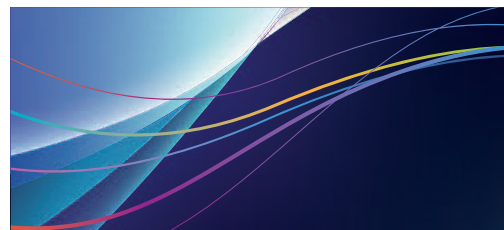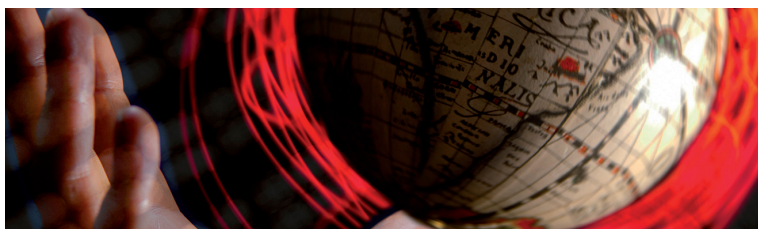# DeCLARA

From the city of the kings:
Second Conference TICAL 2012

Special edition LEADERS:
Global collaboration, research and education networks ... what do you think about this?

RedCLARA connection to Europe reaches 2.5 Gbps

June 2012 - n°31, year 8

Contents

Editorial

Jussara Issa Musse,
Universidad Federal de Rio Grande do Sul

President of the Programme
Committee, TICAL 2012

We live in the world of connectivity and social networks, where the meaning of the word "distance" has changed. In the old times, to go out of our city was a great adventure, something epic; transportation, telephone and information were things for just a few bunch of people. Today we are in Brazil, tomorrow in Chile and then in Mexico, all while maintaining our professional activities and personal relationships.

This change did not only reach the people, it also hit the universities where internationalization, mobility, integration and innovation are mandatory items in the development strategy. This development is only possible with an active area of Information and Communication Technology (ICT).

In the universities ICT are facing major challenges which are typical of this time when changes happen at a great speed. If previously the main item in the agenda was technology, today the services offered are the measure of performance.

And this scenario is changing rapidly. Today, within the area of services offer, actions are directed towards dissemination of the widespread use of advanced networks within the campuses, the creation of digital repositories, e-learning, high performance computing, federated services, among others. The debate on the use of cloud

computing and how to motivate the academic community in the use of ICTs is placed in the agenda.

But the major challenge is management. Strategic planning, IT governance, implementation of best practices, are mandatory items are for all ICT directors. Each university has developed a way to meet the challenge of management. The exchange of these experiences is fundamental to improving the practice and this is key to strengthening the role of ICT.

No matter what in which region is placed our University, or its size. The problems and challenges are the same. We need to accelerate the administrative and academic processes and procedures, to maintain the network available, offering services and facilities, and train and support our users in the use of these resources.

If the problems and challenges are the same, why is it so difficult to collaborate? If the world is connected by social networks, if the information is instantaneous, if ICTs are responsible for all of this, it is our duty, of the professionals of this area, to use the resources that we provide. RedCLARA created a space for collaboration by founding the Latin American Network of Directors of Information and Communication Technologies.

The TICAL 2011 Conference, held in Panama City, showed that we have the same needs and that we can share experiences and knowledge.

So, how do we face the challenge of collaboration?

The first step is to get out of our chair, then get out of our room, and go through the gate of the campus in order to visit our neighbour. And be part of the Latin American Network of Directors of Information Technology and Communication of the Superior Education institutions. Let's go to Lima, let's participate in TICAL 2012.

Second Conference TICAL 2012

On July 2nd and 3rd Lima, the capital of the Republic of Peru, will be the host of the Second Conference of Directors of Information and Communication Technologies in Higher Education Institutions, Management of ICT for Research and Collaboration, TICAL 2012. Parallel sessions, plenary sessions, panel discussions and workshops will be part of the program that will also include the participation of outstanding speakers from Brazil, United States, Greece and Sweden.

In order to provide a space for reflection, exchange of knowledge and best practices that address these issues, in order to contribute to the improvement and optimization of the management and work of the universities in the region, on July 2nd and 3rd, 2012, will take place the second edition of the TICAL Conference.

The event will be held at the Hotel Estelar Miraflores and the program will involve the participation of the distinguished speakers Luiz Claudio Mendonça Director of the Data Processing Center (CPD) of the Federal University of Bahía, Roland Hedberg, IT Architect at the University of Umea, Sweden, Ognjen Prnjat, Manager of the European and Regional e-Infrastructure at GRNET and Karla Vega, Research Engineer in the Data and Information Analysis Group at the University of Texas. (Learn more about the work

of each speaker here: http://tical_2012.redclara.net/es/conferencistas.html)

During the activities the attendees will have the opportunity to participate in parallel sessions, plenary sessions, panel discussions and workshops on topics including e-Science, Knowledge Management, Federated Services, Mobility, Visibility, and Telecommunications Strategies.

Successful call

As a result of the call made through the national research networks and institutions related to information and communication technologies of Latin America, 45 papers were receive that applied to be part of the TICAL2012 Program.

The proposed works were evaluated by the Program Committee integrated by Jussara Issa Musse, Federal University of Rio Grande do Sul (Chairman), Dr. Felipe Bracho Carpizo, National Autonomous University of Mexico, Ernesto Chinkes, University of Buenos Aires, Alfredo Diaz , Jorge Tadeo Lozano University, Colombia, Carlos Garcia Garino, National University of Cuyo, Rodrigo Padilla, University of Cuenca, Genghis Rios Kruger Pontifical Catholic University of Peru, Juan Pablo Rozas Muñoz, University of Chile and Ronald Vargas, National University of Costa Rica.

The process had as a result 22 selected works that will be part of TICAL 2012 program:

Fotografía de ANIBAL SOLIMANO_PromPerú

	Title	Country
1	Desafios para universalizar as tecnologias de informação e comunicação no apoio ao ensino e aprendizagem	Brazil
2	Desenvolvimento de um Planejamento Estratégico de Tecnologia de Informação: o caso de uma Instituição Federal de Ensino Superior	Brazil
3	Desenvolvimento de um Conjunto de Processos de Governança de Tecnologia de Informação para uma Instituição de Ensino Superior	Brazil
4	Customização do DSpace para Sincronizar com Diferentes Fontes de Dados e Padrões de Atualização: o caso do Repositório Digital da UFRGS	Brazil
5	Fortalecimiento de las Redes Académicas de Voz sobre IP Latinoamericanas para una Integración sostenible y sustentable	Argentina
6	Metodología para la formulación del plan de contingencia de TI para Instituciones de Educación Superior	Colombia
7	The GISELA Science Gateway	Italia
8	Sistema de gestión académica SIU-Guaraní 3: Gestión + Servicios + Conocimiento	Argentina
9	Gestión de contenidos multimedia en Educación Superior	Uruguay, España
10	Acceso Abierto al conocimiento científico, repositorios digitales y adopción de estándares desde el SIU.	Argentina
11	Uma Plataforma Web para os Serviços de Contabilização e Gestão de Contas de PAD	Brazil
12	Hemeroteca digital como herramienta de difusión, distribución y fomento de la cultura digital en UPN	Mexico
13	Problemas y herramientas en la seguridad de redes de transmisión de datos universitarias. El caso de la Universidad Nacional de Cuyo.	Argentina
14	EXPERIENCIA DE LA UDB EN LAS APLICACIONES PARA LA GENERACIÓN, ALMACENAMIENTO Y DISTRIBUCIÓN DEL CONOCIMIENTO: REPOSITORIOS DIGITALES	El Salvador
15	SISTEMA NACIONAL DE INFORMACIÓN CIENTÍFICA DEL SINACYT - SICS	Peru
16	Hacia un Sistema de Información Integrado en la Universidad Nacional de La Plata. Argentina/ Un caso de estudio	Argentina
17	Caso de Éxito: Implementación del Marco de Trabajo de Continuidad de la Infraestructura de TI de ARANDU - PARAGUAY	Paraguay
18	Desarrollo de un Modelo de Calidad Informática para la Gestión de Requerimientos en una Universidad del Estado de Chile	Chile
19	Mconf: sistema de multiconferência escalável e interoperável web e dispositivos móveis	Brazil
20	Consejo de Computación Académica: 25 años de experiencia en servicios de computación en los andes venezolanos.	Venezuela
21	Un Modelo de Autosostenibilidad y Servicio para Computación Avanzada en Latinoamérica inspirado en Aplicación como Servicio (AaaS)	Colombia
22	Repositorio Institucional de la UNC:Proyecto Biblioteca Digital, Una Experiencia Multidisciplinaria	Argentina

http://tical_2012.redclara.net

Global collaboration, research and education networks ...
what do you think about this?

