

## Editorial

### Welcome to the first edition of the PAERIP INFOCUS e-Newsletter!

PAERIP (Promoting African European Research Infrastructure Partnerships) is an EU project funded under the FP7 Capacities Specific Programme (INFRA-2010-3.2) and aiming at promoting and strengthening research infrastructure partnerships between Europe and Africa - A project of strategic value for both regions.

In this 1st edition of the PAERIP IN-FOCUS quarterly e-Newsletter we are very pleased to bring to your attention the unfolding research infrastructure partnership initiative between Africa and Europe.

The last five months have been a particularly busy period for the project consortium since we tried hard to get the project off the ground.

Partners involved in the PAERIP project came together on 19-20 May 2011 in Brussels for its first kick-off meeting. With the South African Department of Science and Technology (DST) as the Project Coordinator, other consortium partners include TechnoScene (Pty) Ltd (South Africa), the Association of Commonwealth Universities (UK), ISC Intelligence in Science (Belgium), Sigma Orionis (France), the Ministry of Higher Education and Scientific Research (Egypt), the National Documentation Centre (Greece) and the Ministry of Higher Education, Science and Technology (Kenya). The meeting, held in Brussels, highlighted PAERIP's importance and potential as a mechanism for increasing science capacity - a key feature of science policy in Africa - and as an attribute of the joint Africa-EU partnerships.

We do hope that you will enjoy reading this first update on the PAERIP project and find it a useful source of information. To submit your feedback, comments or for further information, please contact us at [info@paerip.org](mailto:info@paerip.org). Enjoy your reading!

Yours sincerely,

**Takalani Nemaungani**

Director Global Projects, DST, South Africa  
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## Setting the Scene - Research Infrastructures (RIs)

### Research infrastructures at a glance...

Research Infrastructures (RIs) are facilities, resources and services used by the scientific community for conducting cutting edge research for the generation, exchange and preservation of knowledge. It includes associated human resources, major facilities, equipment or sets of instruments, collaborative networks and knowledge-containing resources such as collections, archives and data and bio-banks. Research Infrastructures may be “single-sited”, “distributed”, or “virtual” (the service being provided electronically). It includes cyber-infrastructure to connect these facilities and people and structured information systems related to data management, enabling information and communication. RIs address physical sciences, engineering, life sciences, social sciences and humanities and the environment. They support countries in addressing national priorities and global challenges in ways that would not have been possible to address on their own. This may either be due to affordability or to the need for regionally or globally distributed observations and information, particularly when addressing issues related to the grand challenges in the world in general and Europe and Africa in particular.

### Research infrastructures drive partnerships and collaboration...

Research Infrastructures are applied by the scientific community to conduct top-level research in the fields of social sciences, humanities, natural sciences and engineering. Astronomy, genomics, nanotechnology, bio-informatics, nuclear sciences, advanced computing and modeling all rely on very large and expensive RIs today that are shared by different disciplines to conduct their research. Collections, archives and libraries and the digitalization of their content are essential for building the knowledge economy. Cyberinfrastructures such as high end computing research and education networks, very large database storage, high capacity, high speed communication networks and grid computing, are not only important part of RIs, but

also form the connecting links between instruments, people and nations that collaborate on research. Satellites, research vessels, sensor networks and observation platforms provide access to remote areas where the atmosphere, wildlife, vegetation and climate change are studied and long term data sets are collected. Synchrotrons, accelerators, cyclotrons, colliders and specialized beam lines make up some of the largest globally shared RIs in the world today. The power of research networks create space for new discovery based on collaborative research. These key infrastructures have not only been responsible for some of the greatest scientific discoveries and technological developments, but are also influential in attracting the best researchers from around the world and in building bridges between national and research communities and scientific disciplines. Increasingly research is being conducted across borders, disciplinary boundaries and on a global basis. These partnerships are most often initiated by the presence of RIs that are planned, built and developed on a shared approach.

### Examples of research infrastructures...

A prerequisite for Africa is to develop effective and efficient technologies for poverty reduction - notably in rural, as well as in urban areas. Demographic Surveillance Sites (DSS) have been established in several sites in rural Africa, all of which are part of the global INDEPTH network which is based in Ghana. It is their primary task to collect longitudinal population and health data to inform policy.

