

R&D Projects for 2016

2016 R&D PROJECTS

Agency: ADVANCED SCIENCE AND TECHNOLOGY INSTITUTE

Title of R&D Project	Division-in-Charge	Brief Description	Client Beneficiary	Status of Implementation
<p>Development of the Department of Energy - Online System for Energy Collaboration and Cooperation (DOE-OSECC):</p> <ol style="list-style-type: none"> 1. Energy Data Center Management System (EDCMS) 2. Energy Efficiency Information System (EEIS) 3. Oil Products Web-based Information System (OPWIS) 4. ER-1-94 Financial Management Information System (FMIS) 	CSD	<p>As a component of the DOE CY 2015-2017 Information System Strategic Plan (ISSP), the development of the DOE Online System Energy Collaboration and Cooperation (OSECC) intends to provide better services to clients, particularly at identifying the processes, data, and people involved that will determine the functionality of the system. It also aims to identify issues and concerns, and how these systems might offer streamlined DOE processes and provide efficient delivery of information, products and services to the group and clients. Included in this component is the creation of ER-1-94 Financial Management Information System (FMIS) to administer energy funds utilization management. The DOE-ER 1-94 FMIS is a web-based application that aims to streamline online administration and management of fund for projects under ER 1-94 program; provide better management of data/reports on the monitoring of entity's compliance to the requirements; and facilitate online submission from data sources, secured access to financial data, and dynamic reports generation. Furthermore, it would enhance transparency in the area of government-administered energy funds utilization management.</p>	DOE and its stakeholders/clients	Ongoing
<p>Development, Enhancement, and Adoption of the Department of Energy - Online Service Management System (DOE-OSMS) for Legal Services Information System (LSIS) and Energy Services Information System (ESIS) Phase 2</p>	CSD	<p>The DOE-OSMS project aims to establish a web-based service and document management system, which shall serve as a single point of access to DOE's online services pertaining to legal matters and other services of the Department. It involves the development and implementation of an information system that will provide and enable various stakeholders of the DOE to efficiently and easily access, search, store, track, retrieve, and dispose documents. Specific activities include acquisition and configuration of hardware components, coding and customization of the software, trainings, and technical support.</p>	DOE and its stakeholders/clients	Ongoing
<p>Development, Enhancement, and Adoption of the Department of Energy - Critical Energy Installation Information System (DOE-CEIIS) Phase 2</p>	CSD	<p>The project aims to develop a web-based and automated information management system that will provide DOE stakeholders a single point of access to DOE's online services relevant to Philippine's existing and potential critical energy installations and the corresponding profiles. Said project also includes the establishment of the DOE off-site Disaster Recovery System (DRS) which will manage a fail-over of the system to ensure continuous provision of services. The set up of the DRS will be located outside the DOE main office and will include various robust application/ database servers, storage devices, and other network peripherals.</p>	DOE and its stakeholders/clients	Ongoing

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Development of the Department of Energy - GIS Geodatabase (DOE-GIS) and Upgrade of the Energy Resource Information System Phase 2	CSD	To facilitate DOE's updating, retrieval, and provision of geographically-related energy information, the project aims to develop and implement a centralized geo-database of energy contracts and applications, and energy critical infrastructures. Specific activities under said project involves the collection and building of geo-spatial databases, development of a customized GIS graphical user interface (GUI) for a web-based application compatible or complementary to the existing GIS software, and uploading of energy-related interactive maps at the DOE Website. Trainings for system administrators and end-users will also be conducted.	DOE and its stakeholders/clients	Completed Development
Setting-Up of One-Stop Shop Laboratory For Global Competitiveness (OneLab)	CSD	The project involves the establishment of a referral system that will primarily integrate the laboratories within the DOST system and eventually with partner laboratories from the private sector.	DOST System General Public	Completed
Computing and Archiving Research Environment (CoARE)	KMD/ RDD	The project essentially targets to enable multiple data integration from ASTI-initiated projects and collaborative projects with other agencies that have high requirements for data storage and high-performance computing. It aims to foster collaboration by providing a platform for easy storage, analysis and sharing of environmental and geospatial data, as well as provide better access to high performance computing resources.	Government Institutions Non-profit Organizations Academe	Ongoing
Establishment and Operation of Philippine Electronics Product Development Center (Phase I)	RDD	The project focuses on the setting up of the Electronics Product Development Center (EPDC), a world-class facility designed to support the electronics industry by providing various technical support services to promote innovation and high value product development.	Electronic Industry Academe Government R&D Institutions	Completed
Implementing a Satellite-Based Monitoring and Assessment of Rehabilitation in Typhoon-Effectuated Regions (SMARTER VISAYAS)	RDD	The project aims to acquire a high-resolution satellite multispectral satellite imagery through a dedicated tasking services (DTS) for rapid assessment of the damages and for continuous monitoring of the rehabilitation efforts in the Typhoon hit areas. The satellite images will be processed and analyzed for planning and rehabilitation of typhoon-effectuated regions (i.e. identification of damage in buildings, infrastructure, and crops).	Institutions involved in Disaster Risk Reduction efforts	Completed
Study and Development of a Self-Sustaining Smart Street Lighting System	RDD	The project aims to develop a self-sustaining lighting system that will help reduce consumption of power from the grid by desinging a charge controller that can handle multiple renewable energy sources.	General Public Local Government Units (LGUs)	Ongoing
Study and Development of an Unmanned Aerial Vehicle for Disaster Risk Reduction Application (UAV)	RDD	The project aims to conduct a preliminary study on the development of UAV which will be used to gather critical information from aerial sensors through mapping of disaster zones and to develop better communications tools for disaster relief workers on the ground to ensure that an area is prepared for disaster and/or avoid damage and reduce casualty rates.	Institutions involved in Disaster Risk Reduction efforts	Ongoing