February 16, 2012. From the RedCLARA office in Santiago, Chile, an email inviting each one of the leaders of the regional - and larger national - research and education networks leaders to answer six questions related to collaboration and the work of their networks, is triggered.
Why? Because knowing the vision of those who run the infrastructures and the developments of the networks over which we daily investigate and interact, and to be able to contrast them all, will allow us to evaluate the present and envision the future of our research and education networks.

María José López Pourailly

12 & 6

Twelve leaders representing all the regions of the globe responded to these six questions:

1. What comes to your mind when you hear that a researcher is talking about collaboration?

2. What would you identify as the main importance of research and education networks?

3. How would you describe the role of your network at both a regional and a global level?

4. How important for your network is collaboration with other regional networks and in what ways do you collaborate at a global level?

5. How do you think global collaboration among regional networks will change in the coming years?

6. Could you describe your vision of R&E networks in the future?

Who are them? Down here you will know; by the way, the order in which they appear reflects the alphabetical order built by the name of the research and education networks they lead.
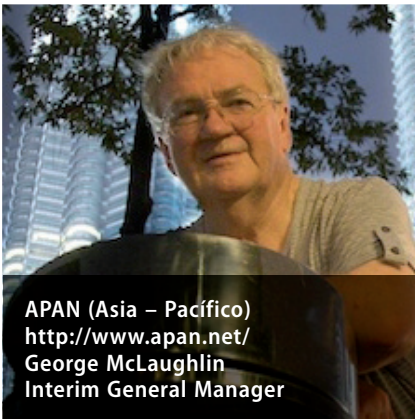
APAN (Asia – Pacífico)
http://www.apan.net/
George McLaughlin
Interim General Manager
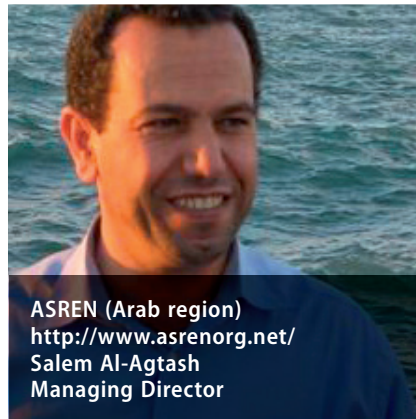
ASREN (Arab region)
http://www.asrenorg.net/
Salem Al-Agtash
Managing Director

CANARIE (Canada)
http://www.canarie.ca/
Jim Roche
President and CEO

CAREN (Central Asia)
http://caren.dante.net/
Askar Kutanov
Regional Coordinator

**CAREN, EUMEDCONNECT3
(East Mediterranean)
y TEIN3 (Asia – Pacifi c)**
http://www.eumedconnect3.net/
http://www.tein3.net/
David West, Manager (DANTE)

CKLN / C@ribnet (the Caribbean)
http://www.ckln.org/home/
Ken Sylvester
CEO

DANTE/GÉANT (Europe)
http://www.dante.net/
http://www.geant.net/
Matthew Scott y Niels Hersoug
General Managers

DANTE/GÉANT (Europe)
http://www.dante.net/
http://www.geant.net/
Matthew Scott y Niels Hersoug
General Managers
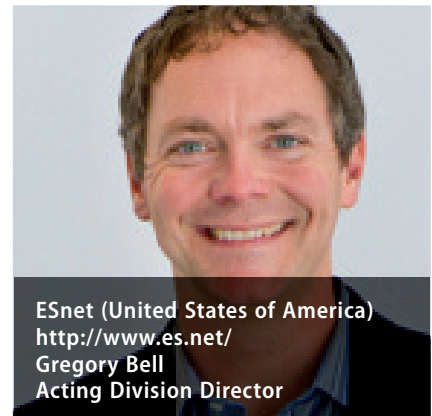
ESnet (United States of America)
http://www.es.net/
Gregory Bell
Acting Division Director

Internet2 (United States of America)
http://www.internet2.edu/
David Lambert
President and CEO

RedCLARA (Latin America)
http://www.redclara.net
Florencio Utreras
Executive Director

UbuntuNet Alliance (Sub-Saharan Africa)
http://www.ubuntunet.net/
Francis F. Tusubira
CEO

What comes to your mind when you hear that a researcher is talking about collaboration?

APAN, George McLaughlin: "I see a dynamic environment where the researcher is interacting with his/her collaborators across the country, and around the world, using high quality immersive environments; where the researcher's local team controls a scientific instrument on another continent as part of their experiments; and where the data collected can be compared, contrasted and analysed against data held in massive databases, from related experiments, located a several other centres around the globe. The innovative approaches used in network-enabling these collaborations lead to massive acceleration of the research outcomes, more timely results, and an edge on potential commercialisation."

ASREN, Salem Al-Agtash: "Scientists are no more isolated and collaboration has become essential and a key to conducting research. Collaboration is about availability of high-speed networks, access to sophisticated computing e-Infrastructure, and sharing of resources and data-intensive applications."

CANARIE, Jim Roche: "Almost all researchers are collaborating, regardless of their field of research. The questions that we ask these researchers are designed to uncover what kind of digital infrastructure they will need for their collaboration. In particular, do they

have any extraordinary needs for data transfer, compute or storage."

CAREN, Askar Kutanov: "Science has no borders and researchers need communicate and exchange information with colleagues in different countries. Also, access to information and recent publications are important."

CAREN, EUMEDCONNECT3 y TEIN3, David West: "This increasingly seems to be the way research is heading – it has been said before, but with science becoming mega science, and laboratories becoming 'collaboratories,' connection to research facilities around the world is vital. I would want researchers to know that there are eInfrastructures available to them now wherever they are, to help them collaborate on a global scale."

CKLN / C@ribnet, Ken Sylvester: "I think of an individual or research organisation wanting to expand the scope of their study by including and collaborating with others interested in the same subject... perhaps bringing a different perspective or orientation. For instance, if someone is doing some research on the role of young fathers in their children's lives, this might be both a quantitative and qualitative study on a particular cohort of men in a particular country. However, if there is another researcher/research institution conducting a study on the same or a similar cohort of men in another country,

both could benefit by comparing and contrasting their findings and developing a common analysis. Or it may be that the other researcher is focussing on very specific economic factors affecting male decision making...each of these studies could conceivably be strengthened and enriched by collaboration. What is important however, is that research findings be a "translated" into layman's terms so they can be used, especially by policy makers, and ultimately not just serve the benefit of research, but serve to further development in our nations and region. The other obvious spin off is that by collaborating, scarce research funding can be stretched, and the personal connection between individuals adds to the richness of globalisation!"

DANTE/GÉANT, Niels Hersoug: "It is a major strength that there is a shared willingness among researchers around the world to work together for the benefit of mankind. The ability to collaborate is dependent on having the correct infrastructure in place, and it is out of a desire to help collaborative work around the globe that many of us are here at DANTE. RedCLARA is another good example of how well things can work when that drive to support collaboration is there."

DANTE/GÉANT, Matthew Scott: "Collaboration creates general benefits for society at many levels. It brings people with similar skills together to work towards a common goal, creating what we call the research village, that is to say the idea that no matter how geographically far apart people are, they can work closely together."

ESnet, Gregory Bell: "ESnet is a science network, dedicated to accelerating the process of discovery. Because modern science depends upon large-scale teams, we think about collaboration every day. When I hear about a new collaboration, I ask myself: 'how could ESnet improve the productivity of that collaboration?' For instance, we routinely work with scientists to facilitate the transfer of large data sets, assure their remote instrumentation can be accessed reliably, or consult regarding a new distributed data model. Each time we engage with a new collaboration, our team learns about new network requirements and emerging challenges that scientists are facing. In turn, this conversation helps us develop new services and best practices can be applied to other collaborations."

Internet2, David Lambert: "What comes to my mind is the amazing and critical work researchers in our community do. Members of our community are collaborating to solve some of the most critical problems burdening global society--clean energy, climate change, cancer cures, astronomy, high-energy physics, and many other important issues.

It is imperative that researchers and their technology colleagues collaborate and provide tools that ultimately provide faster outputs of their research. Whether this is providing solutions to send massive data sets at the press of a button – instead of shipping hard drives around the world, or providing the best possible solutions for fully interoperable and reliable video conferencing to collaborate with research colleagues across the globe. Our community must always serve their needs with the best solutions available now, and lead the charge for innovative and transformative solutions that enable more breakthrough discoveries tomorrow."

RedCLARA, Florencio Utreras: "I think on Latin American researchers working together in solving big common problems that are affecting the region, such as: forecasting of natural disasters (earthquakes, volcanoes, floods, etc..), the discovery of drug and treatment of infectious diseases (Chagas disease, malaria, cholera, etc..), adding value to our basic goods by discovering new processes, uses and trading forms, etc.. I think on generating a critical mass in our region, joining forces of small groups to form relevant groups at a global level. Well, I think on the huge possibilities of an integrated region."

