Course Guideline



Organizers

Asian Disaster Preparedness Center (ADPC)
SilvaCarbon
SERVIR-Mekong
The United States Agency for International Development (USAID)
The Global Land Analysis and Discovery (GLAD)
National Aeronautics and Space Administration
ASEAN Research and Training Center for Space Technology and Applications : (ARTSA)
Geo Informatics and Space Technology Development Agency
(PublicOrganization) : (GISTDA), Ministry of Science and Technology : (MOST)

Welcome to Regional Training "Implementing GLAD System for forest cover change monitoring in the Mekong Region"

7th -9 th August 2017

ASEAN Research and Training Center

for Space Technology and Application (ARTSA)

Sirindhorn Center for Geo - Informatics (SCGI)

Space Krenovation Park, Chonburi Province, Thailand

"Regional Training Implementing GLAD System for forest cover change monitoring in the Mekong Region"

7th -9 th August 2017
ASEAN Research and Training Center
for Space Technology and Application (ARTSA)
Sirindhorn Center for Geo – Informatics (SCGI)
Space Krenovation Park, Chonburi Province, Thailand

Background

Countries in the Mekong region are committed to developing National Forest Monitoring System for REDD+, and improving the information on forest extend and status. Cambodia, Lao PDR, Myanmar and Thailand, have been aligning their forest cover mapping with the UNFCCC Good Practice Guidance, which includes transparency, consistency, comparability, completeness, and accuracy.

As part of these efforts, Forestry Agencies in the Mekong region identified that the lack of time series and temporal data and standardized method to assess uncertainties are the primary constraints in ensuring consistency of the produced maps.

Through discussions with national counterparts during various regional workshops and trainings organized by SilvaCarbon, it was identified that there is an opportunity to address these constraints by implementing the forest cover change mapping method developed by the University of Maryland (UMD) - the Global Land Analysis and Discovery (GLAD) System.

GLAD System uses an automated Landsat data compositing and classification algorithm for forest cover change mapping. As part of the SilvaCarbon program, Cambodia, Lao PDR and Thailand will start implementing the GLAD system in 2017.

In parallel, SERVIR-Mekong has been collaborating with different land use agencies and other stakeholders from the Mekong region to produce high-quality regional land cover maps and identify land cover changes in the Lower Mekong. This is done through the collaborative development of the Regional Land Cover Monitoring System (RLCMS) that leverages the power of Google Earth Engine and the increased availability of open source tools and products.

SERVIR-Mekong is also collaborating with UMD to implement the GLAD system at regional level and calibrate the global forest cover change products for the Mekong region. Under the Applied Sciences Team grant, UMD will strengthen capacity of SERVIR-Mekong to implement the GLAD system in the region, provide technical support to countries as needed, and integrate forest resources data in the RLCMS.

In order to align these various developments, SERVIR-Mekong, UMD and SilvaCarbon are planning a regional training to convene forestry officers and key research partners from Cambodia, Lao PDR, Myanmar and Thailand. The training will be hosted by the Geo-Informatics and Space Technology Development Agency (GISTDA) and will be organized in collaboration with the Department of National Parks, Wildlife and Plant Conservation, Thailand, Ministry of Environment, Cambodia, Department of Forestry, Lao PDR, and Department of Forestry, Myanmar.

The training will be organized from 7th -9th August at GISTDA training centre in Sri Racha, Chonburi, Thailand. Overall objective of the training is to provide brief introduction to the GLAD System, its methodology and tools, with a particular focus on sample-based methods of forest cover area and change estimation and map accuracy quantification. Each country will work on its own country samples.

The training will kick-start the implementation of the GLAD System at national level. The in-depth training on national data management and characterization will be performed during the countries training workshop at UMD.

Training objectives:

1. Providing an overview of the UMD GLAD methodology for national forest monitoring and the existing products developed with different countries
2. Providing training and hands-on exercise on sample-based area and change quantification, including stratified sampling design, image interpretation, and sample data analysis.
3. Initiating the national sample-based forest cover and change analysis for 2000 - 2016 time interval
4. Discussing the mapping objectives at country level: baseline, frequency, priority forest types to be mapped (e.g., primary forest, secondary forest, natural forest, plantations) and the disturbance types.

Expected Outcomes:

1. Increased understanding of the GLAD national forest monitoring methods and tools.
2. Understating of the use of SERVIR regional products for national forest monitoring applications. Increased understanding on the complementarities between nationally-owned change products and regional data sets, depending on the mapping objectives
3. 100 samples interpreted: Each country will be working on interpreting its own samples. The rest of the samples the countries will be able to interpret and analyze after the workshop using provided tools and datasets.

