

European Union's Horizon 2020 Programme
European Commission
Directorate General for Communications Networks, Content and Technology
eInfrastructure



Magic

Middleware for collaborative Applications
and Global vlrtual Communities

Project⁹ Number: 654225

Project Acronym: MAGIC

Periodic Technical Report

Part B

Period covered by the report: from 01/11/2016 to 30/04/2017
Periodic report: 4th

⁹ 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.

During the period of this report, there were efforts in technical hands-on workshops, conferences and consulting.

In Africa, The National research and education network of Mozambique (MoRENNet), in the role of eduroam operator, has been working with the mentoring of the RNP to implement an identity federation. More specifically, both initiatives are part of the same international cooperation project initiated in September 2016 and completed in April 2017.

In the Caribbean, several activities were carried out as part of MAGIC's WP2: Platforms for Mobility to support:

- Strengthen the regional technical infrastructure for eduroam
- Increase the number of deployments of eduroam

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

Regarding this objective, the working group completed the integration of two new pilot applications (Etherpad and eduDRIVE/e-DISKO) that use the group inter-operation standards. The applications were adapted to obtain groups/communities information from other domain through a communication based on the VOOT protocol. This protocol is part of the standards proposed in deliverable *"D3.3 Planning and design requirements for the group management and inter-operations standards and pilot implementation"*. The applications successfully uses the group information to securely access files and share access to a community of users in a remote environment. For the case of Etherpad, the organizations that share the implementation were RENATER (France) and RedCLARA (Latin-America). The application is hosted and served by RENATER, and any user with access to Colaboratorio can invite a group from Latin-America to edit a pad at RENATER. Users from Latin-America can access at any time with the proper authentication through the European confederation eduGAIN. For the case of eduDRIVE, application that is called e-DISKO by RedCLARA, The Brazilian NREN RNP host the service, and users from other Latin-America countries, Europe, Middle-East, Asia or Africa, can access if they are connected to eduGAIN. Also, WP3 produced the deliverable *"D3.6 Recommendation on service requirements for cloud providers in Academic cloud infrastructures"*. The document

contains an standard set of requirements that can be use by NRENs if they want to provide services, or bring providers to deliver them. The providers can verify what they need to provide services in the academic clouds in terms of standards supported, privacy, quality of service, location of services, among others.

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 the real-time applications inter-operation, the MAGIC team worked in the integration of the Webconference services to the traditional SIP video network using ENUM dialling. The development includes Ealing from and to a SIP network, so it will allow easier communication between both environments. Webconference solutions are usually oriented to high mobility users without a fixed terminal, on the other hand, the SIP terminal devices are normally in a fixed location with higher bandwidth or connectivity. The development is completed and available for testing. The MCONF web-conference system is nowadays available to more than 10.000 users from regions like Latin-America, Europe, Middle-East, Asia and Africa. In addition to the implementation carried out, the group developed a deliverable with the guidelines to implement this type of unified network. The goal is that users can adopt the MCONF to SIP integration, and bring it to production in their own institutions.

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 last quarter of the project focused on the sustainability of the Global Science Communities as the project was coming to an end. Both virtual and face to face meetings were held with the communities. The face to face meetings were held back to back with major regional events with the aim of anchoring the work of the communities to the regional and national networks.

1.1.1 Work Package 1: Management

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

- ◆ To ensure that all deliverables were submitted in the EC Portal.
- ◆ 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 video-conference. Steering Committee Meetings were held on the following dates:
 - 11 November, 2016
 - 13 January, 2017
 - 2 March, 2017
 - 12 April, 2017
 - 19 May, 2017

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

- ◆ To ensure that all Milestones are met.

All Milestones have been met. In the case of MS11 we have reached the indicator of 2 Asian countries, counting Central and East Asia, while Hong Kong University has been also added, it is not a full country now, but it is a very influential city in China. We have also added several other countries outside Asia. In the case of MS 18 we have replaced the proof method that was initially defined as agreements with MAGIC with a stronger means: their activation in the eduRoam Federation.

Milestone number	Milestone name	Comments
MS1	Project installation	Kick off meeting in Paris, June 11-12, 2015. Website launched: www.magic-project.eu
MS2	Agreements of MAGIC and GÉANT to work on RTC standards	Agreement signed on 23/10/2016 CEDIA, RedCONARE, Nigeria at the time of the report. After, the following were included too:
MS3	RedCLARA's Collaboration Portal deployed in 2 regions, including the collaboration applications selected	Morocco - MARWAN, Lebanon AUB, Malaysia MYREN, Trinidad and Tobago's TTRENT, CUDI from Mexico 1. First virtual meeting of the Global Science Community on e-Health https://eventos.redclara.net/indico/event/634/ February 2, 2016 2. First virtual meeting of the Global Science Community on Biodiversity https://eventos.redclara.net/indico/event/639/ February 11, 2016 3. First virtual meeting of the Global Science Community on Environment https://eventos.redclara.net/indico/event/640/ February 18, 2016 4. First virtual meeting of the Global Science Community on Remote Instrumentation https://eventos.redclara.net/indico/event/641/
MS4	Global Science Community Opening Conference	February 25, 2016
MS5	Assessment of group management platforms	Document delivered
MS6	NRENnum.NET Deployed in 3 countries in Latin America	5 new connected countries: CEDIA from Ecuador, RAICES from El Salvador, CUDI from Mexico, REUNA from Chile and RAU from Uruguay
MS7	Global Science Communities established	The communities were established: GSC e-Health, GSC Biodiversity GSC Environment, GSC Remote Instrumentation. Their space of work is in Colaboratorio.

MS8	Training of focal points for AAI and eduroam completed	<ul style="list-style-type: none"> * Chile (July 8, 2015) * Amman, Jordan (8 to 10 September 2015) * Jamaica (7 to 9 October 2015) * Beirut, Lebanon (December 3 to 4, 2016) * Kyrgyzstan (February 27 - 28, 2017) * Tajikistan (March 1 - 2, 2017) * Mozambique (October 2016)
MS9	Training materials to show the uses and benefits of the global collaborative tools	<p>A user guide was developed to support the use of the Colaboratorio platform by the Communities. Material is published at: http://magic-project.eu/index.php/training</p> <p>The activities included 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.</p>
MS10	BETA version of MAGIC Information System on Worldwide Funding Opportunities and Partner Search	<p>Work continued with the implementation of alerts by email.</p> <p>One connected in Asia-Pacific: Sri Lanka; one Kazakhstan (Central-Asia), one in the Middle East: Lebanon, One One in Europe: Czech Republic. Furthermore, University of Hong Kong restarted into the service</p>
MS11	NRENum.net Deployed in 3 countries in Asia Pacific	All activities were completed on time. See the reports.
MS12	Dissemination activities Year 1 complete	
MS13	Training in African region completed	<ul style="list-style-type: none"> * Amman, Jordan (September 8 to 10, 2015) * Dar es Salaam (April 26 to 28, 2016) * Beirut, Lebanon (December 3 to 4, 2016) * Mozambique (October 2016)
MS14	Training in the Caribbean completed	<ul style="list-style-type: none"> * Jamaica (7 to 9 October 2015) * Barbados (April 10-12, 2017) <p>UbuntuNet-Connect 2015, Maputo, Mozambique, 19-20 November 2015 https://www.ubuntunet.net/uc2015_cfp</p> <p>IST Africa 2016, Durban, South Africa, 11-13 May 2016 http://www.ist-africa.org/Conference2016/</p> <p>CUDI Spring Meeting 2016, Holiday Inn Hotel, Merida, Yucatán, 25-27m May 2016 http://www.cudi.edu.mx/primavera_2016/</p> <p>Ubuntunet-Connect 2016 , Entebbe, Uganda, from 30 October 2016 to 4 November 2016 https://events.ubuntunet.net/indico/event/1/</p> <p>e-AGE Conference, Lebanon, Beirut, December 1-2, 2016 http://asrenorg.net/eage2016/</p>
MS15	Participation of regional representatives of each global priority area in at least one Regional Best Practice Meeting	<p>WACREN Conference, Abidjan, Côte d'Ivoire, 27-31 March 2017 http://indico.wacren.net/event/46/</p>

