

RECOMMENDATION REPORT 2022 UAS PROJECTS FROM THE UAS BOARD TO THE MINISTER

December 2021

CONTENTS

1.	INTRODUCTION	1
2.	SUMMARY OF PROJECTS	2
3.	PROJECT 1: MOBILE BROADBAND NETWORK UPGRADE AND EXPANSION	3
4.	PROJECT 2: COMMUNITY AND INSTITUTIONAL BROADBAND NETWORKS	8
5.	PROJECT 3: ICT PLATFORM FOR FUTURE GROWTH PROJECT	10
6.	PROJECT 4: EXTENSION OF BROADCASTING NETWORK COVERAGE	13
7	PROJECT 5: OTHER PROJECTS	16

1. INTRODUCTION

Under Section 108(1) of the National Information and Communications Technology Act 2009 (the Act), NICTA is engaged to undertake a number of tasks relating to UAS Projects, including:

- (a) identify, develop and estimate the indicative cost of UAS Projects;
- (b) receive from stakeholders' submissions on proposals for UAS Projects; and
- (c) undertake public consultation, if NICTA considers it necessary or desirable, to identify UAS Project and their indicative costing; and
- (d) estimate the proposed aggregate budget for all UAS Projects to be undertaken under this Part for the relevant period identified by the UAS Board; and
- (e) rank the UAS Project identified and developed under Subsections (1) (a) or (b) in order of priority with regard to
 - (i) their affordability within the proposed budget; and
 - (ii) the remaining factors listed in Subsection (4); and
- (f) prepare for consideration by the UAS Board, a report which summarises the UAS Projects under consideration, their respective indicative costing, their proposed ranking (and the reasons for their ranking), and the proposed aggregate budget, as identified above.

NICTA, having undertaken these tasks, now provides the UAS Board with the 2022 UAS Projects Report, pursuant to Section 108(1)(f) of the Act.

Sections 108 (2) – (3) of the NICT Act provide for the UAS Board to undertake certain tasks, namely:

- "(2) The UAS Board shall consider the report prepared by NICTA under Subsection (1) and prepare a UAS Project report which identifies the UAS Board's recommendations for UAS Projects, their ranking and the reason for such ranking."
- "(3) The UAS Board shall submit the UAS Project report (as prepared under Subsection (2)), to the Minister, at least once in every calendar year, for the Minister's consideration."

This Report recommends for approval by the UAS Board, four (4) UAS Projects for 2022. These recommended Projects have been evaluated and ranked on the criteria in the Act.

2. SUMMARY OF PROJECTS

The 2022 recommended UAS Projects, and their ranking are as follows:

Project	Ranking	Budget
Mobile Broadband Network Upgrade and Expansion	1	K11.0 million
Community and Institutional Broadband Networks	2	K3.5 million
ICT Platform for Future Growth Project	3	K1.0 million
Extension of broadcasting network coverage	4	K1.0 million
Other Projects	5	K1.5 million
	Total	K18.0 million

The sections following this summary outline the way in which each Project fulfils the criteria, and the reasons for the ranking, and the descriptions of each Project.

3. PROJECT 1: MOBILE BROADBAND NETWORK UPGRADE AND EXPANSION

3.1 Project Description

This Project is designed to extend the coverage of advanced broadband wireless mobile communications services (at least 3G/HSPA+, 4G/LTE, or other advanced systems) as far as possible into all areas of the country. The objective is to deliver reliable, high-quality access to Internet and "smart" mobile applications and capabilities to as many PNG citizens as possible, where access to such services is not adequately present, and where existing licensed operators are unwilling or unable to expand their networks, due to commercial or other constraints. The ultimate objective of this program is to achieve virtually 100% mobile broadband service coverage throughout PNG.

These goals can be achieved under the Fund through support for projects that invest in advanced mobile network infrastructure and service expansion by licensed mobile operators. UAS Projects under this program would provide financial support for build-out of local broadband mobile network coverage into unserved and underserved areas, to fill identified gaps and ensure signal access for all target communities.

Under this project, ten (10) new BTS sites will be constructed in areas currently with no mobile service as listed in the table provided in section 3.4.

Implementing contractors/operators will be in charge of installing and operating wireless voice and broadband data/Internet telecommunications networks and services within specified locations where such service is currently non-existent. Priority locations for each separate Project have been selected by NICTA, based on current market analysis and stakeholder consultations.

