

**Contract Number: IST-2001-35412**  
**Project Title: CAESAR**



## **D2**

### **Summary of results of workshop between Europe and interested parties in South America**

Contractual Date: 31 July 2002  
Actual Date: 31 July 2002  
Work Package: WP4  
Nature of Deliverable: R - Report  
Dissemination Level: Pub –Public Document

**Author:** João Cunha, FCCN  
Lino Santos, FCCN

## **ABSTRACT**

This document summarizes the results of the workshop held in Toledo, Spain, in June 13-14 2002, bringing together representatives of European and Latin American national research networks. The main objective of this workshop was to establish a dialogue between the research networking players of both regions in order to evaluate the need for and the feasibility of direct inter-regional connectivity.

## CONTENTS

<b>Executive Summary .....</b>	<b>3</b>
<b>1 Introduction .....</b>	<b>4</b>
<b>2 Workshop Objectives .....</b>	<b>5</b>
<b>3 Workshop Preparation.....</b>	<b>6</b>
3.1 Date and venue .....	6
3.2 Workshop programme.....	6
3.3 Invitees .....	6
3.4 Financial support for participants.....	6
<b>4 Workshop Minutes .....</b>	<b>7</b>
<b>5 Workshop Conclusions.....</b>	<b>10</b>
5.1 Statement declaration .....	10
5.2 Next steps planning.....	10
 <i>Annex I – the CAESAR Project.....</i>	 <i>12</i>
<i>Annex II – CAESAR Workshop Programme.....</i>	<i>13</i>
<i>Annex III – Attendee List.....</i>	<i>15</i>
<i>Annex IV – Presentation: European Research Networking .....</i>	<i>16</i>
<i>Annex V – Presentation: CAESAR Project: Objectives and status report .....</i>	<i>22</i>
<i>Annex VI – Presentation: @LIS.....</i>	<i>25</i>
<i>Annex VII – Presentation: Making the Interconnection of Research Networks between Latin America and Europe a reality.....</i>	<i>33</i>
<i>Annex VIII – Presentation: Building Regional Networks in Latin America.....</i>	<i>37</i>
<i>Annex IX – Presentation: International Connections from Latin America .....</i>	<i>42</i>
<i>Annex X – Presentation: Funding Issues for regional and intercontinental connectivity.....</i>	<i>45</i>
<i>Annex XI – Presentation: Support for new and small NREN’s .....</i>	<i>50</i>

## EXECUTIVE SUMMARY

The CAESAR project targets four objectives: to review the current situation and developments in research networking in Latin America; to study the demand for an improved connection between GÉANT and the Latin American research networks; to survey the options for regional connectivity within Latin America as well as connectivity between that region and Europe; to organise a workshop bringing together the representatives of the Latin American and European research networks, interested European national politicians and the European Commission.

This deliverable presents the results of the workshop held at the University of Castilla - La Mancha, Toledo, Spain, in June 13-14 2002.

The workshop was attended by 16 representatives from 12 Latin America countries. This high level of participation from Latin America is in itself a success. The programme included presentations on European research networking, the CAESAR project and the @LIS programme, as well as open discussions on Regional Latin American networking, Intercontinental connections from Latin America and support for new and small NREN's in Latin America.

The workshop provided extensive opportunities for discussion between the Latin American representatives and the European participants representing the research networking community and the European Commission. The Latin American participants also took the opportunity to meet between themselves and decide on a short-term schedule to develop a proposal for the implementation of some kind of regional networking structure.

At the end of the workshop it was possible to agree on a number of important issues, namely the need for intra regional connectivity in Latin America, the importance of establishing a direct connection between the Latin American and European research networking infrastructures and the need to raise the awareness of politicians.

A preliminary planning for the next steps after the completion of CAESAR, under the @LIS programme, was also established.

## 1 INTRODUCTION

The telecommunications revolution of the past two decades has created a world which is becoming smaller by the day. Modern research no longer needs to be undertaken in small and isolated communities. To be successful research communities with similar interests need to cooperate globally. The communications to facilitate this are a reality now.

One of the major objectives of the pan-European research network GÉANT is to facilitate global research cooperation by encouraging connectivity between European researchers and researchers in other world regions. Between the European research networks and similar activities in North America and, to some extent, Asia Pacific this objective has been achieved. Building on this experience, the European research community is now wishing to connect to other world regions, in particular Latin America.

CAESAR (Connecting All European and South American Researchers) is a European Commission funded feasibility study to evaluate the possibility of a direct interconnection between the pan-European research network GÉANT and similar activities in Latin America. A brief presentation of the project is included as annex I to this document.

## 2 WORKSHOP OBJECTIVES

The basic objective of the workshop is to develop the case for research inter-connectivity between the two regions. From a European perspective, we do not want separate connections to individual countries. This, therefore, requires some inter-regional connectivity in Latin America which is organised on a co-operative basis.

The workshop should contribute to these objectives in several ways, namely by providing an unpaired opportunity for bilateral discussions between Latin American and European players. These discussions are expected to help in:

- understanding the Latin American willingness to cooperate towards the creation of a Latin American regional network;
- understanding the level of interest of the Latin American partners in a direct connection between Latin America and Europe;
- understanding in how far a direct connection to Europe could be competing with direct connections to the American Internet2 networks;
- creating confidence between the European and Latin American partners;
- defining possible next steps after CAESAR.

### 3 WORKSHOP PREPARATION

The workshop preparation included the choice of date and venue, the definition of the programme and the preparation of the list of invitees. The issue of official language of the workshop was considered, and the decision to have simultaneous translation between Spanish and English took into account that: i) most of the participants were Spanish native speakers; ii) portuguese native speakers were known to be reasonably fluent with english. The logistics of the workshop was coordinated between RedIRIS and DANTE.

#### 3.1 Date and venue

The choice of venue and date took into account the international agenda on research networking and information society, the need for good flight connections with Latin America and the potential attraction of a city with good historical liaisons with these countries. Since RedIRIS offered to take care of logistics as well as to co-fund the event, the search for a convenient location was centered on the neighbourhood of Madrid. The final choice fell on Toledo, where the University of Castilla-La Mancha offered to host the event in its facilities free of charge. It was decided to have the event in the week following the TERENA Conference, starting with a dinner on June 12, followed by two days of working sessions.

#### 3.2 Workshop programme

The definition of the workshop programme considered the objectives of presenting full descriptions of the CAESAR project, @LIS programme and European Research Networking developments. The workshop also had to cover both intra-regional and inter-regional connectivity topics. Latin American delegates should have effective participation, so it was decided that at least two sessions should be chaired by LA delegates and most part of the sessions should have an open session format. In order to facilitate the dialogue between attendees there was a decision for longer breaks between sessions.

Individual presentations from the Latin American participants were not part of the programme as an overview of the research networks in Latin America was circulated prior to the meeting.

The Toledo Workshop programme makes an Annex to this document.

#### 3.3 Invitees

The list of invitees formed three different groups: the CAESAR project members and other European NREN representatives, the European Commission representatives and most important for the success of this workshop, the Latin American representatives that had been identified during WP1 evolution.

The possibility of inviting a group of end users has been seriously considered but has been abandoned when it became clear that the number of Latin American representatives would be large and the available time slots should be allocated to the typical problems of interconnecting NREN's.

The complete list of attendees for the Toledo workshop is included as Annex III to this document. The fact that there were 16 representatives from 12 Latin American countries is in itself a success.

#### 3.4 Financial support for participants

Payment of travel expenses was offered to Latin American participants from the CAESAR budget. Funds provided by RedIRIS were partly used to pay for the accommodation of Latin American participants and for the catering costs during the event.

## 4 WORKSHOP MINUTES

### **Opening Session**

The workshop was opened by Manuel Hermenegildo, Director of Research, Spanish Ministry of Science and Technology who expressed his pleasure and privilege at being present at this event, which he considered to be of great historic importance. The importance of the development of networks in science and technology between Europe and Latin America was emphasized, along with the importance of interconnecting Latin American networks to a regional network within Latin America to allow the research community faster and more efficient means of exchanging data. His message was one of encouragement, of global thinking and ambition.

