 1 4886 825
Name of the Contact Person: Dr Jadranka ŠVARC	**E-mail:** jadranka.svarc@pilar.hr

The Institute of Social Sciences “Ivo Pilar” (http://www.pilar.hr/) is the largest multidisciplinary national research institute in Croatia in social sciences and humanities with more than 60 PhD and 40 researcher novices.

In addition to the basic scientific and research activity the Institute provides professional and consulting services, conducts strategic analyses, market research and public opinion research and performs interdisciplinary research that connects humanistic and social aspects with economic, technical, or natural sciences.

Since its inception in 1991 the Institute has participated in more than 150 projects supported by different funding institutions and schemes. The Institute publishes the Current Content referred scientific journal “Društvena istraživanja” (Social Research) and has published more than 80 research studies and proceedings.

Its organizational structure shows that there are, apart from its head administrative center in Zagreb, 6 regional centres throughout Croatia and 16 functional centres.

It is a public research organization, of national and European importance. At its disposal, there is a library with 5000 titles in the fields of social sciences and humanities, and large number of domestic and foreign periodicals. There are also several special and valuable collections, especially in the field of sociology (works of Dr Zlatko Gasparovic) and history (Dr Dragutin Pavlicevic), as well as collections of gender studies (*Gender Studies Classics, Minority Women Issues*). The library is open to external users.

As for the international cooperation, the Institute has been recognized as an important international partner. Their participation in projects supported by EU (SEE-ERA.NET, METRIS, DIOSCURI, WBC-INCO.NET) are only the latest ones that should be mentioned. Also, the Institute staff has been part of many COST actions for more than ten years. It participates in European Social Survey – a project supported by ESF. Also, there are representatives of the Ivo Pilar Institute in numerous international organizations and initiatives, such as: The International Commission for the History of Towns, Commission on the History of Cartography, IFUW (International Federation of University Women), and other.

4.8 OTHER

Scientific field: Other: Multidisciplinary: Chemical Technological, Biotechnology and Food Processing, Textile Engineering, Environmental engineering, Energy, Materials	**Country and Type of Infrastructure:** Bosnia and Herzegovina / European / Single-sited
Laboratories on chemical tech., biotechnology and food processing, textile engineering	
Institution responsible for infrastructure: University of Banja Luka, Faculty for Technology	
Home page: http://www.tfbl.org	
Full Address: Vojvode Stepe Stepanovica 73 78 000 Banja Luka Republic of Srpska, Bosnia and Herzegovina	**Telephone:** Tel.: +387 51 465 032 Fax: +387 51 465 137
Name of the Contact Person: Borislav MALINOVIĆ mobile: +38765690439	**E-mail:** bmalinovic@yahoo.com

The Faculty of Technology's first full year of operation was 1963-64 as a department of the Faculty of Engineering in Banja Luka which comprised then of two basic departments: Department of Chemical Engineering and Department of Electrical Engineering. As a result of subsequent changes in the structure of the Faculty, the Division of Chemical Wood Processing was transformed into the Department of Chemical Engineering and Technology.Requirements placed on the education of highly-skilled personnel in industries led to the establishment of three more departments: Biotechnology and Food Processing Department, Textile Engineering Department, and Mining Engineering Department.

In the past 45 years, the Faculty has been committed to providing the best range of higher education available and, as a result of numerous activities in that field, more advanced and rationalised programmes of study have been launched in order to help students to complete their job-oriented education as well as to respond to the needs of the higher education community, as set out in the Bologna Declaration, i.e., in line with a set of specified objectives based on the ECTS-compatible credit systems.

The current study programmes provide student transfer among the kindred universities in Bosnia and Herzegovina and even among the universities of European Union through the International Student Exchange Programmes. To date, 1232 students have graduated from the Faculty of Technology, while 62 Master's theses and 29 Doctoral dissertations have been successfully defended since 1963.

