TECHNICAL COOPERATION ABSTRACT (TC-ABSTRACT)

REGIONAL

I. BACKGROUND

Country:	Regional	
TC Name:	Mobile Broadband and satellite	
TC Number:	RG-T2460	
Team Leader/Members:	Felix Gonzalez Herranz (Team Leader, IFD/ICS); Enrique Iglesias Rodriguez (IFD/ICS); and Cecilia Bernedo (IFD/ICS)	
TC Taxonomy:	Research and Development (RD)	
Authorization TC date:	March, 2014	
Donors providing funding:	Broadband Special Program (BBD)	
Beneficiary:	Latin America and the Caribbean	
Executing agency and contact name:	Inter-American Development Bank, Felix Gonzalez Herranz (felixg@iadb.org)	
IDB Funding Requested:	BID: Special Broadband Fund (OC)	US$125,000
Local counterpart funding:	Local:	US$ 0
	Total	**US$125,000**
Execution period:	18 months **Disbursement period:**	24 months
Required start date:	June , 2014	
Types of consultants:	Firm and individual consultants	
Prepared by Unit:	Division of Institutional Capacity of the State (IFD/ICS)	
Unit of disbursement responsibility:	IFD/ICS	
TC included in country strategy:	N/A **TC included in CPD:**	N/A
GCI-9 sector priority	The current Sector Strategy: "Institutions for Growth and Social Welfare" identifies *improving innovation and productivity* as a major area where the Bank can help the Region overcome the challenges that hinder growth and social welfare. To this end, the IDB will work towards strengthening institutions, and has specifically recognized the need to improve policies and governmental action in the ICT sector (par.5.21 of the referred Sector Strategy). Consistent with the Strategy, the Bank has been working in the design and implementation of a Broadband Platform to accelerate the penetration rate and usage of broadband services in the Region.	

II. OBJECTIVES AND JUSTIFICATION OF THE TC

2.1 Broadband is well known as an enabler of development for countries in the pursuit of economic and social development since it drives economic growth by contributing to the enhancement of the national competitiveness, to the increase of productivity and efficiency, as well as job creation. In recent years, the economic impacts of broadband, through its access, adoption and use have brought clear social and economic benefits, which have been substantiated with concrete statistics. It has been estimated that 10 percent growth of broadband penetration would raise GDP of high-income countries by 1.21 percent and that of low-income countries by 1.38 percent.[1] In particular, in the Latin American and the Caribbean (LAC) Region, it is estimated that an increase of 10 percent in broadband penetration, on average, is expected to be associated with the increase of 3.19 percent in GDP; 2.61 percent in productivity and a net generation of more than 67,000 jobs.[2]

2.2 This macro impact relies on the various benefits that broadband brings to the economy in terms of improvement in the delivery of education and accessibility to training, promotion of equality and inclusion of rural or disadvantaged communities, support to civil disaster relief, remote medical assistance (known as 'telemedicine'), increasing competition and social cohesion and interaction.[3] These advantages lead the governments to announce significant broadband development programs in order to take advantage of the new and different technologies that are available.

2.3 Countries have been trying to develop a wide range of measures to foster the so-called "information economy", which is highly dependent on access to a fast and qualitative Internet. An example of these measures are the national broadband plans, a diverse set of initiatives of national governments in LAC developed in recent years, whose main objective is to accelerate the access, adoption and use of broadband services.

2.4 Despite these efforts, Latin America and the Caribbean countries faced a triple Digital Divide. According to the International Telecommunications Union, the average penetration rate of fixed broadband services in the LAC Region is below 5 percent. When we compare this figure with the penetration rate in other countries such as Denmark or Korea, where the penetration rate is around 40 percent, the disparity is clear (first Digital Divide). Moreover, substantial heterogeneity can be also observed when we compare penetration rates within the LAC Region (second Digital Divide). Indeed, there are wide differences between countries, for instance,

[1] World Bank, 2009

[2] García-Zaballos, A. / López-Rivas, R.: Governmental control on socio-economic impact of broadband in LAC countries. IDB, 2012.

