# Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST - PCIEERD)

# Physical Report of Accomplishments (as of 4<sup>th</sup> Quarter, FY 2018)

## Program: National Industry, Energy and Emerging Technology Sectors R&D Program Organizational Outcome: Increased benefits to Filipinos from scientific knowledge and technological innovations for productivity and competitiveness

Output/Outcome Indicators	Targets	Accomplishments	Remarks
Output Indicators			
Number of projects funded	100	232	The figure includes DOST and PCIEERD funded projects.
			PCIEERD – GIA – 177 DOST – GIA - 55
Number of projects monitored	330		The accomplishment consists of projects handled by the Council with progress and financial reports submitted by the Implementing Agencies or with field evaluation report prepared by the Project Managers.
Percentage of projects completed which are published in peer- reviewed journals, presented in national and/or international conferences, or with IP filed or approved	50%	56%	Out of 307 completed projects from 2014 – 2017 there were 150 projects with publication in peer- reviewed journals, presented in national and/or international conferences, or with IP filed or approved technologies.

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Output/Outcome Indicators	Targets	Accomplishments	Remarks
Outcome Indicators			
Percentage of priorities in the Harmonized National R&D agenda (HNRDA) addressed	`90% <sup>`</sup>		All priorities of the Council under HNRDA have new/ongoing projects.
Number of partnerships with public and private stakeholders and international organizations	20		The figure comprise of 53 Higher Education Institutions (HEIs) and 45 local and international public and private companies and organizations.

Prepared by:

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#### List of Funded Projects (January – December 2018)

	Project Title	Implementing Agency
PCIE	EERD-GLA Projects	
1	Geopolymerization and its Potential Application in Artisanal Gold Mine Tailings	Central Mindanao University (CMU)
2	Establishment of Common Service Facility (CSF) for Artisanal Small-Scale Gold Mining in Northern Mindanao	Mindanao State University -Iligan Institute of Technology (MSU-IIT)
3	Sustainable Wastewater Treatment Systems with Nutrient (SWAN) Recovery	De La Salle University (DLSU)
4	Development of Data Analytics-Ready Info Unified System (DARIUS) for Agile Delivery of Regional Services	DOST IV - A
5	Binary Gels- Rheology of Two-Component Biopolymer Hydrogels Investigated using Optical Tweezers and Non- Linear Rheometry	University of San Carlos (USC)
6	Improvement of Food Security on Poultry Products by Upgrading Farm Yield and Efficiency through the Introduction of Highly Tailored Farm-Specific Improvements	Farmwatch Solutions, Inc.
7	Development of an Enhanced Radio Frequency Mesh Network to Track and Monitor Boats at Sea Using Fame Transponder	Futuristic Aviation and Maritime Enterprise, Inc.
8	Human Resource Development Program (Financial Grants to: Visiting Professorship and Sandwich Programs, Attendance to Conferences, and the like related to the sectors of the Council)	Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)
9	Improvement of Gong Fabrication Processes Through S&T Intervention at Mankayan, Benguet	DOST Region CAR and Metals Industry Research and Development Center (MIRDC)
10	Package Development of Bakery Product and Field Testing of Ready-To-Eat (RTE) Smoked Fish Rice Meal and Sweet Potato as Disaster/Relief Food-Phase 2	Industrial Technology Development Institute (ITDI)
11	Standards and Testing Automated Modular Platform (STAMP)	UP Diliman
12	Characterization of Tailings and Monitoring of the Integrated Gold-Copper Mineral Processing Pilot Plant in Benguet	DOST Region CAR
	Processing of Bio-based Polyols and Polyurethanes for Indu	strial Applications
13	Project 1. Production of Bio-Based Polyols from Lignocellulosic Biomass	Mindanao State University -Iligan Institute of Technology (MSU-IIT)
14	Project 2. Development of Polyurethane -Based Packing Materials and Anti-Corrosive Coatings from Vegetable Oils	Mindanao State University -Iligan Institute of Technology (MSU-IIT)
.15	Characterization and Separation of Heavy Minerals in the Alluvial and Beach Sands in San Vicente, Northwestern Palawan: Phase I	Philippine Nuclear Research Institute (PNRI)
16	Design and Development of an Automated Multi Commodity Heat Pump Dryer	Adventist University of the Philippines (AUP)
17	Techno-Economic Feasibility Study of Micro-Grid in A Remote Community	Mindanao State University -Iligan Institute of Technology (MSU-IIT)

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	··· Project Title	Implementing Agency
18	Development of Philippine Structural Integrity Monitoring System for Critical Infrastructure in Metro Manila -Phase 1	Mapua Institute of Technology (MIT)
	Development of a Fixed-Wing Short Take Off and Landing(Si With Cooperative Capability for DRRM	
19	Project I. Design and Fabrication of an Airframe for Medium-Range, Short Take-off and Landing UAV	FEATI University
20	Project 2. Development of a Flight Controller for A Modular UAV	De La Salle University (DLSU)
21	Project 3. Cooperative UAV-UGV Missions and Applications with Custom Communications and Imaging Capabilities	Ateneo de Manila University (ADMU)
	High Throughput Processing of Functional Thin Films using	Gaseous Discharges
22	Project 1. Development of Direct Current (DC) Plasma System for Ti-Al-C Thin Film Synthesis	Ateneo De Manila University (ADMU
23	Project 2. Development of Radio Frequency (RF) Plasma System for Ti-Al-N Thin Film Synthesis	UP Diliman
24	Ionic Liquid Assisted Electrospinning of Conductive Nanofibers as Solid Polymer Electrolyte/Separator Membrane of Solid State Supercapacitor	UP Diliman
25	Generalized Automated Microfluids And Micro-Actuator Assembly (GAMMA)	UP Diliman
26	Filipinnovation Entrepreneurship Corps: Enabling Researchers to Assess Commercial and Societal Value of their Research	De La Salle University (DLSU)
27		Senti Techlabs Inc.
28		Kinovette Scientific Solutions Co.
29	Design and Development of a PLC-based High Capacity Tissue Culture Growth Chamber	Cavite State University (CavSU)
30		
31		Multi-Agency
32		industrial Technology Development
5,2	Dryer, Iodizer, Crystallizing Pan, Fumace, Concentrator (Ion -Exchange Membrane)	Institute (ITDI)
-33		UP Los Baños
34		UP Diliman
35	Cyber-Physical Transportation System	UP Diliman
36	Modification of Road Train Energy Storage System using Lithium Ion Battery	Metais Industry Research and Development Center (MIRDC)
37	Jeenneys	University of Asia and the Pacific
38	Development of a HFDR Ship Tracking Algorithm Software for Maritime Surveillance, Search and Rescue	Mapua Institute of Technology (MIT)
39	Ultrafast Mbe-Grown Terahertz Photoconductive Antenna Devices	UP Diliman
40	C. D. J. Marshan Constructor Station	Philippine Nuclear Research Institute (PNRJ)
	(PN33)	UP Baguio

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	Project Title	Implementing Agency
42	Project 1. Standalone Urban Farm	UP Diliman
43	Project 2. Sensor-Based Monitoring and Analytics for Smart Hydroponics (SMASH)	UP Diliman
~44	Project 3. Establishment of Soilless Culture Technology for Urban Food Production)	UP Diliman
45	Project 4. Ex-Situ Conservation through Micropropagation Cryopreservation of Native Plant Species	UP Diliman
46	Embedding of Functional Materials onto Paper for Antimicrobial and Electromagnetic Shielding Applications	UP Los Baños
47	Pulp-To-Print: Development of Print-Ready Cellulose Composites from Paper Mulberry	UP Diliman
48	Angular Goos-Hanchen Shift: An Optical Phenomena for Ultra-Thin Film Thickness Measurement	UP Diliman
49	Development of a Raman Microscopy and Spectroscopy (RMS) Setup	UP Diliman
50	Fringe-Area Data Access by Transient Altitude Provision	De La Salle University (DLSU)
51	One Click: Android/Web-based Student Response and Understanding Visualizer	Mapua Institute of Technology (MIT)
52	Fabrication of Metal Oxide Thin Films for Optical Coatings with Plasma Assisted Deposition using a Plasma Enhanced Chemical Vapor Deposition (PECVD) System	Ateneo De Manila University (ADMU)
53	Flood Risk Assessment for Mitigation and Effective Response (FRAMER) of Riverine Towns in Selected River Basins in Cavite, Batangas and Quezon Provinces using Most Recent Lidar DEM	Mapua Institute of Technology (MIT)
54		Toon City Academy
55	Development of Data Analytics, Big Data, and Artificial Intelligence to Build a Smart Restaurant Management Platform	Restograph Inc.
56	Production of Nanocellulose Crystals: Powder, Advanced and Derivative Products for Various Industry Applications	Nanotronics Inc.
57		Cropital Enterprises Corporation
58	(EE&C) for State Universities and Colleges of Six (6) Regions as Demonstration Sites	Industrial Technology Development Institute (ITDI)
59	Infrastructure Development Program (IDP) - Establishment of an Additive Manufacturing Research Laboratory	Bataan Peninsula State University
60	Establishment of A Wind Turbine Development and Testing Laboratory	Central Philippine University
61	Establishment of A Plasma Physics Laboratory for Materials Processing Applications	UP Baguio
62	Establishment of the University of San Carlos Center for Advanced Computational Modelling and Simulation (CACOMS)	University of San Carlos Center (USC)
63		Philippine Nuclear Research Institute (PNRI)
64		Bonifacio Art Foundation, Inc.
<u> </u>	Wastewater Treatment System Upgrading Program (WATSU	<i>1P</i> )

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	Project Title	Implementing Agency
65	Enhancing the Applicability of the Vertical Helophyte Filter Systems for Small Communities, Local MSMEs and Public Entities	DOST Region XI/University of the Immaculate Concepcion
66	Pilot Scale Production of Nickel Pig Iron from Low Grade Laterite Ore	Department of Environment and Natural Resources - Mines and Geosciences Bureau (DENR - MGB)
	SCALE: Synergistic Capacity Advancement in the Manageme	
67	Endocrine Disruptors, Antibiotics and Heavy Metals in Laguna Lake Water: Impacts on Food and Water Security	UP Diliman
68	Microbial Source Tracking in Selected Tributaries of Laguna de Bay	UP Diliman
69	Trace Organics and Metals in Commodity Fish: Method Optimization, Extent of Contamination and Health Risk due to Fish Intake	UP Diliman
70	Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plat in the Regions (Bicol)	DOST Region V/UP Diliman
71	Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plat in the Regions (Caraga)	DOST Region XIII/UP Diliman
72	Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plat in the Regions (Compostela Valley)	DOST Region XI/UP Diliman
73	How Do We Feed One Hundred Million IEMAGINEERING Systems for Food Security	UP Industrial Engineering Alumni Association Inc.
74	Establishment of the Asian Institute of Management-Dado Banatao Incubator	Asian Institute of Management, Inc.
75	Smart Vision: Artificial Intelligence-Guided Vision System for the Blind	Grayscale Marketing Consultancy
76	Assessment of DOST Technology Business Incubators and Road Mapping	TT12 Technology Forum Inc.
	Design and Development of Processing Machineries for Honeybee and Intermediate Products	Don Mariano Marcos Memorial Stat University
	Assessment of Metal Content of Food and Water Resources i	
78	Project 2. Metal Content of Water Supplies in Volcanic Impacted Area and its Impact to Vegetations	Industrial Technology Development Institute (ITDI)
79	Project 3. Household and Community Based Filters for Metals in Water	Industrial Technology Development Institute (ITDI)
80	Support to the Rehabilitation of Boracay Island through the Upgrading of Material Recovery Facilities (MRFS)	DOST Region VI
	Natural Dyes and Colorants R&D Program	I to the first sector of Development
81	Cosmetics	Industrial Technology Development Institute (ITDI)
82	of Natural Colorants in Nutritional Food Products	Food and Nutrition Research Institu (FNRI)
83	Food Additive	Industrial Technology Development Institute (ITDI)
84	Modelling	UP Cebu
85	Specific Earthquake Ground-Motion to Help Enhance the Seismic Resiliency of Residential and Medium-to-High Rise Buildings in Metro Cebu and Metro Davao	Philippine Institute of Volcanology Seismology (PHIVOLCS)
86	the second secon	Mapua Institute of Technology (MI