Currently, the Faculty offers four degree programmes at the Faculty of Technology in Banja Luka and we have 16 Laboratories at the following departments:

Chemical Technological (CTD):
- General
- Environmental engineering

Biotechnology and Food Processing (BTO):
- Food processing
- Food safety and quality management (FSQM)

Textile Engineering Department (TED):
- General
- Garment Technology
- Design and Garment

Scientific field: Other: Multidisciplinary: ICT, biotechnology, life sciences, material sciences, social sciences and humanities	**Country and Type of Infrastructure:** Bosnia and Herzegovina / European / Single sited
Research infrastructure in the fields of: R&D development, ICT and computer science, environment, microbiology, biotechnology, medical science and public health, agro-biotechnology, social and humanities sciences, economy and management, mechanical and electrical engineering	
Institution responsible for infrastructure: University of East Sarajevo	
Home page: http://uni-es.com/	
Full Address: Vuka Karadzica 30 Lukavica - Istocno Sarajevo 71123 Bosnia and Herzegovina	**Telephone:** +387-57 320 330
Name of the Contact Person: Katarina BOŠNJAKOVIĆ	**E-mail:** katarina.bosnjakovic@gmail.com

The University of East Sarajevo is an independent and self-governing institution, consisting of the 15 faculties and the two academies.Government of the Republic of Srpska is the main source of funding.

The University of East Sarajevo - UIS cooperates with all partners in the fields of: R&D development, ICT and computer science, cooperation, coordination and support, networking, science-research activities, innovations, development and improvement of technology, environment, microbiology, biotechnology, medical science and public health, agro-biotechnology, social and humanities sciences, economy and management, mechanical and electrical engineering.

The University of East Sarajevo has over 20 bilateral agreements signed with partner universities from Europe and Russia. These bilateral agreements regulate different types of cooperation, such as work on subjects and projects of common interest, exchange of scholars and students, joint publications, exchange of information and other activities in order to improve the academic cooperation.

Inter-university bilateral agreements:

Sapienza University of Rome, University of Pecs, The Universidad Politecnica De Valencia, Medical School – Pecs, University of Tuzla, University of Zenica, University of Sarajevo, University Dzemal Bijedic in Mostar, University of Mostar, University of Belgrade, University of Nis, University of Pristina - Kosovska Mitrovica, University of Novi Sad, University of Kragujevac, University of Novi Pazar University of Montenegro, Tambov State technical University.

UIS is also a member of the following associations: CEI UniNet – Central European Initiative University Network, EUA – European University, Association, B&H Rectors' conference

UIS has a very successful cooperation with institutions from B&H, Serbia, Macedonia and Montenegro at the same level of engagement.

The University of East Sarajevo has participated in 12 TEMPUS projects since 2000, two FP6 projects, one FP7 project; and other international project - such as project dealing with Brain Drain in West Balkan Countries, financed by UNESCO and 'Hewlett Packard', than ALPS/IRIS REFORM

PROJECT BIH, financed by USAID, and Institutional University Development Plan 2003-2008 - the project was funded by the World Bank.

As for the research infrastructure facilities, within UIS the following are established: research laboratories for microbiology, biotechnology, medical science and public health, agro-biotechnology, social and humanities sciences, economy and management, mechanical and electrical engineering, computer science.

Scientific field: Other: Multidisciplinary: Biomedical and Life sciences, social sciences and material sciences	**Country and Type of Infrastructure:** Bosnia and Herzegovina / European / Single-sited
Infrastructure in the field of: Biomedical and life sciences, social sciences, engineering	
Institution responsible for infrastructure: University of Banja Luka	
Home page: http://www.unibl.org	
Full Address: Univerzitetski Grad Bulevar vojvode Petra Bojovica 1A	**Telephone:** +387 51 321 172
Name of the Contact Person: Doc. dr Bozo VAZIC	**E-mail:** vazicb@yahoo.com

The University of Banja Luka has been established in 1975. It consists of sixteen faculties: Academy of Arts, Faculty of Architecture and Civil Engineering, Faculty of Economics, Faculty of Electrical Engineering, Faculty of Mechanical Engineering, Faculty of Philology, Faculty of Political Sciences, Faculty of Mine Engineering. Faculty of Agriculture, Faculty of Law, Faculty of Natural Sciences and Mathematics, Faculty of Technology, Faculty of Physical Education and Sport, Faculty of Philosophy and Faculty of Forestry. The University of Banja Luka has 52 licensed study programs.

There are around 600 professors, 400 assistants and 450 administrative staff members currently employed at the University.

At present there are around 17000 students at the University. As of 1st January 2008 the University of Banja Luka is integrated, with faculties as organizational units.

