# Project Proposal Form

2019



### Introduction

One of the key objectives of the National ICT Policy is to ensure equitable access to Information and Communication Technology Services. The policy objective is founded on the premise that ICT is seen as necessary tool for economic growth and social development. The Universal Access Board within NICTA is mandated to give effect to this policy by identifying and developing projects aimed at bridging the telecommunications and ICT gap that limits the opportunities available to ordinary citizens.

Within this context, the National Information and Communications Technology Authority (NICTA) is inviting stakeholders including the general public, ICT operators and service providers to propose or suggest any projects or programs that you think are consistent with the overarching goals within the ICT sector and that NICTA should consider in its current or future programs. Proposals that are accepted will be considered by the UAS Board for potential inclusion in the 2019 UAS programs.

### **Scope of Proposals**

All stakeholders including the general public, ICT operators and service providers are invited to propose or suggest any project for NICTA's consideration. The submitted proposals should seek to promote the long-term economic and social development of Papua New Guinea through projects that will among other things, encourage the development of ICT infrastructure and improve the availability of ICT services within the country including under-served communities and geographic areas.

Proponents are advised to note that submitting proposals does not secure funding/assistance from NICTA in any form or guarantee inclusion in the UAS programs. Submitted proposals will only be received as project concepts for NICTA's consideration.

### **Submission of Proposals**

Proposals must be submitted in the proposed format in Attachment 1. Proposals can be submitted by hard copies or electronically to:

Acting Director UAS Secretariat NICTA PO Box 8227 Boroko 111 National Capital District

Email: uas@nicta.gov.pg

### **Deadline**

The deadline for submission of proposals is **7 September 2019**. Late proposals will not be accepted.

## **Attachment 1: Project Proposal Submission Form**

### **Section A**

### **Title of Project**

Rural Communication Project for East New Britain Province

### **Summary of Project**

This project will be funded by Universal Access and Services (UAS) Fund. It consists of three identified programs;

Program 1: Upgrade and Expansion of Mobile Broadband Network

Program 2: Network, E-Library and Internet Broadband connections to schools and Provincial Government headquarters

Program 3: Expansion of Radio and Television Broadcasting Network Coverage

As per the consultation meeting with NICTA, East New Britain Provincial Government is interested to take up this opportunity to participate in promoting the long-term economic and social development of the Province through the three identified strategic programs above that will encourage the development of ICT infrastructures and improve the accessibilities of ICT services within the Province including under-served communities and identified geographical areas of the four districts (Gazelle, Kokopo, Pomio and Rabaul). The three identified programs above continue to pose a challenge to ENB rural and remote areas accessibilities to communication networks and ICT services.

#### Program 1: Upgrade and Expansion of Mobile Broadband Network

This program is to expand and upgrade the Mobile Broadband Network Coverage to rural and remote communities of East New Britain where Mobile Network coverage and services are not adequately available.

Today, Telecommunication faces the challenge of using information and communication networks more effectively to manage the demand, generation, transmission, and distribution of its commodity services in rural and remotes areas. With the upgrading and expansion of Mobile Broadband network coverage, East New Britain Provincial Government believes that this is a key enabler for increased competitiveness, improved reliability of communication network services, and enhanced business and operational responsiveness to rural and remote communities.

By looking at the importance of the above programs, the Provincial Government proposes that Telecommunication needs to modernize and expand their Mobile Broadband network services and communication infrastructures throughout the rural and remote areas of the four districts where access to such services is not adequately available, and where existing licensed

operators are unwilling or unable to expand their communication networks due to commercial or other constraints.

Current demand for services is constrained by several factors. Fixed broadband penetration is essentially almost zero in rural and remote areas. Even though nearly half the population has wireless access, 3G/4G services across the Province are scant to mobile broadband and internet accessibilities especially in the inter-land of Pomio and Gazelle.

