# Horizon 2020

# Call: H2020-INFRASUPP-2014-2

# Topic: INFRASUPP-7-2014

# Type of action: CSA

# Proposal number: 654225

# Proposal acronym: MAGIC

## Table of contents



### *How to fill in the forms*

The administrative forms must be filled in for each proposal using the templates available in the submission system. Some data fields in the administrative forms are pre-filled based on the previous steps in the submission wizard.

*Proposal ID* **654225** *Acronym* **MAGIC**

# 1 - General information

Topic INFRASUPP-7-2014 Type of action CSA

Call identifier H2020-INFRASUPP-2014-2 Acronym MAGIC

Proposal title* Middleware for collaborative Applications and Global vIrtual Communities

*Note that for technical reasons, the following characters are not accepted in the Proposal Title and will be removed: < > " &*

Duration in months *24*

Fixed keyword 1 *International cooperation* Add

Free keywords *eduroam, eduGAIN, Cloud computing, collaboration, virtual communities,*

## Abstract

*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. More specifically, the project specific goals are:*
*-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.*
*-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*
*-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.*
*-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.*

Remaining characters 224

Has this proposal (or a very similar one) been submitted in the past 2 years in response to a call for proposals under the 7th Framework Programme, Horizon 2020 or any other EU programme(s)? ○ Yes ◉ No

*Proposal ID* **654225** *Acronym* **MAGIC**

## Declarations

| | |
|---|---|
| 1) The coordinator declares to have the explicit consent of all applicants on their participation and on the content of this proposal. | ☒ |
| 2) The information contained in this proposal is correct and complete. | ☒ |
| 3) This proposal complies with ethical principles (including the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct). | ☒ |

4) The coordinator confirms:

| | |
|---|---|
| - to have carried out the self-check of the financial capacity of the organisation on https://ec.europa.eu/research/participants/portal4/desktop/en/organisations/lfv.html. Where the result was "weak" or "insufficient", the coordinator confirms being aware of the measures that may be imposed in accordance with the H2020 Grants Manual (Chapter on Financial capacity check); or | ☒ |
| - is exempt from the financial capacity check being a public body including international organisations, higher or secondary education establishment or a legal entity, whose viability is guaranteed by a Member State or associated country, as defined in the H2020 Grants Manual (Chapter on Financial capacity check); or | ☐ |
| - as sole participant in the proposal is exempt from the financial capacity check. | ☐ |

5) The coordinator hereby declares that each applicant has confirmed:

| | |
|---|---|
| - they are fully eligible in accordance with the criteria set out in the specific call for proposals; and | ☒ |
| - they have the financial and operational capacity to carry out the proposed action. | ☒ |

The coordinator is only responsible for the correctness of the information relating to his/her own organisation. Each applicant remains responsible for the correctness of the information related to him and declared above. Where the proposal to be retained for EU funding, the coordinator and each beneficiary applicant will be required to present a formal declaration in this respect.

According to Article 131 of the Financial Regulation of 25 October 2012 on the financial rules applicable to the general budget of the Union (Official Journal L 298 of 26.10.2012, p. 1) and Article 145 of its Rules of Application (Official Journal L 362, 31.12.2012, p.1) applicants found guilty of misrepresentation may be subject to administrative and financial penalties under certain conditions.

**Personal data protection**

Your reply to the grant application will involve the recording and processing of personal data (such as your name, address and CV), which will be processed pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Unless indicated otherwise, your replies to the questions in this form and any personal data requested are required to assess your grant application in accordance with the specifications of the call for proposals and will be processed solely for that purpose. Details concerning the processing of your personal data are available on the privacy statement. Applicants may lodge a complaint about the processing of their personal data with the European Data Protection Supervisor at any time.

Your personal data may be registered in the Early Warning System (EWS) only or both in the EWS and Central Exclusion Database (CED) by the Accounting Officer of the Commission, should you be in one of the situations mentioned in:
-the Commission Decision 2008/969 of 16.12.2008 on the Early Warning System (for more information see the Privacy Statement), or
-the Commission Regulation 2008/1302 of 17.12.2008 on the Central Exclusion Database (for more information see the Privacy Statement) .

*Proposal ID* **654225** *Acronym* **MAGIC**

# 2 - Administrative data of participating organisations

| ***PIC*** | ***Legal name*** |
|---|---|
| *999646208* | *COOPERACION LATINOAMERICANA DE REDES AVANZADAS* |

## *Short name: CLARA*

## *Address of the organisation*

Street RAMBLA REPUBLICA DE MEXICO 6125

Town MONTEVIDEO

Postcode 11400

Country Uruguay

Webpage http://www.redclara.net

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Executive Office |
| Street | Avda. del Parque 4680A Of.108. |
| Town | Huechuraba. Santiago. |
| Postcode | 8586044 |
| Country | Chile |

☐ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. | Sex: (•) Male ( ) Female

First name: **Florencio** | Last name: **I. utreras**

E-Mail: **florencio.utreras@redclara.net**

Position in org.: Executive Director

Department: Executive Secretariat

Street: Avda. del Parque 4680A. Huechuraba. | [ ] Same as organisation address

Town: Santiago | Post code: 8580644

Country: Chile

Website: http://www.redclara.net

Phone: +56225848618 | Phone 2: +56985298007 | Fax: +56225848618501

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999740589* | *DELIVERY OF ADVANCED NETWORK TECHNOLOGY TO EUROPE LIMITED* |

## *Short name: DANTE*

## *Address of the organisation*

Street 9400 GARSINGTON ROAD, OXFORD BUSINE

Town OXFORD

Postcode OX4 2HN

Country United Kingdom

Webpage

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... no
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | International Relations and Communication |
| Street | City House, 126-130 Hills Road |
| Town | Cambridge |
| Postcode | CB2 1PQ |
| Country | United Kingdom |

☐ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Thomas**

Last name: **Fryer**

E-Mail: **tom.fryer@dante.net**

Position in org.: Senior International Relations Officer

Department: International Relations & Communication

Street: City House, 126-130 Hills Road

[ ] Same as organisation address

Town: Cambridge

Post code: CB2 1PQ

Country: United Kingdom

Website: www.dante.net

Phone: +441223371335

Phone 2: *+xxx xxxxxxxxx*

Fax: *+xxx xxxxxxxxx*

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999579278* | *TRANS-EUROPEAN RESEARCH AND EDUCATION NETWORKING ASSOCIATION* |

*Short name: TERENA*

*Address of the organisation*

Street SINGEL 468 D

Town AMSTERDAM

Postcode 1017 AW

Country Netherlands

Webpage www.terena.org

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... yes
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 72 - Computer & related activities

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Technical Programme |
| Street | SINGEL 468 D |
| Town | AMSTERDAM |
| Postcode | 1017 AW |
| Country | Netherlands |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Brook**

Last name: **Schofield**

E-Mail: **schofield@terena.org**

Position in org.: Project Development Officer

Department: Technical Programme

Street: SINGEL 468 D

☒ Same as organisation address

Town: AMSTERDAM

Post code: 1017 AW

Country: Netherlands

Website: http://www.terena.org/

Phone: +3125304488

Phone 2: +31651553991

Fax: +3125304499

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999582964* | *REDE NACIONAL DE ENSINO E PESQUISA* |

*Short name: RNP*

*Address of the organisation*

Street RUA LAURO MUELLER 116 SALA 3902, BOTA

Town RIO DE JANEIRO

Postcode 22290-906

Country Brazil

Webpage

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Services and Solutions Directorate |
| Street | Rua Lauro Muller, 116 sala 1103 Botafogo |
| Town | Rio de Janeiro |
| Postcode | 22290-906 |
| Country | Brazil |

☐ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Antonio Carlos**

Last name: **Fernandes Nunes**

E-Mail: **antonio@rnp.br**

Position in org.: Service Management Deputy Director

Department: Services and Solutions Directorate

Street: SAS, quadra 5, lote 6, bloco H, 7o andar

[ ] Same as organisation address

Town: Brasília

Post code: 70070-914

Country: Brazil

Website: http://www.rnp.br

Phone: +556132434300

Phone 2: +556181829200

Fax: +556132265303

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *958404427* | *CORPORACION RED NACIONAL ACADEMICA DE TECNOLOGIA AVANZADA* |

*Short name: RENATA*

*Address of the organisation*

Street CARRERA 18 - OFICINA 201 (Edificio Ofilago)

Town BOGOTA

Postcode -

Country Colombia

Webpage www.renata.edu.co

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code - Not applicable

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | SERVICES MANAGEMENT OF TI |
| Street | CARRERA 18 - OFICINA 201 (Edificio Ofil |
| Town | BOGOTA |
| Postcode | - |
| Country | Colombia |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|
| Controls | COOPERACION LATINOAMERICANA DE REDES AVANZADAS | |

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Lucas**

Last name: **Giraldo**

E-Mail: **direccion@renata.edu.co**

Position in org.: CEO - Chief Executive Officer

Department: Executive Office

Street: CARRERA 18 - OFICINA 201 (Edificio Ofilago) 79/47

☒ Same as organisation address

Town: BOGOTA

Post code: -

Country: Colombia

Website: www.renata.edu.co

Phone: 5715302604

Phone 2: +5713173644548

Fax: +xxx xxxxxxxxx

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999608669* | *CORPORACION RED UNIVERSITARIA NACIONAL* |

*Short name: REUNA*

*Address of the organisation*

Street CANADA 239 PROVIDENCIA

Town SANTIAGO

Postcode 6640806

Country Chile

Webpage

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code - Not applicable

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Project Management Office |
| Street | CANADA 239 PROVIDENCIA |
| Town | SANTIAGO |
| Postcode | 6640806 |
| Country | Chile |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs

Sex: ○ Male ◉ Female

First name: **Paola**

Last name: **Arellano**

E-Mail: **parellan@reuna.cl**

Position in org.: Executive Director

Department: Executive Office

Street: CANADA 239 PROVIDENCIA

☒ Same as organisation address

Town: SANTIAGO

Post code: 6640806

Country: Chile

Website: http://www.reuna.cl

Phone: +56223370340

Phone 2: *+xxx xxxxxxxxx*

Fax: *+xxx xxxxxxxxx*

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *995818006* | *Consorcio Ecuatoriano para el Desarrollo de Internet Avanzado* |

## *Short name: CEDIA*

## *Address of the organisation*

Street Av. 12 de Abril y Agustín Cueva - Univ de Cuen

Town Cuenca

Postcode

Country Ecuador

Webpage www.cedia.org.ec

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 61 -

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Technical Department |
| Street | Av. 12 de Abril y Agustín Cueva - Univ d |
| Town | Cuenca |
| Postcode | |
| Country | Ecuador |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. Sex: (•) Male ( ) Female

First name: **Juan Pablo** Last name: **Carvallo**

E-Mail: **jpcarvallo@cedia.org.ec**

Position in org.: Executive Director

Department: *Please indicate the department of the Contact Point above in the organisation*

Street: Av. 12 de Abril y Agustín Cueva - Univ de Cuenca s/n ☒ Same as organisation address

Town: Cuenca Post code:

Country: Ecuador

Website: www.cedia.org.ec

Phone: +59374051000 Phone 2: +593990447559 Fax: *+xxx xxxxxxxxx*

## *Other contact persons*

| ***First Name*** | ***Last Name*** | ***E-mail*** | ***Phone*** |
|---|---|---|---|
| Claudio | Chacón | claudio.chacon@cedia.org.ec | +593993790347 |

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *996106096* | *Corporacion Universitaria para el Desarrollo de Internet, A.C* |

## *Short name: CUDI*

## *Address of the organisation*

Street PARRAL Col Conesa 32

Town Cuauhtemoc

Postcode 06140

Country Mexico

Webpage www.cudi.edu.mx

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 61 -

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | COORDINACION DE ASUNTOS INTERNACIONALES |
| Street | PARRAL Col Conesa 32 |
| Town | Cuauhtemoc |
| Postcode | 06140 |
| Country | Mexico |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mrs

Sex: ○ Male ◉ Female

First name: **Salma**

Last name: **Jalife**

E-Mail: **salmajalife@cudi.edu.mx**

Position in org.: COORDINADORA ASUNTOS INTERNACIONALES

Department: COORDINACION ASUNTOS INTERNACIONALES

Street: PARRAL Col Conesa 32

☒ Same as organisation address

Town: Cuauhtemoc

Post code: 06140

Country: Mexico

Website: www.cudi.edu.mx

Phone: +525552113060

Phone 2: *+xxx xxxxxxxxx*

Fax: *+xxx xxxxxxxxx*

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999662213* | *THE UBUNTUNET ALLIANCE FOR RESEARCH AND EDUCATION NETWORKING* |

*Short name: UBUNTUNET*

*Address of the organisation*

Street SINGEL 468 D

Town AMSTERDAM

Postcode 1017 AW

Country Netherlands

Webpage

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... no
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Executive Office |
| Street | SINGEL 468 D |
| Town | AMSTERDAM |
| Postcode | 1017 AW |
| Country | Netherlands |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr. | Sex: (•) Male ( ) Female

First name: **Francis** | Last name: **Tusubira**

E-Mail: **ceo@ubuntunet.net**

Position in org.: CEO

Department: Executive Office

Street: Off Paul Kagame Road, HB House, Block C | [ ] Same as organisation address

Town: Lilongwe | Post code: 2550

Country: Malawi

Website: http://www.ubuntunet.net/

Phone: +265 1 754 535 | Phone 2: *+xxx xxxxxxxxx* | Fax: *+xxx xxxxxxxxx*

## *Other contact persons*

| ***First Name*** | ***Last Name*** | ***E-mail*** | ***Phone*** |
|---|---|---|---|
| Tiwonge | Banda | tiwonge.banda@ubuntunet.net | +2651754535 |

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *958122448* | *West and Central African Research and Education Network* |

*Short name: WACREN*

*Address of the organisation*

Street Aviation Road Extension 11

Town Accra

Postcode 5744

Country Ghana

Webpage www.wacren.net

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code - Not applicable

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Executive Office |
| Street | Aviation Road Extension 11 |
| Town | Accra |
| Postcode | 5744 |
| Country | Ghana |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr.

Sex: (•) Male ( ) Female

First name: **Boubakar**

Last name: **Barry**

E-Mail: **boubakar.barry@wacren.net**

Position in org.: Chief Executive Officer

Department: *Please indicate the department of the Contact Point above in the organisation*

Street: Aviation Road Extension 11

☒ Same as organisation address

Town: Accra

Post code: 5744

Country: Ghana

Website: www.wacren.net

Phone: +233246682059

Phone 2: +221776390393

Fax: +221338251909

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *963010472* | *ARAB STATES RESEARCH AND EDUCATION NETWORK ASREN GEMEINNUTZIGE GMBH* |

*Short name: ASREN*

*Address of the organisation*

Street GOETHESTRASSE 7

Town DUSSELDORF

Postcode 40237

Country Germany

Webpage www.ASRENOrg.net

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 61 -

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Executive Office |
| Street | GOETHESTRASSE 7 |
| Town | DUSSELDORF |
| Postcode | 40237 |
| Country | Germany |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Yousef**

Last name: **Torman**

E-Mail: **torman@asrenorg.net**

Position in org.: Managing Director

Department: *Please indicate the department of the Contact Point above in the organisation*

Street: GOETHESTRASSE 7

☒ Same as organisation address

Town: DUSSELDORF

Post code: 40237

Country: Germany

Website: www.asrenorg.net

Phone: +962779907900

Phone 2: +962779907900

Fax: *+xxx xxxxxxxxx*

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999589463* | *CESNET, ZAJMOVE SDRUZENI PRAVNICKYCH OSOB* |

## *Short name: CESNET*

## *Address of the organisation*

Street ZIKOVA 4

Town PRAHA 6

Postcode 160 00

Country Czech Republic

Webpage http://www.cesnet.cz

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... yes

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 721 -

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Network Identity Department |
| Street | ZIKOVA 4 |
| Town | PRAHA 6 |
| Postcode | 160 00 |
| Country | Czech Republic |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. | Sex: (•) Male ( ) Female

First name: **Michal** | Last name: **Prochazka**

E-Mail: **michalp@ics.muni.cz**

Position in org.: Researcher

Department: Network Identity Department

Street: ZIKOVA 4 | ☒ Same as organisation address

Town: PRAHA 6 | Post code: 160 00

Country: Czech Republic

Website: www.cesnet.cz

Phone: +420549496141 | Phone 2: *+xxx xxxxxxxxx* | Fax: *+xxx xxxxxxxxx*

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999937887* | *GREEK RESEARCH AND TECHNOLOGY NETWORK S.A.* |

## *Short name: GRNET*

## *Address of the organisation*

Street MESOGEION AV. 56

Town ATHINA

Postcode 11527

Country Greece

Webpage http://www.grnet.gr

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... no
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code - Not applicable

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Technical |
| Street | MESOGEION AV. 56 |
| Town | ATHINA |
| Postcode | 11527 |
| Country | Greece |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Christos**

Last name: **Kanellopoulos**

E-Mail: **skanct@admin.grnet.gr**

Position in org.: Project Manager

Department: Technical

Street: MESOGEION AV. 56

☒ Same as organisation address

Town: ATHINA

Post code: 11527

Country: Greece

Website: http://www.grnet.gr

Phone: +302107474274

Phone 2: +302107471137

Fax: +302107474490

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *998617426* | *SURFnet bv* |

*Short name: SURFnet*

*Address of the organisation*

Street Radboudkwartier 273

Town Utrecht

Postcode 3511 CK

Country Netherlands

Webpage www.surfnet.nl

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... no
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 61 -

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Collaboration, Infrastructure & Services |
| Street | Radboudkwartier 273 |
| Town | Utrecht |
| Postcode | 3511 CK |
| Country | Netherlands |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. Sex: (•) Male ( ) Female

First name: **Frans** Last name: **Ward**

E-Mail: **frans.ward@surfnet.nl**

Position in org.: Senior Technical Product Manager

Department: Collaboration, Infrastructure & Services

Street: Radboudkwartier 273 ☒ Same as organisation address

Town: Utrecht Post code: 3511 CK

Country: Netherlands

Website: http://www.surfnet.nl/

Phone: +31302305305 Phone 2: +31622803444 Fax: +31 302305329

## *Other contact persons*

| ***First Name*** | ***Last Name*** | ***E-mail*** | ***Phone*** |
|---|---|---|---|
| Andres | Steijaert | andres.steijaert@surfnet.nl | |

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999646693* | *COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH* |

## *Short name: CSIR*

## *Address of the organisation*

Street Meiring Naude Road, Brummeria 46

Town PRETORIA

Postcode 0001

Country South Africa

Webpage www.csir.co.za

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... yes
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... yes
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code - Not applicable

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | South African National Research Network (SANReN) |
| Street | Meiring Naude Road, Brummeria 46 |
| Town | PRETORIA |
| Postcode | 0001 |
| Country | South Africa |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.


Title: Mr.

Sex: (•) Male ( ) Female

First name: **Leon**

Last name: **Staphorst**

E-Mail: **lstaphorst@csir.co.za**

Position in org.: Competency Area Manager

Department: South African National Research Network (SANReN)

Street: Meiring Naude Road, Brummeria 46

☒ Same as organisation address

Town: PRETORIA

Post code: 0001

Country: South Africa

Website: www.csir.co.za

Phone: +27128413236

Phone 2: +27828571135

Fax: +27128414223

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999660758* | *GROUPEMENT D INTERET PUBLIC POUR LERESEAU NATIONAL DE TELECOMMUNICATIONS P* |

## *Short name: RENATER*

## *Address of the organisation*

Street RUE DAVIEL 23-25

Town PARIS

Postcode 75013

Country France

Webpage www.renater.fr

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... yes

Non-profit ..... yes

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code 721 -

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Innovation and Experimental Development |
| Street | RUE DAVIEL 23-25 |
| Town | PARIS |
| Postcode | 75013 |
| Country | France |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Jean Francois**

Last name: **Guezou**

E-Mail: **jean-francois.guezou@renater.fr**

Position in org.: Innovation and experimental development responsible

Department: Innovation and experimental development department

Street: Bat 12D, 263 avenue du Général Leclerc

[ ] Same as organisation address

Town: RENNES

Post code: 35000

Country: France

Website: http://www.renater.fr

Phone: +33223235402

Phone 2: +33673294346

Fax: +xxx xxxxxxxxx

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *999657169* | *NEMZETI INFORMACIOS INFRASTRUKTURA FEJLESZTESI IRODA* |

*Short name: NIIFI*

*Address of the organisation*

Street VICTOR HUGO UTCA 18/-22

Town BUDAPEST

Postcode 1132

Country Hungary

Webpage

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... yes
Non-profit ..... yes
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Network Development + Application Development and Operation |
| Street | VICTOR HUGO UTCA 18/-22 |
| Town | BUDAPEST |
| Postcode | 1132 |
| Country | Hungary |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Dr.

Sex: (•) Male ( ) Female

First name: **Lajos**

Last name: **Balint**

E-Mail: **lajos.balint@niif.hu**

Position in org.: Director of International Relations

Department: *Please indicate the department of the Contact Point above in the organisation*

Street: VICTOR HUGO UTCA 18/-22

☒ Same as organisation address

Town: BUDAPEST

Post code: 1132

Country: Hungary

Website: http://www.niif.hu

Phone: +36309540387

Phone 2: 3614503060

Fax: +3613506750

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *936819502* | *Caribbean Knowledge & Learning Network* |

*Short name: CKLN*

*Address of the organisation*

Street The Mutual/Trans-Nemwil Office Complex, The

Town St.George's

Postcode 00005

Country Grenada

Webpage www.ckln.org

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no
Non-profit ..... no
International organisation ..... no
International organisation of European interest ..... no
Secondary or Higher education establishment ..... no
Research organisation ..... no
Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Network Engineering & Operations |
| Street | The Mutual/Trans-Nemwil Office Complex, |
| Town | St.George's |
| Postcode | 00005 |
| Country | Grenada |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Eriko**

Last name: **Porto**

E-Mail: **eriko.porto@ckln.org**

Position in org.: Technical Manager

Department: Network Engineering & Operations

Street: The Mutual/Trans-Nemwil Office Complex, The Villa

☒ Same as organisation address

Town: St.George's

Post code: 00005

Country: Grenada

Website: http://www.ckln.org/home/

Phone: +1473 4396396

Phone 2: *+xxx xxxxxxxxx*

Fax: +1473 4396419

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *936724442* | *National Information Technology Center* |

*Short name: National Information Technology Center*

*Address of the organisation*

Street 265a, Chui Avenue

Town Bishkek

Postcode 720071

Country Kyrgyzstan

Webpage www.it.kg

*Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | CAREN-NOC |
| Street | 265a, Chui Avenue |
| Town | Bishkek |
| Postcode | 720071 |
| Country | Kyrgyzstan |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr.

Sex: (•) Male ( ) Female

First name: **Almaz**

Last name: **Bakenov**

E-Mail: **director@it.kg**

Position in org.: Director

Department: *Please indicate the department of the Contact Point above in the organisation*

Street: 265a, Chui Avenue

☒ Same as organisation address

Town: Bishkek

Post code: 720071

Country: Kyrgyzstan

Website: www.it.kg

Phone: +996312900153

Phone 2: +996312900151

Fax: +996312900154

*Proposal ID* **654225** *Acronym* **MAGIC**

| ***PIC*** | ***Legal name*** |
|---|---|
| *936816689* | *TEIN*CC* |

## *Short name: TEIN program*

## *Address of the organisation*

Street A-708, DMC High-Tech Industry Center, Sangam

Town Seoul

Postcode 121-912

Country Korea (Republic of)

Webpage www.teincc.org

## *Legal Status of your organisation*

Research and Innovation legal statuses

Public body ..... no

Non-profit ..... no

International organisation ..... no

International organisation of European interest ..... no

Secondary or Higher education establishment ..... no

Research organisation ..... no

Small and Medium-sized Enterprises (SMEs) ..... no

Legal person ..... yes

Nace code

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Department(s) carrying out the proposed work*

**Department 1**

| | |
|---|---|
| Department name | Technical Management Team |
| Street | A-708, DMC High-Tech Industry Center, Sa |
| Town | Seoul |
| Postcode | 121-912 |
| Country | Korea (Republic of) |

☒ Same as organisation address

## *Dependencies with other proposal participants*

| ***Character of dependence*** | ***Participant*** | |
|---|---|---|

*Proposal ID* **654225** *Acronym* **MAGIC**

## *Person in charge of the proposal*

The name and e-mail of contact persons are read-only in the administrative form, only additional details can be edited here. To give access rights and basic contact details of contact persons, please go back to Step 4 of the submission wizard and save the changes.

Title: Mr. | Sex: (•) Male ( ) Female

First name: **Patch** | Last name: **Lee**

E-Mail: **patch.lee@teincc.org**

Position in org.: Technical Director

Department: Technical Management Team

Street: A-708, DMC High-Tech Industry Center, Sangam-dong, Mapo-gu | ☒ Same as organisation address

Town: Seoul | Post code: 121-912

Country: Korea (Republic of)

Website: www.teincc.org

Phone: +82231537348 | Phone 2: +821068087326 | Fax: +82231537360

*Proposal ID* **654225** *Acronym* **MAGIC**

# 3 - Budget for the proposal

| Participant | Country | (A) Direct personnel costs/€ | (B) Other direct costs/€ | (C) Direct costs of sub-contracting/€ | (D) Direct costs of providing financial support to third parties/€ | (E) Costs of inkind contributions not used on the beneficiary's premises/€ | (F) Indirect Costs / € (=0.25(A+B-E)) | (G) Special unit costs covering direct & indirect costs / € | (H) Total estimated eligible costs / € (=A+B+C+D+F+G) | (I) Reimburse-ment rate (%) | (J) Max. grant / € (=H*I) | (K) Requested grant / € |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLARA | UY | 316 300 | 61 700 | 50 000 | 0 | 0 | 94 500 | 0 | 522 500 | 100 | 522 500 | 492 250 |
| DANTE | UK | 11 200 | 17 250 | 0 | 0 | 0 | 7 113 | 0 | 35 563 | 100 | 35 563 | 35 563 |
| TERENA | NL | 19 200 | 20 150 | 0 | 0 | 0 | 9 838 | 0 | 49 188 | 100 | 49 188 | 49 188 |
| RNP | BR | 44 700 | 28 360 | 0 | 0 | 0 | 18 265 | 0 | 91 325 | 100 | 91 325 | 0 |
| RENATA | CO | 25 900 | 10 410 | 0 | 0 | 0 | 9 078 | 0 | 45 388 | 100 | 45 388 | 38 388 |
| REUNA | CL | 20 590 | 7 120 | 0 | 0 | 0 | 6 928 | 0 | 34 638 | 100 | 34 638 | 34 638 |
| CEDIA | EC | 2 208 | 7 120 | 0 | 0 | 0 | 2 332 | 0 | 11 660 | 100 | 11 660 | 10 410 |
| CUDI | MX | 153 750 | 7 120 | 0 | 0 | 0 | 40 218 | 0 | 201 088 | 100 | 201 088 | 0 |
| UBUNTUNET | NL | 82 250 | 20 170 | 0 | 0 | 0 | 25 605 | 0 | 128 025 | 100 | 128 025 | 128 025 |
| WACREN | GH | 58 087 | 20 170 | 0 | 0 | 0 | 19 564 | 0 | 97 821 | 100 | 97 821 | 97 821 |

*Proposal ID* **654225** *Acronym* **MAGIC**

| Participant | Country | (A) Direct personnel costs/€ | (B) Other direct costs/€ | (C) Direct costs of sub-contracting/€ | (D) Direct costs of providing financial support to third parties/€ | (E) Costs of inkind contributions not used on the beneficiary's premises/€ | (F) Indirect Costs / € (=0.25(A+B-E)) | (G) Special unit costs covering direct & indirect costs / € | (H) Total estimated eligible costs / € (=A+B+C+D+F+G) | (I) Reimburse-ment rate (%) | (J) Max. grant / € (=H*I) | (K) Requested grant / € |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASREN | DE | 61 250 | 20 170 | 0 | 0 | 0 | 20 355 | 0 | 101 775 | 100 | 101 775 | 101 775 |
| CESNET | CZ | 30 600 | 7 950 | 0 | 0 | 0 | 9 638 | 0 | 48 188 | 100 | 48 188 | 48 188 |
| GRNET | EL | 63 700 | 14 700 | 0 | 0 | 0 | 19 600 | 0 | 98 000 | 100 | 98 000 | 98 000 |
| SURFnet | NL | 5 063 | 13 750 | 0 | 0 | 0 | 4 703 | 0 | 23 516 | 100 | 23 516 | 0 |
| CSIR | ZA | 18 040 | 11 390 | 0 | 0 | 0 | 7 358 | 0 | 36 788 | 100 | 36 788 | 0 |
| RENATER | FR | 85 000 | 14 500 | 0 | 0 | 0 | 24 875 | 0 | 124 375 | 100 | 124 375 | 124 375 |
| NIIFI | HU | 12 320 | 12 150 | 0 | 0 | 0 | 6 118 | 0 | 30 588 | 100 | 30 588 | 30 588 |
| CKLN | GD | 25 020 | 12 140 | 0 | 0 | 0 | 9 290 | 0 | 46 450 | 100 | 46 450 | 46 450 |
| National Information | KG | 1 500 | 14 750 | 0 | 0 | 0 | 4 063 | 0 | 20 313 | 100 | 20 313 | 20 313 |
| TEIN program | KR | 4 500 | 26 400 | 0 | 0 | 0 | 7 725 | 0 | 38 625 | 100 | 38 625 | 33 000 |
| Total | | 1 041 178 | 347 470 | 50 000 | 0 | 0 | 347 166 | 0 | 1 785 814 | | 1 785 814 | 1 388 972 |