[3] Broadband may lead to development of a new model of education and health, while they could get substantial efficiency improvements in its processes, which would lead to lower costs while enabling disadvantaged areas closer to education and health. McKinsey & Company points out that those SMEs that are intensive Internet users improved their productivity by 10 percent, which is a reflection in sales and cost savings. Moreover, the consultant concluded that small and medium sized companies that made heavy use of the Internet in business relationships grew twice as fast as those who did not. In addition to the impact of ICT in education, health and productivity / competitiveness of enterprises, there are examples of how ICTs can improve traffic, assist in natural disasters, or monitor certain public services (sewer, electricity, air and maritime transport , etc). Moreover, for the ordinary citizen, the use of ICT services in both their personal lives and in their careers (electronic payment of value added tax, electronic transactions, information search,) helps to reduce the number of transactions needed, increasing productivity and quality of life.

whereas Barbados has a penetration rate above 20 percent, in Honduras or Guatemala it reaches nearly a 1 percent. Even within each country there is a gap between those with and without Internet access (third Digital Divide). In Brazil, for example, 60 percent of households in the wealthiest income quintile report access to the internet whereas less than 3 percent of households in the poorest income quintile have access to the internet.

2.5 The causal factors that explain the problematic behind the Digital Divide can be summarized from three perspectives: (i) access (lack of infrastructure); (ii) adoption (low quality, high prices and lack of access to devices); and (iii) usage (low digital literacy). In terms of access, countries in LAC faces a major challenge in achieving universality by bringing the infrastructure to underserved areas, where it is very unlikely to have the private sector deploying infrastructure. This is explained by the fact that these regions are quite challenging from technical and financial points of view due to various reasons: (i) they are very remote areas where is highly costly to bring infrastructure; (ii) the locations have an orography where it is very difficult to deploy fiber optics; and (iii) they are low density population areas. In those circumstances, the satellite broadband technology is ideal because satellite infrastructure is the only broadband technology that provides full coverage in metropolitan as well as rural or more remote areas (including oceans and polar zones).

2.6 Countries in the Region have already been using satellite to tackle the aforementioned problem. For instance, Bolivia launched last December their own satellite "Tupac Katari" that will provide broadband connectivity to facilities such as telecenters, schools, health centers and government offices, among others.

2.7 Despite these facts, the Region still lacks a holistic framework around satellite technology that covers technical aspects for usage, public policy and regulation, and more importantly, that is tailored to the specificities of the LAC Region. This is why the Bank aims to support the governments of the Region to understand the specific terms and conditions under which alternative technologies such as satellite technologies may be a viable option to achieve the goal of universality.

2.8 **Objectives of the project.** The objective of this TC is to develop a set of recommendations to raise awareness about satellite broadband and the importance of this technology to enable Latin America and the Caribbean region to bridge the digital gap by means of an additional technological option to cover underserved remote areas.

III. DESCRIPTION OF ACTIVITIES

3.1 The main activity of this TC includes the preparation of a publication on "Satellite Technology and the Provision of Broadband Services in LAC." This publication will cover the role of satellite technology in the provision of broadband services with a specific focus on LAC countries and will explore specific applications of satellite broadband.

3.2 The publication will be structured as follows:

- Introduction
- Review of other countries' best practices
- Role of Satellite Technologies for the Provision of Broadband Services
  - Policy and Regulatory Environment
  - Technical Aspects
  - Economic Aspects
  - Advantages & Limitations
- Specific Applications using Satellite
- Conclusion

3.3 The specific activities that this technical cooperation will finance are summarized below.

3.4 **Component 1: Market/ Benchmark study.** This Component will finance thorough research in 4 to 5 leading countries (inside and/or outside LAC) to identify the key drivers to successful implementation and uptake of satellite services, both on the supply and demand side. The market research will aim at understanding in detail how technology, infrastructure, public policies and regulatory environments affect the roll out of satellite services.

3.5 Working with satellite operators and the broader mobile Internet ecosystem, the research will produce key insights, lessons learned, thought leadership, case studies and replication examples to share across multiple platforms with the mobile Internet ecosystem.

3.6 **Component 2: Feasibility Study/ Gap Analysis.** Based on the findings from the research in Component 1, this Component will finance the development of a gap analysis in the LAC Region, to identify the gaps in service, recommendations and correlating actions that would be necessary to ensure the successful implementation of satellite projects in the market place. Additionally, the study will include implementation plans to expand and improve satellite broadband penetration in selected countries. The project will bring together the satellite operator members and the broader Internet ecosystem to address these recommendations and provide relevant intelligence and analysis, driving collaboration, and knowledge sharing for the successful implementation of projects within markets. To achieve these goals, the analysis will be conducted in 4 to 5 LAC countries, some more developed and some less developed in terms of mobile broadband penetration.

