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UNIVERSAL ACCESS POLICY (UAP)
STAKEHOLDERS UPDATE REPORT NO. 6
UPDATE ON UAP IMPLEMENTATION
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The Telecommunications and Radiocommunications Regulator
Office of the Telecommunications and Radiocommunications Regulator (TRR)

Executive Summary

This Sixth Universal Access Policy (UAP) Public Update Report is intended to update Stakeholders on the status of implementation of the Government's UAP. It builds on TRR's Fifth UAP Update Report of 5 June 2016. The Report highlights the continued progress that has been made in respect of UAP implementation and, particularly, to building on to the secured industry commitment and cooperation in meeting the UAP requirements and the key Government objectives, to bring benefit to the people of Vanuatu; in accord with the intention of the UAP, as well as the economy of Vanuatu.

The Telecommunications and Radiocommunications Regulator (TRR) continues to appreciate, recognise and acknowledges the commitment of the *Players* and industry at large for the achievements presented in this Report. TRR also recognises the valuable assistance, cooperation and support from the Australian Government through its Governance for Growth Program which has significantly contributed, through financial support, to its success via the deployment of telecommunications access into remote and underserved areas of Vanuatu; particularly on Computer Lab and Internet Community Centres (CLICC) programs. We also recognize the support of the Japanese Government through the Asia Pacific Telecommunity (APT) towards universal access and its contribution, both financially and technically, on the Tanna Geohazards pilot project.

TRR has taken a considerable proactive and guiding approach role through the process of UAP implementation; particularly in the negotiation, finalisation and signing of the UAP Player's Undertakings outlining commitments to the implementation of the UAP through the upgrading and rollout of new services, and the provisioning and deployment of equipment and materials for the UAP Information Communications Technologies (ICT) school and internet community centre programs.

TRR has now substantially completed rollout of the CLICC, the Tablets for Students (TFS) and the Internet Community Centres (ICS) programs. Feedback received from those sites that are now operational has been positive; with students and the community being provided with basic skills training and students using the technology as part of the school curriculum. Demand for use of the sites is high and is anticipated to considerably increase as E-government services are developed and rolled out.

Digicel Vanuatu Limited (Digicel) and Telecom Vanuatu Limited (TVL) are progressing ahead with their infrastructure rollout as per their Undertaking Agreements. There have, however, been some issues for the *Players* to overcome during this last reporting period and this has impacted on the infrastructure rollout.

TRR has now moved to a Monitoring and Evaluation (M&E) activity and phase. The M&E activity is necessary to ensure that the signed Undertakings agreed to by the *Players* are delivered as per their schedule and fully achieved.

TRR remains committed to its methodology and approach to achieving the Government's UAP objectives by working collaboratively, cooperatively and constructively with the operators, stakeholders and other relevant parties and will continue to provide updates of all UAP developments.

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1. Introduction

TRR is pleased to inform its stakeholders through this Sixth UAP report, of the significant progress made since TRR's Fifth UAP Update Report of 5 June, 2016. This Report outlines key outcomes in the implementation of UAP that TRR has achieved over the last six months period in collaboration with the telecom industry, related Government Ministries, consumers and communities, and other stakeholders.

Key outcomes of the last six month reporting period include:

- Continued progression of the UAP Undertaking of new sites by the industry players, with 5 of 5 sites expected to be operational by January 2017
- Continued monitoring and evaluation of the UAP Undertakings program
- Completion of rollout of all TRR responsible CLICC sites
- Completion of rollout of alternative service delivery mechanisms (High Throughput Satellite supplied by Kacific Broadband Satellites) for remote and difficult locations
- Development and submission of a grant request for monitoring and evaluation of the CLICC and TFS programs from a pedagogy, curriculum and community development perspective
- Advertisement for applicants for the extension of the UAP CLICC pilot
- Completion of the Asia Pacific Telecommunity (APT) J3 project on Tanna
- Initiation of coverage modelling both predictive and physical to confirm coverage obligations under the UAP undertaking agreements
- Management responsibility for the International Telecommunications Union (ITU) emergency communications and community centre
- Assistance to various Ministries such as the Ministry of Education, Health, Agriculture, and NDMO providing expert advice and support to enable more effective use of the CLICC

These are significant milestones of the multitude of steps required in the development of the UAP and the facilitation of ICT across Vanuatu towards its full implementation.