# Program 2: Network, E-Library and Internet Broadband connections to schools and Provincial Government headquarters

Under this program, there are two components as follows;

- ➤ Components 1: Computer Labs establishment, E-Libraries and Internet connections to seven designated High Schools
- ➤ Components 2: Network establishment and internet connections to the four districts headquarters and the Provincial Headquarter

# Components 1: Computer Labs establishment, E-Libraries and Internet connections to seven designated High Schools

Currently, more than 3045 students are studying from grade 9 to 12 and 113 teachers in the seven selected schools. The educational achievements and services delivered by the schools are satisfactory even though the schools lack adequate teaching learning facilities and resources.

There are two types of schooling system in the Province as well as in the country. There are highly facilitated and technologically well-equipped private schools and public schools like the indicated schools below. Private schools have been providing ICT based education within ICT friendly environment and using modern technology based approaches of teaching and learning. It has created a huge digital gap between ICT supported private school children and ICT non-supported public school children. But both schools' students have to appear in the same examination and compete with them in the same job market later on. Due to the lack of educational facilities and resources in the schools, the Education Department have not been able to provide that much facilities like in the private schools in order to fulfill their aspirations for quality education as expected.

East New Britain has honest, diligent and intelligent students; hard working, dutiful and responsible teachers as per their respective designations. The whole school family is trying its best to provide quality education and addresses the students' aspirations and demand of time with limited resources available with government aiming to enhance the quality and performance of the schools. It has been beneficial to some extent in order to produce capable candidates who can fulfill the current market requirements and create competition with the private schools' children.

Only the medium of teaching cannot bring a desirable and drastic changes in the schools system and their quality enhancements in the lack of proper physical infrastructures, well equipped libraries, computer labs and digital devices of teaching and learning.

Realizing the fact that basic facilities are quite necessary to improve students' learning achievements, the Provincial Government now desires to improve the facilities like e- libraries, well equipped computer labs with internet connections in the designated schools so that the schools can produce such children who can meet the current market needs and get employed immediately after they have completed their school education or further their education ambitions to tertiary institutions. But providing such facilities to children are beyond the schools' own economic capacity. The Provincial Government has such visions but has not been able to manage minimum facilities required due to the low economic status of the schools.

Therefore, the Provincial Government is confident that by providing the government with monetary support through this program from UAS Fund, it will improve libraries and computer labs facilities with internet connections in the schools and in turn addresses the problems being faced by the schools. The Provincial Government hopes that through the UAS Fund, it will assist in supporting the Provincial Government in this regard so that the schools will be in a position to enhance quality education and fulfill the needs and aspirations of vulnerable school children from socio-economically stricken families. The following are the seven proposed Schools.

No	Schools	District	LLG
1	Utmei Secondary	Gazelle	Inland Baining
2	Palmalmal High School	Pomio	Central Pomio
3	Warangoi High School	Pomio	Sinivit
4	Bitapaka High School	Kokopo	Bitapaka
5	Ramoaina High School	Kokopo	Duke of York
6	Boisen High School	Rabaul	Kombiu
7	George Brown High school	Gazelle	Central Gazelle

# Components 2: Network establishment and internet connections to the four districts headquarters and the Provincial Headquarter

Apart from the schools, the Provincial Government also proposes that the four districts (Gazelle, Kokopo, Pomio, Rabaul) be linked to the Provincial Head Quarter through the establishment of network and internet connections.

The aim of this program is to put in place a reliable information and communication network that would service the East New Britain Provincial Administration and its remote office locations around Kokopo including the four districts headquarters and any future sites to be linked in the surroundings of Province. Upon completion, this network should be able to provide file and print sharing, email, internet, network faxing, voice over internet protocol service (VoIP) and data security. Data security provides restricted access to the data on the file server, secure data folders, and automatic online updates of antivirus application.

The proposed network design takes into consideration the fact that remote offices and the four districts' headquarters are out of reach of immediate and cost-effective support. For this reason the design of wireless local area network has been simplified to overcome expensive and inadequate services by Internet Service Providers and Telecommunication Carriers. Below are the proposed sites for the network establishment.

