



## Universal Access and Service Projects for 2020

Date of Submission: May 20, 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>	Jack Pokoe		
<b>Organization</b> Siusoft Technologies 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>	Director		
<b>Mailing Address</b>	Siusoft Technologies Limited PO Box 1659 Waigani, National Capital District		
<b>Telephone</b>	(72594471)	<b>Fax</b>	
<b>Email</b>	siusoft@yahoo.com		

#### Project Information

<b>Project Title</b>	Unified Communication
<b>Project Location</b>	
Province	Nation's Capital
District	National Capital District
LLG	Moresby Northwest
Ward	

## Project summary

Please describe this summary within about 20 lines here. As for the detail, please fill in the Annex 1

Unified Communication is a project by Siusoft Technologies Limited who use Siusoft products and services by Internet and non-Internet to deliver communication to people in un-served and underserved areas inside and outside of Port Moresby. Siusoft staff cooperate to set up and deliver Unified Communication to people in government, non-government and public. Engineers, developers, technical and administrative personnel of Siusoft work together to set up V2 (Voice and Video) Server wirelessly connective to endpoint devices by setting up cable internet, wireless, and non-internet transmission to people in un-served and underserved areas of Papua New Guinea. Siusoft Cloud makes connectivity through satellite to deliver Unified Communication to universities, colleges, technical and vocational schools, national high schools, primary and secondary schools, private and public setups, villages and communities.

Siusoft Technologies Limited begins at Telikom Rumana by working together with engineers of Telikom PNG Limited. Since engineers of Telikom PNG Limited have access to Telikom's routers and operating wireless equipment in Telikom's network, Siusoft engineers and technical personnel are to work together with them to extend the existing network infrastructure by installing VSat, transmission tower, managed Wi-Fi, and by applying protocol switching for Internet and non-Internet connectivity to transmit signals over transmission tower and satellite to distribute and deliver Unified Communication in Teleconference, Telepresence, Remote Teaching, Remote Training, Surveillance Communication, Electronic Health, and Smart Television.

Delivery of Unified Communication is directly to people in government institutions who should need Teleconference Meeting, Remote Training, Mobile Telepresence, and Surveillance Communication. Government departments like PNG Ports Corporation should need Teleconference Meeting, PNG Customs and Correctional Services should need Surveillance Communication, FODE College should need Remote Teaching, National Broadcasting Corporation should need Smart TV, and Port Moresby General Hospital should need Electronic Health. Public servants should need Mobile Telepresence to communicate with each other cheaply. Government schools should need Remote Teaching to learn. Delivery of each product and its services are especially for the government institutions which are un-served or underserved inside and outside of Port Moresby.

Unified Communication is also deliverable to non-government and public. Mobile Telepresence and Smart TV are directly for public. People in public are to buy Siusoft smartphone to use Mobile Telepresence and watch Smart TV. Private companies need Teleconference Meeting, Remote Training, Electronic Health, and Surveillance Communication. Delivery of each product and its services are directly to non-government and public which are un-served or underserved inside and outside Port Moresby.

### Project Cost

K2.5 million

### Requested Amount

K2 million

### Own funding

K500,000

### Duration of the Project

From December 2019 To December 2020

(The project is to be concluded within 12 months from the date of announcement of selection by the NICTA (UAS Secretariat)

### Contact Point Information

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

#### Name

Jack Pokoe

#### Organization

Siusoft Technologies Limited

#### Address

Telikom Rumana, Kumul Avenue, Waigani, National Capital District, Port Moresby

#### Position

Technical Engineer

#### Telephone

(72594471)

#### Fax

#### Email

siusoft@yahoo.com

Date

20 May 2019

Signature

A handwritten signature in black ink, appearing to be 'J. E.', written over a horizontal line.

## Project Details

## Please describe outline of the pilot project

## Objectives

Unified Communication embark to provide ICT Applications and Content, provide Digital Literacy, provide Smart Television, and develop wireless transmission enabling uses of ICT Applications and Content, Digital Literacy, and Smart TV over Internet and non-Internet for everyone in Papua New Guinea.