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	Project Title	Implementing Agency
87	Development of a Low-Energy Ion Source for the Synthesis	UP Diliman
-'	of Diamond-Like Carbon Films	
88	Mobile Application Venture Capital Competition	DOST Region VII
89	Financial Assistance for the Conduct Of 44th FNRI Seminar Series	Food and Nutrition Research Institute (FNRI)
90	Extraction of Radionuclides, Rare Earths and other	Philippine Nuclear Research Institute
	Valuable Industrial Elements from Phosphogypsum	(PNRJ)
	Tailings 3R Approach to Sustainoble Management of Nickel Laterite (	One Tellinge: Bouse Begueling and
ľ	Reprocessing far Environmental Remediotion and Moteriol	Valarization
91	Project I. Utilization of Nickel Laterite Ore Rock (Low	De La Salle University (DLSU)
	Grade) for Various Application: Acid Mine Drainage	
	Treatment and Carbon Sequestration	
92	Project 2. Recycling and Reprocessing of Siltation	Central Mindanao University
	Sediments from Selected Nickel Laterite Mining Areas in	
ļ	the Philippines as Raw Materials for the Synthesis of	· ·
	Iron- Based Novel Adsorbents	
93	Project 3. Recovery of Nanominerals from Silt for	Mindanao State University - Iligan
	Various Ceramie Applications	Institute of Technology (MSU-IIT) De La Salle University
94	Project 4. Recycling of Silt and Spent Residue from Reprocessing as Raw Materials for Geopolymer	De La Sane University
95	Comparison of Different Enzyme Preparations for	Cavite State University
	Productions of Oligofructose and Inulin from Sugarcane	
	Juice	1
96	Design and Development of UP Bike Share System	UP Diliman
97	Development of Information Gathering and Utilization	Philippine Institute of Volcanology and
	Systems using Small Unmanned Airborne Vehicles (UAVs)	Scismology (PHIVOLCS)
	for Disaster Risk Assessment, Monitoring and Response	
98	Fabrication of Highly C- Axis Oriented YBCO	UP Diliman
	Superconducting Thin Films by Sedimentation Deposition	
	$\mu$ C-IC: Design of Microcontroller Integrated with Energy H	
99		Mindanao State University - Iligan
	Sensor Network Applications	Institute of Technology (MSU-IIT)
[100	Project 2. Power Management Unit Using Low Drop-Out	Mindanao State University - Iligan
	Regulator and Switched Capacitor DC-DC Converters	Institute of Technology (MSU-IIT) Mindanao State University- Iligan
101	- Project 3. Design of Indoor Light Energy Harvesting for	Institute of Technology (MSU-11T)
100	Wireless Sensor Network Applications Up-Scaled Solution-Phase Synthesis of Metal Nanowires	UP Diliman
102	and its Application in Transparent Metal Nanowire Touch	
1	Panel	
	Gea-SAFER Mindanao: Geo-Informatics for the Systematic	Assessment of Flood Effects and Risks for
	a Resilient Mindanaa	
103	Project 1. Geo-Safer Zambasulta: Systematic Assessment	Ateneo De Zamboanga University
	of Flood Effects and Risks in the Zamboanga Peninsula,	
	Mindanao Philippines	Central Mindanao University
104	Project 2. Geo-Safer Northern Mindanao/Cotabato: Systematic Assessment of Flood Effects and Risks in	
	Northern Mindanao ad Cotabato, Philippines	
105		Caraga State University
103	Flood Effects and Risks in the Agusan River Basin,	
	Caraga Region, Mindanao, Philippines	
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	Project Title	Implementing Agency
106	Project 4. Geo-Safer Western Mindanao: Systematic Assessment of Flood Effects and Risks in the Western Mindanao, Mindanao Philippines	Mindanao State University - Iligan Institute of Technology (MSU-IIT)
107	Project 5. Geo-Safer Southeastern Mindanao: Systematic Assessment of Flood Effects and Risks in the Southeastern Mindanao, Philippines	UP Mindanao
108	Support to Regional Consortia	DOST Regional Offices and Member Universities
109	Polyhydroxyalkanoate (PHA) Production from Agricultural Residues	UP Los Baños
110	Development of Freeze-Dried Local Alternative Flavors for Ice Cream	Benguet State University
	Assessment of Metal Content in Agricultural Products and It. Areas	s Environment in Volcanic Impacted
I11	Project 1. Onelab Capability Assurance System for Metal Content Assessment in Agricultural Produce Water and Environmental Samples	Industrial Technology Development Institute (ITDI)
112	RCUK: Water - Energy - Nutrient Nexus in the Cities of the Future	De La Salle University
113	Development of Groundwater Resource Management Plan and Monitoring System for Zamboanga City and its Surrounding Areas	Ateneo de Manila University (ADMU)
114	Electrochemical and Quantum Mechanical Investigation of Various Small Molecule Organic Compounds as Corrosion Inhibitors in Mild Steel	De La Salle University (DLSU)
- <u> - </u> 5	Establishment of the Technology Management System of the University of the Philippines Cebu	UP Cebu
116	Higher Education Institution Readiness for Innovation & Technoprenuership (HEIRIT) Development Program for Starting TBI's	UP Diliman
117	Enhancement of K-12 Grading System towards Intelligent Computing Environment through Wela School Innovation (Responsive Monitoring System for Educational Institution)	Wela Online Corp
118	Support for Information Dissemination Program	Multi Agency
119		Philippine Nuclear Research Institute (PNRI)
120	Development, Standardization, and Characterization Studies of Tupig, Bukayo, and Bibingka - Region 1 Native Delicacies	
121		Industrial Technology Development Institute
122		Development Academy of the Philippines
123	Facility for Nanotechnology R&D in Central Luzon	Central Luzon University
124		Food and Nutrition Research Institute

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	Project Title	Implementing Agency
125	Field-Testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Caraga)	UP Diliman
126	Field-Testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Bicol)	UP Diliman
127	Field-Testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Compostela Valley)	UP Diliman
128	Titan: Vision -Based Traffic Information & Analysis	De La Salle University (DLSU)
	Geaspatial Manitoring System for High Value Projects	
129	Project 1. Geospatial Monitoring System for National Greening Program (NGP)	UP Diliman
130	Project 2. Geospatial Monitoring System for National and Communal Irrigation Systems (NCIS)	UP Diliman
<u>1</u> 31	Development of Error Resilient Joint Source-Channel Wireless Video Transmission System for High Efficiency Video Coding (HEVC) Standards Implemented in Field Programmable Gate Array (FPGA)	University of Santo Tomas
132	BRAVE: Bomb Removal Automated Vehicle	De La Saile University
133	Pilot Implementation of ITDI's Pre-Commercialization Tools/ Strategies for Effective Transfer and Commercialization of Generated Technologies and Intellectual Properties	Industrial Technology Development Institute
134	Charm - Charging in Minutes Spinoff Project - Technology Development for Manufacturability and Open Water Market Validation	UP Diliman
135	Product and Market Validation for A Semi-Automated Reef Fish Census System	
136	Catch-All: Vision-Based Artificial Intelligence Analytics Software Development for Traffic and Transport Applications	De La Salle University
137	Technology and Market Validation of Universal Structural Health Evaluation and Recording (USHER) System	Mapua Institute of Technology
138	Integration of Data Science and Scaling Up of Payruler, A Comprehensive Human Resource Management System (HRMS)	Genii Hut Technologies Corporation
	Natural Dyes and Colorants R&D Program	
139	Project 1. Commercial Scale Verification of Natural Dyes for Textiles	Philippine Textile Research Institute (PTRI)
140	Research and Development Project to Rehabilitate and Enhance Productivity in Lahar and Ash-Laden Areas in Central Luzon	Central Luzon State University (CLSU)
141	Collagen and Gelatin from By-products of Fish Processing Industry	Central Luzon State University (CLSU)
142	Fish Oil, Protease and Protein Hydrolysates from by- products of Fish Processing	Central Luzon State University (CLSU)
143	Catfish: A Modular Mini-Autonomous Underwater Vehicle (AUV) System	UP Diliman
144		UP Diliman
145		Ateneo De Manila University1
146	Optical trap-mediated interaction between cancer cells and elucidated compounds from vegetable extracts in PEMF (Pulsed Electromagnetic Field) Background Energy	De La Salle University

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	Project Title	Implementing Agency
147	Enhancing Man-Machine Interaction through Intelligent Conversational Agents	De La Salle University
148	Enhancing Operational Capability of Bicol University Fabrication Laboratory	Bicol University
149	Development of Chitosan Film from Sardine Fish Scales	Western Mindanao State University (WMSU)
150	Development of Bottom Housing System for Abalone Farming	Western Philippines University (WPU)
151	Technology Promotion of Five-Coach Hybrid Electric Road Train (HERT) in General Santos City	Metals Industry Research and Development Center (MIRDC)
152	Quantitative Lahar Impact and Loss Assessment under Changing Land Use and Climate Scenarios	Philippine Institute of Volcanology and Seismology (PHIVOLCS)
153	Catchment Susceptibility to Hydrometeorological Events: Sediment Flux and Geomorphic Change as Drivers of Flood Risk in the Philippines	UP Diliman
154	Marine Transportation Information System (MARIS)	UP Diliman
155	Impact: Assistance in the Commercialization of DOST Funded Technologies in Caraga State University	Caraga State University
156	Fastrac: Commercial Development of Production, Application and Full Market Study of Monascus Red Colorant	UP Los Banos
157	Impact: Enhancement of Mapua's Technology Transfer Process and Structure	Mapua Institute of Tcchnology
158	Impact: Assistance in the Commercialization of DOST Funded Technologies in De La Salle University	De La Salle University
159	Filipinnovation Entrepreneurship Corps (FEC) 2: Enabling Researchers to Assess Commercial and Societal Value of their Research	Dc La Salle University
160	DOST- FNRI Technology Marketing Package for Juan and Juana	Food and Nutrition Research Institute (FNRI)
161	Production of Ready-to-Buy (RTB) Natural Textiles and Dyes in Support of Increasing Utilization of Local and Indigenous Philippine Textile	Philippine Textile Research Institute (PTRI)
	Upgrading the PNS for Virgin Coconut Oil (VCO) and the P	hilippine VCO Industry
162	Project 2. Investigation of the Microbiological Factors which Affect the Quality of VCO	Ateneo De Manila University (ADMU)
163	Project 4. Assessment of VCO Production: GMP and HACCP	Ateneo De Manila University (ADMU)
164	Project 5. Water Activity and Percent Moisture: Effect on VCO Stability	Ateneo De Manila University (ADMU)
165		Philippine Nuclear Research Institute (PNRI)
166		UP Diliman
167	114	Mariano Marcos State University (MMSU)
168		De La Salle University (DLSU)

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	Project Title	Implementing Agency
169	Liquefaction Hazard Assessment for Resilient Schools in GMMA: A Liquefaction Probabilistic Model using Non- Invasive Geophysical Techniques and Limited Probe Hole	Philippine Institute of Volcanology and Seismology (PHIVOLCS)
170	Automated Real - Time Monitoring System for Magat Dam	Mapua Institute of Technology (MIT)/ Malayan Colleges, Inc.
171	Establishing an Environment-Friendly Chromium Plating Process using New Generation Ionic Liquids	UP Diliman
172	Remote Sensing and Data Scence: DATOS Help Desk	Advanced Science and Technology Institute (ASTI)
173	Geospatial Assessment and Modelling of Urban Heat Islands in Philippine Cities (GUHEAT)	UP Diliman
174	Enhancement, Field Validation and Market Readiness of DNA-Based Nanobiosensor for the Detection of <i>EColi</i> , <i>E.</i> <i>Coli</i> 0157:H7 and Salmonella Enterica in Food, Feed and Farm Produce	UP Los Baños
175	Innovation and Technopreneurship Hub (ITECH)	Caraga State University
176	Marine Nanocoat for Anticorrossion, Antibarnacle, AntiUV Coating for Ship Vessel Applications	De La Salle University (DLSU)
177	Rurok Bikes: Variable Geometry and Efficient Suspension Pedaling Platform	Rurok Industries, Inc.
DOS	T-GIA Projects	
Elect Prog	tronics Product Development Center (EPDC) as Platform for . ram	
178	Project 1. Electronics Product Development Center Upgrade and Operation	Electronic Industries Association of the Philippines, Inc. (EIAPI)
179	Project 2. Electronics Product Inclusive Innovation     Center	Advanced Science and Technology Institute (ASTI)
MEC Clim	CO-TECO: Improvement of Forecast Capability on Weather, Mate	
180	Project I. Typhoon Formation, Structure and Intensity Change in Western NP and Wave Observation and Modeling	Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA)
181	Project 2. Heavy Rain Monitoring and Forecasting in the Mountainous Area and Early Warning Landslides	UP Los Baños
182	Project 3. Observations and Dynamical Down-scaling of Seasonal and Sub-seasonal Forecast	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
183	Effectiveness of 21 <sup>st</sup> Century Learning Environment Model as a Support System to Teaching and Learning of Science and Mathematics	DOST Region IV-A
184	Enhancing Onelab for Global Competitiveness	DOST Regional Offices
185	One Expert (IE): A One-Stop Portal for Science and Technology Consultancy and Technical Services	Technology Application and Promotio Institute (TAPI); National Research Council of the Philippines (NRCP); Science and Technology Information Institute (STII); DOST Region VI; DOST Region CAR; DOST Region NCR

