

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



Magic

Middleware for collaborative Applications
and Global virtual Communities

Deliverable 2.7
AAI implementation

Periodical Progress Report

MAGIC Deliverable: 2.7 - AAI implementation

Document Full Name	D2.7 - AAI implementation
Date	04-05-2017
Activity	Platforms for mobility
Lead Partner	RNP
Document status	Final
Classification Attribute	Public
Document link	

Abstract: To have a successful AAI implementation, it is necessary that technical staff of the focal points provide governance and technical mentoring to NRENs or local institutions in order to speed up the local implementation. After AAI pilot phase, the NREN's focal points should have provided technical follow-ups in order to roll out into production state an AAI infrastructure, connecting at least to the NREN's user database. This document aims at reporting onr this effort.

Besides infrastructure, the NRENs have created all governance documentation and websites, in order to join eduGAIN in a pilot state



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MAGIC (Middleware for collaborative Applications and Global virtual Communities – Project number: 654225) is a project co-funded by the European Commission within the Horizon 2020 Programme (H2020), Directorate General for Communications Networks, Content and Technology - Infrastructure. MAGIC began on 1st May 2015 and will run for 24 months.

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

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DELIVERABLE ROUTE

	Name	Member/Activity	Date	Responsible
From	Leandro Guimarães	RNP – WP2	04/03/2016	RNP
Revised by	Gustavo Garcia	CLARA – WP2	12/05/2017	RNP
Revised by	Omo Oaiya	WACREN - WP2	15/05/2015	WACREN
Revised by	Almaz Bakenov	NITC – WP2	16/05/2015	NITC
Revised by	Yousef Torman	WP2 - ASREN	16/05/2017	ASREN
Revised by				
Revised by				
Approved by	Florencio Utreras	CLARA/Coordinator	24/05/2017	CLARA



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TABLE OF CONTENTS

COPYRIGHT NOTICE	3
DELIVERABLE ROUTE	4
1. Executive Summary	6
2. Document Amendment Procedure	6
3. Glossary	6
4. Introduction	6
4.1. Purpose of the Document	6
4.2. What has been done?	6
4.2.1. Face to face training experiences	6
4.2.2. On line training course	7
4.2.3. Creation and implementation of Federations	7
5. Deployment within Regions	8
5.1. Africa	8
5.1.1. Mozambique	8
5.2. Arab Region	12
5.2.1. New eduGAIN candidates	16
6. Conclusion	16



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1. EXECUTIVE SUMMARY

This document reviews the regional actions that guided identity federation 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 to explain and detail the work that has been done in all regions participants of MAGIC Project. In this deliverable it is detailed what was expected in providing technical and governance mentoring, by all focal points, to at least two NRENs per region participating in the project.

4.2. WHAT HAS BEEN DONE?

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.



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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 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.

4.2.2. On line training course:

On line Training Material on AAI Development for Staff

Available to everyone (<http://cursos.redclara.net/course/view.php?id=51>).

4.2.3. Creation and implementation of Federations

When MAGIC started there were 34 Federations in production and 22 in pilot in the world (June 2015), a year later (June 2016) the work carried out by MAGIC's WP2 has change these numbers into: 43 Federations in production and 18 in pilot (Zambia, Romania, Serbia, Macedonia, Bulgaria and so on). At the end of MAGIC project, eduGAIN had 48 federation in production with the eduGAIN Steering Group approval, to admit the South African Identity Federation (SAFIRE) as the first fully participating member from Africa.

The Arab region has been very active in the AAI implementation, since MAGIC started the situation within the Arab countries is the following: Successfully implemented: MARWAN (Morocco), ARN (Algeria); Pilot: AUB (Lebanon), JUNet (Jordan); Planning to implement in Palestine, Egypt





5. DEPLOYMENT WITHIN REGIONS

5.1. AFRICA

5.1.1. Mozambique

Concomitant implementation of an eduroam-roaming operator, the National research and education network of Mozambique (MoRENet) 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 scheduled to be completed in April 2017.

As applied to the eduroam initiative, in September 2016 it was wrote a document, which describes the objectives of the collaboration project, justification, main assumptions, hardware and network structure, work team, documentation to be elaborated and the initial implementation schedule of the project.

Currently, the Mozambican federation core is set in pilot phase, leaving only the configuration of the first identity provider (IdP), that is already under implementation and final adjustment. Once this activity is completed, the intention is to expand the Mozambican federation, named CAF-Moz, to its client institutions.



