



**Project<sup>9</sup> Number: 654225**

**Project Acronym: MAGIC**

## **Periodic Technical Report**

### **Part B**

**Period covered by the report:** from 01/05/2016 to 31/10/2016

**Periodic report:** 3<sup>rd</sup>

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<sup>9</sup> The term 'project' used in this template equates to an 'action' in certain other Horizon 2020 documentation

## **1. Explanation of the work carried out by the beneficiaries and Overview of the progress**

### **1.1 Objectives**

General Objective:

The MAGIC Project seeks to establish a set of agreements for Europe, Latin America and other participating World Regions, aiming at consolidating and completing the building blocks of middleware necessary for the establishment of a marketplace of services and real-time applications for international and inter-continental research groups which facilitates mobility and the work of global science communities.

Specific Objectives:

a) To foster the deployment of the platforms that enable mobility of people and seamless access to services by promoting the establishment of identity federations interconnected via eduGAIN, creating awareness of privacy and security issues and spreading eduroam by: sharing experiences, carrying out training and making available shared infrastructure to ease the process in the partner world regions.

From May to October, 2016, Work Package 2 focused on consulting in eduroam and AAI implementation. Unfortunately, CKLN ceased to exist at the end of September 2016. Because of this, the Caribbean region is not reported on in this section. On 27 and 28 October the 1<sup>st</sup> TEIN-CAREN joint workshop was held in Bishkek, Kyrgyzstan, with the third session on 28 October being devoted entirely to eduroam. In the Arab states region, the expansion of eduroam coverage continued in countries that have already implemented eduroam, including Algeria, Morocco and Lebanon. In addition, Jordan has implemented eduroam at one university which has five campuses. Finally, a strategic action in Africa was carried out by RNP to support MoRENet (the Mozambican NREN). Thanks to this special action, MoRENET has committed to implementing both eduroam and eduGAIN before the end of the MAGIC project.

b) To develop a model for inter-operation between NREN cloud application markets of participating world regions, based on cloud provisioning and taking advantage of applications developed and run by NRENs across different continents to create a model for a worldwide application market for collaboration tools and services

During the reporting period, the Work Package team worked on: a) the development of the pilot environment for the group management in federations solution; b) the review of the service catalogue attributes for MAGIC applications; c) the setting-up of the testing environment of the GÉANT service catalogue application.

c) To seek consensus among participating world regions on the importance of interoperability of real-time applications and work towards the adoption of standards such as those proposed by the Global CEO Forum to promote the creation of a worldwide environment for these applications.

In Work Package 4 MAGIC promotes and supports the development of NRENum.net as the standard for global dialling. During this quarter, following the suggestions of the reviewers, WP4 has developed a MOOC in order to enrich the training process. The tool was developed to allow countries to follow their own path towards the adoption of NRENum, allowing a better appropriation of the technology and facilitating the

implementation in each of the MAGIC target countries. Furthermore, WP4 has worked on the integration of legacy videoconferencing network (SIP) and web-conference systems (MCONF). The advances are well underway. It is expected to have the pilot ready in March 2017.

d) To foster the collaborative work of Global Science Communities by actively promoting the participation of Latin American and other regions' researchers in European Commission Calls and those of other international funding agencies with high impact in the participating regions and other networking activities.

The project is supporting and fostering four Global Science Communities in the fields of e-Health; Biodiversity, Environment; and Remote Instrumentation. The first three were adopted from the findings of the ELCIRA project, and the last one was proposed by an active community in Mexico that saw the MAGIC initiative as a platform to scale their community to a global level. The four communities were launched in February 2016 and since then have been active with different activities. The MAGIC project has spent the last several months supporting the four communities in the following ways:

- Providing information on funding opportunities and possible partners through the Funding&Partners information system that was developed and integrated into the Colaboratorio. The information is also sent via a weekly e-mail.
- Providing the GSCs specifically with information on open Horizon 2020 calls via the regional virtual H2020 Info Days
- Providing the GSCs with networking opportunities through Worldwide Virtual Days where experts are invited to present and/or lead discussions on cross-cutting issues, such as Open Access; Science Communication; and Data Management.
- Providing training on the use of collaborative applications; and best practices on collaborating at a global landscape.

## **1.2 Explanation of the work carried per WP**

### **1.2.1 Work Package 1: Management**

The management tasks carried out in this period were as follows:

- To ensure that deliverables rejected in the evaluation meeting were corrected making sure that the reviewers' recommendations are followed.
- To distribute the funding received from the European Commission in accordance with the Consortium Agreement.
- To maintain regular Steering Committee meetings to ensure the correct implementation of the project. These meetings took place in person and by videoconference. Steering Committee Meetings were held on the following dates:
  - 18-19 May 2016. Second face-to-face meeting, held in Rio de Janeiro, Brazil.
  - 15 July 2016
  - 6 September 2016



The partners meeting in Rio de Janeiro

The minutes of the Meetings are available in the wiki of the MAGIC Community maintained on the Colaboratorio portal.

- To oversee the Deliverables and Milestones.
  - All deliverables, except D3.5 and D4.4 have been submitted to the EC through the H2020 Project Management System.
    - Deliverable D3.5 “Evaluation of pilot and services, user perception, and implementation effort” has been delayed due to the difficulty in obtaining answers to the survey and the fact that the pilot itself was delayed by two months. The Project commits to the delivery of the document by the end of January 2017 (month 21).
    - Deliverable D4.4 “Pilot test of an integration between the legacy global video network with one open-source web-conference, and a VoIP network based in NRENum” is delayed because the work to implement the gateway between the MCONF system used by the MAGIC Project has suffered delays in development. The Project commits to delivering this by month 23.
- The status of milestones is as follows:
  - MS1 completed
    - Kick-off Meeting Minutes; Project Website
    - Event participation plan
  - MS2 has been completed as of October 2015, i.e., Month 6 instead of Month 4 because of changes in the procedures to sign MoUs internally in GÉANT due to its internal restructuring.
    - The agreement itself
  - MS3 has been completed by 29 September 2015
    - The pilot portal itself deployed in Ecuador (CEDIA), Costa Rica (CONARE) and Nigeria (NgREN).
  - MS4 has been completed as of February 25, 2016, after completing the launch events of four Global User Communities:
    - e-Health: February 2nd, 2016
      - <https://eventos.redclara.net/indico/event/634/>
    - Biodiversity: February 11th, 2016,
      - <https://eventos.redclara.net/indico/event/639/>
    - Environment: February 18th, 2016,

- <https://eventos.redclara.net/indico/event/640/>
  - Remote Instrumentation: February 25th, 2016,
    - <https://eventos.redclara.net/indico/event/641/>
- MS5 (Assessment of group management platforms) was successfully completed on 30 October 30 as described in D3.2
- MS6 has been successfully completed as NRENum.net has been deployed in 5 countries in Latin America: El Salvador (RAICES), Ecuador (CEDIA), Chile (REUNA), Uruguay (RAU) and Mexico (CUDI).
- MS7 Four Communities established (each with a thematic Champion) in December 2015: e-Health, Environment, Biodiversity and Remote Instrumentation
- MS8 (Training in AAI) has already been completed for the Caribbean, the Arab Countries (ASREN), West Africa (WACREN) and East and Southern Africa (UbuntuNet). eduroam training has been complete for CKLN, ASREN and WACREN. AAI and eduroam training for Central Asia (CAREN) will be completed in February and March 2017.
- MS9 completed by 29 April 2016. The training material in PDF is available on the website.
- MS10 - The information system on funding opportunities has been available since 6 April 2016 via the Colaboratorio portal. An email alert is sent weekly to all registered users based on their preferences.
- MS11 - This Milestone is yet to be completed; only one Asian NREN, the Sri Lankan NREN. More candidates are studying the possibilities of joining. The Project is very confident that we will reach the target of at least three Asian NRENs joining NRENum.
- MS12 - All dissemination activities have been completed. See D6.4.
- MS13 - Training in the African region has been completed in March 2016.
- MS14 - Training in the Caribbean has been completed
- MS15 - Participation of regional representatives of each global priority area in at least one Regional Best Practice Meeting. A Best Practice meeting was held for the Arab States Region at the e-AGE 2016 conference in Beirut, Lebanon on 1 December 2016. The next two events are planned in Africa and the Caribbean.
- MS16 - Pilot of the group management platforms inter-operating and functioning in at least two applications sharing groups across continents. Completed in December 2016, see D3.4
- MS17 - Training in the Central Asian region in progress, delayed to February 2017.
- MS18 - eduroam agreements with at least 12 countries from different regions signed. Completed.
- MS19 - Training in Asia. Completed in August 2016.
- MS20- Strategic information to strengthen the worldwide communities. Delayed to March 2017.
- MS21 - Integration between legacy video network and webconferencing is in progress completion delayed to March 2017.
- No major problems have occurred during this period, the project has run smoothly, except for some delays reported:
  - It has been complex to recover from the initial slow start affecting mostly the time needed to reach agreements between European and Latin American projects.
  - The difficulty to identify user communities willing to become test communities and the time-consuming work of collecting information on researchers and research groups. This has created a delay that has not been recovered so far but it is expected that this will be done before the end of the project.
  - The difficulty in securing the right timing in the delivery of the gateway between webconferencing and legacy video systems. This has delayed the delivery of this application and the corresponding pilot to March 2017.
- CKLN, the Caribbean Knowledge and Learning Network has asked to leave the Consortium because it has been closed by its owners. An amendment is in preparation. The corresponding tasks will be taken by the Coordinator.

### 1.2.2 Work Package 2: Platforms for Mobility

From May to October 2016 Work Package 2 focused on consulting in eduroam and AAI implementation. Unfortunately, the MAGIC project manager reported that he has received a letter from CKLN's Director informing that CKLN closed at the end of September 2016. The European Commission has been informed of the situation and consultations are underway to decide on the avenues to take as regards the contract with the EC and the work that CKLN had committed. Because of this, the Caribbean region is not reported in this section.

For Central Asia, a contract was signed at the beginning of July in Bishkek, Kyrgyzstan, between the European Commission and GÉANT, guaranteeing the launch of the third phase of the EU-funded Central Asia Research and Education Network (CAREN) project. Under this project regional R&E connectivity will resume following the end of the previous project phase.. On 27 and 28 October, the 1st TEIN-CAREN joint workshop was held in Bishkek, Kyrgyzstan, with the third session on 28 October completely devoted to eduroam. Prof. Deokjai Choi from Chonnam National University presented "Intro to eduroam" and Almaz Bakenov from NITC made a presentation entitled "Roaming for Education and Research".

In the Arab States region, an expansion of eduroam coverage has been noticed in countries that have already had eduroam implemented, including Algeria, Morocco and Lebanon. In addition, Jordan has implemented eduroam at one university which has five campuses.

A strategic action in Africa was carried out involving RNP and MoRENet (the Mozambican NREN). Since 2013 MoRENet has been working with the Brazilian NREN (RNP) under an international cooperation framework which comprises training activities, exchanging good management and governance practices of networks, technical visits and, more recently, information exchanges on technical and operational management. As a result of this collaboration activity, a work plan comprising four phases has been developed.

- **Preparation:** in this phase, RNP and MoRENet elaborated an implementation plan for the project, detailing all work to be done to implement an Identity Federation and eduroam. This phase also comprised the elaboration of structural documents required to implement the federation and the eduroam roaming operator, including the signature of the terms of adhesion to eduroam and the MAGIC project;
- **Federation Implementation:** this phase corresponded to the implementation of the federation of authenticity and authorisation in Mozambique, which comprised a one-week online training course as well as assisted support via webconference;
- **eduroam implementation:** this phase corresponded to the implementation of the eduroam roaming operator in Mozambique, including a one-week online training course as well as assisted support via webconference;
- **Conclusion:** this corresponded to the drafting of an implementation report, which referred to the implementation plan drafted at the beginning of the Project, describing the planned results, contingency planning, lessons acquired, results accomplished and justification for extending the initial deadline.