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<u> </u>	Project Title	Implementing Agency
186	Optimization of the Operational Capabilities of Hydromet Sensors in Line with International Standards (WMO Standards) for Effective Weather, Flood Warming (CBFEWS) and Application to Research	Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA)
187	Development of novel materials as emitters and/or detectors for (sub)-terahertz time-domain spectroscopy carrier dynamic studies	UP Los Baños
188	NovaSAR Imaging Capacity Share Programme Synthetic Aperture Radar (SAR) and Automatic Identification System (AIS) for Innovative Terrestrial Monitoring and Manitime Surveillance	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
189	Environmental, Health and Safety Research in the Risk Assessment of Nanomaterials (Phase 1) Establishment of a Nano Safety Program in the Philippine	Industrial Technology Development Institute (ITDI)
190	Utilization of Spent Tea Leaves and Tobacco Dust as Additives for Plywood adhesive	Forest Products Research and Development Institute (FPRDI)
-191	-Technology Innovation for Commercialization and Other Technology Transfer Program	Technology Application and Promotion Institute (TAPI)/DOST - Research and Development Institutes (RDIs)
192	AGT UP End of Project	Metals Industry Research and Development Institute (MIRDC)
193	The Fusion of Science and Arts: Philippine Biodiversity and Culture	National Research Council of the Philippines (NRCP)
194	DOST Technology Transfer Day	Technology Application and Promotion Institute (TAPI)
195	ITDI Participation to IFEX PHILIPPINE 2018 "The Best of the Seas"	Industrial Technology Development Institute (ITDI)
196	Processing and Utilization of Senile and Unproductive Rubberwoods ( <i>Hevea brazillensis</i> ) Trees for the Production of High Value Furniture, Mouldings and Joineries	Forest Products Research and Development Institute (FPRDI)
197	Strengthening the DOST Regional Metrology Laboratory Services	DOST – Regional Offices (ROs)
198	Development of a Philippine Indigenous Instrument Sound Database	Advanced Science and Technology Institute (ASTI)/UP Diliman
199	Sensors in line with International Standards (WMO Standard)	DOST Regional Offices
200	Investigation and Numerical Modeling of Philippine Tsunamis based on Historical, Geomorphological and Geological Evidence of Past Earthquakes	UP Diliman/Philippine Institute of Volcanology and Seismology (PHIVOLCS)
201	Newton Fund Scholarship	Science Education Institute (SEI)
202	Flooding Due to Storm and Surface Waves in Manila Bay	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
203	Flood Disaster Management Training for Local Government Units	UP Diliman
204		Technology Application Promotion Institute (TAPI)

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T	Project Title	Implementing Agency	
205	Geospatial Information Management and Analysis for Risk Assessment and Hazards (Georisk PH)	Philippine Institute of Volcanology and Seismology (PHIVOLCS)	
206	Tracing the Pathways of Mercury Concentration in Mined- Out Area	Philippine Nuclear Research Institute (PNRI)	
207	Development of a Future Earth Philippines Program (FEPP) Phase I	National Research Council of the Philippines (NRCP)	
208	Upgrading and Enhancing the Capacity of the Packaging Technology Division in Packaging Research and Innovation	Industrial Technology Development Institute (ITDI)	
209	Genomics Junior Camp	Philippine Genome Center (PGC)	
210	Philippine Participation in the China International Import Export (CITE)	Technology Application Promotion Institute (TAPI)	
211	Enhancing the Interest of Students from Selected Geographically Isolated Depressed Areas (GIDA)	Philippine Foundation for Science and Technology (PFST)	
	Development of Philippine Scientific Earth Observation Micr	rosatellite (PHL-MICROSAT)	
212	Project I. Microsatellite BUS Development for Philippine Microsat	UP Diliman	
213	Project 5. Remote Sensing Product Development for Philippines Microsatellite	UP Diliman	
214	Providing High Resolution 5km Climate Change Projections in the Philippines Using Weather Research and Forecasting (WRF) Model	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)	
215	Weather and Climate Science for Service Partnership for South East Asia: Building a Safer Community to Weather and Climate Variability through Science and Innovation	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)	
	Bamboo Musical Instruments Innovation Research and Deve		
216	Project 4. Development of Prototype Designs of Musical Instruments Using Select Philippine Bamboo Species and Processing Technologies	UP Diliman	
	IntElect: INTELLIGENT ELECTRIC TRANSPORTATION N	ETWORK	
217	Project 1. Advice: Ad-Hoc Vehicle-Infrastructure Cooperative Environment	UP Diliman	
218	Project 2. Emocion: Electric Mobility and Charging Infrastructure Operating as a Network	UP Diliman	
219	Project 3. ETRIKE - Deployment and Utilization Study	Cagayan State University (CSU)	
220	NICER Program: Astronomical Near-Earth Observation Light Pollution (ANEO-LiPo)	Rizal Technological University (RTU)	
221	PISOLAR: Payment Innovation for SHS Ownership by Lay Away Routine under the Accelerated R&D Program for	University of Southeastern Philippines (USeP)	
<u></u> .	Capacity Building of Research and Development Institutions and Industrial Competitiveness (CRADLE)	UP Diliman	
222	Based Online Web Dictionary for Philippine Languages		
	Sustained Support for Local Space Technology and Applican Advancement (STAMINA4Space)		
223	Knowledge Acquisition and Localization (OPTIKAL)	UP Diliman	
224		UP Diliman	

	Project Title	Implementing Agency
225	Project 3. Space Science and Technology Proliferation through University Partnership (STEP-UP)	UP Diliman
226	CRADLE: Development of Chicken Egg White Powder and Granules from Low Value Edible Shell Eggs	UP Diliman
	Integrative Studies on the geodynamics of the Philippine and	Taiwan ARC Systems
227	<ul> <li>Project I. Investigating the Tectonic Evolution of Northern and Central Philippine Arcs through Geochemistry and Geophysics</li> </ul>	UP Diliman
228	Project 2. Coastal Tectonics of Central Philippine Islands and Its Implications for Seismic Hazards	UP Diliman
229	Project 3. Geophysical Characterization of the Western Philippine Subduction Zones	UP Diliman
	Establishment of the Philippine Center for Additive Manufac	turing (PhilCAM)
230	Project I. Development of Multiple Materials Platform for Additive Manufacturing (MATDEV)	Industrial Technology Development Institute (ITDI)
231	Project 2. Rapid and Advanced Prototyping for Product Innovation and Development Using Additive Manufacturing Technologies (RAPPID-ADMATEC)	Metals Industry Research and Development Center (MIRDC)
232		Metals Industry Research and Development Center (MIRDC)

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### List of Monitored Projects (January – December 2018)

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	Project Title	Implementing Agency
1	ADMATEL Expansion and Business Continuity	Industrial Technology Development Institute (ITDI)
2	Application of Predictive Data Analytics on Multivariate Analysis of Methamphetamine-HCI Chemical Fingerprints	Industrial Technology Development Institute (ITDI)
3	Fabrication of Metal Oxide Thin Films for Optical Coatings with Plasma Assisted Deposition Using a Plasma Enhanced Chemical Vapor Deposition (PECVD) System	UP Diliman
4	Embedding of Functional Materials onto Paper for Antimicrobial and Electromagnetic Shielding Applications	UP Los Baños
· 5	Pulp-to-Print: Development of Print-Ready Cellulose Composites from Paper Mulberry	UP Diliman
	Smart Plant Production in Controlled Environments (SPIC	E)
6	Project 1. Standalone Urban Farm	UP Diliman
7	Project 2. Sensor-based Monitoring and Analytics for Smart Hydroponics (SMASH)	UP Diliman
8	Project 3. Establishment of Soilless Culture Technology for Urban Food Production	UP Diliman
9	Project 4. Ex-Situ Conservation through Micropropagation Cryopreservation of Native Plant Species	UP Diliman
10	Generalized Automated Microfluidics and Micro-actuator Assembly (GAMMA)	UP Diliman
11	Electrochemical and Quantum Mechanical Investigation of Various Small Molecule Organic Compounds as Corrosion Inhibitors in Mild Steel	De La Salle University (DLSU)
12	Environmental, Health and Safety Research in the Risk Assessment of Nanomaterials (Phase 1)	Industrial Technology Development Institute (ITDI)
13	Development of a Passive Neutron Spectroscopy System	Philippine Nuclear Research Institute (PNRI)
	EPDC os Platform for Innovation and Collaboration (EPIC,	
14	Project 1. Electronics Product Development Center Upgrade and Operation	Electronic Industrics Association of the Philippines, Inc. (EIAPI)
15	Project 2. Electronics Product Inclusive Innovation Center (EPIIC)	Advanced Science and Technology Institute (ASTI)
16	Identification System (AIS) for Innovative Terrestrial Monitoring and Maritime Surveillance	Advanced Science and Technology Institute (ASTI)
17	Visayas Program (NICER Program)	UP Cebu
. 18	Flood Risk Assessment for Mitigation and Effective Response (FRAMER) of Riverine Towns in Selected River Basins in Cavite, Batangas, and Quezon Provinces using Most Recent LiDAR DEM	Mapua Institute of Technology

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	Project Title	Implementing Agency
19	Metro Manila Transportation Network: Big Data Analytics and Applications (MMTN:BDAA)	De La Salle University
20	Prototype Development of Severe Weather Amphibious Navigator Using Local Abaca Composites	Wesleyan University of the Philippines
21	Development of a hybrid trimaran fast craft passenger cargo vessel using multi engine and alternative energy source from ocean waves	Aklan State University (ASU)
22	Performance Testing and Evaluation of Protoype Trainset	Metals Industry Research and Development Center (MIRDC)
23	AGT UP End of Project	Metals Industry Research and Development Center (MIRDC)
24	Formulation of a Settlements Development Model in New Growth Areas in the Philippines	UP Diliman
25	A Dispersive Long-Wave Model for Predicting Coastal Flooding due to Storm Surges and Surface Waves in Manila Bay	Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA)
26	Investigation and numerical modeling of Philippine tsunamis based on historical, geomorphological and geological evidence of past earthquakes	UP Diliman
27	Optimization of the Operational Capabilities Hydromet Sensors in Line with International Standards (WMO Standards) for Effective Weather, Flood Warning (CBFEWS) and Application to Research	Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA)
	Analyzing CORDEX - SEA Regional Climate Simulations for the Philippines: SST Influence, Variability and Extremes, Tr	r Improved Climote Information over opical Cyclane Activity
28	Analysis of the Influence of Sea Surface Temperature Representation in Downscaled Regional Climate Using the SEACLID/CORDEX – Southeast Asia Simulations	Manila Observatory
29	Multi-temporal and Extremes Analysis of Modeled Climatology over the Philippines in the SEA CORDEX Domain	Manila Observatory
30	Detecting Tropical Cyclones in a Downscaled Regional Climate Model for CORDEX – SEA	Manila Observatory
31	Geospatial Information Management & Analysis Project for Hazards & Risk Assessment in the Philippines (GeoriskPH)	Philippine Institute of Volcanology and Seismology (PHIVOLCS)
32	Development of Earthquake Intensity Monitoring System	Mapua Institute of Technology
33	Micro Grid Solar PV System	Ateneo De Davao University (ADDU)
34	Techno – Economic Feasibility Study of Micro-Grid in a Remote Community	Mindanao State University - Iligan Institute of Technology
35	Establishing a 25-kW Waste-to-Energy Facility Using a Direct Combustion Process for Municipal Solid Waste: A Technical, Economic and Environmental Studies	UP Los Baños
36	(SWAN) Recovery	De La Salle University
37		DOST Region CAR

