FP7 Research Infrastructures

CEENGINE

Central and Eastern European Networking Engine

WP2 Support for Users and User Consultancy

D2.1.1 Users database version 1.0

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Abstract: This document provides the summary of WP2 D2.1.1 deliverable of Users database version 1.0 in the period of December 2010-May 2011

Online version of the database is located at: http://www.ceengine.eu/users

Document Revision History

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Preface

CEENGINE project aspires to provide a conducive environment for stimulating and fostering Central and Eastern European Networking Association (CEENet) activities related to the creation, incubation, development and growth of National Research and Education Networks (NRENs) in Central, Eastern, and Southern Europe and Central Asia.

With CEENGINE support it is expected that the Association would become more proactive and intensive in the support and assistance of the developing NRENs in the areas, which are both complementary to and enabling towards GÉANT3.

CEENGINE relies heavily on the unqualified experience, expertise and competence of CEENet in CEE, Caucasus and Central Asia, and aims to fulfill the following objectives:

- coordination of activities between e-Infrastructures initiatives in the region;
- raising awareness and technical know-how necessary for integration with GÉANT, including among others, dark-fiber and cross-border connections;
- fostering international cooperation and extension of GÉANT towards the East;
- strengthening and invigorating the dissemination of e-Infrastructure programme and related projects (GÉANT, BSI, CAREN, various GRID and HPC initiatives) in the region.

CEENGINE project has started in July 2010 and is planned for 36 months, until the end of June 2013. Central and Eastern European Networking Association is the only contractor of this project, which is co-funded by the European Commission's Seventh Framework Programme for Research Infrastructures and CEENet's own budget.

The CEENGINE will achieve the following milestones:

Milestone number	Milestone name	Date	Status
MS1	NRENs Infrastructure Data Base	M12	In progress
MS2	CEENet Global Outreach Concept	M24	In progress
MS3	All scheduled workshops are conducted	M30	In progress

The project will issue the following deliverables:

Del. no.	Deliverable name	Nature	Dissemination Level	Date	Status
D1.1	Management procedures	R	PU	M1	**OK**
D2.1.1	Users database 1.0	R	PU	M9	**OK**
D2.1.2	Users database 2.0	R	PU	M21	
D2.1.3	Users database 3.0	R	PU	M33	
D2.2.1	Users Consultancy Report 1.0	R	PU	M18	
D2.2.2	Users Consultancy Report 2.0	R	PU	M33	
D3.1	NRENs Infrastructure Data Base	R	PU	M12	**in progress**
D3.2	CEENet Global Outreach Concept	R	PU	M24	**in progress**
D3.3	CEENet assistance to less developed NRENs	R	PU	M35	
D4.1.1	R&D coordination report 1.0	R	PU	M12	
D4.1.2	R&D coordination report 2.0	R	PU	M24	
D4.1.3	R&D coordination report 3.0	R	PU	M36	
D5.1	Users Workshop	R	PU	M12	
D5.2	Managerial/Policy Workshop	R	PU	M18	
D5.3	NREN Technology Workshop	R	PU	M30	**in progress**
D6.1.1	PR report 1.0	R	PU	M6	**OK**
D6.1.2	PR report 2.0	R	PU	M12	
D6.1.3	PR report 3.0	R	PU	M18	
D6.1.4	PR report 4.0	R	PU	M24	
D6.1.5	PR report 5.0	R	PU	M30	
D6.1.6	PR report 6.0	R	PU	M36	
D6.2.1	Project web-site	R	PU	M3	**OK**
D6.2.2	Project web-site Refreshment	R	PU	M27	
D6.3.1	Electronic promotional materials 1.0	R	PU	M3	**OK**
D6.3.2	Electronic promotional materials 2.0	R	PU	M27	
D6.4	Presentations/seminar/panels on external Events	R	PU	M36	**in progress**

***R** = Report , **O** = Other , **PU** = Public, **CO** = Confidential (only for members of the consortium incl. EC).*

Table of Contents

1. Executive summary

This document documents the implementation of the first phase of WP2 activity and describes the first deliverable under this activity - D2.1.1 Users database 1.0. It elaborates on the database format, content of survey and approach to collect data for the first version of the User Database.

CEENGINE User Database 1.0 is a result of research and communication related to the NREN community. Collection of the following information was in scope of this activity:

- What are the users?
- What are their legal names and contact data?
- Where are they located (geographically and logically)?
- What are their research interests, do they have partners in CEENGINE region and in Europe?
- How do they participate in ERA, do they plan to do so, if yes – in which areas?
- Do they use (or plan to use) GEANT Network?

The information was collected by the means of an online survey and individual contacts with NREN managements. All NRENs from the list of countries in the scope of the project were contacted with a request to fill an online form. The results then were analysed and published on the web site of the project in a wiki-like database to be consulted online.