The Steering Board, Senate and Rector govern the University. The Rector legally represents the University. There are four Vice-Rectors (in charge of: research and scientific work, international relations, teaching and student issues and human resources).

It is a public university, and therefore the main source of funding is provided by the Government of the Republic of Srpska.

The Banja Luka University research and academic staff has been involved in more than 45 Tempus projects, several FP6 projects and two FP7 projects. The other international projects were financed by: the European Commission, the Council of Europe, the United States of America, United Nations, UNESCO/CEPES, the World Bank, governments of several states.

The University of Banja Luka is bound by more than 40 bilateral agreements on cooperation with public and private universities from all over the world, the agreements being the legal basis for cooperation.

Cooperation with external users is welcome, and, in accordance with that, the research facilities are open towards them. The infrastructure and facilities can be used in accordance with approval of people in charge for the maintenance. Even though there are no precise records, it can be stated that annually, there are many activities of external users performed at the University facilities and by using the infrastructure.

There are several possible types of cooperation with this institution, both, research and academic oriented: improvement of scientific research, student and research mobility, development and improvement of teaching processes, experience exchanges, and others. Therefore, the target groups are researchers, lecturers and students.

As for the cooperation with industry, knowledge transfer is a typical type of existing cooperation.

As best way to attract new users, work on scientific development and implementing gained knowledge in the industry are pointed out.

The University has established cooperation with different types of research institutions, universities being predominant. Among the cooperating countries, all the countries from the regions are mentioned, however, Serbia being the main partner from the region. Several EU countries are currently collaborating with the University, France, Italy, Slovenia, Germany and Austria being the most important.

The equipment and facilities are situated at the respective faculties. At some of the units, there are well equipped laboratories, but also there is a permanent need of further development. The University has plans for development, but it is not possible to realize it only by use of own resources. That is why the University has been active in many different projects.

Scientific field: Other: Multidisciplinary: Biomedical and Life Sciences, Environmental sciences, Material Sciences	**Country and Type of Infrastructure:** Bosnia and Herzegovina / National / Single-sited
Infrastructures: Air monitoring, noise and vibrations monitoring in living and working environments, chemical, biological and physical harmfulness and microclimate in working environment; Facilities for measuring of non-ionizing radiation, and partial equipment for water and soil monitoring, equipment for measuring of electric and lightning conducting installation	
Institution responsible for infrastructure: Scientific institution "Institute of protection, ecology and informatics", scientific research institute	
Home page: www.institutzei.net	
Full Address: Vidovdanska 43 78000 Banja Luka Bosnia and Herzegovina	**Telephone:** + 387 51 218 322
Name of the Contact Person: Predrag ILIC, M. Sc.	**E-mail:** ekoinstitut@inecco.net

Institute of protection, ecology and informatics is a scientific-research, consulting, project and educational institution in the following fields: safety at work, protection and improvement of quality of working and living environment, people's health protection, work safety, risk management and system of quality management. It has been established in 1976 as Institute of safety at work. In 1988, it has become Institute of protection, ecology and informatics. Currently, the Institute is organised in 4 departments:

1. Department for ecology (main activities: Continuous measuring of emissions of polluting substances in the air, Occasional measuring of concentrations from emissions of polluting substances that are going into the air from industrial processes and thermoelectric power plants in order to create Register of emissions and Register of air pollutants, Creating Environmental impact assessment study for all types of objects and processes, both new and developing the existing capacities, Creating Professional and Scientific papers in the field of air quality protection and the environment in general, Under preparation are also measuring and mapping of communal noise in accordance with European directive 2002/49/EC)
2. Department for safety at work (main activities: Creating technological projects, Periodical inspection and examining of work means and equipment in order to give usability licenses, Control of applied measures of safety at work while projecting, constructing and producing work means and equipment, Inspection and measuring electric and lightning conducting installation of an object)
3. Department for fire and explosion prevention (Creating Studies and Professional opinion for fire prevention, Inspection and service systems for fire alarms, projecting and creating communal plans for fire prevention and determining danger zones of fire prevention)
4. Department for education (Education of workers in the field of safety at work and fire prevention, Work with means of protection, Organization of seminars and consultations in the fields of safety at work and fire prevention)

Institute's mission is to develop a concept of reliable economy and implementation of the principle of risk management in practice of economy and institutions. Projects and programs are drafted in

phases: research - scientific and professional verification of the results - training and innovation of knowledge - consulting - publication of the results.