The first phase of the project was concluded on 28 October, 2016, six weeks after the first formal meeting of the project, with the conclusion of the following tasks:

- Web seminars about identity federations and eduroam;
- Drafting of the project implementation;

- Infrastructure availability at the MoRENet client institution;
- Terms of adhesion signed by MoRENet;
- Preparation of structural documents.

The preparation of structural documents has proved to be an essential activity that assists both communication between the service, MoRENet clients and the international eduroam and eduGAIN services, into which the identity federation and the Mozambique roaming operator (RO) had the intention to integrate on the recommendation of RNP. As a result, the following documents were prepared:

- Agreement and signature of the memorandum by MAGIC and MoRENet;
- Use Policy of the eduroam roaming operator;
- Webpage for the eduroam roaming operator in Mozambique;
- Document with eduroam technical specifications;
- Adhesion to terms for eduroam client institutions;
- eduroam statement signature.

During a meeting held on 28 October 2016, one of the most significant activities of the second phase of the project relating to the implementation of the federation was the one-week online training course.

In Latin America, CUDI (the Mexican NREN) continues to work on AAI in Mexico. Currently the Mexican Identity Federation has a federated service implemented by CUDI. Work is also underway on the implementation of a service at the University of Colima, which is expected to be available by the end of December 2016. CUDI is also working on federating some of the applications found on its collaboration platform, which is also expected to be available by the end of 2016. Mexican NREN implemented a discovery service (DS) for the Mexican Federation of Identities, in which the CUDI IdP and the University of Colima have been included.

The Mexican Identity Federation is already connected to the CLARA collaboration; the metadata exchange was carried out and the identity providers are working.

### 1.2.3 Work Package 3: Cloud Provisioning and Groupware Standards

During the reporting period, the Work Package team worked on: a) the development of the pilot environment for the group management in federations solution; b) the review of the service catalogue attributes for MAGIC applications; c) the setting-up of the testing environment of the GÉANT service catalogue application.

The development of the pilot environment for group management in federations was completed by July 2016. The work included four (4) applications: the Colaboratorio, SIVIC, Filesender and Dockuwiki, hosted by RedCLARA, RedCLARA, RENATER and CESNET respectively. Access to these tools is federated. The table below shows the corresponding links:

Service	URL	Use case
Dokuwiki	<a href="https://dokuwiki-magic.cesnet.cz">https://dokuwiki-magic.cesnet.cz</a>	The Docuwiki can validate write if the user has write permission based on the group he belongs to. The group is on another domain, in this case a Colaboratorio community.
Colaboratorio	<a href="http://colaboratorio.redclara.net">http://colaboratorio.redclara.net</a>	The Colaboratorio shares its communities information to the other applications.
SIVIC	<a href="http://colaboratorio.redclara.net">http://colaboratorio.redclara.net</a>	In the SIVIC application, a user can invite users to a videoconference. In this case, the invitation can be sent to the user's partners in a specific group by calling the group name whether the group is in another domain or not.
Filesender	<a href="https://filesender-premium.renater.fr">https://filesender-premium.renater.fr</a>	The Filesender application works in a similar fashion to SIVIC; the user can share a large file with a group by calling the group name.

The service catalogue is an important part of the scope of work in WP3. The service catalogue will list the applications, and the assessment of their main characteristics related to the provider and the application itself. In the group discussion, the conclusion was that the MAGIC catalogue shall manage the following properties:

1. IPR relating to Customer Data
2. Processing Data
3. Ownership of Data
4. Data Protection
5. Requests for Data Access from 3rd Parties
6. Quality of service
7. Notification
8. Liquidated Damages
9. Security of the Service
10. Managing security incidents
11. Data Backup and Restore
12. Compatibility
13. Portability
14. Electronic Data Processing (EDP)
15. Network Connectivity
16. AAI
17. User Provisioning
18. Protection of Minors as Users
19. Service Level Agreement
20. Quality review
21. Information about the Performance of the Service
22. Billing
23. Governing Law
24. Peering, Network Connectivity and Associated Costs



These will be the parameters that will be included in the service catalogue that will be delivered under Deliverable D3.4. This deliverable is expected to be completed by mid-December 2016.

#### 1.2.4 Work Package 4: Agreements for Real Time Collaboration

In the Work Package 4, the team has been continuously working on the engagement of the Asian NRENs in NRENum.net. There have been various meetings with TEIN\*CC, and it is expected to have one more country that joins NRENum.NET service by the end of the project. The team achieved the inclusion of Lebanon as one of the new implementations with deployment by August 2016. Another important advance in the Work Package was the deployment of DNSSec by Ecuador, completed in July 2016. The deployment in Ecuador was the fifth DNSsec implementation achieved, leading to the goal of three countries securing their zone being passed.

The work package team also redesigned the online courses for NRENum.net implementation. The courses were developed as Massive Open Online Courses (MOOCs) using the OpenEDX platform. The platform was contributed by FUN\_MOOC in France. The course was designed in Spanish and English, and can be accessed via the following links:

Spanish version

[http://clara.fun-campus.net/courses/course-v1:RedCLARA+NRUM01+2016\\_T4/about](http://clara.fun-campus.net/courses/course-v1:RedCLARA+NRUM01+2016_T4/about)

English version

[http://clara.fun-campus.net/courses/course-v1:MAGIC+NRENUMen+2016\\_T4/about](http://clara.fun-campus.net/courses/course-v1:MAGIC+NRENUMen+2016_T4/about)

Other work that has been advancing in Work Package 4 is the beginning of the integration of webconference systems with the traditional SIP video solutions. There have being advances in the search for developers and definition of the scope of work. The group defined that the work shall include:

- a) The integration of the MCONF system to SIP capable devices
- b) The development of the content sharing
- c) Development of statistics
- d) An API for control and provisioning
- e) The deployment of a load-balancer solution for the network

#### 1.2.5 Work Package 5: Global Science Communities

During the reported period Work Package 5 focused on strengthening the four Global Science Communities (GSC) that were launched during the previous reporting period. The Communities are:

- Global Science Community on e-Health,
- Global Science Community on Biodiversity,
- Global Science Community on Environment; and
- Global Science Community on Remote Instrumentation.

The coordination of each activity was planned, organised and carried out in collaboration with

the champions of each Community. We take special recognition that the Community Champions have been very useful in guiding the direction of the GSCs especially in line with emerging and trending issues in their field.

Virtual activities and the participation in international events were the main events where WP5 participated in the last six months.

#### **a) Virtual activities with GSCs**

With MAGIC being a global project that involves partners from all over the world, interaction among community members takes place using virtual resources that shorten distances and enhance collaboration from different circumstances. During the reporting period, a total of nine virtual events were conducted for the GSCs: eight for specific communities; and one generic one. The events were:

- Biodiversity Experiences from around the world
- Remote Instrumentation for Medical Applications
- Webinar on Science Communication
- Six e-Health Grand Rounds (focusing on e-Health, Cardiology and Child & Adolescent Health)

For remote webinars, community champions and members had to deal with time zones differences and different interest topics that could be more interesting for one or another group.

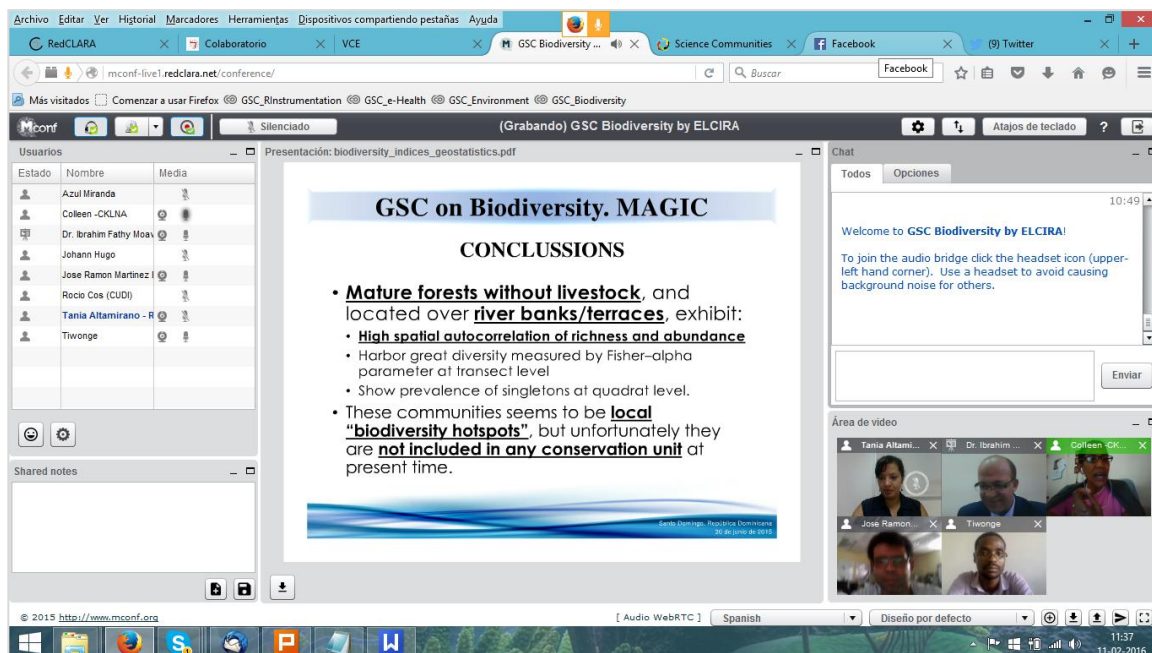
All sessions were recorded and stored on the website of the events. Slides for the presentations used are also available for download.

### **1. Global Science Community on Biodiversity: Experiences from Around the World**

Date: 5 May 2016

Website: <https://eventos.redclara.net/indico/event/661/>

This session was held as a follow-up event to the Opening Conference for the GSC on Biodiversity, which was held on 11 February 2016. During the session four presenters from different parts of the world (Professor Ibrahim Fathy Moawad from Egypt; Professor Dora Canhos from Brazil; Dr Keisha Sandy from Trinidad & Tobago; and Dr José Manuel Mateo from the Dominican Republic) shared their activities and experience in the field of biodiversity. The session was concluded by an open discussion with next steps.



## 2. Webinar on Science Communication

Date: 30 June 2016

Website: <https://eventos.redclara.net/indico/event/719/>

The activity was facilitated by Michelle Wilmers, Curation and Dissemination Manager of the Global South Research on Open Educational Resources for Development (ROER4D) project, and based at the University of Cape Town, South Africa, with a presentation of a five-step model that can be applied by individual researchers or projects who wish to improve their international footprint and make the output of their work more visible and available for use. A total of 58 participants attended the webinar.

The webinar was not intended for a specific priority area and therefore dissemination was targeted at all community members. It was suggested during the follow-up event for the GSC on Biodiversity held on 5 May 2016 when participants felt there was a need to have a focused session to discuss how to effectively communicate scientific results.

The material presented by Ms. Wilmers was originally created in English but to make it more accessible and easy for the participants from different regions her presentation was translated into Spanish and Portuguese.



**Webinar on Science Communication**

30 June 2016  
GMT timezone

> Home  
> Speaker  
> Topics  
> How to participate

Research projects and individual researchers in all disciplines are exploring new modes of scholarly communication in order to engage a wider audience, obtain developmental impact, boost visibility, meet funder requirements, and maximise the return on research investment. Added to this, new trends around communicating a broad range of artefacts from the research process are playing an important role in fostering collaboration and professionalising different aspects of the overall research lifecycle. In short, the publishing or dissemination process can no longer be left solely to formal publishers and there is a need to develop internal capacity in order to engage more optimally with communication activity. This can be daunting for researchers who lack the time and expertise to engage meaningfully with this area of work.

