



NATIONAL INFORMATION & COMMUNICATIONS  
TECHNOLOGY AUTHORITY

Universal Access and Service Projects for 2020

Date of Submission: May 2019

Project Proposal Form – FORM 002

(All project proposals submitted MUST follow this format and sequence. Projects proposals which do not follow this format and sequence may not be considered. All questions must be answered)

**Applicant Information**

<b>Name</b>	MR.JUKI WALDI		
<b>Organization</b> HIGHCOMS ENGINEERING LIMITED	<b>Type of Organization:</b> <input type="checkbox"/> Community/Village/Education Institution <input type="checkbox"/> Government <input checked="" type="checkbox"/> Private <input type="checkbox"/> NGO <input type="checkbox"/> Other		
<b>Position</b>	MANAGER		
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**Project Information**

<b>Project Title</b>	ESTABLISHMENT OF COMPUTER LABOARTORY WITH BROADBAND CONNECTION & COMMUNITY INFORMATION CENTER AT OGULBENG PRIMARY SCHOOL
<b>Project Location:</b>	OGULBENG PRIMARY SCHOOL
<b>Province</b>	WESTERN HIGHLANDS PROVINCE
<b>District</b>	MT.HAGEN CENTRAL
<b>LLG</b>	HAGEN RURAL LLG
<b>Ward</b>	JIKA OPROMB,KOMB,DTELEMP,KOMAPI AND YAMAKA KENTEMB

## Project summary

While we are now in the computer age, a larger fraction of our population do not possess the necessary knowledge and skills to use the ITC services that are available to gain maximum benefit. This problem can be reduced by training the uneducated, thus this proposal is to establish a computer laboratory for the Ogulbeng Primary School with Broadband Service.

Schools in Mt.Hagen District introduce computer lessons to grade 9 students at Secondary level. The aim of this project is to allow grades 7 & 8 students at Primary schools to commence using computers to do their school work and to enhance their knowledge through information research using the Internet service. A total of 120 computer literate students will leave grade 8 at the end of each year to continue into secondary school. The school anticipates to increase the number of computers and introduce IT course to the lower grades in the future which will see more students benefiting.

This installation will consist of 64 thin client computers connected directly to the server. It will see huge cost reduction on PCs, accessories and software licensing, therefore making it cost effective to operate and maintain. Of the 64 units, 60 will be for students learning with a student ratio of one student to a computer while the remaining four will be for staff to prepare lessons, communicate, student database, research, etc. Additional equipment will be a network printer for all to print documents and projector to allow teachers do overhead lesson presentation. All equipment will be provided with backup power (UPSs) to allow users to save work during power outages.

The school has also decided to include a Community Information Center (CIC) with this proposal. This will consist of two desktop computers with broadband, two PCs and network printer/copier. The school will manage the CIC and collect fees from users which will be used to meet ongoing operational costs.

The project will be supported by the school by allocating a building built for this purpose and K10,000.00 cash. It was the Mt.Hagen City Authority, formerly Hagen District Development Authority's plan to establishment computer laboratories with internet connection for all primary schools within the district. However it has been shelved due to financial constraints. The Authority is pleased to see NICTA involvement to help fulfill its plans and are committing counterpart funding.

Project Cost	Requested Amount	Own funding
K291,203.00	K281,203.00	K10,000.00

## Duration of the Project

From August 2019 To November 2019

It is anticipated, this project will take at least three months to complete from building renovations, electrical outlet installation, work bench construct and install to equipment order, installation, testing and commissioning.

## Contact Point Information (If contact point is different from the applicant, please fill in as follows)

Name	MR.STEVEN RONOMU		
Organization	MT.HAGEN CITY AUTHORITY		
Address	P.O.BOX 878,MT.HAGEN.WHP		
Position	EXECUTIVE MANAGER EDUCATION		
Telephone	5421177	Fax	5421212
Email	<a href="mailto:stevenronomu77@gmail.com">stevenronomu77@gmail.com</a>		

Date

27 May 2019

Signature

A handwritten signature in blue ink, consisting of a long horizontal stroke followed by a series of loops and a final flourish.



