



BELLA II

Building the Europe Link to
Latin America and the Caribbean

BELLA II Request for Information (RFI)

October 2024



BELLA II is cofunded by the European Union.

BELLA II: Request for Information from Interested Parties

Document prepared by
BlueNote Management Consulting
for RedCLARA

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BELLA II is coordinated by RedCLARA



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Acronyms

Acronym	Description
5G	Fifth-generation mobile networks
ALICE	<i>América Latina Interconectada con Europa</i> – Latin America Interconnected with Europe
ALICE2	<i>América Latina Interconectada con Europa 2</i> – Latin America Interconnected with Europe 2
BELLA	Building the European Link to Latin America, program that included the BELLA-T and BELLA-S projects
BELLA II	Building the European Link to Latin America and the Caribbean
BELLA – S	Building the European Link to Latin America – Submarine
BELLA – T	Building the European Link to Latin America – Terrestrial
BID Lab	Inter-American Development Bank Innovation Lab
C@ribnet	A network similar to RedCLARA administered by the Caribbean REN
EU	European Commission
CLARA	<i>Cooperación Latinoamericana de Redes Avanzadas</i> – Latin American Cooperation of Advanced Networks
DWDM	Dense Wavelength Division Multiplexing
eduroam	Education Roaming
ELLA	Europe Link with Latin America
EVALSO	Enabling Virtual Access to Latin-America Southern Observatories
FIEL	<i>Federación de Identidad para redes de Educación Latinoamericanas</i> – Identity Federation for Latin American Education Networks
GÉANT	Pan-European Research Network
IPDT	IP Packet Transfer Delay
IRU	Indefeasible Rights of Use
IXP	Internet Exchange Point
LAC4	Latin America and Caribbean Cyber Competence Centre
LACNIC	Latin American and Caribbean Internet Addresses Registry
LACNet	Orchestrator of neutral blockchain infrastructure for Latin America and the Caribbean

LMS	Learning Management System
PoP	Point of Presence
QoS	Quality of Service
RedCLARA	Network developed by CLARA
NREN	National Research and Education Network
RTT	Round-Trip Time
SLA	Service Level Agreement
ICT	Information and Communications Technology
VLAN	Virtual Local Area Network
WHREN/LILA	Western Hemisphere Research and Education Network Linking Latin America

I. Introduction

In the framework of the development of the BELLA II project, the first RFI was published between December 12, 2023, and February 3, 2024. Its purpose was to invite public and private sector actors to join the BELLA II project through different forms of association and provision of services to meet its connectivity requirements.

This call managed to capture comments and observations from government entities, local operators from initially prioritized countries, and some international operators who could collaborate to develop projects or provide the capacities required to deploy BELLA II.

As a result of reviewing these comments, additional analyses by agents interested in developing BELLA II, and a new market review, it was decided to expand the project's scope. This expansion is particularly focused on the Caribbean to link island nations and territories that have ties with European nations—favoring the synergy that has characterized cooperation projects between Europe and Latin America for deploying advanced networks.

Based on this, a new request for information has been made. The goal is to update previously required information and expand it following the newly proposed scope to gauge interest and gather specific information from potential stakeholders in BELLA II.

To do so, this document has been updated to provide context on the current status of BELLA II, describe its connectivity needs, and propose various participation modalities.

The document is divided into four chapters, each defined as follows:

- BELLA II: This chapter offers a brief overview of RedCLARA (the entity coordinating the project), the services it provides to its members, and the core objectives of the BELLA II project.
- Needs: Focuses on describing the infrastructure needed to meet the objectives of the BELLA II project, anticipated technical benefits, and expected service conditions.
- Participation Modalities: Describes various cooperation alternatives to facilitate the participation of multiple stakeholders in the project and the legal options for their realization.
- Questions to Those Interested in Participating in the BELLA II Project: Contains guiding questions to identify stakeholders interested in the project and opens the door to proposals.

This second call aims to capture information that facilitates the development of BELLA II, following the prioritizations proposed, considering the expansion of scope that will be presented later, and updating the information that was gathered in the exercise carried out at the beginning of the year 2024.

We appreciate the participation of those interested and remain at your disposal to provide additional information. For any clarification related to this request for information, please email the team responsible for this process at RFI_BELLAI@redclara.net.

II. About BELLA II

II. A. RedCLARA

The **Latin American Cooperation of Advanced Networks (CLARA)** was created in 2003 as a non-profit organization with the following objectives:

- a. *Promote and support the development of the National Research and Education Networks (NRENs) of Latin America and the coordination between them and with other blocks;*
- b. *Support the creation, operation, and evolution of cyber-infrastructure and the related and accessory services required in Latin America for the digital transformation of education, science, technology, culture, and innovation;*
- c. ***Provide high-capacity and quality network interconnection services, including ancillary, value-added, and/or services related to such interconnection; and***
- d. *Coordinate with its members the processes for the negotiation, development, or acquisition of technologies that are of interest to the members. (CLARA, the Latin American Cooperation of Advanced Networks, 2019).*