3.2 Indicative Budget and targets for 2022

To assist the UAS Board in considering this Project, and funding needs, NICTA provides below an indicative 2022 budget and target outcomes. This project is planned for implementation in the second quarter (Q2) of 2022. Refer to indicative timeline provided in 2.4.

Project	Budget	Target Outcome
4G Greenfield	K11.0 million	New 4G Service
Construction of ten (10) 60m towers	K1.1 million per site	Approximate population of 190,000 to be covered by new 4G service.

3.3 Indicative Implementation approach

Procurement strategy

Licensed operators will be invited to bid to provide 4G service upgrade or new service within the identified areas, for a fixed subsidy per project. Bidders will be selected based on qualification and minimum subsidy proposed to cover the required areas, or alternatively based on the maximum number of persons to receive coverage for the fixed subsidy amount.

Main requirements

Project bidding documents will identify locations and minimum service requirements. These will generally include construction tower infrastructure, backhaul and network connectivity, installation or upgrade of Base Stations, establishment of local electrical power and all other necessary facilities, and operation of broadband mobile services on a commercial basis within the identified areas. There may also be mandates for minimum customer take-up of the services. UAS subsidized operators will be required to provide open access and infrastructure sharing for all facilities, including towers, base stations and backhaul network, as well as mobile roaming to other licensed operators for users within the project locations.

Bidding parameters

Bidders must be licensed mobile network operators, with qualifications and capabilities to provide the services, including existing presence in locations to be upgraded. Bids must include details of proposed network deployment to ensure minimum coverage. Contracts will be awarded to the operator proposing the least total subsidy bid per project, or proposing to cover the largest unserved population for the fixed subsidy amount.

3.4 Project to be funded

Project	Size and Scope	Locations
Project Greenfield 4G	Size and Scope Number of sites = 10 Approximately one (1) site to be selected by LLG within each identified district to be selected in the descending order of priority as listed. 10 sites from the 13 listed sites.	1 – Rapatona LLG, Manus 2 - Kompiam Rural LLG, Enga 3 - Maip Muritaka, Enga
		13 – Telefomin Rural LLG, West Sepik

The locations proposed in the submissions during the consultation process were considered and are given high priority. The priority sequence has been based on the Access Gap analysis, with locations of largest uncovered population (no 2G/3G/4G services) gap being given the highest priority.

Locations

Specific sites within the priority locations will be further refined and determined through the tender process.

3.5 Indicative Timetable of key milestones

This project may be rolled out in one phase, as follows, and the likely funding requirements have taken into account the requirements for 2022:

Initial project design	Done
Public consultations	Done
Project Approvals	November 2021
Tender	January 2022
Bid submission and evaluation	February 2022
Contract award, project launch	March 2022
Project implementation, M&E	April 2022

3.6 Assessment of Project against Section 108(e) criteria

Criteria	Assessment
(a) whether the proposed UAS Project would promote the objectives of the Universal Access and Service Fund	This Project meets the UAS Fund objective set out in Section 90(1) of the Act. It directly relates to the improvement of ICT services within PNG, and to rural communities in particular
(b) the net benefits of the UAS Project to Papua New Guinea, taking into account any costs and detriments to any person	There are clear net benefits to the communities in the locations in which mobile broadband service will be provided through the provision of services that will underpin economic development and greater social cohesion.
(c) whether the UAS Project is sustainable with a one-time capital subsidy	In each of the chosen locations the Project will be sustainable with a one-time capital subsidy

Criteria	Assessment
	and continued operation of the services and related costs will be provided by the successful bidder.
(d) whether the UAS Project would not otherwise occur but for a subsidy payment under this Part	This Project, in the locations identified, would not otherwise occur except for the subsidy provided from the UAS Fund.
(e) the likely efficiency and effectiveness of the proposed UAS Project and whether it is financially and technically feasible	The Project will be undertaken efficiently and effectively, and this will be guaranteed through an arms-length public tender process. The project is financially and technically feasible as shown by similar projects in other locations and by the business programs of PNG licensed mobile operators.
(f) any other information the UAS Board considers relevant	Other relevant information is contained in this report and in the associated Access Gap Analysis.
(g) (shall ensure that) any UAS Project does not include services under a mandatory coverage obligation	The Project does not include services subject to a mandatory coverage obligation.
(h) (shall ensure that) any UAS Project is not otherwise provided by a pre-existing UAS Project	The Project and its constituent elements are not covered by a pre-existing UAS Project.