Science Communication Webinar Outline  
This 2-hour webinar will present a five-step model that can be applied by individual researchers or projects who wish to improve their international footprint and make the outputs of their work more visible and available for use. Focusing on the curation, "packaging", and dissemination of research, the discussion will pay particular attention to the needs of developing-country researchers who are working in diverse, multilingual, resource-constrained contexts

▶ REGISTER

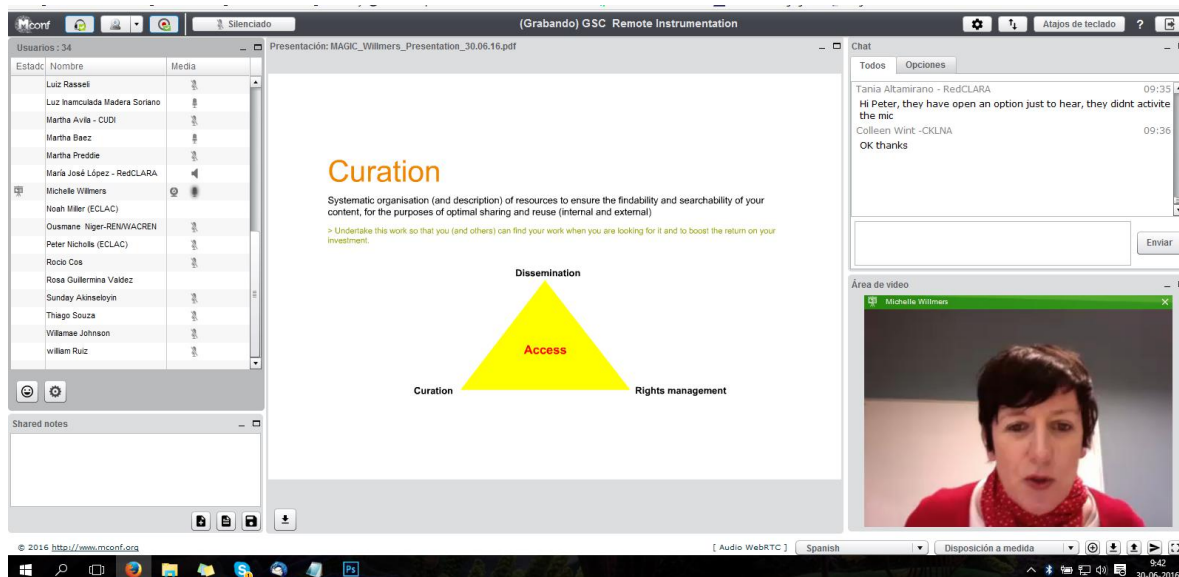
Starts 30 Jun 2016 13:00  
Ends 30 Jun 2016 15:00  
GMT

Mrs. Altamirano López, Tania  
Mr. Banda, Tiwonge  
Ms. Wint-Bond, Colleen

Slides  
Video

• Hours are presented in GMT/UTC (Greenwich Mean Time). Please check your local time at:  
[http://www.worldtimeserver.com/convert\\_time\\_in\\_UTC.aspx](http://www.worldtimeserver.com/convert_time_in_UTC.aspx)

 **Magic**  
Middleware for Collaborative Applications  
and Global Virtual Communities



(Grabando) GSC Remote Instrumentation

Usuarios: 34

Estado	Nombre	Media
	Luiz Rassel	
	Luz Itanculada Madera Soriano	
	Martha Avila - CUDI	
	Martha Baez	
	Martha Freddie	
	María José López - RedCLARA	
	Michelle Wilmers	
	Noah Miller (ECLAC)	
	Ousmane Niger-REN/WACREN	
	Peter Nicholas (ECLAC)	
	Rocio Cois	
	Rosa Guillermina Valdez	
	Sunday Akinsola	
	Thiago Souza	
	William Johnson	
	William Ruiz	

Presentación: MAGIC\_Wilmers\_Presentation\_30.06.16.pdf

**Curation**

Systematic organisation (and description) of resources to ensure the findability and searchability of your content, for the purposes of optimal sharing and reuse (internal and external)

> Undertake this work so that you (and others) can find your work when you are looking for it and to boost the return on your investment.

Dissemination

Access

Curation Rights management

Chat

Tania Altamirano - RedCLARA 09:35  
Hi Peter, they have open an option just to hear, they didnt activate the mic  
Colleen Wint - CKLNA 09:36  
Ok thanks

Enviar

Área de video

Michelle Wilmers

© 2016 <http://www.mconf.org> [ Audio WebRTC ] Spanish Disposición a medida 9:42 30-06-2016

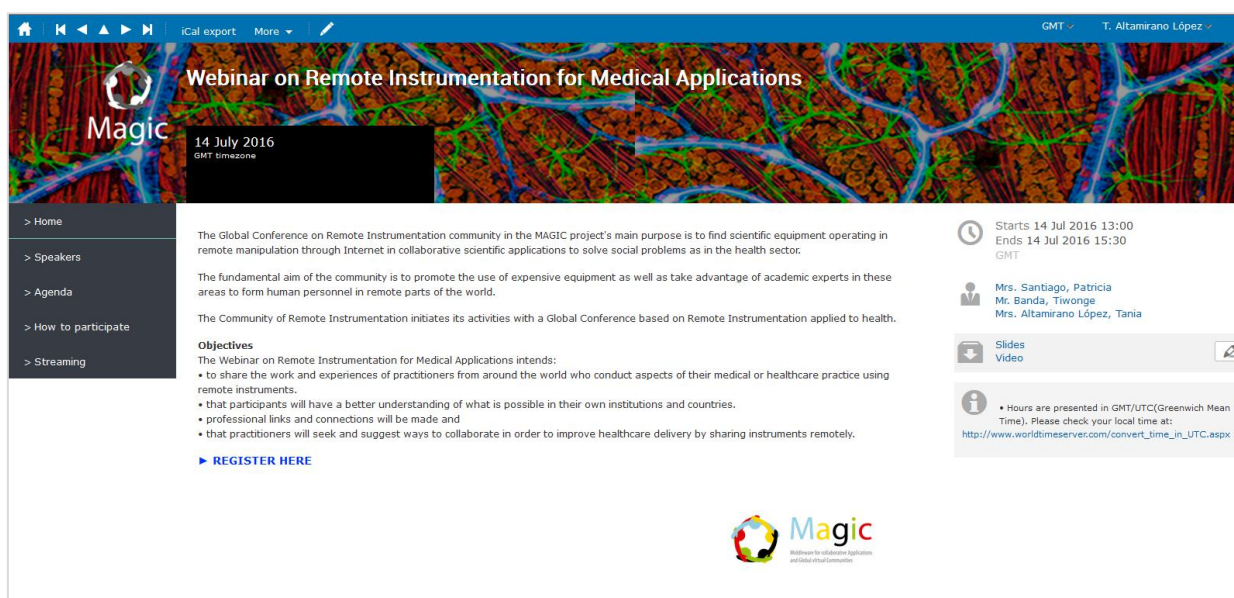
### 3. Webinar on Remote Instrumentation for Medical Applications

Date: 14 July 2016

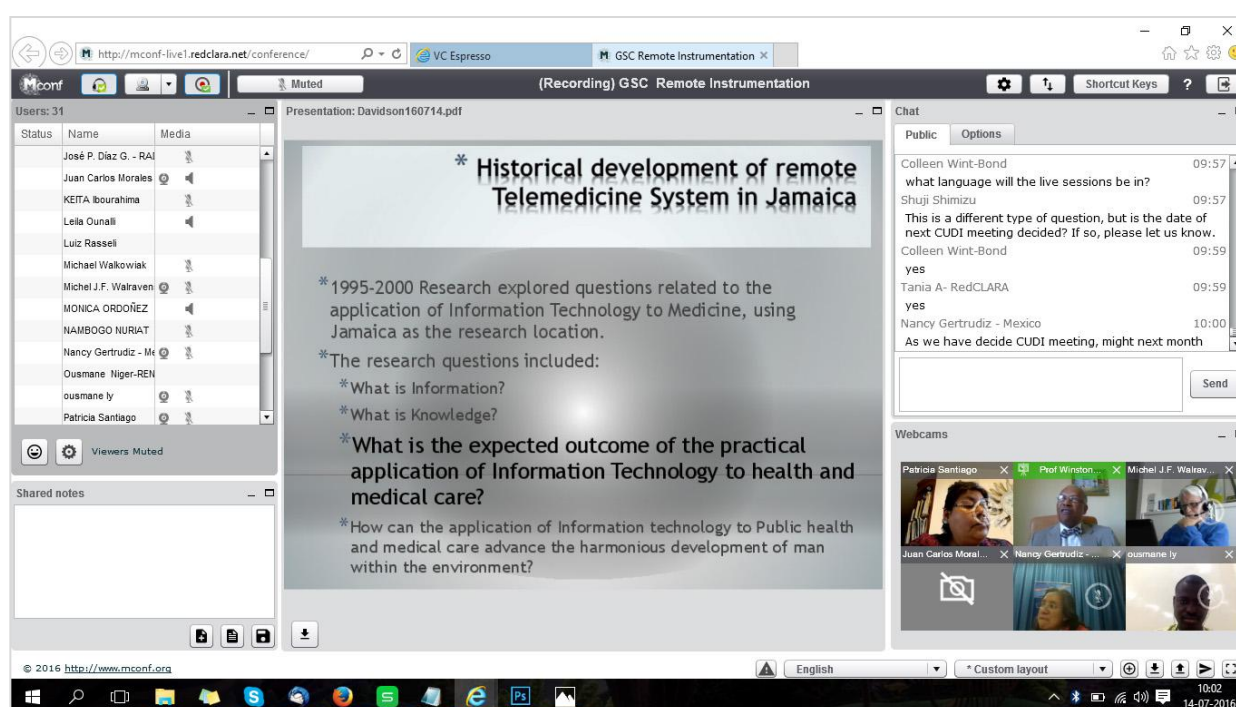
Website: <https://eventos.redclara.net/indico/event/711/overview>

With the main purpose of finding scientific equipment operating in remote manipulation through the internet in collaborative scientific applications to solve social problems as in the health sector, a webinar was held on 14 July 2016 with speakers from Mexico, Japan and Belgium.

The activity was moderated by the champion of the Remote Instrumentation Community, Dr. Patricia Santiago and enabled interaction for the e-Health and Remote Instrumentation Community. The event was attended by 31 participants from different parts of the world.



The image shows a screenshot of a webinar interface for "Webinar on Remote Instrumentation for Medical Applications" held on 14 July 2016. The interface includes a navigation menu on the left with links to Home, Speakers, Agenda, How to participate, and Streaming. The main content area provides details about the event, including its purpose, objectives, and a list of speakers: Mrs. Santiago, Patricia; Mr. Banda, Tiwonge; and Mrs. Altamirano López, Tania. A sidebar on the right shows the event schedule (Starts 14 Jul 2016 13:00, Ends 14 Jul 2016 15:30 GMT) and a list of slides. The Magic logo is visible at the bottom right.



The image is a screenshot of a RedCLARA conference interface. The main window displays a presentation titled "Historical development of remote Telemedicine System in Jamaica". The presentation content includes a list of research questions and a summary of the research. The interface also features a sidebar with a list of participants, a chat window on the right, and a webcam feed at the bottom showing several participants. The interface is labeled "(Recording) GSC Remote Instrumentation".

