Memorandum of Understanding between EGI.eu and CSIR Meraka Institute

To:	Hina Patel
Cc:	Leon Staphorst, Francois Duvenhage
From:	Bruce Becker
Unit name:	Meraka Institute
Subject:	Memorandum of Understanding between EGI.eu and CSIR for an Africa-Arabia Regional Grid Computing Operations Centre as a Resource Infrastructure Provider
Reference:	AAROC RP
Date:	18/02/2014

Request for approval: MoU between EGI.eu and CSIR to create an Africa-Arabia Regional Grid Computing Operations Centre as a Resource Infrastructure Provider for the European Grid Initiative

Purpose

This memo serves to provide background and motivation to the signature of the aforementioned MoU.

Background

The Stichting European Grid Initiative Foundation (hereafter referred to as "**EGI.eu**") has been created under the Dutch law with the mission to create and maintain a pan-European Grid Infrastructure in collaboration with its Participants i.e. the National Grid Initiatives (NGIs) and Associated participants (e.g. European International Research Organisations - EIROs) in order to guarantee the long-term availability of a generic e-infrastructure for all European research communities and their international collaborators.

The **CHAIN-REDS project** – Coordination and Harmonisation of Advanced e-Infrastructures - Research and Educational Data Sharing – is an FP-7 project co-funded by the European Commission (DG CONNECT). It aims to promote and support technological and scientific collaboration across different e-Infrastructures established and operated in various continents, in order to define a path towards a global e-Infrastructure ecosystem that will allow Virtual Research Communities (VRCs), research groups and even single researchers to access and efficiently use worldwide distributed resources (i.e., computing, storage, data, services, tools, applications). CHAIN-REDS is a follow-up project of the first CHAIN

The CSIR currently has a Memorandum of Understanding with the EGI.eu allowing the CSIR, as flagbearing institute of the South African National Grid (SAGrid), to act as a "resource infrastructure provider" to the European Grid Initiative. This is a role which requires the CSIR to deploy several technical services (service availability and reliability monitoring, helpdesk, etc) which enable infrastructure-level interoperability between South African and foreign e-Infrastructures, an activity which finds its original mandate in the deliverables of the EU-FP7 CHAIN project. The success of this initial MoU and the CHAIN project itself has lead to the proposal of a similar MoU between the same partners to address the entire African and Arabian region.

Motivation

The motivation for this scope is the historical collaboration between the National Research Networks (NRENS) and National Grid Initiatives (NGIs) in these regions, represented by the ASREN and Ubuntunet Regional Network Alliances. Due to the excellent work done by the CSIR in implementing the MoU and operating the Resource Infrastructure Provider for South Africa, the members of ASREN and Ubuntunet have, as members of the FP7 CHAIN-REDS project, delegated the CSIR to implement the MoU at the regional level as well. This MoU will greatly increase the pool of interoperable and reliable computational and data infrastructure in Africa, allowing Africans to better collaborate amongst themselves and with their counterparts worldwide, both on a scientific, as well as a technical level.

Financial Implications

Signing the proposed MoU has no financial impact on the CSIR. Furthermore, there will be no increase in workload on the current CSIR resources allocated to SAGrid, since the services and activities defined in the new MoU have already been operational for more than a year.

Intellectual Property Implications

It is not foreseen to generate any intellectual property in the context of this MoU, since it is merely a document on which to base a set of technical activities which allow interoperation of e-infrastructures. However, provision has been made for intellectual property considerations in Article 7.

Kind Regards,

Dr. Bruce Becker
Coordinator, South African National Grid
SANREN Competency Area
CSIR Meraka Institute

Memorandum of Understanding between EGI.eu and CSIR Meraka Institute

Resource Infrastructure Provider MoU

DOCUMENT LOG

SEMANTIC VERSIONING

- Author changes increment patch number
- CSIR routing changes minor number
- CSIR routing completion changes major number.

e.g. - final changes before signature, after CSIR routing : 0.4.9 signed version 1.0.0