UbuntuNet Alliance, Francis F. Tusubira: "I always see beneficiaries – not the researchers, but our communities who are impacted positively by relevant research. To me, collaboration is about the mutual harnessing of resources, experience, and knowledge within and beyond our national and regional borders so that the best solutions in any field can be brought to bear in improving the quality of life of our people."
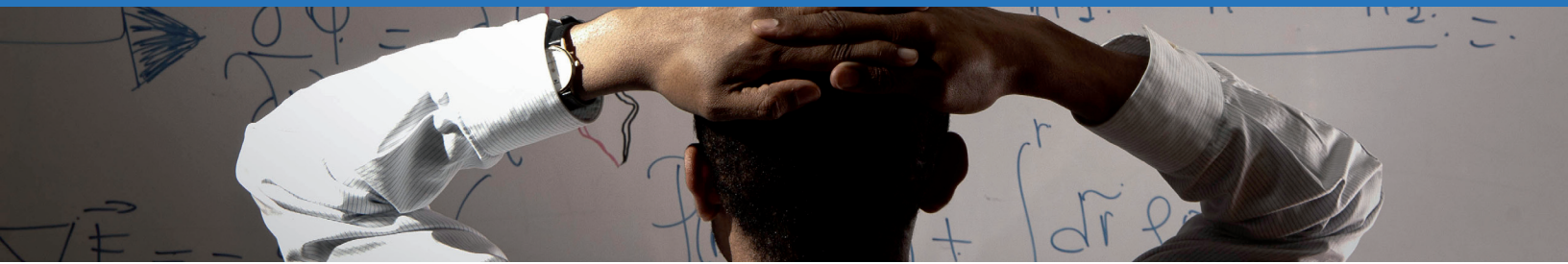
What would you identify as the main importance of research and education networks?

APAN, George McLaughlin: "Research and Education Networks provide a "first mover" advantage whereby educators can develop and deploy innovative approaches to teaching and "challenge setting", and students can take advantage of a richer and more interactive environment for learning and discovery, well ahead of services currently offered through traditional mechanisms.

The deployment of globally linked Regional Research and Education Networks provide researchers with access to instruments, massive data sets, vast computing and analytical resources and easy virtual access to collaborators anywhere, enabling disruptive enhancements to all areas of research."

ASREN, Salem Al-Agtash: "Research and Education Networks are essential tools for connecting researchers and institutions and for sharing scientific applications, services, and computing resources. With these networks, researchers have access to an open world of education, science, and applications and is key for consolidating efforts to address World's pressing problems and crisis that are common to all nations. The networks represent an extremely important outreach infrastructure to a wider research population that has an amazing potential, most dramatically in its impact on enabling developing countries to boot up and join the globalizing developed world."

CANARIE, Jim Roche: "R&E networks underpin the increasingly collaborative and digitally-driven research undertaken by university and government researchers around the world. Our R&E networks facilitate this research in the same way that roads facilitate transportation. Done properly, R&E networks increase the impact of research funding in all disciplines."

CAREN, Askar Kutanov: "Research and education networks provide opportunities to work more effective and faster under minimum cost, and are a good mechanism for science and education development."

CAREN, EUMEDCONNECT3 y TEIN3, David West: "By providing dedicated bandwidth, research and education networks enable researchers to share knowledge quickly and easily. For the scientist, connection to a research and education network can manifest itself as videoconference that is crystal clear, or an uninterrupted tele-surgery session, or the ability to participate in large-scale experiments. The commercial internet cannot provide such reliable and cost-effective data transfer. Without research and education networks, researchers in developing regions would be less able to participate in important international research efforts, and in some cases not participate at all. For governments research networks have become essential infrastructure for national and regional development."

CKLN / C@ribnet, Ken Sylvester: "Research and education networks provide a platform for collaboration and partnerships in achieving economies of scale for knowledge development and research. Enabling teaching and learning institutions, researchers, special interest groups and regional organisations to communicate and strengthen each other, contributing towards the development of our respective nations. I think especially the ability to work with others who have dissimilar perspectives, cultures and ideas also allows for growth in understanding and (hopefully) lead to greater understanding, appreciation and perhaps even adaptation of ideas and concepts."

DANTE/GÉANT, Niels Hersoug: "In addition to the support R&E networks give to research, we must also remember the important role of facilitating education. It is also essential that we continue to work to break down the digital divide, a topic which is very dear to the European Commission in contrast to commercial providers."

DANTE/GÉANT, Matthew Scott: "Absolutely, it is crucial that we create equality of opportunity for people all around the world to access their peers and partners in the research and education community both locally and globally."

ESnet, Gregory Bell: "Innovation. Research and education networks are different from the commercial Internet: they face different challenges, offer different services, and are growing far faster. ESnet for instance is projected to carry over 100 Petabytes of science traffic per month by 2015 – a 72% increase per year. Our exponential growth results from the explosion in data generated at experimental facilities around the world. While experiments like the Large Hadron Collider have been known for creating massive data sets, this trend is emerging across nearly all science collaborations including those involved in climate, genomics, and materials discovery. New detectors being deployed at X-ray synchrotrons are generating data at unprecedented resolution and refresh rates, for example. The current generation of instruments can produce 300 or more megabytes per second, and the next generation will produce data volumes many times higher.

In order to respond to challenges posed by the worldwide data revolution, R&E networks are investing in partnerships to support applied research, development, and innovation activities with the aim of delivering new capabilities that work across multiple domains for Labs and universities around the globe."

Internet2, David Lambert: "I would propose the critical importance of research & education (R&E) networks lies in stewardship and facilitation of the community – providing them what they need to develop and deliver real, transformative solutions to their unique,

collective problems. The networks themselves are just the initial example of the community's ability to create solutions to collective opportunities and challenges.

When the first 34 Universities created Internet2, we did so because commercialization and a much broader use of the Internet, a goal very much supported, had impaired our ability to support large-scale scientific data transfer needs. Establishing a community-operated and later community-owned network devoted to our unique needs was quickly identified as the solution. Today, we face new challenges, and while the network is a cornerstone of our community, we must use the same collaboration concepts to develop and implement better yielding technology solutions that meet the needs of all mission areas and functions members support."

RedCLARA, Florencio Utreras: "The vision of the future, the ability to discover the new applications and uses that will shape the way in which we work, study and entertain during the upcoming years. The collaboration between university and research systems that seeks to integrate teams of large size and capability to solve major regional and global problems. The ability to make contributions to the advancement of technology, as was the Internet, the WWW and now the IPv6 or optical networks controlled by the user, or data roaming systems or identity federations, etc. In summary, the NRENs are an causal agent of technological change, academic collaboration and vision of the future."

UbuntuNet Alliance, Francis F. Tusubira: "This depends on the interpretation of "research and education networks": At the infrastructure level, it is the killing of distance between educators and researchers around the world as well

as the online resources they need, creating an immediacy of presence of both. I used to tell my students that telecommunications is about the death of distance. At the human level, it is the removal, through easy and regular interaction, of the perceptions that often become a barrier to the seamless and synergetic flow of knowledge around the world."

How would you describe the role of your network at both a regional and a global level?

APAN, George McLaughlin: "APAN's Member countries account for more than 55% of the world's population. APAN has engendered strong regional network-enabled collaboration across Asia where the potential is enormous.

An important role for APAN is to help train the next generation of network engineers and applications specialists. APAN has a strong focus on network engineering, network research and advanced audio-visual communications services; it also has an important role in supporting a number of application areas that are highly dependent on networks. The APAN medical working group is among one of the most active among the R&E community. In recent times, intercontinental cyber-cultural performances have become a feature of APAN meetings. Earth Monitoring and Agriculture are among other applications areas where APAN has a strong presence.

APAN partners with the other Regional Research and Education Network organisations. Internet2, DANTE, CANARIE, RedCLARA, TERENA and the World Bank are all Liaison Members of APAN. APAN also has a range of MoUs and other agreements with organisations such as the Trans-Eurasian Information Network (TEIN), GLORIAD, NICT, and with UNESCO's CONNECT-Asia initiative. APAN is an active participant in many programs with our other regional partners."

ASREN, Salem Al-Agtash: "ASREN's role will focus on developing a pan-Arab e-Infrastructure to support e-Science and education and facilitate the collaboration and cooperation among researchers and academicians in the Arab region across the Arab Countries. ASREN has been collaborating with other regional networks for harmonization and coordination of regional e-Infrastructures in an effort to build interoperability standards and facilitate access to research communities at the global level. ASREN will be an intermediary connecting the west and the east, as well the north and the south."

