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Magic

Middleware for collaborative Applications
and Global virtual Communities

Deliverable 2.8 eduroam Implementation

Periodical Progress Report

MAGIC Deliverable: 2.8 -eduroam Implementation

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Abstract: After eduroam pilot phase, it is expected that NRENs Focal Points provided technical follow-ups in order to roll out into production state an eduroam infrastructure, using the same AAI user database (preferably). Besides infrastructure the NRENs have create all governance documentation and website, to be able to join the global eduroam. This deliverable describes this effort.



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For more information on MAGIC, its partners and contributors please see <http://www.magic-project.eu>.

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DELIVERABLE ROUTE

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1. EXECUTIVE SUMMARY

This document reviews the regional actions that guided eduroam implementation within countries that have joined MAGIC Project.

2. DOCUMENT AMENDMENT PROCEDURE

Requests for amendments to this document must be made to the author, Leandro Guimarães, WP 2 - RNP, Leandro.guimaraes@rnp.br, and copied to the Management of the MAGIC project.

3. GLOSSARY

EC	European Commission
EU	European Union
EU-LAC	Europe, Latin America and the Caribbean

4. INTRODUCTION

4.1. PURPOSE OF THE DOCUMENT

The purpose of this document is explain and detail, after eduroam pilot, the actions that all NREN Focal Points have executed in order to roll out into production state an eduroam infrastructure, using the same AAI user database (preferably). Besides infrastructure needed to support eduroam service, to join eduroam network, it is mandatory to follow a list of procedures to provide proper trustworth to all partners all over the world. To show this the NRENs must create governance documentation and

4.2. What has been done in eduroam within magic?

4.2.1. Face to face training experiences:

Mobility Federated Services and Nrenum.net

Date: July 8, 2015

Venue: Viña del Mar, Chile. Enjoy Conference Center

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

Federated Access and eduroam workshop in the Caribbean

Date: October 7 to 9, 2015

Venue: Jamaica Tertiary Education Commission, 14 Gibraltar Camp Way, Mona Campus, University



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of the West Indies, Jamaica

Attendees: 16 participants from 11 institutions and three Caribbean countries (Jamaica, Grenada, Dominican Republic) and one Latin American country (Mexico).

Workshop on Joining eduroam and Identity Federation

Date: September 8 to 10, 2015

Venue: Talal Abu-Ghazaleh University (TAGI-UNI), Amman, Jordan

Attendees: 13 participants representing five Arab countries: Morocco, Algeria, Lebanon, Palestine and Jordan.

Federated Applications (FedApps) Training session

Date: April 26 to 28, 2016

Venue: Dar es Salaam - as part of UbuntuNet Alliance's strategy for deployment of AAI (Authorization and Authentication Infrastructures) in the region.

Attendees: 22 engineers from 14 NRENs.

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.

Eduroam workshop in Tajikistan

Date: March 1 - 2, 2017

Venue: Tajik Technical University named after M.Osimi, 10 acad. Radjabov str., Dushanbe, Tajikistan

Attendees: 14 participants from 13 institutions of Tajikistan.

5. DEPLOYMENT WITHIN REGIONS

5.1. AFRICA

5.1.1. Mozambique

Since September 2016, Mozambican Academic Network (MoRENNet) has been working with the support of Brazilian National Research and Education Network (RNP) in an international cooperation project to implement an eduroam-roaming operator in Mozambique.

Last January just five months after starting the project, eduroam's main server in Mozambique started operating at a pilot stage. Late March it was officially accepted by the international *eduroam*.



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Where can I eduroam?

eduroam > Where can I eduroam?

Having started in Europe, eduroam has rapidly expanded throughout the research and education community and is now available in 89 territories worldwide and emerging pilot locations.



During this period, these were the performed activities:

Month	Performed Activities
September	Planning and schedule
October	Preparing and conducting online training
October	Policy writing
October	Web page development of the Mozambican federation
October	Drafting the technical specifications document
October	Writing the term of adhesion
November	Installation of the Operational System in the server
December	Configuration of the eduroam server
January	Elaboration of the XML eduroam file
January	Final configuration adjustments
March	eduroam statment signature
March	Acceptance of the eduroam internacional

As shown, most of the documentation activities were performed in October 2016. In November, the activities suffered a short interruption but resumed in December.