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	Project Title	Implementing Agency
38	Development of Titanium Dioxide Films and its Derivatives for Semiconductor Mediated Photocatalytic Treatment of Water	UP Diliman
39	Multi-platform and Cross-Sensor Water Quality Monitoring	UP Diliman
40	Electromagnetic Radar Technique for Water Detection	Mindanao State University - Iligan Institute of Technology
	Master of Research and Development Management	
41	Project 1. Curriculum Development for the Master of Research and Development Management	UP Open University
42 -	Project 2. Course Material Development for the Master of Research and Development Management	UP Open University
43	Enhancing the Applicability of Vertical Helophyte Filter Systems for Small Communities, Local MSMEs and Public Entity	Department of Science and Technology Region XI
44	Support to the Rehabilitation of Boracay Island Through the Upgrading of Material Recovery Facilities (MRFs) - Phase 1	Department of Science and Technology Region VI
	Food Manufacturing: Establishment of Halal Assurance System	tems for Food
45	Establishment of Halal Assurance System for Processing Selected Banana Products (Banana Chips, Banana Catsup, and Frozen "Saba" Banana)	Industrial Technology Development Institute (ITD1)
46	Establishment of Halal Assurance System for Bakery Products	Industrial Technology Development Institute (ITDI)
47	Establishment of Halal Assurance System for Muslim Delicacies and Processing Techniques	Sultan Kudarat State University (SKSU)
.: 48	Development of Regional Halal Native Delicacies	Mindanao Autonomous College Foundation, Inc. (MACFI)
49	Technical Guidelines Development for Minimally Processed Halal Chicken and Chicken By – Products (Edible Giblets)	Industrial Technology Development Institute (ITDI)
50	Development of Emulsified Meat Products (Sausage, Nuggets, and Burgers)	Industrial Technology Development Institute (ITDI) with University of Southern Mindanao (USM)
51	Training Needs Assessment and Development and Deployment of Training Modules on Halal	DOST Region XI
52	Curriculum Development and Offering on Halal Science and Scholarship for SUC Faculty on Halal Science	University of Southern Mindanao (USM) with Sultan Kudarat State University (SKSU) and Central Mindanao University (CMU)
53	Establishment of Halal Assurance System for Production Method Development and Standardization of Cosmetics and Toiletries	Industrial Technology Development Institute (ITDI)

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	Project Title	Implementing Agency
54	Operationalization of Halal Verification Laboratories (HVLs) of DOST Regions CALABARZON, 11, 12, and ARMM in Support to Halai Assurance Systems	DOST Region IV- A with DOST Regional Offices 11, 12, and ARMM
55	Design and Development of Gong Fabrication Processes through S&T Intervention	Metals Industry Research and Development Center (MIRDC)
56	Technical and Economic Feasibility Study to Determine the Most Suitable Ironmaking Technology for Value- Adding of Philippine Magnetite Resources	Metals Industry Research and Development Center (MIRDC)
57	Coal Ash as a Resource of Rare Earth and Strategie Elements in the Philippines: Amenability to Metallurgical Processing	Mindanao State University – Iligan Institute of Technology (MSU-IIT)
58	Geopolymerization and its Potential Application in Artisanal Gold Mine Tailings Stabilization	Central Mindanao University (CMU)
	3R Approach to Sustainable Management of Nickel Laterite ( Repracessing for Environmental Remediation and Material V	alorization
59	Project 1. Utilization of Nickel Laterite Ore rock (low grade) for various applications: Acid Mine Drainage treatment and Carbon Sequestration	De La Salle University (DLSU)
60	Project 2. Recycling and reprocessing of siltation sediments from selected nickel laterite mining areas in the Philippines as raw materials for the synthesis of iron- based novel adsorbents	Central Mindanao University (CMU)
61	Project 3. Recovery of nanominerals from silt for various ceramic applications	Central Mindanao University (CMU)
62	Project 4. Recycling of silt and spent residue from reprocessing as raw materials for geopolymer composite	Central Mindanao University (CMU)
63	Pilot Scale Production of Nickel Pig Iron from Low Grade Laterite Ores	Department of Environment and Natural Resources – Mines and Geosciences Bureau (DENR-MGB)
64	Laboratory Scale Continuous Extraction System for the Recovery of Uranium from Philippine Wet Phosphoric Acid	Philippine Nuclear Research Institute (PNRI)
65	Extraction of Radionuclides, Rare Earths, and Other Valuable Industrial Elements from Phosphogypsum Tailings	Philippine Nuclear Research Institute (PNRI)
66	Establishment of the PTR1 "Perfect Fit" Textile Product Development Center	Philippine Textile Research Institute (PTRI)
67	Establishment of Regional Yarn Production and Innovation Center	Philippine Textile Research Institute (PTRI)
68	Utilization of Spent Tea Leaves and Tobacco Dust as Additives for Plywood Adhesive	Forest Products Research and Development Institute (FPRDI)
69	Tabang MARA Wi (Malnutrition Alleviation and Health Restoration through After-War Interventions)	Food and Nutrition Research Institute (FNRI)
	Nutrition Interention Model in Time of Man-Made Calamiti	es – A Quick Response to Emergency
70	Project 1. Production of Nutritional Food Products for Conflict Stricken Areas	Food and Nutrition Research institute (FNRI)

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	Project Title	Implementing Agency
71	Project 2. Implementation of GarNESupp (Gardening, Nutrition Education, Supplementary Feeding (Model in Conflict-stricken area Marawi)	Food and Nutrition Research Institute (FNRI)
72	Enhancement, Field Validation and Market Readiness Detection of DNA-based Nanobiosensor for the E. coli, E. coli 0157:H7 and Salmonella enterica in Food, Feed and Farm Produce	National Institute of Molecular Biology and Biotechnology, UP Los Baños
73	Development of Data Analytics, Big Data and Artificial Intelligence to Build a Smart Restaurant Management Platform (STARTUP)	Restograph Inc.
74	Enhancement of Prototype and Assessment of Product Marketability of Machibox (a robotics kit for STEM-based learning)	MachiBox Inc.
75	CONDAMA & EEMA - Artificial Intelligence Vision System for Retail Analytics	UP Diliman
76	Rurok Bikes: Variable Geometry and Efficient Suspension Pedalling Platform	Rurok Industries
77	Prototype Development of Semi-Automated Foam Shredder Equipment (TECHNICOM)	Holy Angel University
78	Development of Data Analytics-Ready Info Unified System (DARIUS) for Agile Delivery of Regional Services	DOST CALABARZON
79	Beta Testing of Biotechnology Kits for STEM Education	Kinovette Scientific Solutions Co.
80	Filipinnovation Entrepreneurship Corps: Enabling Researchers to Assess Commercial and Societal Value of their Research	De La Salle University (DLSU)
·81	Development of a Future Earth Philippines Program (FEPP)	National Research Council of the Philippines (NRCP)
82	Effectiveness of 21st Century Learning Environment Model as a Support System to Teaching and Learning of Science and Mathematics	DOST Region IV-A
83	Strategic Communication Approaches to Boost the Philippine Nuclear Research Institute Promotions	Philippine Nuclear Research Institute (PNRI)
84	Fringe-are Data Access by Transient Altitude Provision	De La Salle University (DLSU)
85	Impact Assessment of the Department of Science and Technology (DOST) Small Enterprise Technology Upgrading Program (SETUP)	Development Academy of the Philippines (DAP)
86	PHL-MICROSAT Project 5. Remote Sensing Product Development	UP Diliman
87	Industry Defined 2D Basic Animation Course	Toon City Academy
88	Development of a Low-Energy Ion Source System for the Synthesis of Diamond-like Carbon Films	UP Diliman
89	Angular Goos-Hänchen Shift: An Optical Phenomena for Ultra Thin Film Thickness Measurement	UP Diliman
90	Fabrication of Highly C-axis Oriented YBCO Superconducting Thin Films by Sedimentation Deposition	UP Diliman

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	Project Title	Implementing Agency
	Hard Coating Thin Film Synthesis Using DC and RF Magnet Discharges	ron Sputtering vla Gaseous
91	Project 1: Development of Direct Current (DC) Magnetron Plasma System for Ti-Al-C Thin Film Synthesis	Atenco De Manila University (ADMU)
92	Project 2: Development of Radio Frequency (RF) Plasma System for Ti-Al-N Thin Film Synthesis	UP Diliman
93	Ultrafast MBE-grown Tcrahertz Photoconductive Antenna Devices	UP Diliman
94	Sonochemical Synthesis of Cobalt Oxide and Copper Oxide Nanostructures as Electrodes in Photoelectrochemical Water-Splitting Applications	Mapua Institute of Technology
95	Uncooled Carbon Nanotube Microbolometers	UP Baguio
96	Ionic Liquid Assisted Electrospinning of Conductive Nanofibers as Solid Polymer Electrolyte/ Separator Membrane of Solid State Supercapacitor	UP Diliman
97	Up-Scaled Solution-Phase Synthesis of Metal Nanowires and its Application in Transparent Metal Nanowire Touch Panel	UP Diliman
98	Green Synthesis of Carbon Quantum Dots from Biowaste for Biomedical and Industrial Applications	Materials Science Division, ITDI
99	Development of a Raman Microscopy and Spectroscopy (RMS) Setup	UP National Institute of Physics
100	Optical trap-mediated interaction between cancer cells and elucidated compounds from vegetable extracts in PEMF	De La Salle University
101	Binary Gels - Rheology of Two-component Biopolymer Hydrogels Investigated Using Optical Tweezers and Non- Linear Rheometry	University of San Carlos
	$\mu$ C-IC: Design of Microcontroller Integrated with Energy H	
102	Project 1. Development of Microprocessor for Wireless Sensor Network Application	Mindanao State University – Iligar Institute of Technology (MSU-IIT
103	Project 2. Power Management Unit using Low Drop-out : Regulator and Switched Capacitor DC-DC Converters	Mindanao State University – Iliga Institute of Technology (MSU-IIT
104	Project 3. Indoor Light Energy Harvesting for Wireless Sensor Network Applications	Mindanao State University – Iliga Institute of Technology (MSU-IIT
105	One Click: Android/Wcb-based Student Response and Understanding Visualizer	Mapua Institute of Technology
106	Remote Sensing and Data Science: DATOS Helpdesk	Advanced Science and Technolog Institute (ASTI)
	Integrated Assessment and Modelling of Blue Carbon Ecosy Management (IAMBlueCECAM)	
107	Multispectral, and Hyperspectral Data (MaRS)	UP Diliman
108	Project 2. LiDAR, Hyperspectral, and Sonar Remote Sensing of Seagrass Meadows (SeaRS)	UP Diliman

