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# PH to move up the value chain with DOST's electronics dev't hub

By Joy M. Lazcano  
S&T Media Service, DOST-STII

**S**oon the Philippines will be able to design its own electronic products with the establishment of the Department of Science and Technology's (DOST) Electronics Product Development Center (EPDC), the country's first facility for said purpose.

The Center recently had its groundbreaking at the Metals Industry Research and Development Center (MIRDC) at the DOST Complex in Bicutan, Taguig City.

EPDC will provide state-of-the-art design, prototyping, and testing facilities for printed circuit boards (PCB), the primary electronics component that mechanically supports and electrically connects electronic components.

With these services, the center is set to strengthen the local electronics and semiconductor industry by enabling local startup companies and the academe to conduct their own initiatives for research and development (R&D), design, and prototyping of electronic components.

DOST and Electronic Industries Association of the Philippines, Inc. (EIAPI) President Alexander Sy are positive that through the Center, the local electronics and semiconductor industry will move up the value chain - from

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**Phil's first electronics design center.** Department of Science and Technology (DOST) Undersecretary Amelia P. Guevarra (left) leads the groundbreaking ceremony for the Electronics Product Development Center (EPDC) at DOST's Metals Industry Research and Development Center (MIRDC). EPDC will offer support facilities in designing, prototyping and testing of printed circuit boards which are primary components of electronics products. Together with Usec. Guevarra are (from left) Electronics Industry Association of the Philippines, Inc. President Alexander Sy, Advanced Science and Technology Institute Director Denis Villorente, Philippine Council for Industry, Energy, and Emerging Technology Research and Development Executive Director Rowena Cristina Guevara, and DOST Assistant Secretary and MIRDC Officer-In-Charge Robert Dizon. (Photo by Gerardo Palad, S&T Media Service, DOST-STII)

## DOST-PHIVOLCS chief belies "Triangle of Life" earthquake safety theory

Philippine Institute of Volcanology and Seismology Director Dr. Renato U. Solidum speaks about the duck, cover, hold policy as a correct and universally accepted way of response during an earthquake. His talk was held during the 2nd Department of Science and Technology (DOST)-NCR Stakeholders' Summit on Disaster Risk Reduction and Management on December 5 at the DOST Executive Lounge in Bicutan, Taguig City.

During his talk, Solidum said that the Triangle of Life theory is not an appropriate method to keep one safe during a tremor. (Photo by Ceajay N. Valerio, S&T Media Service, DOST-STII)



By Angelica A. de Leon  
S&T Media Service, DOST-STII

**D**uring an earthquake, the first thing to do is to duck under a sturdy table.

This is called the drop, cover and hold response to an earthquake, and all countries follow this, according to Dr. Renato U. Solidum, director of the Philippine Institute of Volcanology and Seismology (PHIVOLCS), a service institute of the Department of Science and Technology (DOST).

"You hide underneath a sturdy table, and you hold the table while the floor is shaking, and the table will also be moving," Solidum stated in his talk "Earthquake Hazards and Risks in Metro Manila and Vicinity: PHIVOLCS-DOST Initiatives" during the 2nd DOST-NCR

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electronics assembly to the higher value services such as electronics design and manufacturing.

### Advantages of the EPDC

In addition, design and manufacturing costs are projected to be reduced by half. Currently, EIAPI stressed that companies are spending around US \$5,000 to 30,000 (Php 210,000 to Php 1.26 million) in design and prototyping alone.

Moreover, the Center will result in shorter turnaround time for product development cycles as well as decreased risks of failing certification tests.

It will also draw more foreign investments in the electronics industry which is expected to create technology spillovers, a scenario wherein other sectors receive the benefits of new technology.



Department of Science and Technology (DOST) Assistant Secretary and Officer-In-Charge of Metals Industry Research and Development Center (MIRDC) Robert Dizon (2nd from left) and Advanced Science and Technology Institute (ASTI) Director Denis Villorente sign an agreement between MIRDC and ASTI, both research and development agencies of DOST, to kick-start the creation of the Philippines' first Electronics Product Development Center (EPDC). Once operational, EPDC will offer support facilities in designing, prototyping and testing of printed circuit boards - a primary electronics component. With Asec. Dizon and Dir. Villorente are MIRDC Deputy Executive Director Jonathan Puerto (left) and EPDC project leader Engr. Peter Antonio Banzon. (Photo by Gerardo Palad, S&T Media Service, DOST-STII)

EPDC, set for operation in July 2014, will offer various electromagnetic compatibility testing services such as electromagnetic interference pre-compliance testing and harmonics and flicker tests. Also, the Center will provide electronic product prototyping for electronic circuit simulation, PCB design simulation, prototype PCB fabrication, prototype PCB assembly, functional/parametric tests, 3D enclosure design, 3D scanning, enclosure design simulation, and enclosure prototyping using 3D printer.

According to Advanced Science and Technology Institute Director Denis Villorente, "The center was conceptualized to house hardware and software tools, which could be used by companies or schools to design, develop and test hardware and software electronics products."