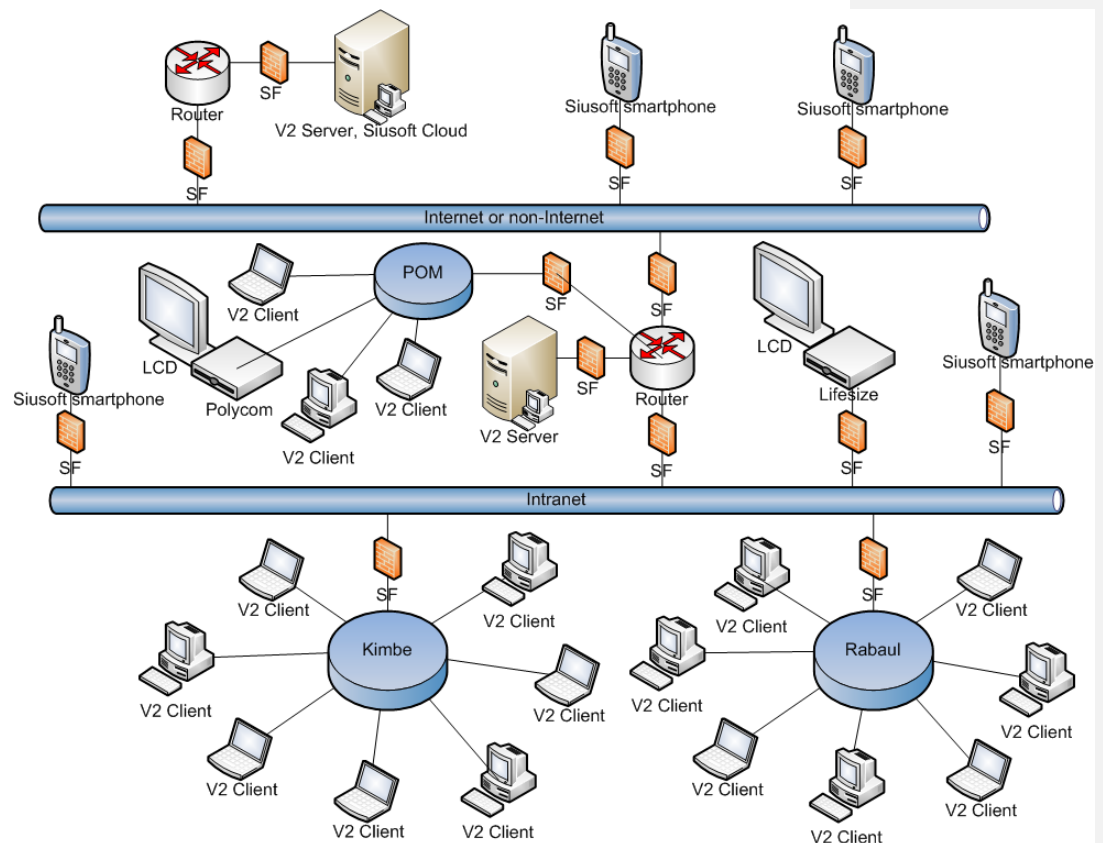
## Purpose of Project

Unified Communication is to deliver communication to everyone in PNG.

## Outline of pilot project

Project description including equipment, networks/systems/design and schematics needed for the Project.  
(You may attach another sheet if necessary.)

Unified Communication is set up over Internet, wireless and non-Internet using servers, routers, and endpoint devices. Unified Communication services are hosted from Siusoft Cloud in connectivity to endpoint devices, transmitted through cable internet, wireless internet, and satellite down to tower dish or VSat dish, relayed and transmitted in microwave to endpoint devices which receive communication for Teleconference, Telepresence, Remote Teaching, Remote Training, Surveillance Communication, Electronic Health, and Smart Television.