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	Project Title	Implementing Agency	
109	Project 3. Geosimulation of Mangroves and Seagrass Vegetation Dynamics (GcoSiMAS)	UP Diliman	
110	Project 4. Hydrodynamic Modelling for the Assessment of Protective Services of Mangroves and Seagrass (HMAPS-MS)	UP Diliman	
111	Project 5. Modelling, Analysis and Simulation of Blue Carbon Cycle and Budgets (BlueCyMAS)	UP Diliman	
112	Project 6. Suitability Models for Guiding Mangrove RePlanting Efforts (SuitMaPs)	UP Diliman	
113	Project 7. Economic Valuation of Generated Blue Carbon Ecosystem Services (EconValBlue)	UP Diliman	
114	Project 8. Multi-agent Systems for Simulating Policy Scenarios on Blue Carbon Ecosystems (BlueMASSPoliS)	UP Diliman	
115	Project 9. WebGIS for Mapping, Supporting Decision- making, and Promoting Ecological Services of Blue Carbon Ecosystems (BlueWebMapS)	UP Diliman	
116	Project 10. Geospatial Decision Support Systems and Capacity Building on Geomatics for Mangrove Seagrass Conservations (CapGeoDSS)	UP Diliman	
	GeoSafer Mindanao Program (ZAMBASULTA, Northern Mi Mindanao and Southeastern Mindanao)	ndanao/ Cotabalo, Agusan, Western	
117	Project 1: Geo-SAFER Zamboanga Peninsula – Systematic Assessment of Flood Effects and Risks In Zamboanga Peninsula, Mindanao, Philippines	Ateneo de Zamboanga University	
118	Project 2: Geo-SAFER Northern Mindanao/ Cotabato – Systematic Assessment of Flood Effects and Risks in Northern Mindanao and Cotabato, Philippines	Central Mindanao University	
119	Project 3: Geo-SAFER Agusan – Systematic Assessment of Flood Effects and Risks in the Agusan River Basin, Caraga Region, Mindanao, Philippines	Caraga State University	
120	Project 4: Gco-SAFER: Western Mindanao - Systematic Assessment of Flood Effects and Risks in Western Mindanao	Mindanao State University - Iligan Institute of Technology	
121	Project 5: Geo-SAFER: Southeastern Mindanao - Systematic Assessment of Flood Effects and Risks in Southeastern Mindanao	UP Mindanao	
122	Design and Development of UP Bike Share System	UP Diliman	
123	A Vision-Based Vehicle Counter for Traffic Monitoring (VEMON)	De La Salle University	
124	Engineering the Public Utility Vchicles (PUVs) Using an OEM Vehicle Platform	UP Diliman	
125	Development of a Customized Local Traffic Simulator (LocalSim Phase 2)	UP Diliman	
126	Recycling and Recyclability Index for End-of-Life Jeepneys	University of Asia and the Pacific (UA&P)	
127	Development of a Local Automatic Identification System (AIS) for Ship Tracking and Monitoring	De La Salle University	
128	Cyber-Physical Transportation System	UP Diliman	

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	Project Title	Implementing Agency
129	Testing for Standardization and Optimization of five Coach Hybrid Road Train Phase III	Metals Industry Research and Development Center (MIRDC)
130	System Expansion of the 120-Passenger per Coach Capacity Automated Guide-way Transit System	Metals Industry Research and Development Center (MIRDC)
!31	e-Asia: Development of Information Gathering and Utilization Systems using small Unmanned Airbome Vehicles (UAVs) for Disaster Risk Assessment, Monitoring and Response	Philippine Institute of Volcanology and Seismology (PHIVOLCS)
	Development of a fixed wing short take-off and landing (STC for disaster risk reduction and management	L) unmanned aerial vehicle (UAV)
132	Design and fabrication of an airframe for a medium- range, short take-off and landing UAV	FEATI University
133	: Development of a Flight Controller for a Modular UAV System	De La Salle University (DLSU)
134	Cooperative UAV-UGV Missions and Applications with Custom Communications and Imaging Capabilities	Ateneo De Manila University
135	National Loss and Damage Registry: A Disaster Management Information System for the Office of the Civil Defense	De La Salle University (DLSU)
136	Fire Check: Urban Fire Hazard Mapping and Fire Spread Modeling	UP Cebu
137	The Use of Radon Technique in Mapping Geological Faults in the Philippines	Philippine Nuclear Research Institute (PNRI)
138	Mapping of offshore active faults for resilient coasts	UP Diliman
139	Automated Real-Time Monitoring System (ARMS) for Magat Dam	Mapua Institute of Technology
140	Development of Groundwater Resource Management Plan and Monitoring System for Zamboanga City and its Surrounding Areas	Ateneo de Manila University
141	Enhancing the Hydrometeorological Hazards Monitoring and Risk Assessment Capabilities of PAGASA through the Adoption and integration of NOAH Operating Systems	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
142	FEATURE: Feature-based Earthquake Analysis Toolset for Urban Response Estimation - Enhancing PHIVOLCS damage estimation capability using building-specific analysis aided by high resolution GiS data	Philippine Institute of Volcanolog and Seismology (PHIVOLCS)
143	Specific Earthquake Ground-Motion to help enhance the seismic resiliency of residential and medium-to-high rise buildings in Metro Cebu and Metro Davao	Philippine Institute of Volcanolog and Seismology (PHIVOLCS)
[44		Mapua Institute of Technology
145	Development of HFDR Ship Tracking Algorithm Software for Maritime Surveillance, Search and Rescue	Mapua University
146	Development (Phase III)	Mariano Marcos State University
	Improvement of Forecast Capability on Weather, Marine M	etearology and Short Range Climate

	Project Title	Implementing Agency			
147 `	Project 1: Typhoon Formation, Structure and Intensity Change in Western NP and Wave Observation and Modeling	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)			
148	Project 2: Heavy Rain Monitoring and Forecasting in the Mountainous Area and Early Warning Landslides	UP Los Baños and Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)			
149	Project 3: Observations and Dynamical Downscaling of Seasonal and Sub-seasonal Forecasts	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)			
	Integrative Studies on the geodynamics of the Philippine and	Taiwan ARC Systems			
150	Project 1. Investigating the Tectonic Evolution of Northern and Central Philippine Arcs through Geochemistry and Geophysics	UP Diliman			
151	Project 2: Coastal Tectonics of Central Philippine Islands and Its Implications for Scismic Hazards	UP Diliman			
152	Project 3: Geophysical Characterization of the Western Philippine Subduction Zones	UP Diliman			
153	Climate Change Adaptation and Disaster Resilience Cluster PH-US Joint Cooperation	PCIEERD			
154	Setting Up a Concrete Petrography Laboratory for Quality Control of Construction Projects	UP Diliman			
155	Development of a Functional and Durable Pervious Concrete Pavement for Local Roads and Parking Lots	Central Mindanao Universi			
156	Upgrading of the PNRI Nuclear Training Center Laboratory Facility	Philippine Nuclear Research Institute (PNRI)			
157	UP Cebu Cybersecurity Research and Extension Center	UP Cebu			
	Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions				
158	Field-testing of the Integrated Goid-Copper Mineral Processing Pilot Plant in the Regions (CARAGA)	UP Diliman			
159	Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Bicol)	UP Diliman			
160	Field-testing of the Integrated Goid-Copper Mineral Processing Pilot Plant in the Regions (Composteia Valley)				
161	Field-testing of the Integrated Gold-Copper Mineral Processing Pilot Plant in the Regions (Benguet)	UP Diliman			
162	Synergistic effect of Forward Osmosis and Capacitive De- Ionization for Water Purification and Recovery	Maiayan Colleges Laguna			
	Synergistic Capacity Advancement for the Management of Laguna LakE: SCALE				
163					
164	Microbial Source Tracking in Selected Tributaries of Laguna de Bay	Natural Sciences Research Institute			

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	Project Title	Implementing Agency
165	TRACe Fish – Trace oRganics and metAis in Commodity Fish: Method optimization, extent of contamination and health risk due to fish intake	UP Diliman
	Molecular and Culture-based Characterizatian of Bacterial ( Spring in Pangasinan - EIDR	Community fram Manleluag Alkaline
166	Molecular characterization of bacterial community from Manleluag alkaline spring through next-generation sequencing of 165 rDNA	UP Los Banos
167	Isolation and screening of alkaliphilic bacteria from Manleluag alkaline spring producing an industrially important enzyme	UP Los Banos
	Assessment of Metal Content in Agricultural Products and Its Areas	Environment in Volcanic Impacted
168	Project 1. OneLab Capability Assurance System for Metal Content Assessment in Agricultural Produce, Water and Environmental Samples	Industrial Development Institute (ITDI)
169	Project 2. Metal Content of Water Supplies in Volcanic Impacted Area and its Impact to Vegetation	Industrial Development Institute (ITD1)
170	Project 3. Household and Community Based Filters for Metals in Water	Industrial Development Institute (ITDI)
171	Water - Energy - Nutrient Nexus in the Cities of the Future	Dc La Salle University
172	Forward Osmosis System using locally-made membrane from Nata-de-coco for the production of rehydration water and application for desalination	Malayan Colleges Laguna
173	Optimization of Ready-to-Drink Sweet Potato Leaf Extract (SPLE)-Tropical Fruit Juice Blends through the UP-DOST Food Innovation Facility	UP Diliman
174	Establishment of Shelf-Life of Vacuum Fried Okra developed by ITDI Main FIC	Industrial Technology Development Institute (ITDI)
175	Package Development of Bakery Product and Field Testing of Ready-to-Eat (RTE) Smoked Fish Rice Meal and Sweet Potato as Disaster/Relief Foods - Phase 2	Industrial Technology Development Institute (ITDI)
	Product Development and Utilization Program of Abalone in	MIMAROPA
176	Development of bottom housing system for abalone farming	Western Philippines University
177	Development of Food and Non-Food Products from Abalone	Marinduque State College and Western Philippines University
178	Performance Evaluation of Dipstick Assay for the Detection of Salmonellae in Selected Food Matrices	National Institute of Molecular Biology and Biotechnology, UP Los Baños
179	Upgrading and Enhancing the Capacity of the Packaging Technology Division in Packaging Research and Innovation	Industrial Technology Development Institute (ITDI)
- <b>1</b> 80	Development of Ready-to-Eat Corn Grit Meals	UP Diliman
181	Pilot-Scale Production of Spray-Dried Powder Dextran and High Fructose Syrup using Whole Cell (Leuconostoc mesenteroides isolates) ITDI Fermentation Technology	Industrial Technology Development Institute (ITDI)

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	Project Title	Implementing Agency	
182	Development of an Effective Distribution System for RTE Retort Foods (Chicken Arroz Caldo and Smoked Fish Rice Meal) to Mitigate the Magnitude of Distress for Calamity Survivors and Providers of Services	Industrial Technology Development Institute (ITDI)	
183	Enhancing OneLab for Global Competitiveness	DOST Regional Office No. 9	
		Note: 16 ROs and 7 RDIs	
	I-SALT: Improving Productivity and Efficiency of Local Salt Philippines in 2020	Producers towards a Self-Reliant	
184	Project 1. Design, Prototyping of Salt Processing Equipment (Washer, Dryer, Iodizer, Crystallizing Pan, Furnace, Concentrator (Ion exchange membrane)	Industrial Technology Development Institute (ITDI)	
185	Project 2. Development of Gourmet Salt Products and Micro-sized Salt in Laboratory Scale	Industrial Technology Development Institute (ITDI)	
186	Design and Development of Processing Machineries for Honey Products and Intermediate Products	Don Mariano Marcos Memorial State University (DMMMSU)	
187	Development of An Automated Multi-Commodity Heat Pump Dryer	Adventist University of the Philippines (AUP)	
188	Strengthening of DOST Regional Metrology Laboratory Services - Phase II	DOST Regions from CAR to CARAGA	
189	Characterization and Separation of Heavy Minerals in the Alluvial and Beach Sands in San Vicente, Northwestern Palawan	Philippine Nuclear Research Institute (PNRI)	
190	Establishment of Common Service Facility (CSF) for Artisanal Small-Scale Gold Mining in Northern Mindanao	Mindanao State University – Ilig Institute of Technology (MSU-II	
	Enhancement of the Competence and Capability of the National Metrology Laboratory af the Philippines Metrology		
191	Project 1. Chemical Metrology for Organic Contaminants in Foods and Water	Industrial Technology Development Institute (ITDI)	
192	Project 2. Chemical Metrology for Inorganic Toxic Elements in Food and Water	Industrial Technology Development Institute (ITDI)	
193 7.	Project 3. Biological Metrology for Microorganisms in Food	Industrial Technology Development Institute (ITDI)	
194	Project 4. Strengthening the Physical Metrology Capabilities of the National Metrology Laboratory	Industrial Technology Development Institute (ITDI)	
195	Modular Innovation Center for Oils, Blends, and Sauces	Industrial Technology Development Institute (ITDI)	
	National R&D Program for Natural Rubber Processing and		
196	Project 6. Processing and Utilization of Senile and Unproductive Rubberwood (Hevea braziliensis) Trees for High Value Furniture, Mouldings and Joinery Products	Forest Products Research and Development Institute (FPRD)	
	Natural Dyes and Colorants R&D Program		
197	Project 1. Commercial Scale Verification of Natural Dyes for Textiles	Philippine Textile Research Institute (PTRI)	
198	Project 2. Development of Natural Colorants for Cosmetics	Industrial Technology Development Institute (ITDI)	

