REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Selection # as assigned by e-Tool: RG-T3810-P001
Selection Method: Full competitive
Country: Panamá
Sector: IFD/CMF
Funding – TC #: ATN/FG-18628-RG
Project #: RG-T3810
TC name: **Social and Productive Digital Infrastructure in Times of Pandemic: Lessons from the case of Spain.**
Description of Services: The general objective of this Technical Cooperation (TC) is to conduct feasibility studies to improve the connectivity of public institutions and households in Ecuador. Particularly, these feasibility studies aim to support the current COVID-19 crisis by exploring market (including demography), forecasting demand, identifying the best cable routes, designing the network, preparing its specifications, and developing the technical, financial, and managerial studies of the network and its utilization. The TC will suggest possible application areas, which will make the full use of developed infrastructure. Especially the best practice of Korean governments' use of ICT to fight COVID-19.
Link to TC document: https://www.iadb.org/en/project/RG-T3810

The Inter-American Development Bank (IDB) is executing the above mentioned operation. For this operation, the IDB intends to contract consulting services described in this Request for Expressions of Interest.

Expressions of interest must be delivered using the IDB Portal for Bank Executed Operations (http://beo-procurement.iadb.org/home) by: *August, 12th 2021*, 5:00 P.M. (Washington D.C. Time).

The consulting services ("the Services") include the development of projects for the deployment of telecommunications networks in Panama and coverage of rural areas and the needy population are intended to achieve the following objectives defined in the 2020 Digital Agenda defined by the government, telecommunications and innovation agencies of the country: (1) Provide access to broadband networks to 64 rural populations (mainly in Darién and areas of Ngäbe-Buglé and Guna Yala identified in the Government plan), (2) Develop a feasibility analysis to provide 100% coverage with digital networks with the plan HIVE, which will provide telecommunications and broadband services to the most isolated populations that, today, do not have Internet and (3) Redesign of the projects of the National Internet Network (3.0) based on community WiFi networks for their expansion and readaptation of the model in order to achieve higher profitability and cost-benefit. More specifically the project is expected to implement the following components:

- Component 1: Improve the understanding of market dynamics in Panamá. The objective of this component is to conduct a market study for Panamá, including an analysis of the socio-demographic and economic conditions; an analysis of current supply and demand of telecommunication services; and a forecast of the demand.
- Component 2: Identify the technical considerations for deploying the infrastructure, including the structure of the network and the expected social and environmental impacts. The objective of this component is to develop a technical study including: (i) orographic study and population distribution; (ii) assessment of the existing available infrastructure; (iii) design of the logic diagram node of the network; (iv) estimation of the expected traffic according to the socio-demographic and economic conditions; (v) identification of technological alternatives; (vi) determination of the requirements in terms of capacity and sizing of the network; (vii) selection of the best technology to attend the estimated traffic; and (viii) development of a deployment and execution plan.
- Component 3: Analyze the economic and financial feasibility of the deployment and select a governance model. The objective for this component is to develop an economic and financial study on the sustainability of the network and the services to be eventually provided.

Eligible consulting firms will be selected in accordance with the procedures set out in the Inter-American Development Bank: *Policy for the Selection and Contracting of Consulting firms for Bank-executed Operational Work* - GN-2765-4. All eligible consulting firms, as defined in the Policy may express an interest. If the Consulting Firm is presented in a Consortium, it will designate one of them as a representative, and the latter will be responsible for the communications, the registration in the portal and for submitting the corresponding documents.

The IDB now invites eligible consulting firms to indicate their interest in providing the services described above in

the draft summary of the intended Terms of Reference for the assignment. Interested consulting firms must provide information establishing that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Eligible consulting firms may associate in a form of a Joint Venture or a sub-consultancy agreement to enhance their qualifications. Such association or Joint Venture shall appoint one of the firms as the representative.

Interested eligible consulting firms may obtain further information during office hours, 09:00 AM to 05:00 PM, (Washington D.C. Time) by sending an email to: *Antonio Garcia Zaballos (antoniogar@iadb.org).*

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TERMS OF REFERENCE

PRE-FEASIBILITY STUDIES RELATED TO THE DEPLOYMENT: MARKET STUDY

[*Panamá*]
RG-T3810
https://www.iadb.org/en/projects-search?country=&sector=&status=&query=RG-T3810

Infraestructura Digital Social y Productiva en Tiempos de Pandemia: Lecciones del Caso de España.

1. Background and Justification

1.1. The use of Information and Communication Technologies (ICTs) services and applications available over the Internet can reinforce sectors such as education, health, business, and government, with broad implications for economic development, competitiveness, and innovation. Yet, harnessing the benefits of this new digital economy increasingly relies on the availability of broadband Internet in a country as evolving services and applications require broadband speed and bandwidth.