#### 4. Global e-Health Grand Rounds

Date: 6 September to 11 October 2016

<https://eventos.redclara.net/indico/event/713/>

Soon after the Opening Conference for the e-Health Community on 2 February 2016, an online survey was conducted with the community with the aim of determining areas of interest for the members. The result was a list of priority areas that were finally trimmed to four areas: eHealth



(Health informatics, Telemedicine and Telehealth), Cardiology, Standards for Telemedicine and Health Informatics and Child and Adolescent Health. Based on these topics, a Call for Abstracts was developed and published on 1 July to share global initiatives.

As a result the evaluation team led by the Champion, Dr. Luiz Ary Messina and Dr. Paulo Lopes received 22 proposals from Brazil, Canada, Czech Republic, Egypt, India, United States of America, Mexico, Moldova, Japan and Russia.

The works were presented by the authors in six sessions two dedicated to e-Health, two for Cardiology, one devoted to Standards for Telemedicine and Health Informatics and one more for Child and Adolescent Health.

The six sessions were held during September and October 2016 as follows:

- e-Health 1, 6 September 2016
- Cardiology 1, 13 September 2016
- e-Health 2, 20 September 2016
- Child & Adolescent Health, 27 September 2016
- e-Health 3, 4 October 2016
- Cardiology 2, 11 October 2016

## **b) Participation in International Events:**

In addition to organising and holding virtual events, WP5 also participated in face-to-face international events with the aim of promoting the GSCs. During the reporting period, WP5 has participated in the following events:

- IST-Africa Conference 2016, Durban, South Africa, 11-13 May 2016. Supported by the European Commission (EC) and African Union Commission (AUC), and co-funded under Horizon 2020 (Contract 723240) IST-Africa is a strategic collaboration between IIMC (Ireland) and Ministries and National Councils responsible for Innovation, Science and Technology adoption, policy and research in 18 African Countries. The conference brings together researchers, policy makers, practitioners and many players in the field of science, technology and innovation in Africa and beyond.
- CUDI Spring Meeting 2016, Holiday Inn Hotel, Merida, Yucatán, May 25-27, 2016 31st semester meeting of the University Corporation for Internet Development of Mexico, which aims to inform the progress of the Mexican National Research and Education Network, which coordinates CUDI. This edition included the participation of 280 academics, researchers, technicians and authorities from the country.

### **IST Africa 2016, Durban, South Africa, 11-13 May 2016**

<http://www.ist-africa.org/Conference2016/>

WP5 submitted a proposal for a Workshop at IST-Africa 2016 and was accepted. The workshop was held on Thursday, 12 May 2016 preceded by the AfricaConnect2 project session. A total of 40 participants attended the workshop where they had the opportunity of hearing about the project in general, the four GSCs and about the Colaboratorio as a collaborative tool available to academics and researchers. The WP5 team participated in the rest of the conference and interacted and networked with other projects and participants. A special flier focusing on the GSCs was printed and distributed to participants.

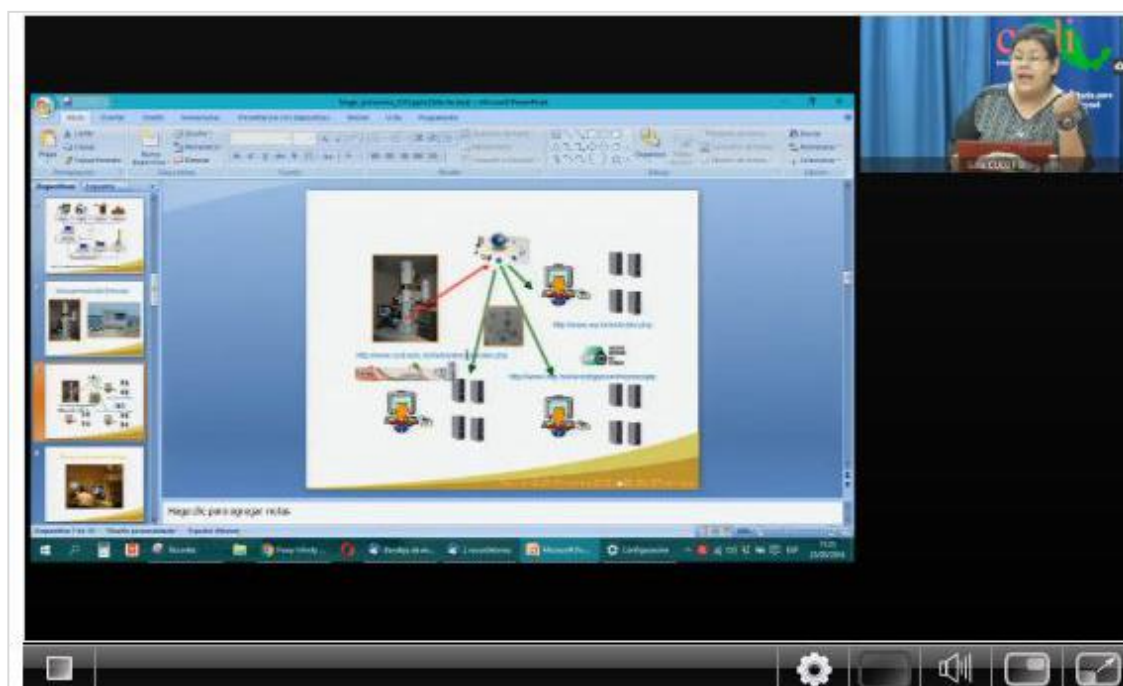


## CUDI Spring Meeting 2016, Holiday Inn Hotel, Merida, Yucatán, May 25-27, 2016

[http://www.cudi.edu.mx/primavera\\_2016/](http://www.cudi.edu.mx/primavera_2016/)

MAGIC WP5 also participated in the CUDI Spring Meeting 2016, which was held on 25-27 May 2016. On 25 May the agenda included a full session dedicated to MAGIC and the different components of the project: work with the communities, collaborative tools, deployment of eduroam and federations.

The presentations about the MAGIC GSCs were developed by members of each community: *Instrumentación remota en MAGIC* - Patricia Santiago (UNAM), *Salud en MAGIC*- Nancy Gertrudiz (CUDI) and *Medioambiente en MAGIC*- Oscar Cárdenas (UDG)



## Ubuntunet-Connect 2016 , Entebbe, Uganda, from 30 October 2016 to 4 November 2016

<https://events.ubuntunet.net/indico/event/1/>

Towards the end of the period, WP5 was preparing to participate in the UbuntuNet-Connect 2016 in Entebbe, Uganda. The activities started with a pre-conference workshop focused on end user engagement where all participants had the opportunity to learn about experiences around the world related to working with scientific and academic communities. The workshop discussed challenges facing NREN end user engagement in the UbuntuNet region. Case studies were shared from other parts of the world including Europe and Latin America. The MAGIC, Sci-GaIA and TANDEM projects provided input into the workshop and shared experiences. The workshop was conceived primarily for the purpose of trying to understand why it is challenging to bring more end user participants into activities.

During the conference, Tania Altamirano, a RedCLARA representative in the MAGIC project, gave a presentation that described the work developed with the communities and the collaborative tools that are being used to support interaction. This session also included a presentation and a debate with Roberto Barbera from the Sci-GaIA project.





### c) Information System on Worldwide Funding Opportunities

During the first half of the project activities related to the Funding System were focused on the development of an improved version of the system, increasing the number of sources of calls, reviewing the format to feed the system and the information display for users. The work involved the integration of Laura Castellana, a librarian, in the team. Her activities are related to monitoring funding sources around the world to feed the system with calls that could be of interest to partners around the world, to update the information of the calls (new deadlines for example) and to clean the system of closed or completed calls.

In the reported period, work continued with the implementation of alerts by email. Sent to all registered users in the Colaboratorio, this services provides information of interest in accordance with the user's profile.



#### **d) Training Materials**

Training material activities focused on the translation of the Colaboratorio user guide, with versions in English, Spanish, Portuguese and French (See: <http://magic-project.eu/index.php/training>).

Activities to follow in the next reporting period will be centred on new versions of the material.

#### **e) H2020 Virtual Information Days**

MAGIC WP5 promoted an InfoDay, Horizon 2020 - 'Health, demographic change and well-being', which was held in Brussels and live-streamed via the internet. It was not possible to track participation.

Towards the end of the reporting period an InfoDay on the H2020 ICT-39 Call was being planned to be held on 14 December 2016. Initially the event had been planned for 20 October but had to be changed because the e-Health Grand Rounds that consumed a lot of effort. Details of the event are found at: <https://events.ubuntunet.net/indico/event/9/>.

##### **1.2.6 Work Package 6: Dissemination and Training**

WP6 supports WP2, WP3 and WP5 on training activities. This consists of administrative support if assistance is required for the organisation of face-to-face training activities (coordination of transportation, hotels, catering, etc.), dissemination and promotion of the courses, translation of training material, etc.

Within the reported period there were no face-to-face training sessions, but there was significant work to coordinate face-to-face training events in eduroam and identity federations in the CAREN region.

#### **On-line presence:**

The MAGIC on-line presence consists of the intranet, which is based in Colaboratorio, the MAGIC website, and Facebook and Twitter presences.

The intranet is extensively used by the project partners for all internal communications and for the interactions among the different Work Packages.

After the first project review, carried out in Brussels in July 2016, the reviewers rejected D.6.2, and stated that the “online presence should be reconsidered”, “organised for and target specific groups -NRENs/RRENs, focal points, communities and researchers, etc. - at a global level while sending clear messages to address the issues/challenges each group faces and providing possible solutions. The dissemination material and webpage should include clear information on how to get involved, what to access, and whom to contact in case of interest”. Following these recommendations, the website navigation map and its contents were updated and changed in order to better tackle the issues identified by the reviewers. The new navigation map for the website is the following:

About MAGIC	Mobility	Groupware	Real Time Collab.	Science Communities	Training
– Objectives	– Platforms for Mobility: What is this about ?	– What is Cloud Provisioning and Groupware Standards about?	– Agreements for Real Time Collaboration: What is this about?	– What is a Global Science Community?	
– Partners	– Platforms for Mobility Objectives	– Objectives	– Objective	– How to Join a Global Science Community?	
– Milestones	– Platforms for Mobility Activities	– Activities	– Activities	– Global Science Communities Activities	
– Deliverables	– Identity Federations	– Group Management in Federation (GMF)	– NRENum: What is this?	– GSC Biodiversity	
– Presentations	– What is an Identity Federation?	– Chosen Standards & Group Management Systems	– Advantages and Benefits	– GSC e-Health	
– Project Structure	– Aiming to establish an Identity Federation?	– SAML2	– NRENum deployment within MAGIC	– GSC Environment	
– Project Management	– On line Training Material on AAI Development for Staff	– VOOT	– Aiming to implement NRENum?	– GSC Remote Instrumentation	
– Dissemination	– eduGAIN	– PERUN	– On-line Course on NRENum.net and DNS Configuration in English		
– News and Events	– What is eduGAIN?	– SYMPA	– On-line Course on NRENum.net and DNS Configuration in French		
– Newsletter	– Aiming to connect to eduGAIN?	– Pilot Implementation	– On-line Course on NRENum.net and DNS Configuration in Spanish		
– MAGIC branding	– eduroam	– Services to be provided	– DNSSec (Security): What is this?		
– MAGIC Brochures	– What is eduroam?	– Colaboratorio	– DNSSec deployment for NRENum within MAGIC		
– MAGIC Templates	– eduroam for Research and Education Networks	– Colaboratorio's origin	– Aiming to implement DNSSec?		

– Contact Us	– Which countries are eduroaming?	– Colaboratorio's deployment			
	– Aiming to provide eduroam?	– Which NRENs have Colaboratorio already installed?			
		– How can I get Colaboratorio for my NREN?			
		– Do you want to install Colaboratorio or one of our applications?			