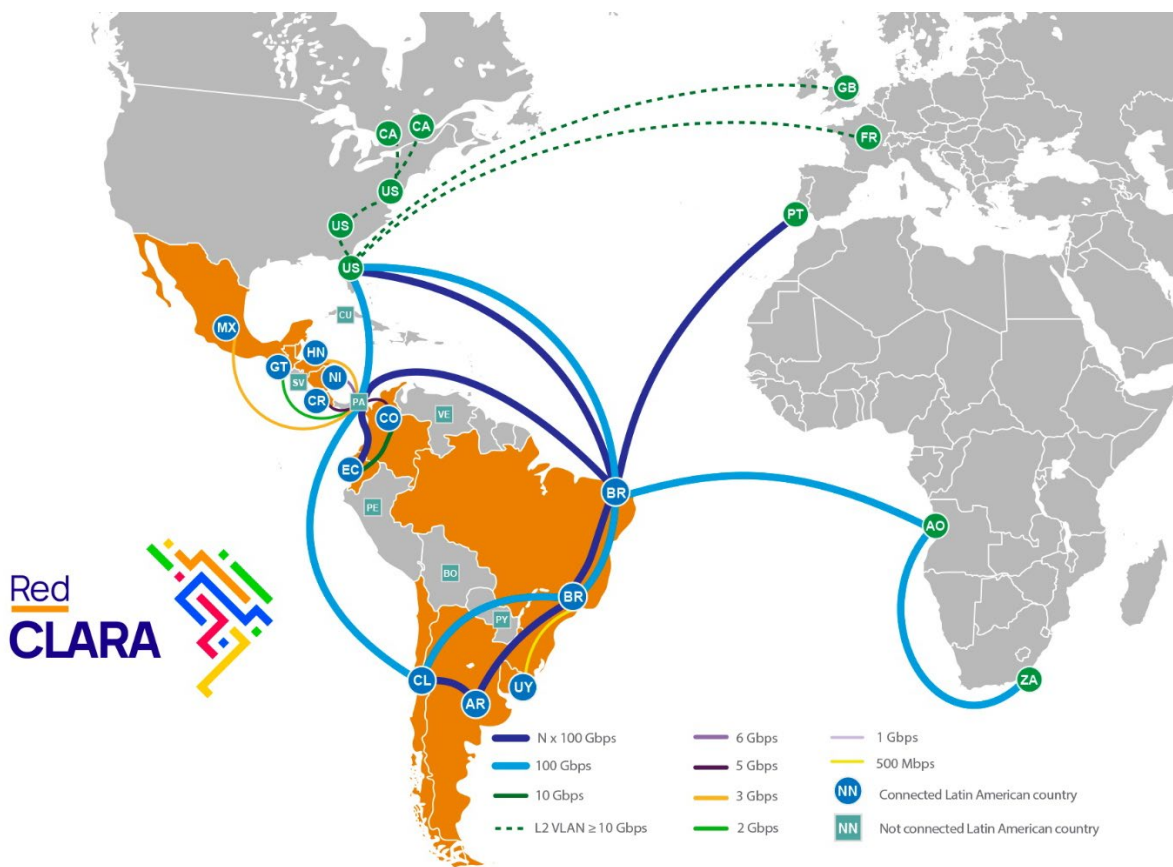
These objectives have materialized in the development of the advanced network for Latin America, RedCLARA, which interconnects the National Research and Education Networks (RNIÉ) of Latin American countries with each other and with their counterparts around the world. It provides them with an “exclusive” network, separate from commercial or public internet traffic, offering superior capacity, quality, and security compared to commercial solutions. Using this network and its equivalents in other continents and countries, scientists, researchers, academics, professors, and students can collaborate immediately, breaking the barrier of physical distance.

Given the cooperative nature of the network and the momentum it has received since its inception, expansion projects have generally been developed under co-financing and coordination schemes between the European Commission (EC), European RNIÉs, CLARA, and Latin American RNIÉs. During its 20 years of existence, the development of RedCLARA has been closely linked to cooperation with its European counterpart GÉANT, and the combined investment of resources by the European Union (EU) and academic and research organizations in Latin America. At least 7 different projects have been developed related to the deployment of the dedicated backbone network for knowledge and research development. As a reference, the BELLA Program (Building the European Link to Latin America), which is the most recently implemented, invested around 44 million euros.

BELLA, executed between 2016 and 2021, culminated, in its maritime segment, with the deployment of the ELLA Link submarine cable, generating a high-capacity direct link that connects Latin America with Europe, specifically Fortaleza (Brazil) with Portugal and Spain. In its terrestrial segment, it deployed an optical backbone network that interconnects Santiago (Chile), Buenos Aires (Argentina), Fortaleza, Sao Paulo, Porto Alegre (Brazil), Panama, and Guayaquil (Ecuador).

Thanks to the development of infrastructure expansion projects over the last 20 years and, particularly the development of BELLA, the current composition of RedCLARA is as follows:

Figure 1. RedCLARA, 2023.



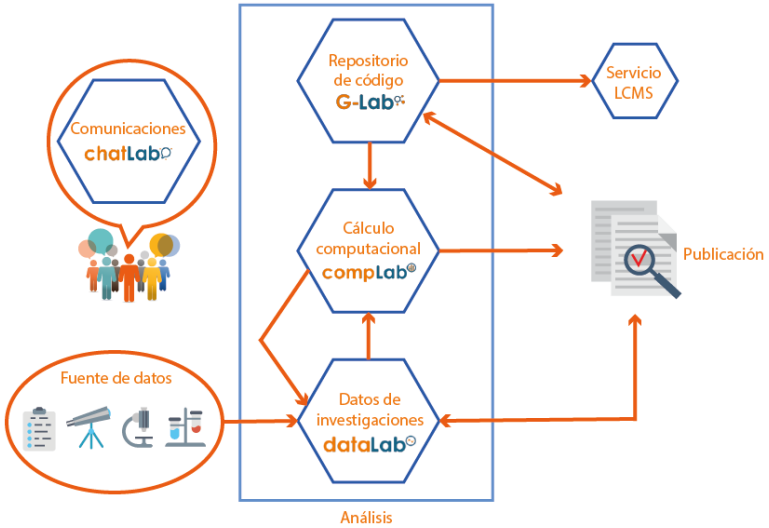
Source: RedCLARA - <https://www.redclara.net/images/images/topologia/RedCLARA-mapatopologia-mundo-Dic2021-BELLA-final-nvologo120623.jpg>.

RedCLARA started BELLA II in 2023. This project will be described in the following section and is the topic on which this survey among stakeholders potentially interested in joining the project will focus.