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Integrated Government Philippines (iGov Phils.): Phase III	RDD/SSED/KMD	The iGovPhil Project is a joint undertaking of the Department of Information and Communication Technology and the DOST- Advanced Science and Technology Insitute. It endeavors to achieve transparency and efficiency in government by setting up relevant mechanisms to implement interactive, interconnected and interoperable government applications and online services by developing relevant systems and enhancing and maximizing existing ones. The iGovPhil Project aims to link up relevant government data centers and databases; have a secured government shared network for deploying government information system; provide a secured payment system for government transactions; provide a secured single sign-on government portal for accessing common government services; showcase Public Key Infrastructure (PKI) authentication in government transactions; acquire a secured official electronic communications and collaboration system; and build a Government Data Center that will host all the applications.	Government Institutions including LGUs	Completed deliverables for 2016. Project will continue in 2017 due to implementation of additional/new activities.
Deployment of Early Warning Systems in Disaster-prone Areas (DEWS)	SSED	The DEWS is a project undertaken in cooperation with the Philippine Atmospheric, Geophysical and Astronomical Services Administration (DOST-PAGASA) and DOST Regional Offices. It involves the installation of hydrometeorological devices (hydromets) such as Automated Rain Gauge (ARG) and Water Level Monitoring Station (WLMS) in different river systems and secondary tributaries to provide data that will be useful in protecting the lives, property and livelihood in various communities. To complement these systems of hydrometeorological devices, an early warning system composed of sirens or beacons will be installed in communities affected by floods. The use of sirens or beacons as early warning of natural hazards is one of global best practices in informing unsuspecting communities thus improving disaster risk reduction.	LGUs/Barangays Government institutions	Ongoing
Devt. of Philippine Scientific Earth Observation Microsatellite (PHL-MICROSAT) Program: Project 2. Ground Receiving Station for the PHL-MICROSAT)	SSED	The project focuses on capability building, development and launch of a two 50-kg class microsatellites called Diwata-1 and Diwata-2 into space. It also involves the establishment of the facility for the ground receiving station to receive imagery and data from the microsatellite. The microsatellite launched will perform several applications based on its mission which will cover environmental monitoring and disaster mitigation. In terms of capability building, the Filipino engineers are working with Japanese experts on the actual bus and payload. The engineers will earn masters degree upon successful completion of the program they are involved in.	Institutions involved in Disaster Risk Reduction efforts; Scientific researchers	Ongoing
Establishment of Agro-Meteorological Stations in Highly Vulnerable Agricultural Areas: A Tool for Climate Change Adaptation and in the Development of Local Early Warning System" (AGROMET cum CLIMATE CHANGE)	SSED	This project is being implemented to address the need of the Bureau of Soils and Water Management of the Department of Agriculture (DA-BSWM) proposal to upgrade their existing Automated Weather Stations (AWS) and deploy more AWS strategic locations. At least 100 AWS with upgraded Rain Gauges will be produced and installed. Using the GSM technology, data collected through these sensors will be transmitted to the centralized data server. Such data will be transformed into graphical representations which is accessible through a web based monitoring portal.	BSWM	Ongoing

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Philippine Earth Data Resource and Observation (PEDRO) Center	SSED	The project aims to develop the capacity to receive, process and distribute multi-sensor satellite imagery through the establishment of a multi-mission ground station (MMGS) facility called PEDRO. It involves setting up of a system and infrastructure that will securely receive, process, exploit and distribute space-borne imagery and derive information from the supported remote sensing satellites for various applications such as disaster mitigation, natural resource management, environmental monitoring, pollution control, energy exploration, intelligence, and emergency response management.	Institutions involved in Disaster Risk Reduction efforts; Government	Completed
Upgrade of ASTI ARQ (Advanced Remote Data Acquisition unit) Datalogger	SSED	<p>The arQ is a data logging solution that currently serves as the controller for the remote monitoring stations such as AWS, ARG, WLMS currently deployed nationwide. It is a customizable datalogging solution that can be configured to fit customer requirements. It primarily uses SMS for telemetry but can also be configured to accommodate other communication facilities such as satellite, GPRS, and others. Aside from the roughly 1,500 stations nationwide, the arQ has also been used as a datalogging equipment for various stations used by LGUs, academic institutions and private companies.</p> <p>To date, arQ is for licensing. It is the first DOST product to acquire approval of the Fairness Opinion Board (FOB) after undergoing evaluation as required by RA10055 prior to commercialization of government-funded product development.</p>	LGUs; Academic Institutions; Private companies in need of telemetry and datalogging solutions	Completed
Establishment and Operation of Philippine Electronics Product Development Center (Phase II)	RDD	<p>With the initially established Electronics Product Development Center (EPDC) located at the DOST Compound in Bicutan, Taguig City, this phase of the project focuses on the operation, enhancement, and expansion of the center. This is seen as a catalyst in moving the electronics industry forward to R&D.</p> <p>Specifically, the project aims to:</p> <ol style="list-style-type: none"> 1. complete the EMC test facility with the EMS capability 2. expand the capability and capacity of the Rapid PCB Prototyping facility 3. support electronic designers in the regions 4. secure international accreditation of the EMC facility 	Electronic Industry Academe Government R&D Institutions	Ongoing