## Project Details

Please describe outline of the pilot project	
Objectives	Provide a fully furnished and equipped computer laboratory with Broadband connection for the Ogulbeng Primary School.
Purpose of Project	To enable grades 7 & 8 students from Ogulbeng Primary School to be computer literate before continuing into Secondary Schools and enable teaching staff to be computer literate and use ITC skills and knowledge to teach and communicate with headquarters regarding administrative matters.
Outline of pilot project	<p>We propose to have a fully furnished and equipped computer laboratory with broadband connection for student learning, lesson preparation and administration duties for teaching staff.</p> <p>The maximum student per class enrollment is 60 at this school. We intend to have a total of 64 thin client computers of which 61 will be allocated for student learning including the teacher while three will be for teaching staff to prepare lessons and administration duties. This will allow for a ratio of one student to a computer.</p> <p>The setup will consist of 64 thin client computers connecting directly via network switches to a rack mounted server. Please refer to attachment "A" for more technical specifications for the server and thin client. Additional items will be a network printer/copier for printing and photocopying work and a projector for overhead lesson presentation.</p> <p>The entire network equipment will be supported with backup power (UPS) during power outages. This will allow users to save their last work. Power consumption for thin clients is very minimal (5watts), therefore we have allowed one desk mount UPS to power two thin clients for 10 minutes. The Server and other rack mount equipment will draw their backup power from a rack mount 1150VA UPS.</p> <p>The computer laboratory will have access to broadband service for student and staff research and administration functions. The preferred ISP in this project will be Telikom which offers affordable broadband service rate and a very cheap voice service via its Wimax wireless service. The Wimax service comes with a single voice service (one telephone line) to complement the internet/email for administration purpose.</p> <p>To help sustain the project we are incorporating a Community Information Center (CIC) to be operated by the school. The CIC will consist of one computer with broadband connection and a printer/copier. This setup will provide internet/email services, typing/printing and photocopying documents. Fees collected from users will help meet operational costs of the computer laboratory.</p>
Appropriateness of the Project	We are in the computer age. Computers are used just about everywhere and every day. While a lot of countries around the globe have leaped forward in making those services available and enabling all citizen to use them fully to their advantage, this trend is lacking in PNG. One reason is the lack of knowledge on how to use it. This project will address this problem by passing out 120 students (grade 8) annually with the necessary basic IT knowledge and skills.
Number of Persons benefiting from the project	<p>Ogulbeng Primary School enrolls a total of 240 in grades 7 &amp; 8 annually. This project after implementation will equip students with basic IT knowledge to continue to secondary level. For those dropping out of grade 8, the knowledge acquired will help improve and sustain their living.</p> <p>Teachers sometimes miss student teaching hours to attend to administrative queries in town. This proposal will allow teachers to have access to internet/email services to communicate with headquarters. Teachers will also use it prepare school work and research. Twenty one teachers will benefit from this project.</p> <p>The Community Information Center will benefit over 8,000 population of the surrounding and neighboring villages to use this facility to surf the internet, typing, sending and receiving emails and printing documents.</p>