1.2. Broadband infrastructure is an enabler of development. According to several studies, a 10% growth of broadband penetration is associated with a 1.21% increase in the Gross Domestic Product (GDP) of high-income countries and a 1.38% increase in the GDP of low-income countries (World Bank, 2009). It is estimated that in the case of the LAC region, for a 10% growth in the penetration rate of broadband services, the GDP can be increased by 3.19%; the productivity by 2.61% and more than 67,000 jobs can be created.

1.3. Panama is positioned as one of the most competitive countries in digital services in the Central American region, although it continues to lag regional and international leaders in the main development indices of the sector.[1,2]

1.4. The penetration of mobile broadband services is around 90%, mainly supported by the high penetration in urban areas. 3G network coverage stands at 95%, but 4G networks still reach less than 75% of the population. The average speed of the network exceeds 25Mbps, higher than the rest of the Central American region, but still well below the ratios of leading countries such as Chile (40Mbps).[3]

1.5. Fixed broadband is evolving, as in the rest of the region, more modestly. 95% of the accesses are through DSL or cable, with a limited presence of fiber in the main cities and the current penetration does not exceed 66% of homes.[4]

1.6. In general, there is a relevant gap between urban and rural areas in the coverage and adoption of services. The Government has been working continuously on rural connectivity and infrastructure development plans since the creation of the Universal Service Fund in 2008. Currently, the 2020 Digital Agenda[5], pursues objectives of increasing rural Internet access.

1.7. To continue growing in its competition for digital and broadband services, the Government of Panama wants to focus efforts on expanding the country's National Communications Network through the National Internet Network (3.0) project and promoting the country's poorest areas to starting from connectivity, which is known as Plan COLMENA[6] in addition to finishing connecting the areas currently disconnected due to lack of infrastructure.

1.8. Additionally, one of the objectives of said Digital Agenda defines that "technology must be used to mitigate or eliminate gaps generated by the territorial distribution of the population and the concentration of government resources and services." In addition, within their digital infrastructure development plans, the government itself

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1 IDBA 2018, Índice de Desarrollo de la Banda Ancha. Véase: https://digilac.iadb.org/es/inicio

2 GSMA, Global Connectivity Index 2019. Véase: https://www.mobileconnectivityindex.com/#year=2019

3 GSMA 2020

4 Telegeography 2020

5 Fuente: AIG 2020, véase: https://aig.gob.pa/descargas/2019/12/agenda-digital-2020-visual.pdf

6 Los corregimientos que serán intervenidos a través de este plan son: Miguel de la Borda, Coclé del Norte, El Guásimo, Gobea y Río Indio, todos ubicados en el distrito de Donoso. En el distrito de Chagres, fueron escogidos, La Encantada, Achiote, El Guabo, Palmas Bellas, Piña y Salud. En el distrito de Santa Isabel, están los corregimientos de Palenque, Cuango, Miramar, Nombre de Dios, Palmira, Playa Chiquita y en el distrito de Omar Torrijos están los corregimientos de San José del General, San Juan de Turbe y Nueva Esperanza.

and the IAG, responsible for the 2020 Digital Agenda document for Panama, establish the need to implement a network that allows institutional interoperability and effective connectivity and interaction between institutions.

1.9. Moreover, due to current ongoing unexpected pandemic situation (COVID-19), the deployment of broadband network to connect the hospitals and health centers has become the highest priorities. To respond to this highly contagious virus, real-time information sharing system through the Internet is necessary for the related organizations. Also, by deploying the broadband infrastructures to the rural areas and increasing the accessibility of public institutions like schools and government offices, ICT tools to overcome the pandemic crisis may be available.

2. Objectives

2.1. The development of projects for the deployment of telecommunications networks in Panama and coverage of rural areas and the needy population are intended to achieve the following objectives defined in the 2020 Digital Agenda defined by the government, telecommunications and innovation agencies of the country: (1) Provide access to broadband networks to 64 rural populations (mainly in Darién and areas of Ngäbe-Buglé and Guna Yala identified in the Government plan), (2) Develop a feasibility analysis to provide 100% coverage with digital networks with the plan HIVE, which will provide telecommunications and broadband services to the most isolated populations that, today, do not have Internet and (3) Redesign of the projects of the National Internet Network (3.0) based on community WiFi networks for their expansion and readaptation of the model in order to achieve higher profitability and cost-benefit.

3. Key Activities

3.1 Component 1: Improve the understanding of market dynamics in Panamá. The objective of this component is to conduct a market study for Panamá, including an analysis of the socio-demographic and economic conditions; an analysis of current supply and demand of telecommunication services; and a forecast of the demand. The scope of the activities to be implemented within the market analysis will be:

3.2 Activity 1: Study of the supply. Identify the type of services that are available for the final users (citizens, SMEs, and public administrations). Specific information should also be provided on how the market is distributed among the different players, providing an analysis in terms of HHI[7] and any other concentration index that the firm may consider necessary to come up with a detailed description of the level of competition in the different countries and the type of services that are available.

