

## TECHNICAL COOPERATION DOCUMENT (TC-DOCUMENT)

### REGIONAL

#### I. BACKGROUND

<b>Country:</b>	Regional		
<b>TC Name:</b>	Mobile Broadband and satellite		
<b>TC Number:</b>	RG-T2460		
<b>Team Leader/Members:</b>	Felix Gonzalez Herranz (Team Leader, IFD/ICS); Antonio Garcia Zaballos (Alternate Team Leader, IFD/ICS); Guillermo Eschoyez (LEG/SGO); Enrique Iglesias Rodriguez (IFD/ICS); Lorena Cano (IFD/ICS); María Eugenia Roca (VPC/FMP); Ileana Pinto (VPC/FMP); and Cecilia Bernedo (IFD/ICS).		
<b>TC Taxonomy:</b>	Research and Dissemination (RD)		
<b>Authorization TC date:</b>	March, 2014		
<b>Donors providing funds:</b>	Special Program for Broadband Services (BBD)		
<b>Beneficiary:</b>	Public sector from Latin America and the Caribbean involved in Broadband		
<b>Executing agency and contact name:</b>	Inter-American Development Bank, IFD/ICS Felix Gonzalez Herranz ( <a href="mailto:felixg@iadb.org">felixg@iadb.org</a> )		
<b>IDB Funding Requested:</b>	<b>Total</b> US\$125,000		
<b>Local counterpart funding:</b>	US\$ 0		
	<b>US\$125,000</b>		
<b>Execution period:</b>	21 months	<b>Disbursement period:</b>	24 months
<b>Required start date:</b>	June, 2014		
<b>Types of consultants:</b>	Firm and individual consultants		
<b>Prepared by Unit:</b>	Division of Institutional Capacity of the State (IFD/ICS)		
<b>Unit of disbursement responsibility:</b>	IFD/ICS		
<b>TC included in country strategy:</b>	N/A	<b>TC included in CPD:</b>	N/A
<b>GCI-9 sector priority:</b>	The current Sector Strategy: "Institutions for Growth and Social Welfare" identifies <i>improving innovation and productivity</i> 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). It is also worth remarking that the Sector Strategy: "Support Competitive Global and Regional Integration", identifies <i>bridging the digital divide</i> as one of the Bank's priorities to promote integration, placing specific emphasis on promoting broadband infrastructure. Consistent with these Strategies, 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 impact 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.<sup>1</sup> 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.<sup>2</sup>
- 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 vulnerable communities, support to civil disaster relief, remote medical assistance (known as ‘telemedicine’), increasing competition and social cohesion and interaction.<sup>3</sup> 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 heavily dependent on access to a fast and high quality Internet. An example of these measures is the national broadband plan, 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. Countries such as Brazil, Costa Rica, and Panama (developed with the support of the Bank) already have their national broadband plans. Other countries such as Mexico, Nicaragua and Bolivia are currently in the process of developing their respective broadband plan (the three countries are receiving the support of the Bank to that goal).

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<sup>1</sup> World Bank, 2009

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

<sup>3</sup> 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 reflected in sales and cost savings. Moreover, the firm concluded that small and medium sized companies that made heavy use of the Internet in business relationships grew twice as fast as those that 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.

- 2.4 Despite these efforts, countries of Latin America and the Caribbean 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, whereas Barbados has a penetration rate above 20 percent, in Honduras or Guatemala it reaches only 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 problem 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 face 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 economic points of view due to various reasons including: (i) they are very remote areas where is highly costly to bring infrastructure; (ii) the locations have an orography where it is very difficult or highly costly to deploy other technologies; 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 create awareness about satellite broadband and provide recommendations on how it may be used by countries of Latin America and the Caribbean Region as an additional technological option to bridge the connectivity gap in 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 around the following axis: technical aspects, economic aspects, policy and regulatory aspects, applications
  - Role of Satellite Technologies for the Provision of Broadband Services
    - Policy and regulatory environment
    - Technical aspects
    - Economic aspects
    - Advantages and limitations
    - Specific applications using satellite
  - Gap analysis on 4/5 LAC countries according to the axis above
    - Gaps around the already mentioned axis: technical aspects, economic aspects, policy and regulatory aspects, applications
    - Recommendations
  - Roadmap with timing and budget for the recommended actions and projects
  - 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 research in four to five countries where satellite technology was implemented successfully (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 research will aim at understanding in detail how technology, infrastructure, public policies and regulatory environments affect the roll out of satellite services. It will also analyze the necessity of complementary infrastructure and utilities such as electricity.
- 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 four or five countries of 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 if this technology was to be chosen. 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.
- 3.7 To achieve these goals, the analysis will be conducted in a diverse group of four to five LAC countries in terms of mobile broadband penetration. The criteria of selecting the countries will be: (i) to favor those where satellite technology can have a significant impact on development, that is to say, countries with remote isolated areas where broadband satellite technology may make technical and economic sense; (ii) to prioritize those countries that show eagerness to take into account the recommendations; and (iii) to select at least one small and vulnerable country.
- 3.8 **Component 3: Dissemination.** This Component will finance the necessary activities to disseminate the findings of the studies through workshops and discussion of the implementation plans. In this regard, once the country where the workshop will take place is identified, the team will be coordinating with the country to obtain the non-objection from the relevant local authorities before holding the event. Additionally, this Component will finance the print publication of the studies.
- 3.9 **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.
- 3.10 **Expected results.** Upon the completion of the activities aforementioned, actors from the government involved in the Broadband field in 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 <sup>4</sup>	Base-line	Target at end of TC
<b>Output Indicators:</b>			
Component 1: Market Research in four to five 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	0	30
	Infographic	0	1
	Online publication on digiLAC	0	1
	Blog posts	0	2
	Tweets on IDB account	0	4
	No. of Events	0	1
<b>Outcome Indicators:</b>			
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	10