CANARIE, Jim Roche: "Like all NRENs, CANARIE focuses inward and outward. Within Canada we work closely with the research and education community to ensure that we are delivering digital infrastructure that meets our community's growing needs. This includes high performance networking, cloud computing, software platforms, cloud services and more. Globally we work closely with the rest of the NREN community to ensure international connectivity and to drive innovation."

CAREN, Askar Kutanov: "CAREN plays an important role in building regional e-Infrastructure for research and education, and its integration to global research infrastructure. Also, at regional level CAREN provides opportunities for strengthening and capacity building of NRENs (National research and Education Networks) participating in the project, as well to strength regional collaboration among them. At global level CAREN, geographically located between Europe and Asia, could play role as modern Silk Road and high-speed highway for research and education."

CAREN, EUMEDCONNECT3 y TEIN3, David West: "Within a geographic region, there may be shared research objectives and interests – for instance, in central Asia, where CAREN operates, research priorities include Earth observation to mitigate the effects of natural disasters, or the surveillance of certain local diseases. However, increasingly the view becomes global - we know that malaria research is being conducted internationally, as a disease that affects many regions worldwide. Similarly crop research, and so these regional networks must, and do, link into global networks also."

CKLN / C@ribnet, Ken Sylvester: "CKLN is a regional agency of the Caribbean Community, CARICOM and thus answers to the heads of state of all twenty (20)

member states. These Heads have given CKLN the mandate to establish the infrastructure for regional network, C@ribNET, and to facilitate the development of national research and education networks (NRENs) that will be the user groups for the network. So we are really now facilitators, incubating the NRENs, and enabling collaboration by convening meetings among Caribbean NRENs and with others through our international connections to other networks such as RedCLARA, Géant, Internet 2, Ubuntunet Alliance, APAN etc. CKLN is seen as providing this critical network, and so is now beginning to be sought out as a significant partner for regional institutions exploring applications requiring regional and international connectivity. Likewise, the international networks see that this hole has now been plugged, and are also beginning to more actively engage with the Caribbean, through the CKLN."

DANTE/GÉANT, Matthew Scott: "Within Europe, GÉANT acts as the common community for European researchers and also as a society of European NRENs in which they can collaborate on new services. Globally we see GÉANT very much as being at the heart of the Research and Education Village. An example of this is the fact that GÉANT enables the exchange of connectivity between other world regions."

DANTE/GÉANT, Niels Hersoug: "DANTE has nearly 20 years' experience of establishing regional research and education networks. This experience is something we have shared and continue to do so with other world regions."

DANTE/GÉANT, Matthew Scott: "In addition to providing connectivity, GÉANT also provides services to meet user needs within Europe. This is again something that we can share with other world regions. The ELCIRA

project led by RedCLARA, and which DANTE and GÉANT are closely involved in, is an example of how we can share experiences of services and work to create interregional services which benefit global collaborations."

ESnet, Gregory Bell: "ESnet has the mission of accelerating scientific discovery for projects funded by the US Department of Energy's Office of Science, which supports 27,000 PhDs, graduate students, and engineers at 300 institutions (and claims credit for roughly 100 Nobel Prizes). Besides interconnecting the DOE's National Laboratory system, its supercomputing sites and its experimental facilities, ESnet links the National Labs to 140 research and commercial networks around the world. We actively contribute to the community by sharing our best practices and innovations in joint forums like the GLIF (The Global Lambda Integrated Facility) collaboration as well as partner in developing new interoperable services, capabilities and standards that mutually benefit the science mission. Prime examples of our community contributions include development around inter-domain virtual circuit and performance measurement technologies as well as the associated standards development within the Open Grid Forum (OGF) and DICE collaborations. Within the U.S., we have a very close and complementary partnership with Internet2, which has also yielded many important collaborations - most recently around emerging 100 Gigabit Ethernet and software-defined networking, among others."

Internet2, David Lambert: "At both levels, I would describe Internet2's role as the same. First, Internet2 was established to be the symbol of a set of ambitions for the research & education community. Secondly, Internet2 was

created to be an agent these leaders can use to develop and implement solutions to common problems. That was the original definition of Internet2, and it holds true today. Though our community is much bigger today than it was 15 years ago – and its reach must be broader and deeper to be optimally effective, this definition applies now more than ever with the challenges facing research and education."

RedCLARA, Florencio Utreras: "RedCLARA is a major initiative of regional collaboration that integrates the efforts of the National Networks, among themselves and with the rest of the world. For the Global community RedCLARA represents a success in terms of collaboration within a region that it's on its way of integration of its research and university systems. That is why other regions are analysing how we have managed to have an organization in which all the Latin American countries cooperate unreservedly and generously. An organization that has earned the prestige of responsibility and efficiency, both with international and regional institutions; an organization that is leading the development of services for researchers and research groups and that is actively collaborating at a global level."

UbuntuNet Alliance, Francis F. Tusubira: "As we say in the Alliance, our role is creating the human and infrastructure networks that will enable research and education collaboration in order to increase the contribution of our research and education institutions to national development."
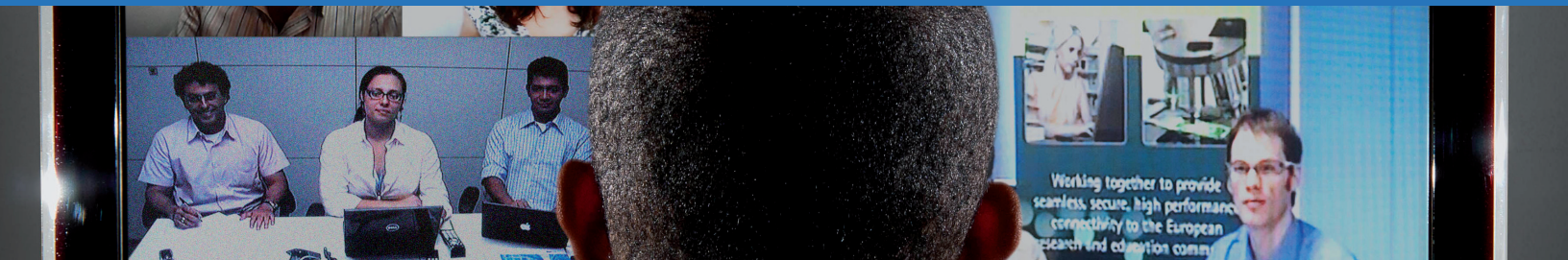
Question 4

How important for your network is collaboration with other regional networks and in what ways do you collaborate at a global level?

APAN, George McLaughlin: "Collaborations at all levels (networking, performance, advanced communications services, applications) must be global in scope. This is very important for APAN while noting that excellent technical networking and innovative advanced communication services, must have an engaged user base ready to exploit such improvements. Awareness raising of the opportunities that R&E networking enables is an important function for everyone involved.

A feature of APAN's twice-yearly meetings is the Global Collaborations workshops, where examples from around the world and within Asia are presented.

There are many active research collaborations between APAN's Member communities and those of the Member communities in other Regional Research and Education networks."

ASREN, Salem Al-Agtash: "Collaboration with other regional networks has many advantages mainly in sharing resources, experiences, as well best practices and successes. ASREN organizes every year the e-AGE forum (Integrating Arab e-Infrastructure in a Global Environment) as the launching pad for R&E connectivity and cooperation at the global level. e-AGE brings together ASREN, EUMED, GÉANT, RedCLARA, Ubuntunet, WACREN, APAN, and Internet2 regional R&E network stakeholders and region's foremost innovators, leaders, scientists, and businesses. The goal is to discuss and debate models of innovation, integration of R&E networks, policies for sustainable development in education, means of knowledge sharing and dissemination, capacity building programs, and region-wide e- infrastructure deployment to tackle today's crises and worlds most pressing problems in environment, economy, health, energy, and many others. The forum plays an important role in bringing leaders and policy makers to plan for building a global e-infrastructure for R&E based on real life broad inclusiveness beyond any political protocols. e-AGE 2012 will be held in United Arab Emirates and targets audience from all over the world."

CANARIE, Jim Roche: "Collaboration international is a key element of our strategy as Canada's national NREN. We work with other NRENs on policy initiatives, technology development, bandwidth acquisition and more. The NREN community is tight-knit and inclusive. CANARIE would not enjoy the success it has seen without the close working relationships with the global NREN community."

CAREN, Askar Kutanov: "Collaboration with other regional networks is important for CAREN. There is need to learn the best practices and success case studies in applications development from other regional networks."

CAREN, EUMEDCONNECT3 y TEIN3, David West: "All the networks mentioned here link into GÉANT, the pan-European network and so there is the potential for region-to-region collaboration. One specific example we identified recently is that land management researchers in North Africa needed to transfer large satellite images to specialist facilities in France for processing before being returned, and they used the connections of EUMEDCONNECT3 and GÉANT to do so. There are many more case study examples which can be found by looking at the regional websites: www. tein3.net. www.eumedconnect3.net and www.caren.dante.net."