Advanced networks such as RedCLARA facilitate collaboration between scientists, researchers, academics, teachers, and students by providing access to their network and to other networks of a similar nature so they can share information and tools, overcoming distance barriers and fostering real-time collaboration when required. These networks have established a dedicated space exclusively for education and research communities, operating in parallel to the public (open) Internet. This unique infrastructure allows them to deliver superior performance indicators, derived from their exclusive focus on serving the needs of these communities. RedCLARA offers multiple services, highlights of which include those listed below.

Figure 2. RedCLARA Services.

Type of service	Name	Description
Education roaming	eduroam	eduroam is a service that originated in Europe which provides members of associated academic communities the possibility of connecting to the Internet in the physical space of any other participating institution. RedCLARA facilitates participation in this service for member NRENs which, in turn, offer this opportunity to their members. Specifically, any student, teacher, researcher, or staff member who is part of a member institution and who visits another member institution can access the connectivity service via WiFi using the authentication service provided by eduroam.
Identity Federation for Latin American Education Networks	FIEL	Identity Federation for Latin American Education Networks (FIEL) grants users of member organizations access to digital services of other organizations, such as libraries, digital repositories, or videoconferencing rooms, using their unique institutional account. This service has global reach via eduGAIN (provided by GÉANT), so it acts as an <i>interfederation</i> linking multiple regional federations and expanding the number of services a user can access with their unique credentials.
Learning management system	CEDIA-LMS	CEDIA-LMS is a learning management system that provides a distance learning platform with multiple functionalities, including the possibility of setting up courses and their syllabuses, reminders, registration, file sharing, online classes, interaction apps, evaluation, testing, and certification.
Project management platform	MiLAB	MiLAB is a platform that allows research groups to effectively manage data, research codes, and communications, facilitating collaborative work and ensuring the preservation, availability, and confidentiality of their information.

		 <p>Source: https://www.redclara.net/index.php/es/servicios-rc/milab</p> <ul style="list-style-type: none"> • chatLab: A specialized instant communication environment that allows users to maintain, centralize, and preserve a group's communications in an orderly manner through the use of thematic channels. • G-Lab: A repository specialized in collaborative management of computer code. It guarantees the code's preservation and traceability. • compLab: Provides the computational capabilities needed to perform the analysis of each research project. • dataLab: A repository that allows cataloging and preserving data in a secure and easily accessible location. dataLab facilitates collaboration by allowing data disclosure —at the group's discretion— and authorship assurance.¹
Desktop videoconferencing	VC Espresso	This service allows RedCLARA users to schedule and attend videoconferences, take notes, share presentations, and record meetings. This service can be used both by members of institutions affiliated with the network, as well as by external third parties.
Large file transfer	eNVIO	eNVIO allows users to upload documents, images, presentations, videos, and other types of files to an academic cloud. These files can then be securely shared with peers at institutions affiliated with the NRENs that make up RedCLARA and their European counterparts.
Connection to commercial networks and VLANs		Take advantage of the infrastructure of RedCLARA and its member NRENs to provide commercial Internet service at a lower cost and with a better quality thanks to the network's security and redundancy features.

¹ <https://www.redclara.net/index.php/es/servicios-rc/milab>

	<p>The network also allows the implementation of Virtual Local Area Networks (VLANs), which makes it easier for two geographically distant organizations to connect their networks as if they were in the same location, share their configuration, and achieve better performance and transmission speeds when connecting with each other.</p>
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Source: Adapted from RedCLARA – www.redclara.net.

Through the services described above, the network facilitates interaction among researchers, students, organizations, and teachers to leverage their academic offerings, intermediate or final research results, advance collaborative and distributed progress, and enhance the resources available in different locations around the world.

The multitude of applications and services supported by advanced networks such as RedCLARA demands robust technical characteristics, high availability, high traffic capacity and resilience. As an example, it is estimated that RedCLARA routinely operates at approximately 20 Gbps, with peaks that can exceed 100 Gbps. Therefore, the minimum requirement has been set at 100 Gbps, scalable to Nx100 Gbps, which means that the minimum unit for the implementation of BELLA II will be the **optical channel**.

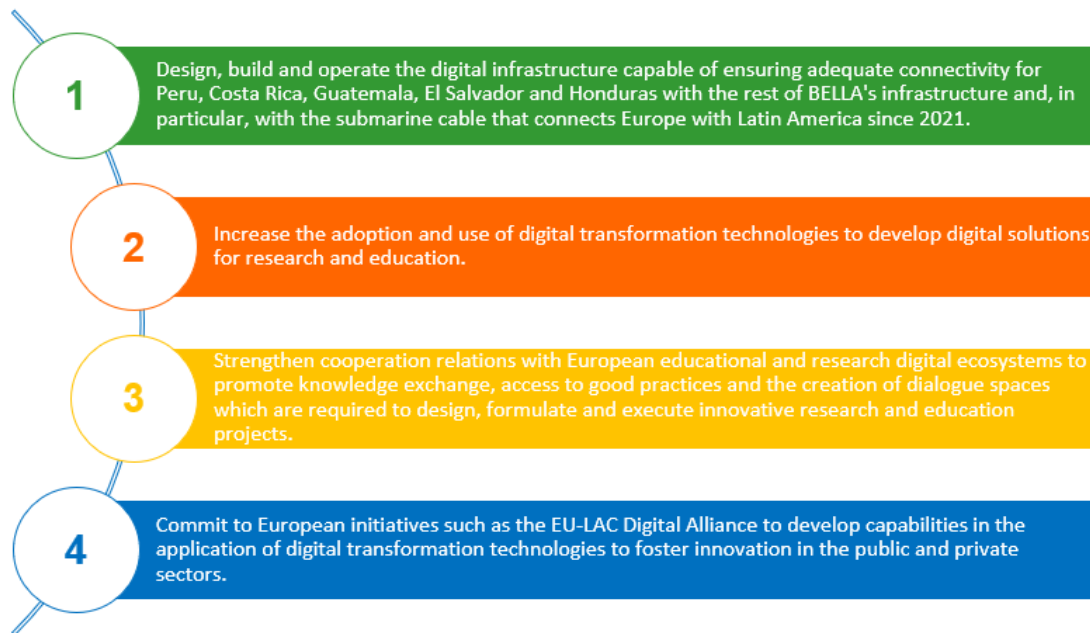
II. B. BELLA II

BELLA II has a high-level objective aimed at *“bridging the digital divide in Latin America and the Caribbean,”* as well as a sectoral objective, which is *“to strengthen and expand the digital ecosystem of Latin America and the Caribbean, enabling relationships and exchanges between companies, research centers, educational institutions, and national research and education networks, which are aligned with the strategic objectives in education, science, technology, and innovation in LAC and Europe.”*²