Data repositories form an essential part of RIs. These refer to data about who is conducting what research, research content and networking with international databases. Several international databases exist and are used as part of RIs. These include CODATA (Committee on Data for Science and Technology) and the World Data System (WDS) supporting the ICSU mission and objectives, ensuring the long-term stewardship and provision of quality-assessed data and data services to the international science community and other stakeholders.

Further examples of research infrastructures can include:

- European Organisation for Nuclear Research (CERN)
- Global Earth Observation System of Systems (GEOSS)
- Global Biodiversity Information Facility (GBIF)
- The Southern African Large Telescope (SALT)
- The African Laser Centre (ALC)
- The South African Centre for High Performance Computing (CHPC)
- GEANT / Africa Connect
- The UbuntuNet Alliance
- Etc.

## Strengthening EU-Africa Cooperation

### The European landscape

Europe has a long-standing tradition of excellence in research and innovation and European teams continue to lead the way in many fields of science and technology. However, Europe's centres of excellence often fail to reach critical mass due to the absence of adequate networking and cooperation. Therefore, there is a need to bring resources together and build a research and innovation area equivalent to the EU's common market for goods and services. Europe should guarantee European researchers access to the infrastructures they require to conduct their research – irrespective of the location of the infrastructure – and that the European approach to the development of new research infrastructures at the regional and trans-regional level, as well as the operation and enhancement of existing infrastructures, is supported. Adequate research infrastructures are essential in promoting technological innovation, as they provide the conditions and critical mass required to carry out cutting-edge research. New scientific and technical challenges call for increased performance of research facilities and better knowledge exchange between different disciplines. This increase in capacity and performance can, in part, be achieved through better coordination of existing facilities and the development of simple operational mechanisms. In addition, funding the design and construction of new infrastructures affects the direction of research for many years afterwards. There are already several networks in Europe that allow the exchange of best practices, the organization of training, access to and the development of new instruments. Increasingly, this is an important way of enabling Europe to engage the best scientists and optimize the use of RIs. The RI actions funded under the Community Framework Programme also play a key role in getting the most out

of the existing facilities. And, at the same time, a further step has been taken towards supporting the emergence of pan-European research infrastructures. (Source: EC, ESFRI)

### The African landscape

Africa is in the process of consolidating its priorities in science and technology. The Consolidated Plan of Action (CPA) addresses science and technology programmes of the African Union (AU) Commission and the New Partnership for Africa's Development (NEPAD). The CPA is the instrument for the implementation of the decisions of the first African Ministerial Conference on Science and Technology (AMCOST), held in 2003. The vision is one of an Africa that is free of poverty and well integrated into the global knowledge economy. Supporting the implementation of the CPA are African national, regional and continental initiatives, addressing priorities identified, for example, through the work of the ICSU Regional Office for Africa. Implementation of the CPA will rely heavily on research infrastructures. Ris in Africa are, however, often lacking and where they exist, they have not been integrated well (with each other and with European ones) in the past, often as a result of different development routes and lack of communication. African researchers have been using European Infrastructure on an individual basis, or when encouraged by bilateral agreements between countries in Africa and Europe. Very few European researchers are in the habit of using African RIs, apart from the better known ones in astronomy, palaeo-sciences, geology, biodiversity, observation sites, etc. The focus of the CPA is on biodiversity, biotechnology, indigenous knowledge, energy, water, desertification, materials sciences, manufacturing, lasers, post-harvest technologies, space science and information and communication 3

technologies. Pan-African RIs that could benefit from PAERIP are those that provide opportunities for cutting edge research to researchers from both the continent and Europe through free and open access based on excellence. These include equipment, facilities, networks and knowledge containing resources such as archives, and data and bio-banks that hold unique sets of data for researchers. Partnerships between African and European RIs such as the ones to be explored by PAERIP will enhance the value-add to these large investments on both continents. (Source: PAERIP)

## EU-African relations: The Africa-EU Strategic Partnership



There is currently significant political attention in promoting Science and technology (S&T) partnerships between Europe and Africa. The Joint Africa-EU Strategy (JAES) is a long-term framework for EU-Africa relations, implemented through successive

short-term Action Plans and enhanced political dialogue at all levels, resulting in concrete and measurable outcomes in all areas of the partnership. Key stakeholders involved in the JAES include the African and European Member States and Commissions, African Regional Economic Communities, International Organisations, the private sector, the civil society, etc.