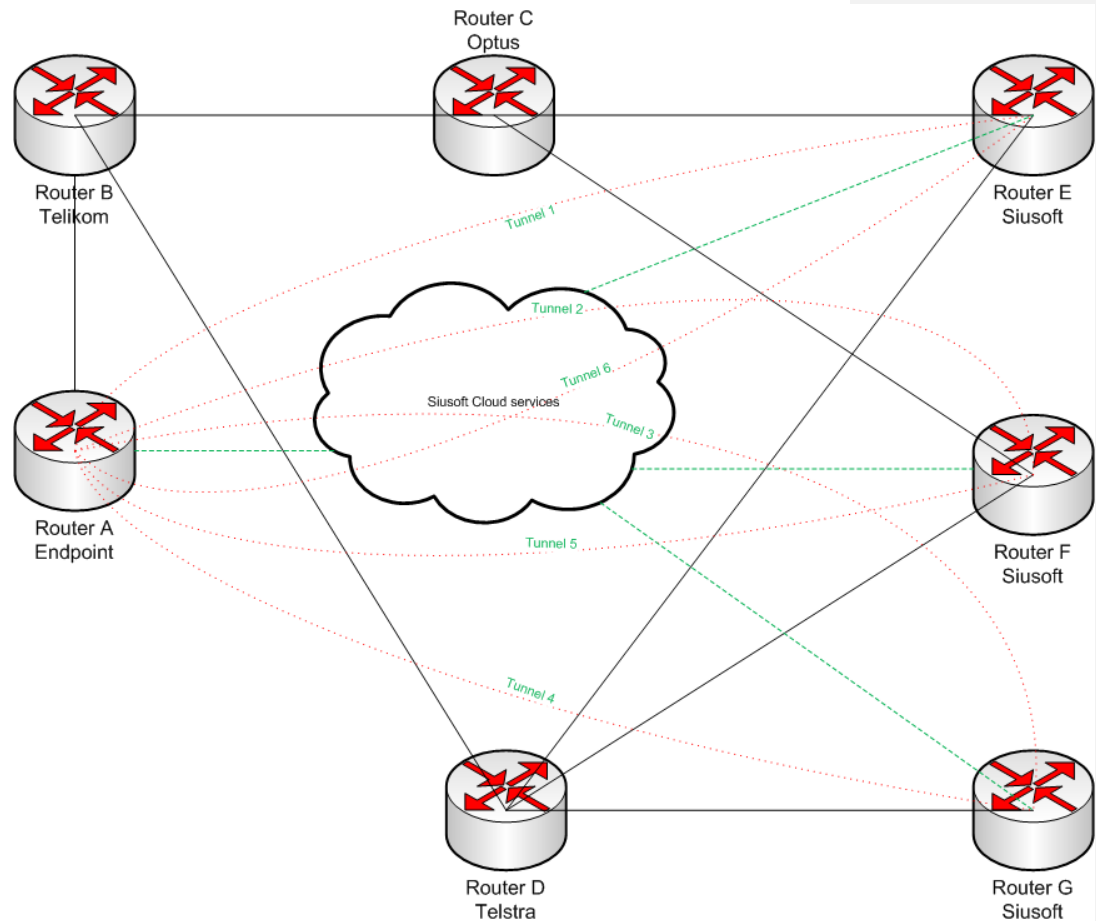
**Figure 1** Network technology and architecture of Unified Communication

Since Siusoft Cloud host each V2 Server and routers, endpoint devices connect directly with each V2 Server and/or connect to a V2 Server installed at endpoint center to supply and deliver Unified Communication. Internet or non-Internet, routers are programmed to each V2 Server to deliver Teleconference Meeting using computer client and smartphone, Mobile Telepresence using Siusoft smartphone, Remote Teaching using electronic whiteboard, Remote Training using electronic whiteboard, Surveillance Communication using computer client, LCD screen and

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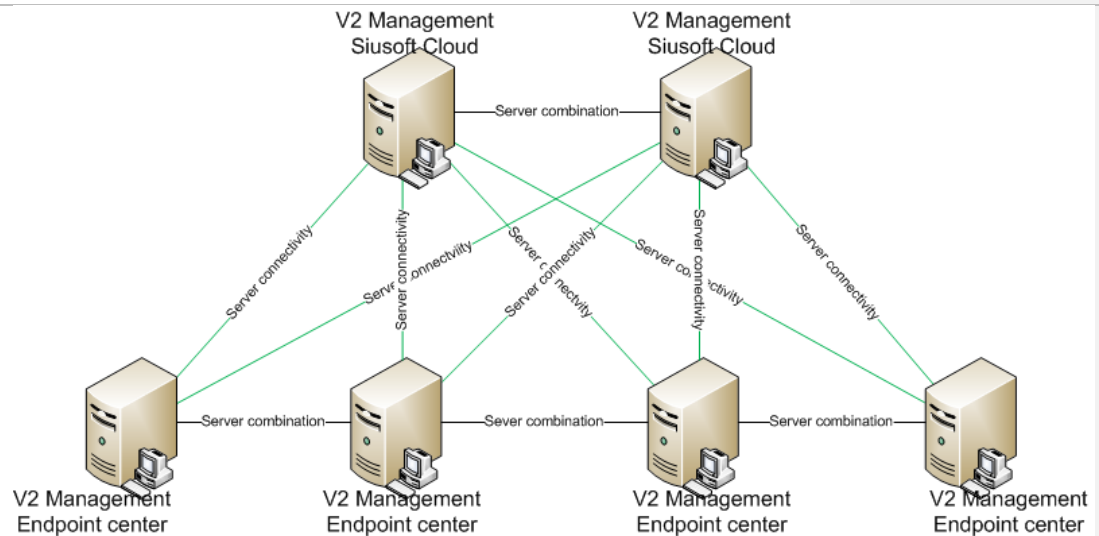
smartphone, Electronic Health using computer client and LCD screen, and Smart TV using smartphone.