Table above illustrates how these Project fulfils the section 108 criteria.

This Project is ranked first since it ranks highest on criteria (a), (b) and (e). This Project provides the largest net benefits due to providing expanded network coverage and service delivery capability. It is also based on well-known technology that is efficient in delivering such services. Currently, extending such network coverage and services ranks higher on these criteria than Projects 2 and 4, which focus on service usage and assisting communities to derive more benefit from services.

4. PROJECT 2: COMMUNITY AND INSTITUTIONAL BROADBAND NETWORKS

4.1 Project Description

This Project is designed to help deliver high-speed, full-service fixed broadband Internet connections to selected communities, with services and capacity available to public institutions as well as local businesses and households, on an affordable basis throughout each designated

local service area. To achieve these outcomes, the Community Broadband Project would support comprehensive implementation projects in a limited number of designated locations, consisting of three integrated components:

- Broadband Network Access and Service: Extending broadband network links into areas unserved by fixed broadband networks;
- Institutional Connectivity: Providing broadband connections directly to identified local public institutions, including schools, health facilities, local government offices, and community centres;
- Community ICT Centres (CICs): Establishment of public access CICs within each designated community.

To achieve the multiple, inter-related goals of this Project, the implementing partners and contractors/operators will be required to provide the full range of specified outputs simultaneously within each defined service area.

For 2022, NICTA will continue to facilitate through this project connectivity for a number of public institutions which may include schools, rural agricultural resource centres, health facilities, and rural airstrips in partnership with the relevant agencies.

4.2 Indicative Budget and Targets for 2022

Detailed below is the indicative 2022 budget and target outcomes for this project which is planned for implementation in the second quarter of 2022. Refer to indicative timeline detailed in 3.4.

Project	Budget	Target Outcome
Computerisation & Internet – establishment of ICT facilities with computers and fixed broadband internet access to ten (10) locations		Fixed broadband connectivity for targeted institutions and surrounding communities

4.3 Implementation approach

Procurement strategy

NICTA will issue a request for bids from qualified licensed telecom operators, identifying the locations and scope of facilities and services required, and the available subsidy amounts. Local SMEs involved in internet service provision are highly encourage to participate. Bidders will propose the range of infrastructure, network configuration, technologies, and other features to be offered for the available budget. NICTA will select the most responsive proposals that will deliver the broadest and most cost-effective services.

Main requirements

At a minimum, contractors must establish broadband access network links into the designated communities, and connections to the identified public institutions. They must also establish some form of public broadband ICT access facility (community ICT center, public WiFi, or

equivalent). The contractor must ensure continuous operation of public Internet service at project locations.

Bidding parameters

Bidders will define in their proposals the specific scope and configuration of infrastructure and services to be provided in the designated locations, and all other required and optional features. The amount of subsidy available will be disclosed to bidders, who must design their projects to meet this budget. NICTA and the UAS Board will select the qualified bids that best meet the requirements, and that provide greatest value for the communities.

4.4 Projects to be funded

Number of projects

A total of 10 projects will be funded under this program which consists of schools, health centres and agriculture centres.

Size, scope

Deployments of community broadband connections to project locations. Connections and broadband service to major public institutions, plus public ICT access facilities in each location.

Project support will include subsidizing of one-off capital assistance within the project duration of two (2) years.

Locations

Specific project locations for public institutions will be determined through consultations with the Department of Education (DoE), Department of Agriculture and Livestock (DAL), Department of Higher Education Research and Science Technology (DHERST), Department of Health (DoH). A number of locations identified through proposals received during the public consultation process will also be included in the projects for 2022.