To meet the objectives above, the following specific objectives have been set for BELLA II:

² <https://www.redclara.net/index.php/es/proyectos/en-ejecucion/bella-ii>

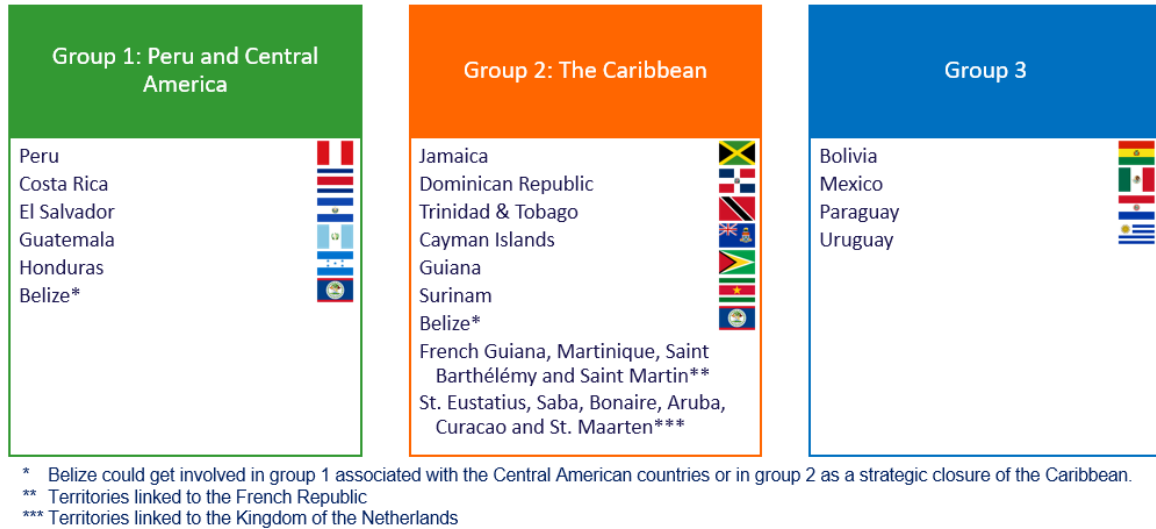
Figure 3. BELLA II Objectives.



Source: Adapted from RedCLARA - www.redclara.net.

The reach and capacity of the infrastructure developed by RedCLARA over the past two decades will be expanded, connecting, at a minimum, Lima (Peru), Guatemala City (Guatemala), Tegucigalpa (Honduras), San Salvador (El Salvador), San Jose (Costa Rica), and Panama City (Panama), with the latter serving as a point of interconnection with the existing RedCLARA network, deployed by the BELLA Program. Depending on the feasibility and availability of resources, the deployment will be extended to countries in the Caribbean and other countries in the region such as Mexico, Bolivia, Paraguay, and Uruguay. In principle, the implementation of fiber optic solutions is expected, for instance, through the execution of co-funded projects that allow deploying or expanding these infrastructures. BELLA II routes have been grouped to indicate the preliminary prioritization for project execution.

Figure 4. BELLA II Geographic Prioritization Groups.



Source: Adapted from the documents for the formulation of BELLA II provided by RedCLARA.

The existing network topology is graphically presented in Figure 1, which shows the desired interconnection points, primarily Panama. The final topology to connect the countries according to the prioritization groups will respond to technical and financial viability, detailed before implementation. The evaluation will include the possibility of opting for alternative solutions in technology, operation models, and contractual terms. The solution will always seek the same service characteristics obtained with optical fiber or superior and the greatest possible social impact.

Regardless of network topology, technical alternative, or contractual type, RedCLARA will reserve a portion of the infrastructure exclusively for the use of the NRENs and their members. The consortium will guarantee the operation and maintenance of the network under the service level agreements and will provide these services to RedCLARA and the NRENs free of charge during the useful life of the infrastructure as compensation for the funding provided through the BELLA II project.

III. BELLA II Infrastructure Needs

The purpose of this section is to present the infrastructure needs for implementing BELLA II. Based on the prioritization groups shown in Figure 4, geographic prioritization and required technical specifications are described below. Groups and suggested network routes are described in further detail below.

III. A. Geographic Prioritization

III. A. 1. Group 1. Peru, Costa Rica, El Salvador, Guatemala, and Honduras

The connection with the highest priority is Peru, as from a strategic perspective of network development, it allows closing the infrastructure ring generated by the BELLA project and also reconnecting a country as relevant as Peru.

The proposal would allow closing a ring in the Panama City – Fortaleza – Sao Paulo – Porto Alegre – Buenos Aires – Santiago – Lima – Manta route, increasing the network's resilience and redundancy. The final topology will depend on feasibility analyses.

This group includes the following countries in Central America: Costa Rica, Guatemala, El Salvador, Honduras, and Belize. The initial proposal consists of establishing an infrastructure originating in Panama, with points of presence (PoP) in San José, San Salvador, Guatemala, Tegucigalpa, and Belmopan or Belize City, depending on technical and financial viability.

On the one hand, this route would allow the completion of the connection of the Central American nations above, likely through a combination of a subsea solution and a terrestrial section. On the other, it would allow the closing of a new ring with the network planned for the Caribbean, enhancing reliability and redundancy.