<sup>4</sup> 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)

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

Component/ Activity	Description	IDB/Contribution funding (US\$)	Total funding (US\$)
<b>Component 1:</b> Market/ Benchmark study	Market Research in four to five countries to understand key drivers for successful satellite internet service roll out	40,000	40,000
<b>Component 2:</b> Feasibility study/ Gap analysis	Assessment of needs in four to five LAC markets, including recommended actions based on identified global best practices	65,000	65,000
<b>Component 3:</b> Dissemination of the results	On the ground workshops to share recommendations, drive collaboration and discuss the implementation plans to strengthen delivery of mobile services	20,000	20,000
<b>Total budget</b>		<b>125,000</b>	<b>125,000</b>

#### IV. EXECUTING AGENCY AND EXECUTING STRUCTURE

- 4.1 **Execution.** Considering that the project is regional and needs interactions with governments of the Region, the executing agency will be the Inter-American Development Bank, through IFD/ICS consistent with the provisions of the Operational Guidelines for Technical Cooperation Products (GN-2629-1). In that sense, it is expected that Bank will play a catalytic role in facilitating the success of interaction among partners as is the case in other projects (e.g. RG-T2295 – Broadband Policy Toolkit for Latin America and the Caribbean)
- 4.2 **Procurement.** For the selection and contracting consultant firms and services, the Bank will follow corporate procurement policies (GN 2303-20), as it was the case for project RG-T2295. A Single Source Selection to hire the International Telecommunications Satellite Organization<sup>5</sup> (ITSO) is proposed to carry out the activities involved in Components 1 and 2 with an estimated budget of US\$105,000. This is justified based on ITSO's outstanding qualifications and reputation for delivering quality services and research, and for its relevant experience and high standards of its products worldwide in the field of satellite technology. Moreover, ITSO has a vast network of contacts (within the public and private sectors), which provide the institution with a qualification of exceptional worth for achieving the project's objectives, rendering any competitive process inefficient and not economical. Since the Component 2 will require focus on the LAC Region, ITSO will need to reach out to regional and local governments, and to that goal the Bank will intervene as already explained, facilitating the contacts and the interactions. The activities in Component 3 will be coordinated by the project team.

<sup>5</sup> 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 on a global and non-discriminatory basis (see more details in <http://www.itso.int/>)

## **V. PROJECT RISKS**

- 5.1 The project presents two risks that could affect the impact, quality or effectiveness of the expected results. First, the possibility that 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 LAC governments. This risk is mitigated by the fact that Broadband has become an important subject in the policy agenda of countries in the Region as demonstrated by the very positive reaction to the Bank's initiative. Moreover, the satellite has been identified as an economical technology option to achieve universality of broadband in those areas where its use is optimal as a means to achieve universality in access (e.g. Bolivia). In addition, as indicated in paragraph 3.7, the 4 to 5 LAC countries selected to participate in the study will be those that show eagerness to take into account the eventual recommendations and those where this broadband technology can have significant impact on development. The second risk is the lack of a 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](#)).

### **Annexes:**

- **Annex I: Terms of Reference (ToR) - [IDBDocs#38803436](#)**
- **Annex II: Procurement Plan - [IDBDocs#38803425](#)**

## **MOBILE BROADBAND AND SATELLITE**

**RG-T2460**

### **CERTIFICATION**

I hereby certify that this operation was approved for financing under the Special Broadband Program Fund (BBD) through a communication dated April 16, 2014 and signed by Sergio Zwi (ORP/GCM). Also, I certify that resources from said fund are available for up to US\$125,000 in order to finance the activities described and budgeted in this document. This certification reserves resources for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, for which the Fund is not at risk.

(Original Signed)

06/13/2014

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Sonia M. Rivera  
Chief  
Grants and Cofinancing Management Unit  
ORP/GCM

\_\_\_\_\_  
Date

### **APPROVAL**

Approved:

(Original Signed)

06/17/2014

\_\_\_\_\_  
Carlos Santiso  
Chief  
Institutional Capacity of State Division  
IFD/ICS

\_\_\_\_\_  
Date