3.7 **Component 3: Dissemination**. This Component will finance the necessary activities to disseminate the findings of the studies through workshops, drive collaboration, and discussion of the implementation plans. Additionally, this Component will finance the print publication of the studies.

3.8 **Expected outputs.** The expected deliverable of this project is a comprehensive publication structured in accordance with the outline defined in paragraph 3.3. Additionally, as a result of component 3, there will be a print publication and a workshop to disseminate the findings.

3.9 **Expected results.** Upon the completion of the activities aforementioned, the LAC Region will have a better understanding of the broadband satellite technology, and therefore, will be in a better position to decide where and how to use this technology from a technical, public policy and regulatory perspective.

Table 3.1: Indicative Results Matrix

Suggested indicator	Measurement Unit[4]	Base-line	Target at end of TC
Output Indicators:			
Component 1: Market Research in 4 to 5 countries to understand key drivers for successful broadband satellite technology roll out	No. of Documents	0	1
Component 2: Set of recommendations for the LAC Region according to the studies/analysis conducted in Components 1 and 2.	No. of Documents	0	1
Component 3: Dissemination tools	No. of Copies of the publication No. of Events	0 0	10 1
Outcome Indicators:			
Increased awareness and understanding of tools, strategies and policies to foster the development of satellite broadband	No. of citations of the TC products in national government strategic documents	0	2

Table 3.2: Estimated budget by component and activity (in US$)

Component/ Activity	Description	IDB/Contribution funding (US$)	Total funding (US$)
Component 1: Market/ Benchmark study	Market Research in 4 to 5 countries to understand key drivers for successful satellite internet service roll out	40,000	40,000
Component 2: Feasibility study/ Gap Analysis	Assessment of needs in 4 to 5 LAC markets. Recommending actions based on global research	65,000	65,000
Component 3: Dissemination of the results	Conduct on the ground workshops to share recommendations, drive collaboration and discuss the implementation plans to strengthen delivery of mobile services	20,000	20,000
Total budget		**125,000**	**125,000**

IV. EXECUTING AGENCY AND EXECUTING STRUCTURE

4.1 Considering that the project is regional and needs extensive partnership with international organizations, academia, private firms and governments of the Region, the executing agency will be IFD/ICS.

4.2 A Single Source Selection to hire the International Telecommunications Satellite Organization[5] (ITSO) is proposed to carry out the activities involved in this TC

[4] For appropriateness reasons, the different documents may need to be consolidated into a single one. Therefore, the output for Component 1 and 2 is the same single document (i.e. the main publication)

(except the publication that will be done by the Bank). This is justified based on ITSO's outstanding qualifications and reputation for delivering quality services and research, and for the high standards of its products worldwide in the field of satellite technology. ITSO has a vast network of contacts, which provide the institution a qualification of exceptional worth for achieving the project's objectives, rendering any competitive process inefficient and not economical.

V. PROJECT RISKS

5.1 The project presents two risks that could affect the impact, quality or effectiveness of the expected results. First, the results of the project are not taken into account to assess the appropriateness of satellite technology to achieve universality goals, due to the lack of commitment from the different governments. This risk is mitigated by the fact that Broadband has become one of the most important subjects in the agenda of almost all the countries in the Region and satellite has been identified by governments as a means to achieve universality in access. Moreover, the 4 to 5 countries selected to participate in the study will be those that show eagerness to implement the recommendations. Secondly, that there is a lack of regulatory framework or institutional capability to carry out the recommendations formulated. This risk will be mitigated by including recommendations in the regulatory arena as part of the implementation plan.

VI. EXCEPTIONS TO THE POLICY OF THE BANK

6.1 There are no exceptions to the policy of the Bank.

VII. ENVIRONMENTAL STRATEGY

7.1 Given that the current TC revolves around a study, there are no social or environmental risks associated with it. This operation is classified as a Category "C" according to the classification toolkit of the Bank (see the link: IDBDocs#38664856).

[5] The International Telecommunications Satellite Organization is an intergovernmental organization that incorporates the principle set forth in Resolution 1721 (XVI) of the General Assembly of the United Nations, which establishes that communication by means of satellites should be available to the nations of the world as soon as practicable on a global and non-discriminatory basis (see more details in http://www.itso.int/)