4.5 Indicative Timetable of key milestones

Initial project design	Done
Public consultations	Done
Project Approvals	November 2021
Tender	January 2022
Bid submission and evaluation	February 2022
Contract award, project launch	March 2022
Project implementation, M&E	April 2022

4.6 Assessment of ranking against Section 108(e) criteria

Criteria	Assessment
(a) whether the proposed UAS Project would promote the objectives of the Universal Access and Service Fund	This Project meets the UAS Fund objective set out in Section 90(1) of the Act. It directly relates to the improvement of ICT services within PNG, and will be implemented to prioritise potential broadband users in rural communities without other access to these services.
(b) the net benefits of the UAS Project to Papua New Guinea, taking into account any costs and detriments to any person	There are clear net benefits resulting from the provision of services in this Project. They will underpin economic development and greater social cohesion. In particular, the community broadband networks from the Project will provide very important local economic infrastructure supporting online transactions that enable the economic reach of the communities served to be extended.
(c) whether the UAS Project is sustainable with a one-time capital subsidy	In each of the chosen locations the Project will be sustainable with a one-time capital subsidy and continued operation of the services and related costs will be provided by the successful bidder.
(d) whether the UAS Project would not otherwise occur but for a subsidy payment under this Part	This Project, in the locations identified, would not otherwise occur except for the subsidy provided from the UAS Fund.
(e) the likely efficiency and effectiveness of the proposed UAS Project and whether it is financially and technically feasible	The Project will be undertaken efficiently and effectively, and this will be guaranteed through an arms-length public tender process. The project is financially and technically feasible as shown by similar projects in other locations and by the business programs of PNG licensed mobile operators.
(f) any other information the UAS Board considers relevant	Other relevant information is contained in this report.
(g) (shall ensure that) any UAS Project does not include services under a mandatory coverage obligation	The Project does not include services subject to a mandatory coverage obligation.

Criteria	Assessment
(h) (shall ensure that) any UAS Project is not otherwise provided by a pre-existing UAS Project	The Project and its constituent elements are not covered by a pre-existing UAS Project.

This Project is ranked second because it ranks second on criteria (a), (b) and (e). This Project is designed to provide network capability and services, and in that respect similar to Project 1, and superior on these criteria to Projects 3 and 4. This Project ranks behind Project 1 because the delivery of services is to a more limited target population, and achievement of net benefits, UAS objectives and efficiency, is not as high as for Project 1.

5. PROJECT 3: ICT PLATFORM FOR FUTURE GROWTH PROJECT

5.1 Project Description

The purpose of this Project is to help develop a platform for future, long-term development of ICT utilization and opportunities across Papua New Guinea society. It would support the development of creative, innovative, and high value ICT activities which will tap into the resources and knowledge of the local populations.

There are two main components to this Project:

- (1) Digital Literacy Training; and
- (2) Content and Applications Development projects.

Specific individual projects will be designed by NICTA and the UAS Board, in consultation with appropriate partners and other stakeholders.

NICTA has identified projects based on proposals received during the public consultation to be piloted with the available Fund budget (together with other resources). Local SMEs involved in ICT are highly encouraged to participate. NICTA and the UAS Board will enter into agreements with participating organizations and SMEs to define and implement the projects deemed most appropriate, cost-effective, and valuable.

5.2 Indicative Budget and targets for 2022

Provided below are indicative 2022 budget and target outcomes. This project is planned for implementation in the third quarter of 2022. Refer to indicative timetable provided in 4.4.

Project	Budget	Target Outcome
Digital Literacy Training	K500,000.00	Projects reaching target populations with useful training, content and valuable applications, while providing helpful lessons for scaling up similar projects, and developing further partnerships
Content and Application Development	K500,000.00	

5.3 Implementation approach

Procurement strategy

NICTA has received proposals from potential partner organizations that are qualified to offer the needed resources. These includes universities, local governments, small entrepreneurs, social service organizations, training institutes, and community groups.

Proposals have been selected for innovation, cost-effectiveness, and capability and resources of the partners. Priority will be given to proposals that are likely to have a large number of potential beneficiaries at the earliest time.

Main requirements

Digital Literacy Training project: Design and deliver digital literacy training to enable and encourage uptake of ICT services, particularly in the rural areas.

Content and Applications Development project: Design of a preliminary plan and implementation strategy to enhance or improve the efficiency of new and existing Government services through the development of ICT Apps for general public use.

5.4 Projects to be funded

Number of projects

Digital Literacy Training = 2 projects

Content and Applications Development = 2 projects

A total of at least 4 projects will be funded under this program.