CKLN / C@ribnet, Ken Sylvester: "Collaboration is critical for us, and we are happy that networks such as RedCLARA have been alongside us from the inception. We have been able to benefit from certain skill sets that we do not yet have in the Caribbean – for instance engineering, applications development. We are the new kid on the block, and so we look to those that have the experience, to guide us and help us until we identify and strengthen the skill sets within our own Caribbean ranks. We recently collaborated with RedCLARA on the first Global Virtual Day by providing a presenter and translator for the session. We see that once the regional NERNs become more established, these types of collaborative efforts will increase, and CKLN will certainly encourage and facilitate

these as far as possible. This would extend to teaching and learning possibilities across the globe, as there are specific topics and sectors in which the region has some unique perspectives and advantages. Governments can certainly utilise the network for greater and more frequent discourse on critical regional issues, and this of course extends internationally."

DANTE/GÉANT, Niels Hersoug: "International collaboration is key for us. DANTE has put a lot of effort into supporting other regional networks over the years, with the support of European Commission (EC) funding, meaning that connectivity costs between regions have always been shared. We have also helped other networks justify to their local funding bodies the importance of Research and Education Networks."

DANTE/GÉANT, Matthew Scott: "For the EC-funded regional projects, DANTE has acted as the conduit between the European Commission and the regions. This has helped to create very powerful links between the regions and Europe. But as organisations such as RedCLARA in Latin America and the TEIN* Cooperation Center in the Asia-Pacific region adopt the role of managing the EC-funded projects, DANTE continues to work closely with them to support them in their work."

ESnet, Gregory Bell: "Modern science depends upon advanced R&E networks to connect scientists to each other and to research facilities, wherever in the world those might be located. One of the most well-known examples of such a facility is the Large Hadron Collider at CERN, which depends on high-performance networking to deliver data to thousands of researchers distributed globally. We expect that in the coming years, more and more facilities – in a range of disciplines – will adopt the same data model. As a result of this rapid paradigm shift, it is imperative that regional and national networks collaborate to deliver services that work seamlessly

across multiple states, regions, countries and continents. Partnership is absolutely vital, because science discovery depends on it. To this end, ESnet collaborates with peer networks in many domains including network operations, engineering, software development, standards work, emerging services, and long-term strategy. We have been active in global collaborations that have led to the development of standardized, open-source tools for performance measurement, multi-domain virtual circuits, and other services and tools."

Internet2, David Lambert: "Internet2 places high priority in optimizing the role of all partners in the traditional 4-tier model of state, regional, national and global R&E networks. The ecosystem is dramatically expanding with new or increasing state efforts, competitive commercial offerings and other forces for change pushing against the historical R&E network model. Through broad collaborations with end users, existing and new network partners and other interested parties, Internet2 seeks to develop a contemporary set of models that link its own networking efforts with those elsewhere in the ecosystem—to create a coherent mission, business, operational and technical capability for the future.

Internet2 collaborates with its many international partner organizations to promote the development of these coherent network capabilities and architectures. For example, Internet2 is a partner in DICE, a strategic collaboration between European and North American Research and Education Networking partners focusing on optimizing trans-Atlantic networking operations for all research and education users. We also work with our global partners to provide above the network services. For example, Internet2 is working in partnership with several peer RENs, including RedClara, to enable seamless, interoperable, high quality video collaboration across institutional and international boundaries. Internet2 also

works with its partners to ensure access to globally distributed science facilities and projects, including CERN's Large Hadron Collider in Switzerland and the SOAR and Prompt telescope projects in Chile."

RedCLARA, Florencio Utreras: "Collaboration with other regions is essential. Nowadays research and education are global, our academics need to be integrated with research teams from other continents to exchange data, access to instruments, use computer facilities, etc. Without that collaboration, no matter how efficient and powerful our networks can be, they would be truncated, and would fail to meet its mission of integrating Latin America into the world.

"The collaboration can adopt multiple shapes. First with the interconnection of our networks and the contributions from international organizations and projects, that along with our counterparts in other continents, especially in Europe, had help us to build what we have. Without such cooperation, RedCLARA would not exist in the way it does today. Second, through the exchange of information for collaboration between our researchers, the permanent contact that allows us to identify persons and institutions with which our researchers can collaborate on specific subjects, and, of course, with agreements in areas such as: identity federations, application sharing (e.g. videoconferencing), mobility (roaming), etc."

UbuntuNet Alliance, Francis F. Tusubira: "Collaboration is absolutely vital for our region: we are several stages behind the rest of the world. We need to learn from the best practices and the failures of our peers in areas ranging from network design and operations; to cost and price models; to communication strategy and public relations. We need to enable the linkages between our content networks and their peers around the world. All these are areas of current or potential collaboration."

How do you think global collaboration among regional networks will change in the coming years?

AAPAN, George McLaughlin: "We live in an environment where disruptive changes as a result of new technologies impact how people live, work and play in ways not anticipated even a few years ago. It is unlikely that this pace will slow.

Most of these disruptive technologies no longer result from the publicly funded research sector. There are new challenges for the R&E networking community and closer collaboration, and exploiting new developments wherever they occur will be important for the future.

Inter-regional network collaboration will increase. High-end science instruments that are enormously expensive to build and operate, will only be located in a small number of sites around the world. Research collaborations will increasingly be built around global teams funded by multiple agencies in different countries. Virtual environments will become the norm for the globally distributed collaborations, supported by the global R&E Network mesh."

ASREN, Salem Al-Agtash: "Global collaboration will be driven by needs, most importantly in a wider access to knowledge resources. Global access, so long denied, will be possible during the coming years to researchers everywhere. Access alone, though

critical and a priority, is not the key element to world successful research collaboration, but it is more related to the development and empowerment of research communities and sharing of resources as the building blocks for strong and sustainable research communities in the 21st century."

CANARIE, Jim Roche: "Collaboration has always been important among the NREN community. International collaborative research projects are growing in scope. Big science increasingly is becoming global rather than local in its focus. Examples include the LHC and SKA. Moreover, most jurisdictions are coping with fiscal challenges. All these factors point to a need for even closer collaboration among the global NREN community."

CAREN, Askar Kutanov: "Global collaboration among regional networks will be more focus on Planetary Emergencies."

CAREN, EUMEDCONNECT3 y TEIN3, David West: "I see that it will continue to intensify as further countries join regional network programmes, as network capacities increase and as science and research demand ubiquitous access to resources and data globally. I believe this is an irreversible trend with great benefits for all which will help

developing countries participate on an equal footing in international research collaboration."

CKLN / C@ribnet, Ken Sylvester: "The current generation was born into the digital age and therefore have expectations of how they communicate. Their demands and uses will guide how the networks will change in the coming years... speed, high resolution, real time, wireless access on a wide range of devices. What will be critical is the capacity of the networks to manage the traffic, ensure security, speed of response for services etc."

DANTE/GÉANT, Niels Hersoug: "We will see a change in the difference in the capacities provided by smaller networks and the larger ones. Gradually, connectivity will grow to the point where there is greater equality in bandwidth across world regions."

DANTE/GÉANT, Matthew Scott: "Providing sufficient bandwidth between regions will continue to be an important part of global collaboration, but the major focus will be on the provision of interregional services which facilitate global collaboration."

ESnet, Gregory Bell: "Without a doubt, we will need to step up our global collaborative efforts. Over the past several decades, we've worked as a

community to successfully develop tools and services that are tailored to the multi-domain needs of global science. These tools are now moving from prototype deployments into hardened, production-ready services. Over the next decade, these services will continue to be adopted and refined, leading to an even more seamless and consistent end-to-end experience for our users. At the same time, I think it's critical that we focus attention on outreach and education. As the data revolution continues to unfold, many scientists who have never used the network before will be forced to do so as their datasets grow too large to ship via portable media. Many of these scientists participate in small collaborations without the level of IT expertise of larger collaborations like the LHC. The R&E network community needs to come together and develop models and best practices that any researcher can easily adopt as part of their science workflow."

Internet2, David Lambert: "Internet2 strongly believes that globalization is changing our mission and strategies—and those of our higher education partners and universities—and will invariably shape the Internet2 of the future.

Because science, education, research and service are not bound by geographic borders, the long-term success of Internet2 relies on strengthening partnerships and collaborative opportunities with international counterparts, but also on our ability to seek out new ways of collaborating and extending our capabilities in support of the Internet2 membership. These partnerships create the bridges required between our respective communities, and support the teaching, learning, clinical and outreach missions of our membership and their communities."