No	Districts	Headquarters		LLG/Location
1	Gazelle	Gazelle Headquarter	District	Central Gazelle/Kerevat
2	Kokopo	Kokopo Headquarter	District	Bitapaka/Bitapaka
3	Pomio	Pomio Headquarter	District	West Pomio Mamusi/Palmalmal
4	Rabaul	Rabaul Headquarter	District	Balanataman/Kurakakaual
5	Provincial	Provincial Headquarter		Kokopo/Vunamami Urban/Kokopo town

### Program 3: Expansion of Radio and Television Broadcasting Network Coverage

This program is to expand radio and television broadcasting coverage to rural and remote areas of East New Britain. In fact, the main issue here is the communication infrastructure. The interconnection of Telecommunication networks into rural and remote areas has created the need for fully interoperable communication network infrastructures to maintain radio and television broadcasting coverage accessibility to rural areas. Existing infrastructures (Towers) are not built to handle large increases in traffic.

Therefore, the Provincial Government proposes that Telecommunication needs to upgrade their existing communication infrastructures by building more towers in identified rural communities to enable radio and television broadcasting coverage where communication accessibilities are inadequately available to the rural population. The Provincial Government also proposes to the UAS boards that they can also consider reviving the short and medium waves (SW, MW) radio broadband where they were once reliable before.

#### Access Gap Analysis

According to the access gap analysis, it is indicated that the three Strategic Programs above only support voice, email, radio and television broadband coverage and basic Internet access around certain areas where ICT infrastructures are in place. However, users are unsatisfied with occasional downtime and slow response times when accessing the Telecommunication network, especially at peak access times.

At a minimum, the Provincial Government is compelled to correct these issues through the three strategic programs which will improve productivity, promote private sector investments which will stimulate increased private sector investments in un-served and underserved areas, foster Economic and Social Development that will stimulate productive use of ICTs for economic, social and Tourism cultural development.

#### **Section B**

### 1.0 Objective and Outcomes of Proposed Project

The primary objectives and Outcomes of the Proposed Projects are:

### **Program 1: Mobile Broadband Network Upgrade and Expansion**

 The objective of the project is to improve access to telecommunications infrastructures and services in rural and remote areas of East New Britain through the extension of broadband wireless mobile communications coverage and services to the four Districts (Pomio, Gazelle, Kokopo, Rabaul) where access to such services is not adequately available, and where existing licensed operators are unwilling or unable to expand their networks due to commercial or other constraints.

#### The outcomes

• To deliver reliable, high quality access to Internet and mobile applications in rural and remote areas of East New Britain as possible.

# Program 2: Network, E-Library and Internet Broadband connections to schools and Provincial Government headquarters

- To establish Internet connections to seven selected schools in rural areas.
- Manage ICT equipped e-library, computer lab and classes
- Train teachers on ICT for enhancing teachers' proficiency and run ICT friendly classes
- Enhance the quality of education, increase the student enrollment rate and uplift the educational standard of the schools.
- To establish network and internet connections to four districts and provincial headquarters

#### To achieve these outcomes,

- An ICT friendly resourceful e- libraries will have been set up in the seven designated Secondary High Schools.
- ICT equipped classrooms will have been managed so that teachers and students will have access to digital resources in order to broaden their knowledge and strengthen their teaching learning skills.
- A well facilitated computer lab will have been established to enable students and teachers conduct ICT supported classes so that they will be more encouraged to learn faster and better.
- Schools' educational achievements will have been enhanced and student enrollment rate and sustain rate will have been increased.
- A well designed Network and Internet connections will have been established at the four districts and provincial headquarters.

### **Program 3: Expansion of Radio and Television Network Coverage**

• To extend the coverage of radio and television broadcasting to the rural population and communities in East New Britain through targeted use of UAS Fund resources to close gaps and assist low income consumers where the broadcasting market may not reach. This activity would focus on support for infrastructure expansion, primarily through enhancement or installation of broadcast antennae on existing or new towers, in close coordination with the rollout of mobile telecommunications infrastructure under Program 1.