The database is open and will be updated as much as needed with new countries to be added or information about different stakeholder of NRENs.

2. Introduction

The Phase One of WP2 aims at the establishment of the WP2 team and project planning as well as delivering the first version of the User Database. During this phase, it was also important to set-up all definitions of the project scope and resources. Therefore, it has been imperative to synchronize it with the other work packages.

Overall, this deliverable marks the scope of the work to follow and provides an indication of the responsiveness of the researched community in this region.

3. Details of WP2 activities for the period

The following chapters detail the WP2 activities undertook by WP2 team.

3.1 Definition of Scope

Definition of Scope is imperative for the WP2 and the whole project because it determines the work to be done and resources required for it. In the specifics of WP2 that means two main definitions:

- the countries which should be included and how they can be categorized and approached if any specifics;
- the depth of NREN users research activity.

It was also important to ensure that the works of WP2 are synchronized with the other work packages so that there is a unified approach and communication with the researched communities.

3.1.1 List of Countries

There are several criteria to profile the countries and the approach to them. The most important for our study was the fact of the participation in GEANT, while the other was the EU membership

Above assumptions led us to the following division of countries for the needs of CEENGINE:

Full GEANT members

EU countries

1. Poland
2. Bulgaria
3. Romania
4. Hungary
5. Czech Republic
6. Slovakia
7. Slovenia
8. Estonia
9. Latvia
10. Lithuania
11. Austria
12. Greece

Relevant basic information about those NRENs is easy to find at least in the TERENA Compendium or through web research. Anyway, the questionnaires were sent to them to confirm the validity of their data and introduce the CEENGINE to them as well as to involve them in the project .

Non-EU conutries

13. Macedonia
14. Turkey
15. Serbia
16. Croatia

17. Montenegro

These non-EU countries enjoy the status “under EU accession procedure”

GEANT “associated member” status, non-EU countries

18. Russia
19. Moldova
20. Belarus
21. Ukraine

Non-GEANT, non-EU countries

22. Albania
23. Kosovo
24. Georgia
25. Azerbaijan
26. Armenia
27. Kazakhstan
28. Turkmenistan
29. Kyrgyzstan
30. Uzbekistan
31. Tajikistan
32. Vietnam
33. Bangladesh
34. Afghanistan
35. Uganda

All aforementioned countries are included in the research.

3.1.2 Levels of Approach

Within WP2, there are two levels or stages of an approach to NREN users :

1. Phase 1 of WP2 research aims at gathering users information from NRENs
2. Phase 2 of WP2 will target directly NREN users as institutions, universities, and labs who are subject of collaboration activities.

Current deliverable concerns the Phase 1.

3.2 Data Collection

For the purpose of the NREN Users data collection, the WP2 team developed and coordinated a survey form, which was communicated and requested to be filled online by the NREN representatives.

3.2.1 Survey Form

The following Survey Form was generated and coordinated with the other CEENGINE teams:

CEENGINE Data Collection Form - NRENs

The objective of this survey is to collect data about your served research and education community in order to expose it to the European Research Area for partnership consideration. It is done in implementation of the Project CEENGINE, which is a joint project of CEENET and the European Commission under the Seventh Framework Program (7FP) of the European Union (EU). The part related to your NREN aims to update the information already available in CEENET and/or TERENA contact database. In addition, it aims to collect information about your users identified as universities, institutes or other organizations and most specifically their research needs and capacity relevant to the network services you provide to them:

General Information

What is the name of your NREN and its abbreviation:

Provide it in your language too:

Address, Street, Town, Country

Legal Person representing it and its title:

Your name as a contact person (if different than the above):

Your email:

Your Skype (optional if you do not mind we call you for more details)

Phone (optional)

Government involvement

Financial

Management

Policy

Topology and users

International connectivity

Please describe your link to GEANT, if you have any, with its parameters. What are your international lines and to where - speed?

How many organizations do you connect?

Universities, labs, institutes, administration

What is, approximately, the number of individual users connected via your NREN?

Students, researchers, teachers,

Among the organizations you serve, which ones can you recommend as important research users who need to collaborate internationally via the network?

Those could be projects such as GRID, Supercomputer, special labs, research teams. How can we contact them?

Is there any document (preferable in English), which may help us understand best your organization and the research activities it supports?

Annual report, strategy, and etc.

If your NREN has a person dealing with international projects what is his contact information?

Name, email, skype

Can you list your major international projects in which your NREN is participating?