As Figure 1 shows, RedCLARA already has links between Panama and Guatemala (with a capacity of 2Gbps), and between Panama and San José (with a capacity of 5Gbps). The initial objective is to develop infrastructure to increase capacity for these countries, adding El Salvador and Honduras and, finally, the alternative to Belize. Note how this alternative would allow closing a ring with the Caribbean portion of the network.

III. A. 2. Group 2. Caribbean

This solution, originating in Central America (Belize, Guatemala, Yucatán Peninsula, or Panama) and PoPs in Cayman Islands, Jamaica, Dominican Republic, British Virgin Islands, Saint Martin/Sint Marteen, Saint Barthélemy, Saba, Saint Eustatius, Montserrat, Dominica, Martinique, Saint Lucia, Barbados, Grenada, Trinidad and Tobago, Guyana, Suriname, French Guiana, or other Caribbean nations and connecting with Fortaleza, has multiple virtues for its development. This alternative can be complemented with an infrastructure linking the territories of Aruba, Bonaire, and Curaçao, either from the Caribbean network itself or from other options such as Panama, Colombia, or Venezuela.

The Caribbean nations and those territories with administrative and political ties to European nations represent a special interest in the development of BELLA II. On one hand, to close the digital divide in these nations and, on the other, as synergy in the development of BELLA II and the contribution of resources by the European Commission or even the nations to which these territories are linked.

The alternatives to connect the Caribbean nations would facilitate a direct connection to the cable that connects with Europe (from Fortaleza), provide the possibility of advancing another ring closure with Central America, and allow for the generation of a high-quality connection for the Caribbean nations and territories linked to European nations, strengthening the digital ecosystem in the region and facilitating the closing of the digital divide in these nations. Partial solutions involving the connection with Fortaleza or Central America and extending the reach to the Caribbean will also be considered.

III. A. 3. Group 3. Bolivia, Paraguay, Uruguay, and Mexico

The last group in terms of its prioritization is comprised of Bolivia, Mexico, Paraguay, and Uruguay. In the case of Bolivia and Paraguay, it would involve the initial integration of these countries into RedCLARA. Mexico and Uruguay already have links, but with smaller capacities compared to the rest of the network, so their expansion would contribute to more homogeneous conditions

In South America, connections can be terrestrial or maritime as appropriate and seeking connection with one of the PoPs that are already in operation.. A connection with Central America is proposed for Mexico, which could be implemented with Guatemala or directly to the Panama City node.

III. B. Technical Characteristics

The BELLA II project operationalizes the backbone network outlined above. This infrastructure must meet certain technical specifications to enable the operation of the services provided by RedCLARA to the NRENs and these to their respective members: high-speed connectivity (minimum 100 Gbps), high availability, suitable latency for real-time services, and separate from public Internet traffic.

III. B. 1. Technical Specifications of the Network

Considering the characteristics of the services offered by RedCLARA, the primary technical specifications for the infrastructure deployed or made available through the execution of the BELLA II project are outlined below.

The network requires a **minimum capacity of 100 Gbps** and ideally the potential for expansion to **300 Gbps** or, even better, to **Nx100 Gbps**, leveraging the optical channel as a unit for capacity division in fiber optic networks.

Figure 5. BELLA II Technical Characteristics, Minimum Requirements.

Availability	IPTD / RTT	Speed
99%	25 ms / 50 ms (max. depending on the distance)	100 Gbps -> 300 Gbps (Nx100 Gbps – optical channel)

Source: Prepared by the authors.

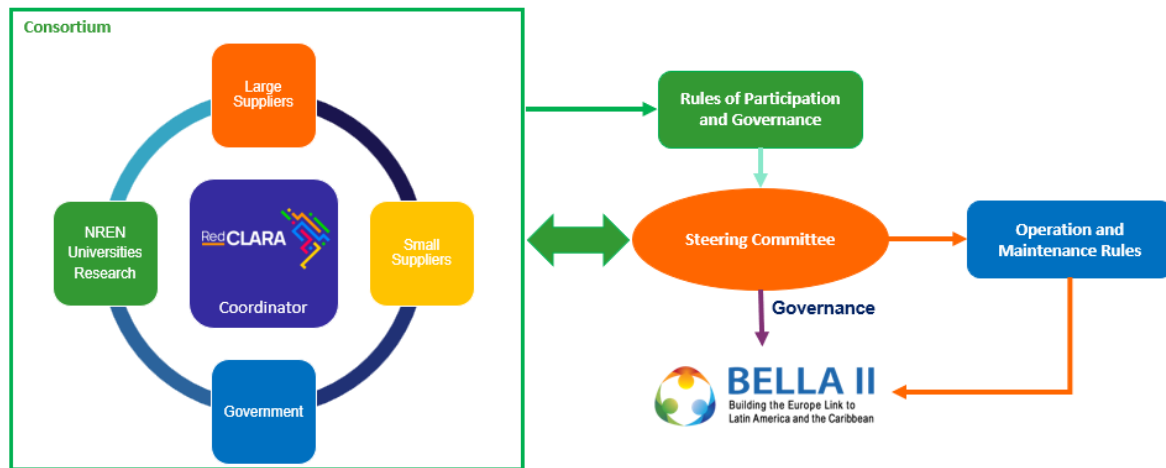
Initial analyses show that a significant part of the network will need to be implemented with submarine fiber optic cables; for continental sections, terrestrial fiber optic networks or the subriver alternative will be considered depending on technical feasibility. In practice, considering the current distances, routes, and technical specifications required for the network's services, other alternatives are ruled out.

Consequently, fiber optics are the most viable alternative to fulfill the objectives of BELLA II, and there is a clear intention to apply the maximum possible scalability in terms of capacity for implementing the network. Therefore, from a practical point of view, the network must be implemented making the most of fiber resources, i.e., **optical channels**. The optical channel as the minimum unit for the implementation of BELLA II will allow the project to establish links with the minimum required capacities and ensure future scalability, in addition to providing flexibility to leverage any technological advances that may occur during the useful life of the infrastructure.