With this development, many local firms will benefit tremendously as Sy explained that global electronics industry players get the biggest share of profits due to their design capabilities. He also pointed out that the country produces world-class engineers capable

of designing electronic components if given the proper support.

### Beefing up the industry

Peter Banzon, EPDC project leader, said that to complete the whole picture, DOST will be creating the Integrated Circuit Development Center that will provide facilities for the development of local engineers in designing and prototyping integrated circuits.

This also augurs well for local companies engaged in original design manufacturing or ODM. Original design manufacturers are companies that design and manufacture a product which is specified and eventually branded by another firm for sale. Many global electronic brands today were previously engaged in the ODM business. Locally, more and more industry players are going into ODM, said Antonio Villaflor, head of

STMicroelectronics, in a separate interview.

The Philippine electronics industry is specifically targeting to reach US\$50B or Php 2.1 trillion in revenues in 2016.

Based on the 2010 Nomura Research, the Philippines has comparative advantage in electronics subsectors like printers, multifunction peripheral, projectors, scanners, and digital cameras. The same study also identified missing linkages in the electronics supply chain such as photovoltaic cell, LEDs, rechargeable batteries for hybrid electric vehicles, electric vehicles and mobile digital devices, and next-generation energy infrastructure.

This report drove the government to implement strategies that will strengthen the country's manufacturing industries by providing necessary support measures that will address obstacles to the entry and growth of domestic firms. With the coming ASEAN economic integration in 2015, the Philippines is aggressively insulating its industries against unbridled competition.

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Stakeholders' Summit on Disaster Risk Reduction and Management, held last December 5 at the DOST Executive Lounge.

Such response is more effective, said Solidum, compared with the so-called "Triangle of Life" theory of reacting to strong earthquakes. The theory states that instead of ducking for cover under a table, the person should lie beside it. If the ceiling collapses, it will hit the table, lean against it, thus forming a triangle and sparing the life of the person lying beside,

"That (Triangle of Life) is not correct because it assumes a static context of an earthquake. Remember, the table is moving so if you just lie down on the floor, you're exposing yourself to falling objects that might even get you killed because you don't have any cover to protect your head and any part of your body," explained Solidum.

The PHIVOLCS director also mentioned another variation of the Triangle of Life theory which involves the refrigerator. Advocates believe that since the refrigerator is made of metal, it will not be crushed as much as a wooden table would.

Solidum also discounted this theory. "The refrigerator is usually high, hence it can topple down. It may even kill or injure you if you lie beside it. So it's not appropriate to follow the Triangle of Life," he reasoned out.

Solidum's talk at the DOST-NCR Stakeholders' Summit came a day after parts of Southern Philippines were struck by a 5.7 magnitude quake. Last October 15, a 7.2 killer quake that shook Central Visayas resulted in the death of many and the destruction of structures including historical churches and the world famous Chocolate Hills in Bohol. The deadliest to hit the country in the last 23 years, the temblor was said to have unleashed the strength of 32 Hiroshima bombs.

Solidum disclosed that a tremor of similar magnitude, or even a magnitude of 6.5, from the West Valley Fault can cause severe damage to Metro Manila and nearby places. The West Valley Fault runs from San Mateo, Rizal to Taguig City. A magnitude 8 along the Manila Trench, he said, can cause a tsunami. The Manila Trench is an oceanic trench in the Pacific Ocean, located west of Luzon and Mindoro.

However, he reminded the audience that it is the collapsing building, not the fault shaking, which causes people to die during a powerful tremor, and cited the August 1968 earthquake which pummeled the country. With its epicenter at Casiguran in Quezon, the Intensity 8 temblor significantly affected Manila, causing the six-story Ruby Tower in Binondo to collapse which caused the death of more than 200 persons.

"If the ground is soft, if the buildings are not engineered well, these can collapse and even cause fire," Solidum said and emphasized the need for preparedness - individually, as well as at home and at the workplace. Buildings should be in accordance with the National Building Code, he stressed.



# DOST- Microsoft tie up for Imagine Cup

## TO BOOST SUPPORT FOR PINOY SOFTWARE DEVELOPERS

By Allan Mauro V. Marfal  
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**T**he Department of Science and Technology (DOST) has embarked on a partnership with Microsoft Philippines to conduct the 12th edition of Imagine Cup, an annual student competition of software applications addressing national problems in health, education, e-government, and others, as DOST's Information and Communications Technology Office (ICTO) continues to support local talents in the industry.

To be held in April 2014, Imagine Cup aims to encourage schools to institutionalize ICT-enabled innovation initiatives in their respective campuses in order to become hubs for ideas that will help solve real-life problems.

DOST's Information and Communications Technology Office (DOST-ICTO) Deputy Executive Director Monchito Ibrahim, who represented the Department in the signing of the Memorandum of Understanding with Microsoft last November 5 at Shangri-la Makati, said that Filipino software developers are definitely at par with their foreign counterparts as they are naturally resourceful and creative.