Annex 1

Annex 1

Project Benefits	This project will be incorporated with a Community Information Center (CIC) .It will not only benefit students, but the public from the local community and surrounding villages through the use of the CIC, making available IT services in the community level. Teachers from Ogulbeng Primary when transferred out to other schools will impart these skills and knowledge to students in other schools. Overall a good number of Papua New Guineans will benefit from this project annually.			
Partner organizations/institutions (if any)	Establishing computer laboratories with broadband connection for primary schools within the Mt.Hagen City Authority (formerly Hagen District Development Authority) has been planned since 2012. However it was unable to execute it due to insufficient funds. The Mt.Hagen City Authority is now supporting this project to help realize its plan. Please find attached is a letter (attachment "B") confirming their commitment to work in partnership to successfully implement this project in the form of counterpart funding.			
Milestone(significant phases of the project)	The school has allocated a building for this project. The first phase of this project will be the renovation of the building (internal paint work) and installation of security grill doors and windows. Next is delivery of chairs and construction and installation of work benches/stations and should. The third phase is the installation of electrical and network outlets. Next will be installation, test and commissioning of the IT network equipment. Finally basic computers skills training will be conducted for one teaching staff who will then return and conduct internal training for others in the school.			
Expected output	This project will produce computer literate students and teachers. Annually the school will produce 120 computer literate students leaving grade 8. It will also enable teaching staff of the school to be proficient in the use of computers using different student learning programs, email and internet services for research and administrative duties. Teachers will be expected to spend more time in classrooms.			
Project Risks	What are the risks to the Project? How will they be overcome or managed? (See management table)			
	Risk -List all possible risks you can think of	Consequence 4 – Extreme 3 – High 2 – Medium 1 -Low	Probability 4 – Almost certain 3 – Likely 2 – Positive 1 - Unlikely	Risk Management/Mitigation plan
	Lack of political or administrative support	1	1	This proposal is supported by the political arm of the Mt.Hagen District Development Authority or now known as Mt.Hagen City Authority. The school board of management will write to or communicate with the Western Highlands Provincial Administration and Mt.Hagen City Authority to seek their support especially finance to help meets its running costs.
	Land not secured	1	1	Land is secured as it is an established school and does not have any outstanding land issues. However if the issue does arise the school will deal with it through the school board which as representatives from the local community, villages and council wards (tribes).
	Security	1	1	This school has been initially established by the neighboring community. Security has never been an issue. There is a fulltime security officer for the property however if such issues does arise the community will address it. The building will be secured with grill doors and window and sufficient external lighting

# Annex 1

Annex 1

	Project Equipment Personalized	1	1	The school will have a small committee who will be tasked to handle the safe keeping and long term maintenance and sustainability of the facility. This arrangement will help reduce the chances of this problem.
	Lack of community support	1	1	The school board has representatives from villages and tribes who enroll students in this school. These members will communicate with individual or groups of parents to gain their support for this this project. This can be financial contribution for further improvements and expansion of the projects or any other related issues.
	Maintenance & recurrent costs	1	1	Running costs of this facility come from annual school and project fees collected from grades 7 & 8 students and other donations and grants from the government.  We are also proposing a Community Information Center to be operated by the school. Income generated from the CIC will pay for running costs of the computer laboratory.
Reporting Procedure	The Mt.Hagen City Authority as the manager of all lower learning institutions in the district will oversee the project implementation. Its Education Executive Manager, Mr. Steven Ronumo or his appointee will issue biweekly project progress reports to NICTA project manager. The contractor is also expected to issue biweekly project progress reports to Mr. Ronomu or his appointee.			
Linkage to existing Government development policies	Internet usage by the population is growing but at a low pace. The reason being most are computer illiterate. The project will address this problem through education. With a computer literate population will trigger increase knowledge, economy growth, increase workers (teachers) performance and creates more source of information.			
Financial Support	The school will allocate a building built for this purpose and contribute K10,000.00 cash for this project while the Mt. Hagen City Authority as committed counterpart funding for this project. Refer to letter from the school and authority labeled as attachment "C", pledging it's support for this project.			
Sustainability of Project	Annual running costs for this facility will be for service fees, purchase of consumable, power bills, broadband service, etc. The school intends to fund these costs from school and project fees and income form the Community Information Center.			
The intended project implementation period is three months. We have allowed two months of actual work, however an additional month is included to accommodate any unforeseen circumstances causing delays.				
Week # 1				
(a) Place orders for all hardware (computer, server, cables, etc)				
(b) Place order for Telikom 4G Wimax Broadband connection				
(c) Pre installation site visit				
Weeks # 2 - 3				
(a) Building renovation – construct & install grill door and windows				
(b) Building renovation - internal wall painting				