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	Project Title	Implementing Agency
199	Project 3. Extraction, Characterization, and Application of Natural Colorants in Nutritional Food Products	Food and Nutrition Research Institute (FNRI)
200	Project 4. Natural Food Colors from Local Source as Food Additive	Industrial Technology Development Institute (ITDI)
201	Standards & Testing Automated Modular Platform (STAMP)	UP Diliman
	Processing of Bio-based Polyols and Polyurethanes for Indu	strial Applications Program
202	Project I. Production of Bio-based Polyols from Lignocellulosic Biomass	Mindanao State University – Iligan Institute of Technology (MSU-IIT)
203	Project 2. Development of Polyurethane-based Packing Materials and Anti-corrosive Coatings from Vegetable Oil	Mindanao State University – Iligan Institute of Technology (MSU-IIT)
204	Polyhydroxyalkanoate (PHA) Production from Agricultural Residues	UP Los Baños
205	Development of Design Prototypes for Government Agencies' Uniforms to Promote Mainstreaming of Natural Fibers and Local Weaves	Phillpplne Textile Research Institute (PTRI)
206	Comparison of Different Enzyme Preparations for the Production of Oligofructose and Inulin from Sugarcane Juice	Cavite State University
207		Cavite State University
208	Quality Assurance of Lambanog and Nipanog for Consumer Safety and Sustainable Industry	UP Diliman
209	Development of a Shelf-Stable Fermented Heirloom Rice "Binubudan"	Benguet State University
210	Development of Freeze-Dried Local Alternative Flavors for Ice Cream	Benguet State University
211	Jolt: A Stackable Multi-Functional Battery Energy Storage for Household Solar and Emergency Applications	UP Diliman
212	Field and Market Testing of a Cost-effective Camera Rig System Biomass	UP Diliman
213	Enhancement of Prototype and Market Readiness of R- TAP (an advanced pressure management system for water utilities)	Hiraya Technology Solutions, Inc.
214	Prototype Development and Field Testing of Mosquito- Repellent Textile	Philippine Textile Research Institute (PTRI)
-215	Enhancing Operational Capability of Bicol University Fabrication Laboratory (Fablab Bicol)	Bicol University
216	Establishment of the Technology Management System and Structure of the Ateneo de Manila University	Ateneo de Manila University (ADMU)
217	Geophysical Exploration Instruments with Micro-seismic Imaging and Tomography for Energy Exploration in the Philippines	Tekton Geometrix, Inc.
218		De La Salle University – STC Campus

	Project Title	Implementing Agency
219	InteliSENSE: A Progress Monitoring Tool for Children with Special Needs	De La Salle University
220	Pilot Implementation of ITDI's Pre-Commercialization Tools/Strategies for Effective Transfer and Commercialization of Generated Technologies and Intellectual Properties	Industrial Technology Development Institute (ITDI)
221	Smart Vision: AI-Guided Vision System for the Blind	Grayscale Marketing Consultancy
222	One Expert (1E): A One-Stop Portal for Science and Technology Consultancy and Technical Services	DOST Regional Offices; Technology Application Promotion Institute (TAPI); National Research Council of the Philippines (NRCP)
223	Upgrading the PNRI Neutron Laboratory for Neutron Physics and Dosimetry Research	Philippine Nuclear Research Institute (PNRI)
224	PUP College of Engineering Sensors and Mechatronics Laboratory	Polytechnic University of the Philippines (PUP)
225	Strengthening SLSU's Capability in GIS Technologies in Support of Southern Leyte's Competitiveness and Development	Southern Luzon State University (SLSU)
	Development of Philippine Scientific Earth Observation Mic	
226	Project 1. Microsatellite BUS Development for Philippine Microsat	UP Diliman
227	Project 3. Development of a Data Processing, Archiving and Distribution Sub-System for the Ground Receiving Station of the Philippines Scientific Earth Observation Micro-Satellite	UP Diliman
228	Project 5. Remote Sensing Product Development	UP Diliman
229	Establishment of Renewable Energy Laboratory and Demonstration Park	Isabela State University (ISU)
230	Development of Future Building Materials and Structures (FBMS) Laboratory	Northwest Samar State University (NwSSU)
231	Establishment of CvSU SiMM (Simulation, Modeling and Measurement) Laboratory	Cavite State University
232	Enhancing the Natural Science Research Center Laboratories of Central Mindanao University	Central Mindanao University (CMU)
233	PCIEERD NSRI Research Grant	UP Diliman
234	Establishment of the USJ-R Center for Energy Harvesting Materials Research	University of San Jose Recoletos (USJ-R)
235	Learning at Scale Vol. 1 Data Science Track	MOOCSX PH
236	Capability Building on Energy Efficiency and Conservation (EE&C) for State Universities and Colleges (SUCs) in Six (6) Regions as Demonstration Sites formerly Capability Building on Energy Efficiency and Conservation (EE&C) for State Universities and Colleges (SUCs) in Five (5) Regions as Demonstration Sites	Industrial Technology Development Institute (ITDI)
237	DOST - SEI - Newton Fund Scholarships	Science Education Institute (SEI)

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	Project Title	Implementing Agency
238	Development of Municipal e-Governance Systems through ICT	Camarines Sur Polytechnic Colleges (CSPC)
239	Establishment of QBO Innovation Hub	Ideaspace Foundation, Inc.
240	Support to the Commercialization of 500 DOST-Generated Technologics (Phase 2): Strengthening the Intellectual Property and Technology Portfolios of the DOST	Technology Application Promotion Institute (TAPI)
	2017-2019 DOST Technology Transfer Day (TTD)	Technology Application Promotion Institute (TAPI)
241	Communicating Science for the People	
242	Leveraging the Power of Broadcast and Web Media to Promote Science for the People (DOSTv)	Science and Technology Information Institute (STII)
243	Content Development for S&T Academic and Research- based openly-operated Kiosks (STARBOOKS)	Science and Technology Information Institute (STII)
244	Doubling the Reach through Information, Education and Communication (IEC) Campaign	Science and Technology Information Institute (STII)
245	Enhanced S&T Experience using Leading-Edge Learning Additions and Realities (STELLAR)	Science and Technology Information Institute (STII)
246 -	Strengthening the Core	Science and Technology Information Institute (STII)
247	The DOST Media Awards	Science and Technology Information Institute (STII)
248	Diwata - 1: Interactive Exhibit at Museo Pambata	Musco Pambata
249	Intensified Promotion of FPRDJ - developed Technologies and Service	Forest Products Research and Development Institute (FPRDI
250	Development and Application of Isotope and Elemental Provenance-Based Methodologies for Authenticity Testing of Vinegar, Soy Sauce, and other Major Condiments in the Philippines	Philippine Nuclear Research Institute (PNRI)
251	Portable Potable Water Equipment During Emergencies (PWEDE)	UP Diliman
252	c-Asia JRP: Development of Functional Nanocarbon- Based Catalysts for Biomass Conversion Processes	De La Salle University
253	Evaluation of Polymeric Separation Membrane for Industrial Applications using Local Materials (Phase I)	Industrial Technology Development Institute (ITDI)
	TiO2 based Nanomaterials and Nanocomposites as Photoele Sensing af Synergistic and Organic Pollutants	ctrocatalysts for the Removal and
254	Project J: Preparation of Imprinted poly(phenylenediamine)/poly(thiophene)-TiO2 Nanoparticle Functionalized Electrodes for the Photoelectrochemical Sensing of Organophosphorus Pesticides	UP Diliman
255		UP Diliman
256		UP Diliman

	Project Title	Implementing Agency
257	Efficacy of copper-based hollow kapok fiber nanocomposite for environmental purification	UP Diliman
258	Production of Nanocellulose from Indigenous Natural - Fibers and Agricultural Wastes	Ateneo De Manila University
259	ANEEME: Synthesizing and Sharing Animation Building Blocks for Rapid creation of 3D Motion Scenes	UP Diliman
260 	Capability Building in Artificial Intelligence through Training and Acquisition of High Performance Computing Device	Philippine Council for Industry, Energy and Emerging Technology Rescarch and Development (PCIEERD)
261	Development of Interactive Software and Teaching Guides for Grades 7-10 Mathematics	Ateneo De Manila University
262	Project Tick-Tock Tech Talk	UP Diliman
263	Cartography of Old Informs the New (COIN)	UP Diliman
264	PNRI Graduate Student Research Grant Program	Philippine Nuclear Research Institute (PNRI)
265	Detection and Identification of Legitimate Public Utility Vehicles (PUVs) Along various road netWorks (DILAW)	UP Diliman
266	Modification of Road Train Energy Storage System Using Lithium Ion Batteries	Metals Industry Research and Development Center (MIRDC)
267	Development of a Commercial Prototype Automated Guide-way Transit System in UP Diliman	Metals Industry Research and Development Center (MIRDC)
:268	Development and Improvement of a Novel Rain Acoustic Sensor	Ateneo de Manila University
269	Regional Scales of Variability in Precipitation (RSVP)	UP Diliman
270	Utilization of Industrial By-product Currimao Steel Slag as Green Concrete - ICIEERD	Mariano Marcos State University (MMSU)
271	Development of a Compact Wastewater Treatment System Enhanced with Bio-augmentation Technology for Quick Service Restaurants (QSRs)	Industrial Development Institute (ITDI)
272		UP Diliman
273		DOST CARAGA
274		Surigao State College of Technology-Dcl Carmen
275	Product Development of Talisay Nut Delights	Surigao State College of Technology-Del Carmen
276	Archimedean Screw Micro Hydropower System for Small Scale Industry Application	Surigao State College of Technology-Del Carmen

	Project Title	Implementing Agency
277	Radiation-induced Grafting of Non-woven Fabrics for Wastewater Treatment to Meet Class C Effluent Heavy Metal Standards	Industrial Development Institut (ITDI) and Manly Plastic Inc.
278	Dried Cassava Grates Processing and System Optimization	Visayas State University (VSU
279	Harmonization of Food Safety Training Modules for Food Manufacturing	DOST Region IV-A
280	Design and Optimization of Austenitic Manganese Steel Liner for Philippine Aggregate and Mineral Processing	Metals Industry Research and Development Center (MIRDC
281	Expioratory Characterization of Scandium and Rarc Earth Elements in Palawan, Zambales and Surigao del Sur Nickeliferous Laterite Deposits	UP Diliman
282	Design, Fabrication and Performance Evaluation of Black Sand	Isabeia State University (ISU)
283	Research and Development Project to Rehabilitate and Enhance Productivity in Lahar and Ash-Laden Areas in Central Luzon	Central Luzon State University (CLSU)
284	Pilot Testing and Technology Validation of NanoZeolite Processes	Industrial Development Institu (ITDI)
285	Establishment of BatStateU Center for Technopreneurship and Innovation (Technology Business Incubation)	Batangas State University (BatStateU)
286	Innovation Hub: Diliman	UP Diiiman
287	Capacity Building, Community Outreach and Diffusion of DOST-PCIEERD Supported Food Technologies through ENTREPRENEURSHIP at the University of Caloocan City	University of Caloocan City
288	IP Management (From Disclosure to Strategy) of DOST- PCIEERD Projects	UP Diliman
289	Commercial Evaluation and Product Design of Eight nanotechnology Products of UPLB	UP Los Bafios
290	Technology Piloting of the FPRDI Flattening Equipment	Forest Products Research and Development Institute (FPRD
291	Bio-Oil Production from Agricultural Waste	UP Los Bafios
292	Region XII and ARMM	Philippine Foundation for Scier and Technology (PFST)
293		DOST Region VII
294	Food Technology Adaptors	Food and Nutrition Research Institute (FNRI)
295	Establishment of the AlM-Dado Banatao Incubator	Asian Institute of Managemer (AIM)
296	Development, Testing, and Market Validation of an Industrial Grade Prototype of Smart Surface	UP Diliman
297	Strategic Communication Approaches to Boost the Philippine Textile Research Institute Promotions	Philippine Textile Research Institute (PTRI)