It has 38 employees, with a team of young and creative researchers, and also a team of known and respected scientists, experts and University professors. The work on professional improvement is conducted both systematically and consistently.
Institute of protection, ecology and informatics is a state institution owned by the Ministry of Science and Technology of the Republic of Srpska, with its own finances and without Government's role in its incomes.

Main source of funding is national, secured through services for economy and non-economic organizations and institutions, scientific-research projects, co-financed by Ministry of Science and Technology.

Institute of protection, ecology and informatics is opened for external users, and for using human resources and Institute's equipment, as well as for other means of cooperation. All types of cooperation are being carried out - making the studies, strategies, reports, mutual work regarding living and working environments monitoring, organization of scientific conferences, seminars and all other aspects of cooperation in the fields our Institute deals with.

Typical external user (target group) is industry, i.e. economy.

The policy to attract new users is promotion and media presentation of the Institute and its results, educational seminaries and scientific and expert conferences.

The Institute mainly cooperates with Serbia, Czech Republic and Switzerland, as well as with Albania, Bosnia and Herzegovina, Croatia, Macedonia and Montenegro. However, Serbia is a dominant partner. Among EU countries, Czech Republic, Germany are main cooperation country partners.

Examples of success stories from cooperation:
Project of polychlorinated biphenyls with Max Planck Institute for Chemistry, Mainz, Germany and Masaryk University, Research Centre for Environmental Chemistry and Ecotoxicology, Brno, Czech Republic and project financed by EBRD: SEA of River Basins of the Vrbas and Bosna in the Republic of Srpska, Bosnia and Herzegovina, Contract No. C17748/SWI-2007-12-06 with Pöyry Energy Ltd. Zurich Switzerland, Environmental Impact Assessment "Integrated Ecosystems Management of the Neretva and Trebisnjica River Basin Project" (International Bank for Reconstruction and Development (IBRD)) Engineering Design for Wild Dump Remediation in Knezevo (International Bank for Reconstruction and Development (IBRD)), "Support to Air Monitoring Bosnia and Herzegovina" (investor was EU), and many other project, both domestic and foreign, together with many institutions.

Institute of protection, ecology and informatics has its own facilities and infrastructure, including laboratories for its activities. It is fully equipped for air monitoring (emissions and immissions), noise and vibrations monitoring in living and working environments, and chemical, biological and physical harmfulness and microclimate in working environment (microclimate, lighting, noise and vibrations level, concentration of dust and chemical noxiousness, presence of biological noxiousness etc). Also, there is equipment for measuring of non-ionizing radiation (ELF and radio-microwave frequencies), and partial equipment for water and soil monitoring, as well as all necessary equipment in the field of inspection and measuring of electric and lightning conducting installation of an object and examining conduction of all types of antistatic bases and protective VN equipment.
Examples of the equipment within the Institute: Noise measurer "Bruel-Kjaer" , Device for dust measurement 151149A MicroDust 880 Intrinsically Safe, producer: CEL Casella England, Gas analyzer IMR 2000/2800 P, Station for air quality monitoring with complete equipment (thermo electron corporation), Portable gas analyzer Gasmet Technologies Gasmet DX – 4030 etc.

Scientific field: Other: Multidisciplinary: Biomedical and Life Sciences, Environmental sciences, ICT	**Country and Type of Infrastructure:** Croatia / European / Distributed
Infrastructure in the fields of: physics, chemistry, oceanography, biology, biomedicine, computer science and electronics/engineering	
Institution responsible for infrastructure: Rudjer Boskovic Institute	
Home page: http://www.irb.hr	
Full Address: Bijenicka 54, HR-10000 Zagreb Croatia	**Telephone:** +385 1 457 1269
Name of the Contact Person: Ms Petra BULJEVIC, Public Relations Office	**E-mail:** buljevic@irb.hr

Rudjer Boskovic Institute (RBI) is the largest Croatian research centre for basic sciences, participating also in science applications and higher education. It was founded in 1950 as a centre for advanced research, and named after the famous Croatian 18th century scientist Josip Ruđer Bošković (1711-1787). The multidisciplinary character of the Institute is reflected through the different research fields in physics, chemistry, oceanography (including marine and environmental research and geosciences), biology, biomedicine, computer science and electronics/engineering. The Institute gathers an academic staff of 530, including 375 researchers and 155 Ph.D. students. Since its inception as the multidisciplinary public research institute, funded to a large extent by the Croatian Ministry of Science, Education and Sports, our mission is dependent upon the particular needs of our society, the RBI has consistently endeavoured to provide high-quality support to industry and academia nationally and to increase the number of qualified graduate students for the 'knowledge economy', thus providing the science expertise and support to state and local governments as well as to technology-based industry and small and medium enterprises. With this, the Institute exerts an important function in development, prosperity and well being of Croatia.