Fernando Liello welcomed the group in his role as chairman of the European NREN Policy Committee. He stated the objectives of the GÉANT Network and gave examples of researching collaboration within Europe and between Europe and Latin American countries.

Mario Campolargo welcomed the participants. He emphasized the importance placed by the European Commission on events such as this, stating that the connection of LA networks will eventually provide global co-operation with all scientists and researchers. He gave thanks to RedIRIS for their support and to the group to their attendance.

### **Research Networking in Europe**

This presentation by Dai Davies, from DANTE, started with a description of the evolution of European networking, covering the last 15 years. Special emphasis was given to the organizational and funding issues as well as to the effects of the developments in the telecommunications market. Global connectivity was discussed and the need for inter-regional rather than country-to-country connectivity was stressed. Possible steps beyond CAESAR were outlined.

Comments received from the floor emphasized the need to raise awareness among politicians of the importance of research networking and the importance of international cooperation, as done in CAESAR, to achieving that goal.

### **CAESAR Project: Objectives and status report**

This presentation by Victor Castelo, from RedIRIS, described the objectives, methodologies and current status of the CAESAR project .

Several comments from the floor stated the potential benefits from CAESAR for national and regional initiatives. The preparation of a white-paper on Research Networking to be submitted to politicians was suggested.

### **@LIS programme: Network for researchers**

In this session EC officials attending the workshop explained the @LIS programme and the opportunities for research networking.

Elena Vilar, from DGEuropeAID, focused her presentation on the framework and objectives of the @LIS programme and announced funding for twenty demonstration projects that can prove benefit to the social environment through education and culture. Some Latin American attendees advised of problems experienced with the receipt of official information on the project.

Mario Campolargo, from DG Info Soc, presented the EC vision on research networking and global connectivity, underlined the dual approach of @LIS focusing both on applications and infrastructure, and pointed out that this is a great challenge and also a great opportunity for the participants in this workshop and the countries they represent.

### **Regional Latin American Network**

Florencio Utreras from REUNA chaired a discussion on a potential regional Latin American research network. His presentation started with an historical view of regional networking in South America and finally presented both existing connections and cable infrastructure around and to South America.

The presentation was followed by a highly participated open discussion, where the Latin American attendees explained the situation in their respective countries and exposed their views on the issue of both regional and intercontinental connectivity.

### **International connections from Latin America**

Nelson Simões from RNP made a presentation on international connections from/to Latin America, defining the motivations to implement a direct connection to Europe and describing the strategic, economic and political opportunities behind it. The connectivity to Europe should be a means to reach other research communities with GÉANT providing transit. Nelson also issued the need for a commitment on defining a plan and execute it. The foreseen funding balance for the implementation of this connection was mentioned to be unfair as it is equal to the cost sharing of the GTRN connection between Europe and the US.

Comments were received stating that application issue is very important. There should be a wider awareness to show that transfer of data and videoconferencing is possible rather than traveling with data tapes. Also, the funding issue was mentioned to say that a cost sharing on a 50/50 basis does not recognise the additional burden involved on Latin America in order to build their regional network.

### **Funding Issues for regional and intercontinental connectivity**

Bernhard Fabianek, from DG Info Soc, made a presentation on research networking within the @LIS programme. Key issues of his presentation were the organizational and co-funding requirements. Some kind of consortium structure in Latin America is needed to define and implement a regional network, potentially connecting the 18 countries of the region, to which the european GÉANT network will be connected. Co-funding of 50% by the EC is foreseen in @LIS. A two phase approach was suggested: a planning phase with a duration in the order of 6 months followed by an implementation phase. The network should be operational, at least partially, by the end of 2003.

The cost sharing between EC and LA countries was a key issue in this session. Several comments were received stating that the 50/50 basis is not realistic, as the Latin American part has to build the regional infrastructure and, in the case of several countries, also the national network.

### **Support for new and small NREN's in Latin America**

João Cunha, from FCCN, offered an historical overview of the Portuguese National Research Network focusing on the different stages of evolution and the catalytic effect coming from cooperation with other European countries and participation in EC funded initiatives. Suggestions for cooperation included technical support, the preparation of a research network white paper to be sent to national politicians and the use of political events like Latin America summits to raise the awareness on the importance of national research networks.

In the subsequent discussion the issue of AUP's (Acceptable User Policies) was recognised as being of utmost importance for cooperation between NREN's. Also the need not to forget education in favor of research was raised from the floor.

### **Meeting of Latin American attendees**

The Latin American representatives expressed interest in meeting between themselves prior to the final session. The need for ad-hoc group meetings was already foreseen in the programme.



**Conclusions and next steps**

After the meeting between Latin American participants, the closing session, chaired by Dai Davies, was quite effective and a set of conclusions, including some well defined commitments, was approved. These conclusions are dealt with in the next section.

## 5 WORKSHOP CONCLUSIONS

### 5.1 Statement declaration

The Toledo workshop participants agreed on the following statements:

- Potential benefit of an early approach to connection between Latin America and Europe
- Need to develop intra regional connection and organisation in Latin America
- Latin America countries recognise their need to enhance national networks in order to collaborate with this advanced networking initiative
- Wish of Latin America Research and Education Networks to develop direct connection with Europe
- Additional point of co-funding needs to be negotiated
- Recognise need for open and incremental approach to development of connectivity
- CAESAR can act as catalyst to create and augment budgets required for the project
- @LIS funding significant to success of project
- The latent need for connectivity is recognised
- Political support including that from the EC and the European NREN's is vital to the success of this project
- A statement of publicity and visibility is needed. CAESAR project to undertake some initial work on this
- Latin America countries commit to have, within a period of 2 months, an agenda to deal with the issue of Latin America organisation. To consist of three points:
  1. to clearly define the aims to interconnect within the Latin America region;
  2. examine the need of interconnection with Europe and the expectations of that interconnection;
  3. commit to propose some type of structure to establish a dialogue.
- CAESAR report will be on the basis of consultation with all participants.

### 5.2 Next steps planning

It was also defined that the establishment of a direct connection between Europe and Latin America countries should proceed in three different phases. The first phase, the information gathering phase, will produce the CAESAR deliverables and a latin-american proposal of organization. This phase must be complete by the end of September 2002.

The second phase, the planning phase, consists on the establishment of a technical plan, a financial plan and a cost sharing plan. The funding for this phase will be submitted under @ALIS programme, based on 50/50 cost sharing basis. Expected duration from three up to six months.

Finally, the third phase, the implementation phase, is deeply dependent on the results of phase two and needs a cost sharing agreement and a connect agreement in order to contractually commit to the telecommunications suppliers. The Latin America countries recognise the need for cost sharing but indicate that the proposed 50/50 cost sharing places too heavy a burden on them in relation to the overall costs and benefits of the activity. Prior to the implementation phase there needs to be a fair resolution of this issue.

Finally, it was agreed to make a follow up workshop to be held in Latin America by the end of September or early in October.

## **Annex I – the CAESAR Project**

CAESAR (Connecting All European and South American Researchers) is a European Commission funded feasibility study to evaluate the possibility of a direct interconnection between the pan-European research network GÉANT and similar activities in Latin America. The creation and development of national research networks in Latin America and their increasing interest in international cooperative research means that it is important to investigate the possibilities of such a direct interconnection. The historical links between Europe and Latin America re-enforce the desirability of this goal.

CAESAR is fully funded by the EC's DG Information Society. In December 2001, the EC launched the @LIS programme to build an Alliance for the Information Society with Latin America. Like @LIS, the CAESAR study involves cooperation with eighteen Latin American countries including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. The project lasts six months, beginning in March 2002.

### **The Partners in CAESAR**

The CAESAR study is jointly carried out by FCCN, RedIRIS and DANTE. FCCN is the Portuguese national research network which interconnects the research institutions, national laboratories, universities and higher education facilities within Portugal. RedIRIS is the Spanish national research network which currently interconnects more than 250 research institutions and universities in Spain. DANTE, the Coordinating Partner of the CAESAR project, is a UK based not-for-profit organisation which was mandated by the European national research networks to organise, build and manage international networking services in their behalf.