Issue	Date	Comment	Author/Partner
0.0.1	25/03/2014	Modifying previous version considering new EGI.eu template	Bruce Becker/Meraka
0.0.2	26/03/2014	Removing last references to IHEP in MoU. Standardising reference to the ROC from "Africa-Arabia ROC" and "ROC Africa-Arabia" to AAROC	Bruce Becker/Meraka
0.0.3	31/03/2014	Removing explicit dates and updating contact points.	Bruce Becker/Meraka
0.0.4	07/04/2014	Removing comments and defining version semantics	Bruce Becker/Meraka
0.1.0	13/05/2014	Additional paragraph in Article 8 regarding funding; Additional Article 13 regarding publicity, agency and partnership. Minor additions and formatting changes	Francois Duvenhage/CSIR Legal Services. Bruce Becker/Meraka
0.1.2	14/08/2014	Changes made to IP clause.	Nicky Koorbanally/Meraka

Table of Contents

BACKGROUND

European Grid Initiative Foundation – EGI.eu

The Stichting European Grid Initiative Foundation (hereafter referred to as "EGI.eu") has been created under the Dutch law with the mission to create and maintain a pan-European Grid Infrastructure in collaboration with its Participants i.e. the National Grid Initiatives (NGIs) and Associated participants (e.g. European International Research Organisations - EIROs) in order to guarantee the long-term availability of a generic e-infrastructure for all European research communities and their international collaborators. In its role of coordinating grid activities between European NGIs EGI.eu will: 1) operate a secure integrated production grid infrastructure that seamlessly federates resources from providers around Europe; 2) coordinate the support of the research communities using the European infrastructure coordinated by EGI.eu; 3) work with software providers within Europe and worldwide to provide high-quality innovative software solutions that deliver the capability required by our user communities; 4) ensure the development of EGI.eu through the coordination and participation in collaborative research projects that bring innovation to European Distributed Computing Infrastructures (DCIs). A summary of EGI.eu is attached as Annex 1.

The Council for Scientific and Industrial Research

The Africa-Arabia Regional Operations Centre (AAROC, or ROC Africa-Arabia) is coordinated by a collaboration of regional institutes from African and Arabian states, developed through a series of FP7 funded projects, CHAIN and CHAIN-REDS[1]. The collaboration is represented by the Meraka Institute in South Africa — itself an operating unit of the Council for Scientific and Industrial Research (CSIR) – which hosts the South African Initiative for Cyberinfrastructure (NICI). A component of this initiative, the South African National Grid (hereafter referred to as SAGrid), is responsible for promoting international collaboration of grid computing infrastructures in South Africa and has coordinated similar activities in the Sub-Saharan region since 2009. SAGrid is a core component of AAROC, and The Meraka Institute has previously successfully signed and implemented a resource infrastructure provider MoU with EGI[2], and is responsible for the core SAGrid services which enable interoperability with EGI. In addition, the South African NREN[3] operates within the Meraka Institute, which is responsible for several operational tools and services which the grid community relies on, such as monitors, Certificate Authority, low-level network optimisation, etc. Through the Ubuntunet Alliance, these services are available to the wider community in the region.

The Meraka Institute has been designated as a "flag-bearing" institute of the SAGrid Initiative, whereby members of the SAGrid Joint Research Unit designate it as a body capable of signing agreements on their behalf. Similar agreements between resource units, NGIs and other initiatives in the region, on a case-by-case basis, allow resource centres – centres – beyond those forming the original MoU beyond those forming the original MoU – to be included in this MoU.

A summary the Meraka Institute is attached as Annex 2.

---

[1]   See http://www.chain-project.eu

[2]   This MoU can be found at EGI document link

[3]   SANREN is the South African National Research Network. See http://www.sanren.ac.za for more information

ARTICLE 1: PURPOSE

The purpose of this Memorandum of Understanding[4] (MoU) is to define a framework of collaboration between EGI.eu and CSIR Meraka Institute, representing the members of the Africa-Arabia Regional Operations Centre (hereafter also referred to as "the Party" or the "Parties"). The Parties recognise, by this MoU, the opening of a wider and longer-term cooperation in activities that will bring visible benefits.

This MoU is mandated in terms of the CHAIN-REDS recommendation AP-AAROC-3[5]

ARTICLE 2: DEFINITIONS

For the purpose of this MoU, the definitions in the EGI glossary are relevant (http://go.egi.eu/glossary).