Unified Communication services supply to endpoint center requires connectivity by routers and servers. Connectivity between endpoint router and Siusoft routers is required, through which connectivity is established for each V2 Server can be installed for Unified Communication at endpoint center in un-served and underserved areas in Port Moresby and Papua New Guinea.



**Figure 2** Router connectivity of Unified Communication

Source router is programmed connectivity to each V2 Server. For un-served and underserved areas, source router is to be housed away from endpoint center and programmed to routers in between, through which V2 Server supplies Unified Communication services to endpoint devices. Source router is programmed for shortest path to destination routers with tunnels in between the routers, through which Teleconference Meeting, Mobile Telepresence, Remote Teaching, Remote Training, Surveillance Communication, Electronic Health, and Smart TV are supplied and delivered to computer client, smartphone, or other endpoint devices like Polycom, Lifesize, and Tandberg.



**Figure 3** Server connectivity of Unified Communication

Inside Siusoft Cloud are V2 servers to supply and deliver Unified Communication to un-served and underserved areas in Port Moresby and Papua New Guinea. Each V2 Server inside Siusoft Cloud is combined with other V2 servers to supply and deliver Unified Communication services to endpoint center or directly to endpoint devices. Siusoft Cloud is based in China, Australia, Indonesia, Japan, France, and other countries from which to supply and/or deliver Unified Communication services in Teleconference, Telepresence, Remote Teaching, Remote Training, Surveillance Communication, Electronic Health, and Smart TV. Each V2 Server at endpoint center in Port Moresby and Papua New Guinea is supplementary with digital licenses to supply and deliver the same communication services to endpoint devices.