### **CAESAR Objectives**

The CAESAR study targets four objectives. Firstly, CAESAR analyses the current situation and developments in research networking in Latin America. For this, the project has contacted the presidents and directors of the eighteen national research organisations in the region asking them to complete a two-paged questionnaire. This questionnaire explores the state of development of the national research network, the underlying funding arrangements and, of course, the technology, topology and geographic scope of the network. The results of this activity were reported in deliverable D1 – Review of Developments in Latin America.

CAESAR also studies the demand for an improved connection between GÉANT and the Latin American research networks. This demand analysis includes an analysis of the current traffic flows between the two regions, as well as a thorough study of current and potential user requirements. The project has singled out user groups across Europe that are working in co-operative projects with one or more countries in Latin America. A second questionnaire will help analyse the user demand and enable CAESAR to define the connectivity requirements between the European research community and Latin America.

Thirdly, CAESAR has addressed potential suppliers to survey the options for connectivity with Latin America. In this respect, CAESAR has established contact with 23 operators asking them for an outline of their services between Europe and Latin America and within the Latin American region. A key issue for the interconnection is to have a single point of presence within Latin American from which all research networks in the region can be reached.

The fourth objective of CAESAR, was to organise a workshop bringing together the representatives of the Latin American and European research networks, interested European national politicians and the European Commission to debate the project, its objectives and future plans. This workshop took place at the University of Castilla-La Mancha, Toledo, Spain on 13 and 14 June 2002. This deliverable presents the results of this workshop.

**Annex II – CAESAR Workshop Programme****CAESAR Workshop  
Toledo, Spain, June 13/14, 2002  
Preliminary Programme****Venue:**

Sala de Prensa  
University of Castilla-La Mancha, Toledo  
Edificio San Pedro Mártir  
C/ Cobertizo de San Pedro Mártir  
45071 Toledo

**Wednesday, 12 June, Dinner at “El Cigarral de las Mercedes”, departing at 8pm from the Hotel casona de la Reina.**

**Thursday, June 13****9h30 - 10h00 Opening**

Manuel Hermenegildo, Director of Research, Spanish Ministry of Science and Technology  
Agustín García Rico, Vicerector of Institutional Relations, University of Castilla-La Mancha  
Mario Campolargo, EC/DG Information Society  
Fernando Liello, European NREN Policy Committee

**10h00 - 10h45 Research Networking in Europe**

Dai Davies, DANTE, UK

**10h45 - 11h30 Coffee break****11h30 - 12h15 CAESAR Project: Objectives and status report**

Victor Castelo, RedIRIS, Spain

**12h15 - 13h00 @LIS Programme: Network for researchers**

Elena Vilar, DGEuropeAid, EC  
Mario Campolargo, DG Info Soc, EC

**13h00 - 14h30 Lunch**

**14h30 - 16h00 Open discussion: Regional Latin American Network**

Chairman: Florencio Utreras, REUNA, Chile

**16h00 - 16h45 Coffee break**

**16h45 - 18h15 Open discussion: Intercontinental connections from Latin America**

Chairman: Nelson Simões, RNP, Brazil

**19h00 - Social programme**

To be detailed

**Friday, June 14**

**9h30 - 11h00 Open discussion: Funding issues for regional and intercontinental connectivity**

Chairman: Bernhard Fabianek, DG Info Soc, EC

**11h00 - 11h30 Coffee break**

**11h30 - 13h00 Open discussion: Support for new and small NREN's in Latin America**

Chairman: Joao Cunha, FCCN, Portugal

**13h00 - 14h30 Lunch**

**14h30 - 15h30 Reserved for ad-hoc group meetings**

**15h30 - 16h30 Closing session: Conclusions and next steps**

Chairman: Dai Davies, DANTE, UK


**Annex III – Attendee List**

	<b>Name</b>	<b>Organisation</b>	<b>Country</b>
LA Countries	Guillermo Cicileo	RETINA	Argentina
	Carlos Frank	RETINA	Argentina
	Nelson Simoes	RNP	Brazil
	Michael Stanton	RNP	Brazil
	Florêncio Utreras	REÚNA	Chile
	Daniel Stolik	RedUniv	Cuba
	Jorge Presmanes	RedUniv	Cuba
	Anita Herrera	FUNDACYT	Ecuador
	Doris Salinas	CONACYT	El Salvador
	Carlos Casasus	CUDI	Mexico
	Sidia de Sanchez	PANNET	Panama
	Juan Segóvia	CNC	Paraguay
	Erick Iriarte	RCP	Peru
	Nelson Manrique	CONCYTEC	Peru
	Ida Holz	RAU	Uruguay
	Sarah Da Rocha	REACCIUN	Venezuela
European NREN	Enzo Valente	GARR	Italy
	Fernando Liello	NRN-PC	Italy
CAESAR project	Joao Cunha	FCCN	Portugal
	Pedro Veiga	FCCN	Portugal
	Lino Santos	FCCN	Portugal
	Victor Castelo	RedIRIS	Spain
	Sonia Portillo	RedIRIS	Spain
	Dai Davies	DANTE	UK
	Amanda Collins	DANTE	UK
	Cathrin Stöver	DANTE	Spain
European Commission	Mário Campolargo	DG-Info Soc	EC
	Bernhard Fabianek	DG-Info-Soc	EC
	Elena Vilar	DGEuropeAid	EC
Spanish Government	Manuel Hermenegildo		Spain

**Annex IV – Presentation: European Research Networking**


**European Research Networking  
Toledo Workshop  
13 & 14 June 2002**

Dai Davies : DANTE  
<http://www.dante.net>



**Phases of Development**

- The EARN phase
- The Cosine phase
- The EuropaNET/Ebone phase
- The Unified phase



**EARN Pre 1990**

- Sponsored by IBM
- Sponsored by DEC
- By a Computer get a connection free
- Computer Centre focussed





## **COSINE 1986-92**

- **Funded by EEC and Governments**
- **Political Objective - OSI**
- **Practical Objective - European Infrastructure**
- **Huge Initial Delay between concept and implementation**
- **A successful failure**



## **EuropaNET/ Ebone 1991-96**

- **Competition/Collaboration**
- **X25+IP versus IP**
- **EuropaNET dominant but not absolute**
- **EBone Migrated to the Commercial World**



## **The Unified Phase 1997-**

- **One pan-European Network**
- **Gradual Geographic Expansion**
- **Gradual Commercial Consolidation**
- **TEN-34, TEN-155, GEANT**



## The Unified Phase Today

- **GEANT**
- **Gigabit Speeds**
- **Global Connectivity**
- **Geographic Expansion**
  - 32 European Countries
  - Mediterranean Expansion
  - Balkans Expansion



## Research Network Organisation

- **Sopa de Letras**
  - DANTE
  - TERENA
  - NRENPC
- **NREN's**





## **National Research and Education Networks**

- **The Engine of European Research Networking**
- **Basically One Organisation Per Country**
- **Becoming Financially Self Standing**
- **Control DANTE, TERENA, NRENPC**



## **Ingredients for Success**

- **Common Approach to Planning**
- **Professional Approach to Procurement**
- **Gradual Geographic Expansion**
- **Respect for Network Economics**



## **The Three Ages of Research Networking**

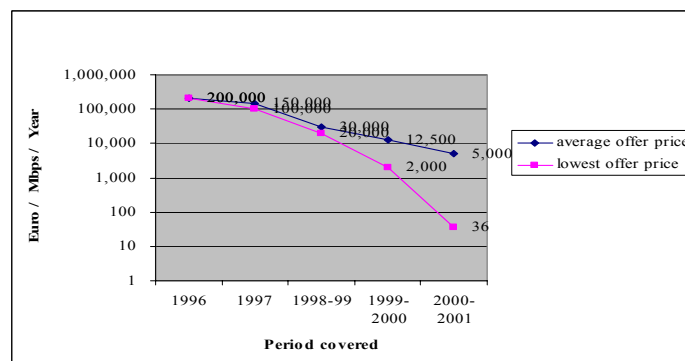
- **The Age of Unavailability (1987-1993)**
- **The Age of Rationing (1993 - 1998)**
- **The Age of Bandwidth (1999 - )**



## Network Economics

- **Favourable Price Trend**
- **Huge and increasing Disparity of Costs**
- **Requires *Sensitive* Approach to Cost Sharing**