*Proposal ID* **654225** *Acronym* **MAGIC**

# 4 - Ethics issues table

| 1. HUMAN EMBRYOS/FOETUSES | | Page |
|---|---|---|
| Does your research involve Human Embryonic Stem Cells (hESCs)? | ○ Yes ◉ No | |
| Does your research involve the use of human embryos? | ○ Yes ◉ No | |
| Does your research involve the use of human foetal tissues / cells? | ○ Yes ◉ No | |
| **2. HUMANS** | | **Page** |
| Does your research involve human participants? | ○ Yes ◉ No | |
| Does your research involve physical interventions on the study participants? | ○ Yes ◉ No | |
| Does it involve invasive techniques? | ○ Yes ◉ No | |
| **3. HUMAN CELLS / TISSUES** | | **Page** |
| Does your research involve human cells or tissues (other than from Human Embryos/ Foetuses, i.e. section 1)? | ○ Yes ◉ No | |
| **4. PERSONAL DATA (ii)** | | **Page** |
| Does your research involve personal data collection and/or processing? | ○ Yes ◉ No | |
| Does your research involve further processing of previously collected personal data (secondary use)? | ○ Yes ◉ No | |
| **5. ANIMALS (iii)** | | **Page** |
| Does your research involve animals? | ○ Yes ◉ No | |

*Proposal ID* **654225** *Acronym* **MAGIC**

| 6. THIRD COUNTRIES | | Page |
|---|---|---|
| Does your research involve non-EU countries? | (•) Yes ( ) No | All |
| *Uruguay, Brazil, Colombia, Chile, Ecuador, Mexico, Malawi, Ghana, Jordan, South Africa, Grenada, Kyrgystan, Korea* | | |
| Do you plan to use local resources (e.g. animal and/or human tissue samples, genetic material, live animals, human remains, materials of historical value, endangered fauna or flora samples, etc.)? (v) | ( ) Yes (•) No | |
| Do you plan to import any material from non-EU countries into the EU?<br>*For data imports, please fill in also section 4.*<br>*For imports concerning human cells or tissues, fill in also section 3.* | ( ) Yes (•) No | |
| Do you plan to export any material from the EU to non-EU countries?<br>*For data exports, please fill in also section 4.*<br>*For exports concerning human cells or tissues, fill in also section 3.* | ( ) Yes (•) No | |
| If your research involves low and/or lower middle income countries, are benefits-sharing measures foreseen? (vii) | ( ) Yes (•) No | |
| Could the situation in the country put the individuals taking part in the research at risk? | ( ) Yes (•) No | |
| 7. ENVIRONMENT & HEALTH and SAFETY<br>See legal references at the end of the section. (vi) | | Page |
| Does your research involve the use of elements that may cause harm to the environment, to animals or plants?<br>*For research involving animal experiments, please fill in also section 5.* | ( ) Yes (•) No | |
| Does your research deal with endangered fauna and/or flora and/or protected areas? | ( ) Yes (•) No | |
| Does your research involve the use of elements that may cause harm to humans, including research staff?<br>*For research involving human participants, please fill in also section 2.* | ( ) Yes (•) No | |
| 8. DUAL USE (vii) | | Page |
| Does your research have the potential for military applications? | ( ) Yes (•) No | |
| 9. MISUSE | | Page |
| Does your research have the potential for malevolent/criminal/terrorist abuse? | ( ) Yes (•) No | |

*Proposal ID* **654225** *Acronym* **MAGIC**

| 10. OTHER ETHICS ISSUES | | Page |
|---|---|---|
| Are there any other ethics issues that should be taken into consideration? Please specify | ○ Yes ◉ No | |

I confirm that I have taken into account all ethics issues described above and that, if any ethics issues apply, I will complete the ethics self-assessment and attach the required documents. ☒

*Proposal ID* **654225** *Acronym* **MAGIC**

# 5 - Call specific questions

## *Open Research Data Pilot in Horizon 2020*

If selected, all applicants will participate in the Pilot on Open Research Data in Horizon 2020[1] , which aims to improve and maximise access to and re-use of research data generated by actions. Participating in the Pilot does not necessarily mean opening up all research data. Actions participating in the Pilot will be invited to formulate a Data Management Plan in which they will determine and explain which of the research data they generate will be made open.

Applicants have the possibility to opt out of this Pilot and must indicate a reason for this choice.

Participation in this Pilot does not constitute part of the evaluation process. Proposals will not be evaluated favourably because they are part of the Pilot and will not be penalised for opting out of the Pilot.

| | | |
|---|---|---|
| We wish to opt out of the Pilot on Open Research Data in Horizon 2020. | ○ Yes | ◉ No |

[1] *According to article 43.2 of Regulation (EU) No 1290/2013 of the European Parliament and of the Council, of 11 December 2013, laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)" and repealing Regulation (EC) No 1906/2006.*

## *Data management activities*

The use of a Data Management Plan (DMP) is required for projects participating in the Open Research Data Pilot in Horizon 2020, in the form of a deliverable in the first 6 months of the project.

All other projects may deliver a DMP on a voluntary basis, if relevant for their research.

| | | |
|---|---|---|
| Are data management activities relevant for your proposed project? | ○ Yes | ◉ No |

# *Coordination and support actions*

**Title of Proposal**

**Middleware for collaborative Applications and Global vIrtual Communities**

**List of participants**

| Participant No * | Participant organisation name | Country |
|---|---|---|
| 1 (Coordinator) | Cooperación Latino Americana de Redes Avanzadas | Uruguay |
| 2 | Delivery of Advanced Networks to Europe | United Kingdom |
| 3 | Trans-European Research and Education Networking Association | The Netherlands |
| 4 | Rede Nacional de Ensino e Pesquisa | Brazil |
| 5 | Red Nacional de Tecnología Avanzada | Colombia |
| 6 | Red Universitaria Nacional | Chile |
| 7 | Consorcio Ecuatoriano para el Desarrollo de Internet Avanzado | Ecuador |
| 8 | Corporación Universitaria para el Desarrollo de Internet, A.C. | Mexico |
| 9 | UbuntuNet Alliance for Research and Educational Networking | Malawi |
| 10 | West and Central African Research and Education Network | Ghana |
| 11 | Arab States Research and Education Network | Jordan |
| 12 | Czech Education and Scientific Network | Czech Republic |
| 13 | Greek Research and Technology Network | Greece |
| 14 | SURFnet | The Netherlands |
| 15 | Council for Scientific and Industrial Research | South Africa |
| 16 | Reseau National de l'Enseignement et la Recherche | France |
| 17 | National Information Infrastructure Development Institute | Hungary |
| 18 | Caribbean Knowledge and Learning Network | Grenada |
| 19 | National Information Technology Center | Kyrgystan |
| 20 | Trans Eurasia Information Network - star Cooperation Center (TEIN*CC) | Korea |

* Please use the same participant numbering as that used in the administrative proposal forms.

## Table of Contents

# 1. Excellence

## 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.

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

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.

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.

## 1.2. Relation to the work programme

This project addresses Topic 7 of the Call: "Support to cooperation with developing countries and regions to promote connectivity, global e-infrastructure services, identification of use cases and promising applications of particular interest for developing regions"

## 1.3. Concept and approach, quality of the coordination and support measures

### 1.3.1. Overall concept, main ideas, models and assumptions involved

In the ELCIRA Project, the partners have worked in the coordination of a series of collaboration tools and services that are being developed in Europe and Latin America in order to provide an interoperability framework that facilitates the work of European-Latin American research teams and to foster collaboration in joint research projects. This collaboration experience has been extremely successful in deploying European technology in Latin America on the one hand and on the other creating the first group of collaboration services that are being shared between European and Latin American NRENs with applications hosted in Europe being used in Latin America (FileSender) and applications hosted in Latin America being used in Europe (MCONF).

The project has been a very successful experience: eduroam has been deployed in 9 countries while 5 new identity federations have been established, with 1 completing the joining process and fully participating in eduGAIN (along with its peer in Brazil which joined prior to ELCIRA), and 4 federations reaching production status and are currently candidate federations of eduGAIN in the process of admission. This success has been possible thanks to a strategy focused on hands-on training at RedCLARA events and on-line training to support expansion in-country with the support of the NRENs and the leadership of RNP, the strongest NREN within the Latin American Region.

In the applications area, the partners have created a pilot portal allowing NRENs of both sides of the Atlantic to access applications being hosted on the other continent using a single authentication mechanism (facilitated by eduGAIN) and a simple administration interface for NREN administrators to allow their users to install the services without having to deploy the software on their own machines, easing in this way the use of those applications and cutting down the cost of implementation and maintenance. In a way, this project has created an Academic Cloud with services provided by NRENs of both continents and using a single authorisation/authentication mechanism.

These successful experiences have created expertise that can be extended to other areas of the world. The project proposes to do that in association with Regional Research and Education Networks around the World as well as deepening the development of the agreements leading to the creation of a worldwide set of standards for the sharing/marketing of collaboration applications.

In particular, the project proposes:

I. In the mobility area:

To foster the deployment of identity federations interconnected via eduGAIN, creating awareness of privacy and security issues and spreading eduroam. This will be accomplished by sharing experiences, carrying out training and making available shared infrastructure to ease the process in the partner world regions. To ensure maximum impact the training and best practice sharing will be carried out at Meetings of the Regional RENs and for each developing REN, a leader NREN has been selected to ensure regional appropriation and follow-up, following the model developed in Latin America where the leadership of RNP has been key for the successful training and implementation of eduroam and Identity Federations. We also plan to make available from servers in Latin America and Europe the “Identity-Provider-as-a-Service” application and “Federation-as-a-Service” so that the NRENs or institutions in the developing regions that cannot install them in their

own servers may build their IdPs and Federations without the need to provide properly secured servers and manage the application suites needed.

II. In the collaboration applications area:

To advance in the agreements and implementation of a middleware capable of managing international working groups across applications. That is, the definition of a middleware infrastructure that will enable applications to share information on international groups so that an existing group may be visible for different applications, avoiding the burden of creating groups in each application separately. Today only private services allow for the work of several applications with a shared group structure. Our proposal is to build upon existing European proposals such as OpenConext, Perun and HEXAA to define a platform for a federated open groupware management system that will allow NRENs and private providers to offer applications worldwide using the same group structure, easing collaboration and setting up the basis for an open market of collaborative applications with authenticated access of persons and groups.

Starting from the pilot developed in ELCIRA, where European and Latin American NRENs are providing services to each other using an access portal, creating in this way a prototype of cloud provisioning between NRENs, we propose to create a model for NRENs to provide services to each other using the AAI infrastructure as well as the federated groupware infrastructure discussed in the previous paragraph. The model shall include mechanisms to disseminate services, to properly define the service characteristics as well as their cost, be this based on cost share or tariffs. The model should also define the way external providers can provide services to the participating NRENs, this should be in agreement with the strategies discussed in the Global CEO Forum on Global Service Delivery.

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

III. In the real-time applications area:

The setting-up of videoconferences between groups of researchers located around the world, especially high quality videoconferences, poses a series of challenges to the user, since there is no easy way to locate the resources (directories) and no standard way of dialling VC facilities. Moreover, in spite of the advent of high definition desktop videoconferences, be they web-based (such as MCONF, Acrobat, and others) or using a client (Polycom, Lifesize, Vidyo, etc.) these systems do not necessarily integrate well. In addition, the end user wants to access robust solutions that enable them to participate in videoconferences while he/she is on the move and want the systems integrated with VoIP, Skype and other voice or video solutions.

In ELCIRA, in coordination with the eduCONF project inside GÉANT, a set of agreements have been reached in order to create dialling schemes that allow researchers in both regions to use a Global Dialling Scheme independent of the physical machine, and efforts are being made to complete the process of adapting Latin American NRENs to use the NRENum.net scheme to access the VC endpoints and multi-conference units. This is a significant step and requires further work to ensure that Worldwide RENs adopt it and hence make this scheme a global standard. The project proposes to work on the dissemination and support to the deployment of this technology. The strategy to follow is similar to the one to be used in the dissemination and adoption of eduroam and

eduGAIN. This effort will be coordinated with the efforts of the Global CEO Forum to ensure that the agreements have worldwide reach, including less developed regions.

On the other hand the project proposes to complete the MCONF and Jitsi Open webconference platforms with gateways to the legacy video-network (H.323) through the SIP protocol in order to establish an open platform for academic use that can be provided by the NRENs to their users, be this using the cloud provisioning model or by deploying their own infrastructure. This will strongly benefit the less developed regions, since no hardware or software will be required for them to start serving their users.

IV. Global Science Communities

A key strategy to generate proper usage of the proposed infrastructures is the fostering of the development of Global Science Communities using the platforms for their collaboration projects. This will not only facilitate the dissemination of the applications, since the communities of researchers will be the best promoters of the tools and hence act as support not only for the collaboration applications, but also as supporters of the role of the NRENs and Regional RENs in their respective countries and regions.

To carry out this task the project proposes to select three (3) research communities with common worldwide interest. That is, groups of researchers working on topics that are a priority not only in the developed, but also in the less developed world, such as Tropical Diseases, Climate Change, Disaster Management and others. Once the communities are selected, the project will support them with training in the use of the tools as well as with information on funding opportunities and training on how to set up successful proposals. The research groups will also act as evaluators of the tools being provided and will help the design of the interfaces and use mechanisms that satisfy their requirements.

**National or international research and innovation activities which will be linked with the project.**

The GÉANT Project

GÉANT is the pan-European research and education network that interconnects Europe's National Research and Education Networks (NRENs).

eduroam and eduGAIN are activities developed within GÉANT and are key in Objective 1 of this project since they are the technologies of choice to be disseminated and provide underpinning infrastructure for global R&E collaboration.

The cloud service activities of the GÉANT Project which supports evolution to the cloud service model is directly connected and coordination will be ensured with Objective 2.

The Service Catalogue being developed by GÉANT will also be connected to Objective 2 as it may provide services to include in the prototype of Collaboration Services.

The real-time video communications and media management services activity of the GÉANT project will strongly be connected to Objective 3.

HEXAA

HEXAA, one of the innovation projects of the GÉANT Open Call, is a tool that is under development and aims to help virtual communities to collaborate, to manage project-related memberships, user rights & roles and application access in a flexible but standard-based way.

OpenConext

OpenConext is the open source software being developed by SURFnet that provides Group Management and is at present deployed on the SURFconext Platform as well as by AARNet (Australian NREN) and JISC (UK NREN). The platform is intended to be a collaborative effort of the NREN world.

Perun

Perun has been developed to provide user, group and access management for distributed and federated environments such as NRENs. The ability of various synchronisation techniques with existing systems makes Perun a tool for building interoperable collaborative environments.

Global CEO Forum

The Global CEO Forum is a forum of NRENs around the World that meet regularly to discuss key issues of the needs of the research and education community they serve. In particular the Working Group on Global Service Delivery (GSD) is connected to Objective 2 and the Working Group on Global Real Time Communications (GRTC) is directly connected to the activities in Objective 3.

AfricaConnect

The AfricaConnect project has established a high-capacity Internet network for research and education in Southern and Eastern Africa to provide the region with a gateway to global research collaboration. AfricaConnect also provides for some capacity building in the WACREN region. Through the participation of the UbuntuNet Alliance and WACREN, the inclusion of Sub-Saharan Africa in MAGIC will be ensured.

CAREN

Co-founded by the European Union and launched in 2010, CAREN interconnects researchers, academics and students at over 500 institutions in Kyrgyzstan, Tajikistan, Turkmenistan and Kazakhstan, with Uzbekistan also a candidate country. The objectives of the MAGIC project will be extended to CAREN countries through the participation of NITC which operates the CAREN NOC.

EUMEDCONNECT3

EUMEDCONNECT3 provides a high-capacity dedicated Internet network for the research and education (R&E) communities across the southern and eastern Mediterranean region, enabling scientists and academics to collaborate and engage in innovative, data-intensive international projects. In addition to connectivity, the EUMEDCONNECT Projects provide funding and support to the pan-Arab regional e-Infrastructures through supporting the establishment and sustainability of ASREN (Arab States Research and Education Network). The MAGIC project aims to provide benefit to the Arab region by extending services through the participation of ASREN

**TEIN4**

The Trans-Eurasia Information Network (TEIN) provides dedicated high-capacity Internet connectivity for research and education communities across Asia-Pacific. By providing the Asia-Pacific countries with a gateway for collaborations across the regional user communities, TEIN4 increases the ability of developing Asian countries to participate alongside the advanced Asian nations in collaborative programmes, and bridges the Digital Divide that exists within the global communities of research, education, and health. The MAGIC project will provide benefit to the Asia-Pacific region through the participation of the TEIN* Cooperation Center.

### 1.3.2. Overall Approach

This project intends to build on existing European, Latin American and worldwide initiatives such as eduroam, eduGAIN, the RedCLARA Portal, the ELCIRA service prototype, OpenConext, the GÉANT Service Activities and the Global CEO Forum's working groups on Real Time Collaboration (GRTC) and Global Services Delivery (GSD), as well as regional initiatives such as ASREN (Arab States), CAREN (Central Asia), CKLN (Caribbean), TEIN (Asia-Pacific), the UbuntuNet Alliance (Southern and Eastern Africa) and WACREN (West and Central Africa). The coordination with all these initiatives in the deployment of the mobility infrastructure as well as the agreements on how to share applications and services is the main strategy behind this project.

In WP2, that is, the work on mobility, the activities are centred on the training of human resources. To carry out this task we will use existing meetings of the regional research networks in order to have maximum regional coverage at minimum cost, since those meetings are already attended by the partners of those regional networks. The participation of regional leading NRENs is crucial at this point, since they are the ones that will continue providing leadership and support to ensure adoption of the technologies during and after the end of the project. The platforms of IdP as a Service and Federation as a Service will be used during these training processes to provide the participating NRENs with the tools for hassle-free implementation in their respective countries or regions. This is essentially a support work package.

In WP3, on collaborative applications, we will generate agreements in order to reach consensus on two key issues: a) the federated platform for group management, b) the cloud provisioning model to share collaborative applications among the NRENs of the World. For federated group management we will start with the OpenConext platform, an open software project developed by SURFnet with instances already working in the UK and Australia, generate an installation in Latin America or other world regions as needed and build the agreements among the partners on the mechanisms to federate the different instances in order to build a worldwide federated group management platform. This will allow us to build a prototype portal that will include a set of chosen applications, among which will be the ones already working on the ELCIRA Portal. This prototype portal will be tested by users in all participating world regions. For cloud provisioning we will generate a basic set of agreements that will become the basis for the provisioning of services between NRENs using the authentication and groupware platforms being worked on in WP2 and earlier in this WP. This is a coordination activity followed by support tasks.

WP4, devoted to the real time applications, such as videoconferencing, is focused on fostering the adoption of NRENum as a global standard, and integration between the open-source web-conference systems to the legacy video network (H.323), a task that will require close coordination with GÉANT activities as well as the Global CEO Forum's GRTC working group. This task, a coordination activity, will be active throughout the project and will involve coordination not only among partners but also with the aforementioned projects to agree on the required standards. In this

WP we will promote and support the use of NRENum as a potential sector standard for global dialling, this dissemination will be carried out through training and dissemination at different conferences. In both cases, we will use the existing conferences of the regional RENs and the leadership of the leading NRENs in each region will be key to success and continued dissemination and deployment after the project's end. Finally, we will work on the integration of web-conference platforms such as MCONF (ELCIRA project) and Jitsi, with SIP video systems in order to provide participation in meetings across the world in different forms. This integration will be very important for the work of coordinating the large set of partners of this project, hence this activity will start early in the project and the platform will be extensively tested during the project timeframe.

WP5 will deal with research communities. This is essentially a coordination activity where the project team will seek a small set of relevant user communities that are of high interest for all the participating world regions. Preference will be given to user communities that also have experience of working in international projects and have at least worked in projects involving two of the regions involved. With this input the project team will select the appropriate communities and will train them in the use of the collaboration applications, as well as providing them with tools to find funding opportunities for their research. Here we will build on the application to disseminate funding opportunities that was developed in the ELCIRA Project and seek agreements with European funding agencies to include information on their calls automatically. Following the experience of projects such as GLOBAL, ALICE2 and ELCIRA the project will organise Virtual Information days to take advantage of the information provided during the EC Information Days and disseminate that information worldwide and specifically to the selected user communities.

#### 1.3.3. Gender

No gender related activities are considered necessary.

## 2. Impact

### 2.1. Expected impacts

#### 2.1.1. Impacts

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

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*

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*

d) Concertation in the development of worldwide services

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

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

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

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

***Indicators:***
*5 NRENs using applications built and deployed/hosted by another.*
*2 NRENs with a pilot cloud applications portal implemented*
*The number of applications deployed in the pilot test will be at least 2*
*The Directory of the applications provided by NRENs available for use of other NRENs contains at least 10 applications*

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.*

### 2.1.2. Barriers

✧ Large geographical nature of the project

We intend to cope with this difficulty by:

e) Using existing regional meetings as the locations for training at marginal costs that maximise coverage

f) Being supported by leading regional NRENs in each region in order to localise the support and make sure that the local sensibilities are taken into account and that support is guaranteed beyond the project's end.

g) The meetings will be organised by time zone groupings, minimising the need for general meetings and concentrating face-to-face meetings at regional meetings such as the TERENA Networking Conference (TNC), the APAN Conference, UbuntuNet-Connect, the TICAL Conference and other meetings where partners usually attend.

✧ Slow development of several NRENs and Regional RENs

The low maturity of several NRENs and/or Regional Networks implies that the pace of adoption of the technologies will differ inside regions and between them. To cope with this problem our strategy is to strongly focus on training as the key enabler to future deployment as well as providing tools that will ease the first deployments of IdPs and Federations when the NRENs are ready for implementation. On the other hand, the piloting of collaboration services will start with implementations that may reside initially on project servers (provided by project partners) that provide the service to the RENs or NRENs immediately and giving them the possibility of using advanced applications without having to install the applications on their own servers.

✧ Different legal frameworks may prove to be a significant obstacle for the deployment of federations

The legal systems, especially those on privacy and data protection may present a significant challenge to joining eduGAIN. This is a complex situation to deal with. The project will analyse this issue further and seek alternative solutions that may lead to sub-regional or other types of confederations.

✧ Regulations in the telecommunications area may become a problem for the adoption of the global wireless connectivity standard eduroam in some countries.

The regulations in the area of telecommunications sometimes forbid the import of access points for WiFi access that are required for eduroam. This difficulty may be overcome by providing Open Source Access points that may be deployed without license by the NRENs and universities. A recommendation will be issued by the project.

## 2.2. Measures to maximise impact

### a) Dissemination and exploitation of results

During the first month dissemination activities will be focused on the launch of MAGIC in order to announce its beginning, to start positioning the MAGIC image, its objectives and its future actions, and in the elaboration of the first WP6 deliverable: Project's Dissemination and Training Plan and Baseline. The on-line publication of the Project website, branding definition, documents and presentation templates, and the on-line distribution of the first MAGIC newsletter (the first one with a real global character within the REN environment), and the distribution of the Project's Dissemination Plan among all project partners will be the Milestones that will serve to measure these activities.

During the Project's lifetime all results will be published on the Project website and will be globally disseminated through the MAGIC newsletter that will be sent every two months to the contacts of the Project's participant institutions which will ensure a high level of capillarity for dissemination, allowing the project to reach potential users and visitors all over the world, for instance institutions that are behind the MAGIC partner organisations. Through this capillarity the project will also foster local promotion of the information generated. The effectiveness of this newsletter will be measured using marketing for mailing tools that efficiently measure and give statistical results of communications shared by e-mail; these statistics plus those of the website will be explained in the first WP6 deliverable and given as results both in the Dissemination and Training Reports deliverables as well as the Final Report.

One of the main activities expected in the MAGIC dissemination plan is the organisation of training activities; six face-to-face training activities will be carried out in the project's lifetime, each one of them in a different world/MAGIC region (Africa, Arab States, Central Asia, Asia-Pacific, the Caribbean and Latin America) in order to ensure global coverage of the training activities and their capillarity. The training plan will be part of the first WP6 deliverable in M2, and both the training agenda and the training evaluation grid will be published on the project's website. Furthermore, a list of training material prepared for the implementation and use of Identity Federations, eduroam and eduGAIN will be published on the MAGIC website, as well as training material generated for each course. All the training activities will be reported on on the project website. The results of these activities will be given by the number of participants on each training course and after the Project, by the number of local training activities carried out by those trainees who after completing MAGIC's courses became trainers and led training activities within their countries.

The six face-to-face training activities will be accompanied by six major face-to-face dissemination actions. The training and dissemination actions will be carried out within the context of international events at which the MAGIC project will be represented both in the form of a booth for dissemination purposes and/or in the form of a presentation that should be given to the event's audience. These international events will be those specific regional events in which the project's partners regularly participate. This will ensure a broader participation of MAGIC's partners with a lower cost for the project. Key events will be the TERENA Networking Conference and regional

conferences such as TICAL, UbuntuNet Conference and/or IST Africa, the APAN Conference, e-AGE, among others. All these dissemination activities will be reported on the Project website and the results will be given and measured by the number of contacts generated and dissemination items delivered to the events' attendees (Project brochures and give-aways), which will be reported on in the Second and Final Dissemination and Training Reports (deliverables 6.6 and 6.7 respectively).

**b) Communication activities**

Participation in international events: The Project will take part in six major regional events in order to promote the activities of the initiative. Participation will also include a training activity per event. The participation in regional events will be measured by the number of contacts generated and dissemination items delivered to the events' attendees (Project brochures and give-aways). This will be reported on in the Second and Final Dissemination Reports (deliverables 6.6 and 6.7 respectively).

Training activities: Organisation and promotion of the training courses proposed by WP2 (Platforms for Mobility), WP4 (Agreements for Real Time Collaboration) and WP5 (Global Science Communities). The measures of the activity will be focused on the appropriate development of the training activity and the number of assistants that participate and complete the workshop and their evaluation of the course.

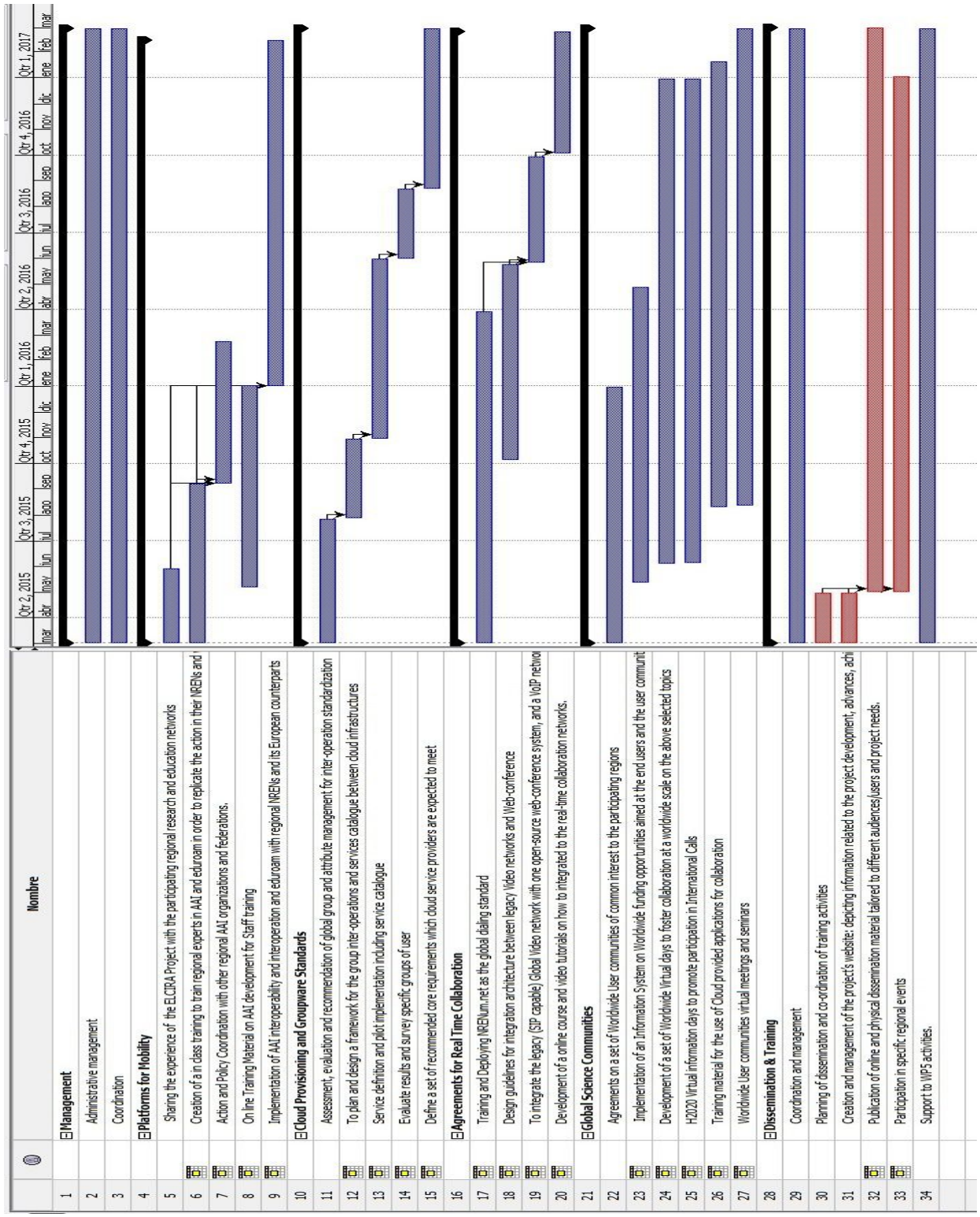
Creation of a training material repository: a compilation of the currently available training material created for the implementation and use of Identity Federations, eduroam and eduGAIN (and where necessary translation into appropriate languages (e.g. English, French, etc.) will be carried out and the resulting documentation will be published on a repository where it will be possible to measure the number of visits and downloads.