#### The Outcomes:

 To support expansion of the Radio and Television broadcasting coverage through targeted use of UAS Fund resources to close gaps and assist low income consumers where radio and television broadcasting market may not reach

### 2.0 Benefits of Proposed Project

Proposals must include the beneficiaries of the project such as number of women, men youth, and organizations and how will they benefit whether it be social, economic, environmental benefits, employment, business opportunities.

- 1. The three programs will provide an expansion of affordable telecommunication services particularly for low income users in rural and remote areas of East New Britain where there is inadequate accessibility of communication network;
- 2. The three Programs will improve the accessibility and quality of telecommunication services in East New Britain, particularly in remote and rural areas of the four districts (Gazelle, Kokopo, Pomio, Rabaul):
- 3. The increased affordability and improved accessibility will enable inclusive economic growth be facilitating access to markets and information and developing other business relying on telecommunication services
- 4. Improved network will enable better access to information, including for public service delivery, education, health and security.
- 5. Manage ICT equipped e-libraries, computer labs and classes
- 6. Train teachers on ICT for enhancing teachers' proficiency and run ICT friendly classes
- 7. Enhance the quality of education, increase the student enrollment rate and uplift the educational achievement of the school.

### 3.0 Technical Aspects

If the proposals include setting up of networks, technical specifications and schematic of the network must be provided. Any technical issues should also be highlighted.

# Program 2: Network, E-Library and Internet Broadband connections to schools and Provincial Government headquarters

There are basically two components under this program, one is the computer labs establishment, e-libraries and internet connections to seven selected high schools. The second is the network establishment and internet connections to the four districts headquarters and the provincial headquarter.

### Component 1. Proposed Network Design Requirements for 7 x high schools

There are seven proposed High Schools as indicated in the table above. The computer labs design, hardware and software requirements will be standardized throughout the seven High schools.

The labs will each have 24 iMac computers, video cameras, digital cameras, scanners, and laser color printers, e-library software with internet connections. There will be a wireless access point for laptop users or desktops to access if necessary. A 24-port switch will be put into place in addition to the wiring that is already in the room to allow access to the computers and the printers

In order to put the network in place, a star topology will be used. With this design, the computers are all connected to either the wiring already in place or the 24-port switch and are then connected

to the main distribution facility. This topology allows for one computer to go down without bringing the entire room down.

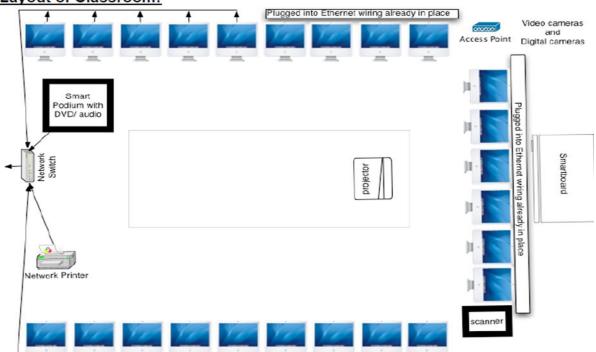
The labs will house multimedia components that will enhance the user's capabilities for learning and manipulation. The following are the software and hardware requirements and diagrams of the labs:

### Hardware and Software Requirements for 7 x Secondary High Schools

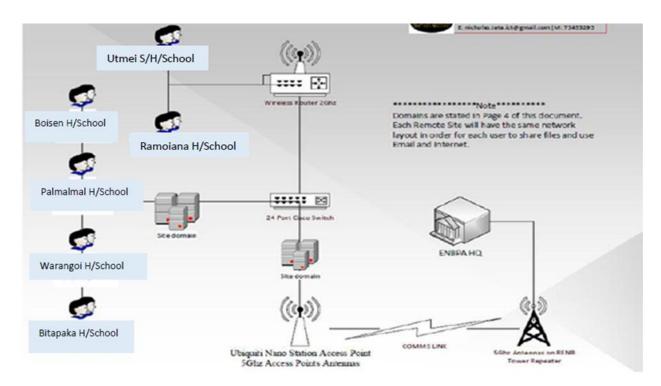
Description	Qty
24 Port Cisco Managed Switch	7
24 Port Patch Panel	7
Wireless Router	7
WEB/MAIL Blade Server	7
File Blade Server	7
Ubiquiti Nano Station Access Point 5Ghz	7
Access Points Antennas	
Ubiquiti Nano Omni Station 2Ghz Access	7
Points Antennas	
42RU Blade Server Cabinet	7
CAT 6 Outdoor Cable 302m	70
CAT 6 Indoor Cable 302m	100
iMac Computers(24 each)	168
Laser color printer	7
Video cameras (2 each)	14
Digital cameras(2 each)	14
Scanners(1 each)	7