(funding institution, name of the project and duration)

End

Thank you for your time! We may contact you for further information related to your needs. If you think you can add more information to this data, you can contact us by email or Skype: ksimonski@gmail.com or "krassi_simonsky" (Skype)

Beyond collecting basic information about the NREN entities, the survey intends to collect information about the so called Power NREN Users or those who already use or plan to use the GEANT connectivity and services in their research. This information will be used to create the first list of NREN users who have to be mapped and consulted by WP2.

3.2.2 Collecting Data

The survey forms can be filled online or by replying to an email. Here is the link to it on the CEENGINE web site:

http://www.ceengine.eu/index.php?option=com_wrapper&view=wrapper&Itemid=20

or directly:

https://spreadsheets.google.com/viewform?formkey=dGlLUXIyOW9ZMjFFLXFvaHBuTDV5RFE6MQ

An email was sent to all NRENs in the listed countries inviting them to fill the form. The campaign reached all listed countries to contacts already known through the networking of CEENET team. More than 100 emails were personally sent with the following or similar text:

Dear Sir/Madam,

I am writing to you as a work package leader for a CEENET project, called CEENGINE. I am writing to you with a request to fill a survey for this project aiming to map the research networking activities in the region. Here is a link to the survey which will take you just a few minutes:

http://www.ceengine.eu/index.php?option=com_wrapper&view=wrapper&Itemid=20

We are particularly interested in universities and research institutes which you serve, which have or are interested in research collaboration with other countries via the GEANT network. At the next stage of the project, we will try to facilitate and support such contacts between the served communities.

FYI, CEENGINE project aims at enforcing and stimulating CEENet activities related to the creation, incubation and development of National Research and Education Networks (NRENs) in Central, Eastern, Southern Europe and Central Asia. You can visit the main page of the project at

http://www.ceengine.eu/

Thank you in advance for your cooperation and let us stay in touch if I could be of any help.

Regards,

3.3 User Database 1.0 results

As a matter of fact, the first user database is available online:

http://www.ceengine.eu/users/CEENGINE/User_Database/User_Database.html

The result of the survey is positive. Out of 35 NRENs requested, we received 24 questionnaires, what gives an indication that such number of NRENs is ready and willing to collaborate with us.

There was no response from 6 GEANT members. Even though the sought information can be found on TERENA website, no response to the questionnaire may be seen as the early indicator of non-interest in CEENGINE activities.

There are also 5 countries where NREN is not developed or the NREN situation is unclear, which will be the subject of a further study.

The response received so far gave us the possibility to draft the first list of NREN Power Users which will be targeted for research in Phase 2 of WP2

3.3.1 Data Records by Countries

In result of the survey campaign, NRENs from the following countries responded:

1. Armenia
2. Azerbaijan
3. Belarus
4. Bulgaria
5. Croatia
6. Czech Republic
7. Georgia
8. Hungary
9. Kazakhstan
10. Kyrgyzstan
11. Latvia
12. Macedonia
13. Moldova
14. Montenegro
15. Poland
16. Romania
17. Russia
18. Serbia
19. Turkey
20. Turkmenistan
21. Uganda
22. Ukraine

23. Uzbekistan
24. Vietnam

Among the EU countries which did not respond but information is available at least in the TERENA Compendium are:

1. Slovakia – TERENA data
2. Slovenia – TERENA data
3. Estonia – TERENA data
4. Lithuania – TERENA data
5. Austria – responded that all information is in TERENA Compendium and they can not share data about their Power NREN users yet
6. Greece – TERENA data

Those countries are not primary targets for the WP2 other that they may help in consultations on GEANT services and relevant project which may be of interest to the other countries.

The other countries where the research will continue are:

1. Albania - no NREN yet
2. Kosovo – no NREN yet
3. Tajikistan – in progress
4. Bangladesh – no successful contact yet
5. Afghanistan – communication in progress

Out of the above, the only target remains Tajikistan, where efforts will continue in the next phase. Contacts will be intensified and subsequent chances for personal communication will be sought.

3.3.2 List of NREN Power Users

The following NREN Power Users were recommended by the respective NRENs:

Academic Scientific Network of Armenia (ASNET-AM)

Armenian Research and Educational Networking Association (ARENA)

1. Institute of Molecular Biology NAS RA (http://www.molbiol.sci.am/)
2. Institute for Informatics and Automation Problems of the National Academy of Sciences of the RA (http://ipia.sci.am/)
3. Yerevan Physics Institute (http://www.yerphi.am/)
4. INSTITUTE OF GEOPHYSICS AND ENGINEERING SEISMOLOGY, NATIONAL ACADEMY OF SCIENCES OF ARMENIA (http://iges.am/)
5. Byurakan Astrophysical Observatory(BAO) (http://www.bao.am/)
6. Armenian Association of Telemedicine (AATM) (http://www.armtelemed.org/)