Dissemination of information on the Project through its website and newsletters (news): active generation of news and informative material to be published on the website and in newsletters in order to disseminate the work carried out by the different components of the project, their results and, of course, the promotion of the training and dissemination activities –both regionally and locally– in order to enhance MAGIC's general outreach. These actions will be measured by usage statistics and the number of visitors to both the website and the newsletters. In the latter case growth of the newsletter mailing list will also be measured.

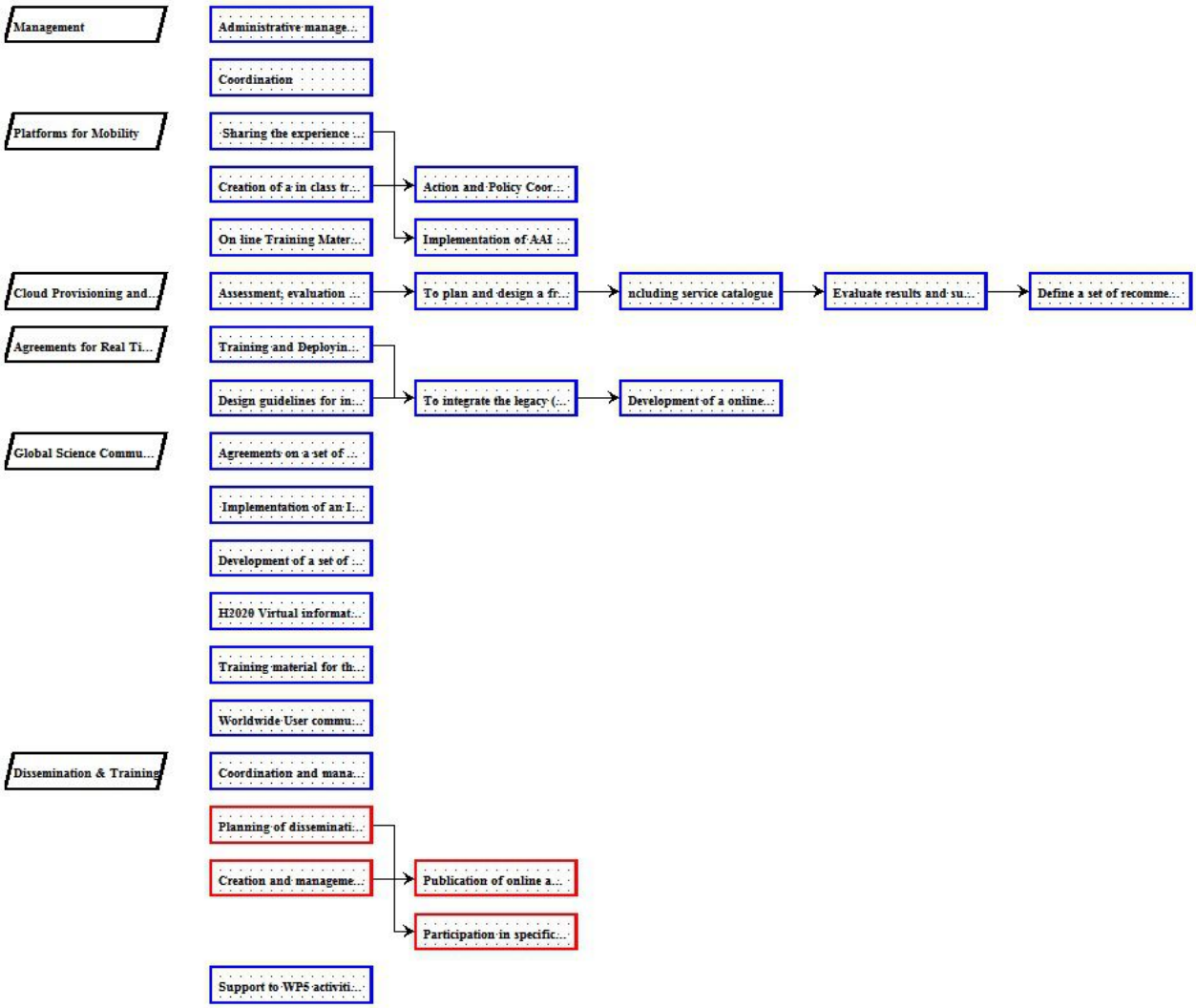
# 3. Implementation

## 3.1. Work plan – Work packages, deliverables and milestones

### 3.1.1. Brief presentation of the overall structure of the work plan




**Gantt Chart**




**Pert Diagram**

**Table 3.1 a: Work package description**

| Work package number | 1 | Starting Date or Starting Event | | | | | | | 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Work package title | WP1: Management | | | | | | | | | | | | | | | | | | | |
| Participant number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Short name of participant | CLARA | DANTE | TERENA | RNP | RENATA | REUNA | CEDIA | CUDI | UbuntuNet | WACREN | ASREN | CESNET | GRNET | SURFNET | CSIR(SANREN) | RENATER | NIIF | CKLN | CAREN NOC | TEIN*CC |
| Person/months per participant: | 15.4 | 0.8 | 1 | 1 | 1 | 0.5 | 0.5 | 6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.3 | 2.2 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |

**Objectives**

- To efficiently manage the project consortium by carrying out adequate planning, implementation and monitoring of the project tasks and activities as well as the timely delivery of reports.
- To secure the adequate coordination among project partners and beneficiaries
- To appropriately manage the resources
- To monitor the results and implement corrective measures, if needed.

**Description of work**

To coordinate the work of the Consortium, there will be a "Steering Committee" composed of one representative of each Partner and coordinated by the Project Leader. This committee will be responsible for making high-level decisions and solving differences that may arise among the work packages, such as different points of view in the implementation calendar of standards or other topics.

The Steering Committee will meet every 3 months in order to receive updates of activities, approve changes and supervise the overall execution of the project.

There will also be a Regional Executive Committee composed of representatives of each of the world regions. This committee will meet once a month and will be responsible for the coordination of work at the regional level. It will report to the Steering Committee and will be coordinated by the Project Leader.

The project will start with a Technical Kick-off Meeting that will include the WP leaders. This will allow for more detailed planning by each WP and the detailed planning of activities in order to ensure that the schedule is completely assumed by each team member.

Each Work Package will be coordinated by the WP Leader who will also be responsible for the appropriate execution of the activities, quality control and the timely delivery of reports. Any change in planning that may imply delays to other packages will have to be approved by the Steering Committee. The WP teams will hold fortnightly meetings and use RedCLARA's Portal to coordinate their activities and maintain documentation of the project.

The Project Leader's Office will be in charge of administrative procedures, the control of expenses and the appropriate documentation to be submitted to the European Commission.

**T1.1 – Administrative management**
**Leader: RedCLARA**
T1.1 will take care of the administrative, financial and overall management of the consortium.

- Organise project meetings
- Coordinate the delivery of reports
- Prepare the appropriate documentation to submit financial reports and maintain all necessary accounting records
- Coordinate the Steering Committee

**T1.2 – Technical management**
**Leader: RedCLARA**
T1.2. Will coordinate technical work ensuring quality control and that milestones are reached both in purpose and on time:

- The monitoring of work package activities
- The overall supervision of day-to-day work
- Ensuring the quality and completeness of the technical reports and standards agreements

**Deliverables**

**D1.1.- Interim Progress Report (M1-M6):** This deliverable will describe the achievements of the project in the first 6 months. It will also include an assessment of the work plan for the remaining 18 months with an update of the risks faced and mitigations applied. [month 6]

**D1.2.- Progress Report (First Reporting Period):** This deliverable will describe the achievements of the project between months 1 and 12 . It will also include an assessment of the work plan for the remaining 12 months with an update of the risks faced and mitigations applied. [month 12]

**D1.3.- Interim Progress Report (M13-M18):** This deliverable will describe the achievements of the project in months 13 through 18. It will also include an assessment of the work plan for the remaining 6 months with an update of the risks faced and mitigations applied. [month 18]

**D1.4.- Progress report (Second Reporting Period):** This deliverable will describe the achievements of the project in the between months 13 and 24. [month 24]

**D1.5.- Final Report:** This deliverable will describe the achievements of the whole project. [month 24]

| Work package number | 2 | Starting Date or Starting Event | | | | | | | 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Work package title | WP2: Platforms for Mobility | | | | | | | | | | | | | | | | | | | |
| Participant number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Short name of participant | CLARA | DANTE | TERENA | RNP | RENATA | REUNA | CEDIA | CUDI | UbuntuNet | WACREN | ASREN | CESNET | GRNET | SURFNET | CSIR(SANF | RENATER | NIIFI | CKLN | CAREN NC | TEIN*CC |
| Person/months per participant: | 8.7 | 0.3 | 0.5 | 7 | 1 | 0.5 | 0.5 | 9 | 3 | 3 | 10 | 2 | 4 | 0 | 0.6 | 3.5 | 0.5 | 2 | 0.3 | 0.5 |

## Objectives

- To promote, coordinate and support the effort to create in the Caribbean, Africa and Asia an authorisation and authentication infrastructure (AAI) for academic services and processes;
- To promote, coordinate and support the effort to create in the Caribbean, Africa and Asia an eduroam infrastructure and processes for researchers and academics;
- To create eduroam Roaming Operators in at least two countries per region;
- To create pilot identity federations in two countries in each region as a basis for further expansion through the region;
- To provide a local boot camp to develop federation and eduroam experts in at least two countries per region;
- To create virtual courses to be used by Federation and eduroam experts to provide local training in their own constituency;
- To provide technical knowledge and policy requirements to integrate new federations and European federations;
- To provide technical knowledge to create interoperability and interoperation with new federations;

## Description of work

Benefiting from the Brazilian experience in the ELCIRA project, coordinating efforts to create AAI and eduroam in Latin America, RNP will coordinate WP2, aiming at the promotion and consolidation of the foundations for creating a framework for authentication and authorisation in Africa, the Caribbean, Asia and for Latin America, CUDI will support RNP in the inclusion of new NREN and its members, particularly those participating in the SCALAC[1] initiative.. The WP will be structured to enable other RENs to establish their own regional federation initiatives. This Work Package will also facilitate integration with the European initiatives under TERENA activities such as TF-EMC2 and REFEDS, and will make the necessary arrangements to make it possible to join the eduGAIN interfederation service.

The participation of the NRENs that will play the role of Focal Points is very important. Below is a description of members' responsibilities in this WP:

### Project Leader (RedCLARA)

- Select team members and, if cross-functional as the Core Team Leader, select Core Team Members;
- Prepare project plan and obtain management approval of the project plan;
- Assure that all team members understand their roles and accept their responsibilities;
- Apply project resources according to the approved project plan;

[1] SCALAC Servicios de Cómputo Avanzado para América Latina y el Caribe.

- Track and report on progress to project plan;
- Keep all stakeholders informed of progress and issues;
- Arbitrate and resolve conflict and interface problems within the project.
- Manage the project Risks, controlling the source of risk and its mitigation strategy;
- Ensure compliance with time and quality of deliverables;

**Work Package Leader (RNP)**

- Track and report on progress in accordance with the WP plan;
- Analyse actual performance against the plan and make adjustments consistent with plan objectives;
- Assure timely adaptive action is taken;
- Establish and publish clear priorities among project activities;
- Arbitrate and resolve conflict and interface problems within the WP;
- Organise and provide in-class training to WP focal points;
- Manage WP Risks, controlling the source of risk and its mitigation strategy;
- Ensure compliance with time and quality of deliverables;

**Focal points (UBUNTUNET, CKLN, RENATER, ASREN, TEIN*CC and WACREN)**

- Negotiate the performance of activities with team members and their managers;
- Arbitrate and resolve conflict and interface problems within the region;
- Provide region online training to WP committed NREN;
- Inform any issue that may impact in the WP or project goals;

**AAI and eduroam governance (TERENA)**

- Provide knowledge to create governance documents and processes to manage an AAI federation and eduroam;

**Committed NREN (all participating NRENs)**

- Implement AAI and eduroam in their respective countries using the knowledge of the online training;
- Provide local online training to their customers;
- Disseminate the AAI and eduroam for their customers;
- Manage their federation and eduroam in the region;

**Tasks:**

**T2.1 – Sharing the experience of the ELCIRA Project with the participating regional research and education networks.**
**Leader: RNP**
This task will present RNP's experience with the implementation of AAI and eduroam, the difficulties, the challenges, and the structure of the service. A meeting of technical and administrative leaders of two regional NRENs is planned.

**T2.2 – Creation of in-class training to train regional experts in AAI and eduroam in order to replicate the action in their NRENs and with their customers.**
**Leader: TERENA**
In-class training (boot camp) will be developed by this Task to capacitate NREN technical experts in order to replicate the action in their NRENs and with their customers.

**T2.3 – Action and Policy Coordination with other regional AAI organisations and federations.**
**Leader: TERENA**
This task will identify and articulate the action and policy coordination with other regional AAI and eduroam organisations and federations.

**T2.4 - On line Training Material on AAI development for Staff training**
**Leader: RedCLARA**
This task will develop training material to be used by Focal Point experts to provide technical staff training. The material will be developed to be used online only; there will be no printed material.

**T2.5 –Implementation of AAI interoperability and interoperation and eduroam with regional NRENs and their European counterparts.**
**Leader: Regional Focal Points**
This task will promote a meeting of technical and administrative leaders among academic networks of Europe and project members to review the conditions and needs to implement AAI and eduroam interoperability and interoperation, to enable pilot testing with at least two NRENs per region. As part of this work, TERENA will facilitate the participation of all NRENs experts in the work of TF-EMC2, the Task Force on European Middleware Coordination and Collaboration

**Deliverables**

**D2.1 - Roadmap for the delivery and deployment of National AAIs in Project regions. [Month 3].**
**Responsible: RNP**
This deliverable will provide a roadmap for the deployment of AAIs in the countries concerned; it will also include the funding/business models for national identity federations and their interoperation with the eduGAIN interfederation service.

**D2.2 – AAI and eduroam boot camp for experts training [Month 6[**
**Responsible: TERENA**
Development of in-class training material and methodology to be used on Focal Point expert technical staff training. The material will be developed to be used in class only; there will be printed material.

**D2.3 – On-line Training Material on AAI development for Staff training [Month 10]**
**Responsible: RedCLARA**
Development of Training Material to be used by Focal Point experts to provide technical staff training. The material will be development to be used online only; there will be no printed material.

**D2.4 - AAI Preparation (Assess the Identity Management of participating institutions) [Month 12 ]**
**Responsible: Focal points**
Document containing all the necessary information required for AAI Implementation at the two NRENs per region participating in the project. This document will contain implementation strategy

to be used by NREN Focal Points;

**D2.5 - AAI Pilot. [Month 13]**
**Responsible: Committed NRENs**
After the online training, the NREN Focal Points will provide technical follow-ups in order to create an AAI infrastructure, in pilot basis, with a small user database.

**D2.6 - eduroam Pilot. [Month 14]**
**Responsible: Committed NRENs**
After the online training, the NRENs Focal Points will provide technical follow-ups in order to create an eduroam infrastructure, in pilot basis, using the same AAI user database.

**D2.7 - AAI implementation. [Month 21]**
**Responsible: Committed NRENs**
After the AAI Pilot, the NRENs Focal Points will provide technical follow-ups in order to roll out into production state an AAI infrastructure, connecting at least to the NREN's user database. Besides infrastructure, the NRENs will create all governance documentation and website, to be able to join eduGAIN in a pilot state;

**D2.8 - eduroam Implementation. [Month 24]**
**Responsible: Committed NREN.**
After eduroam pilot, the NRENs Focal Points will provide technical follow-ups in order to roll out into production state an eduroam infrastructure, using the same AAI user database. Besides infrastructure the NRENs will create all governance documentation and website, to be able to join the global eduroam;

| Work package number | 3 | Starting Date or Starting Event | | | | | | | 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Work package title | WP3: Cloud Provisioning and Groupware Star | | | | | | | | | | | | | | | | | | | |
| Participant number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Short name of participant | CLARA | DANTE | TERENA | RNP | RENATA | REUNA | CEDIA | CUDI | UbuntuNet | WACREN | ASREN | CESNET | GRNET | SURFNET | CSIR(SANRE | RENATER | NIIFI | CKLN | CAREN NOC | TEIN*CC |
| Person/months per participant: | 16.0 | 0.3 | 0.5 | 1.45 | 2.0 | 5.0 | 0.5 | 15.0 | 3.0 | 1.5 | 1.0 | 6.0 | 7.5 | 0.3 | 0.6 | 2.0 | 0.5 | 0.5 | 0.3 | 0.5 |

**Objectives**

- 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.
- To choose or define the standards in order to make groups management systems interoperable across different federated environments, extending federations integration to facilitate authorisation, user interaction, and global group administration.
- To establish a set of standard requirements for cloud providers to increase security, quality, interoperability and privacy over shared resources and services in the NREN clouds.

**Description of work**

Several NRENs in the world are working on cloud strategies that provide a secure market of services for their end users. Examples include SURFmarket, the CHAIN-REDS science gateways, and the ELCIRA project in Latin America. Most NRENs are focused on needs that commercial providers cannot fulfill, including privacy, academic specific services and direct NREN support. In this work package, the MAGIC group aims to generate a set of inter-operation agreements for a federated system of group management that will serve as a basis for collaboration application-sharing among the NRENs of the World. NRENs will have applications deployed on a continent working with the same group in other parts of the world. Applications will be group/community-aware and will be able to adapt to customers' needs. Research and education communities will be able to schedule, authorise, share, or carry out actions for specific groups or communities, even if they are located on another continent.

In this task, the focus will be on coordinating a global set of core requirements which cloud service providers are expected to meet, covering the following fields: intellectual property rights and ownership, legal aspects, security, continuity, confidentiality, communication, billing and technical requirements. This work will enhance and facilitate integration between NRENs while maintaining a high standard of service and security.

**T3.1. Implement applications portal for 2 new NRENs**

Most NRENs do not have applications portals for their organisations. The working group will support them by facilitating the implementation of an applications portal such as the RedCLARA communities site in their respective environments. The work carried out under the project ELCIRA allows this to be done now, and to have these NRENs start up and join the foreseen activities.

**T3.2. Assessment, evaluation and recommendation of global group and attribute management for inter-operation standardisation**

Nowadays cloud infrastructure implementations are based on the SAML2.0 standard, and are limited to the authentication layer, leaving authorisation and group management to each service provider implementation. Through setting a common standard for group management, the academic cloud infrastructures will be able to provide a deeper integration. Group-aware applications will be able to set up authorisation based on groups created in a remote environment, or take specific actions like inviting, sharing, and publishing without the need for the user to create groups on all platforms. The working group will assess the existing standards and resources in order to establish a recommendation that can be adopted in a global integration.

**T3.3. To plan and design a framework for group inter-operations and service catalogue between cloud infrastructures**

Organisations and projects such as GÉANT, SURFnet, and RedCLARA have been working on the deployment of applications markets for their NREN domains. These applications markets work as islands because the integration up to now has been limited to federated authentication. The MAGIC project, in this task aims to plan and design a framework for group inter-operation that allows sharing between application markets or cloud environments.

**T3.4. Service definition and pilot implementation including service catalogue**

In this task, the working group will develop a practical implementation of the standard defined in the previous work. The service catalogue will become an important element in identifying existing services in different clouds, and promoting the sharing of these applications between NRENs or regional networks. The pilot service will have two cloud environments sharing group information, the service catalogue, and two services that use the tools provided in the infrastructure.

**T3.5. Evaluate results and survey specific groups of users**

The working group will evaluate the results of the implementation with user perception, and integration efficiency. The results will be based on interviews of technical managers and CEOs, and a survey among a a specific testing community of people from the end-user market.

**T3.6. Define a set of recommended core requirements which cloud service providers are expected to meet, covering the following fields: intellectual property rights and ownership, legal aspects, security, continuity, confidentiality, communication, billing and technical requirements.**

Trusted cloud services are one of the main requirements in our academic communities. Users request high service levels, information protection, confidentiality, and rely on their NREN as the trusted organisation to support the service. In the new cloud service market model NRENs will play an important role as representatives of academic end users, and must ensure reliability and security of their information. In this task the group will define a recommended set of requirements for application providers to facilitate the secure sharing of services. The goal is to empower each NREN to bring high quality services to their users, and strengthen their negotiation power with commercial alternatives.

**Deliverables**

D3.1. **Collaboration portal implemented for 2 new NRENs [Month 5]**
Two new NRENs will have applications portals for their organisations in this phase. The implementation will be done as in the ELCIRA project, and will allow the NRENs to work actively in the development of the new group management standards.

D3.2. **Assessment of the existing group management standards, NREN tools and value services for the global communities. [Month 6]**
The group will research the applications, group management functions, and available standards. In this deliverable, the work package group will report the results of this research and will identify the recommendations that will serve the design. Furthermore, the group will also search for applications that can be used for the pilot, so that the group sharing and management capabilities can be practically demonstrated.

D3.3. **Planning and design requirements for the group management and inter-operations standards and pilot implementation [Month 8]**
The working group will define the requirements for the group inter-operation framework purpose of the work package. In this deliverable, the design requirements will define how group information sharing should work, and what basic elements will exist, including security, interfaces, authorisation mechanisms among others. Furthermore, the planning will include the definition of the pilot implementation, which service will be used, the use cases for the pilot, and integration with the group information.

D3.4. **Pilot service with one application sharing group information and service catalogue [Month 14]**
The pilot service will have an application using group information present in a different cloud implementation. The implemented use case will take advantage of the groups in meaningful scenarios such as improving the user experience, enhancing a functionality, avoiding work duplication or providing better security. The pilot will also include the deployment of the RedCLARA application portal by two NRENs.

D3.5. **Evaluation of pilot and services, user perception, and implementation effort [Month 17]**
The focus in this deliverable is to present the feedback from a selected group of users or communities that evaluate the pilot. The evaluation will be designed to understand the value seen in the overall solution and model.

D3.6. **Recommendation on service requirements for cloud providers in Academic cloud infrastructures. [Month 23]**
The recommendation contained on this deliverable will provide a way to standardise security, privacy, and other requirements that will lead to better services for NREN users. In order to be able to share, the NRENs must have a guide to ensure they are doing their best to protect users from poor service levels or security threats.

| Work package number | 4 | Starting Date or Starting Event | | | | | | | 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Work package title | WP4: Agreements for Real Time Collaboration | | | | | | | | | | | | | | | | | | | |
| Participant number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Short name of participant | CLARA | DANTE | TERENA | RNP | RENATA | REUNA | CEDIA | CUDI | UbuntuNet | WACREN | ASREN | CESNET | GRNET | SURFNET | CSIR(SANREN) | RENATER | NIIFI | CKLN | CAREN NOC | TEIN*CC |
| Person/months per participant: | 6 | 0.3 | 0 | 1.45 | 11 | 2.5 | 0 | 11 | 3 | 2.5 | 1 | 0 | 0 | 0 | 0.6 | 2 | 0.5 | 0.5 | 0 | 0 |

**Objectives**

To seek consensus among participating world regions on the importance of the 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.

**Description of work**

Real-time communications are a key work area for NRENs. Almost all research areas, especially biology, medicine and physics, rely on real-time communications in their daily work. In this task, the MAGIC work group aims to expand video-network reach, and functionality by a) fostering the adoption of NRENum.net based dialling, and b) integrating the legacy (SIP capable) global video network with existing web-conference systems to achieve unified communications, and c) improving NRENum implementations with secure DNS (DNSSec) adoption. By expanding use of the NRENum.net service, the group will help to deploy real-time communications as a service integrated with the global community. The NRENum.net based dialling standard will use the Domain Name System (DNS) for universal dialling across the world, and will allow future integration with VoIP networks. The DNSSec implementation will help to provide a more secure ENUM/NRENum.net service, avoiding DNS hijacking based attacks.

T4. 1. **Training and Deploying NRENum.net as the global dialing standard.**

In this task, the group will achieve the implementation of NRENum.net in 6 new countries across the world, ideally 1 per region. The work will be done through setting up on-line courses and provide assistance to the NRENs that will implement it. When integrated to the global NRENum.net tree, the NRENs will be able to dial to the global video network with an easy-to-maintain and manage infrastructure. The NREN will be responsible for obtaining its country code dialling prefix.

T4. 2. **To promote the implementation of DNSSec to enhance security of NRENum.net implementations.**

Today, NRENum.net has around 30 members but about five have implemented DNSSec. DNSSec can produce a significant improvement in NRENum.net security, due to the avoidance of multiple types of attack to the name critical infrastructure. The group will help and promote the deployment of this standard by participant NRENs, and will include in the training material the elements for adoption by NRENs.

**T4. 3. Design guidelines for integration architecture between legacy video networks and web-conferencing**

In this task, the group will define an integrated elements architecture that could be used by any RTC developer to integrate its system to the global academic video network. The goal behind this task is to achieve a common path for integration, and how to implement it. For instance, how numbering to virtual systems could be set (dynamic, static), how dialling could be implemented, what APIs shall be defined, how to handle the call records, statistics, information security, how to work with firewall traversal, among others.

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

Nowadays, the open-source solutions deployed by the academic institutions do not have integration with legacy global video networks. This prevents a web-conference user from calling a video terminal in another region of the world. In this task, the WP4 group will design a voice integration method between these types of system, and implement a pilot test. This is a big step in a scenario where any end user could call a conference if invited, no matter where he or she is or whether he or she is using a phone, computer or video terminal.

**T4. 5. Development of an on-line course and video tutorials on how to integrate real-time collaboration networks.**

In order to expand the NRENum.net standard, the group will extend knowledge on implementation to allow new NRENs to adopt it. Having an on-line course is a key element because it can reach a broad audience, on a global basis, at low costs. The on-line course and video tutorials will explain how to implement a DNS system for NRENum.net, and how to integrate it with the web-conferencing and VoIP networks at a global scale. All the material will be focused on facilitating deployment for NRENs, and put in place the elements for unified communications. The courses developed will also include a how-to guide on setting up DNSSec with an open-source DNS server.

**Deliverables**

**D4.1 Online training on implementing the NRENum.net service for global video dialling. [Month 5]**

This training material will be deployed as a tool for the NRENs that have not implemented the NRENum.net service for their organisations. The guide will show the step-by-step instructions to enable NRENum, how to configure it, how to register with the NRENum.net tree, and the general recommendations to configure terminals, gatekeepers, or SBC.

**D4.2 NRENum.net deployed in six new NRENs [Month 12]**

The working group will support six new NRENs that will deploy the NRENum.net service for their countries. In the specified Month, the implementations will be done, and the institutions will be able to dial using the NRENum.net tree.

**D4.3 Three (newly delegated countries or already members) participants that secured the country code prefix ENUM zone with DNSSec. [Month 16]**

The group will promote and support the deployment of a DNSSec implementation by three NRENs. These NRENs could be current NRENum.net or project members.

**D4.4 Pilot test of an integration between the legacy global video network with one open-source web-conference, and a VoIP network based on NRENum [Month 18]**
In the pilot test, the working group will show a system with a use case that implements a direct integration of the SIP network with the legacy video network. The use case will implement dialling using NRENum.net.

**D4.5 Online course and video tutorial on how to deploy a unified communications network [Month 23]**
As the result from the guidelines and the pilot experience, this on-line course will be an easy-to-set-up guide for other NRENs that could implement this integration.

| Work package number | 5 | Starting Date or Starting Event | | | | | | | 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Work package title | WP5: Global Science Communities | | | | | | | | | | | | | | | | | | | |
| Participant number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Short name of participant | CLARA | DANTE | TERENA | RNP | RENATA | REUNA | CEDIA | CUDI | UbuntuNet | WACREN | ASREN | CESNET | GRNET | SURFNET | CSIR(SANREN) | RENATER | NIIFI | CKLN | CAREN NOC | TEIN*CC |
| Person/months per participant: | 22 | 0.3 | 0 | 2 | 3 | 0 | 0 | 15 | 11 | 3 | 3 | 0 | 0.5 | 0 | 0.6 | 0 | 0.5 | 0.5 | 0.3 | 0.5 |

**Objectives**

- To invite/select three global research and scientific communities with common topics of research and education interests which include researchers of the MAGIC participating regions to participate in collaborative initiatives using advanced networks and services.
- To extend/update the Funding Opportunities Database and Partner Search application developed by the ELCIRA Project to include information from other MAGIC developing regions and provide valuable funding information for the global communities and other research groups worldwide.
- To foster 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.
- To promote and foster 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.
- To use 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.