#### Figure 4 Surveillance Communication

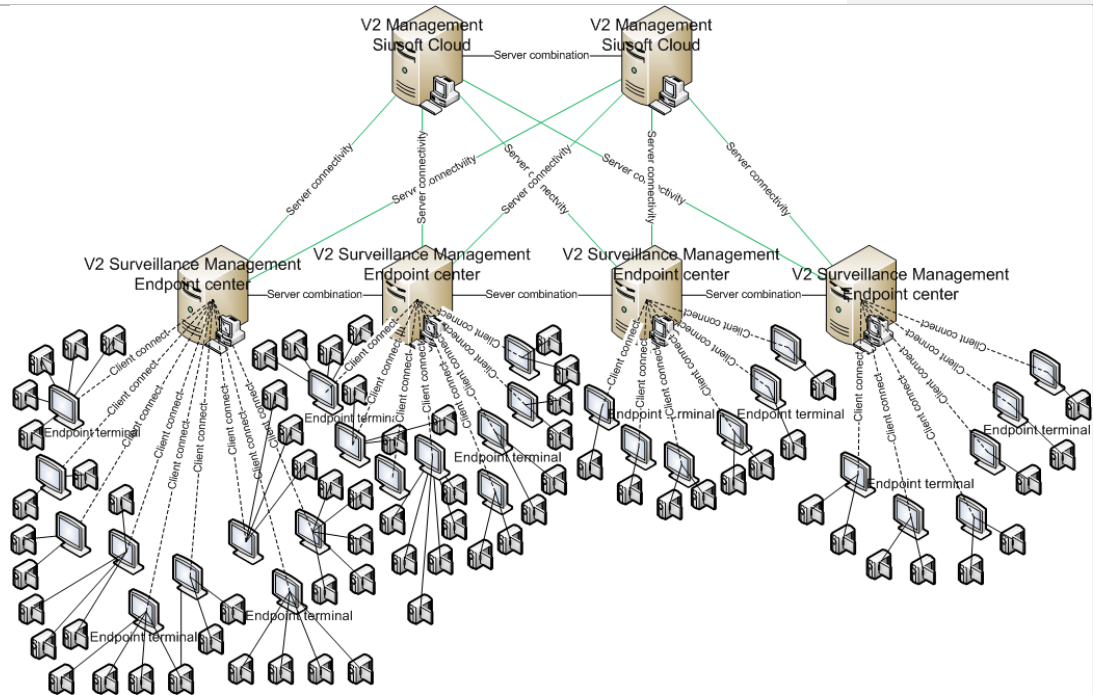


Figure 5 Connectivity and connections of Surveillance Communication

Appropriateness of the Project

The extent to which the Project can support and improve the lives of persons in the project areas evidenced by

- Needs analysis (what is the problem, development opportunity, priorities that project seeks to address)
- Project details
- Applicability to community needs
- Project location (attach maps where appropriate)

#### Application Fields of Teleconference

Government	Education and Research
<ul style="list-style-type: none"> <li>• Remote governmental conference</li> <li>• Remote governmental conference</li> <li>• Urban emergency commanding</li> <li>• Public health commanding</li> <li>• Electric power dispatching</li> <li>• Remote statistics and collaboration</li> <li>• Remote procurement conference</li> <li>• Job interviewing and examination</li> <li>• Governmental affair consultation</li> <li>• Remote bidding</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>	<ul style="list-style-type: none"> <li>• Remote ideas exchanging</li> <li>• Remote tutoring</li> <li>• Network education and training</li> <li>• Examination site monitoring</li> <li>• Remote education and training</li> <li>• Remote lecturing</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>
Legal, Military, Police	Medical
<ul style="list-style-type: none"> <li>• Remote conferencing</li> <li>• Remote training and exchanging</li> <li>• Remote collaborative commanding</li> <li>• Live court</li> <li>• Remote emergency commanding</li> <li>• Remote prison management</li> </ul>	<ul style="list-style-type: none"> <li>• Live surgery broadcast</li> <li>• Remote conferencing</li> <li>• Remote training</li> <li>• Remote ideas exchanging</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>



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	<ul style="list-style-type: none"> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>	
	<p><b>Enterprise</b></p> <ul style="list-style-type: none"> <li>• Remote work conference</li> <li>• Work collaboration</li> <li>• Internal instant messaging</li> <li>• Remote job interviewing and training</li> <li>• Remote production scheduling</li> <li>• Remote business negotiation</li> <li>• Remote workshop monitoring</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>	<p><b>Logistics</b></p> <ul style="list-style-type: none"> <li>• Remote office</li> <li>• Remote route guiding</li> <li>• Remote training</li> <li>• Remote dispatching</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>
	<p><b>Media</b></p> <ul style="list-style-type: none"> <li>• TV program interaction</li> <li>• Remote interview</li> <li>• Remote consultation</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>	<p><b>Finance</b></p> <ul style="list-style-type: none"> <li>• Remote work conference</li> <li>• Remote job interviewing and training</li> <li>• Remote customer service</li> <li>• Remote stock review</li> <li>• Remote monitoring</li> <li>• Call landline and mobile numbers</li> <li>• Others</li> </ul>
	<p><b>Telecommunication operation</b></p> <ul style="list-style-type: none"> <li>• Telecom level video conference service</li> <li>• Instant communication</li> <li>• VoIP Call</li> <li>• SIP Call</li> <li>• Others</li> </ul>	
	<p>Apart from application fields of Teleconference, application fields of Telepresence and other communication services prioritize people living in rural areas where those services and their products are unavailable, including un-served and underserved urban areas in Papua New Guinea.</p> <p>Especially for Mobile Telepresence using Siusoft smartphone, anyone living in un-served and underserved urban areas and rural people will receive service satisfaction when they communicate with each other individually and multiparty by audio and video using SIP Call, SMS, File Cabinet, Email, etc. provided by Siusoft Mobile device and its application services for Siusoft smartphone in each model and version. People living in these areas who are unable to buy and use Siusoft smartphone can buy non-smartphone and make only voice call to people using Siusoft smartphone. When these people or anyone buy Siusoft smartphone, promotional items like solar panel and its battery can be given to them to charge the phone's battery where electricity is unavailable.</p> <p>Siusoft smartphone is affordable with each model and version. Siusoft Mobile device and its application services are manufactured to use Digicel, Telikom, and Bmobile-Vodafone SIM cards. Siusoft smartphone has double SIM slots for two SIM cards and utilizes no data consumption, so that mobile users in un-served and underserved areas are able to make audio and video calls, send SMS, use File Cabinet, or use Email. SIP Call by Siusoft Mobile application preinstalled in Siusoft smartphone make audiovisual call offline to another Siusoft smartphone, another smartphone, or a non-smartphone. SMS, File Cabinet, or Email can be offline as well if customers prefer not to use recharge cards sold by Digicel, Telikom, and Bmobile-Vodafone.</p> <p>Unified Communication begins at Telikom Rumana at Kumul Avenue, Waigani, National Capital District and spread to un-served and underserved locations identified by NICTA.</p>	
Number of Persons benefiting from the project	<p>How many persons would directly and indirectly be benefitting from the project evidenced by</p> <ul style="list-style-type: none"> <li>• Proposed number of participants</li> <li>• Project impact on the community</li> <li>• Provide an idea of the cross section of persons in the community to benefit from the project (e.g. elderly, children, public servants, students, farmers, fisherman)</li> </ul> <p>Unified Communication is to be delivered to all the people inside and outside Port Moresby. Teleconference services are especially for people who work in government departments, non-government and private companies and have access to internet. For those who do not have access to internet, Internet or non-Internet will be connected for them,</p>	

