

ICT RESEARCH IN THE PHILIPPINES

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DEPARTMENT OF SCIENCE & TECHNOLOGY – ICT OFFICE

DOST-ICTO



PROJECTS:

- CloudTop Computing Project
- TV White Space (TVWS)
- Spectrum (SPAS)

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CloudTop: Design and produce a technology platform for the public school system.

Provide teachers the capability to deliver blended learning and instructional methods. Provide students with access to ICT-enabled learning materials and resources.

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CloudTop: Develop technology to power and connect schools not connected to the electrical grid and without internet connectivity. The testing of alternative power sources like solar energy and the use of long-range WiFi capabilities are being explored. Ultimately, provide last mile connectivity.

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CloudTop: Five areas:

1. Thin Client Technology
2. Cloud Computing Infrastructure
3. Alternative Power Technology
4. Long Range WiFi Technology
5. eLearning Technology

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CloudTop: These are currently under Alpha phase field testing in two sites: San Rafael, Bulacan and in Quezon City..

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TV White Space (TVWS): Vacant TV frequencies (VHF UHF) to be utilized as Internet link-up.

Envisioned to provide basic broadband services to far-flung rural areas, providing them with applications in the areas of telemedicine and educational content delivery.



TV White Space (TVWS): Capable only of handling lightweight data tasks as current equipment is limited to delivering 6 megabits per second at a maximum range of 10 kilometers.

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TV White Space (TVWS): Currently undergoing pilot testing in partnership with the private sector in various sites in Bohol and Leyte provinces.

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TV White Space (TVWS): DOST-ICT Office is currently working on the regulatory framework for the the eventual commercial use of TVWS.

TVWS will be made available for Internet Service Providers such as Telecommunications Companies (Telcos) and Value Added Service Providers (VASPs) such as cable companies.

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TV White Space (TVWS): Eventually TVWS chipsets will be embedded in access devices such as smartphones, tablets and laptops, pretty much the same way bluetooth and wifi chipsets were embedded in these access devices when the technology matured.

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TV White Space (TVWS): TVWS can also be used in machine to machine (M2M) communication, such as those used by sensors for traffic and environmental monitoring, logistics and manufacturing.

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Spectrum Policy Assessment System (SPAS): A system to assess the implementation of spectrum policies in the country, and to formulate identified reforms or possible innovations.



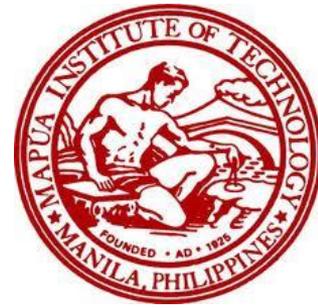
Spectrum Policy Assessment System (SPAS): Will be a hardware-software system composed a large number of spectrum sensors deployed all over the country, a central server that will collate and process the measurements, and a public facing website. The system will also include a radio planning and assessment facility to support policy development and other efforts related to spectrum policy assessment and development.



Spectrum Policy Assessment System (SPAS): Borne out of inspiration from the NOAH and DREAM projects, which allowed the people to be better aware of their environment, and thus deal with the challenges that confront them more effectively. Moreover, planning has been greatly enhanced that has redounded to significant benefits. Such benefits can similarly be had if the people and its government are provided similar information and tools on the condition of the RF spectrum.

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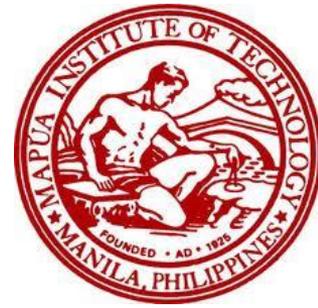
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Design and creation of electronic devices for agricultural applications that will take advantage of the data that the current projects of the Department of Science and Technology (DOST) will generate. (LIDAR data, Weather Data from project NOAH, etc.)

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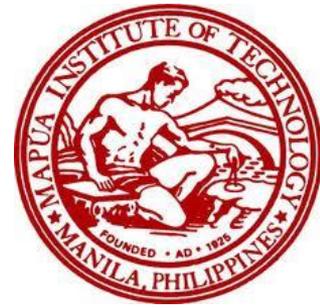


Partnership and collaboration with different Government offices/departments:

- Philippine Textile and Research Institute (e-Textile development)
- Bureau of Fisheries and Aquatic Resources (fish kill prevention)
- Bureau of Plant and Industry (Pest and Disease Prevention)

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Human Automation & Interaction

- Diachronic Analysis of Filipino Major Languages
- Brain Signal Analysis in a conversation set-up
- Modelling of Emotion in a Call Center Environment
- Raising engagement in Programming through gamification

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Pattern Recognition & Image Analysis Laboratory

- Image Processing using Subsequent Analysis
- Face Detection and Tracking System using Facial Geometry and Secondary Region Points
- Image Tampering Detection through Mash-up Algorithm
- Image Stitching
- Optimizing Low Resolution Image Through Multi-Scale Retinex Algorithm, Gaussian Filtering With Edge Preservation, And Face Hallucination Super Resolution Algorithm

THANK YOU!