MS16	Pilot of the group management platforms inter-operating and functioning in at least 2 applications sharing groups across continents	The pilot was deployed with Colaboratorio (Latin-America), FileSender premium (France), and Docukiwi (Czech Republic) at July. At the end of the project were included eduDRIVE (Brazil) and Etherpad (France) as applications in the pilot.
MS17	Training in the Central Asian region completed	<ul style="list-style-type: none"> * Kyrgyzstan (February 27 - 28, 2017) * Tajikistan (March 1 - 2, 2017) * .vn Viet Nam - September 2015 * .jm Jamaica - Nov 2015 * .ba Bosnia & Herzegovina - December 2015 * .ir Iran - Jan 2016 * .eg Egypt - Feb 2016 * .so Somalia - Feb 2016 * .gh Ghana - Mar 2016 * .ml Mali - Nov 2016 * .bj Benin - Dec 2016 * .zw Zimbabwe - Jan 2017 * .bt Bhutan - Jan 2017 * .np Nepal - Jan 2017 * .kw Kuwait - Mar 2017 * .om Oman - April 2017 * .bb Barbados - April 2017 * .mz Mozambique - April 2017
MS18	eduroam agreements with at least 12 countries from different regions signed (actually these countries have already joined the eduroam Federation)	Support of the XeAP project by TEIN, and GÉANT supported connection of the FLRs
MS19	Training in Asia completed	
MS20	Strategic information to strengthen the worldwide communities	Participants express the importance of collaboration and highlight the need of share experiences from more advance groups to new ones.
MS21	Integration between legacy video network and Webconference is active	The system was delivered with dialling from and to SIP networks, and statistics management system
MS22	Update on the training materials portfolio	User's guide of Colaboratorio, tutorial videos of services and brochure on new services. http://magic-project.eu/index.php/training
MS23	Recommendations for Cloud service providers to participate in a Global Academic Cloud	The document was delivered
MS24	Briefing on the success and challenges faced by the Global Science Communities carried out in the 2 years	<p>Closing sessions were held with Community Champions who pointed as challenges of working in a virtual global environment: a)Language b)Connectivity and c)Lack of e-collaboration culture.</p> <p>On a positive side, there is a general consensus that the Global Science Communities helped bring people from various parts of the world to share experience and learn from each other.</p>

		* Oman - Oman KID (Nov 2015 - joined as eduGAIN member)
		* Korea - KAFE (Nov 2016 - joined as eduGAIN member)
		* India - INFED (Feb 2017 - joined as eduGAIN member)
		* South Africa - SAFIRE (Feb 2017 - joined as eduGAIN member)
		* Singapore - SGAF - applied to join eduGAIN - 14 Dec 2016
		* Uganda - RIF - applied to join eduGAIN - 6 September 2016
MS25	Pilot federations deployed in at least 4 countries	* Mozambique - CAFMoz - applied to join eduGAIN - April 2017
MS26	Implementation guides and video tutorial on line	On line material developed and available at edx.redclara.net
MS27	Dissemination activities Year 2 complete	All activities were completed on time. See the reports.

- ◆ No major problems have occurred during this period, the project ran smoothly and we have been able to recover the delays reported in the previous reports.

As already reported in D1.3, CKLN, the Caribbean Knowledge and Learning Network has left the Consortium because it has been closed by its owners. An amendment has been completed and approved by the EC.

1.1.2 Work Package 2: Platforms for Mobility

Objective 1: Strengthen the regional technical infrastructure for eduroam in the Caribbean

Work completed:

- Installation and configuration of a secondary National Proxy Radius Server (NPRS) for TTRENT (Trinidad & Tobago Research and Education Network) that can be used a secondary server for other National Roaming Operators (NROs) in the Caribbean.
- Peering and testing of the new NPRS with the eduroam Top Level Radius Server (eTLRS)
- Migration of institutions in Trinidad & Tobago to the new NPRS

Date Completed 2017-03-10

Outcome: The addition of a RADIUS proxy server outside of Trinidad & Tobago to ensure Security, Stability, and Resiliency of the eduroam service regionally.

Objective 2: Increase the number of deployments of eduroam in the Caribbean

Work completed:

- Assessment of institutions regionally to determine which ones have the wireless infrastructure to support deployment of eduroam.
- Assisted institutions with the planning and deployment of eduroam (UWI, UTT, COSTAATT).

Date completed 2017-04-28

Outcome: Deployment of eduroam in 5 additional countries (Anguilla, Barbados, Grenada, Montserrat

and Jamaica) and one additional eduroam pilot in Barbados.

Technicians, academics and researchers in the Caribbean had the opportunity to benefit from “Caribbean MAGIC”, a 3-day series of technical training and scientific discourse from April 10-12 at the University of the West Indies (UWI), Cave Hill Campus in Barbados.

Collaborating with the UWI, MAGIC has hosted a 2-day training session on eduroam, facilitated by GÉANT, Europe's leading collaboration on e-infrastructure and services for research and education. This have target the technical and IT representatives from various universities and colleges in Barbados and the Eastern Caribbean. For further information on Eduroam, and its application in the Caribbean region.

On April 12, the Global Science Communities of MAGIC, in collaboration with the Centre for Resource Management and Environmental Studies (CERMES) at Cave Hill, have hosted an Enviro-Health seminar, enabling a sharing of recent research and initiatives of the researchers, academics and practitioners in the respective sciences of the environment and health.

In the Arab region, ASREN, and in cooperation with its MAGIC partners conducted the following activities towards eduroaming the region in the period of this report:

I. Conferences: MAGIC Project and eduroam mentioned in all ASREN conferences, meetings and workshops:

ASREN annual Conference e-AGE 2016, Beirut, 1-2 December 2016. a side roundtable was allocated for eduroam discussion. The conference was served by eduroam too.

eduroam was on the top of the agenda of ASREN regional meetings with EUMEDCONNECT3 and AfricaConenct2 meetings. The main reason is to promote and follow up with NRENs on these developments.it was also discussed during ASREN monthly VC meetings.

II. Technical and hands-on workshops:

Workshop on Identity Federation Infrastructure: December 3 to 4, 2016, American University at Beirut (AUB), Beirut, Lebanon. The workshop was attended by 22 participants representing Morocco, Algeria, Lebanon, Palestine, Oman, Egypt, Somalia, Malawi and Jordan. The workshop was coordinated with CESNet and GEANT.

III. Webinars and conference calls:

Technical support team was formed from some staff from Lebanon and Jordan to provide technical assistance and support to the staff of other NRENs.

Several Conference calls and webinars organized to exchange knowledge and to follow up with technical staff at NRENs with support of the technical people from GEANT and CESNet in addition to ASREN team.

IV. Follow up:

eduroam was on the top of the agenda of ASREN regional meetings with EUMEDCONNECT3 and AfricaConenct2 meetings. The main reason is to promote and follow up with NRENs on eduroam. it was also followed up during ASREN monthly VC meeting with its partners.

There were two training sessions In Central Asia:

1.eduroam workshop in Kyrgyzstan

Date: February 27 - 28, 2017

Venue: National Information Technology Center, 265a Chui Avenue, Bishkek, Kyrgyz Republic

Attendees: 14 participants from 12 institutions of Kyrgyzstan.

2.eduroam workshop in Tajikistan

Date: March 1 - 2, 2017

Venue: Tajik Technical University named after M.Osimi, Tajikistan

Attendees: 14 participants from 13 institutions of Tajikistan.

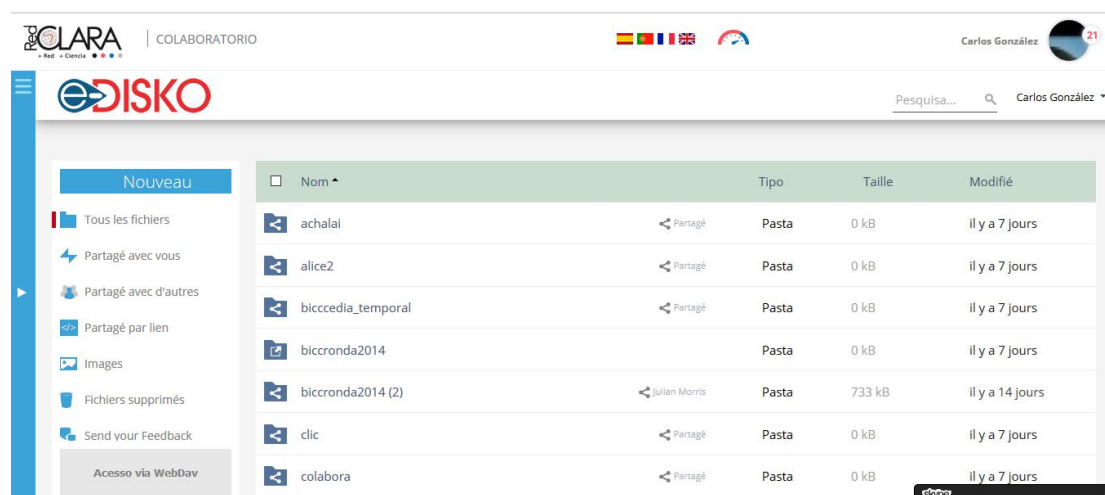
1.1.3 Work Package 3: Cloud Provisioning and Groupware Standards

A special effort was invested in deploying new applications from different NRENs and spreading the installation of the Cloud application portal (Colaboratorio) in several regions around the world was made. Thanks to this effort from the different NRENs, services from RNP (Brazil), CONARE (Costa Rica) and RENATER (France) were added this time to increase trifold the number of required applications and double the required number of NRENs using applications developed or deployed by other NRENs.