2. UAP Telecommunication Service Undertakings

With the negotiation and completion of the UAP Undertaking Agreements (Undertakings) with TVL, Digicel and Telsat, TRR is continuing the Monitoring and Evaluation (M&E) activity. The M&E activity is necessary to ensure that the signed Undertakings agreed to by the *Players* are delivered as per their schedule and fully achieved. TRR has the power and ability to apply penalties to the *Players* under the Undertakings if

the obligations agreed to are not met; in all respects. *Players* have commenced, and are continuing, the rollout of their obligations under their Undertakings, with the first milestone sites completed.

TRR acknowledges all *Players* commitment and dedication through their Undertakings towards upgrading all existing sites and extending their services to the people of Vanuatu. It is an indication of the *Player's* support and commitment towards the Government's UAP and its implementation. It also shows that the rollout of UAP is gaining momentum, and complements the UAP's ICT school programs that are also being implemented in parallel with the *Player's* Undertakings.

2.1 UAP Player Rollout Plans

The UAP Undertakings requires *Players* to rollout infrastructure according to their individual agreement reached and signed with TRR. Within these Undertakings, TRR has provided latitude for changes and alterations to ensure that the *Players* are able to rollout infrastructure in the most cost effective manner where terrain impacts on construction or where other issues may arise that impact on the ability to deliver, but that still ensures *Players* meet all of their obligations. The Undertakings also provide TRR with the ability to levy the appropriate UAP levy on a *Player*, as penalty, if a *Player* fails to meet the agreed rollout targets. The two players, Digicel Vanuatu Limited (Digicel) and Telecom Vanuatu Limited (TVL) are progressing ahead with their infrastructure rollout as per their Undertakings. Both *Players* have had numerous issues to overcome during this last reporting period which has impacted the rollout of infrastructure, while Telsat on the other hand has been removed as a player.

2.2 Population Coverage Analysis

A key UAP requirement is to ensure provision of coverage to 98% of the population of Vanuatu. In order to confirm that this coverage obligation has been met, TRR must measure the coverage in an industry standard scientific basis using appropriate infrastructure information supplied by the *Players*, using recognised industry software modelling tools, undertaking physical coverage analysis, considering population data provided by the Vanuatu National Statistics Office and updated geographical information from Department of Lands. The analysis will include the UAP Undertakings, the UAP CLICC programs, the ITU Emergency centre project and the APT-J3 Tanna project; wherever these are practical.

TRR has engaged a consultancy firm specializing in mobile and radio communications to undertake two components of this activity. The first step is to develop a sound database of spectrum use by each of the operators. This data, which comprises information on tower heights, antenna directions, power output and spectrum frequencies is the key baseline information required for modelling purposes. The

second step, along with population and terrain data, is to input the data into specialized modelling software which provides an output showing the predictive coverage analysis for the sites. The third step is to verify the predictive model with localized information.

TRR has noted that the local modelling is showing that the population data based on the 2009 census is unreliable with significant population shifts having taken place over the last five years. The local analysis has identified areas which have significantly increased in population, whilst other areas have seen the population diminish and, in some cases, a number of local villages have seen the entire population shift away.

The current hypothesis between the TRR and the consultancy firm undertaking the modelling is that the UAP objective should be able to be fully met and highly likely to be exceeded.

3. UAP Programs

The UAP programs announced during 2014 as part of an initiative between TRR, OGCIO, Ministry of Education and Training and the Australian Government under its Governance for Growth (GfG) program have substantially been completed and are now under monitoring. The programs are:

- Computer Laboratories and Internet Community Centre (CLICC)
- Tablets for Students (TFS)
- Internet Community Services (ICS)

During the reporting period significant progress has been made on the completion of all activities associated with these programs. The CLICC program is substantially completed, with service provision of internet for remote schools completed and implementation by our partner Agence Universitaire Francophonie (AuF) substantially complete. The TFS program which slowed due to technical issues has now been completed with all schools receiving their complement of tablets. The ICS program is completed with the final site in Ambae receiving internet connectivity and now providing commercial services to the community.