The 2007 JAES defines the long-term policy orientations between the two continents, based on a shared vision and common principles. The first Action Plan of the 2007 Africa-EU Joint Strategy had a timeframe of 2 years (2008-2010) with a review process at the last Africa-EU Summit that took place on November 2010, in Tripoli, Libya. The Summit shaped the future relations between the two continents and adopted the Tripoli declaration and the 2nd JAES Action Plan. The second Action Plan is now valid for the timeframe of another 2 years (2011-2013) and is due to be reviewed at the next Africa-EU Summit in 2013 which is foreseen to take place in Brussels, Belgium. This plan builds on experience gained from the 1st Action Plan and political objectives enshrined in the 2007 JAES. The implementation of the Joint Strategy and its Action Plans are reviewed every six

months in the Ministerial Troikas.

The JAES includes a dedicated partnership initiative on 'Science, Information Society and Space' (Partnership 8). Several collaborative efforts are currently being implemented under this Partnership, which has acted as an effective platform to promote and build technological capacity, innovation and space knowledge as it seeks to harness the potential of S&T to contribute to Africa's sustainable development in addition to addressing shared global challenges. (Source: PAERIP)

## Relevance of teaming-up with Africa

Europe is already advanced in the sense that it has a comprehensive roadmap for research infrastructures and thus teaming up with Africa would provide this continent with valuable lessons and experiences. One of the expected outcomes of the African Union's Consolidated Plan of Action for Science and Technology is an improved pan-African infrastructure and facilities for R&D, and this is where teaming up will enhance policy dialogue in this important area which is necessary for scientific and capacity development. The idea is to promote mutual access with emphasis on research infrastructures relevant to science and technology projects identified as priority focus areas for Africa-EU cooperation. The proximity and similar time zones between Africa and Europe is another advantage for teaming up together on research infrastructures. (Source: PAERIP)



### SCIENCE, INFORMATION SOCIETY AND SPACE

#### What is the partnership about?

In today's world, scientific research and technology have become the defining transformational forces. Unfortunately, the scientific and digital divides on the African continent are hindering Africa's full participation in today's globalised knowledge society.

There are a number of activities in this partnership which focus on this issue, including a high level political dialogue and consultation on common positions in international conferences.

#### There is also a large project component, including:

- A €15 million pan-African scheme for research grants from the 10th EDF Intra-ACP Indicative Programme. This project will build the African Union Commission HRST (Human Resources in Science and Technology) capacity to launch, implement and monitor calls for proposals at the African continent level. This should contribute to strengthening Africa's research base. The first call is expected before the November 2010 Joint Summit.
- The Africa Call initiative (with a budget of €63 million) under the EU's Research and Development (R&D) Framework Programme. The call covers scientific research in the areas of health, environment, biotechnologies, agriculture, and



## The PAERIP Project

### At a glance

PAERIP (Promoting African European Research Infrastructure Partnerships) is a EU project funded under the FP7 Capacities Specific Programme (Theme INFRA-2010-3.2) and aiming at promoting and strengthening research infrastructure partnerships between two regions: Europe and Africa. Several collaborative efforts are currently being implemented under the JAES Partnership 8 on 'Science, Information Society and Space', with the support of the African Union Commission, the European Commission and African and European Union Member States. None of these initiatives, however, specifically address research infrastructures.

The PAERIP project is specifically focused on addressing this void, notably by undertaking a series of relevant studies and by organising a series of dedicated policy and cooperation workshops, with the main objective of:

- Identifying African-European cooperation opportunities related to existing research infrastructures
- Exploring opportunities for African-European cooperation in developing new research infrastructures

- Promoting African-European research infrastructure policy dialogue including on development impact
- Providing information, advisory & support services for African-European RI cooperation

### Partnership

- DST (South Africa) - Coordinator
- ISC Intelligence in Science (Belgium)
- Ministry of Higher Education and Scientific Research (Egypt)
- Ministry of Higher Education, Science and Technology (Kenya)
- National Documentation Centre (Greece)
- Sigma Orionis (France)
- TechnoScene (Pty) Ltd (South Africa)
- The Association of Commonwealth Universities (UK)



## Expert in the Spotlight

### Biological and medical research infrastructures...

By Declan Kirrane, ISC, Intelligence in Science, Belgium



Biological and Medical Sciences (BMS) Research Infrastructures play an increasingly important role in the advancement of knowledge and technology. They form a key part of the European Strategy Forum on RI (ESFRI) roadmap, which identifies new research (...)