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#### List of Projects Completed with Peer-reviewed journals, Presented in National and/or International Conferences

- 1. Design and Development of Aerial Mapping and Imaging Systems and Standards
- 2. Design, Fabrication, and Evaluation of Monitoring and Sampling Devices for Particulate Matter
- 3. Project e-Bayanihan: A Nationwide Web Mobile Based System for Participatory Disaster Management

BAYANIHANETS: Building Robust and Sustainable Cooperative Community Networks

- 4. Project 1. Development of a Multipath Transport Protocol for Cooperative Community Networks
  - 5. Project 2. ARC: An Application Framework for Robust Communications Transport over Community Networks
  - 6. Project 3. Development of Routing Metrics for High Throughput and Congestion Free Routing over Wireless Community Mesh Networks *Chemical Sensors for Mine Site Monitoring*
  - 7. Project 1. Mapping of Heavy Metal Contamination in the Philippine Mining Soils Using Laser-induced Breakdown Spectroscopy (LIBS) Field Sensors
  - 8. Project 2. Optical Sensors for the Determination of Zn and Cu in Ambient Water
  - 9. Project 3. Gaseous Elemental Mercury Sensors for Atmospheric Monitoring
  - 10. Project 4. Integrated Sensing System Using Mobile and Cloud Technologies for Mining and Nearby Communities
  - 11. Project 5. Data Integration and Visualization of Sensor Output for Mine Site Monitoring CRAVAT Coral Reef Assessment and Visualization Advanced Tools
  - 12. Project 1. FISHDROP 360: Development Tools for Improved Monitoring of Reef Fish Communities
  - 13. Project 2. Teardrop Upgrade

- 14. Project 3. Integration of ARRAS and CRAVAT Tools
  - 15. Developing Capabilities for Biophysics Research at the University of San Carlos
  - Development and Deployment of Early Warning System for Deep-Seated Catastrophic Landslides
  - 16. SENSLOPE: Development and Deployment of Landslide Sensors and Data Communication System

Development of Nanosensors and Nanostructured Materials from Agricultural By-products for Enhancement of Food and Agricultural Productivity and for Environmental Sensing and Remediation

- 17. Project I. Removal of Arsenic from Contaminated Water using Modified Biopolymer-Silica Nanocomposite Materials
- 18. Project 2. Detection and Analysis of Arsenic in Contaminated Water
- 19. Project 4. Development of a Zinc Oxide Thin Film for Gas Sensing
- 20. Project 5. Development of a Controlled Release Nanoencapsulated Plant Growth Regulators from Locally Isolated Plant Growth Promoting Bacteria (PGPB) for High Value Crops Production
- Project 6. Optimization and Bench-scale Preparation of a hemicellulosechitosan/tripolyphospate (polyphosphate) Nanocomposite coating and its Use in the Post-Harvest life extension of papaya (*Carica papaya L.*) fruits
- 22. Project 7. Development of Pectin-collagen/nanocellulose Biocomposite coatings from mango peel and Nata De coco for the postharvest-life extension of mango (*Mangifera indica* L. cv Carabao) and bell pepper (Capsicum annum) fruits
  - 23. Project 8. Nanotechnology for the Philippines forest products industry: Cellulosic Nanocrystals from selected Philippine bamboo species
  - 24. Project 9. Characterization and performance analysis of nanosilica powder incorporated in biodegradable film based on cassava starch for food packaging applications
  - 25. Pilot Scale Production of Nanoencapsulated Plant Growth Regulators for the Production of High Value Crops

Development of Nanosensors and Nanastructured Materials fram Agricultural By-praducts for Enhancement of Food and Agricultural Productivity and for Environmental Sensing and Remediation - Phase 2

- 26. Project 3. Bench-scale Production of Hand-held Nanosensors for Methane Using Zinc Oxide Film
- 27. Project 4. Bench-Scaling of the Production of Cellulosic Nanocrystals from Kawayang-tinik (Bambusa blumeana) and Its Utilization for Renewable Nanomaterials
- 28. Project 5. Production of Nanosilica from Rice Hulis and Rice Hull Ash and Bench Scale Verification of the Production of Biodegradable Packaging Using Cassava Starch-RHA Nanosilica
- 29. Hemicellulose Extraction, Process Development and Toxicological Evaluation of a Hemicellulose-chitosan/tripolyphosphate (polyphosphate) Nanocomposite Coating for the Postharvest-life Extension of Papaya (Carica papaya L.) Fruits Development of National Standards far Chemical Measurements
- 30. Project 1. Interiaboratory Comparisons of Additives and Contaminants in Foods
- 31: Project 2. Production of Secondary Certified Reference Materials and Provision of Proficiency Tests for Metals in Water (Elemental Water Solutions)
  - Development of Philippine Scientific Earth Observation Microsatellite (PHL-MICROSAT)
  - 32. Project 4. Calibration and Validation of Remote Sensing Instruments for PHL.MICROSAT 33. Development of Plasma Technology for the Sterilization of Food Products, Packaging, and Contract Surfaces in Food Processing
    - DOST Nationwide Operational Assessment of Hazards
  - 34. Disaster Management using Web-GIS
  - 35. Enhancing Philippine Landslide hazard maps with LIDAR and High-resolution Imageries
  - 36. System to identify, Quantify and Map the Storm Surge Threat to Philippine Coasts
  - 37. Weather Information Integration for System Enhancement
  - Enhancement of Biotechnalogy Products and Services for Food, Feed and other Agro-Industrial Applications
  - 38. Sub Program 2. Project 1. Development of Probiotic Starter Cultures and Adoption of Technology for Functional Food
  - 39. Sub Program 3. Project 1. Improvement and Commercialization of Microbial-based Fertilizers and Plant Growth Promoters
  - 40. Development of Oyster Powder for Use as Ingredient and Condiment
  - · Fuel Ethanol Production from Lignocellulosic Feedstocks
  - 41. Project 4. Optimization of Saccharification, Fermentation and Purification processes for Pilot Scale Ethanol Production from Lignocellulosic Materials
  - 42. Program for Computer Literacy (ComLit) Interdisciplinary Signal Processing for Pinoys (ISIP Program)
  - 43. Project 6. Philippine Languages Database for Mother Tongue-Based Multilingual Education and Applications
    - Intelligent Transport Systems (ITS)
  - 44. Contactless Apprehension of Traffic Violators on 24-Hour Basis and All-Vehicle Detection System (CATCH-ALL)
  - 45. Advanced Traffic & Pollution Monitoring and Analysis System Based on GPS Trajectory Data, Air Quality Data and Engine Status Data collected from Taxis in Metro Manila (ATPMS)
  - 46. Development of a Customized Local Traffic Simulator (LOCALSIM)
  - 47. An Integrated and Optimal Scheduling of a Public Transport System in Metro Manila (PUBFix)
  - 48. Prototyping of a Diesel-Electric Parallel-Series Hybrid Vehicle for Public Transportation
  - 49. Production, Characterization and Application of Red Pigment Produced by Monascus purpureus M1018
    - Mineral Extraction with Responsibility far Sustainability (MinERS)
  - 50. Project A. Non-Hazardous Methods of Gold Extraction for Philippine Small-Scale Mining Applications

- 51. Project C. Optimizing the Effectivity of Coco-peat Filter Bed in Field Applications
- 52. Project E. Nanofiber Membrane Adsorption for Third Level Waste Water Treatment Method for Small Scale Mining Operations
- 53. Project G. The Gold and Copper Chase: Life Cycle Analysis of Sustainable Small-Scale Production System
  - 54. Development and Deployment of Adaptive, Interactive, SMS-Based Modules for English
  - 55. Stealth Assessment of Student Conscientiousness, Cognitive-affective States, and Learning using and Educational Game for Physics Nanostructured Solar Energy Devices
  - 56. Project 3. GaAs-based Solar Cell Devices
  - 57. Project 4. Modification of Graphene for Nanostructured Photovoltaic Cells
  - 58. Experimental Studies on Thermophysical and Transport Properties Characterization of Industrially Important Solvent System and Process Simulation Studies of Post-Combustion Capture of CO<sub>2</sub> and H<sub>2</sub>S using Aqueous Single and Blended Alkanolamine Solutions National R&D Program for Notural Rubber Processing and Rubber Products Manufacturing
  - 59. Project 2. Optimization and Improvement of Process in the Production of Technically Specified Rubber and Demonstration of Improved Facilities in Zamboanga Peninsula
  - 60. Project 3. Enhancing and Increasing Local Content in Rubber for Motorcycle Tire Application
  - 61. National Space Promotion, Advancement and Capability Expansion (SPACE) Development Program

Phil - LiDAR 1.2. LiDAR Data Processing and Validation by HEIs

- . :. 62.: Project 1.B.1 LIDAR Data Processing and Validation in Luzon: CAR and Selected Sites in Region 1
  - 63. Project I.B.2 LIDAR Data Processing and Validation in Luzon: Northeastern Luzon
  - 64. Project I.B.3 LIDAR Data Processing and Validation in Luzon: Region 3 and Pangasinan (Region 1)
  - 65. Project 1.B.4 LIDAR Data Processing and Validation in Luzon: MIMAROPA and Laguna (Region 4)
  - 66. Project 1.B.5 LIDAR Data Processing and Validation in Luzon: CABARZON (Region 4A cxcept Laguna)
  - 67. Project I.B.6 LIDAR Data Processing and Validation in Luzon: Bicol (Region 5)
  - 68. Project 1.B.7 LIDAR Data Processing and Validation in Visayas: Western Visayas (Region 6)
  - 69. Project 1.B.8 LIDAR Data Processing and Validation in Visayas: Central Visayas (Region 7)
  - 70. Project 1.B.11 LIDAR Data Processing and Validation in Mindanao: Regions 10, 12, and ARMM
  - 71. Project I.B.12 LIDAR Data Processing and Validation in Mindanao: Selected Sites in Northern Mindanao (Region 10) and 11
  - 72. Project 1.B.13 LIDAR Data Processing and Validation in Mindanao: Davao Region / Southern Mindanao (Region 11)
  - ... 73. Project 1.B.14 LIDAR Data Processing and Validation in Mindanao: CARAGA Region (Region 13)

PHIL LIDAR 2.1 Automation of Feature Extraction from LIDAR Data for the Nationwide Detailed Resources Assessment

- 74. Project 2.A.1 Agricultural Resources Extraction from LIDAR Surveys
- 75. Project 2.A.2 Aquatic Resources Extraction from LIDAR Surveys
- 76. Project 2.A.3 Forest Resource Extraction from LIDAR Surveys (FRExLS)
- 77. Project 2.A.4 Development of the Philippine Hydrologic Dataset (PHD) for Watersheds from LIDAR Surveys
- 78. Project 2.A.5 Philippine Renewable Energy Resources Mapping from LIDAR Surveys PHIL LIDAR 2.2 LiDAR Data Processing, Modeling and Validation by HEIs for the
- Nationwide Detailed Resource Assessment Nationwide Detailed Resource Assessment
- 79. Project 2.B.1 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Northern Luzon (Region 1)
- 80. Project 2.B.2 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 2 and Abulog River Basin in Region I

- Project 2.B.3 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 3 and Pangasinan
- 82. Project 2.B.4 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: MIMAROPA and Laguna (Region 4)
- Project 2.B.5 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: CABARZON (Region 4A except Laguna)
- 84. Project 2.B.6 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Bicol (Region 5)
- Project 2.B.7 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Western Visayas (Region 6)
- Project 2.B.8 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Central Visayas (Region 7)
   Project 2.B.9 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed
- 87. Project 2.B.9 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Eastern Visayas (Region 8)
- 88. Project 2.B.10 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Zamboanga Peninsula (Region 9)
- 89. Project 2.B.11 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Northern Mindanao (Region 10)
- 90. Project 2.B.12 LiDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Selected Sites in Region 10 and ARMM
- 91. Project 2.B.13 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Davao Region / Southern Mindanao (Region 11), South Cotabato and Sarangani
- 92. Project 2.B.14 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Mindanao: CARAGA Region (Region 13)
- Pragram for Rehabilitation and Restoration of Mined-Out Areas through Phytotechnologies 93. Conservation of Native Metallophytes, Phytochemistry of Nickel Hyperaccumulators and
- Phytostabilization and Restoration of Mined-out Areas in Palawan, Surigao and Zambales 94. Metal Bio-Indicator Plant Species of the Philippines
- 95. Copper and Arsenic Recovery as a Post Mining Activity Using Indigenous Plant Hyperaccumulators
  - 96. ROGER- Robust and Rapidly Deployable GSM Base Stations and Backhaul for Emergency Response