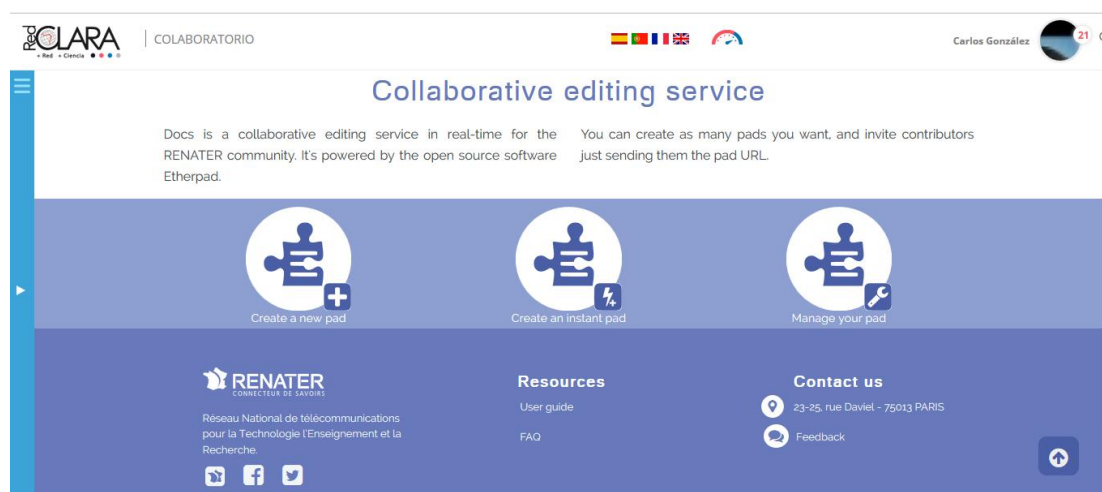
In this period, also these collaborations between projects were done:

- a. With TANDEM - as WACREN has deployed an instance of RedCLARA's Colaboratorio, they were eligible to deploy an integration with the Groupware standard which was beyond the reach of TANDEM project, but thanks to the MAGIC project, the installation could be done successfully.
- b. With Sci-GaIA - first, Sci-GaIA supported RedCLARA in the process of modifying the Open-EDX service to allow the connection of it to the SAML Federations. And finally, a pilot integrating the statistical software R, installed in Costa Rica to the Cloud Application Portal (Colaboratorio) was made by the MAGIC project and is currently part of the pilot applications.

Regarding the group management standards and applications integrations, the group achieved to deploy two new application in pilot stage, eduDRIVE and Etherpad. eduDRIVE is a file storage service based on the open-source project ownCloud, and customized with federation standards support (SAML) by the Brazilian NREN RNP. The application is deployed at RNP premisses, and was adapted for and integrated to Colaboratorio. Furthermore, the group added the support for the group management standard implemented in the MAGIC context, so a community in Colaboratorio can have a folder that is automatically shared to their members. The application look and feel is like the following screen shot:



On the other hand, the MAGIC team with the collaboration of the project partner RENATER from France, implemented the Etherpad service. This service is an on line collaborative edition tool that can be used to produce documents in real-time from a web interface. The magic behind this implementation was that it is deployed at RENATER's infrastructure, and is integrated to Colaboratorio using eduGAIN, and the group management standards. The advantage with the traditional Etherpad is that the edit permissions are based on the membership to the community in Colaboratorio that is shared using the VOOT protocol. Etherpad interface is like the following figure:

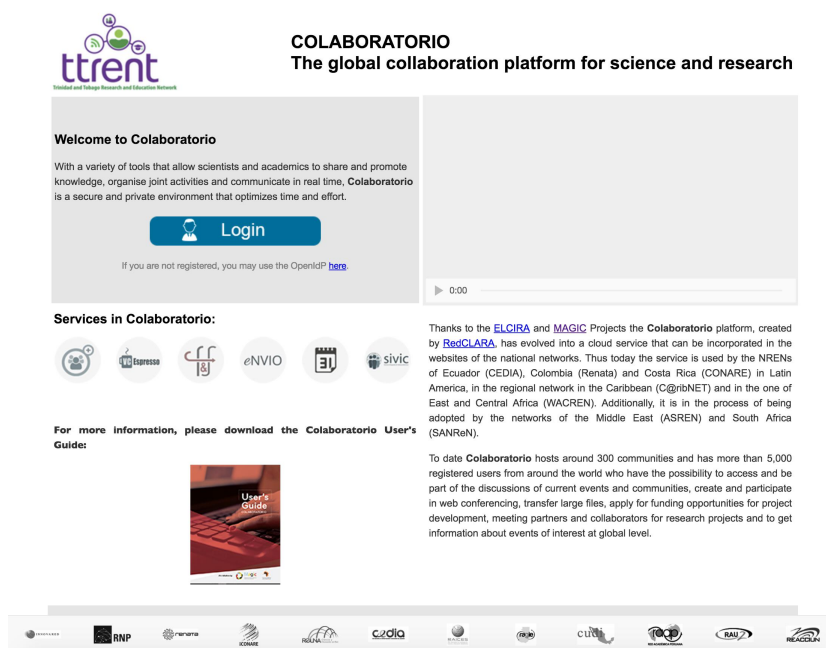


eduDRIVE and Etherpad can be found in the following pilot deployments portal:

<http://colaboratorio-dev.redclara.net/index1.3.html>

The authentication is already integrated to eduGAIN, so any European or global partner that uses the confederation can use them immediately.

Another important work was carried out in the Caribbean with the deployment of Colaboratorio for the Trinidad and Tobago's NREN TTRENT. The work, completed on March 2017, implemented the platform (Colaboratorio) to support and promote collaboration of scientific and academic groups in the Caribbean and rest of the world._



TTRENT Colaboratorio Portal (<http://colaboratorio.ttrent.edu.tt>)

Finally, WP3 also designed and implemented a service catalogue / applications directory for MAGIC. This tool provides central information point where NRENs, end-users, and communities can find the services existing in other NRENs and organizations as brokered by the MAGIC project. The application and the service attributes are based on the existing GÉANT service catalogue. The services registered on this catalogue include: Communities, Funding & Partners, SIVIC, e-DISKO, R, MCONF/VCEspresso, eduDrive, Filesender Premium, Etherpad, Docuwiki, Okeanos.

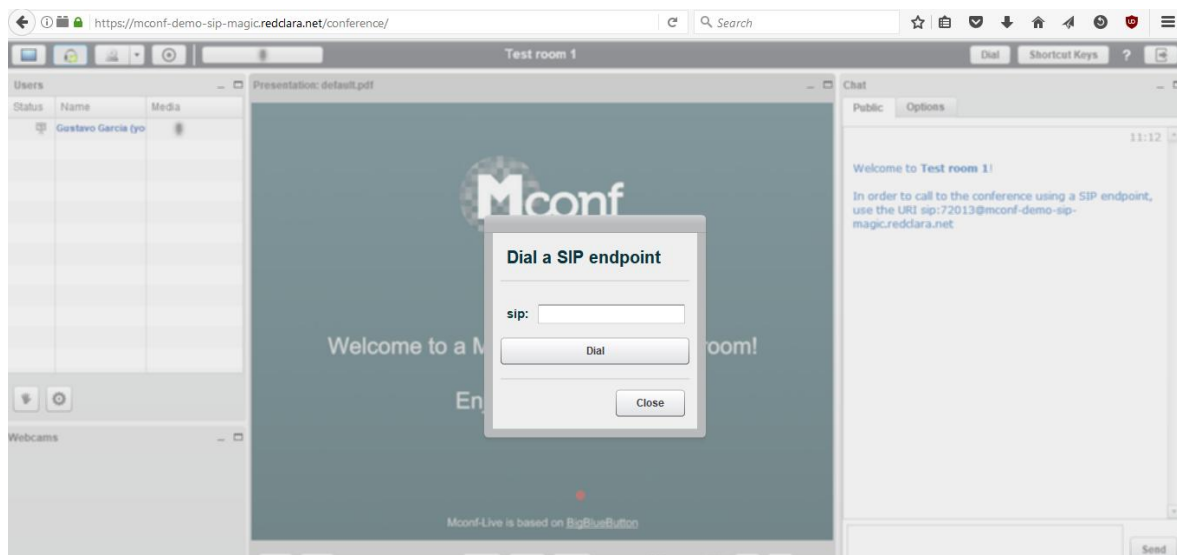
1.1.4 Work Package 4: Agreements for Real Time Collaboration

The work package team continued the work on the NRENum.NET standard promotion, and trying to engage new NRENs to the service.