### **Network Standardized Design Diagram**

#### Layout of Classroom:



### **Network Linking Schools to Provincial Headquarter**



# Component 2. Proposed Network Design for Provincial Headquarter and 4 x Districts Headquarters

To maximize efficiency and allowance for future IT developments, the Provincial Headquarter and the four Districts Headquarters Offices will be networked with CAT6 (Category 6) cabling. This will allow for both data and future voice traffic (VoIP) on the same network (media) with a speed of up to 1 to 10GBps depending on the type of network switch used and the type of network cards on each workstation.

#### **Remote Offices**

Provincial offices attached with the administration and the four districts headquarters offices will have its own network infrastructure using the same standards implemented at the HQ; however, its network services (file/print services, network faxing, antivirus, etc.) will be centralized and deployed from the HQ via the wireless network for the Provincial Offices attached, except for the four districts will have their own network services.

### **Network Services Offered**

The Proposed computer network will offer services listed below. Some of these services will be limited to HQ only.

- 1. Cloud Based File sharing This will be available to all users which they have an advantage of sharing files locally and when out of Kokopo.
- 2. Local Print Sharing Users will be able to print/fax and scan locally and through networked capable printers.
- Anti-Virus Protection The Anti-virus system which will be installed will have the ability to
  protect and secure data within the server and hourly updates will be deployed through the
  host to certain networked workstations through the network.

- 4. Centralized Storage and Backup In any organization, backups are vital in which backups must be done through a software which will be installed on the server.
- 5. Cloud Internet and Email Internet and email connectivity will allow for access through http access or http web login.
- 6. Domain Hosting Provincial domains will be hosted locally and will involve the use of Web hosting and Email connectivity.
- 7. Domain names to be registered under the Provincial Administration office are as follows:

Provincial Offices (Kokopo)	(DNS) Domain Name Attached
ENBPA (Head Quarters)	@enbpa.gov.pg including HR Division
Works Department	@enbpaworks.gov.pg
Community & Development Dept	@enbpacomdev.gov.pg
Disaster Department	@enbpadisaster.gov.pg
HIV-AIDS Department	@enbpahivaids.gov.pg
Commerce & Industry Dept	@enbpacomindus.gov.pg
Department of Education	@enbpaedu.gov.pg
Health Department	@enbpahealth.gov.pg

### **Hardware and Software Requirements**

The Hardware requirement list was compiled after visiting this site. It is based on our recommendations and a wish list for the sites.

### **HEAD QUARTERS & PROVINCIAL OFFICE SITE REQUIREMENTS**

### **B) PROVINCIAL ADMINISTRATION OFFICE**

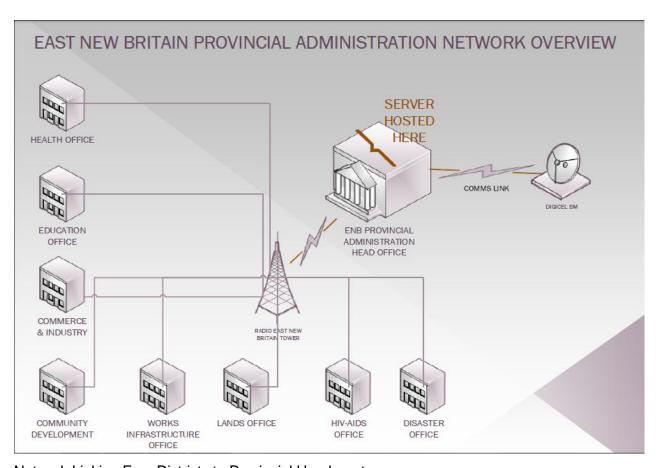
Description	Qty
24 Port Cisco Managed Switch	2
24 Port Patch Panel	2
Wireless Router	4
WEB/MAIL Blade Server	1
File Blade Server	1
Ubiquiti Nano Station Access Point 5Ghz Access Points Antennas	4
Ubiquiti Nano Omni Station 2Ghz Access Points Antennas	4
42RU Blade Server Cabinet	1
CAT 6 Outdoor Cable 302m	6
CAT 6 Indoor Cable 302m	10