ARTICLE 3: INFRASTRUCTURE COMPOSITION

CSIR Meraka is in the position as the AAROC coordinator and represents the following Institutions from the region, who wish to participate in the framework of collaboration defined in this document, and delegate it to represent them in EGI.eu policy groups.

Institutes covered by the MoU:

- EUN & ASRT– Egyptian Universities Network, and The Academy of Scientific Research and Technology, Egypt

- MAGRID – Morocco National Grid Initiative, Morocco

- DIT – Dar es Salaam Institute of Technology, Tanzania

- Nsukka University – Nigeria

- KENET – Kenyan National Research Network

- DZGrid, Algeria

- Universite Gaston Berger – Senegal

- Universite de Dakar – Senegal

- Mekelle University – Ethiopia

- University of Tunis and Al-Kwharmiz Centre de Calcul, Tunisia

- Kwame Nkrumah University of Science and Technology, Ghana

ARTICLE 4: JOINT WORK PLAN

The parties contribute to enable the vision of providing European and African/Arabian scientists an international collaboration for sustainable distributed computing services to support their work.

In this broad context, the specific goals of the collaborations are to:

1. To provide Local and Global operational services as needed to support the international collaborations in this context.

2. To subscribe to a mandatory set of policies, procedures and OLAs;

---

4   An MoU is a written agreement that clarifies relationships and responsibilities between two or more parties that share services, clients, and resources.

5   See http://documents.ct.infn.it/record/556/files/CHAIN-REDS-D3.1-i.pdf section 4

3. To comply with the operations interfaces required by the EGI Operations Architecture[6], which are needed to ensure seamless and interoperable access to resources;
4. To be able to participate as an observer in the Operations Management Board and contribute to the EGI operations agenda.
5. To participate be represented in the Security Policy Group to comment on the development of the security policies fabric of the infrastructure.

As coordinating party to the MoU, CSIR reserves the right to delegate work described below to the Regional Operations Centre.

The specific activities to be carried out in the framework of the collaboration are[7]:

WP1 Participation to the EGI.eu operation policy groups

Parties Involved: EGI.eu (Contact: Senior Operations Manager); CSIR (Contact: CSIRT Coordinator)

Description of work: Operations experts from participating institutes to be regularly represented in the EGI Operations Management Board (OMB), to provide requirements necessary to drive the evolution of the operations architecture and generally to provide feedback through attendance to meetings, questionnaires and e-mail.

CSIR to regularly participate to the EGI Security Policy Group (SPG) meetings, with the status of voting member, contributing to the development of the security policies that ensure a secure distributed computing infrastructure.

Expected outcome:

Participation to OMB work. AAROC Operations Manager and Security Manager/Officer are already appointed and contributing to the OMB. Performance of Operations Centre is assessed on an annual basis by EGI.eu.

WP2 Global services

Parties Involved: EGI.eu (Contact: Senior Operations Manager); CSIR Meraka

Description of work: Identify a set of EGI.eu Global services that AAROC is interested in using on the ROC according to CHAIN-REDs deliverable D3.1[8], together with the respective guaranteed quality parameters that EGI.eu commits to provide.

Expected outcome:

•**A2.1 (once-off)** - EGI.eu to define SLA for the Global services offered to AAROC (via CSIR) ROC to be released and approved. **(Leader: Peter Solanga)**

•**A2.2 (continual)** AAROC will use of GOCDB, GGUS, Accounting Service and Grid Monitoring Services.

WP3 Local services

Parties involved: EGI.eu (Contact: Senior Operations Manager), AAROC (CSIR)

Leading partner: CSIR

Description of work: Identify a set of CSIR local services and the respective minimum quality of

---

6   EGI Operations Architecture: Infrastructure Platform and Collaboration Platform Integration, EGI-InSPIRE Deliverable D4.6, March 2012 (https://documents.egi.eu/document/1309)
7   Party leading the activity is underlined.
8   See http://documents.ct.infn.it/record/556/files/CHAIN-REDS-D3.1-i.pdf

service that the Party commits to provide to EGI.eu in order to be part of EGI.eu

A3.1 (continual): Africa/Arabia to adopt and employ Operational Policies and Procedures (AP-AAROC-8:)

WP4 Integration

Parties involved: EGI.eu (M. Krakowian EGI.eu), CSIR

Leading partner: EGI COD

Description of work: AAROC infrastructure to be supported validated and integrated by the EGI.eu within EGI according to the established procedure.