In the work package 4, the MAGIC team worked in the development of and integration between the Web-conference service (VCEspresso), and the traditional SIP video network. This integration allows to dial from a web-conference to a dedicated SIP endpoint and vice-versa. Full communication of audio and video can be done. The Webconference users will see the SIP endpoint presenter, and the SIP endpoint participants will see each partner logged to the VCEspresso service. Furthermore, the integration allows sharing the screen of the presenter. The development also include a full-featured statistics server used to have quality assurance indicators. The development is documented and architecture manuals have been delivered. In addition to this documentation, the working group developed the deliverable "D4.5 Online course and video tutorial on how to deploy a unified communications network" that describes this implementation. The MCONF pilot deployment can be accessed through the following URL:

<http://mconf-demo-sip-magic.redclara.net>

It can be tested with any standard SIP compliant device by using the "Dial" option in the top-right corner.



For testing inward dialing, the SIP address to dial is shown in the chat window, with a message like:

"In order to call to the conference using a SIP endpoint, use the URI sip:72013@mconf-demo-sip-magic.redclara.net"

In addition, the MAGIC team worked in the deliverable *"D4.5 Online course and video tutorial on how to deploy a unified communications network"*. This course presents the guidelines for the implementation of the MCONF to SIP network integration. The development group presents in video and test guides the architecture elements, and how they interact in order to provide the required services. The course was developed in the OpenEDX platform from RedCLARA in the MOOC (Massive Open Online Course) format. The course can be found in the following link:

<http://edx.redclara.net/>

1.1.5 Work Package 5: Global Science Communities

During the last quarter of the implementation of the project, work on this objective concentrated on sustainability of the Global Science Communities. This was done through both face to face interactions and virtual events with the communities. As part of sustainability of the communities, the project team felt regional as well as national research and education networks are critical players. Therefore, face to face interactions with some communities were held back to back with major regional events.

- During UbuntuNet-Connect 2016 in Entebbe, Uganda, MAGIC Work Package 5 together with UbuntuNet Alliance organised a 1 day End User Engagement Workshop on 2nd November 2016 with the aim of bringing NRENs up at speed with the need for them to support end user communities. At the meeting, RedCLARA, GEANT and NORDUNet – which already have established end user engagement activities - shared their experience with NRENs in the UbuntuNet community.





- At e-AGE 2016 in Beirut, Lebanon on 1 December 2016, MAGIC Work Package 5 in collaboration with ASREN held a session on Biodiversity within the framework of the Global Science Community on Biodiversity. A key anchor at the event was an active member of the

Biodiversity GSC, Dr Ibrahim Fathy Moawad, Associate Professor in the Information System Department at Ain Shams University in Egypt. The session also included several other presentation from stakeholders in Lebanon.

- WACREN 2017 in Abidjan, Cote d'Ivoire on 28-29 March 2017, MAGIC Work Package 5 continued to conduct regional face to face meeting with communities. First, the project team contributed to the workshop with Librarians as Institutional Focal Points, who have been identified in the WACREN region as anchors for community engagement. Then, MAGIC in collaboration with TANDEM and Sci-GaIA held a joint workshop focusing on sustainability of communities being supported by the projects. The conclusion pointed to the critical role played by national and regional research and education networks.

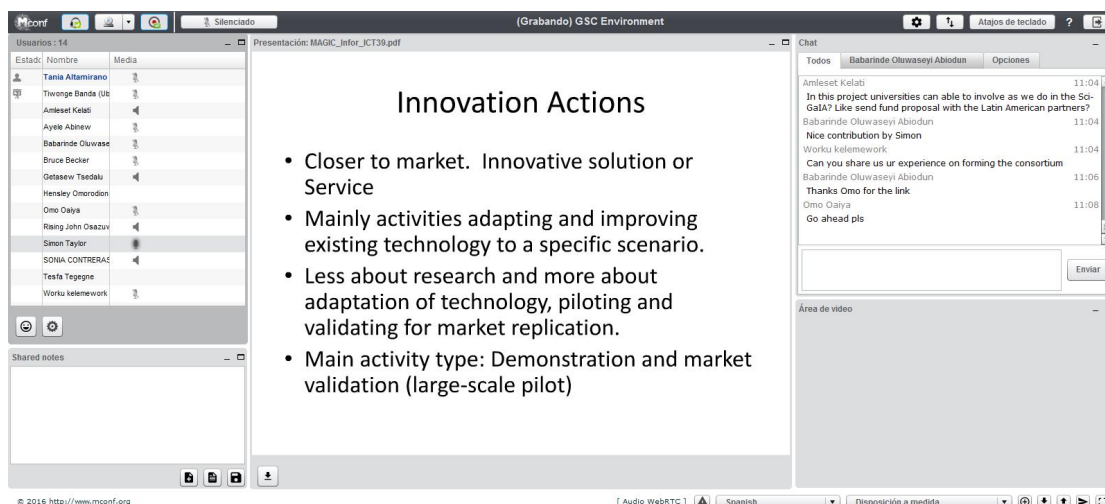


- Caribbean MAGIC, 10-12 April 2017 – Work Packages 2 and 5 teamed up for an 3-day session that begun with 2 days of technical training on eduroam and edugain, followed by a 1 day session with the Environment and Health communities – a session dubbed

Envi-Health – at the Cavehill Campus, The University of the West Indies in Barbados. Dr David Smith, the Champion of the Environment graced the workshop which included several presentations from both Environment and Health communities. A representative from the EU Delegation in Barbados, Mr Marc Thill was part of the opening session and gave a short presentation on H2020 opportunities.

- MAGIC Work Package 5 contributed to the 2nd CAREN Regional Networking Conference, Bishkek, Krygzstan, 25-26 April 2017 through a presentation on Global Science Communities.

Aside from these face to events, Work Package 5 also organised a Horizon 2020 Virtual day focusing on the Africa region on 14 December 2016. The event featured opportunities around the H2020 ICT-39 Call which had just opened then. MAGIC partnered with Sci-GaIA and Africa4Health projects in sharing relevant H2020 experience.

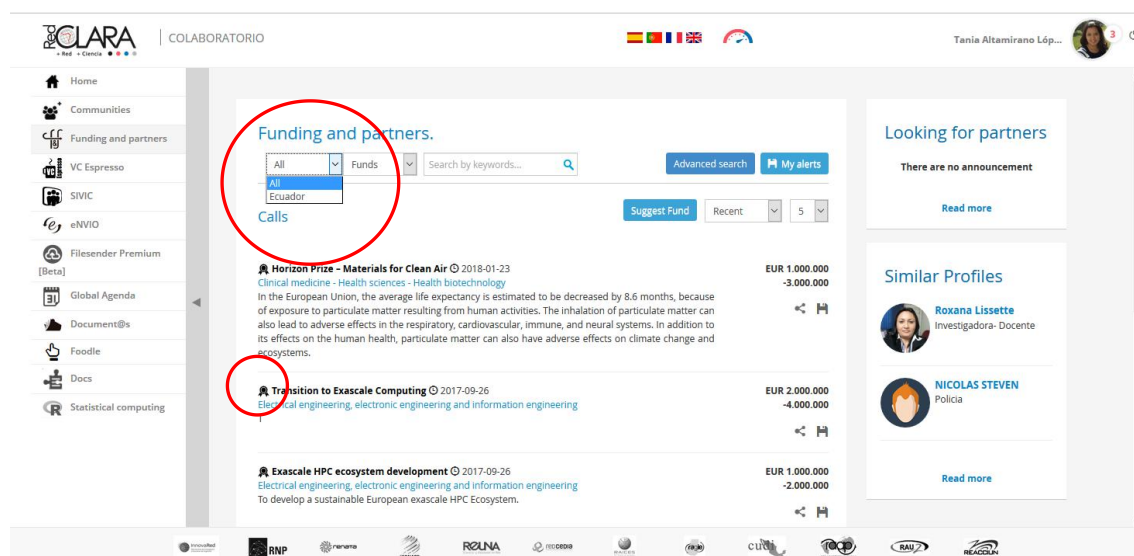


Towards the end, Work Package 5 held closing sessions with Champions of the communities to obtain their feedback on the GSC and how they could be sustained. The feedback received was generally positive. This is reported in detail in D5.3.