Table 1 CLIC/TFS Implementation Status

Monitoring of the data volume has been ongoing since the implementation of the CLICC sites, and is shown in Figure 1 below:

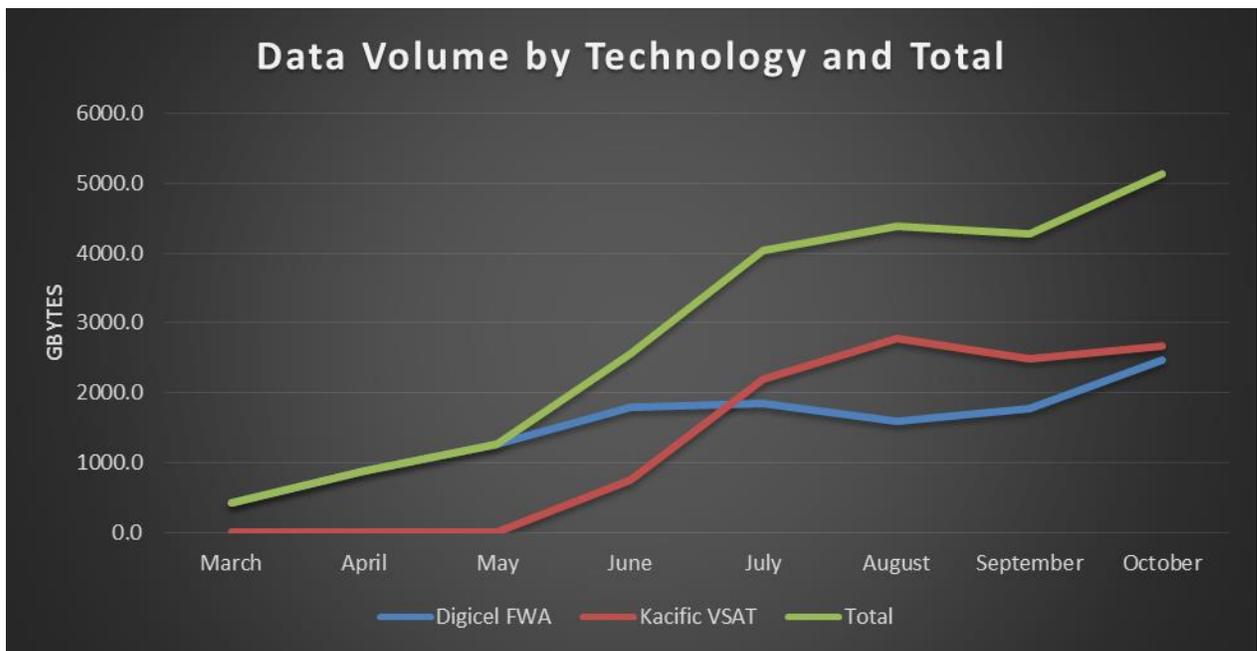


Figure 1 CLICC/TFS Data Volumes

3.1 Computer Laboratories and Internet Community Centres (CLICC)

The CLICC centres are a significant part of the UAP program with 15 schools, being provided with computer labs, for general educational purposes and for use by the community during and after school hours. The objective of the CLICC sites is to primarily increase the knowledge and use of ICT within the school environment, integrate ICT into the curriculum and utilise educational materials for learning. Secondly the infrastructure has facilitated the use of the OpenVMIS school and student management application. Thirdly, the CLICC site is open to the general community for their use to again increase and improve knowledge of ICT, increase the development of local content and provide a central hub for the delivery of eGovernment services, such as health and agriculture, into the future.

The CLICC sites have been well received by the student body and the community in general. Teachers have quickly integrated the CLICC into the school curriculum, at appropriate levels according to the age of the students involved. The level of demand and desire of the student body to engage and use the CLICC has been exceptional with, in some cases, students moving quickly to the CLICC room or asking teachers if they can access the room. Likewise, the interest and engagement of the community has seen many people come to the CLICC site and start to use the infrastructure. The current take away is that there is a need for basic ICT skills training on the use of computers, application training on word,

excel and the like. Lastly basic skills for using the internet are required in order to ensure safe use as well as inclusion in the digital society.