# C) Provincial Offices attached (Health, Education, Commerce & Industry, Community Development, Works Infrastructure, Lands, HIV & AIDS and Disaster)

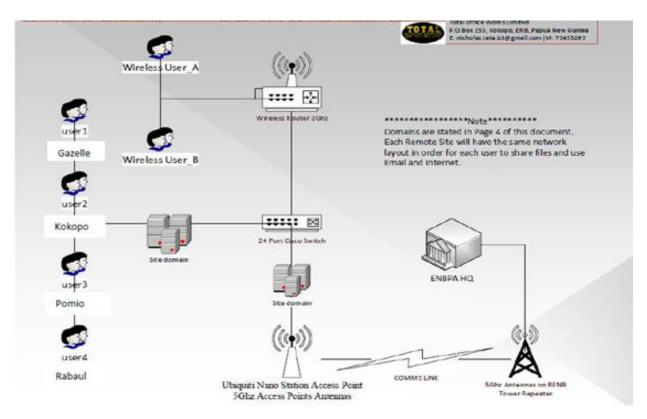
Description	Qty
24 Port Cisco Managed Switch	8
24 Port Patch Panel	8
Wireless Router	8
Ubiquiti Nano Station Access Point 5Ghz Access Points Antennas	14
Ubiquiti Nano Omni Station 2Ghz Access Points Antennas	14
6RU Switch Cabinet	8
2KVA UPS	8

### D) Districts Headquarters (4 x Districts)

Description	Qty
24 Port Cisco Managed Switch	4
24 Port Patch Panel	4
Wireless Router	4
WEB/MAIL Blade Server	4
File Blade Server	4
Ubiquiti Nano Station Access Point 5Ghz Access Points Antennas	4
Ubiquiti Nano Omni Station 2Ghz Access Points Antennas	4
42RU Blade Server Cabinet	4
CAT 6 Outdoor Cable 302m	120
CAT 6 Indoor Cable 302m	168



Network Linking Four Districts to Provincial Headquarter



### **4.0** Cost

All proposals must include a project costing and high-level breakdown of the costs.

### **Costing Breakdown**

Program 2: Network, E-Library and Internet Broadband connections to schools and Provincial Government headquarters

Component 2. Network Design and installation for Provincial Headquarter and 4 x Districts Headquarters			
Location	Item Description	Total	
a. Provincial Head	quarter Network		
	Feasibility Study (inspection of site)	10,000.00	
	Hardware (Network equipment)	400,000.00	
	Software	35,000.00	
	Mobilization fee (Shifting of equipment to sites)	5,000.00	
	Labor cabling & equipment installation	50,000.00	
	Total	500,000.00	
b. Districts Headqu	uarter Network		
Gazelle Headquart	er		
	Feasibility Study (inspection of site)	5,000.00	
	Hardware (Network equipment)	230,000.00	
	Software	28,000.00	

	Mobilization fee (Shifting of equipment to sites)	7,000.00
	Labor cabling & equipment installation	30,000.00
	Total	300,000.00
Kokopo Headquar	ter	
	Feasibility Study (inspection of site)	5,000.00
	Hardware (Network equipment)	230,000.00
	Software	28,000.00
	Mobilization fee (Shifting of equipment to sites)	7,000.00
	Labor cabling & equipment installation	30,000.00
	Total	300,000.00
Pomio Headquarte	er	
	Feasibility Study (inspection of site)	15,000.00
	Hardware (Network equipment)	370,000.00
	Software	35,000.00
	Mobilization fee (Shifting of equipment to sites)	20,000.00
	Labor cabling & equipment installation	60,000.00
	Total	500,000.00
Rabaul Headquart		
	Feasibility Study (inspection of site)	5,000.00
	Hardware (Network equipment)	190,000.00
	Software	25,000.00
	Mobilization fee (Shifting of equipment to sites)	5,000.00
	Labor cabling & equipment installation	25,000.00
	Total	250,000.00