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	especially in un-served and underserved areas. Teleconference services are to be delivered to any mobile user in un-served and underserved communities. Especially Mobile Telepresence will deliver communication to everyone and anyone who lives in un-served and underserved communities.																														
Project Benefits	Phase 1 will benefit people in private companies, government and non-government organizations. Phase 2 will benefit anyone who buy and use Siusoft smartphone and its communication services.																														
Partner organizations/institutions (if any)	V2 Technology Incorporation, Telikom PNG Limited, Huawei Technologies Limited																														
Milestone(significant phases of the project)	Phase 1: Internet connective to deliver ICT Applications and Content, Digital Literacy, and Smart TV Phase 2: Non-Internet connective to deliver mobile communication																														
Expected output																															
Project Risks	<p>What are the risks to the Project? How will they be overcome or managed? (See management table)</p> <table border="1"> <thead> <tr> <th>Risk -List all possible risks you can think of</th><th>Consequence 4 – Extreme 3 – High 2 – Medium 1 -Low</th><th>Probability 4 – Almost certain 3 – Likely 2 – Positive 1 - Unlikely</th><th>Risk Management/Mitigation plan</th></tr> </thead> <tbody> <tr> <td>Lack of political or administrative support</td><td>Low</td><td>Unlikely</td><td>District government support</td></tr> <tr> <td>Land not secured</td><td>Low</td><td>Unlikely</td><td>Endpoint center</td></tr> <tr> <td>Security</td><td>Extreme</td><td>Almost certain</td><td>Security available</td></tr> <tr> <td>Project Equipment Personalized</td><td>Low</td><td>Unlikely</td><td>Endpoint center and company properties</td></tr> <tr> <td>Lack of community support</td><td>Low</td><td>Unlikely</td><td>District government support and community leaders</td></tr> <tr> <td>Maintenance &amp; recurrent costs</td><td>Low</td><td>Positive</td><td>Maintenance is manageable as and when required</td></tr> </tbody> </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	Low	Unlikely	District government support	Land not secured	Low	Unlikely	Endpoint center	Security	Extreme	Almost certain	Security available	Project Equipment Personalized	Low	Unlikely	Endpoint center and company properties	Lack of community support	Low	Unlikely	District government support and community leaders	Maintenance & recurrent costs	Low	Positive	Maintenance is manageable as and when required
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Reporting Procedure	Provide outline of reporting. Each phase report during review every month, 2 months, 3 months, and 6 months.																														
Linkage to existing Government development policies	<p>How will the project contribute to development of Papua New Guinea? Unify communication to people in un-served and underserved areas of Papua New Guinea.</p> <p>Please explain the linkage of the project to;</p> <ol style="list-style-type: none"> <li>1. The Medium-Term Development Plan III (2018-2022) on ICT (Section 3.2),</li> </ol>																														