UPGRADING THE INFRACSTRUCTURE AND SCIENTIFIC COOPERATION
Rudjer Boskovic Institute seeks to achieve its objectives by continually improving and enhancing its facilities and capabilities as well as by establishing strategic partnerships and links with recognised organisations, academic institutions and industry. This scientific cooperation is enhanced through numerous, lasting between three and five years. The majority of projects are national basic research projects, funded by the Ministry of Science, Education and Sport. At present, RBI scientists are involved in 136 such projects. Besides that, the RBI scientists are involved in 41 international projects (including: 6 FP7, 20 FP6, IAEA, COST, NIH, NATO and INTERREG), as well as 67 applied and technological projects and 4 HITRA projects. This year saw the expansion of the spectrum of projects offered by the "Unity through Knowledge Fund", recently introduced by the Croatian Ministry of Science, Education and Sport. An international consortium, including the RBI, was granted a TEMPUS project in 2008. In addition to the RBI, the project, entitled "Opening University towards Society: Linking Education – Research – Innovation", involves 6 Croatian Universities, 6 Foreign Universities, 2 Government Ministries, the City of Zagreb, and 4 additional organizations.

The activities of the RBI also result in various forms of intellectual creations. One important mission of the RBI is the protection of intellectual property and its commercialization. In this context, various specific activities have been initiated and realized in this vein over the last few years. First and foremost, the Institute's Commission for Intellectual Property has been established. We have also established a company under the name Rudjer Innovations Ltd. This company, which is wholly owned by the RBI, engages in activities related to protection and commercialization of knowledge arising from the RBI, other academic organizations, companies, and private persons. Presently, the portfolio of the Institute's intellectual property consists of 26 innovations classified under the broad banner of "know how". Also, RBI has established three spin-off companies. Along with that, RBI continuously seeks to establish and enhance a strong collaboration with the major national and international companies such as Shimadzu, Chiyoda Technol Corporation (CTC), and Alkaloid Skopje. Institute recognizes the importance of investing and further upgrading its infrastructure capabilities, thus encouraging its faculty to integrate in ongoing international projects, enabling networking, supporting capacity building, introducing specific training activities and launching specific calls in the thematic priorities. This upgrading leads to new and exciting research opportunities, thus enhancing and advancing the Institute`s mission.

INFRASTRUCTURE

Due to its manpower and well-organized infrastructure, which includes twelve divisions, three centres, the largest library in natural sciences in Croatia, computing centre, animal facilities and large number of valuable experimental devices (Xcalibur Nova R – Diffractometer System, RIGAKU D/MAX Ultima IV Theta-Theta X-ray Diffractometer System, Typhoon 9200 Phosphoimager, Atomic Force Microscope (AFM), Scanning Electron Microscope (SEM), Tandem Van de Graaff Accelerator, Fourier Transform Electron Paramagnetic Resonance (FT-EPR), Nuclear Magnetic Resonance (NMR), HPLC/MS/MS, IR, Raman spectrometers), the Institute is able to maintain its activities at the highest level, benchmarking itself against the very best in the European Union and forming an essential part of the European Research Area. This adherence to the highest scientific standards, open access infrastructure and collaborative spirit provide an unparalleled scientific environment. While the level of scientific investigation is intense, the atmosphere is collegial and motivating. Technicians, postdoctoral fellows and administrative support staff all are considered part of the team and are given the latitude and responsibility to accomplish their tasks so as to serve the best interests of science. The pursuit of scientific excellence is paramount and all efforts are directed toward that end.