Figure 1: MAGIC Website new navigation map - August 2016 (M16)

The new navigation map as well as the new contents, show all the tasks and results of the different Work Packages, provide clear and easy access to all those users that are interested in using, applying and implementing the applications, services and tools to their websites, or to have access to them, or to participate in the training courses and/or the Global Science Communities. All this new information was added, while still keeping the project information and news that were the main focus of the project during its first year. News ~~are~~is updated ~~under~~on a regular basis.

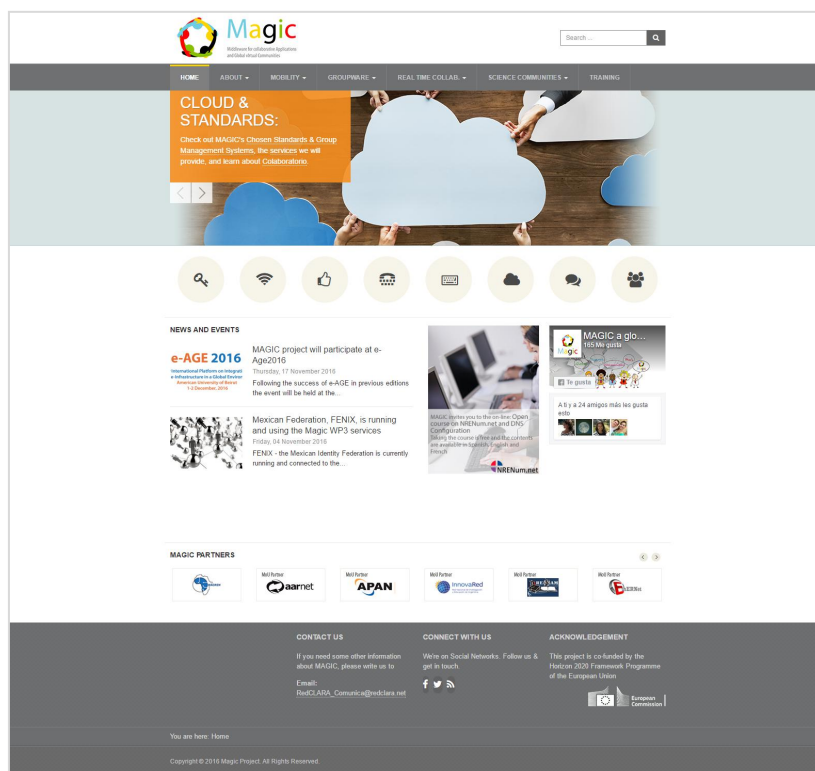


Figure 2: MAGIC Website Homepage, 23-11-2016.

The success of the website and the social network presence is statistically measured by WP6 to identify the type of information which is of greater relevance for the different media users and to provide feedback on how to disseminate the project more effectively. Website usage is measured using the Piwik open-source tool. The Facebook page is measured using the tool provided by Facebook itself, and Twitter is measured in terms of followers and retweeted messages.

MAGIC Web Site																	
	2015							2016									
	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dic.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.
MAGIC Project																	
Unique visitors	231	211	340	328	427	849	412	563	408	378	417	699	413	390	147	74	391
Pages viewed	751	610	905	875	943	2062	887	1102	876	821	779	1592	862	683	490	146	698

Figure 3: MAGIC Website Statistics - Unique visitors and Pages viewed, M02 - M18.

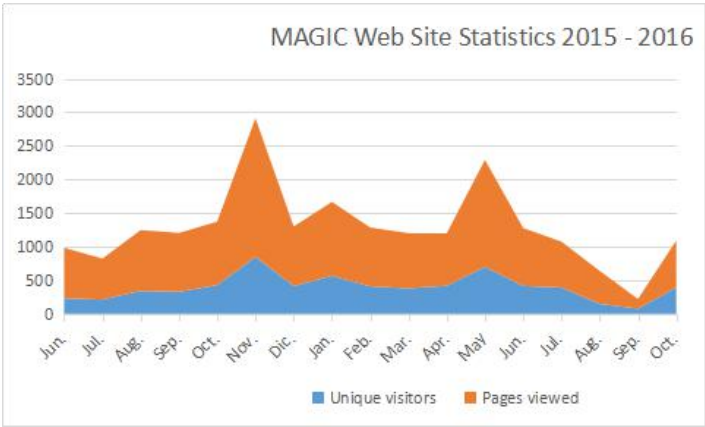


Figure 4: Graphic of the evolution of the MAGIC Website Statistics - Unique visitors and Pages viewed, M02 - M18.

Though statistics immediately following the modification of the website are not as high as might have been expected, it is important to acknowledge that this occurred in the latter part of the northern hemisphere summer, coinciding with the vacation period there, so the low numbers only reflect the stationary falls, while the two strong increases were marked in the context of international events (UbuntuNet Connect and eAGE 2015; TNC16 and TICAL 2016).

In addition to the number of unique visitors and more viewed pages, since M02 every week the ten most viewed pages of the web site have been measured. From the sum of the ten weekly most viewed pages, a ranking of the 20 most viewed pages is created. The results show that visitors have paid more attention to the project itself, training, science communities and to the Cloud Provisioning and Groupware Standards (WP3) activities. This is shown in the following figure, while the second figure shows the regions from which visitors originate (the statistics where taken until 30 October 2016).

10 most viewed pages per week - MAGIC Web Site			
		Total of viewed pages	Unique visitors
1	Magic Project	6013	4695
2	About MAGIC	826	671
3	Objectives	688	572
4	Partners	497	420
5	Training	395	340
6	Science Communities	362	310
7	Deliverables	280	247
8	MAGIC's WP4 makes available on-line: Open course on NRENum.net and DNS Configuration	224	176
9	News and Events	180	100
10	Presentations	154	130
11	Milestones	152	138
12	The Ethiopian NREN is now part of MAGIC	117	107
13	Project Structure	106	88
14	WP3: Cloud Provisioning and Groupware Standards	100	85
15	September 8 to 10: Workshop on Joining eduroam and Identity Federation	84	69
16	Project Management	81	71
17	MAGIC Project lifted off	80	69
18	MAGIC, TANDEM and SciGalA will share a stand and a network session in ICT2015	77	61
19	10 months doing MAGIC	69	61
20	The Workshop on Joining eduroam and Identity Federation in Amman was a success	68	57

Figure 5: Graphic of the evolution of the MAGIC Website Statistics - Unique visitors and Pages viewed, M02 - M18.

Continents from which visitors originate	
Europe	2063
Central and South America	1740
Africa	1075
North America	818
Asia	512
Unknown	304
The Caribbean	307
Oceania	53

Figure 6: The MAGIC website general statistics, regions from which visitors originate.

## Social Networks

The MAGIC social network presence was delivered at the end of M02, both in the Facebook and Twitter environments.

By 7 November 2016, “Magic a global connection”, the project’s presence on Facebook, which went live on 25 June 2015, had 165 likes. The growth of likes since July 2015 is shown in the following figure.

By 11 November 2015 @MACIC\_our\_voice, the project’s presence on Twitter, which had gone



live on 5 June 2015, had 30 followers. Almost one year later, on 8 November 2016, this number had grown to 112, with several interactions (most of them mentions).

## COLABORATORIO landing page

After the first project review the need for a homepage for the Colaboratorio was identified. It was also recommended that access to the Colaboratorio be provided from within the project website. This was implemented along with a Colaboratorio landing page within the site. The landing pages currently included on the MAGIC website and on the WACREN site are shown in the following figures.



Figure 7: Colaboratorio landing page within the MAGIC project website

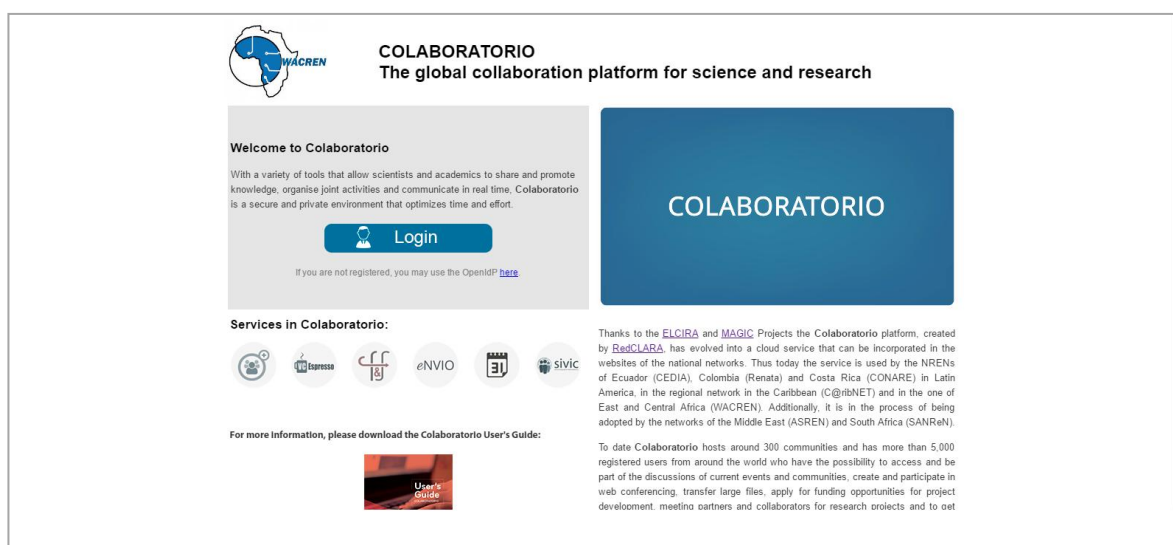


Figure 8: Colaboratorio landing page within the WACREN web environment

## Partner Dissemination Channels

Once it was defined that the MAGIC bulletin was not really efficient to communicate and help to disseminate the news produced by the project, the strategy changed and every time WP6 has needed to share an information and/or invitation made by another WP, a news item has been written in English, then published on the website. It has also been translated into Spanish and Portuguese in document format, and shared with all project members together with a picture asking them to share the information with their local communities. This new way of functioning has worked well and within the reported period the project partners have disseminating the project well; all publications were reported in D.6-5.

## Brochures and promotional material

In order to serve the different dissemination needs, project brochures, flyers and invitations were printed in English and distributed at international events where MAGIC had representation. The brochures and flyers have been published on the website under the Dissemination section (<http://magic-project.eu/index.php/about/2015-05-28-22-53-32/magic-brochures>) for download in PDF.

In order to serve the dissemination needs of WP5 at the IST-Africa 2016 Conference, project brochures focused on raising awareness of the Global Science Communities that MAGIC is currently fostering were designed and printed in English (300 copies). A total of 150 invitations were sent out for the session that WP5 carried out at the event.



Figure 9: MAGIC Global Science Community brochure in English.





Figure 10: MAGIC Global Science Community invitation to the session at IST-Africa 2016.

A new MAGIC brochure was developed in order to disseminate progress with platforms for mobility, cloud provisioning and groupware standards and agreements for real-time collaboration. 400 copies of the brochure were printed, 200 were distributed at TICAL2016 (Buenos Aires, Argentina, 13-15 September), 100 at UbuntuNet-Connect 2016 (Kampala, Uganda, 30 October 2016 to 4 November 2016), and 100 will be distributed at e-AGE2016 (Lebanon, Beirut, 1-2 December).

In order to serve the dissemination needs of WP5 at the UbuntuNet-Connect 2016 and e-AGE2016 conferences, flyers focused on raising awareness of the Global Science Communities that MAGIC is currently fostering were designed and printed in English (500 copies). A total of 200 were distributed at the UbuntuNet-Connect 2016 Conference, and 300 will be distributed at the e-AGE Conference.



Figure 11: New MAGIC brochure in English.



Figure 12: New MAGIC Global Science Community flyer.

Regarding branded promotional gifts, 300 pen-drives were provided for distribution at IST-Africa 2016.