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	<p>2. NICTA Strategic Planning Report (2018-2022), and</p> <p>3. National Broadband Plan 2014,</p> <p><i>The documents are available on NICTA's Website</i></p> <p>Since Siusoft Technologies Limited are capable of extending, expanding and developing network of Unified Communication, Siusoft engineers and technical personnel can work together with Telikom engineers and their technical personnel to set up and install VSat, tower dish, and managed Wi-Fi in un-served and underserved areas to extend, expand, and develop existing network through which Unified Communication services will be delivered to the people who work for government, students and mobile users.</p>
Financial Support	<p>Financial support from the organization/community/provincial governments/or any other source (if any):</p> <p>How will the project be supported by your organization/community/provincial government/administration? District government's project and transport service support Unified Communication by Siusoft Technologies Limited.</p>
Sustainability of Project	<p>How to ensure the sustainability of operation of the systems after this project ends? And how the results of this project may be used for enhancing development of your province/community/area? Technical support, maintenance, research and development.</p>
<b>Please describe project implementation plan (schedule) in detail. (date, period, place, mission, etc.)</b>	

Unified Communication by Siusoft Technologies Limited begins at Telikom Rumana at Kumul Avenue in Waigani, National Capital District. Within a period of 12 months during 2019 to 2020 Siusoft Technologies Limited will complete Unified Communication over Internet and non-Internet. Over Internet and non-Internet utilizes Unified Communication through wireless transmission. Phase 1 of Unified Communication will take 6 months and Phase 2 will take another 6 months to complete Unified Communication in un-served and underserved areas.

Phase 1 of Unified Communication utilizes Internet and wireless transmission to deliver ICT Applications and Content, Digital Literacy, and digital television. Inside or outside Port Moresby where there is existing internet, Siusoft can make connectivity to endpoint center and supply Teleconference, Telepresence, Surveillance Communication, Remote Teaching, Remote Training, Electronic Health, and Smart TV using Siusoft smartphone. Inside or outside Port Moresby where there is no internet, Siusoft can make connectivity through its gateway to each endpoint center by wireless transmission of relay and satellite.

Phase 2 of Unified Communication utilizes non-Internet and wireless transmission to deliver mobile communication. Siusoft Technologies Limited connects Siusoft Cloud to Siusoft smartphone to deliver Mobile Telepresence to mobile users without using data from Digicel, Bmobile-Vodafone, or Telikom. Anyone who will buy Siusoft smartphone in Port Moresby and other provinces in Papua New Guinea will use SIP Call, SMS, File Cabinet, Email, and other communication services of Mobile Telepresence provided by Siusoft smartphone. Every Siusoft smartphone model and its version provide different communication services in Mobile Telepresence.

## Types of Projects That May Be Proposed

### Program 01: Mobile Broadband Expansion and Upgrade

Under this program, the type of project that can be proposed are;

- Extension of broadband mobile services to unserved and underserved areas
- Upgrade of 2G network (voice + data) to 3G/4G network and
- Increase network backhaul capacity to cater for the increase traffic due to expansions and upgrades

### Program 02: Community and Institutional Broadband Networks

The type of project that can be proposed are;

- 1) Broadband Network Access and Service
  - Expansion of national backbone network infrastructure:
  - Establishment of local broadband access network connections
  - Provision of public broadband communication services
- 2) Institutional Connectivity – Education, Health Facilities, Local Government Offices, Agriculture Centers
- 3) Community Information and Communications Technology Centers (CICs)
  - CIC construction, equipment, installation:
  - CIC operation and management:

### Program 03: ICT for Future Growth

Type of projects that can be proposed are;

- 1) ICT Applications and Content
  - Original and translated web sites and other materials presented in local, indigenous languages, highlighting information of greatest interest to populations who speak these languages.
  - Information content made specifically for and by local community users, sharing local knowledge, history, and culture, as well as business and government information, ideally developed by local users themselves.
  - Projects focused on graphic interface, audio-video, and other non-written content aimed at engaging and assisting non-literate users; similar applications and content for disabled or uneducated users.
  - Entrepreneurial ventures focusing on creating innovative applications for mobile and smart phones, tablets, and other new devices.
- 2) Digital Literacy
  - Training classes and workshops
  - Public relations and awareness building programs
  - Entrepreneurial assistance and incubation initiatives
  - ICT applications and content development programs
  - Community-based technical support resources
  - Public administration training and application development