Azerbaijan Research and Educational Networking Association

7. Baku State University, (http://www.bsu.edu.az/)
8. Institute of Physics, (http://www.science.az/physics/)
9. Azerbaijan Medical University (http://amu.edu.az/yeni/index.php)

Belarusian Academy of Sciences Computer Network (BASNET)

10. United Institute of Informatics Problems of the National Academy of Sciences of Belarus (UIIP NASB) (http://itk1.bas-net.by/)
11. B.I. Stepanov Institute of Physics of the National Academy of Sciences of Belarus (http://ifanbel.bas-net.by)
12. Belarusian State University (BSU) (http://www.bsu.by/en/main.aspx)
13. Belarusian National Technical University (BNTU) (http://www.bntu.by/home.html)
14. Belarusian State University of Informatics and Radioelectronics (BSUIR), (http://www.bsuir.by/index.jsp?lang=en)
15. Joint Institute of Power and Nuclear Research "Sosny" of the National Academy of Sciences of Belarus (http://sosny.bas-net.by/)
16. Yanka Kupala State University of Grodno (GRSU) (http://www.grsu.by/en/)

Bulgarian Research and Education Network (BREN)

17. Bulgarian Supercomputer Center - http://www.scc.acad.bg/
18. Bulgarian GRID center - http://www.grid.bas.bg/
19. Astronomy of Rozhen - http://www.astro.bas.bg/
20. Institute of Informatics and ITC - http://www.bas.bg/clpp/en/indexen.htm

Croatian Academic and Research Network – CARNet

Data about connected organizations is available through the web site of CARnet: http://www.carnet.hr/

However, specific information about Power Users in Croatia is not possible to obtain as a list at this moment. Nevertheless, CARnet provides that Croatia participated in the following projects:

21. GEANT 3 (2009-2012), coordinated by DANTE, 36 partners are involved as partners
22. In October 2011 CARNet will organize a study visit within Lifelong Learning Programme- Transversal Programme, a support for Comenius, Leonardo da Vinci, Erasmus and Grundtvig programmes
23. Completed project: GEANT 2 (2004-2009), coordinated by DANTE, 32 partners were involved
24. Completed project: FLOSSWORLD (2005-2007), coordinated by Unviersity of Maastricht

CESNET, zajmove sdruzeni pravnickych osob CESNET, Association of Legal Entities

Data about connected organizations and contact data of researches are currently not publicly available

Georgian Research and Educational Networking Association - GRENA

25. GRENA participates in several 7th Framework Programme projects including:
    26. "European Grid Initiative: Integrated Sustainable Pan-European Infrastructure for Researchers in Europe ". InSPIRE

27. "High-Performance Computing Infrastructure for South East Europe's Research Communities". HPC-SEE
28. "Extending ICT research co-operation between the European Union, Eastern Europe and the Southern Caucasus" EXTEND NATO "Maintenance and Development of the Georgian Research and Educational Computer Network"

NIIF/HUNGARNET National Information Infrastructure Development Institute

29. National Information Infrastructure Development Institute – NIIFI, for grid, supercomputing, clouds, collaboration tools, etc. are concerned, our institute, (http://www.niif.hu/en)
30. The Computer and Automation Research Institute, Hungarian Academy of Sciences - SzTAKI, (http://www.sztaki.hu/institute/)
31. KFKI (institutes of the Academy), (http://www.kfki.hu/indexeng.html)
32. Budapest University of Technology and Economy - BME, (http://english.www.bme.hu/)
33. Eötvös Loránd University - ELTE (universities) (http://www.elte.hu/en)

Kazakhstan Research & Education Networking Association - KazRENA

34. Kazakh National Technical University – (www.kazntu.kz)
35. Turan University – (www.turan.edu.kz)

Kyrgyz Research and Education Network Association - Aknet (KRENA - AKNET).

36. Kyrgyz Russian Slavic University KRSU- GRID computing (http://www.krsu.edu.kg/)
37. National Information Technologies Center, CISCO IPv6

SigmaNet

38. Riga Technical University - Grid, engineering (http://www.rtu.lv/en/)
39. University of Latvia (http://www.lu.lv/eng/)
40. Solid State Physics institute (http://www.cfi.lu.lv/eng/)
41. Venstpils High school - radio astronomy (http://www.virac.lv/en/pro.html)

Macedonian Academic and Research Network (MARnet)

42. University Ss Cyril and Methodius in Skopje, (http://www.ukim.edu.mk/en_index.php)
43. Faculty of Natural Sciences and Mathematics, (http://www.pmf.ukim.edu.mk/web/pages/news)
44. Institute of Informatics. (http://www.ii.edu.mk/render.userLayoutRootNode.uP)

Research and Educational Networking Association of Moldova (RENAM)