**Weeks # 4 - 6**

**Annex 1**

- (a) Construct and install furniture & work benches

**Weeks # 7 - 8**

- (a) Install network cable and accessories
- (b) Install electrical GPOs & lights
- (c) Install Telikom 4G Wimax Broadband access equipment

**Weeks # 9 - 12**

- (a) Installation of network equipment, test and commission
- (b) Conduct IT Training for one IT teacher

**OGULBENG PRIMARY SCHOOL COMPUTER LAB WITH BROADBAND INTERNET CONNECTION**

**(a) NETWORK CABLE**

DESCRIPTION	UNIT COST	QTY	TOTAL COSTS
18RU ,600x600x635mm data rack,wall mount	K 2,700.00	1	K 2,700.00
1150VA UPS,Eaton 1RU 19" rack mount,c/w powerboard	K 4,026.00	1	K 4,026.00
24 port patch panel,cat6 c/w cable management units	K 488.00	3	K 1,464.00
Indoor cat 6,solid core networkcable,305m/roll,blue	K 819.50	3	K 2,458.50
Cat6 ,RJ45 8pin socket,blue c/w ,mount block,patch lead	K 144.00	64	K 9,216.00
duct, 25mm x 25mm (white),4m	K 55.15	30	K 1,654.50
40mm conduit, rigid, grey HD, 4m	K 87.00	21	K 1,827.00
TP Link,48 port network switch	K 2,200.00	2	K 4,400.00
Telikom Wimax Broadband Connection	K 770.00	1	K 770.00
Labour Charge	K 3,500.00	1	K 3,500.00
Total			K 32,016.00
10% GST			K 3,201.60
<b>SUB TOTAL - NETWORK CABLE</b>			<b>K 35,217.60</b>

**(b) SERVER & THIN CLIENT**

DESCRIPTION	UNIT COST	QTY	TOTAL COSTS
850VA UPS,Eaton floor mount	K 360.00	35	K 12,600.00
network printer, Toshiba e studio 2010	K 18,545.00	1	K 18,545.00
overhead project c/w white board	K 4,099.00	1	K 4,099.00
Vi Zero client kit	K 472.00	64	K 30,208.00
45cm HP screen, c/w mouse + pad,key board	K 710.00	64	K 45,440.00
H60 server software	K 10,000.00	1	K 10,000.00
H60 server CPU:E5-2680v2*2 Memory :128 GB DDR3,SSD:240G*2	K 29,600.00	1	K 29,600.00
Labour Charge	K 5,600.00	1	K 5,600.00
Total			K 156,092.00
10% GST			K 15,609.20
<b>SUB TOTAL - SERVER &amp; THIN CLIENT</b>			<b>K 171,701.20</b>

**(c) BUILDING RENOVATION - ELECTRICAL**

DESCRIPTION	UNIT COST	QTY	TOTAL COSTS
10A,GPO single,c/wmounting block	K 35.00	66	K 2,310.00
200m x 2.5mm TPs cable, 100m/reel	K 550.00	2	K 1,100.00
100m x 1.5Tps cable,100m/reel	K 450.00	1	K 450.00
36 watt light c/w complete fitting and 2 gang switch	K 121.00	6	K 726.00
25mm x 25mm duct	K 58.00	30	K 1,740.00
electrical witch board c/w circuit breakers	K 1,800.00	1	K 1,800.00
Labour Charge	K 1,800.00	1	K 1,800.00
Total			K 9,926.00
10% GST			K 992.60
<b>SUB - TOTAL BUILDING RENOVATION - ELECTRICAL</b>			<b>K 10,918.60</b>