### Program 04: Expansion and Upgrade of Broadcasting Network Coverage

Type of projects that can be proposed are;

- Expansion of free to view Digital Broadcasting (TV) Services to unserved areas
- Upgrade from analogue free to air broadcasting services to free to view Digital broadcasting services (TV)
- Expansion of free to air Radio broadcasting services to the unserved areas

### Indicative Project Areas

#### Program 01: Mobile Broadband Expansion and Upgrade.

- Indicative project areas for 4G greenfield and Upgrade from 2G are prioritized from the maximum unserved population to minimum unserved served

- For Greenfield**

Region	Province	Uncovered Population	% Uncovered Population
Momase	Morobe	141,349	20.95%
Momase	East Sepik	118,238	26.24%
Southern	Milne Bay	94,946	34.34%
Momase	Madang	90,542	18.33%
Highlands	Eastern Highlands	89,936	15.51%
Highlands	Southern Highlands	85,300	16.72%
Momase	West Sepik	83,487	33.61%
Highlands	Enga	79,803	18.47%
Southern	Western	72,464	35.99%
Southern	Central	58,412	21.65%
Highlands	Hela	55,413	22.21%
Southern	Gulf	54,846	34.67%
Islands	East New Britain	52,257	15.91%
Islands	West New Britain	51,129	19.35%
Islands	Bougainville	48,644	19.51%
Highlands	Chimbu	44,576	11.84%
Southern	Oro	36,802	19.75%
Highlands	Western Highlands	35,232	9.71%
Highlands	Jiwaka	33,615	9.77%
Islands	New Ireland	29,314	15.11%
Islands	Manus	10,797	17.85%
Southern	National Capital District	878	0.24%

- For Upgrade**

Region	Province	3G Upgrade Uncovered Population	% 3G Upgrade Uncovered Population
Highlands	Eastern Highlands	291,003	50.19%
Momase	Morobe	240,062	35.57%
Momase	Madang	223,138	45.18%
Momase	East Sepik	148,575	32.98%
Highlands	Chimbu	139,066	36.94%
Highlands	Enga	122,332	28.31%
Southern	Milne Bay	113,122	40.91%
Islands	Bougainville	112,430	45.09%
Momase	West Sepik	91,195	36.71%
Islands	New Ireland	85,574	44.10%
Southern	Central	78,045	28.93%
Highlands	Southern Highlands	76,121	14.92%
Southern	Western	72,357	35.94%
Southern	Oro	71,628	38.45%
Highlands	Hela	70,872	28.41%
Islands	West New Britain	58,639	22.19%
Southern	Gulf	56,184	35.52%
Islands	East New Britain	54,012	16.45%
Highlands	Jiwaka	49,730	14.46%

**Annex 3**

Islands	Manus	27,966	46.24%
Highlands	Western Highlands	14,066	3.88%
Southern	NCD	0	0.00%
<b>Program 02: Community and Institutional Broadband Networks</b>			
<ul style="list-style-type: none"><li>• The target project areas are learning institutions, local government institutions, local healthcare facilities and community base set ups who are ICT ready such as;<ul style="list-style-type: none"><li>✓ Universities</li><li>✓ Colleges</li><li>✓ Technical and Vocational Schools</li><li>✓ National High Schools</li><li>✓ Primary and Secondary Schools</li><li>✓ Private/public setups</li><li>✓ Villages/communities</li></ul></li></ul> <p>ICT readiness refers to the basic infrastructure that the institution must have such as reliable power, ICT teachers, funding to help sustain, rooms for computers among others.</p>			
<b>Program 03: ICT for Future Growth</b>			
<ul style="list-style-type: none"><li>• Target project areas include;<ul style="list-style-type: none"><li>✓ Universities with content creation programs/projects</li><li>✓ Technical Colleges with content creation programs/projects</li><li>✓ Local entrepreneurs with content creation programs/projects</li></ul></li></ul>			
<b>Program 04: Expansion and Upgrade of Broadcasting Network Coverage</b>			
<ul style="list-style-type: none"><li>• The target project areas include;<ul style="list-style-type: none"><li>✓ Unserved free to view (Digital Television) services areas in PNG;</li><li>✓ Unserved free air Radio Broadcasting Services in PNG</li></ul></li></ul>			