Training participants:

- Remote sensing officers responsible for producing forest cover maps for REDD+ from Cambodia, Lao PDR, Myanmar, and Thailand
- Academia representatives from Cambodia, Lao PDR, Myanmar, and Thailand
- GISTDA remote sensing officers working with forestry/land use data
- Remote sensing specialists from SERVIR-Mekong Hub and SERVIR HKH
- Representative from Forest Inventory and Planning Institute, Viet Nam, to share experience with implementing the GLAD System in Viet Nam (tbc)

Organizers

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- SilvaCarbon
- SERVIR-Mekong
- The United States Agency for International Development (USAID)
- The Global Land Analysis and Discovery (GLAD)
- National Aeronautics and Space Administration
- ASEAN Research and Training Center for Space Technology and Applications : (ARTSA)
- Geo Informatics and Space Technology Development Agency (PublicOrganization) : (GISTDA), Ministry of Science and Technology : (MOST)

Date & Place

Date: 7th – 9th August 2017
Duration: 3 days
Place: ARTSA, Sirindhorn Center for Geo-Informatics (SCGI),
Space Krenovation Park (SKP), Sri Racha, Chonburi, Thailand.
Location: 13.102001 N, 100.928833 E

Course Content Outline

Date	Topics	Lecturers
Sunday 6th August 2017		
18:00 - 19:00	Dinner	
Monday 7th August 2017		
08:00 – 08:30	Breakfast	
08:45 – 09:00	Workshop opening	SERVIR / SilvaCarbon / GISTDA
09:00 – 09:10	Aim of the workshop, schedule, logistics	SERVIR / ADPC
09:10 - 09:20	Introduction of participants	
09:20 – 10:00	Overview of the GLAD national tree cover monitoring methodology (lecture)	UMD
10:00 – 10:40	Break	
10:40 - 12:00	Overview of the GLAD Landsat data processing system (lecture)	UMD
12:00 – 13:00	Using Q-GIS for national data visualization and analysis (demonstration)	
13:00 - 14:00	Lunch	
14:00 – 14:30	Using Q-GIS for national data visualization and analysis (hands-on exercise)	FIPI
14:30 – 15:10	Introduction to sample-based tree cover and change quantification (lecture)	UMD
15:10 – 16:00	Sample interpretation interface (demonstration)	UMD
16:00 – 17:00	Training sample set interpretation (hands-on exercise)	UMD
18:00 – 19:00	Dinner	
Tuesday 8th August 2017		
08:00 – 08:30	Breakfast	
09:00 – 10:00	Discussion on image training set interpretation results, interpretation interface, definitions, and interpretation legend (moderated discussion)	UMD
10:00 – 10:40	Break	
10:40 – 13:00	Sample interpretation (by country). The goal is to interpret 100 samples for each country.	

Date	Topics	Lecturers
13:00 – 14:00	Lunch	
14:00 – 15:00	Tour to the GISTDA Space Museum	GISTDA
15:00 – 17:00	Sample interpretation (continued)	
18:00 - 19:00	Dinner	
Wednesday 9th March 2017		
08:00 – 08:30	Breakfast	
09:00 – 10:00	Sample interpretation (continued)	UMD
10:00 – 10:40	Break	UMD
10:40 – 11:00	Aggregation of the interpretation results	
11:00 – 11:40	Sample data analysis (lecture)	UMD
11:40 – 12:00	Sample analysis (demonstration)	UMD
12:00 – 12:30	Sample analysis (hands-on exercise)	
12:30 – 13:00	Revision of sample interpretation. Discussion of difficult cases. Sharing experience between country teams (moderated discussion)	UMD
13:00 -14:00	Lunch	
14:00 -14:40	Overview of the preliminary national results (moderated discussion)	SERVIR and UMD
14:40 -15:30	Small group (by country) discussion of the sample methods, results, interpretation challenges, and next steps of the GLAD system implementation.	SERVIR / SilvaCarbon / UMD
15:30 -16:40	Group presentations on the challenges and next steps of GLAD system implementation	SERVIR / SilvaCarbon / UMD
16:40 -17:00	Workshop wrap-up	SERVIR / SilvaCarbon / UMD
18:00 – 19:00	Dinner	
Thursday 10th August 2017		
08:00 – 09:00	Breakfast	
10:00	Travel to Airport	

Meals

All meals will be served in Thai food, Vegetarian food and Halal food on 1st floor of SCGI Building as per the following schedule:

Time:	Breakfast	07:30 - 08:30
	Lunch	12:00 -13:30
	Dinner	18:00 – 19:00
	Coffee break	10:20 – 10:40 and 14.20 – 14.40