Figure 13: MAGIC branded pen drives.

Within the reported period MAGIC was represented by project partners at relevant conferences in Europe, Latin America and Africa:

- TNC16 (Prague, Czech Republic, 12-16 June)
- TICAL2016 (Buenos Aires, Argentina, 13-15 September)
- UbuntuNet-Connect 2016 (Kampala, Uganda, 30 October 2016 to 4 November)

### TNC16 (12-16 June 2016, Prague, Czech Republic)

By means of the “MAGIC + Sci-GaIA + TANDEM: Towards Sustainable e-Infrastructures” session, held during the second day of TNC16, and its presence on the GÉANT booth, the MAGIC Project had significant visibility at the leading European conference for the research and education networking community.

During its session, the EC-funded MAGIC, Sci-GaIA and TANDEM projects joined forces to promote cross-border collaboration. They showcased the development and operation of research

e-infrastructures in the different world regions covered by them, introducing their approaches on these issues and stimulating the discussion about the benefits of developing new world class research e-Infrastructures for the R&D communities. The session recording can be seen at: <https://tnc16.geant.org/web/media/archive/7A>. The presentations given within this session can be downloaded at: <https://tnc16.geant.org/core/session/79>.

Thanks to the collaboration of GÉANT, MAGIC also had the chance of enhancing its outreach by means of its dissemination slots at GÉANT's booth, where the project's benefits were shared with visitors, supported by the presence of the Project's dissemination brochures and promotional gifts (branded vintage puzzles and loudspeakers).

### **TICAL2016 (Buenos Aires, Argentina, September 13-15):**

MAGIC had a stand where 200 MAGIC project brochures were distributed and researchers were informed about the benefits they can get from the applications, services and global science communities.



Figure 14: MAGIC stand in TICAL2016.

### **UbuntuNet Connect 2016 (Kampala, Uganda, 30 October 2016 to 4 November):**

At the conference 200 Global Science Communities flyers and 100 MAGIC brochures were distributed. On 4 November, MAGIC was part of the “Session 5: Enhancing Research and Collaboration through regional and global projects”. The session was chaired by Cathrin Stöver - Chief Collaboration Officer at GÉANT-, and MAGIC was represented by Tiwonge Msulira Banda and Tania Altamirano-Lopez (WP5) who explained the Global Science Communities through the presentation “Experiences with Global Science Communities”. Prior to the Conference, there was a workshop on 2 November at which MAGIC had two presentations slots to speak about “End User Engagement Lessons from RedCLARA” and “The MAGIC Global Science Communities”.



Figure 5: Tania Altamirano at the MAGIC presentation in UbuntuNet Connect2016.

WP6 is led by RedCLARA with contributions from ASREN, CKLN, CUDI, GÉANT, GRNET, NITC, RNP, TEIN\*CC and WACREN.

### 1.3 Impact

As the information on expected impacts is relevant as was proposed in the DoA, we will go one by one analysing the advances in the Indicators and expected dates to reach its full achievement.

- a) Adoption of European infrastructure standards eduroam and eduGAIN in several developing countries. Globalisation of these standards.

Following the strategy of extensive training carried out at regional meetings followed up afterwards with training material on an e-learning platform, and the availability of a service platform to lower the barrier of hardware and software deployment plus the leadership of a local NREN in each region, the project will create the basis for a deployment of eduroam and eduGAIN in each region involved in the project.

**Indicator (DoA):** *Number of trained technicians in AAI from Africa, the Arab Countries, the Caribbean, Central Asia and Asia Pacific is over 30.*

#### ***Advances in the Indicator:***

<i>Training in the Arab Countries</i>	<i>Number of trained engineers 11</i>
<i>Training in The Caribbean</i>	<i>Number of trained engineers 15</i>
<i>Training in the East and South African countries</i>	<i>Number of trained engineers 22</i>
<i>Training in Mozambique</i>	<i>Number of trained engineers 4</i>
<i>Total so far</i>	<i>Number of trained engineers 52</i>

It is expected additionally, to hold at least 2 workshops by the end of 2016 in Arab States Region and February 2017 in Central Asia where more engineers will be trained.

b) Coordination with several continents in basic infrastructure deployment

The project includes the collaboration of NRENs and Regional Networks in Africa, Asia, the Caribbean, Europe and Latin America on the development of agreements, human capacities and a network of collaborators that will foster the deployment of basic infrastructure needed for secure, authenticated access to collaboration tools as well as a means to application-sharing across the NREN world with the potential to include the commercial market serving NRENs and the university/research community. This basic infrastructure is eduroam, eduGAIN and the proposed agreement for the interoperable groupware management system.

**Indicators:** *12 countries having signed eduroam agreements with MAGIC  
4 new pilot federations*

**Advances in the Indicator:**

*Number of countries committed to eduroam so far:*

*Latin America 10*

*Caribbean 1 (Jamaica)*

*Arab Countries (ASREN) 5 (Algeria, Jordan, Lebanon, Morocco)*

*East and South Africa (UbuntuNet) 2 (Uganda, Malawi)*

*West Africa (WACREN) (Senegal, Ghana, Nigeria, Mozambique)*

*Pilot federations already created and in process of becoming eduGAIN members*

*Morocco*

*Algeria*

*Mozambique*

*Ouganda*

*South Africa: SAFIRE*

*Work in progress towards creating a Federation*

*Jordan*

*Lebanon*

*Mexico*

*WACREN eduID*

c) Facilitation of standards to develop a global interoperable market of collaboration services for academia and other interest groups. Potential to ease the creation of a global market.

The project will include several world regions in the discussion for Open Standards in Real Time Collaboration and Service Delivery, including Groupware Management. This will ease the way for a global adoption of these standards which will help the creation of a global market for collaborative and other applications, be these provided by one NREN, or by external providers, to the academic community.

**Indicators:** *3 world regions incorporated in the pilot federated groupware service*

***Advances in the Indicator:***

*At present the regions involved in the groupware service are: Europe and Latin America, The Arab Countries and West Africa are soon to be included.*

d) Concertation in the development of worldwide services

The project will work jointly with the GÉANT project as well as the GSD and GRTC groups of the Global CEO Forum in order to promote and pilot the agreements reached for Real Time Collaboration standards as well as application sharing and service delivery. This will make it possible to include in these agreements several world regions that have been absent from these forums, such as Africa, Central Asia and the Caribbean

***Indicators:*** 6 countries in 2 regions having incorporated NRENum.net for Global dialing

***Advances in the Indicator:***

*The NREnum.NET deployments in MAGIC count now 8 countries (Ecuador, El Salvador, Mexico, Uruguay, Czech Republic, Sri Lanka, Chile, and Lebanon). Furthermore, 4 world regions were achieved (Latin-America, Europe, Asia, and Middle East)*

*Thus 5 countries in LA already joined NRENum.net  
1 Country in Asia has already joined*

e) Application-sharing among NRENs and the global academic community.

The project will select applications being provided by NRENs and will propose a model for application-sharing so that NRENs may become providers of one to the other and/or to/from Regional Networks to take advantage of efforts made in one part of the world in benefit of another one. In particular, this will boost the use of academic applications developed by NRENs by adding a significant number of potential users to them and favouring in this way collaboration and economies of scale.

***Indicators:***

*5 NRENs using applications built and deployed/hosted by another.*

*2 NRENs with a pilot cloud applications portal implemented*

*The number of applications deployed in the pilot test will be at least 2*

*The Directory of the applications provided by NRENs available for use of other NRENs contains at least 10 applications*

***Advances in the Indicator:***

*Within the Colaboratorio container developed by RedCLARA, the following applications are contained:*

*Filesender, developed by UNINET and modified by RENATER is hosted in RedCLARA MCONF, an Open Source WebConference System modified by RNP and RedCLARA, is hosted in RedCLARA, RNP and soon RENATA, ASREN and NgREN*

*The Funding & Partners funding database hosted in RedCLARA*

*These applications are being used by CEDIA (Ecuador), CONARE (Costa Rica), NgREN/WACREN (Nigeria), ASREN, EtherNet and others are coming. The above result*



*is added to the existing Colaboratorio implementations in RENATA (Colombia), CKLN (Caribbean), CUDI (Mexico) and the undergoing work with INNOVARED (Argentina) that is on testing phase.*

*Currently, the following applications are being implemented as shared applications*

*Docuwiki, a wiki system to be hosted in CESNET*

*JITSI, a webconference system implemented at RENATER*

*Etherpad, a collaborative editing system hosted in RENATER*

*CNC, a cloud storage system developed and hosted in RNP*

*Other applications are being studied to be included.*

*Thus, we currently already have over 5 NRENs using shared applications*

*Over 4 NRENs with the applications portal implemented*

*The number of new test applications in the pilot will exceed 4*

*The Directory of applications is already operational in a pilot phase at:*

<http://catalogo.redclara.net:8000>

*The number of applications currently included are 10. More are expected to be included in the coming months.*

f) Worldwide research communities using collaboration tools to improve their daily work

The project will foster the use of collaboration technology among worldwide research communities working in three (3) selected areas. This will serve as a proof of concept and support dissemination by developing NRENs among their researchers of the potential of the use of these tools for their collaboration work across the world. The project will also extend the Funding Opportunities Database and Partner Search application developed by the ELCIRA Project to cover the developing regions and provide valuable funding information for the defined global communities and others. Finally, the project will support dissemination of funding opportunities available in the H2020 project and other funding opportunities through regional Virtual Information Days that follow the EC Information days and other international call for proposals.

**Indicators:** *The number of global research communities selected for special support will be three (3).*

*The number of information days will be at least two (2) each year depending upon the number of existing calls.*

*Finally, the database of funding opportunities will be a key result for all researchers to find collaboration opportunities worldwide.*

**Advances in the Indicator:**

*4 global research communities have been selected and are active: Biodiversity, Environment, e-Health and Remote Instrumentation*

*1 information day on H2020 has been organised in Year 1, 3 more are planned for the last semester of Year 2.*

*The Database of funding opportunities is complete and providing information on a global at a Global scale with continuous feeding and automatic e-mail distribution for subscribers.*

## **2. Update of the plan for exploitation and dissemination of result (if applicable)**

No update is necessary

## **3. Update of the data management plan (if applicable)**

No update is necessary

## **4. Follow-up of recommendations and comments from previous review(s) (if applicable)**

### **Recommendation 1**

*It is necessary to develop the overall strategy of the project that would account for the capacities, capabilities and limitations of all project participating countries and indicate the procedures and approaches for all of them in order to achieve ultimate project goals.*

#### **Comments:**

The project proposed a strategy based on a work region by region where the work with individual NRENs is lead in each region by the Regional Network and a companion leader to support its action.

In particular, in &1.3.1 section I of Part B we state the following:

*“To ensure maximum impact the training and best practice sharing will be carried out at Meetings of the Regional RENs and for each developing REN, a leader NREN has been selected to ensure regional appropriation and follow-up, following the model developed in Latin America where the leadership of RNP has been key for the successful training and implementation of eduroam and Identity Federations.”*

This strategy of working with the NRENs and their Regional organization (the RREN) is repeated in section II of the same paragraph:

*“... we propose to create a model for NRENs to provide services to each other using the AAI infrastructure as well as the federated groupware infrastructure discussed in the previous paragraph”*

*(...)*

*“The final goal is the creation of a prototype of a worldwide market of collaboration services where NRENs provide services to each other across the world using a unique authentication mechanism and a global federated groupware that eases the use of collaboration applications.”*

The goals (KPIs) were established in consultation with each region. The regions took into account the capacities, capabilities and limitations of all the participating NRENs.

Thus, in our view the strategy was defined from the beginning, i.e. to work with the NRENs and their regional organisations (ASREN, CAREN, CKLN, TEIN, UbuntuNet Alliance and WACREN) to reach the NRENs through them. These organisations were also the ones providing the KPIs that they considered possible to achieve according to the degree of development and the resources of each region.