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Fig. 1: Federation of Mozambique on eduGAIN map

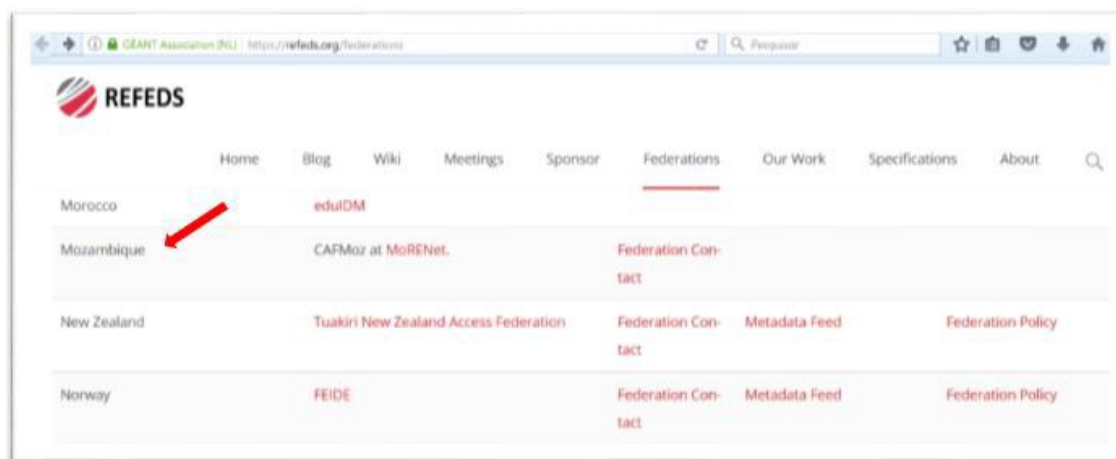


Fig. 2: Federation of Mozambique on REFEDS website

In roughly seven months of this international cooperation work between MoREN and RNP, these were the main activities carried out:



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Month	Performed Activities
September	Planning and schedule
September	Preparing and conducting online training
October	Definition of the name of the Mozambican federation (CAF-Moz)
October	Signing of the memorandum of understanding (MoU) of MAGIC Project
October	Writing Polycies
October	Writing the term of adhesion
October	Drafting of the technical specifications document
October	Writing the file "Metadata Registration Practice Statement"
November	Web page development of the Mozambican federation
November	Writing Polycies (version in English)
November	EduGAIN Policy Acceptance Signature
November	Inclusion of Caf-moz in REFEDS
November	Inclusion of Caf-moz in eduGAIN
November	Start up of federation core configuration
December	Review the federation core installation procedures
January	Installing the federation core
January	Elaboration of the federation XML file (Metadata feed)
January	Installing and Setting Test SP
March	Validation of the federation XML file in eduGAIN
March	Installation and Setting of the first IdP of the federation

As seen on this table, there was an initial stage of document planning and elaboration, which is necessary for the development of a federation. Then, the documents were available and the project was inserted in both REFEDS and eduGAIN. Since November, the implementation of the server has been at initial phase, leading to consequent reformulation of the procedures.

In general, it is important to emphasize that:

- September 2016 was a key milestone for the planning activity, thus it was included the preparation and the performance of an online training on the concepts related to an authentication and authorization federation;
- October 2016 was very important for the elaboration and the signature of documents related of formalization of the federation in Mozambique. Some of these documents are required by eduGAIN and REFEDS, while others were suggestions from RNP based on their service management experience in Brazil;
- November 2016, the documents prepared in the previous month were published on the website created specifically for Mozambican federation available at



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<http://cafmoz.morenet.ac.mz/index.php/en/>. In parallel, the installation and configuration of the core server of the new federation has been started;

- d) December 2016, the implementation of the federation in Mozambique had a pause because of the prioritization of the eduroam roaming server configuration. Meanwhile, however, RNP focused on reviewing its technical procedures in order to facilitate their use by the MoRENet team;
- e) January 2017, the configuration of the core server of the new federation restarted. Now, however, the configuration was performed by apply a revised and simplified procedure. Besides that, in this some month, a test service provider (SP) was installed in order to facilitate the verification of the operation of future federation clients;
- f) February 2017, the installation and setting of the first identity provider (IdP) began, however, it was interrupted due to vacations of the MoRENet team;
- g) March 2017, the last adjustments in the configuration of the first identity provider of CAF-Moz were carried out.