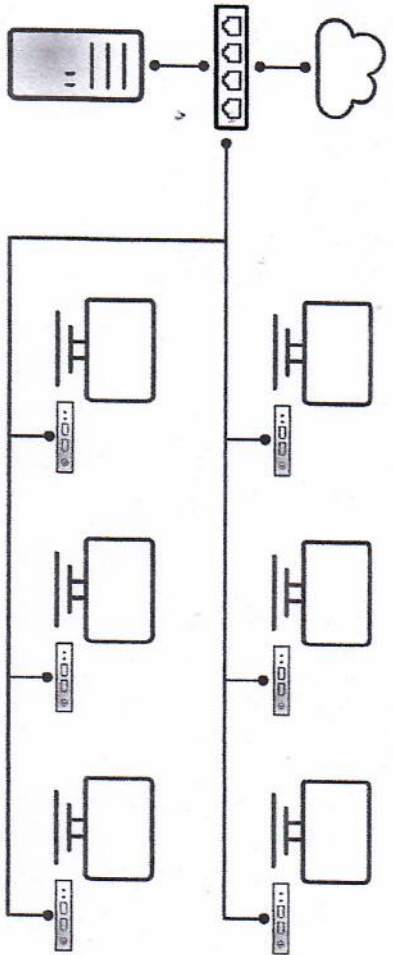


**(d) BUILDING RENOVATION - CARPENTRY & JOINERY**

DESCRIPTION	UNIT COST	QTY	TOTAL COST
Furniture - work benches - construct and install & chairs	K 17,600.00	1	K 17,600.00
Security grill doors & windows, construct & install	K 14,000.00	1	K 14,000.00
Internal wall work and painting,etc	K 13,600.00	1	K 13,600.00
Labour Charge	K 7,500.00	1	K 7,500.00
Total			K 52,700.00
10% GST			K 5,270.00
SUB TOTAL - BUILDING RENOVATIONS - CARPENTRY & JOINERY			K 57,970.00