Expected outcome: AAROC enters the EGI production infrastructure via CSIR

A4.1 (once-off): CSIR, as the Resource Infrastructure Provider, carries out integration on operational level with EGI.eu

A4.2 (continual): CSIR to setup and Operate a Grid Monitoring Service (AP-AAROC-6)

A4.3 (once-off): CSIR to create a new Operations Centre in the EGI.eu GOCDB and transfer Resource Centres from NGI_ZA to the newly established Operations Centre

A4.4 (once-off): CSIR to set up dedicated Support Unit in GGUS (AP-AAROC-9)

WP5 Reporting

Parties Involved: EGI.eu (Contact: Senior Operations Manager); CSIR (Contact: ROC Coordinator)

Description of work: As part of the EGI quality assurance procedures, performance of the services provided by AAROC Resource Centre (site-level grid services) and performance of the core services provided by AAROC (operations centre-level services) is reported on a monthly basis. Reports are produced by EGI.eu and are accessible on the EGI wiki: https://wiki.egi.eu/wiki/Performance

AAROC resource centre agrees to adhere to the minimum service level targets defined in the Resource Centre OLA[9] and the Resource Infrastructure Provider OLA[10] (AP-AAROC-8) .

AAROC installed capacity and utilization are also assessed yearly as part of the annual assessment of EGI. EGI.eu is performing this assessment, which is publicly available on EGI document DB.

Expected outcome:

•**A5.1 annually-** Annual report on performance of AAROC Local services (Resource Centre services and NGI services) **(Leader Peter Solagna)**

•**A5.2 bi-annually -** Annual assessment of services and installed capacity and utilization **(Leader Peter Solagna)**

The EGI.eu Strategy and Policy Team (SPT) will coordinate the periodic review of the progress of the activities defined in the table above, follow-up the milestones and distribute reports to both Parties. Special meetings between the points of contact designated under 5 (Communication) shall be held, as often as necessary, to examine the progress in the implementing of this Agreement.

ARTICLE 5: COMMUNICATION

The Parties shall keep each other informed on all their respective activities and on their progress and shall consult regularly on areas offering potential for cooperation.

---

9   Resource Centre Operational Level Agreement: http://documents.egi.eu/document/31
10   Resource Infrastructure Provider Operational Level Agreement: http://documents.egi.eu/document/463

Each Party shall designate a "point of contact" to be responsible for monitoring the implementation of this MoU and for taking measures to assist in the further development of cooperative activities. Such points of contact shall be the ordinary channel for the Parties' communication of proposals for cooperation.

The primary point of contact for each Party is:

  EGI.eu: Operations Centre. E-mail: operations (at) egi.eu

  CSIR: AAROC manager e-mail : roc(at) africa-grid.org

Questions of principle or problems that cannot be solved at primary contact level are escalated to the EGI.eu Director director (at) egi.eu and the Director of CSIR Meraka Cyberinfrastructure Manager cjwright (at) csir.co.za. Should there be, in rare occasions, a need to escalate beyond the competency area, the director of the Institute should be contacted : hpatel (at) csir.co.za

ARTICLE 6: PARTICIPATION IN EGI.EU GROUPS

CSIR agrees to name a technical representative (with deputy) for the EGI OMB.

CSIR may be asked to nominate representatives to serve on other policy groups as appropriate.

Sites included in AAROC may nominate representatives to serve on or participate to user support or technical work groups, as well as EGI Virtual Teams, as appropriate.