IV. Governance and Relationship Mechanisms for Participating in BELLA II

This chapter outlines the general governance framework, cooperation, and participation mechanisms proposed by BELLA II, as well as various participation alternatives for the projects derived from its execution. The mechanisms proposed in this document are currently under study and are contingent on their compatibility with the legal framework of all the parties involved, including funding sources, executors, and beneficiaries. The chapter will then provide a summary of the legal mechanisms that have been initially envisaged.

IV. A. BELLA II Project Governance



For the initial two years of BELLA II execution, the creation of a consortium is proposed with the participation of all interested parties and under the coordination of RedCLARA. This consortium will define the rules of participation and governance. Members of the consortium will elect a steering committee responsible for governance until project completion and will establish rules for infrastructure operation and maintenance after its implementation.

The consortium coordinated by RedCLARA will manage the investment strategies for the expected connectivity infrastructure. These may result in one or more investment projects directly related to the network or under some type of cooperation or swap, such as the one described later in this document.

The Steering Committee will be comprised of representatives of the stakeholders participating in the execution of BELLA II, and its role will be to guide the development of the projects and the distribution of resources during the four years of implementation, as well as to propose the **Rules for Operation and Maintenance** that will be in force during the useful life of the infrastructure.

In fulfilling these functions, the Committee will consider that the resources appropriated for the BELLA II project must be executed within the four years corresponding to its implementation period,

although the promise of service and operation must be maintained during the useful life of the network, a horizon that spans 15 to 20 years.

Another element worth noting regarding the governance of the project is its marked social vocation. While the primary goal of BELLA II is the deployment of a network to complement the current RedCLARA infrastructure, it also aims to promote and incentivize the bridging of the digital divide in beneficiary countries. This social vocation means that BELLA II will favor the development of projects with a direct impact on expanding the coverage of Internet access services or ICT appropriation over those resulting in a merely transactional client-provider relationship.

The expected social impact of infrastructure development can manifest in multiple ways. Examples include:

1. Increased Internet penetration or quality in beneficiary countries, through the deployment and utilization of capabilities beyond those required by the BELLA II project.
2. Development of a retail network in communities with limited connectivity, or infrastructure such as CDNs or IXPs to improve connectivity in beneficiary countries.
3. Connectivity for educational institutions (schools or universities) or healthcare facilities.
4. Programs for the appropriation of ICT by the population in general or specifically targeting students.

The following sections detail alternatives for participating in BELLA II, listed in order of preference.

IV. B. Cooperation in BELLA II

This section focuses on cooperation alternatives to facilitate the participation of multiple stakeholders, including large and small operators, governments, NREs, educational institutions, research organizations, investment funds, or multilateral banks, as well as participation schemes for connecting with BELLA II. Once again, note that these alternatives are contingent on the feasibility of their implementation based on the limitations of the agents involved or the development of more convenient alternatives.

IV. B. 1. Co-investment

A co-investment project entails the deployment of a new network or the expansion of an existing network by leveraging the combined efforts of multiple agents, a synergy that enhances the availability of know-how, economic, and human resources.

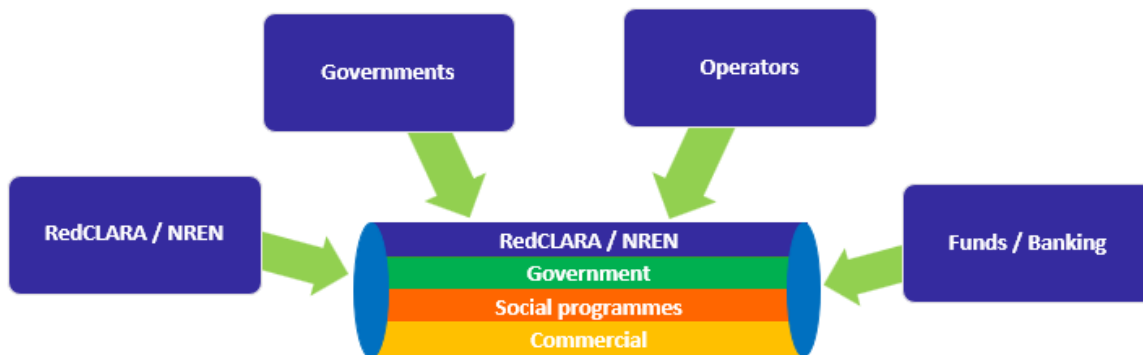
The main idea of this alternative is to pool efforts with multiple stakeholders (for example, large and small operators, NREs or research organizations, governments, funds, and the banking sector) to develop infrastructure with ample capacity to meet the requirements of consortium member organizations, whether through social programs, private commercial activities, or in relation to the needs of BELLA II.

This model brings important benefits to BELLA II. On the one hand, it facilitates the fulfillment of the project's general and specific objectives. On the other, it allows combining social impact objectives

with efforts to bridge the digital divide, which would add value to the deployment of these infrastructures.

In this scenario, BELLA II's contribution would be financial, allocating economic resources to support the co-investment project.

Figure 6. Co-investment Project Scheme.



Source: Prepared by the authors.

This scenario acknowledges the significant capital investment required for digital infrastructure. Consequently, the co-investment scheme makes it financially feasible for BELLA II to allocate resources.