Figure 2 below shows the data volume consumed from March to October 2016 at each of the schools.

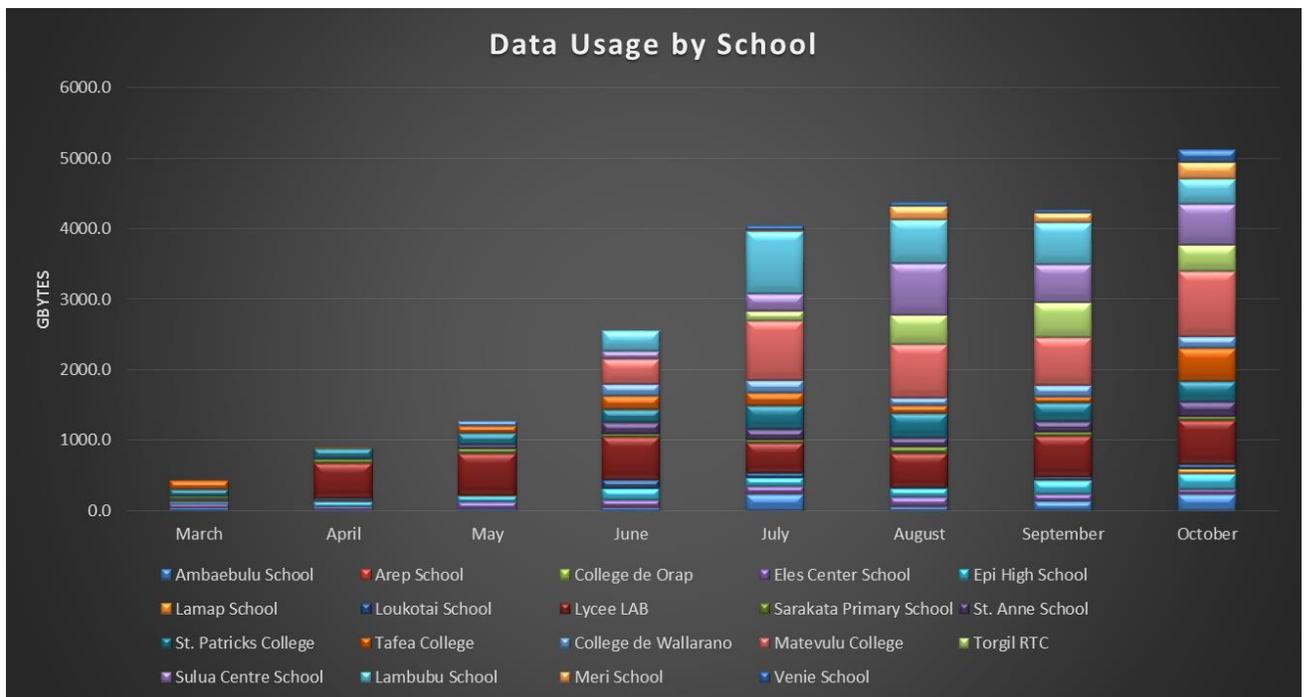


Figure 2 Data Volumes for Schools

3.2 Tablets for Students

The TFS program was placed on hold due to a technical issue impacting the charging of the tablets via the provided charge cart. Digicel were prompt in the investigation of the issue and the subsequent resolution which has seen all tablets replaced by a newer Huawei tablet. All TF program schools have had delivered their complement of fifty (tablets with appropriate educational applications for evaluation.

3.3 Internet Community Services

The final Information and Communication Centre (ICS) on Ambrym has been completed with internet services installed by Digicel. This completes the ICS program apart from general monitoring of the operations. Of the three (3) sites in operation, Ituani Informesen & Communikesen Senta, Malo has progressed the furthest being proactive in engaging the community in training and provision of services to the community.