In general, it can be said that:

- September 2016 was remarkable for the project planning, including the preparation of the online training on eduroam;



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- b) October 2016 was remarkable for the online training and by the elaboration and publication of documents of formalization of the eduroam in Mozambique;
- c) November and December 2016 were remarkable for the installation and configuration of eduroam roaming server in Mozambique. And since the MoRENet analyst responsible for the activity was in Brazil for training, the last activity was performed together in person with RNP expert in Brasilia;
- d) In January 2017, some final adjustments were made to the eduroam server configuration. This activity arose as a result of unforeseen problems in the configuration of the server but they were solved with the support of eduroam international;
- e) In February 2017, the server was remotely monitored until the next month when the request to include the new roaming in the international eduroam was officially accepted.

Throughout this project, RNP could contribute to the implementation of eduroam in Mozambique not only with technical knowledge, but also with a document structure that can be checked on eduroam web page in Mozambique (in Portuguese):

<http://eduroam.morenet.ac.mz/index.php/pt/>

The exercise of adapting these documents to a different country ended up requiring RNP team to update and consequently improve some documents, thus contributing to the improvement of its own management processes. After six months of this cooperation project, RNP team is proud of its contribution to the development of services in the MoRENet. In addition to that, the procedures and knowledge in technology of the RNP were improved.

In addition to that, if RNP had to repeat the current experience, it would require less time now that the online training is ready and the experience of performing a "zero-point" configuration has already been exercised. However, given the technical difficulties encountered over this period, some improvements are recommended:

- a) Development of a standard online training on eduroam, which guaranteed the same level of knowledge for the new federations in the world;
- b) Designing a standard online server configuration training to help analysts in the new institution perform their technical procedures;
- c) Development of a program (or script or technical procedure) to report, such as a security audit, which eventually changed in a new server installed after the configuration, has been completed. This is a useful measure to quickly identify why the service has suddenly ceased to function, as it did in this project;
- d) Development of a program (or script or technical procedure) that informs the quality of the network connection between the institution that is installing the new federation and the



institution that is technically supporting the installation. This is an important step in enabling a "remote assisted support" to the local server configuration.

5.2. THE CARIBEEAN

Several activities were carried out as part of MAGIC's WP2: Platforms for Mobility and WP3: Cloud Provisioning and Groupware Standards to support of the following objectives in the Caribbean:

- Strengthen the regional technical infrastructure for eduroam
- Increase the number of deployments of eduroam
- Increase collaboration between scientific and academic groups in the Caribbean and the rest of the world
- Build capacity in the support, maintenance and administration of Colaboratorio

The details of the technical activities performed and outcomes are outlined in the sections that follow.

5.2.1. WP2 Activities

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 as 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).



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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 have 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.

Details regarding the training, the seminar registration, connection for those participating virtually visas is available at this page: <https://eventos.redclara.net/indico/event/794/>

5.3. THE ARAB REGION

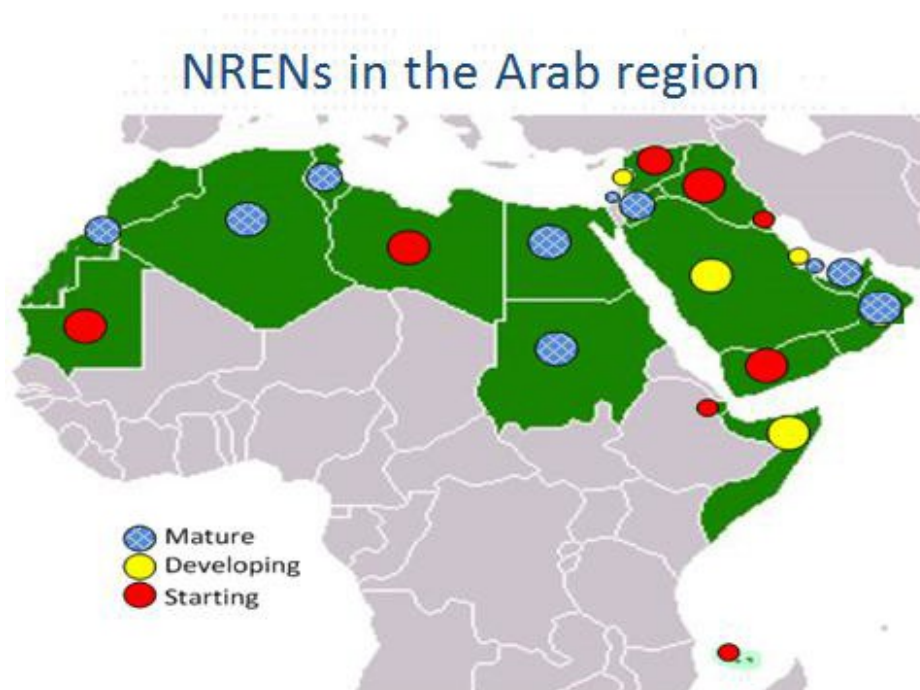
The Arab region consists of 22 Courtiers, 12 in Asia (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen) and 10 in Africa (Algeria, Comoros, Djibouti, Egypt, Libya, Mauritania, Morocco, Somalia, Sudan and Tunisia).