Now that one year of experience has provided us with additional knowledge on how to work with each region, we can further detail and clarify the strategy for each one. This will be done in a separate document that will be provided as “D1.2.5 Reviewed Implementation Strategy”.

### **Recommendation 2**

*Training activities should be more targeted and aligned with the established strategy (described in the point above) to address specific needs of each target group (NRENs, focal points, end-*



users, researchers, etc.).The same is true for the project developed tools and dissemination materials (see comment below).

### **Comments:**

For MAGIC the target groups, or Focal Points, are mainly NRENs and the Regional R&E Networks (ASREN, CKLN, CAREN, UbuntuNet Alliance, WACREN, TEIN). There is no difference for MAGIC between Focal Points and Regional R&E Networks, as is the case in TANDEM where Focal Points are the potential champions that support the development of NRENs in the WACREN region.

Training for WP2, WP3 and WP4 is focused on technical staff of the Regional R&E Networks (RRENs) and NRENs who will deploy the applications and middleware necessary to connect the applications, enabling the proposed global market of collaborative applications. The approach is federative, following the model of RRENs formed by NRENs. The work of MAGIC cannot extend further than the NRENs, and that is why the technical training is focused on the NRENs at meetings which the NRENs attend. This strategy was proposed in the DoA, Part B, Section 2.2 a), where we explicitly proposed the following:

*“The training and dissemination actions will be carried out within the context of international events at which the MAGIC project will be represented both in the form of a booth for dissemination purposes and/or in the form of a presentation that should be given to the event’s audience. These international events will be those specific regional events in which the project’s partners regularly participate. This will ensure a broader participation of MAGIC’s partners with a lower cost for the project. Key events will be the TERENA Networking Conference and regional conferences such as TICAL, UbuntuNet Conference and/or IST Africa, the APAN Conference, e-AGE, among others.”*

In the material to be displayed online, the idea has been to generate material that can later be used by the NRENs to train their institutional members: universities, research centres, etc. The project did not propose to train the institutional members of the NRENs using this material, but only to provide them with the material and a platform to deliver it as outreach to end users is typically the responsibility of NRENs. MAGIC therefore enables the NRENs to obtain the material and expertise to carry out in-country training. Furthermore, the provision by MAGIC of in-country training would have significant budgetary implications which are far beyond the budget of the project.

The project description does not include a proposition for dissemination material aimed at the level of technicians that could adopt the tools for their NRENs. We accept the suggestion to develop this material and also will prepare training on the installation of the tools and middleware. This will require an effort that was not budgeted but we consider it very important for the adoption of the technology. This work will therefore be added to WP3.

The only end users that MAGIC works with directly are the User Communities who are proposed as test users of the applications. This group of users is necessarily of a limited scope because the resources of the project do not make it possible to be extended more widely. The group is intended to serve as a test group of the concept of global research communities. The training for this group was intended to be done via webconferences and in some limited conferences where users of the Global Science Communities could attend, an activity that is planned for year 2.

Nevertheless we accept the suggestions to provide, whenever possible, alternative ways for training in the form of videos that could be used beyond the end of the project, providing a more user-friendly way of showing users how to join the communities and use the collaboration applications to build their own communities. This will be done using the MOOC Platform OedX that will be provided as a cloud service by France Numérique, a partner of RENATER, who is in the process of signing an MoU with MAGIC.

### Recommendation 3

*Further development of the Colaboratorio is justified only in the global context of the project, i.e. across the scientific communities to be established in all participating countries/continents. This tool cannot be justified and/or accepted if developed and/or used only for one project partner (see further recommendations re WP3).*

#### Comments:

Although we understand the admirable intentions behind the above comment and the above recommendation, in this point we have to express a reasonable disagreement with the reviewers. The project Specific Objective b) reads:

*“To develop a model for inter-operation between NREN cloud application markets of participating world regions, based on cloud provisioning and taking advantage of applications developed and run by NRENs across different continents to create a model for a worldwide application market for collaboration tools and services”.*

This goal is proposed to be attained by (&1.3.1 II):

*“To advance in the agreements and implementation of a middleware capable of managing international working groups across applications. (.....) Our proposal is to build upon existing European proposals such as OpenConext, Perun and HEXAA to define a platform for a federated open groupware management system that will allow NRENs and private providers to offer applications worldwide using the same group structure, easing collaboration and setting up the basis for an open market of collaborative applications with authenticated access of persons and groups”.*

*“Starting from the pilot developed in ELCIRA, where European and Latin American NRENs are providing services to each other using an access portal, creating in this way a prototype of cloud provisioning between NRENs, we propose to create a model for NRENs to provide services to each other using the AAI infrastructure as well as the federated groupware infrastructure discussed in the previous paragraph. The model shall include mechanisms to disseminate services, to properly define the service characteristics as well as their cost, be this based on cost share or tariffs”.*

*“The final goal is the creation of a prototype of a worldwide market of collaboration services where NRENs provide services to each other across the world using a unique authentication mechanism and a global federated groupware that eases the use of collaboration applications. This prototype may later be extended to the privately provisioned services by external companies”.*

The Colaboratorio is the prototype where user groups are managed and services to user communities are provided, be these provided by RedCLARA (such as MCONF or SIVIC) or by other NREN providers (work is underway to use Etherpad from RENATER and OedX from France Numérique). This prototype is currently interacting with Sympa, a similar system containing different applications developed by RENATER, and PERUN, the user group interface developed by CESNET. The interaction between these platforms using a common protocol (currently VOOT is being tested) is the core of this activity. Thus, the Colaboratorio is the prototype that has to test case the servicing of applications across NRENs with transparency for the user groups created in different countries/regions of the world.

In the KPIs the project did not commit to deploying the Colaboratorio in all world regions, but to make the tools and protocols available for worldwide dissemination of the concept. The tools may later be adopted as the different world regions mature their NREN/RREN system. The central idea is the inter-operation model allowing NRENs from different world regions to share services in a federated authenticated system with the ability to share user group information as well. An extensive use of the Colaboratorio is not at the centre of the KPIs because on one side, there could be other application environments (such as Sympa or PERUN for example) that could expand their user portfolio embracing the middleware that

the project is proposing.

Nevertheless, as RRENs of the different World Regions are evolving, we have received requests from Central Asia to implement the Colaboratorio in Kyrgyzstan and other regions are working on feasibility of implementing the Colaboratorio.

Thus, we think that the original Indicators for this Specific Objective could be modified as follows:

**Indicators:**

<i>Indicator</i>	<i>Original Value</i>	<i>New Committed Value</i>
<i>3 world regions incorporated in the pilot federated groupware service</i>	<i>3</i>	<i>4</i>
<i>NRENs using applications built and deployed/hosted by another</i>	<i>5</i>	<i>10</i>
<i>NRENs with a pilot cloud applications portal implemented</i>	<i>2</i>	<i>6</i>
<i>The number of applications deployed in the pilot test</i>	<i>2</i>	<i>4</i>
<i>The Directory of the applications provided by NRENs available for use of other NRENs contains at least</i>	<i>10</i>	<i>10</i>

### **Recommendation 3**

*The dissemination activities and materials should be more targeted to reach out to the variety of the specific project audiences.*

**Comments:**

As discussed in previous sections, the project has proposed to work with the RRENs and NRENs of several world regions in order to:

*“(...) establish a set of agreements (...) aiming at consolidating and completing the building blocks of middleware necessary for the establishment of a marketplace of services and real-time applications for international and inter-continental research groups which facilitates mobility and the work of global science communities”.*

Thus, the key target audiences of the dissemination activities are:

- RREN and NREN directors and technical staff
- Policy-makers and leaders involved in the deployment of NRENs and RRENs
- The Global Science Communities

A second type of audience is the community at large and potential users of the NREN services.

Thus, the dissemination activities have been focused on two types of events:

a) Events attended by NREN technicians and directors: eAGE 2015, TICAL2015, TNC2015, TANDEM workshops, UbuntuNet-Connect and APAN conference.

b) Events attended by decision makers and NREN builders: IST-Africa 2015, ICT 2015

It was envisaged that during the second year of the project promotional material (brochures, flyers, etc.) would be tailored to different specific audiences and communities. This process of “tailored material delivery” started with the flyers produced for ICT Africa 2016 in May and will continue.

The project website is focused on project partners, not in prospective partners or end users, because the prospective partners are a matter of the regional R&E networks while end users

should be a matter of the NRENs and the universities. This is very important for the work with the NRENs, since they always insist that the end users should be dealt with in a federated way and not directly served by the Regional R&E Networks (RRENs). The only exception to this is the Global Science Communities where the work has been done jointly in order to ensure representative participation of the different NREN partners.

Nevertheless, we recognise that more can be done in preparing dissemination material focused on the NRENs for the deployment of the Colaboratorio and the applications. This material will be included in the website where more work will be devoted to the attraction of potential NREN partners to MAGIC with care being taken to ensure that their participation is not separated from the corresponding RREN involvement.

### **Recommendation 3**

*In addition to back-to-back events and co-organized dissemination activities, the project should build synergies with other EC-funded initiatives. TANDEM and SCI-GaIA for instance have a lot in common with MAGIC – communities building, working with focal points, NRENs, expanding e-infrastructures and networks to the less advanced countries and regions. These and other commonalities between the projects should be identified and exported in order to optimize their overall impact.*

### **Comments**

The user communities in TANDEM are essentially focused on the construction and funding of the NRENs in the WACREN region, entailing the participation of Focal Points, that could become NREN leaders, and donors and governments who will support them. Thus their goals are different from the MAGIC goals. There will be a user community in Agriculture in TANDEM that is similar to the MAGIC communities and of course synergy is to be built wherever there are opportunities to do so.

The MAGIC project is not focused on expanding the physical infrastructure of the NREN but rather in supporting the development of the service layer. Of course there is synergy there in the sense that services motivate connectivity.

The Sci-GaIA project builds on a series of previous projects (EELA, EELA-2, CHAIN, GISELA, CHAIN-REDS) which have built the Science Gateway where a series of applications from different providers are available as a resource database where the user can request access to each application by asking permission by completing a form and waiting for the result. The access policies from each application are different ranging from free access to commercial providers where the Science Gateway points to the provider for further information on pricing and access modalities.

The use of some of the Sci-GaIA applications to be embedded into the Colaboratorio portal could be relevant providing that the application is made fully available by the application provider. MAGIC will work with Sci-GaIA to generate a test with one or two applications embedded into the Colaboratorio, using groupware tools to enhance access by ‘user communities’, one of the key characteristics of the Colaboratorio.

The Forum application developed by Sci-GaIA is the key tool for community building and is very interesting. Nevertheless, the Discussions area in the Colaboratorio does the same for user communities. The key difference here is that Discussions are available only once you join the user community while in the Forum the open discussion is the key community building tool. MAGIC will discuss with Sci-GaIA the possibility of working to embed the Forum into the Colaboratorio or connecting both tools.

As regards community-building activities, Sci-GaIA does not have activities such as the Global Virtual Days to support the strengthening of communities and a real-time exchange of experiences. For MAGIC these activities are very important in addition to the Information Days on H2020 Calls and the Information System on Global Funding Opportunities. MAGIC is very interested in finding other ways of collaborating and will use the Sci-GaIA Forum

to invite academics to join the GSCs.

It is also important to keep in mind that MAGIC is not focused only on Africa, but includes Europe, the Caribbean, Central Asia, the Asia-Pacific region and Latin America. Consequently, collaboration with Sci-GaIA will be determined by the common goals and the limited resources available in both projects to pursue new activities.

### ***Recommendations concerning Future Work***

In the following paragraphs we comment on the Reviewers' recommendations concerning Future Work.