## Development of Prices for International Bandwidth (Logarithmic Scale)



## Global Connectivity



- **Historically A National Issue**
- **Integral Part of GÉANT**
- **Inter-Regional Connectivity**
  - Asia Pacific Japan and Korea
  - South America - The CÆSAR Study



## **CÆSAR**

- **Co-operation FCCN, RedIris and DANTE**
- **100% Funded by EEC**
- **Study Economics, Feasibility and Implementation**
- **Objective - Improved inter-Regional Connection**




## **CÆSAR 2**

- **Close Co-operation with South American NREN's**
- **Toledo Workshop a Vital Element**
- **Why Inter-Regional Connectivity**
  - **More Cost Effective**
  - **Scalable (You Connect to North America not TEXAS)**
- **Research Possible implementations**
- **Aim to Implement in 2003**



## **TOLEDO**


- **A Unique Event**
- **IBERIAN Focus**
- **Benefit from European Experience**
- **Learn from European Mistakes and History**
- **A Great Experience - Una gran experiencia**

**Annex V – Presentation: CAESAR Project: Objectives and status report**

## **Toledo Workshop**

**CAESAR Project: Objectives and status report**


**Toledo, June 2002**



## **CAESAR (acronym)**

**Connecting All European and South (Latin) American  
Researchers**

**Project funded by the EC (IST Program)**



## **CAESAR - Objectives**

- **Explore Demand for Connection between GEANT and Latin America**
- **Consider Options for Inter-Regional Connection**
- **Avoid “per Country” Connections in Latin America**
- **Support Joint EU/Latin America Projects @LIS**



## Project partners

- DANTE, co-ordinator
- FCCN, Portuguese NREN
- RedIRIS, Spanish NREN



## CAESAR - Methodology

- Survey of Latin American Research Networks
- Traffic Analysis of Existing Flows
- Review of Potential Connectivity Options
- Joint Europe/L.America Research Network Workshop



## Results of NRENs questionnaire

- 18 countries in Latin America approached
- 13 answers received, pending 1
  - 8 established NRENs
  - 3 No single organization
  - 3 Some initiatives
  - 4 No info, non initiative?



## **Traffic analysis**

- **Work not finished, in process**
- **I/O GÉANT and key countries**



## **Review of Potential Connectivity Options**

- **23 Suppliers Approached**
- **Intra- Latin American Coverage - a Key Factor**
- **Cost Effective Routing**



**Next steps ...**



## Annex VI – Presentation: @LIS





**Alianza para la Sociedad de la Información**  
Un programa de cooperación entre América Latina y la Unión Europea

Caesar Workshop  
Toledo, Junio 13-14 2002  
Elena Vilar, EuropeAid Oficina de Cooperación  
Cooperación económica con América Latina





Comisión Europea


---

- Programa @LIS: Alianza para la Sociedad de la Información
- Acción 4 de @LIS: Interconexión de redes de investigación
- Proyecto "Caesar" : Estudio de viabilidad

2


---

- El programa de cooperación @LIS - Alianza para la Sociedad de la Información - **nace del diálogo político** establecido en junio de 1999, en Rio de Janeiro, entre los Jefes de Estado y de Gobierno de la Unión Europea y de América Latina y continuado con la reciente Cumbre de Madrid (Mayo 2002)
- El desarrollo de la Sociedad de la Información ha sido erigido por la Comisión como principal **prioridad para la cooperación con América Latina** en el ámbito económico.
- Creado por la Comisión en Diciembre 2001: @LIS desea coordinar los esfuerzos entre LA y la UE afin de **maximizar los beneficios de la Sociedad de la Información** (desarrollo sostenible, sociedad del conocimiento, lucha contra la brecha digital)

3






---

- Aprobación formal: **diciembre de 2001**
- Duración total : **4 años**
- Presupuesto total : **85 millones de Euros**
- 75% Contribución de la UE: **63.5 millones de Euros**
- 25% Aportaciones restantes: socios europeos y latinoamericanos con participación en @LIS

4







---

- **Países del Unión Europea:** 15 países;
- **Países de América Latina :** 18 países  
Argentina, Bolivia, Brasil, Chile, Colombia, Costa Rica, Cuba, El Salvador, Ecuador, Guatemala, Honduras, México, Nicaragua, Panamá, Paraguay, Perú, Uruguay, Venezuela
- **Países del Caribe:** pueden participar en los proyectos de demostración como asociados en un consorcio. Sus costos deberán ser financiados con cargo a sus propios fondos o a través de terceras partes (públicas o privadas).

5


---

@LIS pretende promover la Sociedad de la Información y luchar contra la denominada "división digital" mediante una cooperación entre la UE y LA al objeto de:

- Facilitar la **integración** de los países de América Latina en una sociedad de información global.
- Promover el **diálogo** entre todos los actores y usuarios de la Sociedad de la Información.
- Mejorar la **inteconexión** entre comunidades de investigadores de ambas regiones
- Favorecer y servir a las **comunidades locales** detectando las necesidades de los ciudadanos para favorecer un desarrollo sostenible.
- Poner en práctica **aplicaciones innovadoras** susceptibles de réplica tales como programas informáticos, instalación de material, implantación de redes, etc.
- Estimular la **cooperación** entre entidades y organizaciones latinoamericanas y europeas.

6

 **Áreas de acción** 

**@LIS estimula dos tipos de diálogo**

- **Diálogo político y reglamentario**  
(contribución estimada de la CE: 4 Millones Euros)
- **Diálogo normativo**  
(contribución estimada de la CE: 3 Millones Euros)

**@LIS pone en marcha tres redes**


- **Creación de redes de actores participantes**  
(contribución estimada de la CE: 3 Millones Euros)
- **Red de reguladores**  
(contribución estimada de la CE: 1 Millón de Euros)
- **Interconexión de redes de investigación**  
(contribución estimada de la CE: 10 Millones Euros)

**@LIS financia proyectos de demostración**  
(contribución estimada de la CE: 40 Millones Euros)






7

 **@LIS**


Fomento del diálogo entre ambas regiones en materia de política regulatoria, tanto a nivel regional, como interregional, mediante el desarrollo de marcos propicios destinados a favorecer el desarrollo de la Sociedad de la Información en América Latina.

**Resultados esperados:**

- Elaboración de planes de acción nacionales y sub-regionales para el desarrollo de la Sociedad de la Información en LA;
- Refuerzo de la integración regional y sub-regional en LA;
- Estímulo de las relaciones entre UE y LA a través del desarrollo de proyectos comunes sobre regulación y administración pública electrónica (estudio, asistencia técnica, formación, transferencia de know-how, etc)



8

 **@LIS**

Con @LIS se pretende promover la integración de América Latina en la Sociedad Global de la Información fomentando la adopción de estándares globales.

**Resultados esperados:**

- Establecer partenariados a medio y largo plazo entre la UE y LA para la definición de normas en el ámbito de las telecomunicaciones;
- Promover el sistema europeo de estandarización basado en normas de tipo abierto e internacional;
- Aumentar la cooperación entre organismos de normalización de la UE y de LA (ETSI, European Telecoms Standard Institute, y CITEI, Comisión Interamericana de Telecomunicaciones).

9



## Red de Reguladores

@LIS

Mediante seminarios y reuniones se tejerá una red entre reguladores, operadores y empresas de ambas regiones. Además, un programa de formación para el personal de los organismos de reglamentación de LA estimulará el intercambio de experiencias y la familiarización con el cuadro reglamentario europeo.

### Resultados esperados:

- Refuerzo de la integración regional y subregional en LA
- Transferencia de know-how entre UE y LA.



10



@LIS

@LIS desea estar también próximo del ciudadano y dirigirse al conjunto de la sociedad civil. Mediante comunidades virtuales, seminarios y ciber-hermanamientos, @LIS difundirá los beneficios de la Sociedad de la Información al conjunto de actores y usuarios, permitiendo el acceso a los nuevos instrumentos tecnológicos al mayor número de ellos.



### Resultados esperados:

- Refuerzo de lazos existentes entre todos los actores de la Sociedad de la Información en la UE y en LA (a través de asistencia técnica, transferencia de know-how, etc)
- Observatorio Virtual sobre la Sociedad de la Información, Comunidades virtuales, e-hermanamientos.