3.3 Activity 2: Study of the demand

Considering the analysis conducted in the previous activity, identify how the demand is behaving in terms of consumption and whether there is any unsatisfied demand. Provide an analysis of what is demanded today.

3.4 Activity 3: Study on the distribution of the population

Identify how the population is distributed in terms of socio-demographic and economic conditions and discern conclusions on the implications that the composition of the population density may have in terms of the infrastructure deployment of the optical fiber ring for Panamá.

3.5 Activity 4: Demand forecast

Provide a forecast of the demand in Panamá, considering the demand behavior identified in activity 2 and the socio-demographic conditions from activity 3. To conduct this study, the consulting firm must take into consideration not only the existing services that are available in Panamá, as per activity 1, but also the new services that may be launched after the deployment of the infrastructure. Specific attention should be given to market and sectorial trends to justify the forecast. The results of these studies will serve as the basis for the Technical Study to be carried out in the following component.

3.6 Component 2: Identify the technical considerations for deploying the infrastructure, including the structure of the network and the expected social and environmental impacts.

The objective of this component is to develop a technical study including: (i) orographic study and population distribution; (ii) assessment of the existing available infrastructure; (iii) design of the logic diagram node of the network; (iv) estimation of the expected traffic according to the socio-demographic and economic conditions; (v) identification of technological alternatives; (vi) determination of the requirements in terms of capacity and sizing of the network; (vii) selection of the best technology to attend the estimated traffic; and (viii) development of a deployment and execution plan. The activities included within the technical analysis are:

a. Orographic Analysis

[7] Herfindahl–Hirschman Index (HHI) is a measure of the size of firms in relation to the industry and an indicator of the amount of competition among them.

b. Assessment of the current situation of Telecommunications Infrastructure
c. Design of the Logic Diagram Node
d. Estimation of the expected traffic
e. Estimation of capacity and choice of interfaces
f. Analysis of technological alternatives
g. Physical layout diagram
h. Deployment Plan and Implementation Schedule
i. Environmental and social impact assessment

3.7 Based on the market study conducted in component 1, an analysis of technical parameters to consider in the consider in the deployment project will be done in component 2. The selection of appropriate technologies and the stages of the deployment plan, including the structure of the network, and the implementation schedule will be the main results of this component.

3.8 The Technical Study will be used as basis for the Economic study to be conducted in component 3 and will be revised, as needed, based on the results of the latter.

3.9 Component 3: Analyze the economic and financial feasibility of the deployment and select a governance models. The objective for this component is to develop an economic and financial study on the sustainability of the network and the services to be eventually provided.

3.10 Particularly important will be the specification of the consortium and the governance model to guarantee the success of the optical fiber ring, not only during the deployment, but also during the exploitation. The activities to be included in the economic analysis:

a. Estimation of the required investment to satisfy the demand.
b. Valuation of the different scenarios, considering the different technological alternatives.
c. Development of a business model.
d. Selection of the technology and financial figures of the project.
The result of this component will be an analysis of the economic feasibility of the deployment considering the data from the Market Research (component 1) and the Technical Study (component 2).

3.11 Additionally, the conclusions drawn from this study will serve as feedback for the technical study and may introduce specific changes in the Deployment Plan (component 2).

3.12 Considering the results and conclusions of the feasibility studies, specific recommendation will also be provided on the best way to aggregate traffic in Interconnection Exchange Points (IXPs), which will allow for the international Internet connectivity charges in the Region to be reduced.

4. Expected Outcome and Deliverables

4.1 All the deliverables must to be approve by the team leader, the firm will be must to prepare two important documents:

- Draft Report
- Final Report

5. Acceptance Criteria

5.1. The firm will have extensive experience in the telecommunications sector, with Senior team members involved in projects in LAC and other developing regions. Specific domain of domestic and international broadband infrastructure is required, including both terrestrial and undersea cables. The firm must have a proven capability to deliver detailed and accurate market studies, particularly as the results of Component 1 will serve as critical inputs for the development of the feasibility studies in Components 2 and 3 of the projects.

6. Other Requirements

6.1. Type of consultancy: Firm**,** the duration of this consultancy is for 6 months, since the contract firm, travel required. During this period, the firm is expected to participate in a total of two (2) coordination. Meetings with IDB Specialists in Headquarters (Washington DC) and (2) presentation meeting with government of Panamá.

7. Supervision and Reporting

7.1 Supervision and coordination of the consultant's work will be the responsibility of Antonio Garcia Zaballos (IFD/CMF) Team Leader, antoniogar@iadb.org

8. Schedule of Payments

8.1 Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described.

8.2 The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
Deliverable	**%**
1. Upon Contract Signature and Working Plan deliverable.	30%
2. Describe deliverable	30%
3. Describe deliverable	40%
TOTAL	**100%**