Scientific field: Other: Multidisciplinary: ICT, Material Sciences, Social Sciences	**Country and Type of Infrastructure:** Serbia / European / Single-sited
Information and Communication Technologies, S&T policy,	
Institution responsible for infrastructure: Institute Mihailo Pupin	
Home page: http://www.imp.bg.ac.yu/	
Full Address: Volgina 15 11 060 Belgrade	**Telephone:** +381 11 2771 398
Name of the Contact Person: Prof Dr Djuro KUTLACA	**E-mail:** dkutlaca@labtel.imp.bg.ac.yu

Institute Mihailo Pupin (IMP) R&D profile presents a synthesis of scientific and expert knowledge across a wide spectrum of disciplines: electronics, automation, computer science, telecommunications, information systems, and software engineering.

Because of its broad spectrum of research fields IMP is capable of assembling dynamic teams with the mixture of expertise appropriate to the specific engagement, which is essential when conducting projects on a large scale. This vast diversity makes IMP a unique center of excellence in this part of the world with in-house interdisciplinary ICT knowledge base required for developing complex system solutions. Also, it is the leading Serbian R&D institution in information and communication technologies (ICT), as well as the biggest and the oldest ICT institute in Southeastern Europe. Ever since it was founded in 1946, Institute has been engaged in contract research and application-orientated research on behalf of key utility and transportation companies and various vertical industry sectors.

It is a research organization, with most of its revenues (between 90-95%) being earned on very competitive domestic and international markets. Only 5-10% percent of total revenues are governmental allocations through national projects. Approximately 8% of total revenue is earned from export of products and services.

At the Institute Michael Pupin, the expertise and technology are combined in order to deliver innovative solutions in the areas of:

1) Automation and control
2) Information systems
3) Signal and image processing
4) Artificial Intelligence and Knowledge Based systems
5) Telecommunications
6) Sensors and Measurement
7) Simulation and modeling
8) Traffic management

9) Robotics
10) Science and technology policy

To enhance the effectiveness of investment into R&D and innovation activities, IMP experts have focused their efforts on studying and synthesizing development strategies, policies, plans and programs to meet the needs of government agencies, regional and local administration, firms, as well as IMP own needs. To attain the stated goal, the following are part of the expertise of the IMP researchers: the history and laws of science and technology development, science and technology development implications on the economic and social development, methods in scientometrics, evaluation of development policies and programs, impacts of science and technology development on management, education and training of managerial staff, and other relevant fields

The results of their research work are evident in different areas, here some of them are mentioned: a wide range of hardware and software products in automation and control area (process control computers (ATLAS Family), SCADA software (VIEW6000, VIEW2), DMS/EMS applications, measurement equipment and converters for electric/nonelectric quantities, expert systems and decision support systems), information systems (development, implementation, and support of advanced manufacturing and business information systems, most recent research interest is focused on using portal technologies for knowledge sharing and business intelligence and knowledge management tools for improving business performance), knowledge-based systems (knowledge representation, multiparadigm inference, logic programming, truth maintenance, etc.), robotics (robotics laboratory), sensors and measurement (a primary wattmeter, as a top achievement in precision measurement of electric power, sold to companies in Germany, USA and Canada; about twenty types of electric energy, power, current and voltage measuring devices), signal and image processing (thanks to over 20 years of experience in DSP technology, IMP represents a center of excellence in Southeastern Europe, with expertise ranging from digital signal processing algorithm design to full physical implementation of complex embedded DSP systems for telecom applications, voice, image and radar signal processing), simulation and modeling (Simulation Program was formed in 1976, during development of the flight simulator for aircraft crew training. Since then, a number of very successful military trainers for both operational and tactical training have been produced; the second line of the Group activities is related to the development of general simulation tools to be used during all stages of a complex technical system life-cycle), science and technology policy (studying and synthesizing development strategies, policies, plans and programs to meet the needs of government agencies, regional and local administration, firms, as well as the institute`s own needs), telecommunications (In past two decades, R&D focus is on applications of signal processing technology in telecommunications, with emphasis on modem communications, data encryption and access multiplexers), traffic management (two main streams: urban traffic control and management and motorway and highway traffic control and paytoll systems).

Its research infrastructure is open to external users, and among its main collaborators, the following companies were mentioned: the Fraunhofer Institute for Computer Architecture and Software Technology (FIRST), Berlin - Germany, Raytheon – Canada, AREVA – France, Motorola Application Partner Program, and many other partners from the region and the world.