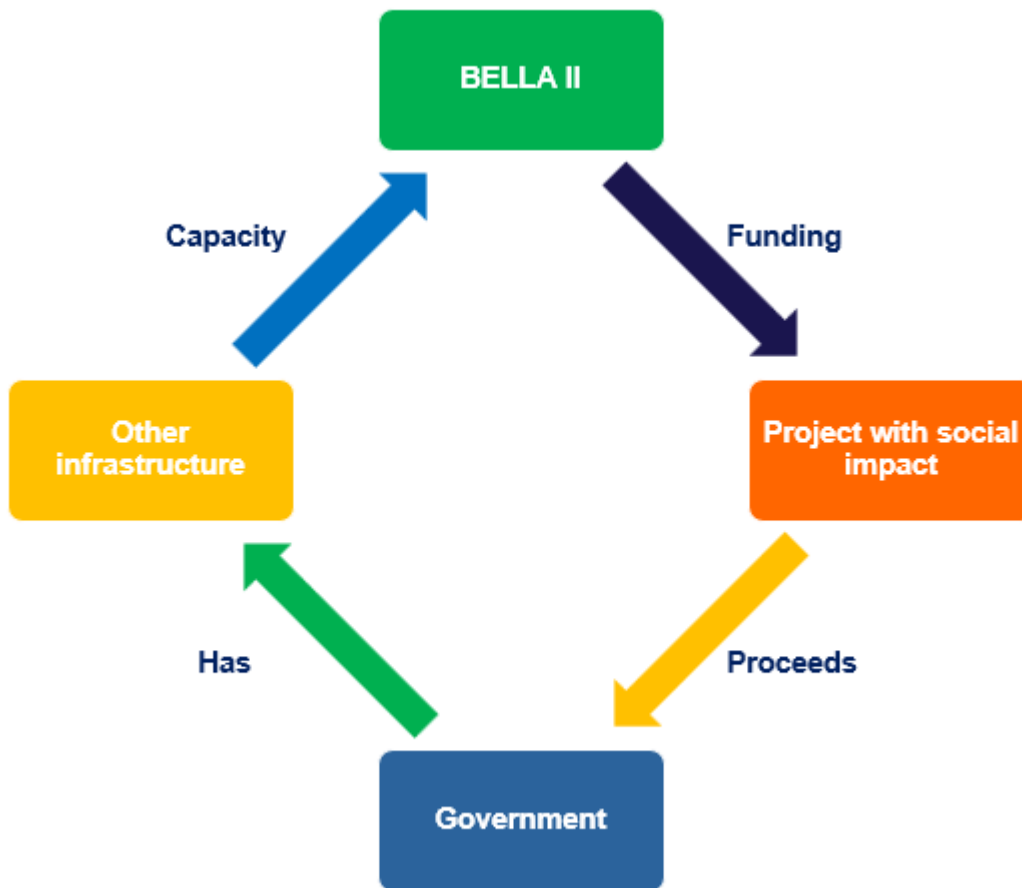
This option also promotes a scenario of greater collaboration. For example, a Central American or Caribbean network where all countries have useful capacity to achieve their national objectives would require the cooperation of these nations, not only for the funding and construction of the network, but also for its operation over its useful life, strengthening regional unity and international cooperation instruments.

IV. B. 2. Investment Swap

This is an innovative option that allows BELLA II to provide investment resources to third parties, whether private or public, for the development of projects with social impact, receiving as compensation capacity in some priority sections of BELLA II.

For instance, a country may have available capacity to connect to the research ecosystem, but its current investment efforts are focused on expanding coverage to rural populations. BELLA II would be in a position to invest in expanding this coverage. As compensation, the country or operator receiving the investment would provide BELLA II with the capacity to cover some of the previously detailed connection priorities, in this example, connection to the research ecosystem.

Figure 7. Example of a Swap Structure.



Source: Prepared by the authors.

Figure 7 shows an example of a swap that involves the exchange of funding provided by BELLA II for a project with social impact for consideration of the capacity required by BELLA II to meet its specific objectives. The structure presented in Figure 7 is not limited in terms of the number of agents involved, nor in their type; the only essential and non-negotiable condition is the existence of social impact in the alternative project receiving the funding.

This alternative may seem more complex than the co-investment scenario. However, deployment efforts to address the digital divide and the specific needs of BELLA II are not always concomitant and may differ in time and place of execution, which is why this alternative is offered that combines efforts for the execution of all the projects, particularly those with a social vocation.

The swap model also applies to stakeholders other than those who receive funding for the social impact project, or those who own or control infrastructure that can satisfy the demands of the BELLA II project.

An alternative scenario leverages the funding granted by Bella II to a specific project without priority social impact to generate new sources of funding or projects with a strong social impact that contribute to closing the digital divide.

IV. B. 3. Purchasing Capacity

This is the traditional model of purchasing and selling network capacity between Bella II and a specific provider. This alternative is the last resort to be considered by the project and will only be implemented if no alternatives for co-investment or projects under the swap modality can be identified that are directly related to the objectives of Bella II.

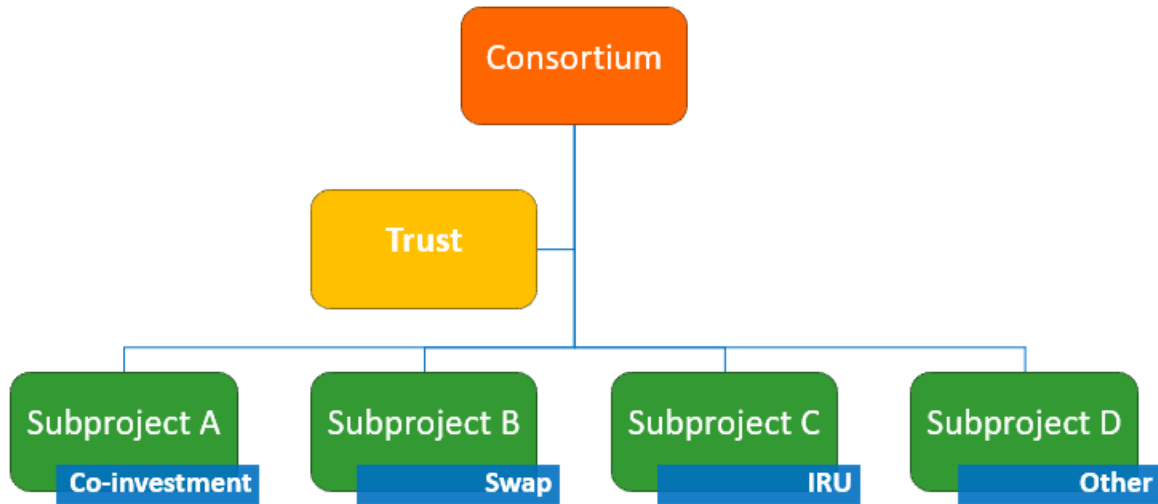
In this model, a client-provider relationship is established and governed by a specific contractual figure, with the following essential characteristics: i) it must consider an advance payment mechanism for operation and maintenance, as Bella II can only appropriate resources for its four years of implementation, yet the service must be provided for the useful life of the infrastructure; and ii) service level agreements between the parties, based on previously defined technical specifications.