Sensars for Agricultural and Fishery Ecasystems and Harvests Safety (SAFEHarvestS)

- 97. Project I. Development of Portable Surface Plasmon Resonance MIP-based Sensor for Detection of Histamine in Shrimps
- Project 3. Development of Potentiometric-MIP Test Kit for the Detection of Clenbuterol in Meat
- 99. Project 4. Development of Electrochemical Sensor Platform for Meat and Fish Freshness Monitoring
- 100. Project 6. Molecularly Imprinted Polymer Modified-Carbon Paste Electrodes (MIP-CPEs) as Multi-analyte Sensor for the Detection of Organophosphorus Pesticides Chlorpyrifos and Fenitrothion and Triazine Herbicide Atrazine Smart Grid Technology for Filipino Household
- 101. Project 1. Design and Development of a Smart Home Platform
- 102. Project 2. Design and Development of an Advanced Metering Infrastructure (AMI) Emulator Platform
- 103. Project 3. Prepaid MeterIng and Smart Home System: Technology Acceptance and Technology Features Studies
- SmartWire Program 104. Project 1. Energy Efficient Data Acquisition and Conditioning for the SmartWire Sensor Node Project
- 105. Project 3. Energy Ultra-Low Power Computation and Communication for the SmartWire Sensor Node Project
- 106. Project 4. Resilient Data Transport

- 107. Tactical Operative Amphibious Drive (T.O.A.D.)
  - 108. Rainfall Spatial Analysis in Butuan City Using GIS
  - 109. Design and Development of a Local Microwave Vacuum Dryer (MVD)
  - 110. Simulation and Evaluation of an AGT System Passenger Stations Phase 2
  - 111. Performance Testing of Five-Coach Centrally Powered Hybrid Electric Road Trains for Local Applications - Phase 2
  - Technological Support for the Upgrading of the Local Cacao and Cocoa Industry
  - 112. Project 1. Improving the Quality of Solid Cocoa Liquor Including Molded Cocoa Nibs and Developing the Capability of Small Scale Processors in the Manufacture of Intermediate Cocoa Products
  - 113. Project 4. Design and Fabrication of Equipment for the Production of Local Cocoa Products
  - 114. Voices of Yolanda: Narratives of Risk and Coping Among Survivors of Typhoon Yolanda in Tacloban City, Guiuan Eastern Samar and San Francisco, Cebu
  - 115. 3-D Gestures on 2-D Screen for User Interface
  - 116. A Graphene-Based Electrochemical Supercapacitor for Solar Cells
  - 117. Black Sand Mineral Characterization
  - 118. Deployment and Field Testing of Eco-friendly Septic System (Eco-Sep) in Boracay Island Phase II
- \*. [19. Design and Implementation of a Power Distribution System for Data Centers Program for Responsible Mining
  - 120. Project 3. Alternative Technology for Processing of Chromite and Laterite Ores: Crude Fe-Ni-Cr Alloy Production
  - 121. Project 5. 1CT Support for Responsible Mining (Use of GIS, Data Mining and DSS for Analysis of Mining Areas in Mindanao
  - 122. Project 6. Rehabilitation of Areas Affected by Nickel Mining in Surigao Provinces Towards Eco-Restoration
  - 123. Development of a Dipstick Assay Format for Detection of Salmonella in Food and Feeds
  - 124. Development of Wireless Sensory Network System for Structural Integrity Monitoring of Bridges (SMART BRIDGE)
  - 125. Drought and Crop Assessment and Forecasting (DCAF)
  - 126. Establishment of Centralized Facility of Ultra High Temperature/High Temperature Short time Pasteurizer for Milk, Coconut Water and Other Juices
  - 127. Fabrication of Supercapacitors Using Indigenous Textiles as Electrode Materials
  - 128. Fabrication of a Solid-State Rechargeable Li-ion Battery Using Li7La3Zr2O12 as Solid Electrolyte for Energy Storage Applications
  - 129. Geophysical characterization of an overriding plate: Arc-continent convergence and its ... implications for natural hazards and resource distribution in the Central Philippine
  - 130. Gitara ni Juan: Development of Prototype Design and Standardization of the Guitar-making Process for Quality Classical Guitars Using sclected Philippine Woods
  - 131. Linking active margin tectonics and overriding plate dynamics: A look at the geochemical nature of the Central Philippines
  - 132. Synthesis and Characterization of Novel Metal Nanoparticle-doped Electroactive Polymer Materials and Their Possible Application for Gas Sensing
  - [33. Nanostructured Electrocatalyst Composites for Direct Ethanol Fuel Cell: Preparation, Characterization and Performance Evaluation
  - 134. Nanostructured Electrocatalysts Based on Graphene-support Nanoparticles Towards Direct Ethanol Fuel Cell Application
  - 135. Optimization, Bench-scale Preparation and Toxicological Evaluation of Pectin-Gelatin/Nanocellulosc Biocomposite Coatings from Mango Peel and Nata dc Coco for the Postharvest-Life Extension of Mango (Mangifera indica L. cv Carabao) and Bell Pepper (Capsicum annuum L.) Fruits
  - 136. Pilot Scale Standardization of Product and Processes using Drum Drying Technology on Selected Raw Materials (Mango, Banana and Makapuno)
  - 137. Piloting and Market Validation of the UP Technologies on Rapid Electric Vehicle Charging
  - :.. or CharM (Charging in Minutes) in Cauayan City, Isabela for Progressive SMARTER City

- 138. Polymer Electrolyte Systems Based on Carrageenan for Solid State Dye Sensitized Solar Cell
- 139. Radiation-induced grafting of nonwoven fabrics for waste water treatment to meet Class C effluent heavy metal standards
- 140. Rapid Electric Vehicle Charging Station (CharM)
- 141. Retracing the Central Philippine Overriding plate motion
- 142. Field Deployment of Telemedicine Devices

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- 143. Support to the Commercialization of 500 DOST-Generated Technologies (CYs 2015-2017): Creation of an IP Database Management System and Provision of Initial Support to the Fairness Opinion Board for 12 DOST-Generated Technologies - Phase 1
- 144. Synthesis and Application of Novel Nano-Scale Photocatalysts with Different Dopants for the Treatment of A) Dimethyl Sulfoxlde, B) Chlorophenols in Aqueous Solutions and C) Gaseous Formaldehyde
- 145. Synthesis of Metal Nanowires and their Application in Foldable Transparent Conducting Electrode
- 146. Synthesis, Morphology and Chemical Modification of Fullerene-Based Nanomaterials for Nano-engineered Structural Materials and Optoelectronic Applications
- 147. Technology Generation for the Production of Multi-Nutrient Extruded Rice Kernel (MNERK) to Address Malnutrition
- 148. The Geology of an overriding plate: Constraints from field geology, sediment geochemistry and paleontology
- 149. Tidal Current Energy Integrated Resource Assessment and Spatial Planning Tool
- 150. Trace and Rare Earth Element Geochemistry of Selected Porphyry-Epithermal Cu-Au Deposits in the Philippines

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	PCIEERD Research Areas	With New/Ongoing Projects
1 .	Food and Nutrition Security	X
2	Countryside Development	X
3	Competitive Industries	X
4	Delivery of Social Services	x
5	Intelligent Transportation Solutions	X
<u>6</u> .	Renewable Energy and Energy Storage Solutions	X
7	Human Security	X

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PCIEERD Research Priorities in the Harmonized National R&D Agenda (HNRDA)

#### Partnerships with Public and Private Stakeholders and International Organizations

- 1. Adventist University of the Philippines (AUP)
- 2. Aklan State University (ASU)
- 3. Asian Institute of Management (AIM)
- 4. Ateneo de Davao University (ADDU)
- 5. Ateneo de Manila University (ADMU)
- 6. Ateneo de Zamboanga University (ADZU)
- 7. Bataan Peninsula State University (BPSU)
- 8. Batangas State University (BatStateU)
- 9. Bicol State University
- 10. Bicol University
- 11. Cagayan State University (CSU)
- 12. Camarines Sur Polytechnic Colleges (CSPC)
- 13. Caraga State University (CarSU)
- 14. Cavite State University (CavSU)
- 15. Central Luzon State University (CLSU)
- 16. Central Mindanao University (CMU)
- 17. Central Philippines University (CPU)
- 18. Cropital Enterprises Corporation
- 19. De La Salle University (DLSU)
- 20. De La Salle University (DLSU) Science and Technology Complex (STC)
- 21. De La Salle Araneta University
- 22. Development Academy of the Philippines (DAP)
- 23. Don Mariano Marcos Memorial State University (DMMMSU)
- 24. FEATI University
- 25. Food Development Center National Food Authority
- 26. Futuristic Aviation and Maritime Enterprise, Inc. (FAME)
- 27. Genii Hut Technologies Corporation
- 28. Grayscale Marketing Consultancy
- 29. Hiraya Technology Solutions, Inc.
- 30. Holy Angel University
- 31. Ideaspace Foundation Inc.
- 32. Isabela State University (ISU)
- 33. Kinovette Scientific Solutions Co.
- 34. Machibox Inc.
- 35. Malayan Colleges Laguna (MCL)
- 36. Manila Observatory
- 37. Manly Plastics Inc.
- 38. Mapua Institute of Technology (MIT)
- 39. Mariano Marcos State University (MMSU)
- 40. Marinduque State College
- 41. MATA VR
- 42. Micabsystems Corp.
- 43. Mindanao Autonomous College Foundation, Inc. (MACFI)
- 44. Mindanao State University Iligan Institute of Technology (MSU-IIT)
- 45. Department of Environment and Natural Resources Mines and Geosciences Bureau (DENR - MGB)
- 46. MOOCSX PH
- 47. Museo Pambata
- 48. Northwest Samar State University (NwSSU)
- 49. Pampanga State Agricultural University (PSAU)
- 50. Pangasinan State University Bayambang
- 51. Philippine Foundation for Science and Technology (PFST)
- 52. Polytechnic University of the Philippines (PUP)

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53. RestoGraph, Inc.

54. Rurok Industries

55. Senti Techlabs Inc.

56. Southern Leyte State University (SLSU)

57. Sultan Kudarat State University (SKSU)

58. Surigao State College of Technology-Del Carmen

59. Tekno Logika Pilipinas, Inc.

60. Tekton Geometrix Inc.

61. ToonCity Academy

62. University of Asia and the Pacific (UA&P)

63. University of Caloocan City

64. University of Cordilleras

65. University of San Carlos (USC)

66. University of San Jose Recoletos (USJ-R)

67. University of Santo Tomas (UST)

68. University of Southern Mindanao (USM)

69. UP Baguio

70. UP Cebu

71. UP Diliman

72. UP Los Baños

73. UP Mindanao

74. UP Open University (UPOU)

75. Visayas State University

76. WattSmart Philippines Corp.

77. Wela School System

78. Wesleyan University of the Philippines

79. Western Mindanao State University (WMSU)

80. Western Philippines University (WPU)

81. Department of Energy (DOE)

82. Department of Public Works and Highway (DPWH)

83. Mindanao Development Authority (MinDA)

84. Maritime Industry Authority (MARINA)

85. Department of Budget and Management (DBM)

86. National Security Council (NSC)

87. National Water Resources Board (NWRB)

88. Department of National Defense (DND)

89. National Irrigation Administration (NIA)

90. Kyushu Institute of Technology (Kyutech)

91. Tohoku University

92. Hokkaido University

93. Revolution Precrafted

94. Newton Agham

95. Research Councils UK

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96. e-Asia Program

97. Wave Computing

98. Philippine Advanced Technological Research and Development for Internet of Things (PATRIOT) Consortium

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