ARTICLE 7: INTELECTUAL PROPERTY RIGHTS, JOINTLY OWNED RESULTS AND LICENSE

A. INTELECTUAL PROPERTY RIGHTS AND LICENSE

1. "Intellectual Property Rights" shall mean all intellectual creations including but not limited to inventions, know-how, layouts, drawings, designs, specifications, computer programs, reports, processes, protocols, calculations and any other matter and protected by intellectual property rights, whether registered or not, including patents, registered designs, copyrights, design rights and all similar proprietary rights and applications for protection thereof.

2. Intellectual property rights generated by a Party under this MoU shall be the property of that Party who shall be free to protect, transfer and use such Intellectual Property Rights as it deems fit.

3. Notwithstanding the foregoing each Party shall grant the other a non-exclusive royalty free, perpetual license to use the Intellectual Property Rights generated by it under this MoU for use within its project and for research and development purposes only.

B. JOINTLY OWNED RESULTS

1. Results that were jointly generated by both Parties will be jointly owned by the Parties, hereinafter referred to as ("Jointly Owned Results") and the Parties shall enter into a separate written agreement to set out (without limitation) how the costs and benefits of protection and commercialization of the Foreground Intellectual Property shall be shared .

2. With respect to any joint invention resulting from this MoU (i.e. any invention jointly made by employees of both Parties), the features of which cannot be separately applied for as Intellectual Property Rights and which are eligible for statutory protection requiring an application or registration (herein referred to as "Joint Invention"), the Parties shall agree on which Party will carry out any filling as well as any further details with regard to persecuting and maintaining of relevant patent applications.

ARTICLE 8: FUNDING

Each Party shall bear the costs of discharging its respective responsibilities under this MoU, including travel and subsistence of its own personnel and transportation of goods and equipment and associated

documentation, unless otherwise agreed in this MoU.

Each Party shall make available free of charge to the other Party any office/meeting space needed for the joint activities.

The Parties' obligations hereunder are subject to their respective funding procedures, applicable national legislation and the availability of appropriated funds. Should either Party encounter budgetary problems in the course of its respective internal procedures that may affect the activities carried out under this MoU, that Party shall notify and consult with the other Party in a timely manner in order to minimise the negative impact of such problems on the cooperation. The Parties shall jointly look for mutually agreeable solutions.

In order to reduce the impact on travel costs, face-to-face meetings should be co-located with other events where participants are likely to attend. Meeting via teleconferences should be considered when the nature of the discussion does not strictly require a face-to-face presence.

Where any of the Parties are required to appoint any third party to assist such Party in the execution of the activities identified in Article 4 (Joint Work Plan) or the projects in which the Parties participate such appointment shall at all times be subject to such Party's internal procurement processes and applicable national legislation, if applicable.

ARTICLE 9: STARTING DATE, DURATION AND TERMINATION

This MoU will start when signed by the authorised representatives of the Parties and shall remain until completion of the activities identified in Article 4 (Joint Work Plan), or upon termination of the projects in which the Parties participate, or upon three (3) months prior written notice by one Party to the other. In the event of termination, the parties shall endeavour to reach agreement on terms and conditions to minimise negative impacts on the other Party. In the event of the continuation of the present cooperation, the Agreement may be extended and/or amended by mutual agreement in writing.

The parties agree that the entry into force of this MoU automatically terminates the MoU signed in 2011 between EGI.eu and MERAKA (see https://documents.egi.eu/document/495).

ARTICLE 10: AMENDMENTS

The MoU is subject to updates and modifications that can be triggered by changes in either EGI organizational model, or the changes in other party's organizational model

The MoU may be amended by written agreement of the Parties. Amendments shall be valid only if signed by the authorised representatives of the Parties.

ARTICLE 11: ANNEXES

Annexes 1, 2, 3 and 4 attached hereto have the same validity as this MoU and together constitute the entire understanding and rights and obligations covering the cooperation accepted by the Parties under this MoU. Annexes may be amended following the provisions of Article 10.

ARTICLE 12: LANGUAGE

The language for this MoU, its interpretation and all cooperative activities foreseen for its implementation, is English.

ARTICLE 13: PUBLICITY, AGENCY AND PARTNERSHIP

Each Party shall not use the name of the other, in any publicity, advertising or news release without the prior consent of the other Party.