45. Institute of Mathematics and Computer Science (http://www.math.md/en/projects/);
46. Institute of Applied Physics (http://www.phys.asm.md/);
47. Institute of Geophysics and Seismology (http://igs.asm.md/en)
48. State Medical and Pharmaceutical University of Moldova (www.usmf.md)
49. National Scientific-Practical Center of Emergency Ambulance (www.urgenta.md)
50. State Hydrometeorological Service (www.meteo.md)

Montenegro Research and Education Network - MREN

51. University of Montenegro - Center of Information System, (http://www.cis.ac.me/)
52. University of Montenegro - Department of Electrical Engineering, (http://www.ucg.ac.me/eng/elektrotehnicki.htm)
53. University of Montenegro - Department for mathematics and physics, (http://www.ucg.ac.me/eng/matematicki.htm)
54. Academy of science and art (http://www.canu.org.me/cmsen/index.php?option=com_content&task=view&id=26&Itemid=38)

PIONIER - Polish Optical Internet

55. National Data Warehouse, (http://kmd.pcss.pl)
56. Polish Infrastructure for computerized support of science in ERA (http://www.plgrid.pl)
57. Torun Centre for Astronomy (TCfA), (http://www.astri.uni.torun.pl/index-en.html)
58. Henryk Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences in Krakow, (http://www.ifj.edu.pl/?lang=en)

RoEduNet

59. Bucharest University, (http://www.unibuc.ro/en/)
60. ,Universitatea Ovidius (http://www.univ-ovidius.ro/)
61. Universitatea Politehnica, (http://www.upt.ro/english/index.php)
62. " A. I. Cuza" University of Iasi, (http://www.uaic.ro/)
63. Universitatea " Lucian Blaga" din Sibiu, (http://inginerie.ulbsibiu.ro/)
64. Technical University of Cluj, (http://www.utcluj.ro/)
65. Universitatea of Oradea, (http://www.uoradea.ro/)
66. University of Craiova, (http://www.ucv.ro/en/)
67. " Aurel Vlaicu" University of Arad, (http://www.uav.ro/en/index)
68. Institute of Mathematics of the Romanian Academy, (http://www.imar.ro/)
69. Babes-Bolyai University, (http://www.ubbcluj.ro/)

The network For Research, Education and Engineering - FREEnet

70. Yaroslavl Regional Network (Yaroslavl State University, http://www.uniyar.ac.ru/index.php?title=main_page&uselang=en, head@netis.ru)
71. Voronezh Regional Network (Voronezh State Technical University, http://www.vorstu.ac.ru,dubinina@cc.vorstu.ac.ru)
72. Central Research Institute for Machine Building (Operates Mission Control Center on behalf of the Russian Federal Space Agency) http://www.mcc.rsa.ru/, afb@mcc.rsa.ru

Academic Network of Serbia (AMRES)

73. Belgrade University Computer Center, (http://www.bg.ac.rs/)

National Academic Network and Information Center - Ulusal Akademik Agve Bilgi Merkezi (ULAKBİM)

74. Ankara Üniversitesi, (http://www.ankara.edu.tr/)

75. Bogaziçi Üniversitesi (University of Bosphorus), (http://www.boun.edu.tr/tr-TR/Content/Default.aspx)
76. Cankaya Üniversitesi, (http://www.cankaya.edu.tr/)
77. Doğuş Üniversitesi, (http://www.dogus.edu.tr/tr/)
78. Galatasaray Üniversitesi, (http://gsu.edu.tr/)
79. Gazi Üniversitesi (Gazi University), (http://www.gazi.edu.tr/)
80. Işık Üniversitesi, (http://www.isikun.edu.tr/)
81. Istanbul Teknik Üniversitesi (Istanbul Technical University), (http://www.itu.edu.tr/)
82. Istanbul Universitesi, (http://www.istanbul.edu.tr/#)
83. Izmir Yüksek Teknoloji Enstitüsü (Izmir Institute of Technology), (http://www.iyte.edu.tr/)
84. Koç Üniversitesi (Koc University), (http://www.ku.edu.tr/)
85. Maltepe Üniversitesi, (http://www.maltepe.edu.tr/)
86. Orta Dogu Teknik Üniversitesi (Middle East Technical University), (http://www.metu.edu.tr/)
87. Yıldız Teknik Üniversitesi – (http://www.ce.yildiz.edu.tr/)
88. Turkish National Research Institute of Electronics and Cryptology (http://www.uekae.tubitak.gov.tr/)

Turkmen Research and Educational Network Association (TuRENA)

89. Academy of science of Turkmenistan, (http://science.gov.tm/en/)
90. Turkmen State Institute of transport and communication, (http://science.gov.tm/en/organisations/transport_institute/)
91. Institute Gun of the Academy of science of Turkmenistan, (http://science.gov.tm/en/organisations/chemical_institute/)
92. Institute of Seismology of the Academy of science of Turkmenistan, (http://science.gov.tm/)