Institute Mihailo Pupin has a long-term orientation in cross-border cooperation with companies and institutions, whether if it is a case of involvement in a joint research or application-orientated development project, purely academic collaboration, or providing services from our service portfolio, with positive attitude to exchange know-how and achievements, and join forces with companies with similar fields of interest in order to deliver better results and approach a broader market.

The Institute teams have participated in several FP6 and FP7 projects, to mention only some of them: SARIB, PROMETEA, Web4Web, WBC-INCO.NET), Interreg/CADSES projects (I2E, STRiM), bilateral projects with Greece and Germany, etc.

5 Conclusions

5.1 Conclusions: European Research Infrastructures

This delivery report shows that research Infrastructure covers major equipment or sets of instruments, as well as knowledge-containing resources such as big synchrotrons, large material testing facilities, natural collections, important archives, databases, etc. The deliverable report followed the ESFRI roadmap and existing national research infrastructures. It showed that European research infrastructure may be classified as “single-sited”, “distributed”, or “virtual” (the service being provided electronically), it examined how the RIs are open towards external users, are whether they operate in a global, European, regional or national space.

Answers from our respondents showed that RI often requires structured information systems related to data management, enabling information and communication. These include technology based infrastructure such as grid, computing, software and middleware. Almost all cases showed that considered infrastructures apply an “Open Access” policy for research that is opened to all interested researchers. Based on open interest showed, competition and selection of the proposals is evaluated on their scientific excellence by international peer-review. In most cases the effort and resources required to build these infrastructures, and to make them available as a service to the general pan-European user community, are well beyond those available to single institutions from WBC. Therefore there exists a need for proper international approach including the prerequisite to ensure long term sustainability of open access, at no cost to researchers from WBC.

The importance of pan-European infrastructures is well established in areas such as fusion energy, space or particle physics. Today, it is rapidly increasing in other areas, which, until now, were mainly supported by national institutions. For example, light and neutron sources, databases for genomics or social sciences, observation networks for environmental sciences, centres for development of new materials or nano-electronics, are now at the core of world-level research. We need to look into these perspective fields, search for the possibilities and promote excellent centres from WBC to initiate collaboration with EU RIs from these fields.

If we consider the received answers, we can resume the following consideration: Highest frequency of research infrastructures are in operation for more than 26 years and about 47% have a global dimension. More than 98% of RIs are open to external users and the same results are repeated for RIs that are open to researchers from WBC.

When the respondents from individual research infrastructures talked about different access policies for target groups, they have not specifically mentioned geographical difference. They mentioned only that there is a difference if the partners are coming from a private or public organization. The main difference reported was that European researchers can be paid, non-European researchers cannot always be funded and supported and they need to have their own budget to stay and work at their institution. But if we consider researchers from WBC, the respondents underlined that many programmes give opportunities for free access for users from EU member states, including associated and candidate countries (by this we mean WBC).

If we consider third countries, the unique parameter often depends on the agreement between RI and the third party. In other words, if we can take into consideration the access for industrialised 3rd countries (e.g. US, Canada, Japan) or researchers from developing 3rd countries or individual countries (e.g. Brazil, China, India, Russia), the basic difference is that

users from EU are supported within the transnational-access programme, instead other users can be accepted only after bilateral agreement.

In this way we can specify that there is no different access policy for researchers from EU Member States and researchers from WBC. Western Balkan researchers are on the equal footing in regards to formal access policy.

Survey showed that problems for researchers from the WBC are lying elsewhere. For the moment, there are very limited possibilities to manage intensive cooperation links with important European medium scale and large scale research infrastructure. The main reason for this is not so good financial situation of research institutions in WBC and the lack of sufficient infrastructure in WBC that will initiate a good preparation to work together with EU RIs. EU RIs respondents replied that they are aware that national research systems in WBC are missing sufficient funding, they also recognize a lack of strength in the specific scientific community and a fragmentation of WBC research community. EU RIs replied that they are having weak contacts with WBC research institutions, and they are missing proper information about the research facilities and research expertise that is present and available in WBC. EU RIs are facing a problem who to contact at the research institutions in WBC. Survey showed that information problem exists as all EU RIs were not aware that all WBC countries recently became associated countries to the FP7 and that they are on the equal footing for the participation in European research programmes.

