



TV White Space (TVWS) Experimental for Application in Remote Area

ASEAN IVO
Final Report

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Target of this project: This project aims to demonstrate the effectiveness of TVWS experimentation for the following applications; hydrological quality monitoring in rural area and natural disaster emergency network. This project has utilized TVWS transceiver equipment as well as WiSUN node and gateway which were design and build by NICT Japan. The devices were deployed in the Philippines and Malaysia.

Findings and Outcomes: We have conducted radio propagation study and comprehensive spectrum measurement at Chini Lake. We have successfully conducted experimental work at Surigao: Philippines Experiment for Emergency Communications using TV White Space (IEEE 802.11af) as well as WiSUN and LoRa (sub-GHz) Experiment at Chini Lake for Hydrological Monitoring Application.

Collaborations: NICT has developed prototype hardware for TVWS communications. Philippine government has strong interest in TVWS and an TVWS experimental has be deployed in Surigao. This IVO project enables researchers from MIMOS and UKM to discuss TVWS with Malaysia stakeholders. WiSUN transceivers were deployed for water quality experiment work at Lake Chini.

Broader Impact and Future Developments: In the Philippines, the TVWS has been tested successfully in providing internet connectivity with multihopping. In Malaysia, due to challenging propagation condition, the next plan is to experiments the use of the unmanned aerial vehicle (UAV), or drones.

Social Contribution: This project has produced four (4) academic papers presented at international conference. This project has also created awareness in Malaysia and the Philippines about the benefit of TVWS for applications in rural areas, focusing on environmental preservation and disaster comms.