After March 2017, the international cooperation project between RNP and MoRENet - created specifically to facilitate the implementation of the federation and eduroam in Mozambique - ends. The following month of April will be devoted to the drafting of the project closure report with the respective indication of what has or not been achieved in relation to the initial planning.

Regarding what was originally planned; the only aspect that was not achieved within the timeframe in question was the implementation of identity providers in all three selected client institutions, such as what happened to eduroam roaming, although the MoRENet struggled to reverse this scenario in the last weeks of the project.

In spite of that, RNP considers the experience as quite positive as, among other things, some of the procedures, used to implement a new federation, could be updated. This exercise of reviewing and updating the procedures also contributed to updating the knowledge of the current team as well as making RNP better prepared for future technological cooperation experiences analogous to this one. The assurance of the results presented here was largely due to weekly project management meetings that helped maintaining a relatively steady pace of time deliveries and progress on the activity in question.

However, we must add another fundamental element to achieve the results: the dedication of the analysts involved in the cooperation. This is a point that must be highlighted because the MoRENet team support proved to be higher to what was originally planned. Thus, in addition to the weekly meetings, several technical meetings were held to monitor the implementation of technical procedures, as well as to review these procedures both to update them and to make them simpler. Sometimes, some procedures were replaced by a virtual machine image generated so that the



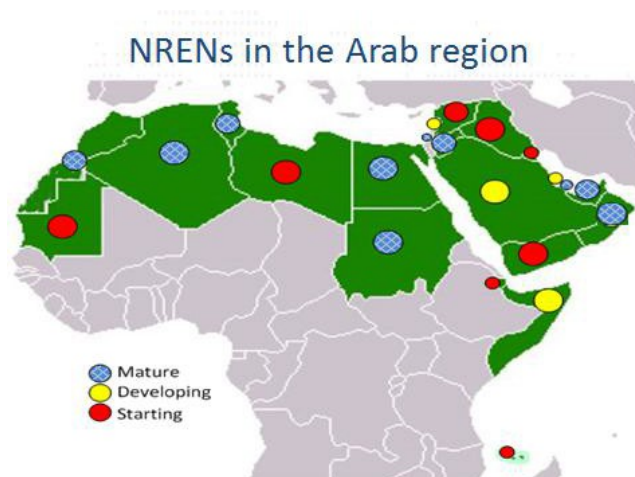
configuration, made in the RNP approval and testing environment could be replicated in the MoRENet infrastructure.

Additionally, considering these and other technical difficulties encountered in this activity, some improvements in the process as a whole are recommended. Some of these recommendations, by the way, are similar to those previously appointed in the roaming-eduroam implementation report:

- a) Development of a standard online training on federation, which guaranteed the same level of knowledge for the new federations in the world;
- b) Designing a standard online core server configuration and identity provider (IdP) 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. ARAB REGION

The Arab region consists of 22 Countries, 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 nor idp 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.

ASREN's Approach

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

- Promoting identity federation 'as an essential service' 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 VC calls.
- ASREN also encouraged its NRENs by announcing awards and recognition of successful implementations during its annual conference every year. Each successful NREN in implementing IdP received ASREN Trophy from ASREN Chairman and was also announced in the media.

Main Activities:

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

- I. Conferences: MAGIC Project, identity federation 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 federation and eduroam. Oman and Morocco received ASREN Trophy for success on IdP implementation.



- ASREN annual Conference e-AGE 2016, Beirut, 1-2 December 2016. a side roundtable was allocated for eduroam and idp discussion. Algeria was recognized for its success in federation startup.
- eduGAIN and eduroam used to be 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.

III. Webinars and Conference Calls:

- 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:

- IdP 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 the progress of IdP eduroam activities. It was also followed up during ASREN monthly VC meeting with its partners.



Main Achievements:

V. Successful implementation in:

- Morocco through its NREN (MARWAN), <http://www.educert.ma/> (implemented before MAGIC start but close cooperation took place with MAGIC project)
- Oman by the TRC, <https://www.trc.gov.om/portal/sec/portal/default/default> (before MAGIC start but there is cooperation with them).
- Algeria through its NREN (CERIST), <https://www.aai.arn.dz/> implemented during the MAGIC project

VI. Pilots in advanced stages:

- Lebanon through the American University in Beirut
- ASREN IdP, to be announced very soon.