Research and Education Network of Uganda (RENU)

93. Makerere University (various projects), (http://mak.ac.ug/)
94. Uganda Christian University (various projects), (http://www.ucu.ac.ug/)

Ukrainian Research and Academic Network URAN

95. National Technical University of Ukraine "Kiev Politechnic Institute", (http://inter.kpi.ua/)
96. Donetsk National Technical University, (http://donntu.edu.ua/)
97. National Technical University "Kharkiv Politechnic Institute",
98. Taras Shevchenko National University of Kiev, (http://www.kpi.kharkov.ua/)
99. National Science Centre "Khrarkiv Physical & Technical Institute", (http://www.nas.gov.ua/)
100. Bogolyubov Institute for Theoretical Physics of the National Academy of Sciences of Ukraine, (http://www.bitp.kiev.ua/)

Scientific and education network of Uzbekistan

No served organization is recommended as Power NREN user

Vietnam Research and Education Network (VinaREN)

101. Hanoi University of Science and Technology, (http://www.hut.edu.vn/)
102. Hanoi University, (http://english.hanu.vn/)
103. Vietnam Academy of Sciences, (http://www.vast.ac.vn/)

104. Department for S&T of Da Nang, (http://www.dost.danang.gov.vn/)
105. National University , Ho Chi Minh City, (http://www.vnuhcm.edu.vn/)

4. Data Analysis

The survey has proven the original concept of the WP2 to profile the countries depending on their activities in GEANT. It happens that using GEANT services depends to a high extend on the administrative, financial, and representation capacity of the NRENs in different countries.

4.1 Results by categories

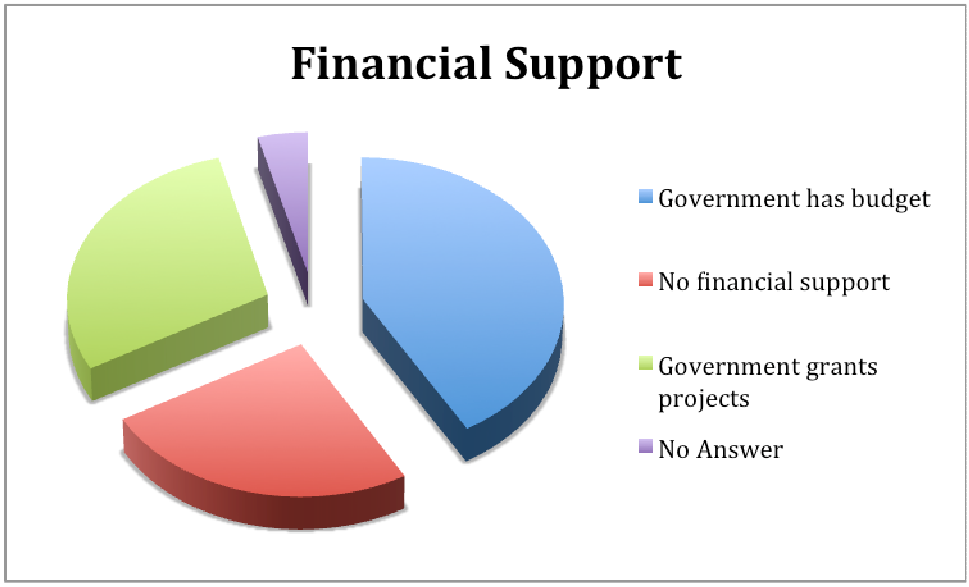
Questions in the survey were organized in categories to allow to summarizing the data and getting an overview of the current situation in the region. According to the survey the following categories could be analysed:

4.1.1. Financial involvement of governments

Out of 24 countries, 10 form their budget from government funding. Those include – Romania, Hungary, Bulgaria, Latvia, Croatia, Macedonia, Serbia, Turkey, Armenia, and Vietnam. Other than Vietnam and Armenia, all others are EU countries or EU pre-accession countries.

7 countries are granted government projects – Poland, Czech, Montenegro, Moldova, Ukraine, Belarus, and Turkmenistan. This approach is similar to the previous and in some cases, it is difficult to distinguish between them. Therefore, the dispersion between the EU and non-EU associated countries is very similar too.

Still 6 countries have no financial support from the Governments at all – Georgia, Kazakhstan, Uganda, Kyrgyzstan, Uzbekistan, Azerbaijan. None of them is associated with the EU.