11



@LIS

@LIS aspira a multiplicar los estudios desarrollados de forma conjunta en el ámbito de la Sociedad de la Información y a favorecer la ejecución de proyectos comunes, mediante la instalación de una red de alta capacidad que conecte comunidades de investigadores y centros académicos europeos y latinoamericanos.

### Resultados esperados:

- Aumento de la investigación conjunta UE-LA, con intercambios de servicios "on-line" en banda ancha.
- Mejorar la interconexión entre las comunidades de investigadores de ambas regiones a través de la extensión de la red GEANT (Gigabit European Academic NeTwork- Red paneuropea de interconexión de centros de Investigación) hacia LA.

➤ El desarrollo de este apartado se llevará a cabo por DANTE, gestor del proyecto europeo GEANT.



12



## Proyectos de demostración @LIS

Sobre el terreno, los objetivos de @LIS se concretarán gracias a una veintena de aplicaciones nacidas de proyectos de demostración con objeto de mejorar la calidad de vida del ciudadano.

Tales aplicaciones se inscriben dentro de cuatro segmentos principales:

- la administración pública,
- la educación y diversidad cultural,
- la salud pública y
- el desarrollo social.



13



@LIS

• Fecha límite para la recepción de propuestas: **31 de octubre de 2002**

• Duración de los proyectos: **24-36 meses**

• Número de proyectos seleccionados: **aprox. 20**

• La **Guía para los solicitantes** y sus anexos se encuentran en: [www.europa.eu.int/alis](http://www.europa.eu.int/alis)

• El **idioma** de las propuestas puede ser: Inglés, Francés, Portugués o Español

• La CE evaluará las propuestas con la asistencia de **expertos externos de la UE y de LA** (los expertos interesados pueden inscribirse en [www.cordis.lu/expert-candidature](http://www.cordis.lu/expert-candidature)).

14



@LIS

Los Proyectos de demostración de @LIS están concebidos principalmente hacia **entidades sin ánimo de lucro** (públicas o privadas)

**Condiciones mínimas** de un consorcio:

- Min. nº de socios: **8**.
- Min. nº de países UE representados: **3**.
- Min. nº de países LA representados : **1**.
- **Solicitante**: una entidad legal sin ánimo lucrativo pública o privada establecida en la UE.
- **Socios**: entidades legales privadas o públicas establecidas en la UE, LA o países del Caribe.



**Se dará importancia al equilibrio territorial**

15



## Sesiones de formación para proyectos de demostración

@LIS

- Colombia (Cartagena de Indias) 13-14 Junio 2002
- Costa Rica (San José) 17-18 Junio 2002
- Mexico (Mexico D.F.) 27-28 Junio 2002
- Peru (Lima) 11-12 Julio 2002
- Uruguay (Montevideo) 15-16 Julio 2002
- Chile (Santiago de Chile) 25-26 Julio 2002
- Brasil (Sao Paulo) 30-31 Julio 2002

Más información e inscripciones: [www.apisel.org](http://www.apisel.org)

16



@LIS

17



@LIS

@LIS aspira a multiplicar los estudios desarrollados de forma conjunta en el ámbito de la Sociedad de la Información y a favorecer la ejecución de proyectos comunes, mediante la instalación de una red de alta capacidad que conecte comunidades de investigadores y centros académicos europeos y latinoamericanos.

➤ **El desarrollo de esta acción se llevará a cabo por DANTE, gestor del proyecto europeo GEANT.**



18



## Por qué interconectar las redes de la UE y de LA?

@LIS

- Creación y desarrollo de redes nacionales de investigación en LA
- Creciente interés en la cooperación en el campo de la investigación internacional
- Lazos histórico-culturales entre UE y LA
- Experiencia europea en interconexión de redes (GEANT)

19



@LIS

### GEANT (Gigabit European Academic Network)

- ⌘ **Sexta generación de redes de investigación paneuropeas, en funcionamiento desde Diciembre 2001**
- ⌘ **Conecta a más de 3,000 instituciones de investigación y educación a través de 28 redes nacionales**
- ⌘ **Uno de los principales objetivos de GEANT: desarrollo y mejora de la conectividad con redes de otras partes del mundo**


20




@LIS

- ⌘ Estimular la **cooperación** entre socios Europeos y Latinoamericanos
- ⌘ Aumentar la **interconexión** entre colectividades de Investigación y Educación en América Latina y en Europa extendiendo la red GEANT hacia América Latina y creando una infraestructura para redes multi-megabit de investigación
- ⌘ Proporcionar un ancho de banda a las redes de Investigación y Educación de LA que permita conectarlas entre ellas y con la red europea

21





## Presupuesto



Presupuesto total de 20 Meuros co-financiado:

- ⌘ 50 % por la Comisión Europea
- ⌘ 50 % por los socios Latinoamericanos y Europeos

22

- **Comunidades** europeas y latinoamericanas de investigadores **interconectadas** por una red de alta velocidad
- Aumento del número de **proyectos bi-regionales** de investigación tecnológica en relación con la S.I.
- **Red regional en LA** como parte de la red global
- Asegurar **cohesión en LA** incluyendo el máximo número de los 18 países LA
- **Apoyo** a las necesidades de conectividad de diferentes actores que facilite **relaciones duraderas** y cooperación a largo plazo entre la UE y LA.

23




Equipo @LIS :

Sra Joséphine Arpaillange ( Jefe de Equipo )  
Sr Jorge Aparicio  
Sra Stéphanie Matt  
Sra Elena Vilar

Email: [EuropeAid-ALIS@cec.eu.int](mailto:EuropeAid-ALIS@cec.eu.int)

Sitio internet:  
<http://europa.eu.int/comm/europeaid/projects/alis>

24



## Annex VII – Presentation: Making the Interconnection of Research Networks between Latin America and Europe a reality

CAESAR Meeting - 13<sup>th</sup> June 2002

**Making the Interconnection of Research Networks between Latin America and Europe a reality**

Mario Campolargo  
EC - DG INFSO  
Deputy-Head of Unit - Research Networks

\*The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission\*



### Research Networks in Europe - The context



Technical excellence  
Next Generation Networks  
All optical Networks  
GRIDs  
Experimentation



Research Infrastructure  
eEurope  
European Research Area  
Cohesion  
International cooperation



### GTRN - A Global Approach to Research Networks

- A global approach is necessary to build a true global cyber-infrastructure to underpin global e-science and to promote dialogue.
- The aim of an international co-operation initiative is to provide a unified global backbone inter-connecting global network access points that provide peering within a country or region.
- GTRN aims to be a production network as a single autonomous system, which will span the different continents, governed and managed internationally in a light but efficient way.



## ALIS - A dual approach focussing on infrastructure and applications

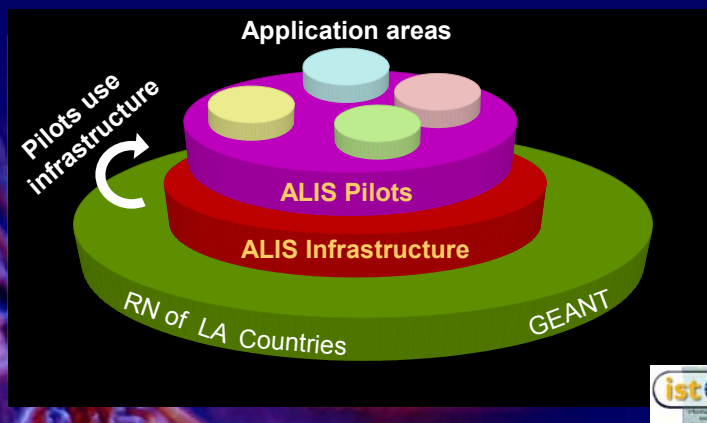
- Deploy pilot experimentations
- Deploy an infrastructure interconnecting GEANT and the Research Networks from Latin-American countries



- Ensure synergies



## ALIS - Application pilots versus infrastructure



## CAESAR - Pre-ALIS action! ...

- The experience with initiatives like EUMEDIS show that a long and well structured preparation period is necessary
- The CAESAR project, an IST Accompanying Measure, targets a number of necessary studies which will ultimately help preparing and launching the corresponding ALIS initiative.