VII. Starting:

- Jordan
- Egypt

Way Ahead:

ASREN has built a pool of technical capacities across its region on identity federation 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 identity federation at all levels and will encourage and attract more countries to implement IdP and to join eduGAIN.

ASREN will count on the support of GEANT and other partners to further support the developments and implementations of federation services in the region.

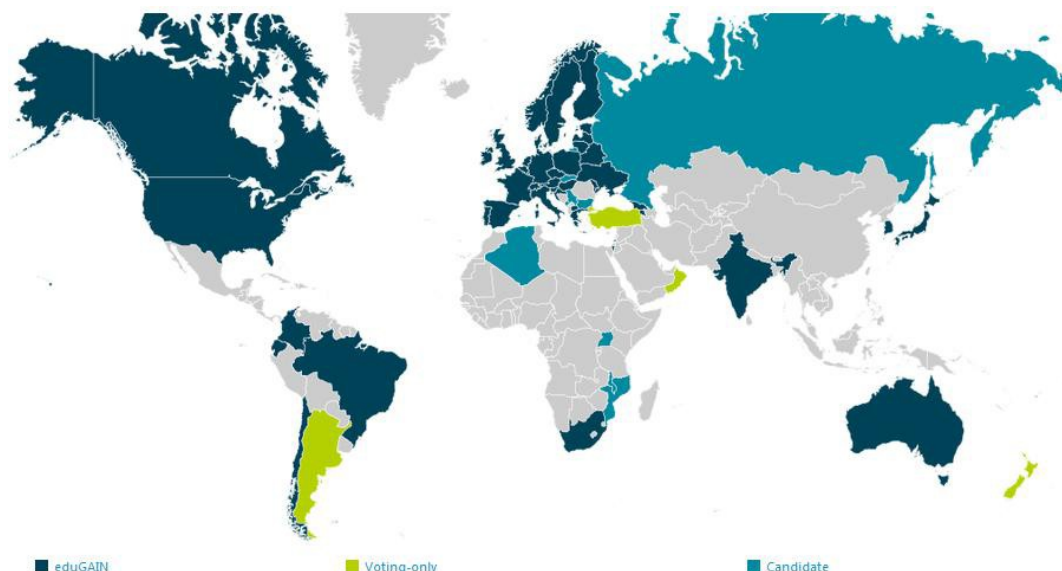
Below are marked the countries in eduGAIN worldwide at: <https://technical.edugain.org/status>



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5.2.1. New eduGAIN candidates

As have experienced in ELCIRA Project, after MAGIC Project conclusion, all focal points and Regional and national research and educational networks will keep pushing their customer in order to implement and use all identity federation benefits. This represents that specific project helps to create an effort to improve, in a very short time, the maturity level in some areas, in this case, Identity Management. At the end of MAGIC Project there are 10 pilot federations: **Algeria** – ARNaai, **Bulgaria** – BIF, **Malawi** – MAREN, **Montenegro** – eduID, **Mozambique** – CAFMoz, **Russia** – φEDUrus, **Serbia** – iAMRES, **Singapore** - Singapore Access Federation – SGAF, **Slovakia** – safelD and **Uganda** - RIF

6. CONCLUSION

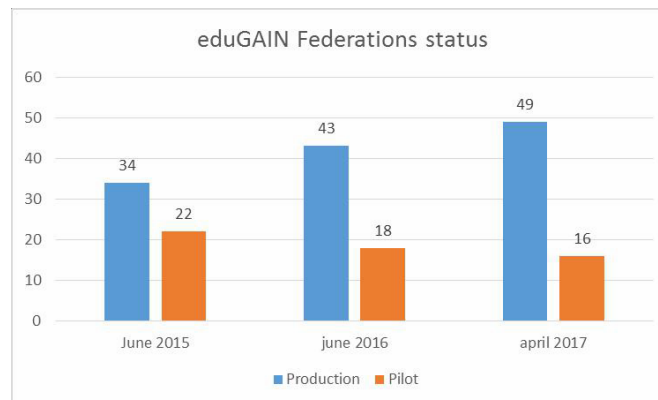
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This advance is result of many training sessions, speeches in conferences and in some regions even consulting. This shows that when a project is running with feasible goals it is possible to motivate partners to reach them. In the MAGIC project, although the goals were challengeable, the project team have motivated their partners in order to implement AAI, infrastructure and governance. This represents that specific project helps to create an effort to improve, in a very short time, the maturity level in some areas, in this case, Identity Management.



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