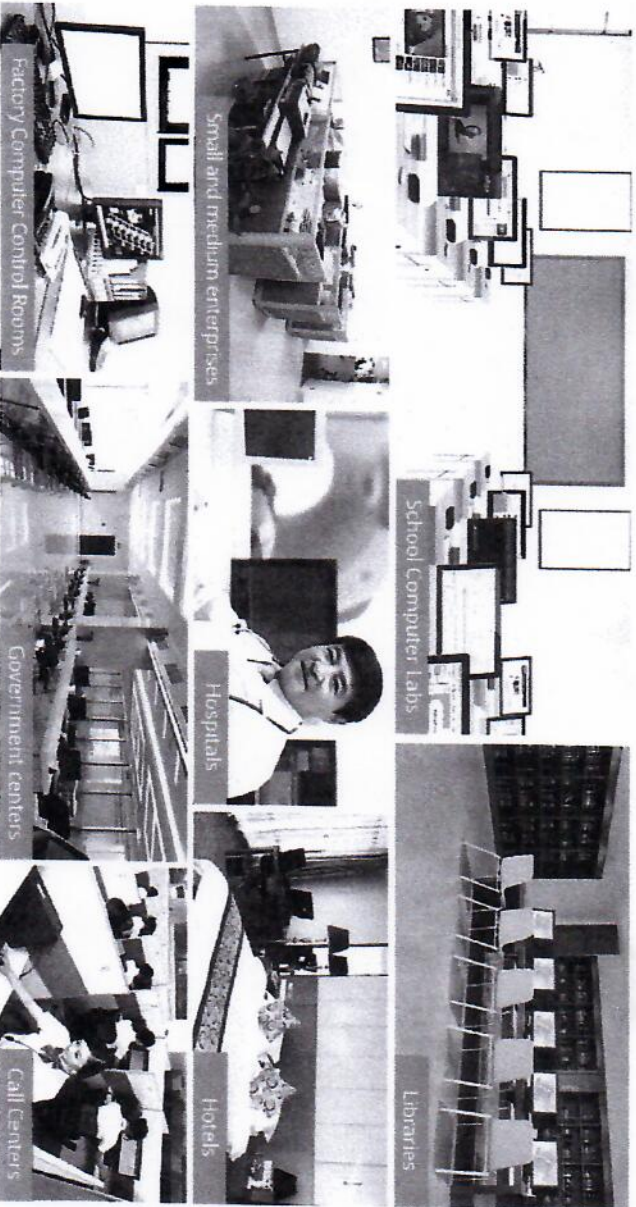
**(e) COMMUNITY INFORMATION CENTER**

DESCRIPTION	UNIT COST	QTY	TOTAL COST
Workbench & chair	K 2,870.00	1	K 2,870.00
Lenova M720-17,8GB RAM,1TB HD,windows 10P64,DVDRW	K 5,567.00	1	K 5,567.00
Lenova T2224D 21.5' LCD Monitor	K 850.00	1	K 850.00
HP LJ Pro MFP Printer,Colour,wireless/networkwired	K 2,479.00	1	K 2,479.00
Floor Mount 850VA UPS,Eaton	K 360.00	1	K 360.00
Telikom Wimax Broadband connection	K 770.00	1	K 770.00
Labour -installation	K 1,100.00	1	K 1,100.00
Total			K 13,996.00
10% GST			1,399.60
SUB TOTAL COMMUNITY INFORMATION CENTER			15,395.60
TOTAL PROJECT AMOUNT FOR OGULBENG PRIMARY SCHOOL			K 291,203.00



vCloudPoint Shared Computing solution allows multiple users to share the resources of a single host while providing the users with the same PC experience.

## Applications



vcloudpoint

# 1 Computer For 99 Users



Save 70%  
Capital Cost



Save 95%  
Power Consumption



Save 95%  
Maintenance Cost



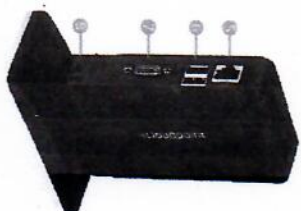
Save 90%  
Future Up-gradation



S100



- ① Power/ Reset Button
- ② USB2.0
- ③ 3.5mm Microphone
- ④ 3.5mm Speaker



- ⑤ 10/100 Mbps Ethernet
- ⑥ USB2.0
- ⑦ VGA Display Port
- ⑧ 5V DC Power Input

V1



- ① VGA Display Port
- ② HDMI Display Port
- ③ 10/100/1000 Mbps Ethernet
- ④ 5V DC Power Input
- ⑤ USB2.0
- ⑥ 3.5mm Speaker
- ⑦ 3.5mm Microphone
- ⑧ USB2.0
- ⑨ Power/ Reset Button



## Why vCloudPoint?

**Simplicity:** one-click installation, no configurations, plug and play.

**Smoothness:** 30 FPS desktop refreshment, smooth & seamless.

**Experience:** rich multimedia support, indistinguishable PC experience.

**Resolution:** 32 bits true color depth and high resolution for native-quality display.

**Manageability:** provided software to manage any users & devices in detail.

**Technology:** innovative technologies including IP virtualization, private disk ...

**Efficiency:** resources-efficient to allow more users on a single host.

**Reliability:** reliable performance for running either 10 users or 100 users.

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MOUNT HAGEN CITY AUTHORITY



OFFICE OF EXECUTIVE MANAGER EDUCATION

27<sup>th</sup> May 2019

TO :  
Highcoms Engineering Ltd  
P O Box 648  
MT HAGEN  
WHP

SUBJECT: UNIVERSAL ACCESS SERVICE PROJECTS FOR 2020

Thank you very much for identifying a number of primary schools within the Mt Hagen City Authority to benefit from the above project funded by NICTA.  
We understand you are submitting proposal for Establishing Computer Laboratory with Broadband Internet Connection.  
This is one of the Authority's plans for all schools however it has not been implemented due to financial constraints. We will support this project with a counterpart funding of K1 million and support in any way possible to see this project be a success.

Yours Sincerely

STEVEN RONOMU (Mr)  
Executive Manager Education  
Mt Hagen City Authority

MT HAGEN CITY AUTHORITY  
PO BOX 878