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In fact, not all Arab countries have National Research and Education Networks (NRENs) in place. The above map shows that 10 countries have mature NRENs, others are in the state developing NRENs and some minority are still in very early stages. The main reason for this is the conflicts and instability in the region especially in Libya, Syria, Yemen and Iraq and thus will not be possible to have any kind of eduroam activities there. However, ASREN is spending many efforts in these countries to promote the concept of NREN and to encourage universities to cooperate towards having some form of NRENs.

5.3.1. ASREN's Approach

ASREN decided to take the opportunity of the support of the MAGIC Projects and MAGIC partners to develop eduroam in the region. Our approach was based on the following:

- Promoting eduroam at all levels including decision makers, NRENs CEOs, NREN technical staff and users in the universities. Promotional material including brochures, documents and giveaways have been produced by ASREN and in cooperation with RedCLARA.
- Capacity building and technical support which was provided to the NREN teams through workshops, webinars, online material and technical support via phone or email or VCcalls.



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- ASREN also encouraged its NRENs by announcing awards and recognition of successful implementations during its annual conference every year. Each successful NREN in implementing eduroam received ASREN Trophy from ASREN Chairman and was also announced in the media.

5.3.2. Main Activities:

ASREN, and in cooperation with its MAGIC partners conducted the following activities towards eduroaming the region:

- I. Conferences: MAGIC Project and eduroam mentioned in all ASREN conferences, meetings and workshops:
 - ASREN annual conference e-AGE 2015, Casablanca 7-8 December 2015. A special session and a booth on MAGIC and eduroam.. The conference was served by eduroam. Lebanon and Morocco received ASREN Trophy for success on eduroam.
 - 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 Joining eduroam and Identity Federation: September 8 to 10, 2015, Amman, Jordan. The workshop was attended by 13 participants representing five Arab countries: Morocco, Algeria, Lebanon, Palestine and Jordan. The training was conducted by ASREN in cooperation with CESNet of the Czech Republic.
 - 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.



IV. Webinars and Conference Calls:

- A 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.

V. 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.

5.3.3. Main Achievements:

VI. Full eduroam implementation in:

- Morocco through its NREN (MARWAN), <http://eduroam.ma/index.php/en/>
- Algeria through its NREN (CERIST), <https://www.eduroam.arn.dz/>
- Lebanon through the American University in Beirut <http://www.aub.edu.lb/it/Documents/eduroam-IT-Services-20150415.pdf#search=eduroam>
- UAE by its NREN (Ankabut) <http://www.ankabut.ae/en/Pages/default.aspx>
- KSA, by KAUST University, <https://eduroam.kaust.edu.sa/Pages/Index.aspx>
- Qatar by Qatar University, <http://www.qu.edu.qa/>

VII. Pilots in advanced stages:

- Jordan
- Egypt
- Tunisia
- Oman

VIII. Starting:

- Paestine
- Sudan
- Kuwait
- Somalia



– Mauritania

5.3.4. Way Ahead:

ASREN has built a pool of technical capacities across its region on eduroam issues including technical, administrative and legal requirements which will be utilized by ASREN to provide support to new countries, NRENs and universities who want to join.

ASREN will continue its efforts to promote eduroam at all levels and will encourage and attract more countries to have a place in the eduroam map.

ASREN had a unique story to start eduroam in a country with no NREN by a leading university such as the American University in Beirut which started the eduroam in its campus and now other universities are following. ASREN is now working with Kuwait University which will hopefully lead to more universities to join.