### **Overall Summary Costing of three Major Programs (Estimates)**

Location	Unit (K)	Quantity	Total (K)			
Program 1: Upgrade and Expansion of Mobile Broadband Network						
4 x districts (Gazelle, Kokopo,	1,000,000.00	4	4,000,000.00			
Pomio, Rabaul)						
Program 2: Network, E-Library		roadband con	nections to schools and			
Provincial Government headqu	arters					
Components 1. Schools Computer Labs, E-libraries and Internet connections						
Utmei Seconadry	200,000.00	1	200,000.00			
Palmalmal High School	300,000.00	1	300,000.00			
Warangoi High School	200,000.00	1	200,000.00			
Bitapaka High School	200,000.00	1	200,000.00			
Ramoiana High School	280,000.00	1	280,000.00			

Boisen High School	200,000.00	1	200,000.00
George Brown High School	200,000.00	1	200,000.00
George Brown Flight School	200,000.00	Sub Total	1,580,000.00
O			, ,
Components 2. Network insta		t connection for	Provincial Headquarter
and four Districts Headquarte		<u> </u>	
Provincial Headquarter	500,000.00	1	500,000.00
Gazelle District H/Quarter	300,000.00	1	300,000.00
Kokopo District H/Quarter	300,000.00	1	300,000.00
Pomio District H/Quarter	500,000.00	1	500,000.00
Rabaul District H/Quarter	250,000.00	1	250,000.00
		Sub Total	1,850,000.00
		Grand Total	3,230,000.00
Program 3: Expansion of Bro	adcasting Network	Coverage (Radio	and Television)
	J	<b>5</b> (	,
Installation of communication	n Infrastructures (T	owers) and Ante	nnas
Pomio	2,000,000.00	4	8,000,000.00
Gazelle	1,000,000.00	4	4,000,000.00
Kokopo	800,000.00	4	3,200,000.00
Rabaul	600,000.00	4	2,400,000.00
		Total	17,600,000.00

The Provincial Government has come up with the best solution that is cost effective and will enable the networks and server infrastructures of the four districts' headquarters, provincial headquarter and schools to function seamlessly.

The cost of most item listed are best estimates and rounded up. Once the proposal is approved for progression to the next stage, then sites' visits will be required, to come up with the exact quantities and distance measurements to do proper costing. You should note that the cost varies for each proposed sites depending on the geographical settings of each project sites which will affect the mobilization, feasibility study and Labor costing.

### 5.0 Sustainability

Proposals must identify suitable ways in which the project can be sustained financially beyond the life of the project and whether or not it can be scaled up nationally.

It is expected that with the provision and inclusion of these projects in the East New Britain Provincial Government budget, the three strategic programs will be able to achieve their objectives. The maintenance of the three programs will be enhanced by one sustainable account establishment specifically for the three programs' sustainability. In addition to these, the resurrect expenditure would be met from the revolving fund, after the termination of donor fund which will enhance the three programs continuation.

East New Britain Provincial Government will take up the responsibility for ensuring people in the current and future generation are able to benefits from the three programs by sustaining their outcomes, processes, resources and human capacity. The Provincial Government will also ensure that the improvements and the gains through the three programs are endured beyond the programs completion by providing a set of directions through the process as programs are designed where these services are their processes to beneficiary communities.

Sustainability of the process depends on the Provincial Government to continue providing those services after the assistance and subsidies of the programs are withdrawn. This only depends on the viability of existing structures and people's capacity and continued function when the initial external support exits. The Provincial Government will continue to assess the capacity of the programs so that it maintain and sustain the structure that enables processes of generating programs benefits.