3.4 Monitoring and Evaluation

M&E is now a critical and essential step in the UAP rollout. Whilst it is embedded into the UAP agreements and is currently being undertaken by TRR on a monthly basis, M&E associated with the CLICC and TFS sites is required. Whilst the technology can be simply evaluated, the importance of the infrastructure to the educational environment and community is more difficult and required specialist advice. In particular there is a need to understand how ICT infrastructure helps in the pedagogy (the 'how' of teaching) and the curriculum (the 'what' is being taught). By understanding the benefits in this way more effective integration of technologies can be achieved.

At present, TRR has applied for a research grant through the GfG to undertake this M&E task. GfG have shown positive interest in the application and a number of modifications have been made on GfG suggestions. Following (the expected) approval of the research grant, TRR will progress, in concert with OGCIO and Ministry of Education and Training (MoET), to open market competition to select an appropriate party to undertake the M&E research activity.

3.5 Extension of CLICC pilot

The CLICC Pilot Project have been extended and Schools that were not able to succeed in the first round of the project, will have the opportunity to access a CLICC facility with the second round. Advertisement on the applications have been made, with the closing date of submission as the 2nd of December, 2016. The extension of the CLICC Pilot Project is providing a twofold effect of ensuring increasing coverage against the UAP and providing community benefits from the provision of ICT infrastructure into schools.

3.6 APT-J3 Tanna Volcano Monitoring Project

TRR has recently completed the project management for the installation of the APT-J3 Volcano Monitoring network, established by the Japan Telecommunications and Engineering Consultancy Service (JTEC). This network provides for 2 cameras to monitor the activity of Mt Yasur on a 24 hour basis with the video transmitted back to the Vanuatu Meteorological and Geohazards Department (VMGD) in Port Vila.

Included into this network is connectivity to Whitesands Health Clinic, Laneula School, Whitegrass Meteo Office, Lenakel Hospital, Meteo at Isangel and Isangel Government offices. The connectivity will provide internet to sites currently without, as well as a screen to show the images from the volcano monitoring cameras. The images available from the cameras are shown in Figure 3 and Figure 4 below;

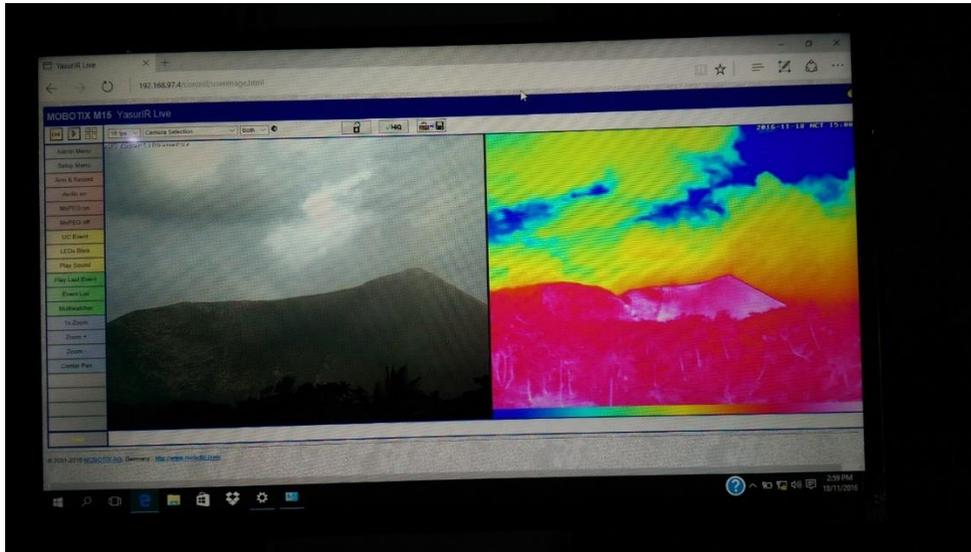


Figure 3 Screen shot of Mt Yasur Camera Images from Ianeula School, Whitesands, Tanna



Figure 4 Final Camera Installation Hill552 Tanna

4. Reporting

TRR remains committed to Government UAP implementation and will continue to provide update to its stakeholders at 6 monthly intervals. TRR's next scheduled Report will be provided on or prior to 5 June 2017.