According to him, it is not impossible to see their out-of-the-box concepts implemented and make the operation of



The Department of Science and Technology partners with Microsoft Philippines for the 12th edition of Imagine Cup set for April 2014 as part of its support to Filipino software developers. Shown in photo are Imagine Cup 2011 winners (from left) Jeriah KJell Miranda, Thomas Tiam-Lee, Keven Hernandez and Jenina Chua of Team Signum Fidei, after finishing second place in the Microsoft-Imagine Cup Game Design Competition in 2011 in New York. The team's winning technology was a mobile application puzzle game called Conject where the player is required to clear boards overlaid with photos of real-life problems around the world. The team earned the right to represent the Philippines in the New York competition after winning the Imagine Cup in the country. *(Information and photo from website of Microsoft Philippines)*

government offices faster, more reliable and more efficient. The key to a concept's marketability, he said, is for the software developer to consider issues and challenges in the Philippines that may be addressed by ICT-enabled solutions prior to product development. Having fulfilled this, the software developer may be considered as a viable contributor in the country's drive towards sustainable development, Ibrahim noted.

Some of the recent winners of Imagine Cup are team Divide Zero that developed KidCAMP, a web and mobile application that enhances special education to improve autism communication tools, and Team Signum Fidei that developed a mobile application puzzle game called Conject, where the player is required to clear boards overlaid with photos of real-life problems around the world. The Imagine Cup grand prize winners will represent the country in the Microsoft Cup Design Competition.

"Microsoft's Imagine Cup is vital to promoting the science and technology capability of our student developers in achieving innovations that are geared towards delivering economic and social benefits," said DOST Undersecretary Louis Casambre.

"We look forward to more partnerships like this with Microsoft in order to sustain the development of programs that harness the talents and skills of Filipinos in science and technology and at the same time, give them the opportunity to potentially contribute to the economy through entrepreneurship," he added.

Last year, ICTO teamed up with the Philippine Software Industry Association (PSIA) for the Spring.ph initiative, a start-up coaching and mentoring program that aims to produce at least 10 start-ups with annual revenues of at least US\$1M by 2016. ICTO intends to align and harmonize efforts in promoting entrepreneurship in ICT, in order to strengthen the Philippine startup ecosystem and support new and upcoming startups for them to be globally recognized, Ibrahim said.

Based on a report released by PSIA, the software development industry is expected to generate revenues of \$1.5 billion by the end of 2013, compared with the \$1.16 billion it earned last year. At the same time, the number of I.T professionals is also expected to grow higher by 33 percent from 60,000 in 2013 to 80,000 by the end of 2013.

# Color sorter technology increases rice productivity for rice traders

By Jesse M. Pine  
S&T Media Service, PSTC-Oriental Mindoro

**“The color sorter technology for rice has really paved the way for increased productivity of our current facility,”** said Leonard M. Garcia who started his rice mill business with his wife on January 20, 2005. **“Before the intervention of the Department of Science and Technology, we were able to produce 40 percent good quality commercial rice and the other 60 percent graded as ‘slight’ by rice traders,”** he quipped.

The color sorter technology is intended to improve the commercial rice productivity and quality. In Garcia’s rice mill, the facility was finally installed last September 2, 2013. The firm is one of the Small Enterprise Technology Upgrading Program (SETUP) beneficiaries in the 2nd district of Oriental Mindoro for the current year and got the biggest allocation in the province for equipment upgrading since 2004. The technology is also the first ever to be established successfully in the southern part of the province.

The quality rice commands better price in the market compared to the one that is “slight”, the term used to describe discolored and chalky rice with impurities such as stones, weed seeds, and broken grains.

The color sorter machine

With the acquisition of the new technology, it is expected that the previous production of quality rice will turn to 60 percent and the other 40 percent into “slight.” This will translate to 20 percent increase in productivity and, eventually, sales. Nowadays that commercial rice prices are on its peak, a 50-kg bag will fetch around P1,850 on a wholesae basis compared with “slight” which costs P1,550.

The couple is all smiles as they see bigger opportunities during this harvest season when it comes to producing quality commercial rice with the new technology provided by DOST through the (SETUP).



## InFocus



**Getting to know more about flood early warning system.** Danilo Flores, weather forecaster from PAGASA-Hydromet Division (left) answers a participant’s query on the community-based early flood warning system during the Project NOAH Information, Education and Communication (IEC) seminar for Region I held recently at the Oasis Country Resort in San Fernando City, La Union. Others in photo (from left) Raquel Felix, Landslide Mapping-WebGIS; Leo Godfrey Jao, WebGIS-Project NOAH; Oscar Lizardo, Chief SRS of WebGIS-Project NOAH and Engr. Sulamita Catalan (standing) of DOST Region I. (Photo by Teddy Amante/Text by Rodolfo P. de Guzman, S&T Media Service, DOST-STII)