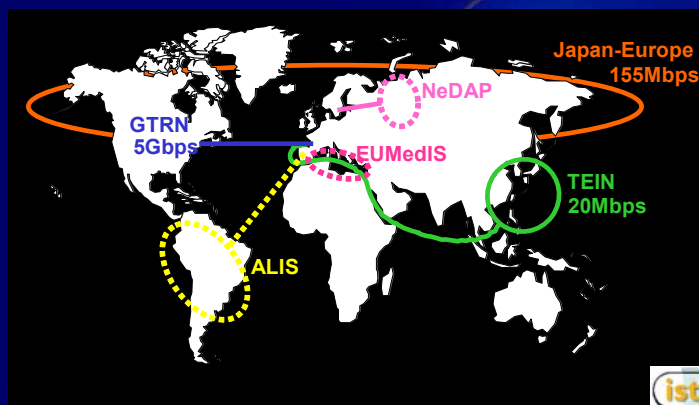


### CAESAR - Just the beginning...

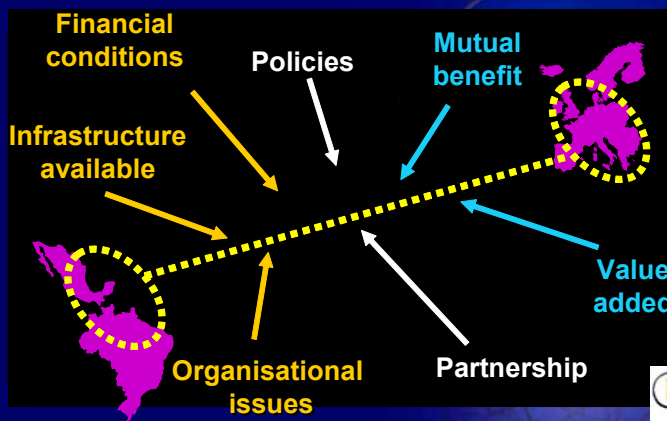
- The CAESAR project is just the first phase of an effort that needs to be continued
- Momentum achieved with this event must not be lost
- Next phase - ALIS! Should follow with minimum delay and capitalising on findings and dynamics of the current phase



### Linking GEANT to Research Networks in other continents.



### Linking GEANT to the Latin-American Research Networks.



## **ALIS - The start of a long and windy road...**

- There is no time to loose
- You are the actors in the driving seat
- There is an urgent need to create a positive momentum
- The challenge is to transform the difficulties in opportunities



## **... but a great opportunity**

- You are the right actors and you responded warmly to the challenge!
- We are ready to help you establishing the right partnership
- You are aware of what can be gained by co-operating versus what can be lost by lack of long lasting vision
- There is an adequate policy framework
- Collectively, we need to find the necessary resources



**Let us work together!**



**Annex VIII – Presentation: Building Regional Networks in Latin America**



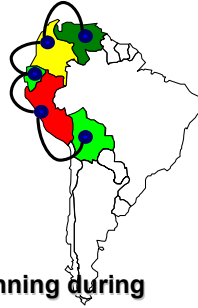
**Building Regional Networks in Latin America**

**The Latin America R&E Backbone**



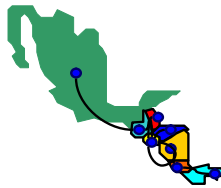
**Known Past Regional Projects**

## The “Pacto Andino” Network



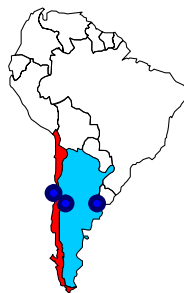
- Active Planning during 1996
- No activity at present

## RedHucyt: Central America and Caribbean



- Supported by OAS up to 1998
- Currently Inactive

## Argentina-Chile Connection



- Supported by Fundaciones Andes & Antorchas up to 1997
- Currently Inactive

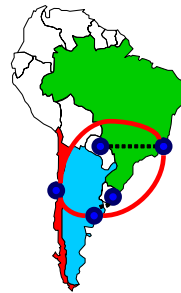


## South American Regional Backbone



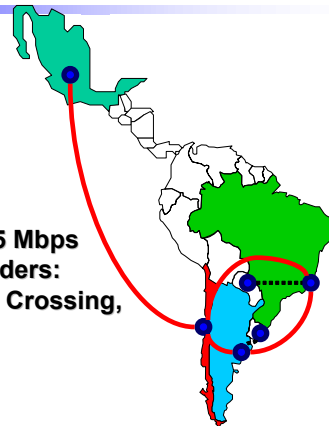
## Southern Cone Network

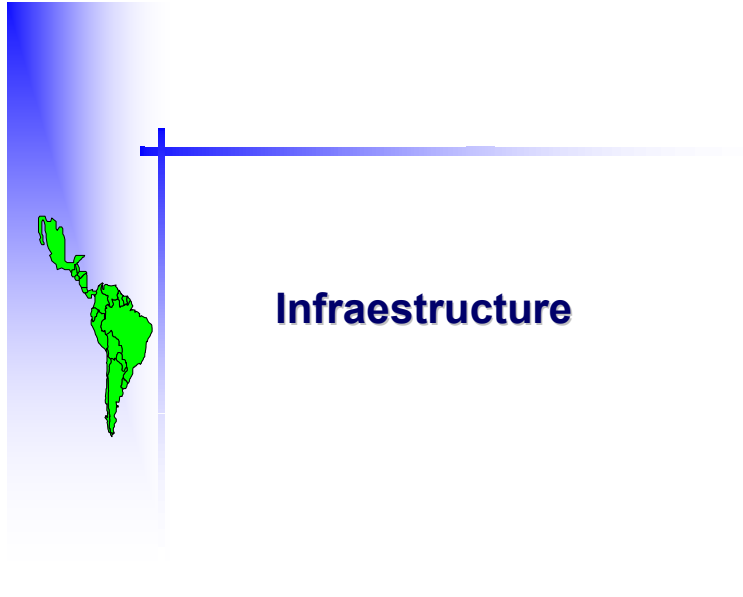
- Initial Speed 45 Mbps
- Backbone Providers: ImpSat, Emergia, Global Crossing
- Uruguay: Wireless (10 Mbps)
- Paraguay: Embratel (2 Mbps)
- Estimated date of operation March 2003



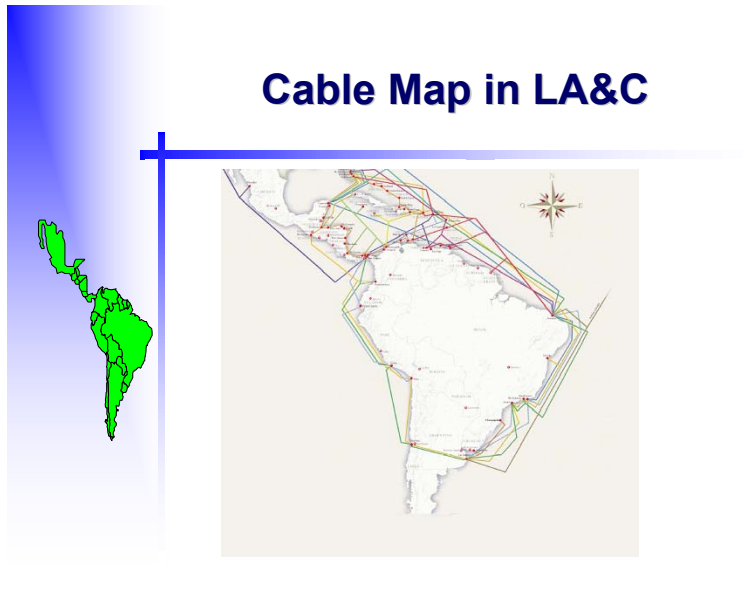
## Integrating North and South Latin America