Size and scope

The projects identified from stakeholder proposals will be supported from the total allocated fund for this project. Digital Literacy projects provide capacity building programs for communities within existing UAS projects under the Community and Institutional Broadband program. Content and Application Development Project may provide content development for institutions that require information in education, health and other sectors for knowledge purposes.

Locations

Specific locations and target beneficiaries of the projects will be determined by NICTA through consultations with the implementing parties.

5.5 Indicative Timetable of key milestones

Initial project design	Done
Public consultations	Done
Project Approvals	November 2021
Tender	July 2022

Bid submission and evaluation	August 2022
Contract award, project launch	September 2022
Project implementation, M&E	October 2022

5.6 Assessment of ranking against Section 108 (e) criteria

Criteria	Assessment
(a) whether the proposed UAS Project would promote the objectives of the Universal Access and Service Fund	This Project meets the UAS Fund objective set out in Section 90(1) of the Act. It directly relates to the improvement of ICT services within PNG, and will encourage greater ICT usage and therefore sustain further investment in ICT infrastructure.
(b) the net benefits of the UAS Project to Papua New Guinea, taking into account any costs and detriments to any person	The ICT platforms and practical innovations envisaged will have net social and economic benefits for PNG and the specific proposals that are accepted for funding will be selected on that basis.
(c) whether the UAS Project is sustainable with a one-time capital subsidy	Yes, there will be a one-time contribution from the UAS Fund and the specific proposals that are accepted for funding will be selected on the basis that they will be commercially sustainable after that contribution.
(d) whether the UAS Project would not otherwise occur but for a subsidy payment under this Part	Proposals accepted for funding under this Project will be selected on the basis of their merit and that they would not be progressed but for the subsidy.
(e) the likely efficiency and effectiveness of the proposed UAS Project and whether it is financially and technically feasible	and effectively, and this will be guaranteed
(f) any other information the UAS Board considers relevant	Other relevant information is contained in this report.

Criteria	Assessment
(g) (shall ensure that) any UAS Project does not include services under a mandatory coverage obligation	The Project does not include services subject to a mandatory coverage obligation.
(h) (shall ensure that) any UAS Project is not otherwise provided by a pre-existing UAS Project	

This Project is ranked third because it ranks third on criteria (a), (b) and (e). It is a project directed to increase the ability of the communities to use and derive benefits from ICT services. This is, in terms of the criteria, not as highly ranked as providing network infrastructure to deliver the services at all. As a usage – oriented Project, this ranks above Project #4 because the platform and literacy project can be applied more broadly and are likely to have greater impact in terms of meeting the UAS objectives.

6. PROJECT 4: EXTENSION OF BROADCASTING NETWORK COVERAGE

6.1 Project Description

This Project addresses the objective of extending coverage of radio and television broadcasting to all citizens and communities in PNG. NICTA aims to support growth of the broadcasting sector through targeted use of UAS Fund resources to close gaps and assist low income consumers which the broadcasting market may not reach. This activity will focus on support for infrastructure expansion, primarily through enhancement or installation of broadcast antennae on existing or new towers.

For 2022, this Project is intended to improve broadcasting coverage to two (2) selected Provinces identified following submissions made during the consultation phase. NICTA will solicit bids from qualified contractors for a single, integrated project to be rolled out within the 2 provinces.

6.2 Indicative Budget and targets for 2022

To assist the UAS Board in considering this Project, and funding needs, NICTA provides below an indicative 2022 budget and target outcomes. This project is planned for implementation in the second quarter of 2022.

Project	Budget	Target Outcome
Digital Television Broadcasting	K500,000.00	Expand coverage of broadcasting signals and or upgrade and restore
Radio Broadcasting	K500,000.00	broadcasting services in the selected geographical locations providing access to broadcasting services

6.3 Implementation approach

Procurement strategy

NICTA will solicit bids from qualified contractors to construct and install the necessary infrastructure, facilities, and equipment to expand broadcast signals within the designated areas. Contractors do not have to be licensed operators, but must have the capability to provide all necessary planning, equipment, and resources. NICTA will coordinate with broadcasters to identify the required locations, and contractors will propose how best to build and install the needed facilities.

Main requirements

Survey existing infrastructure and transmission network, determine scope of needs. Install broadcast antennae and related equipment and facilities to link to existing radio and TV broadcast networks. Wherever possible, use available towers and similar structures that are capable of supporting broadcast antennae.