**Description of work** (where appropriate, broken down into tasks), lead partner and role of participants

WP5 will include the participation of the Research Communities, raising their awareness and training communities on the use of collaborative technological platforms. This is essentially a coordination activity where the project team will establish a small set of relevant user communities working on areas/topics that are of high interest in a significant number of world regions. Preference will be given to user communities that have experience of working in international projects and have at least worked in projects involving at least two of the regions involved. The global communities will be provided with online collaborative tools and will be trained on how to use them. In addition, the communities will be provided with tools to identify funding opportunities for their research. The project will expand the Funding Opportunities and Partner Search portal developed in the ELCIRA project, and use it to disseminate funding opportunities. Agreements with European and other funding agencies will be sought to automatically include information on their calls on the application. Following the experience of projects such as GLOBAL, ALICE2, ELCIRA, GILERA, CHAIN and CHAIN-REDS the project will organize Virtual Information days to take advantage of the information provided during EC Information Days and disseminate that information worldwide and specifically to the selected user communities.

**Task 5.1 Agreements on a set of worldwide user communities of common interest to the participating regions**

**Leader: NIIF + UBUNTUNET**

This task will define a set of priority areas common to MAGIC regions upon which Global Science Communities will be developed. This will scale up the methodology successfully used by RedCLARA in developing regional communities in Latin America. To reach agreement on global priority areas that are relevant to all regions, a three-staged approach will be followed:

a) Reviewing broader worldwide priority areas for research and development as described by international bodies such as the United Nations, the World Bank, etc.
b) Through the regional partners, review of regional research priorities areas as described by regional bodies.
c) Definition of global priorities that are common to the MAGIC regions and corresponding to prevailing needs.

Based on the agreed priority areas three Global Science Communities will be developed and calls sent out to researchers in all regions to come together and join their energies. however, for global purposes this number has been chosen, to ease the difficulty of management and coordination worldwide To ensure sustainability of the communities, work plans will be developed in coordination with community leadership. Activities and successes of the communities will be monitored and disseminated worldwide in order to encourage the creation of new ones.

**Task 5.2 Implementation of an Information System on worldwide funding opportunities aimed at the end users and the user communities**

**Leader: RedCLARA**

This task proposes to extend/update the Funding Opportunities Database and Partner Search application developed by the ELCIRA Project to cover other MAGIC regions and provide valuable funding information for the global communities and other worldwide research groups. With this service the project will be able to advertise current funding opportunities given by different donors to encourage research and science development in developing countries. Using the portal, researchers will have a one-stop-shop for information about research grants and calls for proposals. Also researcher and members of the Global Science Communities will be able to search for partners. The application will improve and strengthen regional academic networks and international partnerships using collaborative platforms.

**Task 5.3: Development of a set of Worldwide Virtual Days to foster collaboration at a worldwide scale on the above selected topics**

**Leader: UBUNTUNET/RedCLARA**

Virtual Days – distributed events held via videoconference – have been successfully organised by RedCLARA since the days of the ALICE2 project. Within the framework of the ELCIRA project, a Blueprint for organising Virtual Days has been developed, which gives a step-by-step outline of how to organise the events via videoconference. This task will see the implementation of Worldwide Virtual Days on subjects/themes that will be defined in liaison with Global Science Communities invited/selected in T5.1.

The Worldwide Virtual Days will be aimed at sharing information and experiences among experts in the field and to raise awareness of prevailing issues from Global Science Communities to wider audiences including policy makers. In liaison with the communities, a template programme will be developed which will be implemented with slight modifications to accommodate local community needs. To address time zone problems that arise with real-time global events, the virtual days will be staged in blocks by time zone and will be held on consecutive days. Dissemination of the Worldwide Virtual Days will be held in coordination with WP6.

**Task 5.4: H2020 Virtual Information Days to promote participation in International Calls**
**Leader: UBUNTUNET/RedCLARA**
This task seeks to foster the collaborative work of Global Science Communities by actively promoting the participation of researchers from the MAGIC region in European Commission Calls and those of other international funding agencies with high impact in the participating regions and other networking activities.

The task will organise and coordinate at least two continental videoconferences (depending upon the number of existing calls) to disseminate the funding opportunities available in the H2020 framework programme and other funding opportunities. This activity will serve as a bridge between the research communities and the personnel of the National Science and Technology funding agencies with the EU Project Officers and other international donor agencies Officers.

**Task 5.5: Training material for the use of cloud-provided applications for collaboration**
**Leader: UBUNTUNET/RedCLARA**
This task will develop training materials for the use of cloud-provided applications for collaboration by the Global Science Communities. Collaborative tools may include wikis, file transfer tools, web-conferencing facilities, etc. Once the Global Science Communities are developed (T5.1), they will define how they want to collaborate. Working in liaison with WP3, this task will conduct an inventory of the collaborative tools that the communities would like to use. Building on the experience of the ELCIRA project in preparing training material on the use of services in video and other formats, this Task will develop virtual materials illustrating how to use the collaborative tools. This will be aimed at simplifying the ease of using the tools. The material developed will be available on the collaboration portal (T5.2) and will be disseminated in conjunction with WP6.

**Task 5.6: Worldwide User Communities virtual meetings and seminars**
**Leader: CKLN**
In order to improve the communication and the relationship between the members of the Global Science Communities, as well as the personnel of the National Research and Education Networks (NRENs), Regional Research and Educations Networks, and other science and high education organisations, different virtual meetings and seminars will be organised in liaison with MAGIC WP6 members. These events will be as follows:

***- Global Science Communities Project, Opening Conference***

The main objective of this event will be to invite all the groups, communities and researchers from the selected worldwide priority areas to be part of the three Global Science Communities that the MAGIC Project will support. To do so, the WP6 MAGIC team, will present the results of the study on worldwide priority areas for research and development and the global priorities topic of main interest for the MAGIC regions.

***- Regional Best Practice Meeting - Best practices and general presentation of the members of the new MAGIC Global Scientific Communities***

After working on the construction of the three Global Science Communities and having started their activities, the first virtual global communities meeting will be held. This activity will be aimed at allowing the members of each global communities to present themselves by showing their regional best practices in the field of the community as well as their scientific-academic interest and expectations on working together in the community.

***- Global Science Communities: Experiences and challenges of working on a collaborative way***

This second virtual global community meeting will address the topic of how to ensure the success of the

global virtual communities. The objective of the activity will be to give tools and advice to the members of the communities on best practices in carrying out collaborative work worldwide. To achieve this, the programme of the event will include presentations from experts in the field; and testimonials of other communities and similar scientific and collaborative groups.

***- Global Science Communities Project, Closing Conference***

This last event will present the results of the growth and the future of the Global Science Communities. Here, both the WP6 MAGIC team and the members of the Global Communities will share the most important and remarkable experiences acquired and challenges faced since the beginning of the MAGIC project. The objective of this activity is to spread the Global Community methodology constructed during the project and encourage other organisations and groups to reproduce the model. Also, this activity will ensure the cohesion of each global community for the years to follow.

**Deliverables**

**D5.1 Guidelines, objective, directives and strategic work plan of the MAGIC Global Science Communities [Month 8]**
**Leader: NIIFI + UBUNTUNET**
This deliverable will contain results of the establishment of the three global science communities, including their guidelines and objectives plus the directives for the management of each community. A strategic work plan for year 1 will be provided, including a monitoring and evaluation plan for the following year; this plan will focus on the consolidation and sustainable growth of the three global communities. Also, this deliverable will include a report on the study of the priority scientific areas for the MAGIC regions.

**D5.2 Annual report on Global Virtual Days in priority worldwide fields and on International Calls InfoDays transmitted [Month 12]**
**Leader: UBUNTUNET/RedCLARA**
First annual report of at least four Global Virtual Days organised with live streaming in a minimum of one MAGIC region per videoconference and webcast to other regions and, report of at least two continental videoconferences organised and coordinated with the purpose of disseminating the funding opportunities available in H2020 and other funding opportunities.

**D5.3 Annual report on Global Virtual Days in priority worldwide fields and on International Calls InfoDays transmitted. [Month 22]**
**Leader: UBUNTUNET/RedCLARA**
Second annual report of at least four Global Virtual Days organised with live streaming in a minimum of one MAGIC region per videoconference and webcast to others regions and, report of at least two continental videoconferences organised and coordinated with the purpose of disseminating the funding opportunities available in H2020 and other funding opportunities.

**D5.4 Report on Worldwide User communities virtual meetings and seminars [Month 23].**
**Leader: CKLN**
Each virtual activity will be followed by a specific report on the event. These reports will subsequently be consolidated in a general report on all virtual meetings and seminars. It is the General Report which will be considered as the final derivable.

| Work package number | 6 | Starting Date or Starting Event | | | | | | | 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Work package title | WP6: Dissemination and Training | | | | | | | | | | | | | | | | | | | |
| Participant number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Short name of participant | CLARA | DANTE | TERENA | RNP | RENATA | REUNA | CEDIA | CUDI | UbuntuNet | WACREN | ASREN | CESNET | GRNET | SURFNET | CSIR(SANREN) | RENATER | NIIFI | CKLN | CAREN NOC | TEIN*CC |
| Person/months per participant: | 24.5 | 0.3 | 0 | 2 | 0 | 0 | 0 | 9 | 3 | 1 | 2 | 0 | 0.5 | 0 | 0 | 2 | 0.5 | 0.5 | 0.3 | 0.5 |

**Objectives**

**General Objective:**

To efficiently promote and disseminate the project to the global REN and, scientific and academic communities as well as among decision-makers, and organising training events that will augment the number of people able to use MAGIC's collaborative applications.

**Specific Objectives:**

- To promote the establishment of agreements for Africa, Asia, the Caribbean, Europe, Latin America and Oceania that aim at consolidating and completing the building blocks of middleware that MAGIC will work towards.
- To enhance the use of MAGIC services and real-time applications among international and inter-continental research groups and communities.
- To coordinate and promote training on the implementation and use of the services agreed by MAGIC.
- To develop informative material for participation in specific events related to research and education networks.

**Description of work**

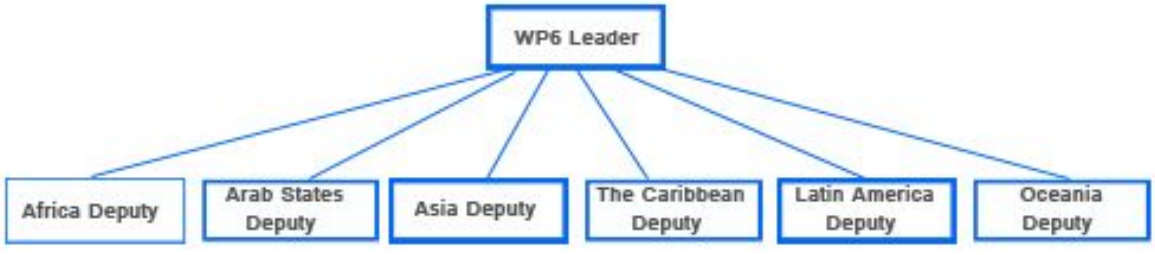
This WP will carry out all the activities that will generate relevant informative products for the project members in order to support the work of the participants, to ensure the project's global visibility and to guarantee the effective organisation and implementation of training activities. All this work will be carried out highlighting the fact that this is the first really global project ever carried out within the scope of action of RENs.

**Activities:**

**T6.1 Coordination and management**

**Leader: RedCLARA**

This task will deal with the overall coordination of WP6, which will have a structure in which every region will conscientiously report on their actions, a task which will be carried out by a WP6 local representative. The following figure depicts the functioning of WP6:




**T6.2 Planning of dissemination and co-ordination of training activities.** This task refers to MAGICs participation in relevant events in the form of dissemination booths and/or presentations to be given and to

the organization of all the training activities which will also serve to dissemination purposes.

**T6.3 Creation and management of the project's website: depicting information related to the project development, advances, achievements, training activities, etc.** The website will be the first face of MAGIC to the public and specialized audiences, through this task we will ensure the continuous updating of it in order to reflect the ample global sense of MAGIC an its advances in all the WPs in each region.

**T6.4 Publication of online and physical dissemination material tailored to different audiences/users and project needs.** For each MAGICs participation in a event/conference in the form of an exhibiting booth MAGICs brochures will be printed and distributed, in order to enhance the visibility and outreach of that material, it will be also published in the projects website.

**T6.5 Participation in specific regional events in order to promote the advances and success of the project and make them coincide with training activities.** Key events will be the TERENA Networking Conference and regional conferences such as TICAL, UbuntuNet Conference, the APAN Conference, eAGE, others.

**T6.6 Support to WP5 activities.** WP6 will cooperate with WP5 in order to help it to enhance the outreach and visibility of their actions and hence -and in time-, to contribute to the formation and/or consolidation of research communities.

**Deliverables** (brief description and month of delivery)

**D6. 1. First Dissemination and Training Plan and Baseline [Month 2]**

The document will refer to all the activities carried out before the project starts in order to ensure its proper dissemination from Day 1. The deliverable will describe the dissemination plan, the MAGIC branding, documents and presentation templates, the MAGIC newsletter and the project website and tools implemented for the measurement of outreach and impact of both the newsletter and the website. It will depict those international events in which the MAGIC project should be represented for its dissemination in the form of a booth and/or in the form of a presentation that should be given to the event's audience. The deliverable will also present the agenda of MAGIC training activities for both years of the project, explaining the reasons for the venues chosen and the actions and procedures that will be involved in the organisation and implementation of the training courses in general and of those to be carried out during the first year of the project in particular; the training courses are those as defined by WP2 (Platforms for Mobility), WP4 (Agreements for Real Time Collaboration) and WP5 (Global Science Communities). The deliverable will also refer to the support that WP6 will give to the aforementioned WPs for the translation (English and French), graphic design and publication of their training on the Moodle on-line training platform.

**D6.2. MAGIC's on-line presence report [Month 2]**

The deliverable will refer to the MAGIC website in depth in terms of its navigation map, the platform on which it will be based, languages, and how its use and utility will be measured. The document will also refer to the MAGIC presence in social media, specifically Facebook and Twitter.

**D6. 3. First Dissemination and Training Report [Month 7]**

This document will be an update of D.6.1, revising the first semester of the project and giving indications of the actions that will be taken to continue disseminating the project and its benefits; it will revise the MAGIC project's participation in international events during the given period and will define the future participation in those events for its dissemination in the form of a booth and/or a presentation that given to the event's audience. It will refer to the statistics of use and visits of both main dissemination channels: the project website and the newsletter, evaluating the on-line outreach of the project and giving indications about what will be done in order to maintain and/or enhance the given outreach for the project's benefit. It will also provide a review of the training activities carried out during the first six months of the Project and will depict

the training activities of the future months.

**D6. 4. Second Dissemination and Training Report [Month 13]**
This document will be an update of the D.6.3.

**D6. 5. Third Dissemination and Training Report: [Month 19]**
This document will be an update of the D.6.4.

**Table 3.1 b: List of work packages**

| Work Package N° | Work Package Title | Lead Participant N° | Lead Participant Short Name | Person-Months | Start Month | End month |
|---|---|---|---|---|---|---|
| 1 | WP1: Management | 1 | CLARA | 33.6 | 1 | 24 |
| 2 | WP2: Platforms for Mobility | 4 | RNP | 56.75 | 1 | 24 |
| 3 | WP3: Cloud Provisioning and Groupware Standards | 1 | CLARA | 64.25 | 1 | 24 |
| 4 | WP4: Agreements for Real Time Collaboration | 5 | RENATA | 41.75 | 1 | 24 |
| 5 | WP5: Global Science Communities | 9 | UbuntuNet | 62.05 | 1 | 24 |
| 6 | WP6: Dissemination and Training | 1 | CLARA | 46 | 1 | 24 |
| | | | | 304.4 | | |

**Table 3.1 c: List of Deliverables[2]**

| Deliverable Number | Deliverable Name | Work Package N° | Short name of lead principal | Type | Dissemination Level | Delivery Date |
|---|---|---|---|---|---|---|
| D1.1 | Interim Progress Report (M1-M6) | 1 | CLARA | R | PU | M6 |
| D1.2 | Progress Report (First Reporting Period) | 1 | CLARA | R | PU | M12 |
| D1.3 | Interim Progress Report (M13-M18) | 1 | CLARA | R | PU | M18 |
| D1.4 | Progress report (Second Reporting Period) | 1 | CLARA | R | PU | M24 |
| D1.5 | Final Report | 1 | CLARA | R | PU | M24 |
| D2.1 | Roadmap for the delivery and deployment of National AAIs in Project regions | 2 | RNP | R | PU | M3 |
| D2.2 | AAI and eduroam boot camp for experts training | 2 | RNP | DEC | PU | M6 |
| D2.3 | On line Training Material on AAI development for Staff training | 2 | RNP | DEC | PU | M10 |
| D2.4 | AAI Preparation (Assess the Identity Management of participating institutions) | 2 | RNP | R | PU | M12 |
| D2.5 | AAI Pilot. | 2 | RNP | DEC | PU | M13 |
| D2.6 | eduroam Pilot. | 2 | RNP | DEC | PU | M14 |
| D2.7 | AAI implementation | 2 | RNP | R | PU | M21 |
| D2.8 | eduroam Implementation. | 2 | RNP | R | PU | M24 |

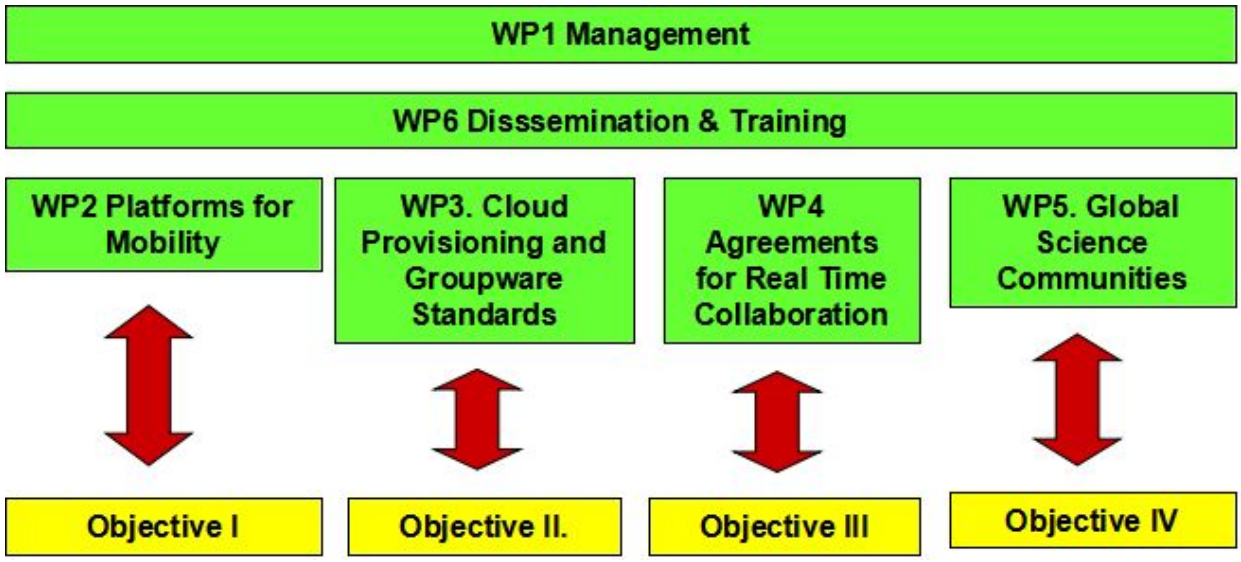
[2] If your action is taking part in the Pilot on Open Research Data, you must include a data management plan as a distinct deliverable within the first 6 months of the project. This deliverable will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available on the Participant Portal (Guide on Data Management).

| Deliverable Number | Deliverable Name | Work Package N° | Short name of lead principal | Type | Dissemination Level | Delivery Date |
|---|---|---|---|---|---|---|
| D3.1 | Collaboration portal implemented for 2 new NRENs | 3 | CLARA | DEC | PU | M5 |
| D3.2 | Assessment of the existing group management standards, NREN tools and value services for the global communities | 3 | CLARA | R | PU | M6 |
| D3.3 | Planning and design requirements for the group management and inter-operations standards and pilot implementation | 3 | CLARA | R | PU | M8 |
| D3.4 | Pilot service with one application sharing group information and service catalogue | 3 | CLARA | DEC | PU | M14 |
| D3.5 | Evaluation of pilot and services, user perception, and implementation effort | 3 | CLARA | R | PU | M17 |
| D3.6 | Recommendation on service requirements for cloud providers in Academic cloud infrastructures. | 3 | CLARA | R | PU | M23 |
| D4.1 | Online training on implementing the NRENum.net service for global video dialing | 4 | RENATA | DEC | PU | M5 |
| D4.2 | NRENum.net deployed in 3 new NRENs | 4 | RENATA | DEC | PU | M12 |
| D4.3 | Three (newly delegated countries or already members) participants that secured the country code prefix ENUM zone with DNSSec | 4 | RENATA | OTHER | PU | M16 |
| D4.4 | Pilot test of an integration between the legacy global video network with one open-source web-conference, and a VoIP network based in NRENum | 4 | RENATA | DEC | PU | M18 |
| D4.5 | Online course and video tutorial on how to deploy a unified communications network | 4 | RENATA | DEC | PU | M23 |
| D5.1 | Guidelines, objectives, directives and strategic work plan of the MAGIC Global Science Communities | 5 | UbuntuNet | R | PU | M8 |
| D5.2 | Annual report on Global Virtual Days in priority worldwide fields and on International Calls InfoDays transmitted | 5 | UbuntuNet | R | PU | M12 |
| D5.3 | Annual report on Global Virtual Days in priority worldwide fields and on International Calls InfoDays transmitted | 5 | UbuntuNet | R | PU | M22 |
| D5.4 | Report on Worldwide User communities virtual meetings and seminars | 5 | UbuntuNet | R | PU | M23 |
| D6.1 | First Dissemination and Training Plan and Baseline | 6 | CLARA | R | PU | M2 |
| D6.2 | MAGIC's on-line presence report | 6 | CLARA | R | PU | M2 |
| D6.3 | First Dissemination and Training Report | 6 | CLARA | R | PU | M7 |
| D6.4 | Second Dissemination and Training Report | 6 | CLARA | R | PU | M13 |
| D6.5 | Third Dissemination and Training Report | 6 | CLARA | R | PU | M19 |

## 3.2. Management structure and procedures

### 3.2.1. Organisational structure and the decision-making

The Project's tasks and activities are organised into six Work Packages. Two of these Work Packages are designed to carry out general tasks encompassing all of the objectives, and the other four will address specific objectives as shown in the diagram below. Management of the whole project will be carried out by RedCLARA, which will monitor the execution of the different tasks and make sure all the deliverables are submitted on time.




The general management of the Project will be carried out by a Steering Committee on which each Partner will be represented. This Committee, chaired by RedCLARA, will meet by Video/Web-conference every three months and will have the overall responsibility of the execution of the Tasks, the on-time issuing of the deliverables and verification of the Milestones. We consider that these meetings, even if they are complex to deal with because of the number of participants and the different time zones, are very important to allow all partners to maintain an overall view of the project.

All Project Partners will physically meet at the Kick-off Meeting which will be held in Africa, on the occasion of the IST-Africa Meeting. We consider that this face-to-face meeting is key to the strengthening of the network of institutions that will make this project a success. We are also proposing to hold a second meeting of the Steering Committee to evaluate the advances of the first year and plan the second year. This meeting should take place after the Evaluation Committee issues its recommendations at the beginning of Year 2.

Given the large number of regions involved in this project, and in order to be effective in the management of the work with the regions, a second structure will be needed. We call it a "Regional Coordination Committee" which will meet also every three (3) months by videoconference and two (2) times in face-to-face meetings throughout the project, in addition to the meetings that they will hold before/after the face-to-face Steering Committee Meetings. This Regional Coordination Committee will gather together the Regional Research networking organisations and a leading NREN committed to supporting the region's efforts in this project and beyond.

Regional Coordination Committee

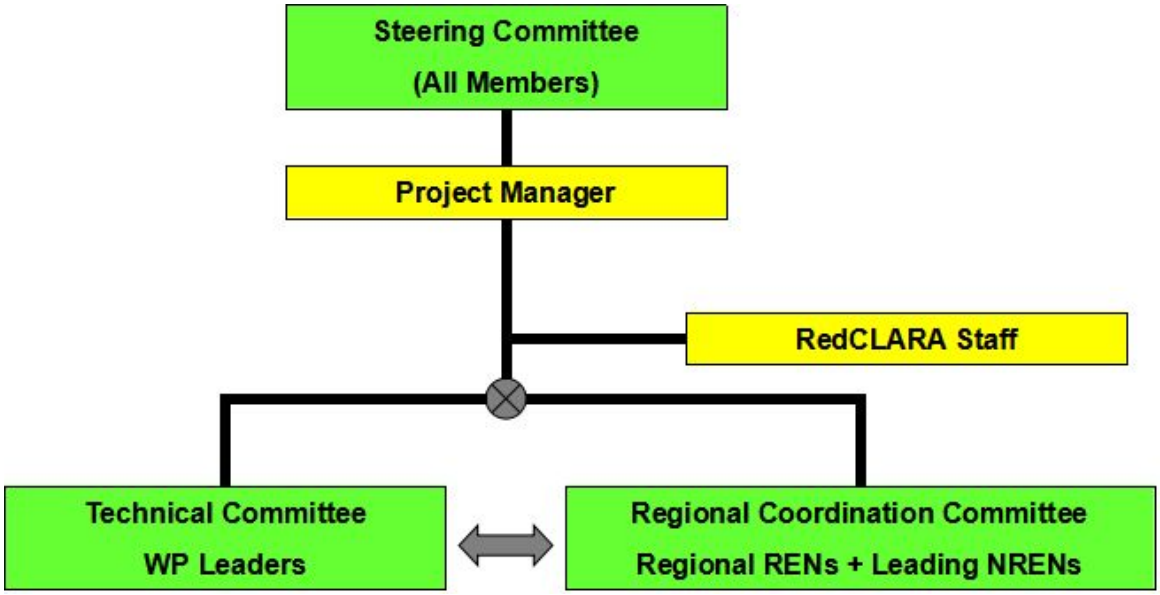
UbuntuNet Alliance + CSIR
WACREN + RENATER
CAREN NOC (NITC)
TEIN*CC
ASREN + GRNET
CKLN+ RNP
CLARA

The purpose of including a leading NREN partner is to ensure that training, support and continuity in time be assured by that leading organisation committed to support the region's efforts.

CLARA will work through a Project Manager and the support of the Technical Manager, the Marketing Manager and the Academic Relations Manager. Financial management will be carried out by the Chief Financial Officer. This staff will provide support for the activities of the Working Groups.

The leading persons of the technical Work Packages (WP2-WP4) will form a Technical Committee that will ensure appropriate coordination among the activities. This Committee will issue recommendations on the development of the project to both the Regional Coordination Committee and the Steering Committee.

The complete organisation will then be as follows:




The Steering Committee is the maximum decision body of the Project. Its aim is to reach consensus on all major decisions but in the event of discrepancy, decisions will be taken by majority making sure that strategic decisions are taken at least 60% of the partners. In case that this number is not met, but the simple majority is reached and the Project Coordinator's vote is among the majority, the decision is taken for that option. Otherwise a second round of negotiations will be carried out. If

the 60% is not met again, but a majority is reached, the decision will be taken by the Project Coordinator. In case of a tie the decision will be taken by the Project Coordinator.

The Working Groups will internally take all project execution decisions, but will have to request the Steering Committee's approval for agreements that go beyond the Group's influence and or have impact on the other groups.

The Project Manager will be responsible for the appropriate coordination of the work and will make sure that decisions are taken at the appropriate level.

There are three major risks for the project:

Risk 1. Disagreements between the regional blocks on protocols to be adopted. This risk is minor since for most protocols a consensus already exists in the global community of research and education networks, and most Partners have already been active participants in meetings and projects where these standards are already in production. Nevertheless, if a disagreement appears and remains after meetings of the Steering Committee, the possibility of establishing "gateways" and interoperability agreements will solve the problem.

Risk 2. Different development speeds of the regions involved in the partnership. This will be taken care of by the regionalised approach that we are proposing, with training ensured at each regional level and local leadership and support provided by the Leading Regional NREN (Focal Point) that will be in charge of the support to the regional REN members jointly with the Regional REN, this will also ensure long term sustainability of the effort.

Risk 3. Poor coordination with other European and Global Initiatives. This risk will be avoided by including partners working in all major European initiatives and the Global CEO Forum group where several of the partners are involved. The key issue here is to implement agreements reached by those forums and not produce a different solution. Reaching out to all regions of the world, especially developing RENs is a key success factor of the project.