RedCLARA, Florencio Utreras: "It should tend to further integration, especially for those applications that promote collaboration. For a researcher, it should be as simple as using a phone to carry out a videoconference meeting, sharing documents, working together to manage a project, organizing a conference, etc. And this should be done without the need of identifying yourself separately in several systems, but ensuring the security of applications, data, documents and people. The key is the integration of services. "

UbuntuNet Alliance, Francis F. Tusubira: "As connectivity improves and barriers to collaboration disappear, there will be a rapid increase in the intellectual output of those regions (for example Africa) that run a very high intellectual property deficit. This will increasingly lead to equal partnerships in global collaboration; and will also drive the demand for similarity in performance of networks anywhere in the world. The platforms will become ubiquitous, disappearing in the background, and people and content networks will personify the global collaboration."
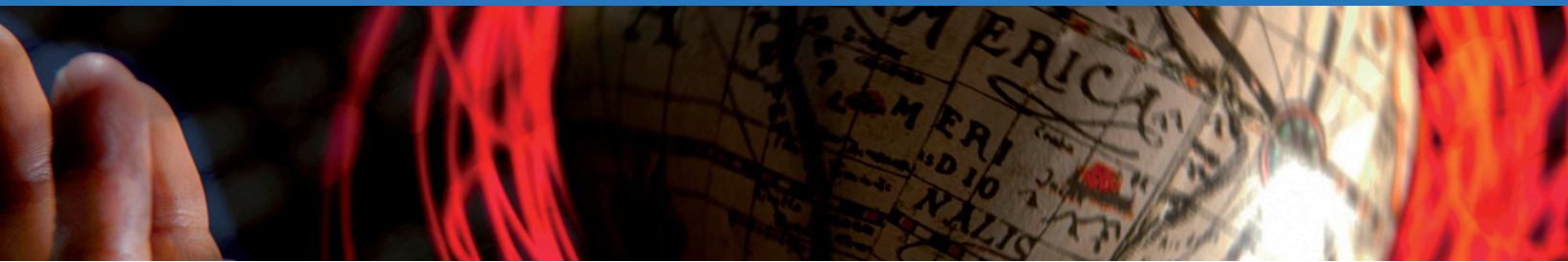
Could you describe your vision of R&E networks in the future?

APAN, George McLaughlin: "In the past the expertise within the R&E community was, in most cases, well in advance of the commercial sector. That is no longer the case. We have been focussed (largely) on terrestrial, cable and fibre network, while the commercial world and the user communities are moving to high throughput mobile environments. The pace of change continues to increase. In order to remain relevant, the organisations responsible for R&E networking will have to be highly adaptive, respond rapidly to change, and importantly engage closely with their user communities to determine how they can best exploit the changes to benefit their users and their collaborations."

ASREN, Salem Al-Agtash: "Our vision at ASREN for the coming few years is to build on EUMEDCONNECT 3 and establish research and education networks in the Arab countries where such networks do not exist, create links [virtual or dark fibre] between the Arab neighbouring countries, develop four main POPs linking to other regional research and education networks in Europe, Africa, America, and Asia. This will facilitate emergence of a truly integrated Arab e-Infrastructure that can mobilize Arab research communities into a wider collaboration context focusing on local problems and issues related to poverty, environment, health and social disparity."

CANARIE, Jim Roche: "We will continue to push the envelope of what is possible both in terms of bandwidth but also in terms of the underlying technology. NRENs will also provide increasingly sophisticated services that leverage the networks. Cloud computing will continue to grow in importance. In Canada, CANARIE will also continue to use its position to stimulate growth in the technology sector."

CAREN, Askar Kutanov: "R&E networks could get further development and extend their services in the future."

CAREN, EUMEDCONNECT3 y TEIN3, David West: "I think R&E networks will continue to advance in capacity and capability ahead of the commercial services to provide researchers with services that increase the security, accessibility and manageability of the users' experience of the network. Increasingly additional resources will be available through the R&E network cloud: some developed in-house within the R&E community, others using best of breed commercial applications. While the base unit of R&E networking will continue to be the national level, regional level inter-working and network development will become increasingly important in other world regions, as it is already is in Europe."

CKLN / C@ribnet, Ken Sylvester: "I see R&E networks becoming not just national but across nations...so not just an Jamaican network, or an Argentinian or Italian network, but networks of Poets, or networks of Physicists, Geologists, choreographers etc....more speciality networks that utilise their respective national and regional networks. It will be an exciting time, and one in which our 3 and 4 year olds will consider the norm. Current developments and inventions will be tested and many new applications developed....the sky is the limit, but it will be important to keep certain protocols and systems in place to avoid abuse. But I think the possibilities are as limited as the imagination of the students and users of networks to advance their dreams."

DANTE/GÉANT, Matthew Scott: "For big projects the issue will continue to be about providing unconstrained bandwidth which commercial providers are not interested in providing, given the bursting nature of research networking. More and more, we will be working together to serve large science projects which are distributed around the globe, work which would be impossible without high bandwidth. Research projects which depend on data from the European Southern Observatory in Chile and the Pierre Auger Observatory in Argentina are good examples of this.

Beyond the issue of bandwidth, the quality of the services provided on R&E networks will be very important, be they for network monitoring, bandwidth-on-demand connectivity, eduroam, global

access to services via federations, collaboration tools, etc."

DANTE/GÉANT, Niels Hersoug: "It is vital that we keep significantly ahead of the commercial providers and try out things which are not commercially attractive. We have to deliver the unthinkable."

ESnet, Gregory Bell: "In the future, we'll think of R&E networks as instruments for discovery, not just infrastructures. These instruments will be programmable, and they will offer a rich services interface to meet the needs of any collaboration. R&E networks will constantly communicate with each other over simple web-service interfaces, coordinating the lifecycle of service requests, brokering competing demands, and optimizing network services based on the specific requirements of individual workflows. They will do all this in a global context, while coping with a massive yearly growth in traffic. Networks will consume much less energy in general, and the energy they consume will be proportional to the work performed, which is currently not the case. ESnet has been a pioneer in the area of programmable networks, advanced capability development, and network energy efficiency - and we expect to continue in those roles for many years to come."

Internet2, David Lambert: "R&E networks must harness and build upon community experience in successfully developing collective solutions to meet the unique needs of the R&E community at-large and provide new dimensions of support for members to garner the resources required to develop and deliver unique solutions for researchers and educators.

Internet2 strives to continually earn the right to be an agent for the R&E community by assisting them in developing transformative solutions that address collective needs and problems, delivered by the community, enabled by advanced technologies that combine to create a complete platform for innovation. We are working hard to create an even better collaborative environment and provide innovative tools and technologies for community collaboration and solution delivery to enable the community to support all of their mission areas in new, unprecedented ways.

Further, Internet2 aims to mobilize the community to collaborate on defining a prioritized set of initiatives that will address their issues and needs, advocate with other organizations-- commercial providers, open-source groups, government, global partners, etc.- -to remove barriers to the community's collective success, and serve the community in any other possible role to accomplish collective goals.

Ultimately, R&E community leaders can utilize a unique service-delivery mechanism to transform current business and service models – free of limitations imposed by current structures, models, and technologies, and deliver better yielding and perhaps previously unimaginable solutions. The results will be reduced education costs, new markets created, solutions to burdening societal problems more rapidly, and strengthened positioning of global research and education long into the future."
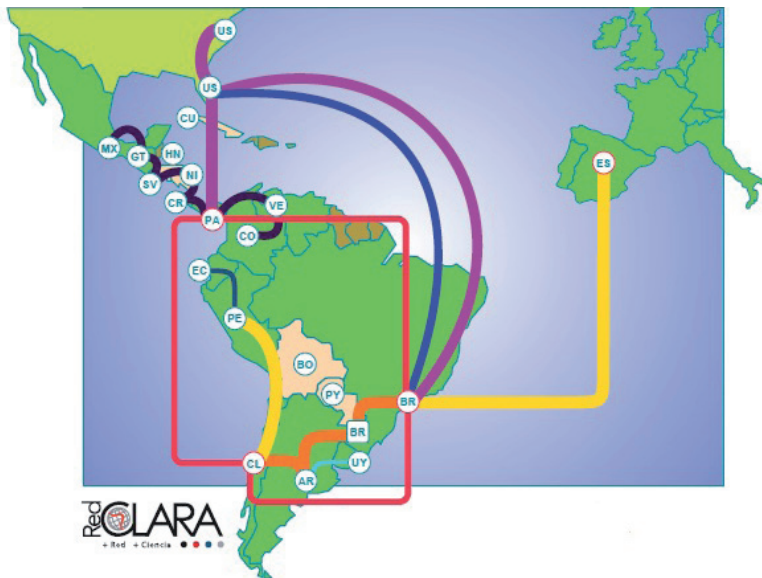
RedCLARA, Florencio Utreras: "For me they are the spearhead of technological advancement and integration of our global capabilities for research and academic activities in general. As institutions of higher education and research are where knowledge is shaped, and above all, where young people that will build the future is trained, it is their ability of collaboration and integration what will define what we will do or stop doing tomorrow. The Research and Education Networks are and should be the spaces for the proposition of new applications and ways of working in this hyper-connected society that we are building".