- Initial Speed 45 Mbps
- Potential Providers: Emergia, Global Crossing, Telmex

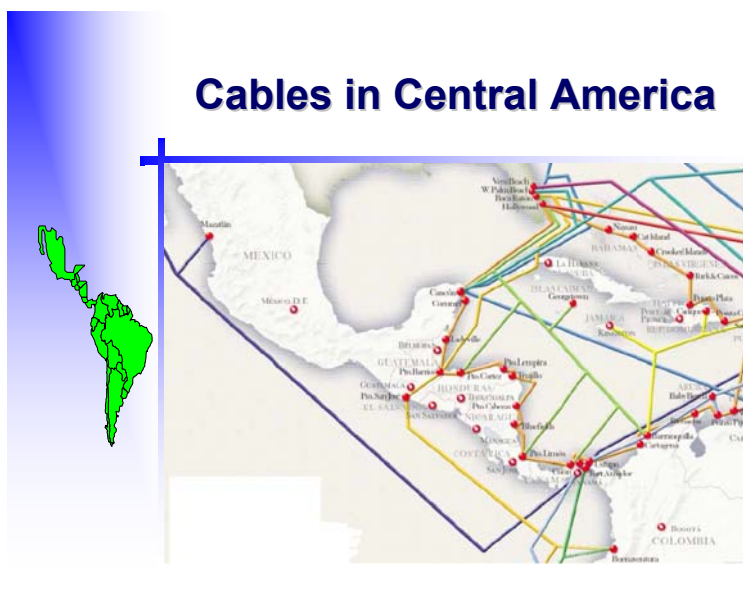




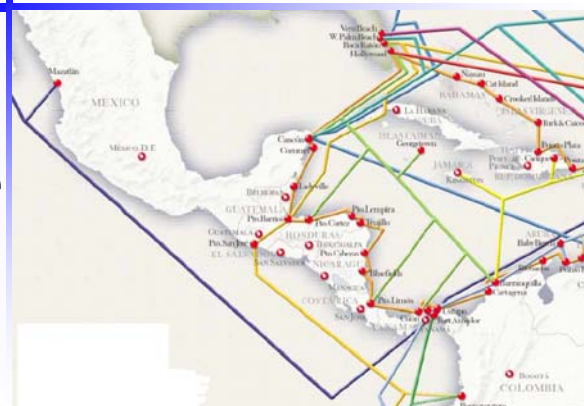
## Infraestructure



## Cable Map in LA&C



## Cables in Central America





## Some Issues



- Why academic networks in LA?
- A Permanent Regional Organization
- Identify applications
- The Role of Governements
- Funding Issues
- Network Topology
- Capacity Planning
- How to organize the development of the Project.

Annex IX – Presentation: International Connections from Latin America



Intercontinental Connections

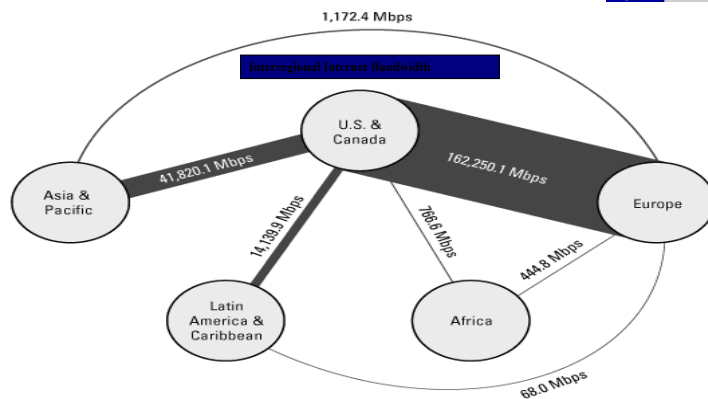
CAESAR Workshop

Nelson Simões  
Diretor Geral

RNP/REF/0208  
© 2000 – RNP



Motivation

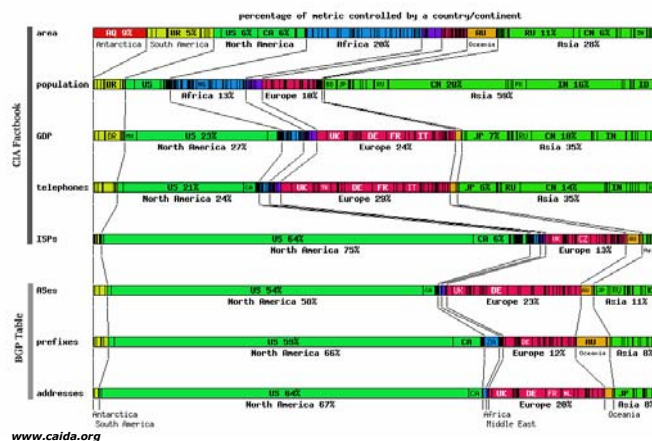


© 2001 TeleGeography, Inc.

CAESAR workshop



Internet gap



www.caida.org

CAESAR workshop



LA NRN International Connectivity (1990)

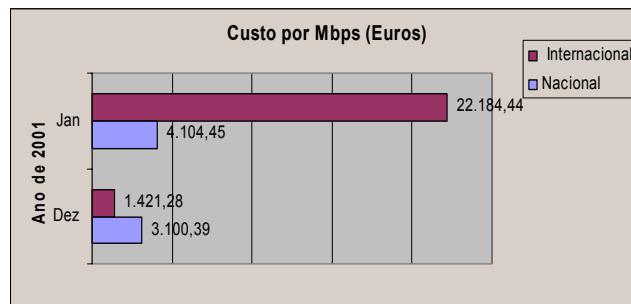


- Connection to North America
  - first experience with internet technology
    - collaboration between traditional research institutions
  - access point availability
  - infrastructure in place: satellite, rarely fiber
  - high costs
  
- There is no reason for other international connection
  - lack of regional infrastructure
  - higher cost for a regional or european link

CAESAR workshop

4 RNP

LA NRN International Connectivity (2000)

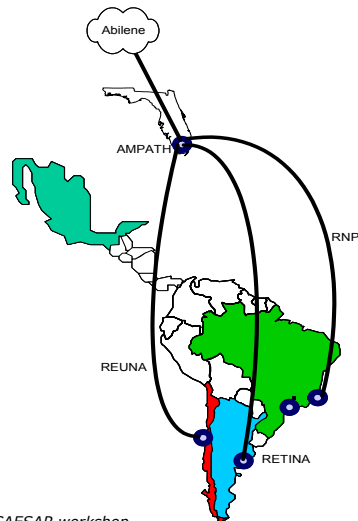


- costs still dropping

CAESAR workshop

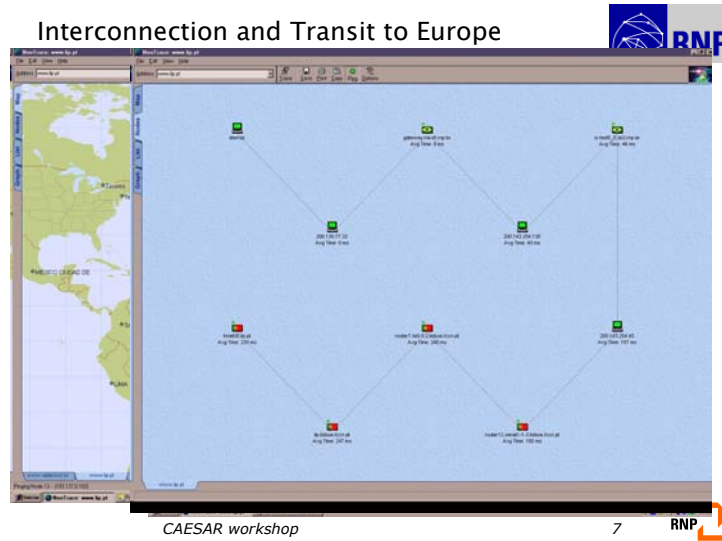
5 RNP

AmPath



CAESAR workshop

6 RNP



### Interconnection opportunities



- Strategic
  - Stimulate advanced technical and scientific cooperation
  - Create awareness about Information Society in our region
- Economic
  - Unused capacity (ex. 70% of fiber in Brasil is dark)
  - High competition for international capacity
- Political
  - @LIS as a landmark (ex. like ECO-92 in Rio)
  - Symbolic direct link between AL&C - UE