Vertical View

All participants will live at Vertical View, located in Space Krenovation Park during 6th – 10th August 2017 in a single room. Vertical view is located in SKP and about 400 meters of SCGI Building on south direction

CHECK IN: SUNDAY, 6th August 2017

CHECK OUT: SATURDAY, 10th August 2017

Please be informed that Vertical View is the dormitory in SKP, not a hotel, so please brings your personal items

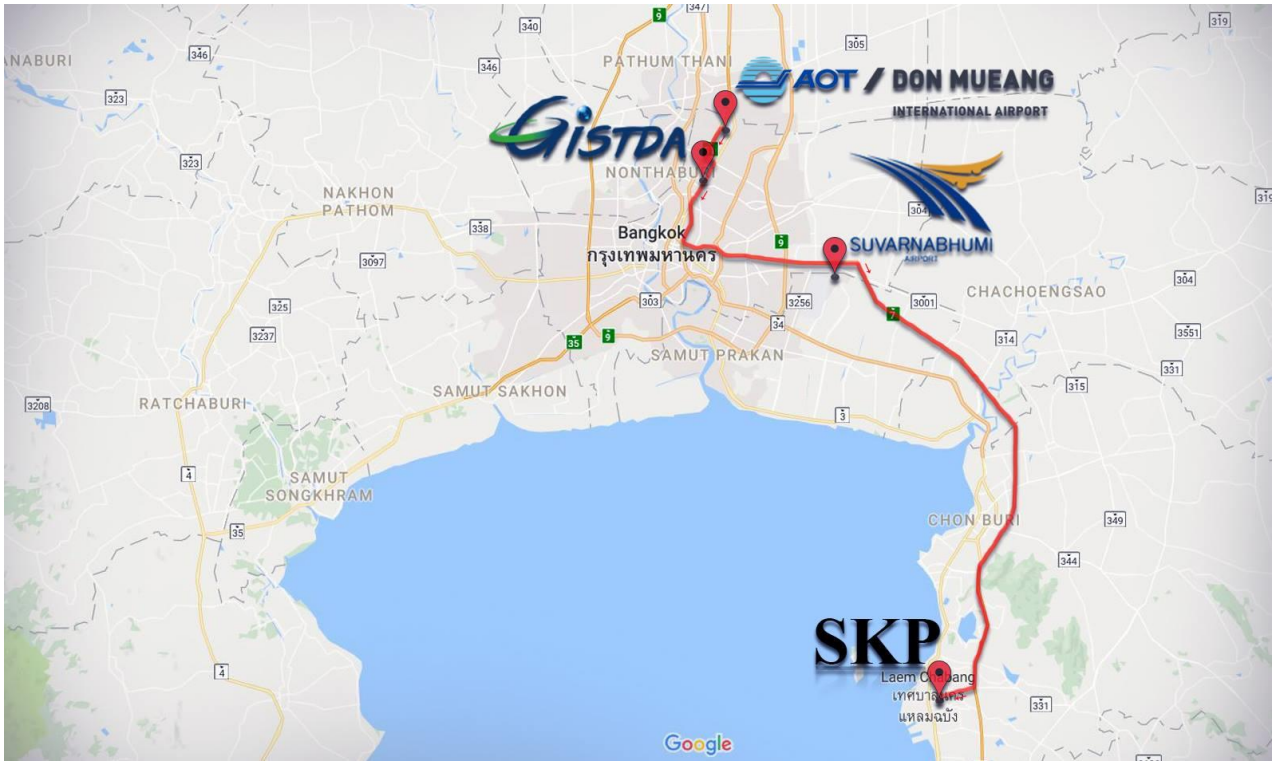
Please kindly be noted that the financial support is limited, so we do not allow for accompanying family members and friends are not allowed to stay at Vertical View



Remark: Please kindly be informed that the van will be available during the training to service between SCGI and Vertical view building which are 400 meters far away each other.

Transportation

We are pleased to provide the local transportation to take all participants to SKP at Suvarnabhumi international airport



1. **Suvarnabhumi Airport** to Space Krenovation Park (SKP), Sriracha, Chonburi Province. There will be GISTDA staff pick you up at the airport and bring you to the van, then when all participants are ready the van will go to SKP. Please notice the person who show GISTDA logo as below around Exit C gate number 3, on 2nd floor at Suvarnabhumi Airport.
   Official Website: http://www.suvarnabhumiairport.com/

GISTDA logo

Participants arrival and departure schedules have been shared with GISTDA. All participants are advised to gather at the meeting point close to Level 2, Gate 3 and look for GISTDA signage. If you encounter any problems, please get in touch with GISTDA focal person in charge of airport pick up.