This is the least desirable alternative, as it sacrifices the collaborative values that Bella II wishes to promote and deeply limits the possibility of contributing to the achievement of social objectives, such as closing the digital divide.

The alternatives presented in this document —**co-investment, investment swap, and capacity purchase**— are described as an example. They are not intended to exclude any other alternative or combination of alternatives that may be designed through a collaborative exercise with the stakeholders who wish to engage in the project, and who respect the objectives and values defined by Bella II for its execution.

Ultimately, Bella II will serve as an umbrella project, to which the execution of multiple subprojects will be linked. This will require the development of several types of specific contractual figures for each subproject, and their nature will be as variable as the specific purpose and desire of the contracting parties.

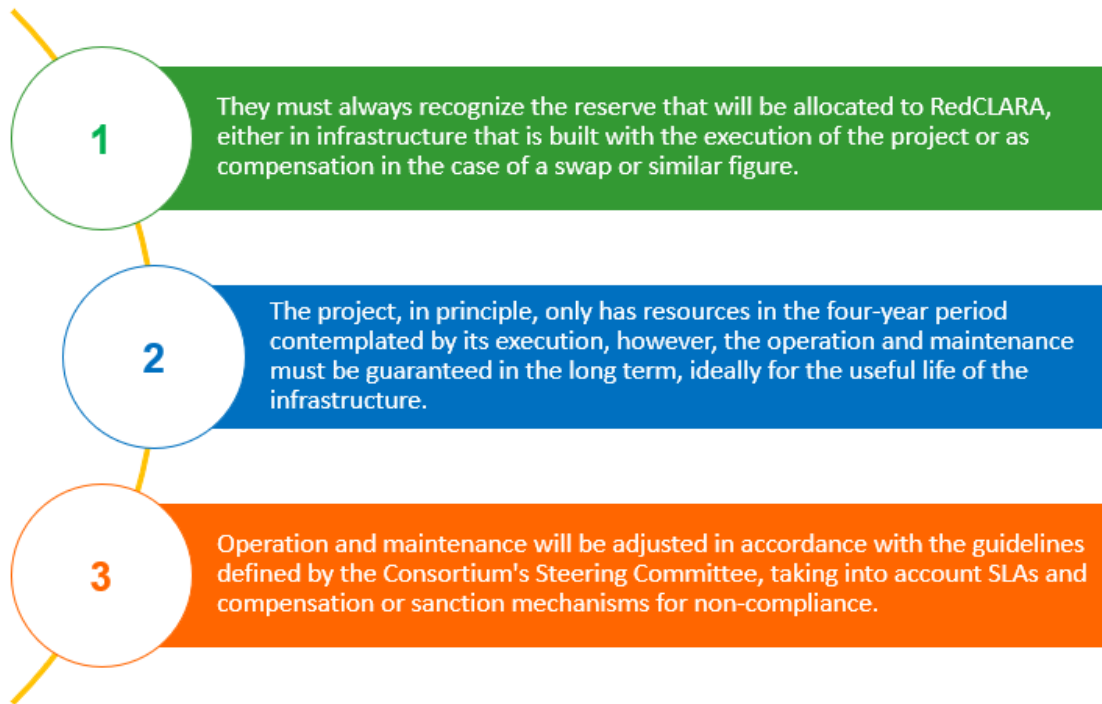
Figure 8. BELLA II Umbrella Scheme.



Source: Prepared by the authors.

However, all projects and contracts must consider fundamental elements such as those listed in Figure 9.

Figure 9. Essential Elements of BELLA II Contracts.



Source: Prepared by the authors.

V. Specific Questions for Those Interested in Participating in Bella II

This section presents a series of questions for those potentially interested in partnering or collaborating with the Bella II project. We thank you in advance for providing us with as much detail as possible and for raising any concerns you may have. If you have any questions, please write to RFI_BellaII@redclara.net.

The questions can be answered either in the tables below, or in the Excel template titled “Bella II Project – Questions for Interested Parties” and attached to this document.

1. Does your organization have any **projects** that align, either in whole or in part, with one or more of the groups/sections required by Bella II?

Project	Description	Section	Group	Expected Investment
1.				
2.				
n.				

2. Do your projects align with the **technical specifications** and requirements of Bella II in terms of availability, delay, and speed as described in in section III.B of this document?

Project	Description	Available or projected capacity (optical channels)
1.		
2.		
n.		

Is your organization equipped with **existing infrastructures** capable of supporting the requirements of BELLA II in the sections presented? Does your organization have a commercial offering that aligns with the requirements of BELLA II?

Product/Service	Available or projected capacity (optical channels) and State of the Infrastructure (design, deployment, or installed)	Section	Price
1.			
2.			
n.			

3. Would your organization be interested in **participating in co-investment or investment exchange projects** with BELLA II? If so, describe the modality and the project along with the expected investment..

4. Does your organization have any projects aimed at **bridging the digital divide** in the countries of interest to BELLA II that might be considered for an investment exchange?

Project	Description	Location	Comments	Expected Investment
1.				
2.				
n.				

5. Is there any other **alternative modality** (aside from co-investment, investment exchange, or capacity purchase/sale) that might be of interest to you in order to participate in BELLA II?