Another obstacle that prevents some of the WBC to participate in joint research projects with important medium and large scale EU RIs is that there is not yet a consolidated expertise in particular scientific fields (e.g. LIDAR field, DHI Shallow Water Basin) even though specific support actions are needed for these fields also in WBC.

There are also large differences among the WBC regarding the state of research facilities, scientific equipment, laboratories, libraries, and high speed Internet penetration. Croatia and Serbia for example already established good Internet connection links with European scientific computer network while Albania, FYR of Macedonia and Montenegro still lack the satisfactory information infrastructure.

Economically speaking, developed European countries are clearly in a much better position to establish strong cooperation links and networks than WB countries. But still there are centres of excellences that can be also identified in WBCs and they establish strong cooperation links with EU RIs.

5.2 Conclusion WBC RIs

In the survey, there was a group of questions envisaged to determine level of governmental support to development of research infrastructure; obtain opinion on different issues, such as on correlation between EU and national programmes, as well as EU and regional networks; to decide on level of awareness on ongoing regional dialogue, etc. The answer to the question on existence of structural or national funds available to support RI activities in WBC or investments was almost unanimously affirmative. However, in several cases, additional comments were given, all stating that these funds are insufficient when compared to actual needs.

It was, again almost unanimously, confirmed that ministries responsible for research in WBC, through their strategies, encourage various funding models to support development of research infrastructures.

Involvement of stakeholders and policy makers and society in general was assessed as functional and positive for the future development of RIs. When asked on opinion if it will, for the future of national RIs, become necessary to ensure coordinated decision by a `strategic body` with appropriate authority, more than a half did not provide any answer, whereas the rest of them found it to be necessary.

Next, it was considered necessary that coordination between national and EU programmes should be improved, in order to develop national research infrastructures. Large majority of respondents have declared that they are aware of the ongoing regional dialogue, the topic of which is need to involve representatives from EU Member States, incoming Member States, Western Balkan Countries as well as representatives of European industry into the debate on EU RIs.

Majority declared that importance that development of national and European infrastructures in general would have on existing and prospective research infrastructures and networks in the WBC would be significant. In general, development of research potentials (equipment and people) would be provided, as important part of any kind of cooperation. It would contribute to improvement of research policy and standards. Next, exchange of information related to research, reinforcement of the existing cooperation paths and support to already promising research clusters would be enabled, complementary and more sophisticated equipment would become available. Strengthening of the regional cooperation would take place, and connections ruined during the war re-gained. It often happens that wider international cooperation brings together WBC RIs,

To conclude, following were identified as main obstacles to EU researchers in accessing research infrastructures in the region: differences in policy and financial regulations, lack of contacts and interest from EU side, limited capacities and facilities in the region, lack of administrative support, complicated procedures, language barriers, etc. Poor state and level of the infrastructure in the region was most frequently emphasized as the main obstacle in the process. But we have to mention also a report undertaken for UNESCO-ROSTE (2007), "*Why Invest in Science in South Eastern Europe"*, which has showed that existing infrastructure in WBC countries, particularly the situation regarding connectivity, e-journals, libraries, and e-publishing varies. The report confirms the great variety among the individual WBC concerning each of these areas of disseminating scientific information, finding the situation particularly unsatisfactory in Albania and Bosnia and Herzegovina.

Overall research infrastructures in the Western Balkans are still not sufficiently developed to meet all the needs of the modern, European research environment and to exploit to full extent the existing human capacities. Still, the main reason for unsatisfactory level of modernization of infrastructure in WBC derives from insufficient available funding, since most of the institutions within survey are funded from the public funds.

Above mentioned problems can be mirrored partly through relatively low response rate for the part where questionnaires were distributed among WBC research institutions. Reasoning for this partly derives from responsible people in charge at WBC institutions who did not recognized their research facilities, equipment and infrastructure as such to be defined as significant enough in order to be classified as important medium scale or large scale infrastructure. So they decided not to fill the questionnaires.

However, despite all difficulties and lacks, existent research infrastructures in the region that was mapped through this report are accessible to external users. That is supported by the fact that all of these institutions are involved in the activities of international cooperation. Cooperation partners are from the region, but from EU as well. The framework for the

cooperation is provided either through intergovernmental agreements or within different European programmes and initiatives. Most of the European funding schemes provide possibilities for upgrading of the equipment, which adds to further development of the institutions and, consequently, strengthening of their international cooperation.

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