Information System on Worldwide Funding Opportunities

During the reported period the activities related to the Funding and Partners service were focused on the development of a local pilot for the National Research and Education Network of Ecuador, CEDIA. This enriched (in terms of content, browse and design) system is deployed as an additional feature in Colaboratorio that could be available for other institutions in the future. This task held along with WP3, included a process of identification of needs, development of the pilot and the presentation of the results to the NREN.

The result is a new option integrated on the main menu of the tool, where users from Ecuador have the opportunity to do a specific search for calls dedicated to their country facilitating the process to identify open calls and partners around the world.



Also the Advanced search option was updated to include more Boolean operators (AND - OR fields) for a more accurate result. In terms of design it was included on the information presented icons that help the

user to identify in an easier and more friendly way the information presented. The icons are dedicated to: scholarships, awards and funding.

This changes are also included in the updating of the training material that is also reported on Deliverable D5.3.

1.1.6 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.

On-line presence:

MAGIC's on-line presence consists in its Intranet, which is based in Colaboratorio, its Website, Facebook and Twitter social inter-phases.

As it has been reported in the past Progress Reports, the Intranet is extensively used by the project partners for all its internal communications and for the different WP interaction.

The Project Website information is regularly updated and a new page was created in order to publish the numerous videos that were recorded by the project members and some academics, explaining the importance of the MAGIC project for them.

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 Website

	Nov '16	Dec '16	Jan '17	Feb.'17	Mar.'17	Apr.'17
Número de visitantes únicos	390	355	359	346	303	243
Número de páginas vistas	1042	714	805	677	635	602

MAGIC Website Statistics - Unique visitors and Pages viewed, M19 - M24.

The numbers are consistent with those of the previous months and it is verified that the change of contents in the web site did not increase the number of visitors of the site.

Within the reported period 16 testimonial videos of the MAGIC Project members were publish in the website at <http://magic-project.eu/index.php/about/2015-05-28-22-53-32/magic-videos>. These videos reflect the spirit of collaboration that MAGIC has lighten up and it is also a testimonial of the use of the application and services within the scope of action of every partner institution.

Social Networks

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

By May 04, 2017, "Magic a global connection", the project's presence on Facebook, which went live on-line on 25 June 2015, had 195 likes. The growth of likes since the previous report is of 30 followers. Also

in May 04, 2017, @MACIC_our_voice, the project's presence on Twitter, which was on 5 June 2015, had 130 followers, 28 more than in the previous mid term report, and several interactions (most of them mentions while MAGIC was participating in international events).

Brochures and promotional material done

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

In order to serve the dissemination needs of WP5 at the eAGE 2016 Conference, the WACREN Conference and at the Caribbean MAGIC: Enabling Collaboration in Research & Education, project brochures focused on raising awareness of the Global Science Communities that MAGIC is currently fostering were designed and printed in English (500 copies and 300 copies respectively). Also a special invitation for both events was done. It is important to notice that within the context of the WACREN Conference it was carried out the “e-Infrastructures for Worldwide Collaboration: Assessing the present and road mapping the future. Joint workshop”, an initiative of TANDEM, SciGAia and MAGIC, and MAGIC did all the events image for on-site promotion.

A collaboration project to globally connect researchers and academics

Building on the success of the ELCIRA project, RedCLARA -with partners from Africa, Arab States, Asia, Europe, Latin America and The Caribbean- is leading MAGIC, a cooperation project which aims to significantly improve the ability of researchers and academics around the world to collaborate together.

Connect, contribute and collaborate!

MAGIC is fostering the collaborative work of **Global Science Communities** by:

- Actively promoting the participation of researchers from all participating regions in European Commission Calls and those of other international funding agencies with high impact in the participating regions and other networking activities.
- Promoting and fostering the use of collaboration technologies among worldwide research communities, encouraging the proper and active use of the collaborative platforms, services and tools, by supporting them with training material and activities to learn how to use the tools.
- Using these collaborative platforms to spread knowledge and the practices of the Global Science Communities by sharing information and experiences among experts in the priority fields identified, looking to raise awareness of prevailing issues to wider audiences including policy makers, and also, to foster and improve collaboration among researchers of the MAGIC regions.

More information at: <http://magic-project.eu/index.php/global-science-communities/what-is-a-global-science-community>

What is a Global Science Community - GSC?

A group of experts (researchers and/or academics) from different parts of the world with a common interest, working together on activities, sharing best practices, knowledge and experiences.

Their activities aims are to provide the opportunity of learning and sharing different experiences related to their thematic areas, contributing and sharing knowledge and exploring the possibility of establishing collaboration. Each MAGIC GSC thematic area is led by a champion, an expert that is the thematic leader.

MAGIC GSC + champions

- e-Health**
Thematic Leader: Luiz Ary Messina, National Coordinator of RUTE (Rede Universitária de Telemedicina), Brazil.
- Biodiversity**
Thematic Leader: José Ramón Martínez, Professor and researcher of the Universidad Autónoma de Santo Domingo (UASD), Dominican Republic.
- Environment**
Thematic Leader: Dr David C. Smith, Coordinator, Institute for Sustainable Development, The UWI, University of the West Indies, Jamaica.
- Remote Instrumentation**
Thematic Leader: Patricia Santiago, Associate Professor Physics Institute, Universidad Autónoma de México (UNAM), México.

How to participate in a GSC?

To be part of the activities you need to be registered in the Colaboratorio platform and join the Community you are interested in.

Colaboratorio is a platform developed by RedCLARA to support and promote the collaboration of scientists and academic groups initially intended for users in Latin America.

GSC are currently...

- Benefiting from the MAGIC Implementation of an Information System on Worldwide funding opportunities aimed at the end users and the user communities.
- Developing a set of Worldwide Virtual days to foster collaboration at a worldwide scale on the GSC topics
- Running H2020 Virtual Information days to promote participation in International Calls
- Getting training material for the use of MAGIC's provided applications for collaboration
- Deploying virtual meetings and seminars

For More Information please write to the GSC Team leader, Twonge Banda, at twonge.banda@ubuntunet.net

MAGIC Project: <http://magic-project.eu/>

MAGIC is supported by the European Commission

Second MAGIC Global Science Community brochure in English, delivered at eAGE 2016 and WACREN Conference .



3rd MAGIC Brochure , delivered at the Caribbean MAGIC: Enabling Collaboration in Research & Education.

Regarding the branded promotional goodies, within the reported period we did 170 power banks that were delivered during the eAGE2017 together with 50 remaining MAGIC branded umbrellas and brochures..



MAGIC branded power banks, delivered at eAGE2016.

200 MAGIC branded headphones were done and distributed at the Caribbean MAGIC: Enabling Collaboration in Research & Education with brochures.



MAGIC branded headphones.

No goodies were delivered at WACREN Conference, only brochures.

As it was told a few lines before, MAGIC did all the image for on-site promotion for the “e-Infrastructures for Worldwide Collaboration: Assessing the present and road mapping the future. Joint workshop”, an initiative of TANDEM, SciGAia and MAGIC, this image consisted of the following pieces: web banners and web image, vinyl banners of different sizes that were placed in the events venue.



Figure 6: Big vinyl banner made for the scenario back for the e-Infrastructures for Worldwide Collaboration: Assessing the present and road mapping the future. Joint workshop”. All the other pieces made were based on this.

Participation in international events and training

Within the reported period MAGIC has been represented by project partners at relevant conferences in Africa and the Caribbean:

- e-AGE 2016 (Beirut 1-2 December 2016)
- APAN43 (New Delhi, India, 12 - 15 February 2017)
- CAREN Training - Bishkek, Kyrgyzstan, 27-28 February 2017, and Dushanbe, Tajikistan, 2-3 March)
- CAREN Regional conference (Bishkek, Kyrgyzstan, 25-26 April 2017)
- WACREN2017 (Abidjan, Ivory Coast, March 30-31 2017)
- Caribbean MAGIC: Enabling Collaboration in Research & Education (University of the West Indies(UWI), Cave Hill Campus in Barbados, April 10-12, 2017)

APAN43 (New Delhi, India, 12 - 15 February 2017)

MAGIC carried out a training on federated access (main focus), eduGAIN and eduroam. With Terry Smith, AAF (Chair of TF-IAM) and Brook Schofield, GÉANT, as trainers, there were 40 attendees from 10 countries.