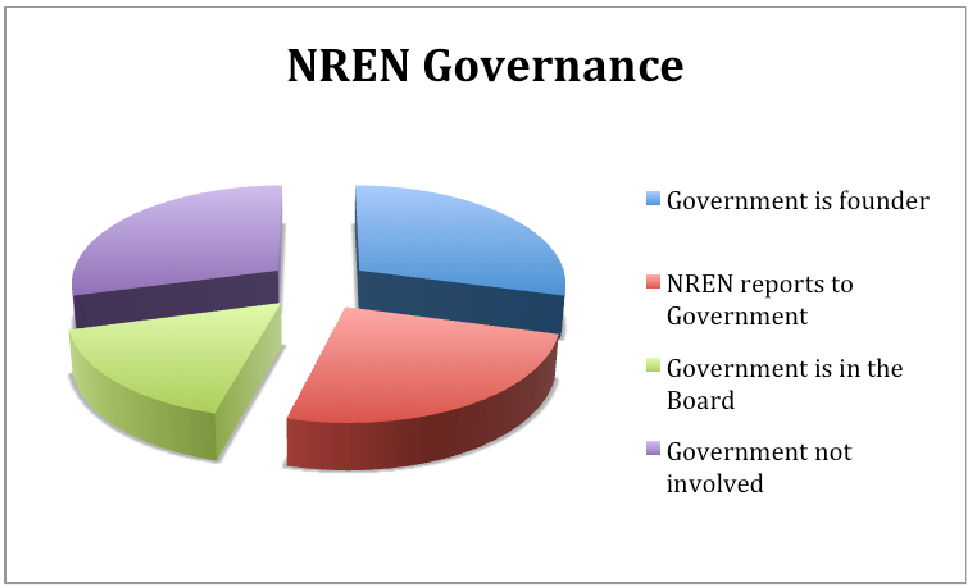
4.1.2. Governance models

Government is involved not only in the financial models of the NRENs but also in their governance models. Respectfully, 17 out of 24 countries report that the government is involved in one of the following roles:

- *"Government is founder of the NREN"* – 7 countries including: Bulgaria, Romania, Serbia, Turkey, Montenegro, Croatia, and Turkmenistan;
- *"NREN reports to Government"* – 6 countries including: Poland, Latvia, Czech, Ukraine, Vietnam, and Kazakhstan;

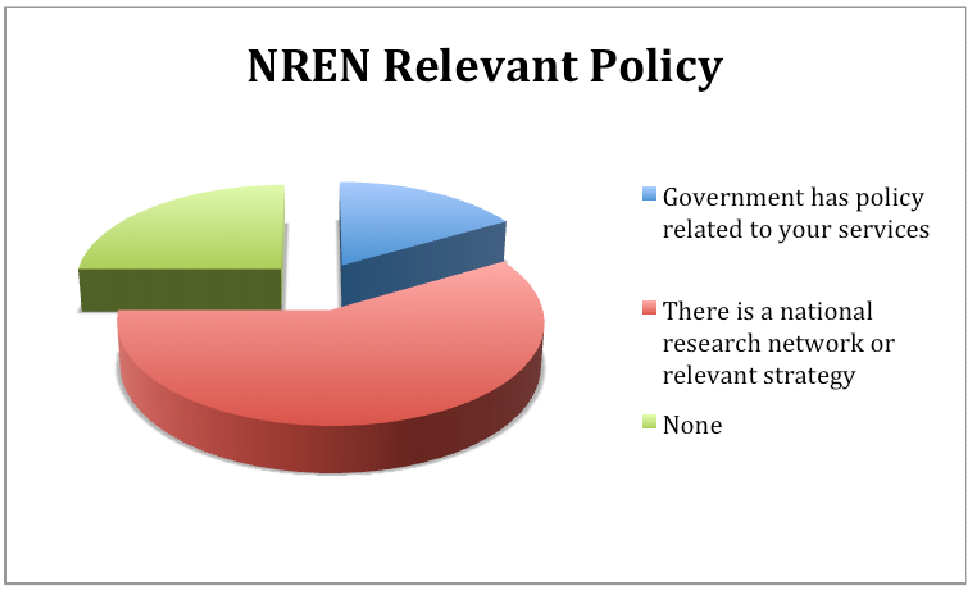
- *"Government holds seats in the Board"* – 4 countries including: Hungary, Moldova, Macedonia, Vietnam;

And still there are 7 countries where the government is not involved in the NREN management or governance. These are Georgia, Russia (but regarding FreeNet response only), Armenia, Uganda, Kyrgyzstan, Uzbekistan, and Azerbaijan.



4.1.3. NREN supporting policies

In almost all countries, there is a relevant policy to the NREN services and support for the research. It is either developed by the Government for the NRENs use, or is a part of a national strategy, still including government involvement. In 18 countries, it is a distinguished policy that refers to the NREN services. Still, in 6 countries there is no such distinctive policy in the form of a strategy. Those include: Azerbaijan, Uzbekistan, Kyrgyzstan, Uganda, Russia (actually no answer), and Georgia.