5.4. COUNTRIES EDUROAMING:

In June 2015, when MAGIC started, there were 74 countries eduroaming and 13.390 hotspots, a year later, in June 2016, MAGIC and worldwide eduroam efforts changed those numbers into 77 countries and 17.937 hotspots (Georgia, Ukraine and Uruguay, were added in the MAGIC scope). In April 2017, eduroam counted with 89 countries.

eduroam in Africa: Since MAGIC started the eduroam status in Africa is growing, today there are 6 production deployments - Kenya, Morocco, Uganda, South Africa, Zambia, Algeria - and 10 Pilot deployments - Zimbabwe, Somalia, Ghana, Malawi, Nigeria, Senegal, Egypt, Sudan, Tanzania, Tunisia.

5.4.1. New Production Territories:

1. Sri Lanka
2. The Phillipines
3. Pakistan
4. Uruguay
5. United Arab Emirates
6. Ecuador
7. Mexico
8. Costa Rica
9. Colombia
10. Argentina



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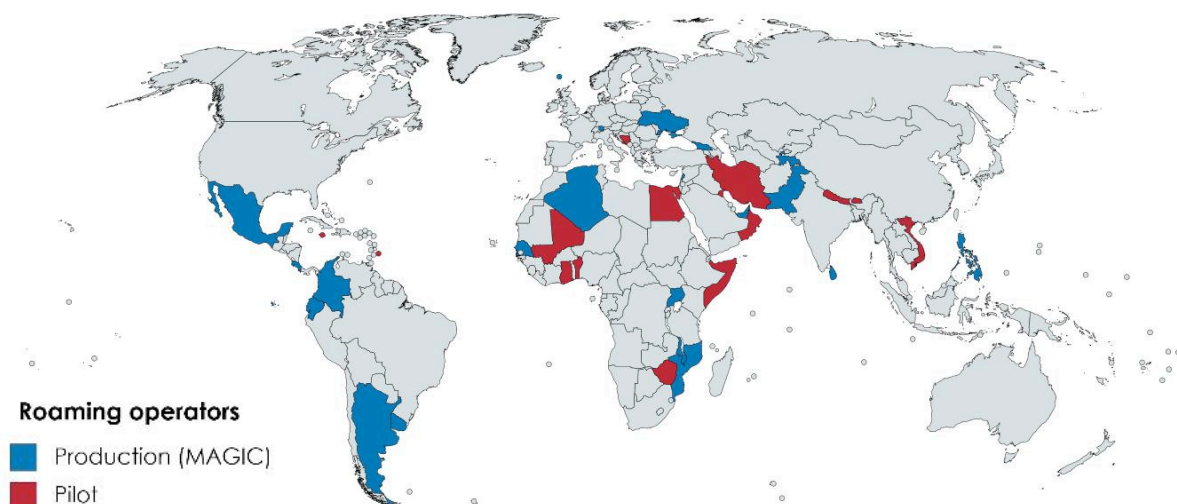
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11. Uganda
12. Lebanon
13. Algeria
14. Georgia
15. Ukraine
16. Senegal
17. Malawi
18. Mozambique
19. Tajikistan
20. Greenland
21. Faroe Islands
22. Liechtenstein

5.4.2. New Pilots:

1. Bosnia & Herzegovina
2. Vietnam
3. Bhutan
4. Nepal
5. Iran
6. Oman
7. Egypt
8. Kuwait
9. Jamaica
10. Barbados
11. Mali
12. Ghana
13. Somalia
14. Zimbabwe
15. Benin

Below are marked the countries that are eduroaming worldwide at: <https://www.eduroam.org/where/>.



Just remembering that membership of the European Confederation is within the scope of this group and not reported to the GeGC (Global eduroam Governance Committee). Same with the Latin American Confederation (CLATe).

So, as result of MAGIC project, there are 15 new pilots and 22 new territories - all supported by MAGIC with 4 in Europe, 6 in CLATe and 3 in combination with the XeAP project within TEIN*CC/TEIN/APAN/AARNet.

The actual eduroam world map is:



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6. CONCLUSION

In the beginning of MAGIC project, there were 74 roaming operators and 13.390 hotspots all over the world, now eduroam is available in 89 territories worldwide with more than 20.280 hotspots. This advance is result of many training sessions, speeches in conferences and in some regions even consulting. This shows that when a project is running with feasible goals it is possible to motivate partners to reach them. In the MAGIC project, although the goals were challengeable, the project team have motivated their partners in order to implement eduroam service in every continent.



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