CAREN Training - Bishkek, Kyrgyzstan, 27-28 February 2017, and Dushanbe, Tajikistan, 2-3 March)

The CAREN Training held in Bishkek, Kyrgyzstan, run for two days (27-28 February), as well as the one carried out in Dushanbe, Tajikistan (2-3 March). Both training sessions were carried out by Zarlyk Jumabek uulu (CAREN NOC) and Brook Schofield (GÉANT).

In Kyrgyzstan - already a member of the European eduroam Confederation - the participants were 14 engineers from 10 different organisations, while Tajikistan that had zero eduroam infrastructure set up a TJ FLR and connected it to top-level eduroam infrastructure, had 13 engineers from 9 institutions as attendees and signed the European Confederation document to join eduGAIN officially.

CAREN Regional conference (Bishkek, Kyrgyzstan, 25-26 April 2017)

CRNC 2017 was hosted by KRENA, the Kyrgyz Research and Education Network Association, together with the Kyrgyz Turkish Manas University in Bishkek, at the premises of the Kyrgyz Turkish Manas University in Bishkek.

CNRC is organised by the EC-funded CAREN project that provides gigabit capacity connectivity to Central Asian NRENs.

Dr. Ognjen Prnjat of GRNET presented at CAREN main conference, work carried out by the MAGIC project focusing on value-added service sharing in global R&E environments.

e-AGE 2016 (Beirut 1-2 December 2016)

At e-AGE 2016 MAGIC had a great Global Science Community Session on Biodiversity.



Speakers of the Workshop and project members.

The session was chaired by Pascal Hoba, CEO of Ubuntunet Alliance and went in the following order (with links to the presentations):

- Yousef Torman, “MAGIC Project”, Co-Managing Director, ASREN, Jordan
- Tiwonge Banda, “Global Science Communities”, Head of Administration and Finance, UbuntuNet Alliance, Malawi
- Tania Altamirano, “Colaboratorio” Coordinadora General de Comunidades”, Academic Communitities Coordinator, RedCLARA, Chile
- Rhea Kahale, “The flora of Lebanon at your fingerprints”, Project Manager, Saint Joseph University, Lebanon
- Ibrahim Fathy Moawad, “Biodiversity Informatics: Scientific Data Management”, Associate Professor, Faculty of Computer and Information Sciences, Ain Shams University, Egypt
- Manal R. Nader, Director, “Mapping Potential Responsible Hunting Areas in Lebanon”, Institute of the Environment, University of Balamand, Lebanon
- Ghassan Soleiman Abu-Sittah, “Where Surgery meets Augmented Reality”, Chief of Plastic & Reconstructive Surgeon, AUB, Lebanon
- All the presentations, a link to the video recording and the event photos can be seen at <http://asrenorg.net/eage2016/?q=content/program>.

The video recording of the session has also been published at https://www.youtube.com/watch?v=NT_8_3r5eKM.

IFI Workshop: under the name of Identity Federation Infrastructure workshop took place at the American University of Beirut (AUB), during 3-4 December 2016, within the same eAGE2016 context. This training session lasted for two days and it covered the Federated Access, eduGAIN and eduroam subjects; the trainers were from CESNET (Michal Prochazka and Jan Oppolzer) and they had 15 participants.



MAGIC project members with the IFI Workshop participants and trainers.

WACREN2017 (Abidjan, Ivory Coast, March 30-31 2017):

Within the Conference, Tania Altamirano and Tiwonge Banda, leaders of WP5, gave 2 presentations about MAGIC Communities and Colaboratorio, and participated in a panel session. Ognjen Prjnat, representative of GRNET in MAGIC, gave two presentations regarding MAGIC and VI-SEEM projects.



Tania Altamirano speaks about engaging communities in MAGIC, within a panel session at WACREN 2017.

The joint presentation of MAGIC / TANDEM / Sci-GalA was held on March 28, inside WACREN's week of activities (that begins on March 27), under the title "Welcome remarks and Overview of Achievements from H2020 Projects".

This was not the first time that the three projects got together to promote intercontinental collaboration and to foster the development of global research infrastructures. Joint sessions of the initiatives were also carried out in ICT2015, TNC16, UbuntuNet Connect 2016 and WACREN2016. In WACREN2017, whose main theme was "Catalyzing the quality of higher education and research", the trio will once again shared the development and operation of e-Infrastructures in different regions of the world, stimulating discussions on the benefits of creating World-class digital research structures.

The e-Infrastructures for Worldwide Collaboration: assessing the present and road mapping the future joint workshop was chaired by Tiwonge Banda (Ubuntunet Alliance) and Ognjen Prjnat (GRNET), and had

the presentation of Leandro Guimarães (RNP) entitled as Supporting Global Science Communities in MAGIC. These three representatives were from the MAGIC project.



Leandro Guimarães presents MAGIC at the joint workshop.

There was also a training given by MAGIC and TANDEM entitled Supporting Campus Libraries to embed NREN Services and e-Infrastructure, where a training session on the use of the Colaboratorio platform was carried out by Tania Altamirano (RedCLARA) for 40 attendees; Altamirano also did a second training in the same issue but in a deeper mode to the Librarians Community of Niger for five members.



MAGIC project members from Europe, Latin America and Africa participating at the WACREN Conference.

Caribbean MAGIC: Enabling Collaboration in Research & Education (University of the West Indies(UWI), Cave Hill Campus in Barbados, April 10-12, 2017):

Technicians, academics and researchers in the Caribbean had the opportunity to benefit from “Caribbean MAGIC”, a 3-day series of technical training and scientific discourse carried out from April 10-12 at the University of the West Indies(UWI), Cave Hill Campus in Barbados.

Partnering with the UWI, MAGIC hosted a 2-day training session on eduroam and the technical implementation of the Colaboratorio platform, that reached 15 representatives the technical and IT departments of various universities and colleges in Barbados and the Eastern Caribbean, was lead by Brook Schofield (GÉANT) and Carlos González (RedCLARA).



Brook Schofield training on eduroam at the Caribbean MAGIC training sessions.



Participants of the training session Caribbean MAGIC together with MAGIC representatives..

On April 12, the Global Science Communities of MAGIC, in collaboration with the Centre for Resource Management and Environmental Studies (CERMES) at Cave Hill, had an Enviro-Health seminar, enabling a sharing of recent research and initiatives of the researchers, academics and practitioners in the respective sciences of the environment and health. With 25 participants, the training sessions on community building and the use of Colaboratorio, were carried out by Tania Altamirano, Tiwonge Banda, Colleen Wint and Carlos González. The Counsellor Head of Cooperation of the Delegation of the European Union to Barbados, the Eastern Caribbean States, the OECS and CARICOM/CARIFORUM, Marc Thill, attended this activity given its high importance for the region.



In the center of the photo, with jacket and tie, the Counsellor Head of Cooperation of the Delegation of the European Union to Barbados, the Eastern Caribbean States, the OECS and CARICOM/CARIFORUM, Marc Thill, with the participants of the Caribbean MAGIC.

WP6 has been lead by RedCLARA with contributions from ASREN, CKLN, CUDI, GÉANT, GRNET, NITC, RNP, TEIN*CC and WACREN.

1.2 Impact

As the information on expected impacts is relevant as was proposed in the DoA, we will go one by one analyzing the results achieved in the Indicators.

- 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:

- 1) Mobility Federated Services and Nrenum.net, Venue: Viña del Mar, Chile

Attendees: 11 participants from five Latin American countries: Chile, Costa Rica, Ecuador, Mexico and Peru.