UbuntuNet Alliance, Francis F. Tusubira: "The R&E sector is growing bigger and bigger, and as they take on board hospitals, libraries, schools, and a whole multitude of anchor institutions as planned in say US UCAN, the global mass-market will become irresistible for the private sector. They will be able to offer the infrastructure services and applications NRENs now offer to their members at much more competitive prices. RENs will migrate away from that layer to higher value layers of human networks, leaving the lower layers either to the private sector, or dedicated companies owned by (or hired by) RENs."

RedCLARA connection to Europe reaches 2.5 Gbps

Thanks to the ALICE2 project, jointly funded by the European Commission through its @LIS2 programme, the capacity of the transatlantic link has increased from the 622-Mbps connection between Europe and Latin America that was in place at the beginning of the project, to 2.5 Gbps, strengthening collaborative research between the communities of both continents.

April 24, 2012. Scientists and academics from 13 Latin American countries, nearly 800 universities and research centres, over fifty regional research communities and projects ranging from radioastronomy to the recovery of pre-Hispanic musical heritage are seeing in short time significant increases in their opportunities for collaboration with Europe through the establishment of a link that increases the capacity of the connection of RedCLARA with the pan European network GÉANT to 2.5 Gbps, that is four times the capacity that the link had at the beginning of the project. Thus, within the context of the ALICE2 project (Latin America Interconnected with Europe, version 2), the regional advanced network, RedCLARA, has given a further boost to the development of science, research and innovation in Latin America and strengthened collaboration with Europe.

Since its creation in 2004, RedCLARA has been crucial for research and education in Latin America, offering collaboration environments to the scientific community at regional, international and global levels, by means of its connections to GÉANT and Internet2 (USA) and through them with advanced networks in the rest of the world.

The current and advanced collaboration projects carried out over RedCLARA have expanded the development of the areas of research and education. Projects in Astronomy, such as EVALSO, EXPReS and AugerAccess, are linking observatories in Chile and Argentina with peer institutions in Latin America and Europe, and grid computing initiatives such as GISELA and CHAIN share technical resources and aim to reduce the time to solve problems in research between these two continents, in the case of the former, while at the same time they aim to define a strategy to ensure the coordination and interoperability of European grid infrastructures with those of Latin America and the rest of the world. Scientists from Argentina, Bolivia, Colombia, Ecuador, Guatemala, Mexico, Peru, Venezuela, Spain, France and Italy are collaborating in the LAGO initiative in order to measure the radiation of gamma ray bursts and solar activity. Students, academics, musicians, anthropologists, museologists and engineers from Bolivia, Colombia, Chile, Ecuador, Mexico, Venezuela and Spain are doing research on pre-Hispanic Andean musical instruments in order to recover their sounds and the immanent historical tradition. In e-Health, thanks to the support from the IADB, twelve Latin American countries are joining efforts in order to implement regional public policies on Telehealth, and the Pan-American Health Organisation (PAHO) finds here a starting point for the development of certain analyses required by its strategies.

These projects and the enormous amount of initiatives in which Europe and Latin America are collaborating in favour of the development of science, research and innovation, will be largely benefited by the new capacity of the transatlantic connection that is now available.

The Caribbean is Now Connected To the Rest of the World's Research & Education Community

Colleen Wint-Smith

St. George\'s, GRENADA - April 26. The Caribbean Knowledge and Learning Network (CKLN), a regional organisation established by the heads of government of the Caribbean Community (CARICOM), has today implemented a high capacity broadband research and education network called C@ribNET. This network connects all CARICOM countries and is connected to the world's research and education community, through AMPATH to North America, through Géant to Europe and RedCLARA to Latin America. The network was financed by a contribution of ten million euros by the European Union.

Mr. Ken Sylvester, CEO of CKLN, made the announcement at the Internet 2 Meeting in Arlington Virginia on April 22. He told network partners from around the world, "For too long, international research and education maps and language have excluded the Caribbean, as we had no network or way of connecting. That is now a thing if the past and I urge you to rapidly update your maps and language to include the Caribbean with C@ribNET! "

With C@ribNET now in place, Mr. Sylvester said, "the governments, the research and the teaching and learning institutions of the region can address the growth needs of our economies by expeditiously grasping new opportunities, increasing the competitiveness of the region within the emerging global economy, and, very importantly, enhancing regional integration and functional cooperation."

Through C@ribNET, communities of interest are being organised to implement priority applications such as a regional digital library, a shared student information system for tertiary institutions, together with other applications supporting issues such as climate change, disaster management, crime and security, tele-health, culture among others.

Mr. Sylvester thanked the European Union for their contribution in providing the funding, and expressed his gratitude to the many partners and colleagues from the other international networks that provided invaluable guidance and assistance, to enable C@ribNET to become a reality and join the global mesh.

GÉANT's global connectivity more than doubles in the space of one year

Tom Fryer, DANTE

Today the GÉANT Research and Education Network provides connectivity to 40 European NRENs at speeds of up to 40 Gbps. Over the coming months those speeds will increase to up to 100 Gbps to meet the increasing connectivity requirements of NRENs and major research projects. However, for many research and education collaborations, the capacities available on GÉANT's links to its partner networks around the world are of equal importance.

In early 2011 GÉANT's global IP interconnections provided a combined capacity of a little under 34 Gbps to research and education networks outside Europe. In just over one year since then, that capacity has more than doubled to over 84 Gbps.

One of the significant increases has been on the transatlantic link between RedCLARA and GÉANT. From the beginning of the ALICE project in 2003, the link provided 622 Mbps between the R&E communities in Europe and Latin America. As a result of the ALICE2 connectivity procurements that capacity has very recently quadrupled to 2.5 Gbps. Already the need for this increase is being seen on the amounts of traffic being transmitted between Europe and Latin America.

In the Caribbean, CKLN's work to implement the C@ribNET network and provide global links to GÉANT (155 Mbps) and RedCLARA (45 Mbps) as well as North America (300 Mbps), has reduced the number of world regions without research and education connectivity either internally or to Europe and other regional networks around the world.

Other regions which are now enjoying increases in IP capacity to GÉANT are North American, which has more than doubled from 25 Gbps to 55 Gbps, and Southern and Eastern Africa where capacity to the UbuntuNet Alliance has increased ten-fold to 10 Gbps.

In April 2011 GÉANT's global point-to-point connectivity also saw a boost when the UbuntuNet Alliance became only the second regional network in the world to establish point-to-point connectivity to GÉANT. Today that link is provided for e-VLBI traffic between South Africa and the Netherlands.

In the South Caucasus region the HP-SEE project has established new links to Azerbaijan and Armenia, replacing the links formerly provided by the Black Sea Interconnection project. In Central Asia, a new procurement has enabled capacity to Kazakhstan for the first time as well as improving the routing of links to Tajikistan and Kyrgyzstan. In the Asia-Pacific region a 10-Gbps link has been established with the ASGC network of Taiwan.

The recent increases in GÉANT's global connectivity also provide benefits for the Latin America research and education community. Whilst RedCLARA has its own direct links to a number of other regional networks, e.g. Internet2, NLR and ESnet in the US, CANARIE in Canada and TEIN3 in the Asia-Pacific region, where it does not,

GÉANT Global Connectivity Map, May 2012

GÉANT is able to act as a bridge. For instance, traffic destined for any of the NRENs connected by either the EUMEDCONNECT3 project or by the UbuntuNet Alliance transits GÉANT on the way to its destination.

The recent changes in GÉANT's global capacity are reflected in the latest edition of the GÉANT Global Connectivity Map (see the image) which can be downloaded at http://www.geant.net/ Media_Centre/Media_Library/Pages/Maps.aspx. The GÉANT Global Connectivity Website (http:// global.geant.net) also provides a full summary of GÉANT's links to the rest of the world, and also lists NRENs connected to the global research and education village through networks such as EUMEDCONNECT3, CAREN, TEIN3 & RedCLARA.

For specific questions on GÉANT's global connectivity, please contact Tom Fryer at

Tom.Fryer@dante.net.

First Virtual Global Day, a success of the LA NREN PR Network group

On March 22nd the group integrated by the responsible of the communications and public relations of the National Research and Education Networks (NREN) members of the ALICE2 project (LA NREN PR Network) and coordinated by RedCLARA, conducted an online experience that gathered eleven countries, thirty videoconference rooms from nine institutions connected to the Latin American NRENs, as well as participants in Spain and Jamaica, and 214 people connected to the transmission by streaming. The speakers presentations, the recording of the event and a photo gallery are some of the materials currently available for consultation.