**Table 3.2 a: List of milestones**

| Milestone number | Milestone name | Related Work package(s) | Expected date [1] | Means of verification |
|---|---|---|---|---|
| MS1 | Project installation | All | M3 | Project Website; Event participation plan |
| MS2 | Agreements of MAGIC and GÉANT to work on RTC standards | WP4 | M4 | The agreement itself |
| MS3 | RedCLARA's Collaboration Portal deployed in 2 regions, including the collaboration applications selected | WP3 | M5 | The pilot portal itself |
| MS4 | Global Science Community Opening Conference | WP5 | M5 | Activity webpage and conference videotape online |
| MS5 | Assesment of group management platforms | WP3 | M6 | The document including the agreed specifications |
| MS6 | NRENumnet Deployed in 3 countries in Latin America | WP4 | M6 | The NRENum deployment report |
| MS7 | Global Science Communities established | WP5 | M8 | Deliverable D5.1 |
| MS8 | Training of focal points for AAI and eduroam completed | WP2 | M8 | The Training report |
| MS9 | Training materials to show the uses and benefits of the global collaborative tools | WP5 | M10 | Online publication of the portfolio of the training materials |
| MS10 | BETA version of MAGIC Information System on Worldwide Funding Opportunities and Partner Search | WP5 | M11 | The information system on line |

| Milestone number | Milestone name | Related Work package(s) | Expected date [1] | Means of verification |
|---|---|---|---|---|
| MS11 | NRENum.net Deployed in 3 countries in Asia Pacific | WP4 | M12 | The NRENum deployment report |
| MS12 | Dissemination activities Year 1 complete | WP6 | M12 | The dissemination report Year 1 |
| MS13 | Training in African region completed | WP2 | M13 | The Training report |
| MS14 | Training in the Caribbean completed | WP2 | M13 | The Training report |
| MS15 | Participation of regional representatives of each global priority area in at least one Regional Best Practice Meeting | WP5 | M13 | Activity webpage and conference videotape online |
| MS16 | Pilot of the group management platforms inter-operating and functionning in at least 2 applications sharing groups accross continents | WP3 | M14 | The applications themselves |
| MS17 | Training in the Central Asian region completed | WP2 | M15 | The Training report |
| MS18 | eduroam agreements with at least 12 countries from different regions signed | WP2 | M15 | The MoUs signed with MAGIC |
| MS19 | Training in Asia completed | WP2 | M16 | The Training report |
| MS20 | Strategic information to strengthen the worldwide communities | WP5 | M16 | Evaluation survey about the virtual seminar on "challenges of working collaboratively" |
| MS21 | Integration between legacy video network and Webconference is active | WP4 | M18 | The working system |
| MS22 | Update on the training materials portafolio | WP5 | M22 | New online publication of the portafolio of the training materials updated |
| MS23 | Recommendations for Cloud service providers to participate in a Global Academic Cloud | WP3 | M23 | The recommendations report |
| MS24 | Briefing on the success and challenges faced by the Global Science Communities carried out in the 2 years | WP5 | M23 | Deliverable D5.4 |
| MS25 | Pilot federations deployed in at least 4 countries | WP2 | M24 | The policy documents of the federations |
| MS26 | Implementation guides and video tutorial on line | WP4 | M24 | The online material |
| MS27 | Dissemination activities Year 2 complete | WP6 | M24 | The Final Report |

**Table 3.2b: Critical risks for implementation**

| Description of risk | Work package(s) involved | Proposed risk-mitigation measures |
|---|---|---|
| Disagreements between the regional blocks on protocols to be adopted. | WP2, WP3, WP4 | "Gateways" and interoperability agreements will be sought |
| Different development speeds of the regions involved in the partnership. | WP2-WP5 | Training will be ensured at each regional level and local leadership and support provided by the Leading Regional NREN (Focal Point) that will be in charge of the support to the regional REN members jointly with the Regional REN |
| Poor coordination with other European and Global Initiatives. | WP2-WP4 | Partners are involved in all major European initiatives and the Global CEO Forum group. |

## 3.3. Consortium as a whole

### 3.3.1. Description of the Consortium

The consortium is formed by a set of European and worldwide NRENs as well as Regional Research and Education Networks (RENs). The Regional RENs are intended to cover a specific area of the World:

a. ASREN for the Arab countries
b. UbuntuNet Alliance for the East and Southern African countries
c. WACREN for the West and Central African countries
d. NITC (CAREN NOC) for the Central Asian countries
e. TEIN for the Asian countries (represented by TEIN*CC)
f. CKLN for the Caribbean countries
g. CLARA for the Latin American countries

The consortium also includes DANTE and TERENA who will ensure an interface between the Project and the community of European NRENs, as well as the GÉANT project as a whole, eduroam and the eduGAIN inter-federation service and other appropriate GÉANT services.. DANTE is also in charge of the AfricaConnect project for Southern and Eastern Africa and is also strongly engaged in work with ASREN, CAREN, CKLN, TEIN*CC and WACREN, while having also been the leader in the Euro-Latin American project ALICE and partner in the ALICE2 Project.

Cooperación Latinoamericana de Redes Avanzadas CLARA, the coordinator of the project is the consortium of Latin American NRENs and has been the leader of the ALICE2 and ELCIRA projects. It brings into the project its experience in coordinatng the action of the Latin American NRENs and its well established network of international collaborations.

DANTE manages research and education networking projects serving Europe, the Mediterranean, Sub-Saharan Africa and Central Asia regions, coordinates Europe-China collaboration, and assists the projects underway in Latin America, the Caribbean and Asia-Pacific. In MAGIC, DANTE will provide a liaison function between the Project and the GÉANT project, ensuring and supporting appropriate interaction between MAGIC and the GÉANT project as a whole, and specifically the GÉANT services focused on by MAGIC. DANTE will also ensure that the GÉANT community as a whole is kept informed of the MAGIC project.

TERENA is the association of National Research and Education Networks in Europe, its mission is to promote and participate in the development of high-quality international information and telecommunications infrastructure and services for the benefit of research and education, as such it will coordinate the relationship of the project to the eduroam and eduGAIN initiatives as it successfully did for the ELCIRA project.

RNP, the Rede Nacional de Ensino e Pesquisa, NREN of Brazil, will contribute without receiving funding as the coordinator of WP2. It brings to the project its experience in building a large set of Federations and eduroam connection points in Latin America where it is recognised as the leader of the region. It will also share its experience in training accumulated during the ALICE, ALICE2 and ELCIRA Projects.

RENATA, the Red Nacional de Tecnología Avanzada, NREN of Colombia, has been the leading NREN in Gatekeeper deployment in Latin America during the ELCIRA project and has successfully implemented NRENum.net in Colombia. It has also led the development of the

videoconference scheduling system in CLARA. RENATA will lead WP4 on Real-time Applications.

REUNA, the Red Universitaria Nacional, NREN of Chile, is the second oldest NREN in Latin America and the first one to implement a Federation connected to eduGAIN. It will bring to the project its regional leadership, its experience in building a federation and eduroam implementation as well as its extensive experience in videoconferencing.

CEDIA, the Corporación Ecuatoriana por el Desarrollo de Internet Avanzado, NREN of Ecuador, has extensive experience in building RedCLARA's scheduling system, jointly with RENATA and is currently finishing its Federation that will be connected to eduGAIN in a very short time. It will bring the successful experience of the NREN in a small country that has been able to implement these key infrastructures in a very short time.

CUDI, the Corporación Ecuatoriana por el Desarrollo de Internet has extensive experience in managing large videoconferences through their "Virtual Days" which have served as a model for the construction of user communities in Latin America. CUDI will participate in the project as an unfunded party, bringing to the project resources from Mexico's National Sciences Board (CONACYT).

UNAM, the National Autonomous University of Mexico will participate in the project as a Third Party, collaborating in CUDI's activities.

UbuntuNet Alliance for Research and Educational Networking is the Regional REN including East and Southern African countries. With wide experience in networking people in Africa and its involvement in the AfricaConnect project, UbuntuNet Alliance is building the basic infrastructure for this part of the world and will coordinate all the actions towards its members.

WACREN, the West and Central African Research and Education Network is joining the REN community and it groups the West African countries. Its work will be fundamental for the deployment of the infrastructure and services in West Africa.

ASREN, the Arab States Research and Education Network, has been working for several years on building an Arab countries networking community. ASREN will contribute to the project and participate in all work packages with focus on eduroam, identity federation infrastructures and clouds at both national and regional levels within NRENs in ASREN's region.

CESNET, the Czech Education and Scientific Network, has been very active as participant in AAI activities as well as groupware developments. CESNET is providing services for AAI solutions for other NRENs and research projects. Its participation will be fundamental to coordinate the activities of WP3 as well as for the deployment of infrastructure such as Federation as a Service that will support the deployments of WP2 in different regions of the world.

GRNET, the Greek Research and Technology Network, has built a large experience in the deployment of Cloud Services in Greece and is now coordinating the Working Group on Cloud Services in GÉANT. GRNET will bring its experience into the project to help build the necessary agreements for a Global Cloud services model for the NREN world.

SURFNet is the NREN of The Netherlands. It will bring into the project its experience in the development and deployment of OpenConext and its cloud service model where nearly 500 applications are provided to its community by themselves and private providers. Their business

point of view as well as their experience with groupware and cloud services will be essential for the project. SURFNet will contribute without requesting funds from the EC.

CSIR, the Council for Scientific and Industrial Research of South Africa, acts as the house of SANREN, the NREN of South Africa that is a key part of UbuntuNet since it cooperates with the other NRENs providing them with its expertise and knowhow, supporting in this way the development of the whole UbuntuNet community. SANREN is called to play the same role that the Brazilian NREN, RNP, has played in Latin America and will be key for the long time continuity of this effort.

RENATER, the French NREN, has implemented the identity federation for education and research in France which is connected to eduGAIN, operates eduroam in France and has successfully deployed a nationwide video-conference service. RENATER is a member of DANTE, TERENA and WACREN. It is strongly committed to the WACREN community and willing to support lengthy efforts to deploy the basic infrastructure proposed in the project as well as deploying and maintaining services for that community in the long-term.

NIIF, the National Information Infrastructure Development Institute of Hungary has been a participant in several European projects and is part of the HEXAA initiative where groupware standards are being discussed within the GÉANT Project. Its participation will be key to ensure interoperability with European initiatives.

CKLN, the Caribbean Knowledge and Learning Network is a consortium of the Caribbean NRENs. It will bring to the project its capacity to coordinate the activities of the Caribbean NRENs whose interests are from AAI and eduroam to the development of services for their newly formed regional community.

NITC (CAREN-NOC), As provider of the CAREN NOC and training activities, NITC will represent the Central Asia R&E networking region (as established by the EC-funded CAREN project), and ensure that the NRENs and end users in the region are able to benefit from the results of the MAGIC project.

TEIN, Trans-Eurasia Information Network, is a high capacity networks for Research and Education (R&E) organisations in the Asia-Pacific region and Europe, enabling and promoting collaborative research on applications of broad societal benefit. As such, its participation in the MAGIC project will be as a catalyst in international collaborations as well as to expedite and effectively spread applications including eduroam and eduGAIN in the Asia-Pacific Region.

APAN is the non-profit partnership of over 20 NRENs across the Asia-Pacific region, established in 1996. It has a strong focus on the user needs for research and education infrastructure, with many application working groups in areas such as agriculture, telemedicine and disaster monitoring. It builds upon a range of collaborative infrastructure initiatives provided by members within the region and connections beyond to Europe and North America, from the network layer up to the application layer.

APAN has agreed to collaborate with the project. To do this, a Memorandum of Understanding will be signed once the project is approved. To testify their support, a Letter of Support is attached.

### 3.4. Resources to be committed

The personnel involved in the project amount to a total effort of 304.4 PMs distributed as 33.6 PMs for Project Management and 270.8 PMs for the Coordination Activities. The following is the distribution of PMs by WP and by Partner.

| | WP1 | WP2 | WP3 | WP4 | WP5 | WP6 | Total Person/ Months per Participant |
|---|---|---|---|---|---|---|---|
| CLARA | 15.4 | 8.7 | 16 | 6 | 22 | 24.5 | 92.6 |
| DANTE | 0.75 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 2 |
| TERENA | 1 | 0.5 | 0.5 | 0 | 0 | 0 | 2 |
| RNP | 1 | 7 | 1.45 | 1.45 | 2 | 2 | 14.9 |
| RENATA | 1 | 1 | 2 | 11 | 3 | 0 | 18 |
| REUNA | 0.5 | 0.5 | 5 | 2.5 | 0 | 0 | 8.5 |
| CEDIA | 0.5 | 0.5 | 0.5 | 0 | 0 | 0 | 1.5 |
| CUDI | 6 | 9 | 15 | 10.5 | 15 | 9 | 64.5 |
| UbuntuNet | 0.5 | 3 | 3 | 3 | 11 | 3 | 23.5 |
| WACREN | 0.5 | 3 | 1.5 | 2.5 | 3 | 1 | 11.5 |
| ASREN | 0.5 | 10 | 1 | 1 | 3 | 2 | 17.5 |
| CESNET | 0.5 | 2 | 6 | 0 | 0 | 0 | 8.5 |
| GRNET | 0.5 | 4 | 7.5 | 0 | 0.5 | 0.5 | 13 |
| SURFNET | 0.25 | 0 | 0.25 | 0 | 0 | 0 | 0.5 |
| CSIR(SANREN) | 2.2 | 0.55 | 0.55 | 0.55 | 0.55 | 0 | 4.4 |
| RENATER | 0.5 | 3.5 | 2 | 2 | 0 | 2 | 10 |
| NIIFI | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 3 |
| CKLN | 0.5 | 2 | 0.5 | 0.5 | 0.5 | 0.5 | 4.5 |
| CAREN NOC | 0.5 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 1.5 |
| TEIN*CC | 0.5 | 0.5 | 0.5 | 0 | 0.5 | 0.5 | 2.5 |
| Total Person/Months | 33.6 | 56.75 | 64.25 | 41.75 | 62.05 | 46 | 304.4 |

Table 3.4 a **Summary of staff effort**

The total number of PMs requested to the EC is 208.7 while the PMs funded by the partners are 95.7. These PMs are funded by several participating organisations which are not requesting funding: RNP, CUDI, SURFNet, CSIR, TEIN*CC. Each of these organisations will use funding coming from internal sources (RNP, SURFNet, CSIR, TEIN*CC), while CUDI has requested the funding from their national science organisation in Mexico (CONACYT).

The total funds requested from the EC for this proposal amount to €1,388,972 out of a total cost of €1,785,814.

The total of manpower resources amounts to €1,041,178 while travel expenses are €347,470 and the Material, Conference Organisation and other visibility actions are set to €50,000. These latter costs correspond to sub-contracting.

The large distribution of the coverage of the project as well as the different levels of development of the partners requires the formation of a strong network of people who trust each other. Thus, the networking is a key component of MAGIC. To ensure this, we have included two (2) face-to-face meetings of the whole project team. Since this involves a large expense, we have planned to hold also meetings of the WPs on the

same date so that maximum efficiency in the use of resources is ensured. Other meetings involving partial groups, such as the Regional Committee and travel for the Training Boot Camp are also planned.

Another important part of the project is dissemination and training. This also requires traveling to conferences and training sessions. We have planned to use existing conferences in all the continents to ensure maximum visibility as well as a "train the trainers" and regionalised training strategy.

The total cost of travel is high with respect to manpower and other costs. This is also due to the synergy with other projects such as AfricaConnect, EUMEDCONNECT3, TEIN4, GÉANT, CKLN and others whose activities will complement or ensure impact and long-term impact of the action. Given the number of partners and the large geographic coverage, we consider that the planned number of 84 trips for management and 116 for Coordination, i.e. an average of 4.2 Management trips and 5.8 Coordination trips per partner is a minimum to ensure the required level of networking and visibility.

Below are the tables of travel and other direct costs for all the partners.

| 1 CLARA | Cost (€) | Justification |
|---|---|---|
| Travel | €61,700 | Management, networking and dissemination activities |
| Equipment | €0 | |
| Other goods and services | €50,000 | Material and other meeting and organization costs |
| Total | €111,700 | |

| 2 DANTE | Cost (€) | Justification |
|---|---|---|
| Travel | €17,250 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €17,250 | |

| 3 TERENA | Cost (€) | Justification |
|---|---|---|
| Travel | €20,150 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €20,150 | |

| 4 RNP | Cost (€) | Justification |
|---|---|---|
| Travel | €28,360 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €28,360 | |

| 5 RENATA | Cost (€) | Justification |
|---|---|---|
| Travel | €10,410 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €10,410 | |

| 6 REUNA | Cost (€) | Justification |
|---|---|---|
| Travel | €7,120 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €7,120 | |

| 7 CEDIA | Cost (€) | Justification |
|---|---|---|
| Travel | €7,120 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €7,120 | |

| 8 CUDI | Cost (€) | Justification |
|---|---|---|
| Travel | €7,120 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €7,120 | |

| 9 UbuntuNet | Cost (€) | Justification |
|---|---|---|
| Travel | €20,170 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €20,170 | |

| 10 WACREN | Cost (€) | Justification |
|---|---|---|
| Travel | €20,170 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €20,170 | |

| 11 ASREN | Cost (€) | Justification |
|---|---|---|
| Travel | €20,170 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €20,170 | |

| 12 CESNET | Cost (€) | Justification |
|---|---|---|
| Travel | €7,950 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €7,950 | |

| 13 GRNET | Cost (€) | Justification |
|---|---|---|
| Travel | €14,700 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €14,700 | |

| 14 SURFNET | Cost (€) | Justification |
|---|---|---|
| Travel | €13,750 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €13,750 | |

| 15 CSIR(SANREN) | Cost (€) | Justification |
|---|---|---|
| Travel | €11,390 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €11,390 | |

| 16 RENATER | Cost (€) | Justification |
|---|---|---|
| Travel | €14,500 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €14,500 | |

| 17 NIIF | Cost (€) | Justification |
|---|---|---|
| Travel | €12,150 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €12,150 | |

| 18 CKLN | Cost (€) | Justification |
|---|---|---|
| Travel | €12,140 | Management and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €12,140 | |

| 19 CAREN NOC | Cost (€) | Justification |
|---|---|---|
| Travel | €14,750 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €14,750 | |

| 20 TEIN*CC | Cost (€) | Justification |
|---|---|---|
| Travel | €26,400 | Management, training and networking activities |
| Equipment | €0 | |
| Other goods and services | €0 | |
| Total | €26,400 | |

**Tables 3.4b 'Other direct cost' items (travel, equipment, infrastructure, goods and services, large research infrastructure)**

## Annex: Support Letter from Asia Pacific Advanced Network


*Asia Pacific Advanced Network Ltd (Incorporated in Hong Kong)*
*Rm 101, Level 1, Block B, Cyberport 4, 100 Cyberport Road, Hong Kong*
*Company #: 1357140*
*email: sec@apan.net web: http://www.apan.net /*

To:

Florencio I. Utreras,
Executive Director, Cooperación Latinoamericana de Redes Avanzadas (CLARA),
Santiago, Chile

Dear Florencio,

This letter is to express APAN's support for and commitment to the MAGIC proposal being submitted for funding under the Horizon-2020 program of the European Commission. APAN's role in the Asia-Pacific is strongly aligned with the targets of your MAGIC project, and we are keen to assist the delivery of the work packages for our community, spanning more than half the world's population.

As the funding rules for Horizon-2020 do not permit APAN itself to be funded, even though many of its members could be, we are very happy to pursue a Memorandum of Understanding (MoU) with the MAGIC consortium if the project is approved.

### About APAN

APAN is a non-profit consortium established in 1996 and recently incorporated in Hong Kong. Its members include almost all of the National Research and Education Networks ("NRENs") across the Asia-Pacific region. APAN was established to provide a framework for the exchange of information, skills and other benefits across its members, and to collectively provide a coordinated shared peering network of international links, such as TEIN, Gloriad, TransPAC, AI3, and many others. Its connectivity, both within the Asia-Pacific and from there to the rest of the world, underpins a rich community of research and education users, a mechanism for coordination around international standards for advanced internet-based infrastructures, and an environment for collaboration amongst its diverse base of users.

APAN is strongly focused on building infrastructure and on supporting application areas, from infrastructural layers to research areas including agriculture, biosciences, medicine, geosciences and environment, as well as education, amongst many others. It has a keen enthusiasm to establish and realise the social benefit of Internet technologies and to assist governments with informed policy formulation around and using such technologies. APAN works closely with governments, research and education communities, industry, international partnerships and particularly with like-minded agencies around the world to achieve mutually beneficial outcomes.

### Support for the MAGIC proposal

APAN is able to identify key areas of alignment to each of the proposed Work Packages.

WP1: Management. APAN would arrange regular meetings for the MAGIC consortium with the APAN General Manager, the APAN Secretariat, and the Board of APAN as appropriate, to ensure that delivery of the work packages is supported across our Members, and is effective.

WP2: For the identity federation and eduroam activities, APAN has just launched a Task Force to develop a 2-year work plan for development in these areas. This plan will include technology development, but more importantly it will include support for face-2-face training/workshops at the APAN meetings, especially train-the-trainers, as well as collaboration services, and also development (tuning) and hosting of training materials - including recordings of workshops, and translation into local languages.

WP3: APAN is just launching its Cloud Working Group, which will build on some of the mature Cloud deployments in Asia. The Australian Research Cloud (NeCTAR) will be an exemplar, but many countries have an emerging model. They are also starting a Task Force to survey the region's current situation, identify resources that are available to be shared, develop and propose standards for domestic and international cloud services, as well as training for cloud deployments (infrastructure) and cloud migration (moving tools to cloud platforms).

WP4: For nearly twenty years APAN has been a highly distributed organisation, and is very familiar with a wide range of collaboration technologies and standards. It has worked on H323 and SIP-peering within the region and globally. It regularly assesses the market for other collaboration platforms that provide cost-effective solutions that can be integrated for the whole community. The Network Engineering working group of APAN provides direct technical contacts into many NRENs of the region who can assist the assessment, deployment and integration of selected technologies.

WP5: APAN's key driver is supporting the research and education communities of its members, so it has a strong focus on application areas and (science) communities. There are some very strong application working groups in APAN, providing significant, international, leadership in their domains, because they are so important to the region. These include Agriculture, Telemedicine and Earth Monitoring in support of Disaster Monitoring/Management. The respective Working Groups, and especially their Chairs, could provide direct engagement with their communities for the MAGIC project.

WP6: APAN can assist all of the activities through dissemination at its meetings, through its website and mailing lists. The APAN meetings themselves, held every six months, involve significant organisational effort, by APAN itself and by the APAN Member who is the local host. Scheduling and hosting any MAGIC-related workshops could be supported as an extension of their activities.

Across all of these activities it is likely that APAN and its Members could provide the MAGIC project with easily over 2 fulltime equivalent staff, or over 50person-months across the project, on the basis that the MAGIC project will invest in and deliver valuable outcomes to APAN, our Members and the wider community that they all serve.

We wish your proposal all the best and hope for its success. We look forward to establishing an MoU at the earliest opportunity.

Prof Sureswaran Ramadass

Chair, APAN Ltd.

31 Aug 2014

## 4. Members of the consortium

### 4.1. Participants (applicants)

#### 4.1.1. CLARA

CLARA, Cooperación Latino Americana de Redes Avanzadas (Latin American Cooperation of Advanced Networks) is a consortium of the National Research and Education Networks (NRENs) of the Latin American Region. Legally established in Uruguay, CLARA is formed by the NRENs of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panamá, Paraguay, Peru, Uruguay and Venezuela.

The mission of CLARA is to foster collaboration between the different countries in the Latin America Region by providing a world-class research networking infrastructure for the use of researchers, educators, students and innovators making it possible for them to connect to each other and with their peers in the other regions of the world. CLARA was created as part of the ALICE Project (America Latina Inter Conectada Con Europa / Latin America Interconnected with Europe), a €12.5-million project funded by the European Commission under the umbrella of the @LIS Programme.

CLARA operates RedCLARA, the Research and Education Network of Latin America which connects 13 of the aforementioned countries by a high-speed network which is in turn connected to GÉANT via a link from São Paulo, Brazil, to London, UK. Also, thanks to the partial support of the US National Science Foundation, RedCLARA is linked to US networks through connections in São Paulo (Brazil) and Tijuana (Mexico).

CLARA operates as a very decentralised organisation, having its legal office in Uruguay, but spreading its operation over the whole of Latin America, in particular with its Network Operation Centre (NOC) located in Chile, its Network Engineering Group (NEG) located in Brazil, its Project Management Office in Mexico, its Academic Relations Management in Colombia and Chile, and its General Management located in Chile. In this way CLARA has permanent contact with its member NRENs, and ensures that appropriate feedback is obtained from them, while also ensuring that they collaborate in the overall functioning of the organisation.

In 2013 CLARA, together with its European counterparts, completed the ALICE2 project which aimed at substantially increasing network bandwidth so as to be able to serve demanding applications such as High Energy Physics, Earthquake Simulations, Biodiversity Databases, VLBI and Astronomy, among others.

Key personnel:

Florencio Utreras (Executive Director)
Gustavo García (Technical Manager)
María José López (PR Manager)
Tania Altamirano (PR Specialist)
Rodrigo Soto (Marketing Specialist)
Emilia Serafin (User Communities Coordinator)

Dr. Florencio I. Utreras is the Executive Director of CLARA, the Latin American Cooperation of Research Networks. Dr. Utreras graduated in Mathematical Engineering from the University of Chile in 1975 and received a Doctor of Engineering degree from the Université de Grenoble, France, in 1979. He is a former Full Professor of the University of Chile. Before joining CLARA, Dr. Utreras was the Executive Director of REUNA (the Chilean Research Network which he contributed to creating) from 1992 and previously he had been Full Professor of Applied Mathematics at the University of Chile in Santiago and Visiting Professor at several universities and research centres in Europe (France, Italy) and the United States. Dr. Utreras has been involved in Research Networking since 1987 and has been awarded several national and international prizes for his contribution to the dissemination of Internet technology and research networking. He was the Director of the EuropeAid-funded ALICE2 Project from 2008 to 2013 and has participated in several FP7 Projects, including ELCIRA, EVALSO and ELLA.

Gustavo Garcia is a Colombian Electronics Engineer with a post-graduate degree in Technological Management. Gustavo has extensive experience in the telecommunications field through a 15-year career in Telephony, Cable and Telecommunications' companies. Gustavo's engineering training had an emphasis on informatics. The above allowed him to work on telecommunications and information technology management with achievements in service deployment through open-source technologies. Gustavo has worked as Internet Manager (2.5 years), Telecommunications and Internet Planning Leader (4 years), IT Manager (8 years) and Technical Manager (2 years). As RedCLARA's technical manager for the last five years, Gustavo worked directly on the ALICE2 project.

Carlos González is an Electronics Engineer with a M.Sc. in Electrical Engineering and currently holds credentials as CISM and COBIT Foundations by ISACA and PMP by Project Management Institute. Carlos has 15+ years of professional experience as Senior Professional and Project Technical Leader in projects in Networking, Information Systems (Software), Information Security and Disaster Recovery in industries including Oil & Gas, Telco, Financial, R+D and Government. His knowledge areas include IT Management, Development, Systems Integration, Information Security Risk, Compliance and Governance and Continuity Management. For the past four years, Carlos has worked at RedCLARA leading the software development components for ALICE2 and ELCIRA projects.

María José López Pourailly is the Communications & PR (CPR) Manager of RedCLARA. She holds a Licence Degree in Social Communication and a Bachelor Degree in Journalism from the University Andrés Bello (UAB - Chile) in 1998. Before joining RedCLARA as a full time employee (February 2010) she worked as CPR manager at REUNA (Chilean NREN - May 2000 / January 2010), where she also managed CPR for CLARA since November 2004. Previously to her carrier in the advanced networks area, she worked at several Chilean media outlets (radio, TV, newspapers) and publishing companies and was full time professor of Multimedia Journalism at the UAB in Santiago. She has wide experience in advanced networks, collaborative and distributed project development and implementation, website design and management, editing and the coordination of scientific and advanced networks events; she developed the PR Plan for CLARA, ALICE2, ELCIRA, EELA, EELA2 and worked in the organisation of the ALICE–CLARA Launch Event (Río de Janeiro, November 22, 2004).

Tania Altamirano L. is Master in Editorial and Written Journalism at the Pontifical Catholic University of Chile and El Mercurio Journal of Chile. In 2001 Tania graduated as Bachelor of Science in Communication at the Centro American University (UCA) of Nicaragua, and in 2005 concluded a post graduate studies in Marketing and Publicity Management from the Technical Institute of High Studies of Monterrey, Mexico (ITESM). Since 2009 she has been a member of the Communications and Public Relations team of RedCLARA working as a Sub-Editor. Her experience includes the generation of informative material (news, articles, brochures) for the website, bulletin, social networks and the dissemination through the national networks connected to RedCLARA, the participation in IT international events and the organisation of virtual meetings with participants from around the world.

Rodrigo Soto is a Bachelor in Business & Administration who specialises in Strategy & Management Control and has been RedCLARA's Product Manager since July 2013. He is in charge of the definition and management of products for RedCLARA. Rodrigo has a special interest in the different aspects of technology and the telecommunications industry. For the last year he has been working on the ELCIRA project redesigning the interfaces for the RedCLARA Portal and working on business models for sustainable services in RedCLARA.

