

Title:**Global Service Collaboration: Developing & Implementing Services Together****Authors & Author Affiliations**

Author	Affiliation	e-mail	Telephone
Thomas Fryer	DANTE	Tom.Fryer@dante.net	+44 (0)1223 371335
Florencio Utreras	RedCLARA	Florencio.Utreras@redclara.net	+33 (0)9 5713 3734

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Abstract

Introduction

As R&E connectivity between different world regions, and national and regional networks, have continued to grow in recent years, an increasing emphasis has emerged on the need to create and implement end-user services which provide for the expanding collaboration needs of the global Research and Education Community.

This recognition has resulted in the development of services which range from network services (e.g. bandwidth-on-demand), network performance monitoring services (e.g. perfSONAR), roaming and identity federation services (e.g. eduroam and eduGAIN), videoconferencing services (e.g. eduCONF, SIVIC in Latin America, the Global Video Alliance), and collaboration tools (e.g. RedCLARA's mconf and UNINET's file-sender tool). In addition, the provision of cloud services is now receiving significant attention.

Service Development and Collaboration to Date

Historically, end-user services have frequently been developed simultaneously but separately by individual NRENs or regional networks, leading to duplication of effort and often services which are not of themselves interoperable.

Examples of this are the bandwidth-on-demand tools developed separately in Europe (AutoBAHN) and the US (OSCARS), and the two flavours of perfSONAR (with the European MDM and the US pS). Given the diverse developments, significant effort was required on the part of GÉANT, Internet2 and ESnet to make the tools interoperable and enable a transatlantic service.

Equally, in Latin America, the SIVIC videoconferencing service was made available by RedCLARA ahead of developments on the eduCONF service in Europe. Through the EC-funded ELCIRA (Europe Latin America Collaborative e-Infrastructure for Research Activities) project, efforts are now underway to bring the two services in line with one another, and in line with the Global Video Alliance established by the CEO Forum).

In other instances, a single service model has been developed and is seeing consistent global growth. An example of this is eduroam, which is now present in 66 territories around the globe. Another is eduGAIN which is expanding outside the GÉANT Service area and now includes the federations of Brazil, Canada and Chile, whilst those of Australia, Japan and New Zealand are in the process of joining, and the US federation holds candidate status.

The relevance of the expansion of eduroam and eduGAIN, as well as the need for collaboration tools, is demonstrated in the EC-funded ELCIRA project which brings together expertise in Europe and Latin America to extend eduroam and federations in Latin America, and to develop a suite of end-user collaboration tools for Europe-Latin America research collaborations.

Elsewhere the NRENum.net service currently interconnects the VoIP services of 32 NRENs worldwide.

In addition, the Global Service Delivery group has been set up by the CEO Forum to consider the provision of cloud services at a global level.

The Future of Global Service Collaboration

The examples above demonstrate that there is significant will around the globe for R&E networks to collaborate on service development, implementation and interoperability. Nevertheless, the examples also show that efforts have tended to focus on specific services, and that collaborations typically involve only two regions.

In an age where constrained budgets affect many R&E networks, the benefits of closer global service collaboration are clear. In addition, increased joint efforts will reduce the risk of competing and/or non-interoperable services being developed, with efforts in service development and implementation being duplicated, and the possibility of services which may not fully provide for global user collaboration needs. Equally, the cooperative provision of these services by NRENs or Regional Networks by themselves on a Global Scale poses a series of challenges from development and maintenance to scaling, operations, and user support and business models, among others.

This paper proposes a panel session which will include an overview of current service collaboration around the world, and will invite views from representatives of the world's regional networks, and service development and implementation teams, on the opportunities for future global service collaboration and the issues such efforts face. It will subsequently discuss approaches which may be adopted to bring about an increasingly concerted global effort on the provision of services to end users around the world.

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References

GÉANT Global Service Collaboration web page:

http://www.geant.net/Network/Global-Connectivity/Pages/Global_Service_Collaboration.aspx

Author Biographies

Thomas Fryer is a member of the International Relations Team at DANTE where he supports international dialogue between the GÉANT community and GÉANT's Partner Organisations outside Europe, focusing on North America, Latin America, the Caribbean and Sub-Saharan Africa. This work falls within his GÉANT role as Leader of the GÉANT Task responsible for International Liaison. In addition, he is a participant in the AfricaConnect Project. Prior to joining DANTE in 2008, Thomas worked in translation and international event organisation. He also worked with the Spanish blind and Paralympic teams at international sporting events, including the Beijing Paralympics.

Dr. Florencio Utreras is Executive Director of CLARA (Latin American Cooperation of Research Networks). He has a degree in Mathematical Engineering (University of Chile) and a Doctorate in Engineering (Grenoble University). Before joining CLARA, Dr. Utreras was Executive Director of the Chilean NREN, REUNA. Previously he was Professor of Applied Mathematics at the University of Chile and Visiting Professor at institutions in Europe and the USA. Dr. Utreras has received national and international awards for his work concerning Internet technology and research networking. He has directed EC-funded projects (ALICE2 and ELCIRA) and participated in FP7 Projects (e.g. EVALSO and ELLA).