The Provincial Government will make sure that Project managers or Project Officers at the District level play a crucial role to influence programs' successes and their sustainability. The Provincial Government believes that the progress in the three strategic programs will create an increasing need for developing competences (knowledge, skills, and attitudes). Contextual, behavioral and technical competencies will primarily essential in the programs' success and sustainability.

### 6.0 Cross-cutting Issues

If necessary, proposals should also include issues relating to addressing environmental aspects or issues on addressing the needs of minority groups such as gender equity, people with disabilities.

There is a range of cross cutting challenges in East New Britain Province that a project of such a magnitude should be able to at least address in the course of its implementation.

Improving communication in the province through three programs will contribute to addressing issues of the vulnerable, marginalized and minority groups such as people living with disability, HIV/AIDS, the victims of family and sexual violence, youths, women and girls empowerment and the broader issue of gender equity.

In addressing these cross cutting challenges, the accessibility of ICT and Internet Connectivity in the province will enable and improve the core areas of Accessibility to Educational Information and Local Information Dissemination; Equal Participation in the use of Communication Technology, Communication Safety Net Medium of Reporting Violence and other Law & Order Issue and Enhance Education through the Access to Virtual Learning Programs for the School Children for sustainable development.

### 7.0 Monitoring and Evaluation

Proposals should clearly show how the project can be monitored and evaluated over a 12 - month period. The proposals should clearly provide measurable indicators to assess the impact of the project.

#### **Monitoring and Evaluation Framework**

The project team members consisting of Districts Project Officers are responsible for monitoring the projects implementation, made necessary recommendations and submit reports to the Project Technical Team Leader who will then prepare submission reports to the PPWG on the projects progress. Observations and field visits will also form part of the participatory monitoring methodology.

In addition to the above, the Project Technical Team will be responsible to conduct in-depth project evaluation and make necessary recommendations and decisions for better project implementation.

The Project Technical Team is believed to play a very important role in the implementation of the three programs and will make sure that the programs are implemented successfully. Monitoring of the activities will be done on a regular basis and the process should provide regular feedback on the progress of the programs activities, use of resources and the results achieved.

Evaluation can be done through Process and Outcome evaluations to assess whether intervention/models are implemented as planned, whether the target population are reached, and what are the major challenges and successful strategies used. Outcome evaluation will determine whether and to what extent the expected changes occurred and whether these changes can be attributed to the programme activities. To evaluate the impact of UAS program and regulation policy, the Provincial Government has come up with programs' outcome indicators such as

- Penetration of mobile services in East New Britain (number of subscribers per 100 inhabitants)
- Direct Project beneficiaries (number)
- Indirect project beneficiaries (number), of which female (percentage)
- Increase in Internet usage in targeted rural districts' centers.
- Increased percentage of population coverage in East New Britain
- Increased percentage of the four district centers with public Internet access points
- An ICT supported e- library will be available in the schools' premises
- An ICT supported computer Labs will be available in the schools' premises
- An ICT supported internet connections will be available in the schools' premises
- Teachers and students will have access to digital content and ICT tools
- Teachers will have been teaching using ICT devices
- Overall educational quality of the school will be enhanced and there will be more number of students in the schools
- Increased percentage of population accessing radio and television coverage
- Erected communication towers in rural and remote areas

Constructors/Agencies are required to report on progress including financial aspects. In their report, Constructors/Agencies will identify any factors that may be delaying progress, increasing costs or compromising the quality of the outputs. Constructors/Agencies will also outline how they are addressing those factors and whether assistance from other agencies may be required. However early identification of constraining factors will help circumvent the failure to deliver.

The Provincial Planning Working Group (PPWG) will be given the additional function to perform the monitoring and evaluation of the three programs. At the strategic level, PPWG will be responsible to ensure that programs outputs contribute to the outcomes identified. This will be done on a monthly basis following the normal PPWG sitting schedule, where the Chairman (who is the Provincial Administrator) will be required to deliberate on implementation of the plan and related issues before advising the Provincial Government and UAS board.