Emilia Serafin, graduated as Psychologist in 2004 from the Universidad Autónoma del Estado de Morelos-UAEM in Mexico and has a Master degree in International Studies from the Université de Montréal-UdeM in Canada obtained in 2011. Her professional career began in the Higher Education International Relations as member of the International Relations team of the UAEM (2001-2004) and the UdeM (2005-2008). Her experience and her studies guided her towards the universe of the International Cooperation and Development, collaborating from 2009 to 2012 for the International Organization on Higher Education, and since 2013 for RedCLARA. Her knowledge on the Higher Education System in Latinamerica and other world regions, as well as her experience on the management and approach of academicians and scientific groups and projects, positioned her as the Academic Communities Manager of RedCLARA.

**Role in project**

Project Co-ordinator

### 4.1.2. DANTE

DANTE (Delivery of Advanced Network Technology to Europe) was established in 1993 in Cambridge, UK. It is a limited liability company and a "Not for Profit" organisation. The ownership of the company is by fifteen shareholding organisations, which are either European NRENs or government funding bodies which finance the NREN for their country.

DANTE's main purpose is to plan, build and operate pan-European research networks. In the last 20 years, DANTE has played a pivotal role in five consecutive generations of pan-European research network, best known as GÉANT. In addition, DANTE has successfully coordinated several regional development projects building research and education networks in Latin America (ALICE), Asia Pacific and South Asia (TEIN), Central Asia (CAREN), North Africa and the Near-East (EUMEDCONNECT), and most recently sub-Saharan Africa (AfricaConnect). DANTE also managed the ORIENT project linking GÉANT and China and is the co-ordinating partner of the successor ORIENTplus Project. In addition, DANTE is a partner in the ELCIRA (Europe Latin America Collaborative e-Infrastructure for Research Activities).

Based in Cambridge, UK, with around 70 employees, DANTE currently manages an annual turnover of approximately €50m.

**Bio**

Thomas Fryer joined DANTE as a member of the International Relations Team in November 2008. His work involves supporting international dialogue between the GÉANT community and GÉANT's global R&E networking partners. Thomas works closely with CLARA, acting as a liaison point between the GÉANT community and its Latin American partners. In addition, he assisted in the implementation of the ALICE2 project since its inception in December 2008, and represents DANTE in the ELCIRA project, ensuring close liaison between ELCIRA and relevant service activities in the GÉANT project. In collaborations with other world regions, Thomas supports dialogue between the GÉANT community and its partners in North America, WACREN in West and Central Africa and the UbuntuNet Alliance in Southern and Eastern Africa. Thomas has a degree in modern languages and linguistics from the University of Essex in the United Kingdom.

**Role in Project**

To ensure the success of the MAGIC project, dialogue and collaboration will be required with Activities within the GÉANT project concerning, eduGAIN, eduroam, real-time collaboration tools and cloud services. In order ensure that this interregional collaboration is established and maintained, DANTE will provide a liaison and support function between the various work packages and the corresponding GÉANT services.

**Relevant Publications**

N/A

**Relevant Projects**

The EC co-funded GÉANT project (currently GN3plus, April 2013 to March 2015). GÉANT is the pan-European research and education network. www.geant.net
ELCIRA; June 2012 to October 2014;. Europe Latin America Collaborative e-Infrastructure for Research Activities. www.elcira.eu

### 4.1.3. TERENA

TERENA is the association of National Research and Education Networks in Europe. In 2014, the organisation counts 41 national members, two international members – CERN and ESA – and a number of associate members, including, DANTE, NORDUnet, EMBL and a few industrial organisations, which are normally highly involved in cooperation activities and projects with the research and education networking community. The mission of TERENA is to promote and participate in the development of high-quality international information and telecommunications infrastructure and services for the benefit of research and education. The activities of TERENA fall into four categories, which are the pillars of the organisation:

Fostering new activities: TERENA provides an environment for fostering new initiatives in the European research networking community.
Technical programme: TERENA supports joint European work in developing, evaluating, testing, integrating and promoting new networking, middleware and application technologies.
Knowledge transfer: TERENA organises conferences, workshops and seminars for the exchange of information between TERENA member organisations and in the wider research networking community, and to make them and the Internet community at large aware of relevant developments.
Promoting members' interests: TERENA represents the common interests and opinions of its member organisations in contacts with governments, funding bodies, industry and other organisations.

Previous Relevant Experience

TERENA staff members have been involved in the GN2, GN3 and GN3plus projects. In the GN3plus project TERENA staff members are responsible for leading the Networking Activity NA3 (Status and Trends) developing the TERENA Compendium of NRENs and supporting the TERENA Task Forces, building collaboration amongst the R&E networking community. TERENA also provides the task leader for the GN3plus Joint Research Activity JRA3 (Trust and Identity). In 2012 TERENA staff undertook and published a SMART study on: "Authentication and Authorisation Platforms for Scientific Resources in Europe". TERENA currently participates in the collaborative ELCIRA project. In GN3 TERENA led the work on producing the ASPIRE Foresight Study. Members of staff organise and participate in the preparing and running various workshops, seminars and training courses.

TERENA also organises a renowned annual international networking conference (TERENA Networking Conference – TNC) attended by over 600 delegates representing R&E networkers and users from around the globe.

Key Personnel

Valentino Cavalli, Acting Secretary-General - Valentino has been working for TERENA since 1999, and since March 2012 works as Acting Secretary General. He is responsible for the day-to-day management of the TERENA Secretariat staff. He has overall responsibility for the execution of TERENA's policies and activities, reporting to the TERENA Executive Committee. Valentino also represents TERENA in contacts with other organisations. He is one of TERENA's representatives on the NREN Policy Committee and the Executive Committee of the GN3plus project. Before joining TERENA, he worked as Research Manager for the Italian IT company Omega, where he was responsible for a number of projects under the European Commission Fourth Framework Programme. He graduated in Philosophy from the University of Urbino in Italy in 1987.

Brook Schofield (Project Development Officer) – Brook Schofield joined TERENA in May 2009. Brook supports TERENA's task forces and contributes to technical projects. He is currently responsible for a portfolio of middleware activities within TERENA, including acting as Secretary for the Task Force on European Middleware Coordination and Collaboration (TF-EMC2) the Secretary of the Global eduroam Governance Committee and the Product Manager for the eduGAIN Interfederation Service. He is also a member of the operation team within the GÉANT eduroam activity supporting the deployment of eduroam in emerging NRENs.

Role in project
Participant in WP2 and WP3 and liaison to the eduGAIN and eduroam initiatives.

### 4.1.4. RNP

RNP (http://www.rnp.br) is a non-profit company supported by the Brazilian government and dedicated to promoting the development of technologies in the field of networks and innovative applications in Brazil. RNP operates the national advanced networking infrastructure for cooperation and communication in education and research. Besides interconnecting all the federal government institutions of higher education and research, this network provides a laboratory for the experimental development of new applications and network services for the benefit of the organisations using it. This Brazilian National Research and Education Network (NREN) enables interaction and cooperation between people and resources in the country and abroad.

The network reaches all 27 states in the country, with speeds of up to 10 Gbps, and interconnects more than 800 campuses of more than 300 education and research institutions, serving around 3,5 million users. Local access to the points of presence (PoPs) of the national backbone for more than 200 RNP clients is available through RNP-built optical metro networks operating at gigabit speeds. RNP maintains direct international research networking connections to Europe through RedCLARA and also to the USA.

RNP is also involved in the prospection and development of new networking applications and in the qualification of human resources for research and education networking throughout the country (http://esr.rnp.br).

RNP also provides several services to its user organisations and communities of special and strategic customers. These services are consolidated in the Service Catalogue (http://www.rnp.br/servicos/servicos-avancados), and classified as follows: communication and collaboration, digital content delivery, identity management, strategic hosting and academic network support services.

**Relevant Projects:**

RNP has participated in a number of projects in partnership with European institutions, such as ALICE, Mercosur Digital, EELA, EELA-2 and RINGrid, and actively participates in ALICE2 and FIBRE.

RNP has played a key role in the success of Europe Latin America Collaborative e-Infrastructure for Research Activities project (ELCIRA) (http://www.elcira.eu) and in particular its activities in the deployment of eduroam in Argentina, Chile, Colombia, Costa Rica, Ecuador and Mexico, and the creation of the federations linked or in process to be linked to eduGAIN in Chile, Colombia, Ecuador and Mexico.

**Relevant publications:**

Stanton, M.A. et al., “RNP: A brief look at the Brazilian NREN”. In: Selected Papers from TERENA Networking Conference 2010 (TNC 2010) Proceedings, ISBN 978-90-77559-20-8, Vilnius, Lithuania, May 2010.
Nunes, A.C.F., Guimarães, L.M.O., “Service Management in Brazilian NREN”, TERENA Networking Conference 2012 (TNC 2012), Reykjavik, Iceland, May 2012.
Stanton, M.A., et al., “Creating advanced Internet services in collaboration with the research community”, 5th UbuntuNet Alliance annual conference, Dar es Salaam, Tanzania, November, 2012.
Grizendi, E., da Silva, N.S., Stanton, M.A., “Brazilian experience of connecting at 100 Mb/s and 1 Gb/s universities and research institutions in the interior of the country”, 5th UbuntuNet Alliance annual conference, Dar es Salaam, Tanzania, November, 2012.
Robertson, A.G., Nunes, A.C.F, “Punto de Intercambio de Tráfico de Voz sobre IP (PIT VoIP) – Relatos y Sugerencias”, Terceira Conferência de Diretores de Tecnologias de Informação e Comunicação de Instituições de Ensino Superior (TICAL 2013), Cartagena de Indias, Colombia, July 2013.

**Key Personnel:**

Antônio Carlos Fernandes Nunes (RNP) is MSc in Electrical Engineering from the Teleinformatics and Automation Group (GTA) at The Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering (COPPE) from the Federal University of Rio de Janeiro (UFRJ), and graduated in Systems Engineering and Computer at Rio de Janeiro State University (UERJ). He joined RNP (Brazilian NREN) in May 1998 where he has worked in operations, administration and systems development. As Special Projects Manager of the General Directory he has led and worked on several projects, inter-ministerial, and has driven the emergence and growth of the Federal Point of Interconnection Networks (FIX), and Coordinator of the Brasilia PTT Metro project in CGI.br, Supervisor of Midwest Community Networks for Education and Research project (Redecomep) and project manager responsible for RNP's Internet Data Center. Since 2009 he is Service Management Deputy Director of RNP being in charge of communication and collaboration services, digital content delivery services, identity management services, strategic hosting services and academic network support services. He has CCNA certificate, Relationship Marketing by Ibmec, and has published articles in the areas of networks, service management, technological innovation, and science and technology policies. He also represents RNP in the ELCIRA project coordinating actions for AAI between the EU and Latin America, and promoting the deployment of eduroam services.

Leandro Marcos de Oliveira Guimarães (RNP) has been Service Manager of RNP since May, 2010. He is responsible for communication and collaboration services, identity management services and strategic hosting services, and currently is member of the GeGC (Global eduroam Governance Committee) and acts as secretary of the Latin American eduroam Committee. He has worked for over fifteen years in Information Technology areas, focusing on projects, planning and operation. He has an MBA in Project Management from IBMEC and another MBA in Information Security from IBPINET - RJ-FUNCEFET. He is certificated as PMP by PMI, COBIT Foundation by ISACA, the EXIN ITIL v3 and the MCSO (Modulo Certified Security Officer) by Modulo. With a Degree in Computer Networks from University Estacio de Sa., Leandro has worked in large companies such as Petrobras, TIM, Claro and Xerox Brazil. He also manages RNP's activities in the ELCIRA project coordinating actions for AAI between EU and LA, and promoting the deployment of eduroam services.

Alex Galhano Robertson is a Telecommunications Engineer and has an M.Sc. in Network Engineering from the Fluminense Federal University, with emphasis on Multimedia Communications. Experienced in IP network management, QoS, Voice over IP and computational telephony. Alex has coordinated international projects on VoIP in Latin America. He has written and presented VoIP training for NRENs in Latin America, and theoretical and practical VoIP courses for Brazilian Universities and telecommunications companies in Brazil. Alex has written the fone@RNP book for Escola Superior de Redes (ESR), at RNP. Nowadays, he is Service Specialist at RNP, has technical responsibility for the telephony over IP service. Alex also represents the Americas on Global NRENum.net Governance Committee (GNGC) and participates in the Global Real-Time Communications Group (GRTC) of the CEO Forum.

Ricardo Nobuyoshi dos Santos Makino is a Computer Engineer and has an MBA in Information Security Management. He has strong knowledge of cloud computing, cloud security and virtualisation, and a strong background in computer forensics, incident handling, web application security, electronic voting systems and network security. Ricardo has worked on several projects such as the Brazilian Consortium of Honeypots, Security analysis of Brazilian electronic voting system, Honeynet Project. He has already presented at some Brazilian security conferences and given some courses on virtualisation and cloud security. Nowadays, he works as Cloud Computing Expert at RNP and is responsible for mapping demands related to strategic projects in cloud computing, monitor, manage and execute technical activities related to cloud computing, preparing feasibility analysis and technical advice for executive staff. Additionally, he helps some community projects such as the Cloud Security Alliance (Brazilian Chapter) and ABNT (Brazilian Standard Organisation) Work Group for cloud computing security standards.

Iara Machado is Assistant Director in the Directorate of R&D at RNP. She coordinates working groups related to Advanced Application projects. All these activities involve extensive collaboration with the Brazilian networking research community. She has also worked for more than 19 years in Brazilian Telecommunication Company (Embratel) as Management System Architect. A Graduate in Physics from the

University Federal of Rio de Janeiro (UFRJ) Iara has a Master Degree in Computer Networks from the University Federal Fluminense (UFF).

Leandro Ciuffo is a Manager in the Directorate of R&D at RNP, in charge of interacting with scientific communities concerning new approaches to advanced network use. From 2006 to 2009 he worked at INFN-Catania (Italy) in two e-Science projects: EELA (FP6) and its successor EELA2 (FP7), being responsible for dissemination and user support activities. Leandro holds a B.Sc. in Informatics from the Federal University of Juiz de Fora (UFJF) and a M.Sc. in Computer Science from the Federal Fluminense University (UFF), in Brazil.

**Role in project:**

Co-ordinator of WP2 on Platforms for Mobility
Contribute to WP1, WP3, WP4, WP5 and WP6

### 4.1.5. RENATA

RENATA is the national network for research and education that connects Colombia, articulates and integrates the actors of the National System of Science, Technology and Innovation (SNCTI) with each other and with the world, through the provision of services, tools and technology infrastructure to contribute to improving the level of productivity, efficiency and competitiveness of scientific and academic production in the country

RENATA is an important tool for the development of collaborative work by researchers, teachers, students and other members of the academic community in the country. The great added value of RENATA is the power of communication and collaboration among its members. Our work is guided by the principles of collaboration, innovation, technological development and quality of service.

RENATA consists of the three members of the Government (Ministry of Education, Ministry of Information Technologies and Communications and Administrative Despartamento of Science, Technology and Innovation, Colciencias) and eight Academic Networks Regional (RADAR, RIESCAR, RUANA, RUAV, COURSE, RUP, Caribbean and UNIRED ROUTE) which are connected to more than 160 institutions in the country among institutions of Higher Education, Health, Culture and Centres R & D + i.

RENATA has been directly involved in the development of the Latin-American integrated Video-conference service (SIVIC) as well as coordinator of the Videoconference WP in the ELCIRA Project, reasons why they would be able to provide all the Latin-American experience to the work package 4.

**Key Personnel**

Lucas Adolfo Giraldo Rios, CEO, Executive Director of RENATA, Business Administrator, with posgraduales studies in finance and master's degree in Science and Technology. Experience in education and private sector projects and science and technology.

Javier Enrique Lopez, Manager of Technology RENATA is a systems engineer and specialist in computer security. Responsible for the technical architecture of RENATA in Colombia and leader of the technical committee that allows the development of the NREN in the country.

Hernan Garcia, systems engineer with experience in scientific and development of a PORTLET calculation to facilitate the implementation of WRF for GRID Gisela. Specialist MySQL database and programming in various languages like C ++, Python, Perl, among others, knowledge of GNU / Linux, HTML, XML.

**Role in the Project**

Coordinator WP4

### 4.1.6. REUNA

Red Universitaria Nacional (REUNA), Chilean NREN founded in 1991. REUNA, the digital platform to support the academic and research community in Chile, manage the academic backbone infrastructure, currently with capacity between 2.5Gbps and 1Gbps dedicated to research.

With over 20 years' experience and currently made up of 29 institutions, REUNA's digital platform covers 13 regions between the northern city of Arica and the southern city of Osorno, and aspires to incorporate all regions, meaning the whole country. Its e-Infrastructure is also connected to its international peers: in Latin America (RedCLARA), North America (Internet2 and CANARIE), Europe (GÉANT), Asia (APAN), and Oceania (AARNET). Through this international connection, REUNA broadens the collaboration possibilities of its members to over 14,000 institutions in Latin America and over 40,000 globally.

REUNA's mission is to be the lead digital platform in the country that articulates, communicates, and cooperates with all entities in the science, culture, and higher education systems, connecting them to the global concert by the use of innovative and advanced services.

The activities planned in the MAGIC Project have a directly relation with the activities that REUNA has defined to accomplish its mission, such as the delivery of cutting-edge services to the Chilean scientific, educational and research communities. In the same way, REUNA would like to contribute with its experience deploying services such as federated identity or eduroam.

**Key personnel**

Name: Gabriela Aillon
Position: Services Management Engineer at Red Universitaria Nacional (REUNA).
Degree: Industrial Engineer at Universidad del Bío Bío, Concepción, Chile.
Bio: Gabriela obtained her Engineering Degree in 2009. She has five years of experience managing different kind of projects.
Since 2011 she has been working at REUNA, from then to 2013 she worked in IT projects with research and education communities of REUNA's partners.
Nowadays she works in managing REUNA services, planning the deployment with the Engineering Team and creating the strategy to deliver that services to the REUNA's partner communities.

Name: Alejandro Lara
Position: IT Services Engineer at Red Universitaria Nacional (REUNA).
Degree: Telecomunications Engineer at Universidad Técnica Federico Santa María, Valparaíso.
Bio: Alejandro obtained his Engineering degree in 2011. In the same period of time he was hired by REUNA, the Chilean Research and Education Network as IT Services Engineer. In this position he has been involved in the development of key services such as eduroam in Chile and COFRe, the Chilean access federation. He is a member of the GeGC (Global eduroam Governance Committee) and he has been collaborating in different projects such as ELCIRA.

- Services Study Cases: Videoconference and eduroam (http://reuna.cl/index.php/difusion/casos-de-uso) (In Spanish)
- "Red en Acción" Nº33: REUNA bulletin, special of 20 years. (http://reuna.cl/index.php/difusion/red-en-accion) (In Spanish)
- REUNA services (http://reuna.cl/index.php/servicios) (In Spanish)
- eMPIRICA.Lab: http://reuna.cl/index.php/innovacion/proyectos-tematicos/empirica (In Spanish)
- Biodiversidad: http://reuna.cl/index.php/innovacion/proyectos-tematicos/biodiversidad (In Spanish)
- Picalab: http://reuna.cl/index.php/innovacion/proyectos-tematicos/picalab (In Spanish)
- NLHPC: http://reuna.cl/index.php/innovacion/proyectos-de-infraestructura/nl-hpc (In Spanish)

- RinGrid
- eduroam: http://reuna.cl/index.php/servicios/gestion-de-identidad/eduroam (In Spanish)
- COFRe (Chilean Federation): http://reuna.cl/index.php/servicios/gestion-de-identidad/cofre (In Spanish)

### 4.1.7. CEDIA

CEDIA, Ecuadorean Consortium for Advanced Internet Development, is made up of the top universities, polytechnic colleges, research centres, and public and private organisations in Ecuador.
It was created to encourage, promote and coordinate advanced network projects and information technology development. These telecommunications and computer networks are focused on innovative and educational development in science and technology in the country.
We have enabled our teachers and researchers to get involved in projects with both national and international teams by using a special high-speed network which provides 1Gbps of capacity. Thus, we have facilitated the integration of research networks as well as the development of e-science projects in different fields of knowledge.
Both the CEDIA national infrastructure and that of its international peers are of the highest level of technology; it provides our members with high-speed transfer of large volumes of data from and to several academic research centres worldwide.
All our members are part of a synergy which promotes interconnectivity and interoperability to develop projects supported by the European Union. These projects are aimed at different areas like e-science, technology, health, and telecommunications, among others.
It is important to point out that CEDIA is part of the RedCLARA Network (Latin American Cooperation of Advanced Networks).

**Key Personnel**

Claudio Hermel Chacón Arévalo (CEDIA), MgT in Telecomunications, specialist on LAN networks and services, graduated in Systems Engineering at the University of Cuenca, and is CCNA Certified. He has worked at CEDIA since 2009 as technical coordinator, and in last quarter of 2013 changed his role to become a specialist on services to the CEDIA members, including eduroam, Federations and VoIP, actually implementing the services at the member institutions. He has also worked as a System Engineer at the Universidad de Cuenca since 2005, with skills in open source, LAN and WAN networking, also with a manager role including networking technical coordinator of the University, but actually working in informatics security and networking.

### 4.1.8. CUDI

CUDI (www.cudi.edu.mx), is a non-governmental organisation responsible for the development of the National Research and Education Network of Mexico. It was established on April 8th, 1999 by presidential Decree. Its aim is to provide the Mexican Scientific and Higher Education Communities with a state of the art high speed, high capacity telecommunications network to promote the use of advanced ICT tools for the development of innovative and competitive research and education applications; to create synergies with other research and education groups throughout the world sharing common interests on the resolution of domestic, regional or worldwide needs; to build collaborative research and education projects for the use of e-Science applications; and, to raise the standard of virtual capacity building for education and training. CUDI membership represents more than 80% of the students of higher education, more than 85% of the centres and institutes of research in the country and more than 90% of the researchers of the National System of Research (SNI).

CUDI's infrastructure has implemented the following services: QoS, multicast, IPv6, Videoconference H.323, VNOC, Security, NOC and more recently eduroam. Up to date more than 200 institutions are CUDI members, they have promoted collaborative projects on e- Science and e-Education. CUDI has participated in EELA, EELA-2, CHAIN, CHAINREDS, GISELA and ELCIRA FP-7 projects for implementation of standardised network services and the standardisation of advance computing e-infrastructure. CUDI, through UNAM operates the Regional Operation Center for Latin America on Grid Computing and has implemented

Identity Federation and federated services through a Science Gateway to access HPC, cloud, storage and grid resources, with Latin American reach. CUDI currently works the promotion and use of advanced networks in collaborative research in the different domains. It has established an Applications Committee that coordinates these 17 research communities. The benefits CUDI members have accomplished are:

- Implementation of a Latin American initiative SCALAC (Advanced Computing Services for Latin America and the Caribbean) supports ROC-LA and Science Gateway services
- Collaboration with other institutes and universities to resolve common problems and develop common applications
- Access to shared computing resources
- Access to shared laboratories
- Access to state of the art educational material (learning objects, digital libraries)
- Possibility of sharing specialised human resources

Role in the project: WP2, WP3, WP4, WP5, WP6

**Key Personnel**

Salma Jalife graduated at the Computer Engineer Faculty of Engineering, UNAM (1981-1985) and obtained her Master Degree in Science with specialty in Telecommunications, University of Colorado at Boulder, USA (1991). She has lectured courses, seminars, conferences on telecom and information technologies nationwide and abroad. She has a relevant career at UNAM where she collaborated on the design of the largest Latin American telephone and data network of 1990, with the installation of 13,000 telephone lines. In 1992, she joined the Ministry of Communications and Transportation (SCT) where she became the Chief of Staff of the Under-Minister of Communications and Technological Development, participating in the construction of the Private Network for the Federal Government and the Strategic Communications Plan 1993-2000. Since the creation of the regulatory authority for telecommunications in 1996 she became the General Coordinator for International Affairs. In 2003 she was appointed commissioner of COFETEL and Head of the Engineering and Technology Department. As Mexican representative of the government, she occupied different chairmanships of International working groups on telecommunications and radio spectrum issues at APEC, CITEL(OAS) and ITU. In June 2006 she joined CUDI, where she is currently coordinating national and international projects oriented to the use of NRENs and its applications. She also participates in the International affairs of such NREN.

Hans Reyes is a Telecommunications Engineer from the Universidad Nacional Autónoma de México (UNAM). He is currently Chief of CUDI's Network Operation Center and was appointed in 2004. CUDI's NOC is co-located at UNAM in the Dirección de General de Servicios de Computo Académico (DGSCA). He also participated in the operation of UNAM's network, as well as the design of different university networks and on the first design of the regional network of the Cooperación Latino Americana de Redes Avanzadas (CLARA). Between 2006 and 2008 he also operated CLARA's NOC. He also participates in domestic and international seminars and academic conferences and lectures on workshops and specialised continuous education courses. He is also a consultant on ICT for universities and government agencies in Mexico and other countries.

Rocío Cos, graduated as an Industrial Engineer, from the Faculty of Engineering at the Universidad Nacional Autónoma de México, UNAM (1981-1985) and obtained her Masters Degree in Engineering specialising in Planning, UNAM (2004-2006), She has lectured continuous education courses and permanently enriched bher education in PMI methodology. She has worked for over fifteen years in project management, with extensive experience in national and international projects. As Project Manager of Cooperación Latino Americana de Redes Avanzadas (CLARA) (6.5 years), she has worked directly in the ALICE and ALICE2 projects, as well as Regional BID Projects. Since 2012 she has been collaborating with CUDI in the management of national and international projects.

### 4.1.9. UbuntuNet

UbuntuNet Alliance (www.ubuntunet.net) was founded in 2005 as the regional research and education (R&E) network in East and Southern Africa. It is an alliance of, currently fourteen, National Research and Education Networks (NRENs) from DRC, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Namibia, Rwanda, Somalia, South Africa, Tanzania, Uganda, and Zambia. The core business of the Alliance is to secure affordable broadband and efficient ICT access and usage for the African research and education sectors through NRENs and their associated communities of practice on a not-for-profit basis.

UbuntuNet Alliance plans, builds and operates UbuntuNet, the R&E backbone network that interconnects NRENs in Eastern and Southern Africa and connects them to other regional R&E networks worldwide. The regional component of the UbuntuNet network is being financed through the AfricaConnect project, which is co-funded by the European Union and African beneficiary NRENs. The network currently includes a high capacity transcontinental link interconnecting UbuntuNet points of presence in Nairobi and Amsterdam, which connects to GÉANT and through it to other regional RENs; and high capacity cross-border links connecting PoPs in Mtunzini, Maputo, Dar es Salaam, Nairobi, Kampala Kigali, and Lusaka. This serves a total of seven NRENs, namely KENET (Kenya), MoRENet (Mozambique), RENU (Uganda), RwEdNet (Rwanda), TENET (South Africa), TERNET (Tanzania) and ZAMREN (Zambia). The network continues to grow, reaching more countries and opening opportunities for African researchers, educators and students. As they gain access to global information infrastructures.

In addition to building the high capacity regional network for research and education, the Alliance has also been implementing a multi-partner capacity building programme for network engineers in Eastern and Southern Africa. The partnership includes Network Startup Resource Center (NSRC) – USA, International Network for the Availability of Scientific Publications (INASP) – UK, and African Network Operators' Group (AfNOG) - Ghana.

UbuntuNet Alliance works closely with the REN Unit of the Association of African Universities (AAU) and has contacts within the higher education and research community within much of sub-Saharan Africa to ensure wide participation and access to technologists with experience of coping with very stringent bandwidth constraints.

Since 2007, UbuntuNet Alliance has been partner in EU FP7 projects, GLOBAL, ERINA4Africa, CHAIN and CHAIN-REDS. All of them have focusing on e-Infrastructures. In these projects, the Alliance has spent considerable amount of time assessing and collecting information about the state of infrastructures supporting research and education including use cases for advanced research applications.

***CVs of personnel working on project activities***

**Eng. Dr Francis Frederick Tusubira** is the CEO of the UbuntuNet Alliance. He has key competence in ICT policy and regulation, reinforced by continental level and international experience in policy analysis and formulation, capacity building, and research in the same sector. He is currently a member of the boards of UbuntuNet Alliance for Research and Education Networking; TENET, the research and education network of South Africa; RENU, the Research and Education Network of Uganda; and Chair of the Board of the National Information Technology Agency, Uganda. He holds a PhD (Southampton, UK), an M.Sc.E (New Brunswick, Canada), and a B.Sc. (Engineering) 1st Class Hons (Makerere University, Uganda).

**Tiwonge Msulira Banda** manages the Secretariat of UbuntuNet Alliance in Lilongwe, Malawi. He has spent the last 8 years at UbuntuNet Alliance working with emerging NRENs in Eastern and Southern Africa. He has been following up on issues of ICT infrastructure for research and education including connectivity and applications for Virtual Research Communities. He holds a Master of Business Administration (MBA) jointly awarded by Maastricht School of Management (MSM) and East and Southern Africa Management Institute (ESAMI) obtained in 2013; and a credit BSc in Environmental Science from the University of Malawi obtained in 2005. He has been involved in EU funded projects since 2007 and participated in the GLOBAL, ERINA4Africa, CHAIN, ei4Africa and CHAIN-REDS projects. He oversees the management of

the web presence and e-newsletter of UbuntuNet Alliance and is also involved in the dissemination activities of the AfricaConnect project.