(...) infrastructures of pan-European interest corresponding to the long term needs of European research communities. They constitute indispensable instruments in bringing together a wide diversity of stakeholders to look for solutions to many of the problems facing Europe and the world today. They offer unique research services to users from different countries, attract young people to science and help to shape scientific communities. In addressing the challenges facing healthcare systems around the world over the coming years, it will be vital to reaffirm the significance of research in developing appropriate solutions. BMS research infrastructures will provide the cornerstone of any research-led response.

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Furthermore, the importance of multilateral partnerships will become increasingly salient under the globalised conditions of research and development.

In Europe, ESFRI has identified ten Biological and Medical Sciences (BMS) infrastructures which can lead the way in finding new, research-led health care solutions.

These include:

- **BBMRI (Biobanking and Biomolecular Resources Research Infrastructures)**, which provides the key biological resources to address several of the upcoming grand challenges for Europe, such as innovative solutions for providing sustainable healthcare for an ageing population and the impact of environmental change on health.
- **ERINHA (European Research Infrastructure on Highly Pathogenic Agents)**, which integrates existing and newly established high security laboratories that, through BBMRI, also interface with the health care systems of Member States to enable effective responses to new threats - pandemics, bioterrorism and physical and biological incidents.
- **ECRIN (European Clinical Research Infrastructures Network)**, which together with BBMRI will speed up development of medicine and disease prevention by improving biomarker development and the performance of multinational clinical trials.

Europe and Africa both stand to gain from the collaboration that can be harnessed from shared research infrastructure partnerships across the range of areas which PAERIP is designed to explore. In the life sciences, these opportunities for collaboration include but are not limited to the following:

- **Measures to improve health care and health inequality**

Access to high quality health services is an important determinant of socioeconomic inequalities. Such inequalities have been particularly salient in some regions of Europe, as reflected in the Warsaw Declaration of 2005, which highlighted a range of cancer-related inequalities afflicting Central and Eastern Europe.

- **Sustainable access to biological resources**

Biological resources – living organisms, cells, genes and related information – are the essential raw materials for the advancement of biotechnology, human health, and research and development in the life sciences. Biological resources are likely to become a key foundation on which 21st century research and economies will build. There is a particular need for a long-term infrastructure to ensure sustainable access to biological resources, as well as a political support process that facilitates efficient use of finite resources at the global level.

- **Infrastructure for rapid evidence-based decision making for new epidemics**

The outbreak of the H1N1 'swine flu' in 2009 led to the World Health Organisation declaring the strain a 'pandemic'. However, the global response from state governments remained opaque and poorly coordinated. The development of apposite mechanisms and infrastructure tasked with a rapid decision making role in the face of future epidemics will be crucial.

- **Preventive measures against bioterrorism**

Although a range of protective options exists, such as stockpiling of antibiotics, no single solution provides comprehensive protection to the complex array of potential biological agents that might be used as terrorist weapons.

Each of these challenges is global in nature. The international context of research infrastructures will be an important dimension in the evolution of global science policy. Implementation instruments for a number of Research Infrastructures in Europe will be based on the European Research Infrastructure Consortium (ERIC). ERIC is a legal instrument that was created to enable the establishment and operation of research infrastructures in Europe. An ERIC enables the creation of a Europe-wide venture while still allowing the participation of non-European countries. It provides a legal personality recognised in all EU Member States and has the flexibility to adapt to the specific requirements of each infrastructure.

Currently, the BBMRI and ECRIN Research Infrastructures have applied for ERIC status. The decision on whether or not to grant ERIC status will be known by early 2012.

## News

### Horizon 2020: the new Framework Programme for Research and Innovation



(June 21, 2011) - The European Commissioner for Research and Innovation, Mrs Máire Geoghegan-Quinn, has announced on 21 June 2011 the new name for the future EU funding programme Research and Innovation: 'Horizon 2020'. Horizon 2020 will enter into force on January 1, 2014, after the end of FP7 on December 31, 2013. More...