No Party, including those identified in Article 3 shall present itself as the representative or agent of the other Party for any business, legal or any other reason, nor shall it have the power of authority to legally commit, instruct or confer third party right to the other party nor legally commit, instruct or confer rights of the other Parties towards third parties, unless it receives the other Party's prior written consent.

Nothing in this MoU shall be interpreted as establishing a separate legal entity such as but not limited to a partnership or joint venture between the Parties and both Parties and those identified in Article 3 shall act as independent contractors.
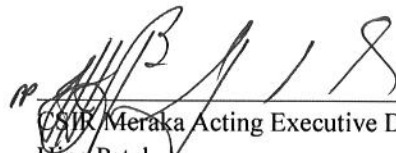
Memorandum of Understanding between EGI.eu and CSIR

IN WITNESS WHEREOF, the Parties have caused their duly authorised representatives to sign two originals of this non-binding Memorandum of Understanding, in the English language.

The following agree to the terms and conditions of this MoU:

EGI.eu director
Yannick Legré

CSIR Meraka Acting Executive Director
Hina Patel

14 September 2014
Date

4/september/2014.
Date

ANNEX 1– EGI.EU DESCRIPTION

To support science and innovation, a lasting operational model for e-Infrastructure is needed – both for coordinating the infrastructure and for delivering integrated services that cross national borders. The objective of EGI.eu (a non-for-profit foundation established under Dutch law) is to coordinate and manage the European Grid Infrastructure (EGI) federation on behalf of its members: National Grid Initiatives (NGIs) and European International Research Organisations (EIROs) to help guarantee the long-term availability of a generic e-Infrastructure for all European research communities and their international collaborators.

Services provided by EGI.eu to the wider EGI community:

• Oversee the operations of EGI to guarantee the integration of resources from providers around Europe into a seamless and secure e-Infrastructure.

• Coordinate the support provided to EGI's user communities.

• Work with technology providers to source high-quality and innovative software solutions to answer users' requirements.

• Represent the EGI federation in the wider Distributed Computing Infrastructures (DCI) community through coordination and participation in collaborative projects.

• Coordinate the external services provided by partners in the community.

• Steer the evolution of EGI's policy and strategy development.

• Organise EGI's flagship events and publicise community's news and achievements.

The EGI.eu is supporting a federation of high-performance computing (HPC) and high-throughput computing (HTC) resources and cloud resources. EGI.eu is also ideally placed to integrate new Distributed Computing Infrastructures (DCIs) such as clouds, supercomputing networks and desktop grids, to benefit the user communities within the European Research Area.

EGI collects user requirements and provides support for the current and emerging user communities. Support is also given to the current heavy users of the infrastructure, such as high energy physics, computational chemistry and life sciences, as they move their critical services and tools from a centralised support model to one driven by their own individual communities.

The EGI community is a federation of independent national and community resource providers, whose resources support specific research communities and international collaborators both within Europe and worldwide. EGI.eu, coordinator of EGI, brings together partner institutions established within the community to provide a set of essential human and technical services that enable secure integrated access to distributed resources on behalf of the community.

The production infrastructure supports Virtual Research Communities – structured international user communities – that are grouped into specific research domains. VRCs are formally represented within EGI at both a technical and strategic level.

Further information (e.g. governance; services) can be found at: www.egi.eu/about/EGI.eu

Annex 2 - Description of CSIR, CSIR Meraka and Africa-Arabia Regional Operations Centre Annex 2.1: Description of the Council for Scientific and Industrial ResearchThe CSIR is one of the leading

scientific and technology research, development and implementation organisations in Africa. Constituted by an Act of Parliament in 1945 as a science council, the CSIR undertakes directed and multidisciplinary research, technological innovation as well as industrial and scientific development to improve the quality of life of the country's people. The CSIR is committed to supporting innovation in South Africa to improve national competitiveness in the global economy. Science and technology services and solutions are provided in support of various stakeholders, and opportunities are identified where new technologies can be further developed and exploited in the private and public sectors for commercial and social benefit. The CSIR's shareholder is the South African Parliament, held in proxy by the Minister of Science and Technology.Annex 2.2: Description of the CSIR Meraka Institute The Meraka Institute is an operating unit of the CSIR focused on Information and communication technology (ICT). We are in the business of research, innovation and advanced human capital development. With over 200 staff and students, Meraka is the largest group in South Africa dedicated to ICT research. It has extensive national and international networks and actively collaborates with other organisations across the globe. Meraka contributes to enhancing quality of life and economic competitiveness in South Africa and the continent through ICT by:

- researching and developing new technology that enables ICT access, inclusion and use
- researching, developing and transferring innovative ICT products, processes and services into the market
- researching, developing, building and operating world-class cyberinfrastructure
- contributing skills and outcomes that are changing the profile of our ICT landscape

Meraka's research and development covers the following areas:

- Earth observation science and information technology
- Human language technologies and knowledge technologies
- Networks and media
- Integrative systems, platforms and technologies
- Cyberinfrastructure

The cyberinfrastructure initiative in South Africa has the role to provide access and development of advanced e-infrastructure services and tools, to the South African research communities. The cyberinfrastructure programme is funded by the South African Department of Science and Technology, and is managed by the Meraka Institute. The Centre for High-Performance Computing (CHPC), the South African National Research Network (SANReN) and the Data-Intensive Research Infrastructure for South Africa (DIRISA) form part of the initiative, while SAGrid forms the underlying framework for collaboration and infrastructure sharing amongst participating institutes. The coordination of the national grid forms part of SANReN activities at Meraka, due to the close relationship between the two and the reliance of the grid on the network as a service provider.

ANNEX 2.3: DESCRIPTION OF THE AFRICA-ARABIA REGIONAL OPERATIONS CENTRE

The Africa-Arabian Regional Operations Centre has been initially developed during the EUMEDGRID-Support project (ended on 31 December 2011) in cooperation with the CHAIN project, in the context of WP4, along the lines of the EGEE and EGI-definition of ROC. The ROC consists of software, information and grid services, operated by a collaboration of institutes in the region; services in this case refer both to automatic services implemented in software as well as human-provided services. The ROC presents itself to various sets of users in terms of the services it offers, however does not explicitly operate any resources – the main goal of the ROC is to coordinate the operation of resources in the region, by monitoring them, supporting their users and providing decision makers with usage,

accounting and other figures justifying continued investment.

In terms of interoperability the ROC also acts as a central point for exchange of security, monitoring and usage data, allowing entire infrastructures and NGI's to trust each other to mutually exploit their resources. This trust in turn promotes collaboration at a scientific level, allowing users in one region (and using resources belonging to one NGI) to share data and compute time with their collaborators in other regions.

The ROC responds essentially to the following category of customers:

1.End users: They are distributed across the entire continent, which is currently the geographic range of the ROC, in the absence of any other coordinating body.

2.Technical support staff: The technical experts and site administrators are located at the participating institutes of the ROC and are thus more well-defined and confined than the end-user group of customers. This group is special in the sense that it both consumes services and provides services via the ROC

3.Policy and decision makers.

ANNEX 3 – DETAILED CONTACT LIST

Role	EGI.eu	Collaborating Organisations
Signing Authority	Director Yannick Legré Yannick.legre@egi.eu	CSIR Meraka Institute Acting Executive Director Hina Patel hpatel@csir.co.za
MoU Contact Point	Strategy and Policy Manager Sergio Andreozzi sergio.andreozzi@egi.eu	AAROC Coordinator Bruce Becker bbecker@csir.co.za
User support	Senior Operations Manager Peter Solagna peter.solagna@egi.eu	AAROC User Support team roc@africa-grid.org
Infrastructure Operations	Senior Operations Manager Peter Solagna peter.solagna@egi.eu	AAROC Operations Manager Bruce Becker bbecker@csir.co.za
Technical Coordination	Technical Manager Michel Drescher michel.drescher@egi.eu	AAROC Operations Manager Bruce Becker bbecker@csir.co.za
Dissemination	Communications Manager Neasan O'Neill neasan.oneill@egi.eu	CSIR Disemination officer Nox Moyake NMoyake@csir.co.za

These contact points may be the same person. The EGI.eu Strategy and Policy Team (policy@egi.eu) is to be notified regarding any changes to the contact list.