**Mr. Joseph Kimaili** has been the Technical Manager of UbuntuNet Alliance since August 2011. He is responsible for the design, procurement and management of the UbuntuNet Alliances network resources, negotiation and management of contracts with suppliers, and management of service level agreements. Mr. Kimaili is also in-charge of the Alliances capacity building program. Before Joining UbuntuNet Alliance, Mr. Kimaili was the Chief Network Development Officer at RENU, the NREN for Uganda, the Network Manager at Makerere University, Kampala and Technical Manager at the Ugandan branch of Africa Online, a regional ISP. Mr. Kimaili holds a BSc. in Electrical & Electronic Engineering from the University of Nairobi and an MSc. in Data Communications Engineering from Makerere University.

***Publications***

1. Tusubira, F, et al, (2011). The Impact of Improved Access and Connectivity on Intellectual Property Output: Baseline Report
2. Final Report of the UN Broadband Commission for Digital Development Working Group on Broadband and Science, 2011
3. G. Andronico et al., "E-Infrastructures for International Cooperation", chapter 6 of the book "Computational an Data Grids: Principles, Applications, and Design", N. Preve (Ed.), IGI Global 2011, DOI: 10.4018/978-1-61350-113-9;

***Previous Projects***

1. AfricaConnect
2. CHAIN-REDS
3. ei4Africa
4. CHAIN
5. ERINA4Africa

**Role in Project**

UbuntuNet will lead WP5 Global Science Communities. In addition, UbuntuNet will represent the NRENs of Southern and Eastern Africa in the project and ensure that the activities of the project trickle down.

### 4.1.10. WACREN

WACREN is the West and Central African Research and Education Network, with the vison of making available world-class infrastructure and services for the West and Central African Research and Education community.

WACREN is thus to build and operate a world class network infrastructure, develop state of the art services, promote collaboration among national, regional, international research and education communities and build the capacity of the REN community.

The objectives of the organisation is the promotion and establishment of interconnections between national research and education networks in West and Central Africa to form a regional research and education network , the interconnection of this network with other regional and continental networks, and the provision of services aiming at fostering collaboration between research and education institutions in the region as well as between them and peer institutions at continental and international levels.

To achieve its goal, WACREN works not only with educational and research institutions, but also with bodies such as regional economic communities (ECOWAS, UEMOA), telecommunications regulators (WATRA) and a number of national policy and decision-making institutions in West and Central Africa.

WACREN has signed interconnection agreements with DANTE and the UbuntuNet Alliance. It also collaborates very closely with the Arab States Research and Education Network (ASREN).

Current WACREN members include RerBenin (Benin), RITER (Côte d'Ivoire), GabonREN (Gabon), MaliREN (Mali), NigerREN (Niger), NgREN (Nigeria), snRER (Senegal) and TogoRER (Togo).

***CVs of personnel working on project activities***

Boubakar Barry: Dr. Barry is the CEO of WACREN. Prior to joining WACREN, he was Coordinator of the Research and Education Networking Unit of the Association of African Universities (AAU) for 7 years. Before taking the post at AAU, Dr. Barry was lecturer of Electronics and Computer Networks at the Faculty of Science and Technology of Cheikh Anta Diop University (UCAD) in Dakar, Senegal; he was also Director of UCAD's Computer Center for 8 years.

Omo Oaiya: Mr. Oaiya is WACREN Chief Technical Officer and responsible for WACREN technical assets, counselling and supporting members on technical issues and supervising WACREN capacity building activities. He has been project manager, network manager and system developer in different IT sectors offering consultancy with a focus on academic networks in the last decade.

***Publications***

Boubakar Barry:

- Optical fibre opportunities for RENs in West and Central Africa;
- Telecommunications regulatory environment in West and Central Africa from a REN perspective;
- Connectivity of African Higher Education Institutions – addressing the Demand for Connectivity in West and Central Africa;
- Connecting West and Central Africa to the Global Research and Education Network;
- Regulatory Harmonization in the ECOWAS Region: Regional Regulation as a New Form of Governance in the Telecom Industry.

Omo Oaiya:

- EduERP – Open source student administration system;
- Peoples-uni – Extensively customised Moodle based platform for initiative offering post-graduate medical degrees in Public Health;
- Eko-Konnect – Metropolitan REN in Lagos, Nigeria interconnected with opensource Linux routers and wireless devices.

***Previous Projects***

Boubakar Barry:

- Facilitation of the establishment of 9 research and education networks in West and Central Africa;
- Participation in the Feasibility Study for the AfricaConnect project.

Omo Oaiya:

- EduERP – Open source student administration system;
- Peoples-uni – Extensively customised Moodle based platform for initiative offering post-graduate medical degrees in Public Health;
- Eko-Konnect – Metropolitan REN in Lagos, Nigeria interconnected with opensource Linux routers and wireless devices;
- eI4Africa project (funded by the EU);
- AfricaConnect project (funded by the EU).

### 4.1.11. ASREN

The Arab States Research and Education Network - ASREN is an official legal entity registered in Dusseldorf, Germany. ASREN is the association of the Arab region NRENs and other strategic partners, which works on promoting world-class Pan-Arab e-Infrastructures and e-Services for the Research and Education communities to boost Scientific Research and regional Cooperation. ASREN's vision is to support pan-Arab collaborative research and education projects and activities through high-speed networks, and to contribute to boosting scientific research, innovation and education across the Arab world by increasing efficiency and productivity of research and education communities. The mission of ASREN is to implement, manage and extend sustainable pan-Arab e-Infrastructures dedicated to the use of research and education communities and to boost scientific research and cooperation in member countries through the provision of world-class e-Infrastructures and e-services. ASREN came out with the following objectives in mind:

-To build, maintain and consolidate regional e-Infrastructures dedicated to e-Science and education across Arab Countries
- To contribute to create and sustain National Research and Education Networks (NRENS) in the Arab Countries
- To facilitate the collaboration and cooperation among the researchers and academicians in the Arab region

ASREN is an official partner in several projects funded by EC including and very active and contributed to the success of these projects. ASREN works on supporting the developments of e-Infrastructures in the Arab region and connecting these infrastructures with others around the world to enable cooperation and collaboration between researchers and academicians in this region and the rest of the world.

ASREN will be represented, but not limited, by the following

Salem Alagtash: Salem Al-Agtash, got his Ph.D. in Electrical Engineering from the University of Colorado at Boulder in 1998. He is a professor of Computer Engineering at the German Jordanian University and leading the development of the Arab States Research and Education Network in his capacity as the Chairman's Senior Advisor on ICT and Technology. His experience is in the area of academic research, teaching, consulting, and development. His research focuses on Electric power industry, Scheduling Mechanisms, Agent Systems, Artificial Intelligence, Software Design, Smart grids, ICT Infrastructure, Industrial linkages, Education, and Innovative partnership. He served as a department head and managing director of the Entrepreneurship Center of Excellence at Yarmouk University, with emphasis on developing graduate programs and strong linkage with industry. He has also served as a dean of School of Informatics and Computing at German Jordanian University, with emphasis on developing relevance in education and partnership with German Universities and industries. Currently, professor Al-Agtash is leading e-Infrastructure development across the Arab region, with PoPs in London, Fujaira, and Alexandria linking Arab national research and education networks as part of EC funding projects. His industrial experience has been in the area of technology development and consulting. As a technical advisor and consultant for more than 10 years, professor Al-Agtash has worked on several technology and education related projects funded by the European Commission, United Nations, and many national and international institutions. His intensive technical expertise covers varieties of topics in Energy, Education, Science, e-Infrastructure, ICT, and Institutional development. His personal interest lies in e-infrastructure development as well as partnerships and innovations in developing ICT applications in energy, institutional services, resource planning, and industry-oriented implementations.

Redouane Merrouch. Redouane got his PhD in Nuclear Physics from Caen University at GANIL. He is a researcher at the National Center for Technical and Scientific Research (CNRST) since January 1992, Head of the National Research and Education Network (MARWAN) and the grid computing infrastructure (MAGRID) and manager of the information system of CNRST. Current Projects include:

-Study and monitoring of the implementation of the new architecture of the National Research and Education Network MARWAN4.
-Installation of the national infrastructure wifi NetU
-Establishing a National Federation Identity
-National Grid Computing Infrastructure MAGRID

-Participation of MARWAN in the EUMEDCONNECT3.

Aouaouche El-Maouhab. Aouaouche is leading Networks Division at Centre de Recherche sur l'Information Scientifique et Technique CERIST, working on information networks technologies where she is involved in technical and project management aspects of a number of national e-infrastructures activities as the research and academic network ARN and DZ e-Science GRID services. She is also the Manager of Algerian ccTLD ".dz" and the Algerian IDN ccTLD ".الجزائر."

Actual interests concern networks technologies (management, e-infrastructure, services, modelling …), process management in complex environment and ICT for e-services like clouds, grids, e-library, e-learning, etc.

She is the manager of Algerian NREN "ARN" and Algerian NGI DZ e-Science GRID and participates to EUMEDCONNECT and EUMEDGRID projects.

Ola Samara. Ola got her B. Sc. Degree in Computer Engineering, Yarmouk University, Jordan, 2011. She is currently working as both an Administrative Officer and Infrastructure Deployment Engineer at the Arab States Research and Education Network (ASREN). Ola is contributing in organizing regional events, dealing with European Commission projects as well as assisting in developing networking schemes, Identity Federations, and e-services such as Science Gateways and eduroam for the Arab world. She is also managing the content updates of ASREN websites and social media.

Yousef Torman. Yousef Torman is currently working as Managing Director for the Arab States Research and Education Network (ASREN). His aim is to establish a pan Arab e-Infrastructure to support the development of research and education in the Arab region. His responsibilities in ASREN include Technology, Networking and Infrastructure. Youssef's main focus is to promote and encourage the use of technology and networks for research and education

He worked also as Executive Director of the Jordanian Universities Network (JUNet), the Jordanian National Research and Education Network. He participated and chaired many national and regional committees and initiatives that focus on research and education infrastructures. He also co-established and managed the new Computer and Information Center at Jordan University of Science and Technology (JUST); one of the largest Universities in the region with focus on science and technology.

Yousef has played a prominent and key role in the efforts and initiatives that aim to establish a Pan Arab regional e-Infrastructure for scientific research since more than 5 years.

Yousef will be the representative of ASREN in the project steering committee as he was a member of steering committees of many EC projects like EUMEDGRID, EUMEDGRID Support, CHAIN, CHAIN-REDS, LinkSCEEM, LinkSCEEM-2, EPIKH and EUMEDCONNECT Projects

ASREN and its partners participated in the following EC funded Projects:

a. EUMEDGRID
b. EUMEDGRID Support Project
c. CHAIN
d. CHAIN-REDS
e. LinkSCEEM
f. LinkSCEEM2

### 4.1.12. CESNET

CESNET, Association of Legal Entities, is a public non-profit organisation established in 1996 by all the public universities and the Academy of Science of the Czech Republic to do research, development and deployment of advanced network technologies and applications. Serving as a recognised Czech NREN and NGI, CESNET's funding is guaranteed by a combination of membership fees, payment for services by non-members, and a governmental contribution. CESNET is a member of several international organisations, including DANTE, TERENA, CEENet (Central and Eastern European Networking Association), GLIF (Global Lambda Integrated Facility), and EGI.eu (European Grid Infrastructure). CESNET is also involved in many national and international projects, including GÉANT and EGEE series of projects, Phosphorus, Lobster, EUAsiaGrid (see http://www.cesnet.cz). CESNET was a coordinator of the EGI Design Study project and is currently involved in EGI InSPIRE, EMI and CHAIN/CHAIN-REDS projects. In its role as a National Grid Initiative, CESNET not only contributes grid and cloud resources to the European Grid Infrastructure, but also operates a separate Czech national grid and cloud environment. CESNET has a very strong position also in providing AAI services, including a set of services around the Public Key Infrastructure (PKI), providing eduroam, Identity Federation, Identity Management/Identity and Access Management services for Czech academic sphere. It has also experiences with providing services to the other national identity federations. Under the CESNET umbrella the software has been developed and is now provided for other NRENs and research communities to support AAI infrastructure.

More information about CESNET can be found at http://www.cesnet.cz

**Key Personnel**

Michal Prochazka (M) focuses on IT security and the identity management area. In the security area his major focus is targeted on CSIRTs, forensic analysis and authentication methods in distributed environments. Issuing federated identities and the concept of identity federations are his major focus within the identity management area. He is the project leader for Perun, an identity and access management system. He is also involved in several projects such as CHAIN-REDS where he is involved in supporting of AAI for small research communities in development countries. He is member of AAI task forces of projects Elixir and EGI.

Slavek Licehammer's (M) specialisation is on AAI systems including identity and access management systems. He also has experience with system analyses and system design and team leadership. Currently he is leader of development team for Perun, identity and access management system. He has wide experiences with integrating identity management tools into existing infrastructures. He did deployment of identity and access management system in the following use cases: EGI federated cloud, SAGrid - South African National Grid and CESNET's computing grid and data storages. Recently he is also part of join activity of CESNET, NIIF and SURFnet, which aims to find a way to enable interoperability of existing identity management systems.

**Participation in Relevant Projects**

GN3+ – GÉANT project where CESNET is focusing on cloud standards and interoperability.

EMI – Grid middleware development project where CESNET has committed to development of grid middleware components for AAI and job status monitoring.

EGI-InsPIRE – European Grid Initiative: Integrated Sustainable Pan-European Infrastructure for Researchers in Europe, and the preceding EGEE series of projects. CESNET providing AAI services for several subprojects and is involved in EGI-CSIRT team.

Perun – Identity and Access Management software. CESNET has developed the software and it is now provided as a services and also as a virtual appliance for other NRENs and research communities. Perun has been successfully deployed within Czech e-Infrastructure and NGI as well as in EGI and several other NRENs.

Moonshot – Project oriented on developing technologies for supporting non-web federated access to the services. CESNET has been involved in development and testing.

CHAIN and CHAIN-REDS – harmonisation of e-Infrastructure technical architectures and policies on a global level (7 world regions).

**Role in Project**

Involvement in WP2 and WP3.

### 4.1.13. GRNET

Greek Research and Technology Network (GRNET, www.grnet.gr) is a state-owned company operating under the Greek Ministry of Education - General Secretariat for Research and Technology. Its mission is to provide high-quality electronic Infrastructure services to the academic, research and educational community of Greece and link these with global e-Infrastructures. GRNET has also been leading e-Infrastructure developments in South-East Europe (15 countries) in the past decade. GRNET plays a crucial role in technical operations and policy support for e-Infrastructures in Greece, South-East Europe, and Europe, as well as globally.

GRNET operates national network, and Grid-, cloud- and high-performance computing facilities, and links these to regional, European and global infrastructures. GRNET operates a backbone network covering whole Greece, more than 9000 km of dark fibre. GRNET is interconnected with pan–European High Speed Network GÉANT, with 4x10Gbps uplinks, where it also has an active role in pan-European network operations via related GN projects.
GRNET is the leading R&E cloud computing provider in Greece, operating Infrastructure as a Service ~okeanos via large datacenters (400+ servers, 8000 Virtual Machines, 4 Petabytes of storage), develops Synnefo cloud software for ~okeanos, and is a part of pan-European and global cloud testbeds. GRNET is currently supporting the development of service catalogue and marketplace (including cloud services) in the framework of GN3+ project.
GRNET coordinates the Greek National Grid Initiative – HellasGrid - 1,700 CPUs and 200 Terabytes storage, and it is one of the core participants in the European Grid Initiative and the related EGI-InSPIRE project.
GRNET is procuring the Greek national High-Performance Computing centre (200 TFlops), and is a member of pan-EU PRACE Research Infrastructure.
Together with inclusive AAI and Persistent Data Identification services, the computing and storage platforms of GRNET form the backbone for the upcoming big data manipulations (archiving, mirroring, curation, computing, sharing) across the R&E spectrum.

Regarding policy issues in e-Infrastructures, GRNET was a founding member of e-IRG (pan-EU e-Infrastructure policy platform – reflection group), was a partner in related eIRG-SP projects, as well as EGI-DS which designed pan-EU Grid infrastructure from the organisational, legal and financial viewpoints.

On the global level, GRNET has been a core partner in EUMEDCONNECT, EUMED-GRID (with focus on Arab region), EU-CHINA-GRID, and CHAIN & CHAIN-REDS projects which stimulated e-Infrastructure developments globally (7 world regions).

**Key personnel:**

Christos Kanellopoulos (m) has been involved in European and National research and infrastructure projects since 2000, serving in various technical and management positions. 2000-02 he was a team leader in the project CAMPUS of Lufthansa coordinating the infrastructure rollouts at the airports of Athens, Beirut, Paris, Venice, Vienna and Zurich. 2002-12 he was the technical coordinator of the Scientific Computing Centre at the University of Thessaloniki leading the activities of the centre in more than 15 FP6 & FP7 projects in the areas of Grids, Distributed Systems and HPC. During that period he served as a WP Leader, Activity Leader and Working Group chair in various projects and fora. Since 2012 he works at GRNET in the fields of

Distributed Systems, Cloud Computing & Security. Currently he is the Product Manager for the ARGO Availability & Reliability Monitoring Framework, he is leading the eduGAIN - STORK Integration Pilot in GN3Plus and he is the Security Officer for NGI GRNET and the CA Manager for the HellasGrid CA and the SEE-GRID CA, which provides services as a Catch-All CA for EGI.

Dr. Ognjen Prnjat (m) holds the position of European and Regional eInfrastructure manager in the Greek Research and Technology Network. In this role he is responsible for organizing various aspects of computing infrastructures in the South-East European region and beyond, their sustainability and seamless integration in pan-European eScience infrastructure; as well as GRNET involvement in pan-European and worldwide eInfrastructures. In the past 10 years he has acted as project coordinator for 5 EC projects in the field. Previously Ognjen was with the Department of Electronic and Electrical Engineering, University College London, where as a Research Fellow he was leading technical and project management aspects of a number of EC ACTS/IST and UK EPSRC projects in diverse fields of computing and telecoms. He holds a Bachelor of Eng. Degree in Electronics and Electrical Eng. (First Class Honours) from University of Surrey, UK, 1995; MSc (Distinction), 1996, from University College London; and Ph.D. in Telecoms from UCL, 2001.

**Role in Project**

In WP2, GRNET will provide its expertise in Authentication and Authorisation Infrastructure (AAI) approaches, Identity Federations, and eduroam, working on policy coordination and AAI interoperability. In WP3, GRNET will support coherent service catalogue and service definition approaches, as well as the development of requirements and guidelines for onboarding cloud service providers. GRNET will also contribute to project policy-level, global collaboration and science communities, and dissemination activities.

**Relevant Publications**

"A Trust Framework for Security Collaboration among Infrastructures" D. Kelsey, K. Chadwick, I. Gaines, D. L. Groep, U. Kaila, C. Kanellopoulos, J. Marsteller, R. Niederberger, V. Ribaillier, R. Wartel, W. Weisz, J. Wolfrat: WLCG Security - PoS (ISGC 2013)

"Promotion of Virtual Research Communities in CHAIN", Tiwonge Banda, Ognjen Prnjat, et. al, Proceedings of: 5th UbuntuNet Alliance conference

"~okeanos: Building a Cloud, Cluster by Cluster," Vangelis Koukis, Constantinos Venetsanopoulos, Nectarios Koziris, IEEE Internet Computing, vol. 17, no. 3, pp. 67-71, May-June, 2013

"Development of Grid e-Infrastructure in South-Eastern Europe" Antun Balaz, Ognjen Prnjat, Dusan Vudragovic, Vladimir Slavnic, Ioannis Liabotis, Emanouil I. Atanassov, Boro Jakimovski, Mihajlo Savic: J. Grid Comput. 9(2): 135-154 (2011)

"EGI Security Monitoring", Mingchao Ma, Daniel Kouril, Michal Prochazka, Cyril L'Orphelin, Olivier Lequeux, Pierre Veyre, Christos Triantafyllidis, Christos Kanellopoulos and Paschalis Korosoglou, Proceedings of Science (PoS), 2012 International Symposium on Grids and Clouds (ISGC 2012), Taipei, Taiwan

**Relevant Projects and Infrastructure**

GN3/ GN3+ (GÉANT) – the pan-European data network dedicated to the research and education community.

EGI-InsPIRE – European Grid Initiative: Integrated Sustainable Pan-European Infrastructure for Researchers in Europe, and the preceding EGEE series of projects

CHAIN and CHAIN-REDS: harmonisation of e-Infrastructure technical architectures and policies on a global level (7 world regions).

SEEREN-1, SEEREN-2, SEE-GRID-1, SEE-GRID-2, SEE-GRID-SCI, HP-SEE – a series of FP7 projects setting up e-Infrastructures in South East European region (15 countries), and involving user communities.

Okeanos (http://okeanos.grnet.gr) is an IaaS Service that offers computing and storage facilities to academic and research users in Greece. Okeanos allows users to create Virtual Machines and Virtual Networks, manage them, destroy them, create snapshots, etc., both through a GUI and programmatically through an OpenStack compatible API and command line tools. Okeanos is powered by the synnefo cloud stack (http://synnefo.org), an open source cloud management and implementation framework built on top of Google Ganeti.

### 4.1.14. SURFnet

SURFnet is both the name for the organisation that develops, implements and maintains the national research and education network (NREN) of the Netherlands as well as the network it operates. It was one of the first networks outside the USA linked to the Internet.

SURFnet as an organisation was established in 1986 and in 1989 started supplying IP connectivity services, deploying the TCP/IP suite. SURFnet is a subsidiary of a not-for-profit foundation SURF (Samenwerkende Universitaire Reken Faciliteiten; English: Co-operative University Computing Facilities).

SURFnet as a network is a high-grade computer network specially reserved for higher education and research in the Netherlands. Staff and students of connected organisations can communicate through SURFnet with other internet users all over the world. SURFnet is globally recognised as one of the most sophisticated networks around.

SURFnet is based in Utrecht, the Netherlands, with around 85 employees.

SURFnet's Mission

Collaboration, research and learning, as well as sharing knowledge, data and instruments are all important criteria for high quality in Dutch higher education and research. It is SURFnet’s job to connect researchers, lecturers and students with one another and to give them access to a variety of innovative ICT services through a reliable ICT infrastructure. This will enable institutions and their users to get the most out of the opportunities offered by ICT. SURFnet also promotes the use and the development of new ICT applications which, following proven successes, find their way to the market by way of suppliers and knowledge transfer. In this way, SURFnet helps to strengthen the Dutch knowledge economy and acts as an engine for innovation.

Relevant Projects and Infrastructure
The SURFconext online collaboration infrastructure has been providing users with online services and instruments from commercial providers, connected institutions and SURF operating companies since 2011. This gives institutions new opportunities for collaboration, both within the institution and beyond, and both nationally and internationally. Since its inception, SURFconext has grown into a robust collaboration infrastructure.

OpenConext
OpenConext is the open source software being developed by SURFnet. NRENs, collaborative organisations or other parties can use OpenConext to create their own collaboration infrastructure. OpenConext provides the building blocks to set up a collaboration infrastructure in which:

- federated authentication is used to gain access to services and applications that are to be linked;
- identity providers and service providers can exchange standardised attributes;
- group information can be exchanged;
- self-service components can be applied.

Bio

Frans Ward is a Technical Product Manager at SURFnet since 1999 and was responsible for innovation projects in the area of online video, streaming services, media management, cloud and collaboration services. As a board member of the MediaMosa Foundation he is still active in the field of online media management. In his current position at SURFnet Advanced Services department, he does innovation projects in both the Service Development and Delivery team and the Collaborative Platforms team. Frans studied Business Information Technology at Rotterdam University.

Role in Project
Participant in WP3 for support on OpenConext.

### 4.1.15. CSIR

The Council for Scientific and Industrial Research (CSIR) in South Africa performs multidisciplinary research and technological innovation with the aim of contributing to industrial development and the quality of life of people of South Africa and increasingly on the wider African continent. The CSIR employs people who are experts in their fields and passionate about creating a better future through science. Constituted by an Act of Parliament in 1945, the CSIR is one of the leading science and technology research, development and implementation organisations in Africa. The CSIR's main site is in Pretoria, South Africa, while it is represented in other provinces of South Africa through regional offices.
The CSIR transfers the knowledge generated through research activities by means of technology and skilled people. The generation and application of knowledge reside at the core of the CSIR. This takes place in domains such as information and communication technologies; biosciences; the built environment; defence, peace, safety and security; materials science and manufacturing; and natural resources and the environment.

The Meraka Institute is an operating unit of the CSIR focused on Information and communication technology (ICT). Meraka is in the business of research, innovation and advanced human capital development. With over 200 staff and students, Meraka is the largest group in South Africa dedicated to ICT research. It has extensive national and international networks and actively collaborates with other organisations across the globe. Meraka contributes to enhancing quality of life and economic competitiveness in South Africa and the continent through ICT by:

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

The South African National Research Network (SANReN) is part of a comprehensive South African government approach to cyberinfrastructure to ensure successful participation of South African researchers in the global knowledge production effort. SANReN is managed and implemented by the CSIR Meraka Institute. Together with the Centre for High Performance Computing (CHPC) and the Data Intensive Research Initiative of South Africa (DIRISA), SANReN forms a key component of this cyberinfrastructure as a core scientific infrastructure for South Africa. This is complemented by the activities of the SAGrid.

Currently, the various roles and responsibilities of the de facto South African NREN (SA NREN) are distributed between SANReN and the Tertiary Research and Education Network of South Africa (TENET). SANReN typically represents the governmental interests, though substantial effort is put into ensuring that the needs and goals of the SA NREN's educational and research beneficiary institutions are also met—both commodity and high capacity. TENET typically represents institutions' interests, though it too has made substantial efforts to ensure that government priorities (e.g. connectivity to the Square Kilometre Array (SKA)) are met.

The current division of responsibilities between SANReN and TENET is broadly as follows:

- SANReN acquires the backbone connectivity (either by purchasing fibre, acquiring light paths or managed bandwidth) and incubates innovative services

- Once the connectivity has been acquired or the services are matured TENET assumes responsibility for operating these and concluding the necessary contractual buy-in from users. Last mile connectivity is acquired either by SANReN or TENET. Essentially therefore SANReN provides the infrastructural capacity whilst TENET provides the operational layer enabling the SA NREN to perform effectively.

The key goals of SANReN are to:

- Establish a high bandwidth research network for the South African Research community with international links to global research networks;
- Provide a platform for research into high speed networking;
- Develop value added services; and
- Enable accelerated Human Capital Development (HCD) through the use of the network.

**Relevant previous projects or activities, connected to the subject of this proposal**

During 2013 SANReN embarked on the implementation of a national Federated Identity Management (FIM) system for the South African research and higher education communities. The SA NREN beneficiary community is currently finalising a pilot project for the federation, currently tentatively entitled the South African Federated Identification for Research and Education (SAFIRE). Several institutions in the SA NREN beneficiary community have been set up as identity providers (IdPs) in the federation and a test service has been set up to be accessed by all users of the IdPs. Activities to date include:

- 
- The policy team has successfully compiled a draft policy document;
- The technical implementation team has succeeded in implementing an Identity Provider (IdP) at the CSIR Meraka Institute;
- An IdP image created by the technical implementation team was distributed to the various pilot institutions;
- The technical team created an instance of the federation's first service (Filesender), which is currently hosted on SANReN network servers;
- Currently IdPs can access the Filesender service with some manual configuration on the server side; and
- SA NREN beneficiary institutions can now register as IdPs.

SANReN has also been responsible for the South African implementation of the eduroam service. Currently eduroam is available at a number of South African institutions and SANReN has, in conjunction with various partners, presented training workshops in Pretoria and Cape Town.
Through SANreN's successful development of a national eduroam policy for South Africa, it is expected that many more South African universities will adopt eduroam as a standard service on all institutional wireless networks. Details of the national eduroam service for South Africa can be found at: http://eduroam.ac.za/. SANReN's support activities related to the eduroam service include, but are not limited to the following:

- Provide information to institutions to install and configure their own local IdP authentication server;
- Testing of the institutions user accounts to confirm that they authenticate with the National Roaming Operators server, hosted on the SANReN network;
- Assistance with configuration of various network components (Domain Name Server (DNS), Firewall and WiFi) to enable the service at the institution;
- Monitoring of the institutions IdP server; and
- eduroam IT support in testing, debugging, interpretation of eduroam server logs, and getting the service operational again when there are issues at the institution.

**Key Personnel**

Leonard Staphorst, B.Eng: Electronic Engineering (University of Pretoria, 1997, Cum Laude), M.Eng: Electronic Engineering (University of Pretoria, 2005, Cum Laude) and MBA (Gordon Institute of Business

Science, 2011, Cum Laude) is the Competency Area Manager for the South African National Research Network (SANReN) at the Meraka Institute in the Council for Science and Industrial Research. Professional with specialties in:

- Digital Signal Processing and Telecommunications
- Business Management and Leadership
- Technology Management

Is registered at:

- Chartered Fellow of the Chartered Management Institute (CMI)
- Professional Engineer with the Engineering Council of South Africa (ECSA)
- Senior Member of the South African Institute of Electrical Engineers (SAIEE)
- Senior Member of the Institute of Electrical and Electronics Engineers (IEEE)
- Member of the Institute of Engineering and Technology (IET)

He has previously been:

- Senior Lecturer in Digital Communication and Signal Processing in the Department of Electrical, Electronic and Computer Engineering at the University of Pretoria
- (01/2000 to 04/2006)
- Training Manager for the Motorola Cellular Training Institute (05/2006 to 05/2007)
- Customer Solutions Manager for the Neotel and Broadband Infraco Key Accounts

### 4.1.16. RENATER

RENATER, French Research and Education Network, was deployed in the early 90s in order to federate telecommunication infrastructures for Research and Education.