#### **Future Work 1**

*Sustainability of the project should be addressed in the next period. The project should present a comprehensive plan for how to maintain and expand the work done in the regions. Mainly supported by the sustainability and exploitation plans of the partner NRENs and focal points.*

##### **Comments**

The MAGIC Project aims to create the basis for the construction of a dynamic market of applications to be shared and provided by NRENs to one another and by external providers. RedCLARA will maintain the Colaboratorio framework and will make the software available in OpenSource as it is considered a key development for user communities to share and access resources.

The same philosophy of a container application that can provide access to other services for the benefit of NRENs is shared by the partners. In particular, RENATER has developed Sympa, an application including e-mail, calendar, mailing lists and video and webconferencing for the use of the French R&E community. This application is adopting the groupware approach and sharing mechanisms that MAGIC is developing. Hence a second platform will be maintained and sustained by RENATER.

The provision of applications that can be embedded into the Colaboratorio and other platforms will depend on the NRENs that provide them. The idea of applications and service-sharing is becoming an important subject in the R&E networking world and in particular at GÉANT.

The development of the middleware will be maintained by the interest of the different RRENs and NRENs of the world in the same way that eduGAIN and eduroam are maintained by the European partners. Groupware will also be supported by RedCLARA and MAGIC is confident that the Asia-Pacific region will also join this initiative.

Support for the continuity of the actions will depend on the Regional R&E Networks: ASREN, CKLN, CAREN, UbuntuNet Alliance and WACREN.

A section describing the Global and Regional initiatives aimed at ensuring that middleware software and services as well as the containing platforms such as Colaboratorio, Sympa and others develop in the future will be included in the Final Report.

#### **Future Work 2**

*The reviewers suggest to elaborate more of project-tailored KPIs that would monitor communities' expansion and performance in each region and help to draw conclusions about the progress, outputs and outcomes of the project.*

##### **Comments**

This is a valid observation and a correct recommendation. However, it should be noted that the suggested extension would go beyond the goals of the project. In the proposal MAGIC committed to the following:

*“To select three (3) research communities with common worldwide interest. In topics such as Tropical Diseases, Climate Change, Disaster Management and others. Once the*

*communities are selected, the project will support them with training in the use of the tools as well as with information on funding opportunities and training on how to set up successful proposals. The research groups will also act as evaluators of the tools being provided and will help the design of the interfaces and use mechanisms that satisfy their requirements”.*

The project is not focused on building and maintaining large user communities but rather in building a set of collaboration tools and making them available to the Global Science Communities to make their collaborative work easier and more effective and efficient. The purpose of the committed Global User Communities has been to showcase the use of the applications and receive their input on the tools required for effective global collaboration.

It is very important to show the work of Global Communities, but KPIs that monitor the expansion, in our opinion, go significantly beyond the purpose of the project. After seeing the enthusiasm of the Central Asia Health group and the recent work with Asia-Pacific on the same subject, MAGIC is convinced that a KPI on including members from most, if not all, the regions can be achieved within the project lifetime.

However, the actual number of individual members was never intended to be an indicator as for some members of the communities, a too large community could lead to just a few working on it. The work of the user communities was not part of the project either, hence a commitment of the type of work being done or whether it led or not to the preparation of proposals would be impossible to guarantee and is significantly beyond the scope of the project.

Nevertheless, MAGIC does propose an indicator on the participation of the GSC members in Virtual Days as well as a satisfaction survey on the usefulness of the information being provided by the “Funding and Partners” database. MAGIC will submit a proposed set of KPIs in addition to the ones already proposed for Specific Objective 2 above.

### **Future Work 3**

*The dissemination events should be well identified, targeted, and in line with the defined strategy.*

#### **Comments**

Dissemination events have been targeted at NRENs via the following events: APAN, e-AGE, TNC, TICAL, UbuntuNet-Connect, WACREN meetings.

Decision-makers in science and technology and NRENs have been targeted at: ICT 2015, IST Africa-2015 and IST Africa-2016

Future events are intended to continue the focus on NRENs: APAN, e-AGE, CAREN meetings, UbuntuNet-Connect, WACREN meetings.

These events are in line with the already defined strategy to focus the work on NRENs and RRENs.

As regards user communities, it is extremely challenging for MAGIC to attend researcher events, given the wide range and number of such events, except possible remotely. However, MAGIC will endeavour to participate in a limited number of appropriate events in order to recruit more members for the Global Science Communities. Furthermore MAGIC will also attend Sci-GaIA workshops on Open Science in order to reach user communities working in Africa.

### **Future Work 4**

*The synergies with other EC funded projects in the domain and geographical focus areas should be also intensified for common benefits.*

#### **Comments**

Synergies with TANDEM can and will be intensified. In particular MAGIC will work to support the agricultural user community which is being promoted by TANDEM.

As part of the MAGIC project, WP5 will be conducting training on H2020 for African researchers and on the use and expansion of the Funding & Partners database

MAGIC will expand the invitation to join Global User Communities.

Synergies with Sci-GaIA may include the use of their training material when useful for MAGIC purposes. As set out above, efforts will also be made to showcase access to Sci-GaIA applications to be integrated into the Colaboratorio. MAGIC will also offer Sci-GaIA the use of MCONF and other applications for the use of the African Grid Science Gateway.

## 5. Deviations from Annex 1 (if applicable)

### 5.1 Tasks

The following tasks have been delayed:

#### T3.4 Pilot service with one application sharing group information and service catalogue

This task was delayed because of

#### T3.5 Evaluation of pilot and services, user perception, and implementation effort

**T4.4 To integrate the legacy (SIP capable) Global Video network with one open-source web-conferencing system, and a VoIP network based on NRENum.net.**

#### T5.4 H2020 Virtual Information Days to promote participation in International Calls

This task was delayed because of

### 5.2 Use of resources

The following table shows the amount of resources spent up to October 2016 which amounts to €1,167,757 and is requesting reimbursement for €849,886 This amounts to 63% of the foreseen claims. In general terms we have spent 65% of the manpower and 55% of the travel budget.

Partner	Direct personnel costs	Other direct costs	Direct costs of subcontracting	Indirect costs	Total eligible costs	Requested reimbursement
CLARA	234.110 €	60.350 €	19.844 €	73.615 €	387.918 €	387.918 €
GEANT Limited	6.346 €	4.618 €	- €	2.741 €	13.705 €	13.474 €
GEANT Veriniging	11.298 €	10.819 €	- €	5.529 €	27.646 €	27.646 €
RNP	33.525 €	8.680 €	- €	10.551 €	52.756 €	- €
RENATA	11.248 €	2.624 €	- €	3.468 €	17.340 €	17.340 €
REUNA	14.688 €	3.935 €	- €	4.656 €	23.279 €	23.279 €
CEDIA	1.758 €	3.270 €	- €	1.257 €	6.285 €	6.285 €
CUDI	142.628 €	15.459 €	- €	39.522 €	197.609 €	- €
UBUNTUNET	35.996 €	9.194 €	- €	11.297 €	56.487 €	55.690 €
WACREN	43.565 €	9.318 €	- €	13.221 €	66.104 €	66.104 €
ASREN	66.325 €	7.497 €	- €	18.456 €	92.278 €	72.153 €
CESNET	14.379 €	1.930 €	- €	4.077 €	20.386 €	20.386 €
GRNET	39.888 €	10.464 €	- €	12.588 €	62.939 €	62.939 €
SURFnet	2.297 €	- €	- €	574 €	2.871 €	- €
CSIR	8.786 €	2.880 €	- €	2.917 €	14.583 €	- €
RENATER	28.268 €	6.572 €	- €	8.710 €	43.550 €	43.550 €
NIIF	11.754 €	4.696 €	- €	4.112 €	20.562 €	20.562 €
CKLN	13.922 €	8.584 €	- €	5.626 €	28.132 €	28.132 €
NITC	700 €	2.842 €	- €	886 €	4.428 €	4.428 €
TEIN	2.997 €	20.123 €	- €	5.780 €	28.900 €	- €
<b>Total</b>	<b>724.478 €</b>	<b>193.853 €</b>	<b>19.844 €</b>	<b>229.583 €</b>	<b>1.167.757 €</b>	<b>849.886 €</b>



The following partners are behind in their expenditure for the reasons detailed below:

DANTE and TERENA have become GEANT Limited & GÉANT Association Merging into one organisation, this has distracted their human resources from more active participation in the project. More active participation is foreseen for the last semester of the project.

RENATA has gone through a change in management and a reorganisation of its team. This has made difficult for their staff to contribute more. CLARA has then assumed the leadership in D4.4 and supported the continued support to the expansion of NRENnum and DNSSec. In the last part of the project RENATA is focussing on increased participation in these activities.

UbuntuNet suffered from a slow start and has not been able to completely cope with the lack of personnel to carry on the project activities. They are actively working to overcome this difficulty in the coming months.

CESNET has not been able to dedicate the time foreseen in the first semester of Y2, but they have increased spending in Q7 due to training in Lebanon. And now they will have another person who will work with the team till the end of the project.

RENATER has gone through an internal reorganisation that has kept them away from more active participation, they expect to be able to become more active in the last semester.

NITC late start of the next CAREN phase which is currently just getting to heat up. In February 2017 we will conduct the MAGIC training and a GSC event in Kyrgystan, while more training in synergy with NSRC will be conducted in April 2017 jointly with the CAREN conference.

CKLN has ceased to exist as of September 30, 2016. An amendment request is in progress.

In terms of manpower, the partners have spent a total of 217.4 PMs, i.e., 71% of the total manpower committed which is in line with the time elapsed which corresponds as average to 75% of the total time. The following is the detail of PMs spent by partner:

Partner	WP1	WP2	WP3	WP4	WP5	WP6	TOTAL
CLARA	13,4	0,5	25,6	3,5	19,3	14,3	76,7
GEANT Limited	0,7	0,2	0,1	0,0	0,1	0,2	1,3
GEANT Veriniging	0,4	0,9	0,1	0,0	0,0	0,0	1,3
RNP	0,8	5,4	1,1	1,1	1,5	1,5	11,3
RENATA	0,4	0,0	0,0	7,0	0,0	0,0	7,4
REUNA	0,7	0,6	0,9	2,8	0,0	0,0	4,9
CEDIA	0,2	0,4	0,6	0,0	0,0	0,0	1,2
CUDI	2,4	21,1	7,4	9,4	5,2	5,7	51,3
UBUNTUNET	1,1	1,8	0,1	0,0	4,0	1,7	8,7
WACREN	0,4	2,3	1,1	1,9	2,3	0,8	8,6
ASREN	0,8	9,5	0,9	0,3	4,2	2,3	18,0
CESNET	0,3	1,2	4,1	0,0	0,0	0,0	5,5
GRNET	0,5	2,5	4,4	0,0	0,3	0,3	8,0
SURFnet	0,1	0,0	0,1	0,0	0,0	0,0	0,2
CSIR	0,7	0,0	0,1	0,1	0,6	0,3	1,7
RENATER	1,5	0,6	2,4	0,4	0,0	0,1	5,0
NIIF	0,4	0,0	0,2	0,5	1,3	0,0	2,4
CKLN	0,6	0,3	0,2	0,0	0,9	0,0	1,9
NITC	0,3	0,2	0,2	0,0	0,0	0,0	0,7
TEIN	0,3	0,5	0,3	0,0	0,2	0,4	1,5
<b>Total</b>	<b>25,7</b>	<b>47,9</b>	<b>49,6</b>	<b>27,0</b>	<b>39,8</b>	<b>27,4</b>	<b>217,4</b>

### 5.2.1 Unforeseen subcontracting (if applicable)

None

### 5.2.2 Unforeseen use of in kind contribution from third party against payment or free of charges (if applicable)

None