

Predicting and managing natural disasters

Using satellites to forecast and manage natural disasters saves lives and property.

In addition to providing static images, geoinformatics and space technology is also a dynamic tool for forecasting, monitoring, and planning. For example, space technology can be broadly applied to serve as for the purposes of disaster warning and integrated water management in the aftermath of an earthquake or flood.



As the national space agency in Thailand under the Ministry of Science and Technology's Geo-Informatics and Space Technology Development Agency (GISTDA), in collaboration with partners, has developed a flood forecasting and monitoring system using space technology and models which will be operational by mid-2012.

On 28 March 2012, GISTDA held the Mini-Expo: Space Technology for Disaster Warning and Water Management. The main objectives of the expo are to raise awareness among national decision makers and to improve confidence among investors of the efficiency of the efficiency of space technology applications as a tool in terms of disaster warning and management.

The expo also exhibited operational space and geoinformatics technology that has proven to be effective tools for long-term flood prevention from countries around the world, namely Australia, Canada, China, Italy, Japan, Korea, the United Kingdom, the United States, and Thailand.

The expo featured three very informative keynote addresses from international experts in the space technology and disaster management.

The first keynote lecture, "Improving Disaster Response and Risk Management with Satellite Surveillance", was given by William Jefferies, Chief Technical Officer of MacDonald, Dettwiler and Associates Limited (MDA) in Canada. MDA is involved with satellites, space stations, ground stations, and Radarsat (an advanced Earth observation satellite project developed by Canada to monitor environmental change and support resource sustainability).

Mr. Jefferies stressed the important role which radar plays in Thailand, particularly in light of the 2011 flooding which caused US\$45 billion in damages.

He also discussed five operational experiences that are relevant to Thailand, namely flooding, agricultural monitoring, fisheries enforcement, offshore pollution monitoring, and landslides and ground stability.

Mr. Jefferies also said that in order for them to be effective, operational services need to be reliable, repeatable and rapid, as well as providing value to users in terms of reduced cost and useful information.

The second keynote lecture, "Advanced Small Satellite Constellations for Earth Observation Service", was given by Sir Martin Sweeting, Chairman of Surrey Satellite Technology Limited (SSTL) in England.

Mr. Sweeting said that small satellites are changing the face of space technology through their commercial applications. These satellites have the advantages of being low cost (US\$12 million to build and launch into orbit) and part of a network with increased capabilities (including high imaging, high resolution data).

SSTL's Disaster Monitoring Constellation (DMC), which supports one disaster worldwide per day, is capable of rapid coverage of large areas. In fact, the DMC can cover the entire United Kingdom in just one pass and all of Europe in just five days.

In addition to disaster prevention and assistance, these satellites also have precision farming, security, and surveillance applications.

The final keynote lecture was given by Kenzo Hiroki, Principle of the International Center for Water Hazard and Risk Management and a Special Advisor to the United Nation's Secretary General's Advisory Board on Water Management and Sanitation.



Mr. Hiroki said that the 2011 floods in Thailand were deep and wide and should have been made shallow and wide. He also remarked that floods can be controlled by knowing the inundation on a real time basis. Therefore satellite observation is a must. He also said that disaster response is a fight against information and that it is vital that the government share its information with its citizens.

The logo for GISTDA, featuring the word "GISTDA" in a stylized, bold font with a globe icon integrated into the letter "I".

Geo-Informatics and Space Technology Development Agency
120 Moo 3 The Government Complex,
Rattaprasasanabhakti Building, fl.6,7Chaeng Wattana Road,
Laksi District, Bangkok 10210, THAILAND
Tel. (662) 141 4444 Fax. (662) 143 9586-87
Website :<http://www.gistda.or.th>
e-mail : pr@gistda.or.th