The RENATER Group was launched in February 1993 to bring together telecommunication infrastructures for Technology, Education, and Research. As manager of the RENATER network, it aims to offer its members secure broadband network access and to provide high-performance collaborative services that are tailored to the needs of the community. RENATER plays a major role in spreading education and research throughout Europe and the world. Equipping the community with fixed and mobile high-speed broadband infrastructure capable of supporting exchanges in the best possible conditions of speed, quality, security, and integrity, RENATER has become a key asset in supporting the community for Research Education in a strategic partnership approach.

Member organisations of the RENATER PIG are the Ministry of Higher Education and Research and the Ministry of Education, the CNRS (the French National Centre for Scientific Research), CPU (Chair of the Association of the French universities), CEA (the French Atomic Energy and Alternative Energies Commission), INRIA (the French National Institute for Research in Computer Science and Control), CNES (the French National Centre for Space Studies), INRA (the French National Institute for Agricultural Research), INSERM (the National Institute of Health and Medical Research), ONERA (the French National Office for Aerospace Studies and Research), CIRAD (International Centre of Agricultural Research for Development), IRSTEA (The French National Institute of Science and Technology for Environment and Agriculture), IRD (French Research Institute for Development) and BRGM (Bureau of Geological and Mining Research). The RENATER network today has a very large infrastructure that is dedicated to the research and education community.

More than 1000 sites are connected to RENATER via campus, metropolitan or regional networks and most of them use the large range of proposed online services. RENATER offers national and international connectivity, and evolves according to technologies' improvements and available capacity infrastructure.

Some services deployed and managed by RENATER are particularly relevant related to this project:

Federation Education Recherche
RENATER has deployed a nationwide identity federation for the research and education community in France. Today, this federation gathers 227 identities providers and 512 resources as service providers. The federation is connected to Edugain for opening or accessing resources across borders.

Sympa
Sympa is a mailing list management software developed as an open source project and led by RENATER. It is one of the most popular mailing list software in the world. Beyond the distribution of emails, Sympa can be used as a group manager and an attribute provider linked to an identity federation.

eduroam
eduroam is the secure, world-wide roaming access service developed for the international research and education community. Eduroam allows students, researchers and staff from participating institutions to obtain Internet connectivity across campus and when visiting other participating institutions by simply opening their laptop. RENATER has deployed the French Eduroam infrastructure.

Moonshot
Moonshot is a technology that enables to manage user identities and control access to a wide range of web and non-web services and applications. These include cloud infrastructures, High Performance Computing and Grid Computing and commonly deployed services such as email, file store, remote access and instant messaging. RENATER is deploying a national Moonshot server and is involved in a GÉANT project that aims at providing access across borders by deploying national Moonshot routers in several countries

**Key personnel:**

Jean-François Guezou (Senior engineer, male)

IT architect, he has led the software and middleware department at RENATER during several years. He has coordinated the development and/or the integration of numbers of national platforms or online services deployed in SaaS mode. He has recently managed the team in charge of the design and the build of a collaborative tools platform. This service is running in the cloud, hosted in an Openstack IaaS.

He has led the operation and the evolution of the Authentication and Authorisation Infrastructure (AAI) for research and education in France. In particular, he has managed the deployment of TERENA certificate service (TCS) in France and initiated the reorganisation of Grid2-FR, the French certificate service for grid usage, part of IGTF. He has steered the education and research identity federation and its connection to eduGAIN (the worldwide interconnection of federations) and directed the evolutions of Sympa (a lists server developed by RENATER) enabling it to be used as a group manager and an attribute provider. He is involved in the Moonshot GN3+ project, which aims at providing non-web federated authentication across border.

Today, he is in charge of innovation and experimental development at RENATER, taking part in national project consortiums (ANR, IPL) and international project consortiums (FP7, GN3+, H2020).

**Role in project**

RENATER will contribute to WP1, WP2, WP3, WP4 and WP6

### 4.1.17. NIIFI

The Hungarian e-Infrastructure for the academic and research community is operated by NIIFI (the NIIF Institute), as the NREN in Hungary.

NIIFI provides the access for the related community (represented by Hungarnet) to a wide range of national and international e-Infrastructure services, including – on top of the networking services and the related (federated) AAI – the academic HPC, grid, cloud, storage, and multi-media communication and collaboration infrastructure.

NIIFI has built and operates HBONE+, the community's country-wide CEF-based private 100 Gbps hybrid backbone network, and provides international connectivity to the entire community.

NIIF/Hungarnet has been traditionally serving the Hungarian research, higher education, and public collection communities (currently about 700 R&E sites, representing more than 500 institutions/organisations and approximately 700,000 users) for almost three decades. More recently (practically in 2013-2014) the coverage has been extended to more than 4,000 primary and secondary education institutions. The complete user community is well above 2 million individuals.

NIIFI is partly government funded. The total annual budget for research networking and e-Infrastructure services within the Hungarnet community is around €8million.

More information about NIIFI is available at: http://www.niif.hu/en

**Main Tasks in the Project**

NIIFI will contribute to all WPs of the Project.

**Relevant Background, Infrastructure and Experience**

NIIFI/Hungarnet has been continuously developing the Hungarian academic and research network for almost 30 years and intensely participating in international research networking activities from the early 90s. As a member of the GÉANT (and predecessor) consortia, NIIFI/Hungarnet gradually developed the country-wide research network and its international connectivity – in the early 2000s both the internal network and the international capacity have achieved the gigabit and later the 10 Gbps speed.

Until recently the optical segments of the NIIFI/Hungarnet infrastructure were dominantly based on leased lambdas, but in 2010-2012 the new DF based HBONE+ backbone of some 3000 km CEF (NIIF lit fibre based on DF IRU) succeeded the earlier network generation of the Hungarian NREN.

Practically the entire research, education, and public collection communities of the country do enjoy a wide spectrum of services, including advanced videoconferencing, VoIP, grid/ClusterGrid, HPC and storage cloud, digital libraries/archives services etc. IPv6 is widely used on the hybrid backbone and in the access network using multiple technological variants.

**Participation at Relevant Projects**

Besides running several national projects, NIIFI/Hungarnet has been participating at numerous international project activities, most of them performed by EU FP5, FP6, FP7 supported co-operations (GN1, GN2, GN3, GN3plus, 6NET, 6DISS, 6DEPLOY, EGEE-1, EGEE-2, EGEE-3, KnowARC, EMI, PRACE-2, PRACE-3, SEEREN-1, SEEREN-2, SEEFIRE, HP-SEE, FEDERICA, eInfraNet, SIM4RDM, DCH-RP, BYTE, etc.).

**Relevant publications**

- Lajos Balint: Principles, characteristics, evolution, practical aspects – Session on e-Infrastructure Services, e-IRG Workshop, Brussels, 13-14 October 2010
- Ivan Marton, Tamas Maray: The new HPC, storage, and cloud infrastructure of NIIFI, Conference on New opportunities in the research network, Gyor, 4 June 2012
- Kristof Bajnok: Challenges of (Really) Federating Applications, EuroCAMP 2009, Budapest, 17 November 2009
- Janos Mohacsi: IPv6 addressing case studies + Deployment of IPv6 and Transition mechanisms + IPv6 Security, IPv6 Summit, RIPE NCC Regional Meeting, Dubrovnik, 29-30 September 2011
- Mihaly Meszaros: WebRTC – What's going on and is it of use to NRENs? TERENA eduCONF Workshop, Porto, 13 March 2014

**Role in the Project:**

Participacte in all WPs.

**Key Personnel**

**Kristof Bajnok** (M) has graduated from the Technical University of Budapest in 2003. He has been working since then as a Systems Engineer leading the Service Operations group at NIIFI. He has been deeply involved in authentication and authorisation infrastructure development, and in user identity management and federations for several years. He is responsible for running and developing the Hungarian eduID.hu Federation, operated by the NIIF Institute as a Federation Operator. As a partner to HEXAA (a winner Open Call activity within the GN3plus EU FP7 project), NIIFI is represented by Kristof Bajnok at the project activities.

**Lajos Balint** (M) has graduated and received his MSc, dr.techn., and PhD degrees from the Technical University of Budapest, in 1969, 1976, and 1997, respectively. He is Vice President of Hungarnet, and Director of International Relations at NIIFI. He has been working on information systems, information and communication technologies, telecommunications, computer networks, network applications, research infrastructures, European R&D policies and innovation strategies, HCI, etc. He has been a member/representative/officer at a number of national and international organisations, including TERENA, e-IRG, ERAB, etc.

**Ivan Marton** (M), Head of Department, works as the leader of the Application Development and Operations Department at NIIFI. In this function he is responsible also for the management of operating the application oriented IT facilities at the institute. He is deeply involved in facing various system and software development challenges, including those related to computational and storage clouds. He has been active in numerous European and national projects, such as KnowARC and EMI, featuring grid development, as well as PRACE, aiming at federating European HPC resources. He has a M.Sc. degree in information engineering.

**Mihaly Meszaros** (M), responsible for Voice-Video Collaboration at NIIFI's Multimedia Workgroup, has received his M.Sc. degree in engineering at the University of Miskolc. He is deeply involved in the areas of collaboration platforms, as well as in signalling and media protocols, on top of his wide expertise and intense involvement in the Hungarian VC and VoIP network setup and operation. He is working in TERENA's TF-ECS, TF-VVC, eduCONF, and NRENum.net. He has been a member at the CEO forum, Global Real-Time Communications group. His interest has been widening for a long time in the direction of the WebRTC developments.

**Janos Mohacsi** (M), Director of Network Development at NIIFI, received his MSc degree in Electrical Engineering as a computer engineer in 1993. He has been involved in numerous national and international projects related to high-speed networking and IPv6. In the early 2000s he joined DANTE and worked on developing GÉANT, optical testing and areas of GÉANT multicast and monitoring services. His key areas of

activities are: high speed computer networks, protocols, security, and network management. As Head of the HBONE+ project developments he has been managing the building of the CEF based new 100 Gbps hybrid backbone in Hungary.

More information about NIIFI staff is available at: http://www.niif.hu/en/organization

### 4.1.18. CKLN

The Caribbean Knowledge and Learning Network (CKLN) was established in 2004 and registered as a regional not-for-profit foundation with its headquarters in St. Georges, Grenada in the Eastern Caribbean. In 2010, CARICOM agreed the Caribbean Knowledge Learning Network Agency be established as an institution of the CARICOM, pursuant to Article 21 of the Revised Treaty of Chaguaramas. CKLN was mandated by the Heads of Government of the Caribbean Community (CARICOM) to implement a project envisaged to bridge the digital divide between the Caribbean and the rest of the world and to enable global collaboration in Education and Research.

The project was the first phase of the C@ribNET development initiative. CKLN's role in developing a Regional Research and Education Network was in accordance with the terms and conditions of a 2007 Financing Agreement between CARIFORUM[1] and the European Union. In 2012, CARIFORUM signed a revised Agreement with the European Union to extend the scope of the project to include the development of national networks in each CARICOM[2] Member State and the development of Communities of Practice

CKLN's strategic objective is to enhance the global competitiveness of the Caribbean by upgrading and diversifying the skills and knowledge of human resources in the region through greater regional collaboration and connectivity. CKLNA launched the core of the Regional Network (C@ribNET) in February 2013, with connections to the global research and education community. To date, over 32 institutions are connected to the national networks, and by extension, to C@ribNET and the global research and education community. CKLN continues to facilitate and encourage the development of National networks and communities of practice.

CKLN’s main purpose is to

- develop and support the appropriate ICT enabled e-infrastructure at the national and regional levels (REN/NREN), with interoperability with global e-infrastructure in the international Research and Education Network (REN/NREN) space
- build Communities of interest to develop and work on projects in support of CKLN ‘s strategic objectives, enabled by the regional e-infrastructure
- support CARICOM Member States in the Integration process by way of facilitating Functional Cooperation amongst CARICOM institutions, and in developing the appropriate governance mechanism for the development, support and leveraging the use of national e-infrastructure

C@ribNET is one of the newest global research and education networks and holds the distinction of being an invaluable and unique resource for the region because it is the only regional broadband network in the Caribbean designed as the infrastructure to encompass the intended Single ICT Space of the Caribbean and bridges the digital divide between the region and the rest of the world, coupled with a high-speed backbone network, offering dedicated channels and reaching 15 member States that can exchange research and education services with the global research and education community and with dedicated hardware to support high performance applications.

The CKLN is governed by a Council, comprising Ministers of Education of CARICOM member states, and a Board of Directors nominated by governments of CARICOM Member States.

**Key Personnel:**

**Mr. Eriko Porto – Network Engineering and Operations Manager**

Eriko Porto is a resident of Resident in Rio de Janeiro, Brazil. He has been working for CKLN since April 2010 heading the Network Engineering & Operations of C@ribNET – The Caribbean Research and Education Network. The focus of his work is to coordinate the implementation and development of the network and associated services. Before his engagement with CKLN, Eriko worked for the Brazilian R&E network – RNP – as Network Engineering Manager, and during this period drove the design and implementation of the Latin American R&E Network – RedCLARA.

Eriko has a Bachelor degree in Electronic Engineering, Master of Technology degree in Computer Networks, Master of Technology degree in Internet Technology and Network Management, and M.Sc. degree in Telecommunications Engineering. Eriko has also considerably knowledge and experience in Networking and Network Security from previous jobs in ICT project development.

**Mr. David Edwards – Programme Manager**

David Edwards is the Programme Mananger of CKLN. He is responsible for project development and implementation, procurement and contract management and plays a lead role in the development of national research and education networks and communities of practice.

Edwards completed a Bachelors degree (BSc) in natural sciences at the University of the West Indies and holds a Masters degree (MA) from the University of Sussex (UK) and an MBA from Durham University (UK).

### 4.1.19. National Information Technology Center

National Information Technology Center (NITC) emerged in 2004 by the Kyrgyz President Decree as a target goal of the joint Kyrgyz-Japanese project (2004-2008) titled as "IT Human Resource Development in the Kyrgyz Republic (Creation of National Information Technology Center)". The project intended to strengthen capacities of local IT specialists by conducting training courses at NITC and developing IT human resource and training curricula, and thereby to contribute by providing advanced IT engineers with practical skills to Kyrgyz IT industry. After the project completion NITC continues to provide a short term training to develop practical and technical skills for local IT engineers. And the number of trainees who completed short-term courses at NITC is increasing every year.

Although some universities and private schools operate as IT educational institutes, currently only NITC can provide advanced training for IT engineers in software and network development. In addition, NITC is only one place in the whole country where all certification exams in IT related field can be taken– NITC holds authorisation statuses from PearsonVue, Prometric and ETS as a testing centre – no other organisation in Kyrgyz Republic has capacity and ability to provide testing activities and an opportunity to obtain internationally recognised certificates issued by companies like Microsoft, Cisco and Oracle.

Since 2010 NITC provides Network Operating Centre's (NOC) services to Central Asian Research and Education Network (CAREN) project that connects research and educational institutes in the Central Asian countries by broadband and promotes mutual research and education.

**Bios of the Organisation's participants in the Project:**

**Almaz Bakenov (m)** is the Director of NITC since 2004 and since 1 August 2014 is the Program Director of Software Engineering Department and Associate Professor at the American University of Central Asia.

**Education (*degrees, dates, universities)***

- Certified in the Governance of Enterprise IT (CGEIT), ISACA 2009, certificate # 0902239
- MS, Computer Science, Brigham Young University, 1998-2001
- MS, Electronic Engineering, St. Petersburg Institute of Fine Mechanics and Optics, Russia, 1992-1994, Diploma with Honors;
- BS, Computer Engineering, St. Petersburg Institute of Fine Mechanics and Optics, Russia, 1986-1992, Diploma with Honors.

**Main publication**: ACM SIGGRAPH, "T-Splines and T-NURCCs", San Diego, 2003.

---

**Zartlyk Jumabek Uulu** (m) is an IT adviser at NITC and manages daily operations of CAREN-NOC.

**Education:**

- Naryn Economy Lycee – Naryn , Kyrgyzstan \ 1993 – 1997
- Ege University ,Economics – Izmir, Turkey \ 1997 - 1999
- Yildiz Technical University, Computer Science & Programming – Istanbul, Turkey \ 1999 – 2003
- National Academy Of Law , Business Administration – Bishkek, Kyrgyzstan \ 2004 – 2007

**Certifications:**

- **Oracle DBA1** (ORACLE Academy)
- **Cisco Certified Network Professional** (CCNP - Cisco Career Certification via Pearson VUE Cisco ID: CSCO11195561, Validation ID: 813904785)
- **CompTA Unix+** (CISCO networking Academy)
- **Network Security** (KEIO University, Japan)
- **Cisco Network Security 1-2**(CISCO networking Academy)
- **Cisco Wireless LANs**(CISCO networking Academy)
- **CCAI** (Cisco Certified Associate Instructor)
- **Cisco Certified Network Association** (CCNA - Cisco Career Certification via Pearson VUE Cisco ID: CSCO11195561, Validation ID: 813904785)
- **Software Development** (IBM, Japan)

**Publications:**

**Books:**

- LAN Design (June 2005, 125pages); Routing Protocols(September 2005, 87 pages); Unix/Linux Installation, Administration, Security(October 2006, 496pages);
- Windows Server 2003 Installation and Administration(March 2005, 365pages);
- Network Development; Network Technology; (February 2006, 385pages)
- Advanced UNIX Server Configuration(March 2006, 346pages)
- MS Exchange Server(June 2006, 357pages)
- MS ISA Server (August 2006, 412pages)

**Research papers:** Wireless(Wi-Fi) Security, War-driving in Bishkek, Network Accounting Systems, System Cloning, Web Traffic Accounting

**Relevant Publications (up to 5):**

N/A

**Relevant Projects (up to 5):**

Provision of Network Operations Center (NOC) services to the Central Asian Research and Education Network (CAREN): from 2009 to present. For more information visit: http://caren-noc.org

EU project “Concept Development for school network infrastructure (Smart Schools)” in scope of EU Program "Support to the Kyrgyz Education Sector”, EuropeAid/128771/C/SER/KG, January-April 2013
UNDP funded project on development of communication, information, e-governance and ICT for Development (ICTD) program for governmental strategy on transition to sustainable development for 2013-2017. March-April 2013

UNDP funded project on development of regulatory part for the establishment and implementation of Government Chief Information Officers in Kyrgyzstan (duration: from 23 November to 10 December 2012)

UNDP funded project on development of technical standards for public services delivery in electronic format (duration: from September 7 to November 23, 2012)

**Organisation’s Role in Project:**

As provider of the CAREN NOC and training activities, NITC will represent the Central Asia R&E networking region (as established by the EC-funded CAREN project), and ensure that the NRENs and end users in the region are able to benefit from the results of the MAGIC project.

### 4.1.20. TEIN*CC

TEIN*CC (Trans-Eurasia Information Network-star Cooperation Center) was established in August 2011 by the Korean Government and with TEIN partners’ support as a non-profit Foundation Corporation to take responsibility for the 4th phase of the TEIN program which started in April 2012. It is located in Seoul with funding provided by the Korean Ministry of Science, ICT and Future Planning. TEIN continues to receive funding support from the European Commission which is contributing €8 million for TEIN4.

The early phases of the TEIN projects were managed by DANTE (www.dante.net), a not-for-profit organisation based in the United Kingdom. In October 2010, at the ASEM8 Summit that was held in Brussels, Belgium, Korea was granted the operation right to manage the 4th phase of the TEIN project.

TEIN is a high speed network for research and education which connects 20 countries in Asia Pacific. This network is actively used for international joint researches in Tele-Medicine, e-learning, Weather Forecasts as well as cutting-edge area including Cloud Computing and Software Defined Networks (SDN).

Key personnel

**Dr. Byung Kyu Kim (Executive Officer)**
Byung Kyu Kim received his Ph.D. from the Department of Physics, University of Texas at Dallas on 1997. Currently he is the Executive Officer of TEIN*CC and is the project manager of the TEIN4 program.
He had been involved with the cctld (country-code top level domain name) constituency secretariat as the executive director and APNIC (Asia-Pacific Network Information Center) as an executive council member for several years, and has collaborated with research and education networks in Asia-Pacific more than 10 years, through TEIN (Trans-Eurasia Information Network) and APII (Asia-Pacific Information Infrastructure) projects.

**Patch Lee (Technical Director)**
Patch Lee joined TEIN*CC in January 2012. He is currently responsible for the procurement of TEIN networks as well as management and operation of them through outsourced NOC. He also supports promotion of applications societally beneficial to the TEIN partners and enhancement of Human Capacity of partners through trainings and relevant events. Before he joins TEIN*CC, Patch worked for Korea Telecom (kt) in korea over 10+ years in the fields of global data business and strategic procurement as well as network engineering.

**Roles in the project :** WP2, WP3, WP5, WP6

### 4.1.21. Universidad Nacional Autónoma de México – UNAM (MEXICO) (Third Party)

UNAM (www.unam.mx) is dedicated to research and teaching in almost all the different areas of knowledge. These include biology, physic, chemistry, material research, astronomy, mathematics, and computing departments. The academic staff of the University is around 30,000 people. Students and administrative support aggregate around 300,000 persons. Half of the research done in Mexico is done at the UNAM. The University has an extensive experience on the development and use of computer codes for sophisticated numerical analysis, complex calculations, simulation of physical phenomena, and its applications in fields as diverse as material analysis, archaeology and medicine. The UNAM had been also an active participant of the RINGrid, EELA, EELA-2 and EPIKH, GISELA, CHAIN, CHAINREDS projects among other international research collaborations. It maintains high performance computing research in many scientific fields. The Computing Department of the UNAM (DGSCA) gives facilities of computing and communication to the University. It operates the largest Mexican national supercomputing centre, serving both local and remote users. The DGSCA operates the Network Operating Centre (NOC) for CUDI and also hosts the certification authority for Mexican grid activities. The Instituto de Ciencias Nucleares (ICN) is the first institute in Mexico with a dedicated department for high-energy physics. It coordinates the Mexican participation in ALICE/CERN experiment and hosts the main Mexican GRID resources for ALICE in order to develop and deploy the computing infrastructure to enable local participants to access the ALICE GRID infrastructure. The ICN also collaborates in the Pierre Auger Observatory (PAO) in the development of the offline software and in the HAWC project for high-energy gamma rays detection. The Instituto de Física (IF) is the largest and oldest physics institute in Mexico. It participates in ALICE in the development of the vertex detector (V0L) and in the development and deployment of the Mexican ALICE GRID infrastructure and had been working in the remote manipulation of electron microscopy equipment to study nano- systems. The Centro de Física Aplicada y Tecnología Avanzada (CFATA)

The Centre for Genomic Sciences (CCG) objectives are to perform scientific and technological research at the frontiers of genomic sciences; to generate human resources at the undergraduate, graduate and postgraduate levels; and to contribute with the deploying corresponding Information Technology facilities for the UNAM National Node of Bioinformatics, hosted by this Center, which is a member of the European Molecular Biology Network (EMBnet) and of the Iberoamerican Bioinformatics Network. The Instituto de Biotecnología fundamental mission is to develop modern biotechnology at the National Autonomous University of Mexico or UNAM. The IBt is part of the program of study of master of Genomic Science, in collaboration with CCG. It participates actively in the EELA project including development of Bioinformatics applications, and site managing. The Engineering Institute (www.ii.unam.mx) of the UNAM is a research center in various areas of engineering. It conducts research aimed at general problems of engineering, collaborating with public and private efforts to improve engineering practice at national level, it also provides engineering services to various sectors of society. The Seismic Instrumentation Coordination develops projects that enable earthquake registration in areas of high seismic risk. Currently, the coordination is using the real-time acquisition system named Earthworm (EW) that records the seismic activity of key stations in the area.

The Facultad de Estudios Superiores Cuautitlán (FESC) contributes to generate human resources at the undergraduate, graduate and postgraduate levels in health, Chemistry, Pharmacy and basic and applied research and analytical services in the fields of physics of materials, chemical properties, properties of polymers, crystalline properties, nanotechnology, physics of waves, perform activities of optical and solid state. Engineering areas. Had been participating in Grid projects with applications for the remote experimentation in processes of food freezing, in prediction of freezing times, image analysis of frozen foods and remote applications of RMN and Scanning Electronic Microscopy. The JRU-MX is a National Consortium created in March 30 2009 and integrated by Centro de Investigación Científica y de Educación Superior de Ensenada, Corporación Universitaria para el Desarrollo de Internet, A.C., Instituto Tecnológico y de Estudios Superiores de Monterrey, Instituto Politécnico Nacional, Universidad Autónoma de Aguascalientes , Universidad Autónoma del Estado de Morelos, Universidad de Sonora, Universidad Juárez Autónoma de Tabasco, Universidad Michoacana de San Nicolás de Hidalgo and Universidad Nacional Autónoma de México.

The JRU-MX aims are: to promote a national Grid initiative through the development of an infrastructure for e-Science and Grid in Mexico. The creation of a human "network" of researchers and technologists that exploit infrastructures, bleeding edge computing technologies to find solutions to complex and still unsolved multi-disciplinary problems of scientific relevance and societal impact and, ensure a long term sustainability of the e-Infrastructure for e-Science support designing and asserting the required financial & management schemes.

**Role in the project:** Joint work with CUDI and the partners in WP2, WP3

**Key Personnel**

Jesús Cruz Assistant professor at the Physics Department of the Cuautitlan Higher Studies Faculty UNAM. He obtained the BSc in Physics from the Faculty of Science at UNAM. He works in computational physics (Electromagnetic Field), remote instrumentation application (LEMDist, LEMDistFE and Seismic Sensor Grid) and Grid thechnology. He had participated in FP6 projects: E-Infrastructure shared between Europe and Latin America -EELA-, Contract 26409, and Remote Instrumentation in Next-generation Grids, RINGrid, Contract 31891, and FP7 projects E-science grid facility for Europe and Latin America -EELA-2, Contract RI-223797 and Exchange Programme to advance e-Infrastructure Know-How EPIKH, Contract N° 230842. Member of the UNAM supercomputing committee since 1996 and the deputy coordiantor of the Mexican Joint Research Unit (JRU-MX).

### 4.2. Third parties involved in the project (including use of third party resources)

| **Participant** | **RedCLARA** |
|---|---|
| Does the participant plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted) | Y |
| The printing of Material and the expenses such as meeting rooms and other expenses related to dissemination will be subcontracted to appropriate providers. | |
| Does the participant envisage that part of its work is performed by linked third parties[1] | N |
| *If yes, please describe the third party, the link of the participant to the third party, and describe and justify the foreseen tasks to be performed by the third party* | |
| Does the participant envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement) | Y |
| *UNAM, the Universidad Nacional Autónoma de México will be a Third Party involved in CUDI's activities, UNAM is a partner of CUDI and has strong technical and managerial abilities that will ensure the success of CUDI's participation in WP2 and WP3.* | |

[1] A third party that is an affiliated entity or has a legal link to a participant implying a collaboration not limited to the action (Article 14 of the Model Grant Agreement).

## Section 5: Ethics and security

### 5.1 Ethics

No ethic issues involved

### 5.2 Security[2]

Please indicate if your project will involve:

- activities or results raising security issues: (NO)
- 'EU-classified information' as background or results: (NO)

[2] Article 37.1 of Model Grant Agreement. *Before disclosing results of activities raising security issues to a third party (including affiliated entities), a beneficiary must inform the coordinator — which must request written approval from the Commission/Agency;* Article 37. *Activities related to 'classified deliverables' must comply with the 'security requirements' until they are declassified; Action tasks related to classified deliverables may not be subcontracted without prior explicit written approval from the Commission/Agency.; The beneficiaries must inform the coordinator — which must immediately inform the Commission/Agency — of any changes in the security context and — if necessary —request for Annex 1 to be amended (see Article 55)*


***Digitally signed by sealingservice.grants.ec.europa.eu***
***Date: 2014.09.01 22:29:02 CEST***
***Reason: Acknowledgment of Receipt***

This electronic receipt is a digitally signed version of the document submitted by your organisation. Both the content of the document and a set of metadata have been digitally sealed.

This digital signature mechanism, using a public-private key pair mechanism, uniquely binds this eReceipt to the modules of the Participant Portal of the European Commission, to the transaction for which it was generated and ensures its full integrity. Therefore a complete digitally signed trail of the transaction is available both for your organisation and for the issuer of the eReceipt.

Any attempt to modify the content will lead to a break of the integrity of the electronic signature, which can be verified at any time by clicking on the eReceipt validation symbol.

More info about eReceipts can be found in the FAQ page of the Participant Portal. (http://ec.europa.eu/research/participants/portal/page/faq)