CAESAR workshop

8 RNP

### Key points



- ☆ Regional interconnection: long term planning, matching funds, flexible solutions
  - support to a backbone core + national PoPs
    - Ex. PoP 10 Mbps < 170K EUR/year
- ⌚ Foster common key applications for/in advanced networks: grids, climate, space, health, astronomy, genoma / IPv6, QoS IP, security, directories
- ⌚ Connect to Europe and ensure global transit through Geant
- ⌚ Balance funding: LA&C - EU ≠ US - EU

CAESAR workshop

9 RNP

## Annex X – Presentation: Funding Issues for regional and intercontinental connectivity

### Modalities for the ALIS Interconnection Initiative

**Bernhard FABIANEK**  
Bernhard.Fabianek@cec.eu.int  
European Commission, Information Society Directorate-General

CAESAR Workshop  
Toledo, June 13-14, 2002

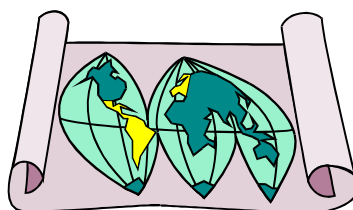
"The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission"



European Commission - Research Networks



### A Process for the ALIS Interconnection Initiative



- Background
- Principles
- Common EC Policy Interests
- High Level Requirements
- Contract and Funding Modalities



European Commission - Research Networks



### Objectives

- Increase the interconnection between Research & Development communities in Latin America and in Europe
- Stimulate the cooperation between European and Latin-American partners
- Promote the dialogue between all players and users of the Information Society



European Commission - Research Networks



## Background: The role of the European Commission

- ⇒ The EC has provided crucial investments for the interconnection of national research networks in Europe and the ALIS Initiative will allow this to be extended to the 18 Latin American partner countries
- ⇒ To enable the creation of a multi-megabit/s network infrastructure for research and education
- ⇒ The EC will ensure that use of the available funds complies with the rules for sound and efficient management of public funds



European Commission - Research Networks



## Principles: The role of the Consortium

- ⇒ The National Research and Education Networks Centres (NRENs) in the 18 Latin American partner countries provide, on a national basis, services to the research and education communities and they have the required knowledge of the needs of their end users
- ⇒ The specific role of the NREN organisations or other similar entities in this initiative is to form a group which will be responsible for defining the detailed requirements and specifications of a backbone network infrastructure and its connection to Europe



European Commission - Research Networks



## Principles: The role of the Consortium

- ⇒ The second aim of this initiative is targeted at the provision of bandwidth to the Latin American NRENs to connect them amongst themselves and to the European research backbone network

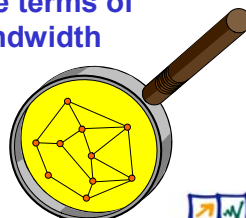


European Commission - Research Networks



## Principles: Services to be provided

- ⇒ The NRENs will perform a detailed analysis of the regional needs in the field of research networking and will ensure a good implementation of the interconnections
- ⇒ This analysis will constitute the terms of reference for the tender for bandwidth provision and technical co-ordination

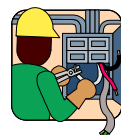


European Commission - Research Networks



## Principles: The role of the Telecommunications Operators and Service Providers

- ⇒ To provide the required infrastructure and services
- ⇒ Because these markets are competitive ones, they will be invited to submit their proposals in response to open calls for tenders
- ⇒ Through their R&D activities and commercial developments, they also contribute to the shaping of the emerging technology landscape and market evolution



European Commission - Research Networks



## Principles: Funding

- ⇒ A proposed initiative should provide a multi-annual framework that could be awarded with a contract of up to 10 MEuro
- ⇒ To finance collectively by the EC and the NRENs
  - ⇒ the planning
  - ⇒ procurement
  - ⇒ cost and management of the backbone and the interconnection
- ⇒ The approach must ensure that network connectivity and services are procured competitively and financed jointly by the EC and the NRENs



European Commission - Research Networks



## Common EC Policy Interests

- ⇒ Acceleration of the overall economic development rate
- ⇒ Ensure Latin American Cohesion by including the largest possible number of the 18 ALIS countries
- ⇒ Efficient and Transparent Use of Community Funds
- ⇒ Sound and Efficient Management of the Initiative



European Commission - Research Networks



## Common EC Policy Interests

- ⇒ Increase the collaboration of European and Latin American researchers through the provision of an interconnected research infrastructure
- ⇒ Keep the network up with technological developments
- ⇒ Carry all traffic accepted by the NRENs (common Acceptable Use/User Policies)
- ⇒ Support any research traffic and the connectivity needs of pilot projects
- ⇒ Not carry any commercial transit traffic

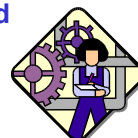


European Commission - Research Networks



## Organisational Requirements

- ⇒ EC and the NRNC consortium organisations shall agree on procedures and structures to be adopted for planning, procurement, cost sharing and management
- ⇒ The consortium should periodically review the project and (re-)assess priorities
- ⇒ The NREN organisations should provide the details of the proposed organisational structure and procedures, with a clear definition of roles and responsibilities for all partners and monitoring information/indicators



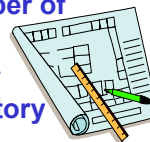
European Commission - Research Networks





## Technology Requirements

- ⇒ Provide a stable multi-megabit/s transport network for production-quality data communications
- ⇒ Offer a flexible and scalable access topology from all connecting countries by providing one point of presence (PoP) in the largest possible number of the 18 NRENs
- ⇒ The network should be easily accessible for research needs, on an open non-discriminatory basis, and provide access to pilot projects
- ⇒ Include means for extensive traffic measurements

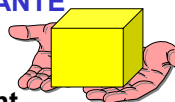


European Commission - Research Networks



## Contract and Funding Modalities

- ⇒ 1 contractor with the EC (DANTE)
- ⇒ some Partners (e.g. FCCN, RedIRIS) on behalf of GEANT
- ⇒ up to 18 Subcontractors (LA NRENs) to DANTE
- ⇒ 2 Phase Approach:
  - ⇒ Phase A - Preparation and Procurement
    - Offers for connectivity, equipment, other services
  - ⇒ Subscriptions from LA NRENs for Next Phase
    - ⇒ Phase B - Implementation and Operation of Infrastructure



European Commission - Research Networks



## Outlook

- ⇒ Start of Phase A after end of CAESAR (Autumn 2002)
  - ⇒ Get Letters of Intent (Lols) from LA NRENs
  - ⇒ Development of concrete scenarios as basis for the pre-tender
- ⇒ Start of Phase B (hopefully before the end of 2003)



European Commission - Research Networks



**Annex XI – Presentation: Support for new and small NREN's****Support for new and small NREN's**

**Toledo, June 2002**

**The portuguese case study**

- **FCCN was created in 1986 to take care of supercomputing. The acronym is still the same but stands for a different name.**
- **No national research network at that time**

**The portuguese case study**

- **Partners in FCCN:**
  - **FCT (national R&D funding agency)**
  - **Council of Rectors of the Universities**
  - **LNEC (one of the most important research laboratories)**



## The portuguese case study

- **Different communities supporting different networking solutions:**
  - Earn/Bitnet
  - Unix people with uucp
  - Decnet connecting a majority of DEC users
  - X.25/X.400



## The portuguese case study

- **Politicians not aware of the need for a research network.**



## The portuguese case study

- **With the COSINE project the need for cooperation at the european level became more and more evident.**
- **FCCN, as the structure where universities and research institutions were already represented, naturally emerged as the research networking organization.**



## The portuguese case study

- **The cooperation at the european level was instrumental for the development of the research network in several ways:**
  - it helped at the political level
  - it helped in the convergence of the different (and mutually competing!) user communities
  - it helped financially
  - it helped with technical experience



## The portuguese case study

- **Each country has its own problems but some lessons can always be learned.**



## Cooperation issues

- **International cooperation in research networking is based on national research and education networks:**
  - connecting (potentially) all the researchers in the country
  - with a well known AUP



## Cooperation issues

- **When we look at research networking there are different stages of development in the Latin American countries.**
- **Cooperation initiatives must take this into account, but the ultimate goal is to connect everybody.**



## Cooperation issues

- **How can this cooperation initiative contribute to the development or establishment of research networks ?**
  - Technical support?
  - White paper on research networking ?
  - Political initiatives (eg at the Ibero-American summit) ?
  - ???