*2) Federated Access and eduroam workshop in the Caribbean, Venue: West Indies, Jamaica
Attendees: 16 participants from 11 institutions .*

*3) Workshop on Joining eduroam and Identity Federation, Venue: Amman, Jordan
Attendees: 13 participants representing five Arab countries*

*4) Federated Applications (FedApps) Training session, Venue: Dar es Salaam
Attendees: 22 engineers from 14 NRENS.*

*5) Workshop on Identity Federation Infrastructure, Venue: Beirut, Lebanon.
Attendees: 22 participants from 9 NRENS*

*6) eduroam workshop in Kyrgyzstan, Venue: Bishkek, Kyrgyz Republic
Attendees: 14 participants from 12 institutions of Kyrgyzstan.*

*7) eduroam workshop in Tajikistan, Venue: Dushanbe, Tajikistan
Attendees: 14 participants from 13 institutions of Tajikistan.*

Total trained engineers during the project 112

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 already active in eduroam having become part of the eduroam federation: 15

- * .vn Viet Nam - September 2015*
- * .jm Jamaica - Nov 2015*
- * .ba Bosnia & Herzegovina - December 2015*
- * .ir Iran - Jan 2016*
- * .eg Egypt - Feb 2016*
- * .so Somalia - Feb 2016*
- * .gh Ghana - Mar 2016*
- * .ml Mali - Nov 2016*
- * .bj Benin - Dec 2016*
- * .zw Zimbabwe - Jan 2017*
- * .bt Bhutan - Jan 2017*
- * .np Nepal - Jan 2017*

- * .kw Kuwait - Mar 2017
- * .om Oman - April 2017
- * .bb Barbados - April 2017

Pilot federations already created and in process of becoming eduGAIN members: 7

- * Oman - Oman KID (Nov 2015 - joined as eduGAIN member)
- * Korea - KAFE (Nov 2016 - joined as eduGAIN member)
- * India - INFED (Feb 2017 - joined as eduGAIN member)
- * South Africa - SAFIRE (Feb 2017 - joined as eduGAIN member)
- * Singapore - SGAF - applied to join eduGAIN - 14 Dec 2016
- * Uganda - RIF - applied to join eduGAIN - 6 September 2016
- * Mozambique - CAFMoz - applied to join eduGAIN - April 2017

Work in progress towards creating a Federation

5

*Jordan
Lebanon
ASREN
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:

The following 3 regions have deployed a federated groupware service:

Europe: CESNET (Czech Republic), RENATER (France)

Latin-America: RedCLARA (Latin-America)

Africa: WACREN (West and Central African)

- 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 dialling

Advances in the Indicator:

In work package 4, the MAGIC team succeeded to incorporate 9 new countries in 5 regions to the NRENum.net service.

- Ecuador (Jul/2015),
- El Salvador (Sep/2015),
- Mexico (Oct/2015),
- Uruguay (Nov/2015),
- Czech Republic (Dec/2015),
- Sri Lanka (Dec/2015),
- Chile (Jan/2016)(Aug/2016).
- Lebanon (Aug/2016)
- Kazakhstan (April/May 2017)

These countries were spread 4 regions, divided in four deployments in Latin-America, one in Europe, one in Middle-East, and one in Asia. As it is seen, the milestone number was achieved. Nevertheless, it is worth mentioning that the group expected to have 3 deployments in Asia and was not fulfilled. The group identified some barriers like internal NREN governance that make difficult to achieve the required consensus on the standards.

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 catalogue of the applications/services provided by NRENs available for use of other NRENs contains at least 10 applications

Advances in the Indicator:

The project team reached the number of 10 NRENs using applications built and deployed/hosted by another. The following table show the provider and customer NRENs relation. It is worth mentioning that Colaboratorio integrates several applications like Funds and partners, the web-conference, and the communities' management service among others.

		Provider					
		CESNET (Czech Republic)	RedCLARA (Latin- America)	RENATER (France)	UNINETT (Norway)	RNP (Brazil)	CONARE (Costa Rica)
Customer NREN	CEDIA (Ecuador)		Colaboratori o			VCespresso	
	CONARE (Costa Rica)					VCespresso	
	CUDI (México)		Colaboratori o				
	RENATA (Colombia)		Colaboratori o				
	RedCLARA (Latin- America)	Docuwiki		Sympa, Etherpad, Filesender Premium	Foodle	VCespresso , e-DISKO	R
	TTRENT (Trinidad and Tobago)		Colaboratori o			VCespresso	
	WACREN (West and Central Africa)		Colaboratori o	Sympa		VCespresso	
	MyREN (Malaysia)		Colaboratori o				
	AUB (Lebanon)		Colaboratori o				
	MARWAN (Morocco)		Colaboratori o				

8 NRENs have adopted RedCLARA's Colaboratorio as the cloud applications portal (see the previous table) 3 from Latin-America, 1 from the Caribbean, 2 from Africa, 1 from Middle-East and 1 from Asia Pacific.

7 applications were deployed exclusively as part of the project: 3 in the first stage (CESNET's Docuwiki; RENATER's Sympa and Filesender) and other 4 in the second stage: Open-Edx in RedCLARA's infrastructure, RENATER's Etherpad, CONARE's R (Web Access Component) and RNP's e-DISKO.

11 applications are listed in the Catalogue:

- 4 by RedCLARA Communities, Funding & Partners, SIVIC, e-DISKO, R
- 2 by RNP: mconf (webconference) and eduDrive
- 2 by RENATER: Filesender Premium and Etherpad
- 1 by CESNET: Docuwiki.
- 1 by GRNET: Okeanos.

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

2 information days on H2020 were organised in Year 2 and 2 has been already organised in Year 1.

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.

g) Growth of the use of the Funding and Partners system

In order to measure the usefulness of the Funding and Partners Database and its impact in the research community we have measured three indicators

Indicators:

Number of Uploaded funds

Number of Alert e-mails sent

Number of clicks on the alerts

Advances in the Indicators:

# of Uploaded funds	# of Alert Mail Sent	# of Clicks on the alerts sent:
April 2016: 250	April 2016: 25,850	April 2016: 350
April 2017: 870	April 2017: 38,000	April 2017: 1,352

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.

We have prepared a Report explaining i details the strategy of the project. The document named “D1.2.5 Reviewed Implementation Strategy” is being forwarded to the reviewers for their analysis.

Recommendation 2:

We did 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. The MOOC Platform OedX that is provided as a cloud service by France Numérique, a partner of RENATER, who is in the process of signing an MoU with MAGIC, is the one in which two courses (one of them in two languages) have been done: 1) Servicio NRENum.net (course 1 in Spanish), NRENum.net Service (the same in English); 2) How to deploy a unified communications network (Webconference to SIP endpoints). Under the <http://edx.redclara.net/> URL, these courses are available through the MAGIC Project website, under the Training tab.

Recommendation 3:

Regarding this recommendation, the MAGIC project made very significant advances completing the implementation of Colaboratorio in the following non LA countries:

- a) Morocco - MARWAN
- b) Lebanon AUB
- c) Malaysia MYREN
- d) Trinidad and Tobago TTRENT

Colaboratorio has been deployed in countries of Africa, Asia, and Middle-East, apart from the new countries of regions where already existed (Latin-America and the Caribbean).

Another are in which the MAGIC project achieved globalization, is the integration of group managers and applications. The pilot implementations contain applications from RENATER (France) with Sympa, Etherpad and Filesender Premium, RedCLARA (Latin-America) with Colaboratorio and SIVIC, RNP (Brazil) with eduDRIVE, and Czech Republic with Dokuwiki.

The Sci-GaIA team provided assistance to RedCLARA that lead to deploy the “R” application. R is the statistical computing software that runs in university clusters. The MAGIC team worked with the National High Technology Center (CENAT) from Costa Rica who provides the computing cluster that runs the “R” application, and RedCLARA integrated it to Colaboratorio in a similar fashion of how Sci-GaIA does it. With this result, the next step will be to share the resources to the Sci-GaIA environment using their Future Gateway API. The “R” application is included in the MAGIC catalogue, and published through the

Colaboratorio environment. In addition, the Sci-GaIA team supported RedCLARA, and provided example code in order to integrated the MooC platform OpenEDX to the eduGAIN confederation. This functionality is crucial to guarantee global access to this resource for European and global partners.

In terms of dissemination, specific dissemination material (brochures and flyers) where developed and delivered for very specific target audiences where WP5 participated leading different activities in Global Science Communities.

Also a big effort has been done in order to get video testimonials from the different project partners and researchers (en users) of the different world regions where they explain why MAGIC is important for them. The 16 testimonial videos have been published in the project's website at <http://magic-project.eu/index.php/about/2015-05-28-22-53-32/magic-videos> and both in Twitter and Facebook, generating an important interaction with the broad R&E public.

Recommendation 4:

D5.1 was re-written to include the recommendations of reviews. The revised deliverable t was missing, especially the strategic planning and guidelines for the set-up, work and expansion of the Global Science Communities.

Where practically possible, the project worked with existing communities, but it was realized that this exercise requires a lot of time since existing communities have their set objectives. One needs to be there with them at the planning phase to draw any meaningful participation of organised communities.

The project also intensified interactions with Sci-GaIA and TANDEM projects with the aim of increasing community synergies. Sci-GaIA communities joined the MAGIC H2020 Info Day in December 2016. MAGIC joined the TANDEM community of institutional Focal Points (Librarians) in Ivory Coast in March 2017.