4.1.4. Number of Users

It is difficult to calculate the exact number of served institutions and users served by the surveyed NRENs. With a modest level of approximation, and again not including data from 11 countries plus Russia with only one NREN, we can provide the following estimates:

The number of institutions served by NRENs in the region exceeds ***3,300*** including only the universities, research labs and institutes. Beyond this number are the high and elementary schools. For Russia, the numbers are from FreeNet NREN only.

Respectfully, the number of students, researchers, and professors, can be estimated at more than ***6.5 mln***.

The numbers are highly impressive and deserve the attention of the EU to consider a dedicated policy for the region.

4.2 Conclusions

4.2.1 Government role in NRENs

Government has critical role for the success of the research networking and therefore it is imperative to study the relations between the NREN and governments and the model of governmental support. Respectively, relevant questions to identify the models were included revealing a wide variety of approaches.

Almost all countries in the region rely on a mix of governmental funding and some business models for sustainability, typically acting as Internet service providers. NRENs with strong governmental support report more distinctive policies and success in the research projects using GEANT services and connectivity. Examples include Romania, Turkey, Latvia. On contrary, NRENs, which have problems to secure governmental funding (like Kazakhstan) have not enough representation power to assist their user communities in services other than plain Internet connectivity. In result, their users do not collaborate effectively with partners from the GEANT map. Still others (like Bulgaria, Macedonia) are in transitional period and lack a clear stable model for government support.

That governmental support is essential for the research networking and it also affects the role of the NRENs for development of national research as a whole. Governments supporting NRENs help the latter with representation power to unite and organize the research community to collaborate at national and international level. Where governments are involved in NREN steering and management bodies, the relations with NREN user communities are streamlined and well organized. On contrary, if government is just an observer or not available, the relations between NRENs and their users follow traditional ISP business models and relations, and there is no much involvement of the NRENs in the research activities at all (Ukraine).

4.2.2 NRENs as the catalysts of research activities

Overall, NRENs demonstrate involvement and understanding of the research needs and interests of their user communities. Most of them recognize the so called Power NREN Users as per the CEENGINE definition and recommend consulting them on the GEANT services and partnership.

A good question to be asked about the role of the NRENs is whether they can become the entities to organize and lead their users in different research activities related to networking. By responding to the CEENGINE survey, the NRENs have indicated that they are concerned about this role and would assume it, if organized and supported by projects like CEENGINE or GEANT. Indeed, the role of NRENs to increase collaboration on international level should increase and services of this kind should be considered further.

With the increased demands for collaboration and integration between the different ICT projects originating from the European research area, NRENs may become those coordination entities competent to deliver services and organize a collaborative environment at national and international level. Indeed, with the intensified efforts to integrate the region to the European research area, NRENs from the region could become the driving force into this process.

4.3 Summary

The results of the survey and, most importantly, the active participation and responsiveness of NRENs to it, sustains the above. In providing connectivity services to universities and research labs, NRENs practically add not only value in technical services but also in coordination and research support. By responding to the survey, NRENs also agree to cooperate in the further CEENGINE activities and see the added value of our research.

Beyond the above, one of the main results of the survey is the list of Power NREN Users which is the input for the next version of the user database. Based on the gathered survey forms, more than 100 Power NREN Users are identified and will be approached at the next phase of the project. They represent the next level of the user database for which another survey and profiles will be developed.

The database also is a base for unification of the approaches and information about the users. At the next phase, NREN Users profiles will be created and they will be classified by categories and groups to let them find their own way to collaborate with the other users in different countries in the region.

In conclusion to the survey, it proves that more focus is needed on the developing countries – Georgia, Azerbaijan, Turkmenistan, which understand the environment and the need for research networking but lack support for their cases. More case studies and good practices will help them promote the services and develop a favourable environment for services and networking. Those in transitional period, from total government control and financing towards the project-oriented support, will still need help to raise awareness about the need for international research collaboration via the European research networks.

Another conclusion that could be drawn from the survey is that some projects like HPC and GRID have already developed a good networking environment and brought together international teams who collaborate on those advanced technologies. Even more, the high responsiveness was achieved through contacts and meetings as part of the mentioned projects because some of the people involved in research networking are the same people in charge of the GRID and HPC activities.

In summary, we can say that the database and the survey achieved its goals and objectives namely:

- to involve the regional NRENs to cooperate with CEENGINE;
- to collect latest information about them and their networks;
- to identify and list Power NREN Users in the region;
- to promote CEENGINE in the region;
- to create a ground for the next phase of the WP2 activity to profile the NREN User Communities.

Finally, the database as published marks the completion of the First Phase of WP2 activity and allows for the other project activities to utilize its findings in their work.