On March 22nd experts from different scientific areas of Mexico, Chile and Spain discussed topics related to the Mayan apocalypse, the scenarios of risk for great earthquakes and tsunamis in Chile, Japan and Mexico, the case of El Hierro in the formation of a volcano and the work developed in Jamaica for Disaster Preparedness and Emergency Management. After each presentation, the audience was invited to ask questions to the panelists.

The event was transmitted by videoconference through national networks connected to RedCLARA and included the participation of videoconference rooms in Chile, Mexico, Colombia, Uruguay, Brazil, El Salvador, Peru, Costa Rica, Venezuela, Jamaica and Spain. In addition, from the web portals of Chile and Mexico was developed a live broadcasts via commercial Internet and through the Skype user dia.global.2012 were received the questions and comments of the virtual assistants.

The agenda included the participation of Dr. Jesus Galindo, of the Institute of Aesthetic Studies at the National Autonomous University of Mexico (UNAM) and Dr. Alfredo Santillan, of the General Department of Computing and Information and Communication Technologies, of the National Autonomous University of Mexico (UNAM) who referred to the Mayan apocalypse in 2012 and what tell us the prehispanic Mayans and the sky.

Dr. Bertha Marquez Azua, of the Center for Strategic Studies for the Development, Master Carlos Suarez, and Dr. Mabel Padlog, all from the University of Guadalajara (UDG), referred to natural disasters, risks and their perception.

In Chile Dr. Marcelo Lagos Lopez of the Department of History, Geography and Political Science, of the Pontifical Catholic University of Chile, referred to the scenarios of risk for great earthquakes and tsunamis in Chile, Japan and Mexico and from Spain, Jesus Rivera, Olvido Tello, Nuria Hermida and Beatriz Arrese - geology team working on El Hierro, and Juan Acosta, a geologist, and responsible for the work of volcano cartography and monitoring in El Hierro, presented the case of El Hierro on the formation of a volcano.

Finally, Mr. Ronald Hugh Jackson, General Director of the Office of Disaster Preparedness and Emergency Management (ODPEM), addressed the theme of the Disaster Preparedness and Emergency Management.

The recording of the event is available at the video library of the national network of Chile, REUNA and in the archives of the national network of Mexico, CUDI and can be accessed through the following links:

REUNA: http://videoteca.reuna.cl/?iframe=http://vcenter.reuna.cl/videos/video/243

CUDI: http://www.cudi.edu.mx/videos/12_03_22_global_day.wmv

Besides a photo gallery is published and can be seen from the following link: http://www.redclara.net/index.php?option=com_community&view=photos&task=myphotos&userid=33570&Itemid=711

Presentations can be downloaded from the event website: http://2012globalday.redclara.net/es_programa.html

New services, new opportunities

Do you need to send a large file? Would you like to create a gallery with photos of your community? Need a simple and modern tool to design and manage your website? Want to share a video of a lecture or meeting? All this and more just a click away.

Tania Altamirano

For the RedCLARA users, March comes loaded with new features. From today four new free services are available to the associated academic networks and Latin American research communities. The Benefits? Applications that strengthen and enhance the networking of registered users in www.redclara.net giving them the opportunity to interact and collaborate with parners across Latin America.

To share a lot: Upload File

By accessing this option you will have the possibility to upload large files to a temporary server that generates an URL where you can download the information as much as needed for a week.

Features:

• Files allowed: zip, rar, doc, xls, pdf, docx, odt, xlsx. In the case of having more than one file or a file with a different extension than the ones mentioned, it can be compressed as .zip or. rar.

• Maximum size allowed for sendingr: 1024 MB

• Files are stored for a week. After that, they are automatically deleted by the system.

• Files are protected for download. Only people who has receive the downloading URL that the system sends to the mail and that are registered in the portal will have access to it.

A picture is worth a thousand words: Create new album

This service allows you to create easily and quickly a gallery of images by selecting multiple files. After creating the album the options View / Manage Images allows to order, tag, delete or add pictures to the gallery.

Features:

• The system can load up to 100 photos at a time.

• Allows to create unlimited albums to organize photos.

• Allows to specified if the uploaded photos are private, public or restricted to an specfic community.

• Allows uploading high resolution pictures, up to 100MB.

•People registered on the portal www.redclara.net can be tag on the photos

• Images can then be downloaded or linked from other components of the portal (eScaparate, Wiki, etc.).

Do it yourself: Webhosting for Communities

With eScaparate you can expand the visibility of your research community by publishing the progress and results of the research work, future steps, contact details, basic or detail information, work plans, photos and more.

For the exclusive use of RedCLARA communities, the service requires basic knowledge of FTP, HTML and Web page creation. RedCLARA do not provide advice on the design, editing and/or publication of the sites and/or pages.

Features:

· 500 MB of disk capacity.

· Unlimited traffic.

· Remote access via FTP (for the exclusive use of the community organizer).

· Publishing in the domain http:// [community_name]. Redclara.net / and http://escaparate. redclara.net/ [community_name].

· Available for corporative information on web format based on standard HTML.

· Allows installation of MySQL databases.

· Allows to upload pages by file managers or the creation of these through templates of the system.

Lights, camera, research!: Video on Demand

Thanks to RedCLARA Ve it is possible to share a course, lecture or tutorial through the RedCLARA video storage system. With the options "Add", "Search" and "All videos" the academic and scientific community registered in the RedCLARA portal have the opportunity to access to valuable selection of videos from any Internet-connected computer.

Features:

· Can be uploading videos of up to 980MB.

· Allows charging up to 50 videos per user.

· Allowed the following formats: mpg, mpeg, avi, divx, mp4, wmv, mov, asf.

· Allows existing upload videos in any of the following compatible providers: YouTube, Yahoo Video, MySpace Video, Flickr, Vimeo, and others.

Agenda 2012

JULY

2-3 | Second TICAL Conference 2012

Lima, Peru
http://tical_2012.redclara.net/es/index.html

2-6 | Joint Summer School on Workflows and Gateways for Grids and Clouds

Budapest, Hungary
http://www.lpds.sztaki.hu/summerschool2012/

3-4 | e-FISCAL summer workshop

Samos, Greece
http://www.efiscal.eu/2nd-workshop

10-13 | QUESTnet Conference 2012

Cairns, Australia
https://www.questnet.edu.au/display/qn2012/Home

15-19 | Summer 2012 ESCC/Internet2 Joint Techs

Stanford, California, United States
http://events.internet2.edu/2012/jt-stanford/

29-3 | 84th IETF Meeting

Vancouver, British Columbia, Canada
http://www.ietf.org/meeting/upcoming.html

AUGUST

25-29 | 34th APAN Meeting

Colombo, Sri Lanka
http://www.apan.net/meetings/Colombo2012/

27-31| 2012 Latin American Conference on High Performance Computing 'CLCAR 2012'

Panama City, Panamá
http://www.clcar.org/

SEPTEMBER

11-14 | EAIE 2012

Dublin, Ireland
http://www.eaie.org/home/conference/dublin.html

18-20 | VPH2012 conference - Integrative approaches to computational biomedicine (The Virtual Physiological Human Initiative Scientific Sessions 2012)
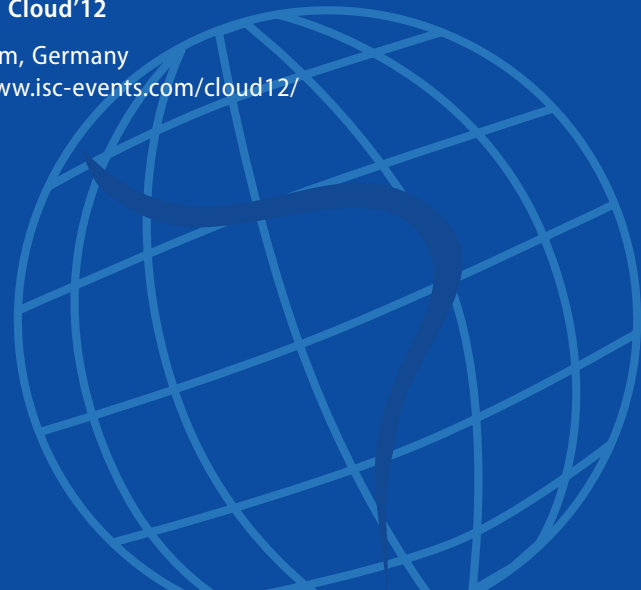
London, UK
http://www.vph-noe.eu/vph2012

18-20 | 27th NORDUnet Conference

Oslo, Norway
https://events.nordu.net/display/ndn2012web/Welcome;jsessionid=E7D7160816FE8B6D500418F75D7D313D

**Nuevos servicios, nuevas oportunidades
24-25 | ISC Cloud'12**

Mannheim, Germany
http://www.isc-events.com/cloud12/