Bidding parameters

Bidders will be asked to propose the technical approach and requirements for expanding broadcast coverage within the designated areas. Contractors need not be licensed operators/broadcasters, but must demonstrate capability to construct the necessary facilities and link them to existing broadcast networks. The amount of available subsidy will be disclosed by NICTA, and bidders will identify the maximum scope of coverage they can achieve for that budget. The qualified contractor proposing the widest population coverage for the available budget will be awarded each project. Bidders must also propose a plan for distributing subsidized set-top-boxes to low-income households.

6.4 Projects to be funded

Number of projects:

A minimum of 4 projects locations to be identified and selected for implementation.

Size, scope

Districts within a selected province, where broadcast signals are not sufficiently available, to reach all unserved LLGs within the defined area.

The priority sequence has been based on the Access Gap analysis and proposed location identified through the public consultation process, with locations of largest unserved population gap being given the highest priority. The priority is based on the absence of broadcasting coverage as shown by the access gap analysis.

Locations

The locations proposed in the submissions during the consultation process were considered and will be given high priority. The priority sequence has been based on the Access Gap analysis, with locations of largest uncovered population (no broadcasting services) gap being given the highest priority.

Specific locations (districts, LLGs) to be determined through consultations with the public, broadcasters, and local officials.

6.5 Indicative Timetable of key milestones:

Initial project design	Done
Public consultations	Done
Project Approvals	November 2021
Tender	April 2022
Bid submission and evaluation	May 2022
Contract award, project launch	June 2022
Project implementation, M&E	July 2022

6.6 Assessment of ranking against Section 108(e) criteria

Criteria	Assessment
(a) whether the proposed UAS Project would promote the objectives of the Universal Access and Service Fund	
(b) the net benefits of the UAS Project to Papua New Guinea, taking into account any costs and detriments to any person	Improved information distribution through increased broadcasting service coverage will provide net social and economic benefits through a better-informed community in the areas the Project covers.
(c) whether the UAS Project is sustainable with a one-time capital subsidy	,

Criteria	Assessment
(d) whether the UAS Project would not otherwise occur but for a subsidy payment under this Part	
(e) the likely efficiency and effectiveness of the proposed UAS Project and whether it is financially and technically feasible	The Project will be undertaken efficiently and effectively, and this will be guaranteed through an arms-length public tender process. Financial and technical feasibility will have to be proven by the proponents of proposals that are accepted for a subsidy.
(f) any other information the UAS Board considers relevant	Other relevant information is contained in this report.
(g) (shall ensure that) any UAS Project does not include services under a mandatory coverage obligation	The Project does not include services subject to a mandatory coverage obligation.
(h) (shall ensure that) any UAS Project is not otherwise provided by a pre-existing UAS Project	

This Project is ranked fourth because it ranks fourth on criteria (a), (b) and (e). The reasons for this are summarized in the ranking discussion for Project # 1 - 3.

7. PROJECT 5: OTHER PROJECTS

7.1 Project Description

Under this program, NICTA will implement two (2) categories of projects to be implemented for 2022.

- (1) Development Partnership Projects Projects proposed by development partners including International Telecommunication Union (ITU), Asia Pacific Telecommunity (APT), and other parties that maybe interested in a partnership with NICTA for projects related to ICT,
- (2) Emergency Telecommunications Project

NICTA has taken the liberty to include an Emergency Telecommunications Project annually commencing in 2021 following the recent Covid-19 pandemic experience. The proposed project is intended to provide Emergency Telecommunications response to support emergency operations during a State of Emergency (SoE) related to natural disaster and

pandemic disease outbreaks. This project will only be implemented at the time an SoE is declared with the need for an Emergency Telecommunications response.

7.2 Indicative Budget and targets for 2022

To assist the UAS Board in considering this Project, and funding needs, NICTA provides below an indicative 2021 budget and target outcomes. This project is planned for implementation during 2022 as and when required.

Project	Budget	Target Outcome
Development Partnership Projects	K1.0 million	Provide broadband access to the general populace through ICT related project partnerships with local and international development partners and to provide emergency telecommunications response during emergencies.
Emergency Telecommunication Projects	K500,000.00	