### Mark your calendar! Date and place are now set for the 1st PAERIP workshop! (Cape Town - Nov. 11, 2011)



(July 28, 2011) - The first PAERIP workshop will be held on November 11, 2011 in Cape Town, South Africa. The event will be co-located with the 4th Euro-Africa Cooperation Forum on ICT Research (Nov. 14-15, 2011) so that participants can make the most of their stay in Cape Town. This workshop aims at promoting and enhancing African-European research infrastructure cooperation opportunities, with a focus on FP7 instruments and other similar initiatives. Mark your calendar and register! More...

### PAERIP to be represented at the INCO National Contact Points (NCPs) meetings (Johannesburg - Sept. 28, 2011)



(August 18, 2011) - The INCO NCPs meeting and training workshop is taking place on September 28, 2011 in Johannesburg, South Africa. The event, organised in the framework of the 2nd INCO Conference 2011 "Supporting Research Integration", aims at offering specialized training to INCO NCPs. These experts will then provide assistance to potential FP7 participants in their countries for enhancing third countries participation in the 7th Framework Programme. More...

### PAERIP to be represented at the 4th Euro-Africa Cooperation Forum on ICT Research (Cape Town, Nov. 14-15, 2011)



(August 22, 2011) - The PAERIP project will be represented at this important Forum, where a presentation on the project activities and objectives will be delivered by Takalani Nemaungani (Director Global Projects, DST), PAERIP Project Coordinator. The "4th Euro-Africa Cooperation Forum on ICT Research" is taking place on Nov. 14-15, 2011 at the Cape Town International Convention Centre (CTICC) in South Africa. This major event is the fourth of a series of very successful conferences organized by the EuroAfrica-ICT initiative under the aegis of the European and the African Union Commissions. More...

### 10th Call for Proposal Announced (FP7 Research Infrastructures Programme)



(July 20, 2011) - The European Commission has published on July 20, 2011 the 10th call for proposal, detailed in the Research Infrastructures Work Programme 2012 and published under the e-Infrastructures topic of the FP7 "Capacities" Specific Programme (FP7-INFRASTRUCTURES-2012-1). The 10th call aims at supporting the existing research infrastructures, the construction of new infrastructures as well as the policy development and programme implications. The topics are detailed in the call fiche. With an indicative budget of 90 million, the call is open to international cooperation and of course African organisations are eligible to receive funding. The deadline for the submission of proposals is November 23, 2011. More...

## Events

### 9th e-Infrastructure Concertation Meeting

Location : Lyon, France  
Venue : Lyon Conference Centre  
Date : September 22-23 , 2011  
Note : Co-located with the EGI Technical Forum  
URL : [www.egi.eu/indico/conferenceTimeTable.py?confId=452#20110922](http://www.egi.eu/indico/conferenceTimeTable.py?confId=452#20110922)



### 2nd INCO Conference 'Supporting Research Integration'

Location : Johannesburg, South Africa  
Venue : Emperor's Palace  
Date : September 26-28, 2011  
URL : [www.ncp-incontact.eu](http://www.ncp-incontact.eu)



### ERAfrica Briefing Session for African and European Programme Owners

Location : Brussels, Belgium  
Date : October 21, 2011  
Contact : Dr Yves Savidan, ERAfrica Project Coordinator ([info@erafrica.eu](mailto:info@erafrica.eu))  
URL : [www.erafrica.eu/](http://www.erafrica.eu/)



### First PAERIP Workshop - Promoting African European Research Infrastructure Partnerships

Location : Cape Town, South Africa  
Venue : Southern Sun Garden Court Hotel  
Date : November 11, 2011  
Note : Co-located with the "4th Euro-Africa Cooperation Forum on ICT Research"  
URL : [www.paerip.org/project-events](http://www.paerip.org/project-events)



### 4th Euro-Africa Cooperation Forum on ICT Research

Location : Cape Town, South Africa  
Venue : International Convention Centre (ICC)  
Date : November 14-15, 2011  
URL : <http://euroafrica-ict.org/events/cooperation-forums/2011-cooperation-forum/>



### CAAST-Net Stakeholder Conference on Africa-Europe S&T Cooperation

Location : Dakar, Senegal  
Venue : TBA  
Date : December 2011  
URL : [www.caast-net.org](http://www.caast-net.org)