Recommendation 5.

A The work on this deliverable should include detailed guidelines for training foreseen in T5.5 (on the cloud based collaboration and communities building). A new version of the document should be developed with the goal to provide guidance for training on communities' engagement, initiation, building, maintenance, support and expansion.

Recommendation 6. Communities h have been expanded during year 2, in absolute numbers, geographically, and in terms of distribution of events. While it was important to measure the impact of the communities, it is too early to evaluate this after just one year. As part of sustainability, Regional RENs and NRENs will continue where they can to sustain the activities of the GSCs and may evaluate their impact at a later stage.

Future Work 2

During the second period of the project the growth of the communities was related to the development of activities with the members. GSC E-Health and Environment are the communities that included more members and are the both that headed two of the biggest events: e-Health Ground Rounds and the Seminar "Enhancing Collaboration in Research & Education" in Barbados. Regarding the Founding and Partners service it was a increase of the calls available for consultation in the system, foster by the despatch of alerts to the registered users in Colaboratorio. At the end the system included a new pilot that allows to filter the information for a local NREN, CEDIA from Ecuador, with a more accurate search tool that includes more Boolean search operators.

Future Work 3:

The dissemination events have been targeted at NRENs: ASREN, WACREN.

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

As for user communities, we had special actions with Librarians within the WACREN Conference in Adbijan (March), and in the Caribbean (April) with Health and Environment communities.

Future Work 4:

The synergies with TANDEM and SciGAia have been very intense within the reported period, where MAGIC managed all the visuals of the “Joint Workshop carried out in Adbijan in March 2017, and WP5 carried out training and panel sessions.

5. Deviations from Annex 1 (if applicable)

5.1 Tasks

In the case of work package 4, the task 4.1 committed 6 new countries with NRENum.NET across the world, and ideally one per region. In the amount of countries and regions, the work package team achieved the goal with 8 countries in 4 regions. Nevertheless, we shall notice that one of the goal was to have 3 of these implementations in the Asia-Pacific area where, counting Central Asia we have got to 2. This deviation is largely due to the fact that most Asian countries have complex decision making processes and there was not fully agreement in the need for NRENum.NET for the project time line. Further work in promoting and showing how easy is to implement NRENum.NET could overcome this barrier.

5.2 Use of resources

The following table shows the amount of resources spent up to April 2017 which amounts to €1,775,534 and is requesting reimbursement for €1,355,972.

Participant	(A) Direct personnel costs	(B) Other direct costs	(C) Direct costs of subcontracting	(F) Indirect costs (=0.25* (A+B+E))	(H) Total eligible costs (=A+B+C+D+F+ G)	(K) Requested Reimbursement
CLARA	372,052 €	105,256 €	23,883 €	€ 119,327	€ 620,518	620,328 €
GEANT Ltd.	8,069 €	5,343 €	0 €	€ 3,353	€ 16,765	16,494 €
GEANT Association	24,952 €	20,880 €	0 €	€ 11,458	€ 57,291	57,291 €
RNP	44,700 €	8,680 €	0 €	€ 13,345	€ 66,725	0 €
RENATA	22,292 €	2,624 €	0 €	€ 6,229	€ 31,145	31,145 €
REUNA	19,491 €	7,728 €	0 €	€ 6,805	€ 34,024	34,024 €
CEDIA	2,206 €	6,137 €	0 €	€ 2,086	€ 10,429	10,429 €
CUDI	189,196 €	15,459 €	0 €	€ 51,164	€ 255,819	0 €
UbuntuNet	68,306 €	24,304 €	0 €	€ 23,153	€ 115,763	114,967 €
WACREN	58,087 €	11,802 €	5,518 €	€ 17,472	€ 92,879	92,879 €
ASREN	101,325 €	11,687 €	0 €	€ 28,253	€ 141,265	95,547 €
CESNET	26,917 €	3,894 €	0 €	€ 7,703	€ 38,514	38,514 €
GRNET	81,066 €	13,035 €	0 €	€ 23,525	€ 117,626	117,626 €
SURFNET	3,372 €	0 €	0 €	€ 843	€ 4,216	0 €
CSIR(SANREN)	10,010 €	2,880 €	0 €	€ 3,222	€ 16,112	0 €
RENATER	48,543 €	6,572 €	0 €	€ 13,779	€ 68,893	68,893 €
NIIFI	14,125 €	4,696 €	0 €	€ 4,705	€ 23,526	23,526 €
CKLN	13,922 €	8,584 €	0 €	€ 5,626	€ 28,132	28,132 €
CAREN NOC	2,100 €	2,842 €	0 €	€ 1,236	€ 6,178	6,178 €
TEIN*CC	3,649 €	20,123 €	0 €	€ 5,943	€ 29,715	0 €
Total	€ 1,114,381	€ 282,525	€ 29,401	€ 349,227	€ 1,775,534	€ 1,355,972

The following problems/issues can be reported

DANTE and TERENA have become GEANT Limited & GÉANT Association Merging into one organisation, hence their contributions and expenses have to be summed up.

RENATA has gone through a change in management and a reorganisation of its team. Despite this fact they managed to catch up their work and reach 70% of their effort but did not manage to attend the main meetings, hence their travel budget remained largely unspent.

UbuntuNet suffered from a slow start. Despite this, they managed to catch up with their work, notably in WP5. Their use of resources attained 90% of the total. They made a very large effort in travelling for training and user communities workshops.

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. They have reached 80% of spending.

RENATER has gone through an internal reorganisation that has kept them away from more active participation, they increased their spending in Q7 and Q8, but could only reach 55% of spending.

NITC late start of the next CAREN phase which is now in work. In February 2017 they conducted the MAGIC training, while more training in synergy with NSRC was conducted in April 2017 jointly with the CAREN conference. They were not able to attend most meetings, hence they over spent in man power, but they reached only 19% expenditure in travelling.

NIIFI has merged into KIFU as of 1 September 2016 and due to this reorganisation and the associated staff shortage, the level of their contribution and their amount of expenses in the last two quarters (Q7 and Q8) have been somewhat lower than originally anticipated.

CKLN has ceased to exist as of September 30, 2016. RedCLARA took over the activities of CKLN to continue its work in the Caribbean after an Amendment was approved by the EC.

RedCLARA has increased its effort to cope with the needs of the project in order to support the WPs where man power was missing or extra effort was needed. Also additional travelling was needed to support the Caribbean development as well as the extra effort in Global User Communities Workshops.

In terms of manpower, the partners have spent a total of 308 PMs, i.e., 101% of the total manpower committed, albeit with small deviations between the partners, The following is the detail of PMs spent by partner:

	WP1	WP2	WP3	WP4	WP5	WP6	Total Person/ Months per Participant
CLARA	16.8	0.7	30.0	4.3	30.2	17.9	100.0
GEANT Ltd.	0.9	0.2	0.1	0.0	0.1	0.2	1.6
GEANT Associati	0.7	2.3	0.1	0.0	0.0	0.0	3.1
RNP	1.0	7.1	1.5	1.5	2.0	2.0	15.0
RENATA	0.9	0.0	0.0	10.0	0.0	0.0	10.9
REUNA	0.9	0.6	1.2	3.7	0.0	0.0	6.5
CEDIA	0.5	0.6	0.6	0.0	0.0	0.0	1.7
CUDI	5.1	29.4	8.7	11.9	6.2	6.9	68.2
UbuntuNet	1.1	2.4	0.1	0.0	10.7	3.2	17.4
WACREN	0.5	3.0	1.5	2.5	3.0	1.0	11.5
ASREN	1.0	14.5	1.2	1.8	5.5	4.1	28.1
CESNET	0.4	2.6	6.7	0.0	0.0	0.0	9.7
GRNET	0.6	3.8	9.4	0.0	0.5	0.5	14.9
SURFNET	0.2	0.0	0.2	0.0	0.0	0.0	0.3
CSIR(SANREN)	0.8	0.0	0.1	0.1	0.7	0.3	1.9
RENATER	1.7	0.8	5.4	0.4	0.0	0.1	8.5
NIIFI	0.6	0.1	0.2	0.6	1.5	0.1	3.1
CKLN	0.6	0.3	0.2	0.0	0.9	0.0	1.9
CAREN NOC	0.7	0.3	0.3	0.0	0.4	0.4	2.1
TEIN*CC	0.3	0.5	0.3	0.0	0.2	0.4	1.7
Total Person/Months	35.3	69.1	67.8	36.8	61.8	37.3	308.0

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