GISTDA logo

Space Krenovation Park



"Delivering Values from Space"

New GISDA's vision had been developed. To achieve this vision, 2 significant missions are planned. One is to develop Thailand's second earth observation system (Thaichote-2) to ensure data continuity as well as to optimize the utilization of Thaichote. Parallel to the development of THaiChote-2, the second mission is to establish the Space kreanovation Park (SKP) where creativity and innovation comes together by 2013. GISDA aims to expand Thaichote Ground Control Station at Siracha district, Chonburi province as an epicenter of SKP for Space & GIS operations, R&D, and knowledge transfer. With its strategic location close to industrial area on the eastern seaboard of Thailand, it shall bridge the gap among GISDA, the universities and the industry firms through co-operative R&D, human-resource and shared facilities. Thus, SKP can create a unique "Space park" with dynamics clusters that accelerate economic growth.

Space Krenovation Park consists of 5 main parts as follows:

1. Geo-informatics Research & Training Center
2. Thaichote Operations Center
3. Space Technology Laboratory Center
4. Space Technology Park Building
5. GIS & Space Technology Museum

ARTSA

ASEAN RESEARCH AND TRAINING CENTER FOR SPACE TECHNOLOGY AND APPLICATIONS

ARTSA IN BRIEF

This center increases the capability of personnel knowledge and research development in the region as well as establishes and expands the network of academic knowledge and research collaboration among ASEAN countries that will benefit to natural resource, environmental management, and emergency response of the region.

The operational concept of the center is to increase ASEAN personnel capacity on the area of space technology and geo-informatics applications and raise awareness for all levels as well as strengthen the network of academic knowledge and research collaboration through conventional classroom training, on the job training, research projects, academic network, etc.





GOAL

1. To provide services in education and trainings, knowledge sharing and enhancement, and awareness raising in Geo-informatics.
2. To conduct research applications and innovations, and collaborations in areas related to Geo-Informatics for ASEAN countries and worldwide.

TARGET GROUPS

ASEAN government agencies, private organizations, academic institutes, universities, and schools, and other relevant organizations.

BENEFITS

1. Establish extensive networking of space technology and applications in ASEAN.
2. Use Geo-Informatics to respond to current regional situation, problems, and disasters.
3. Enhance the country development and strengthen the cooperation among ASEAN countries for regional competitiveness and prosperity.



GISTDA

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196 Phaholyothin Road, Chatuchak, Bangkok 10900 Thailand.
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www.artsacenter.org



SIRINDHORN CENTER FOR GEO-INFORMATICS

SPACE KRENOVATION PARK: SKP, SRI RACHA, CHONBURI, THAILAND

Sirindhorn Center for Geo-Informatics (SCGI) is established under the cooperation between the Ministry of Science and Technology, Thailand by Geo-Informatics and Space Technology Development Agency (Public Organization): GISTDA and Wuhan University by State Key Laboratory of Information Engineering Surveying, Mapping and Remote Sensing : LIESMARS), the People's Republic of China. SCGI is an international center in the field of geoinformatics, under the grace of HRH princess Maha Chakri Sirindhorn. SCGI is located at Space Krenovation Park (SKP), Sriracha, Chonburi province, Thailand.

The center is a non-profit organization aiming at promoting the academic exchange of scientists in related fields in China, Thailand and even the world; and advancing the development of science and technology of geo-informatics.

PURPOSE

To be the International Knowledge Transfer and Research Center of Space Technology and Geo-informatics.

MISSION

This center is a source of quality scientist incubation in development of geo-informatics and space technology. This center will advance education and create a knowledge based society in geo-informatics and space technology, not only in Thailand but also in ASEAN and Asia Pacific countries. Therefore, the activities of this center will increase and improve personnel capacity in the region to respond to current regional situation and major problems as well as enrich the institutions' intellectual and research endeavors of the region.

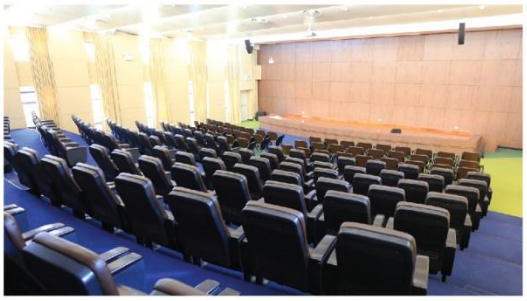
CENTER ACTIVITIES

- Training Course
- Workshop
- Conference
- Space Camp
- Symposium

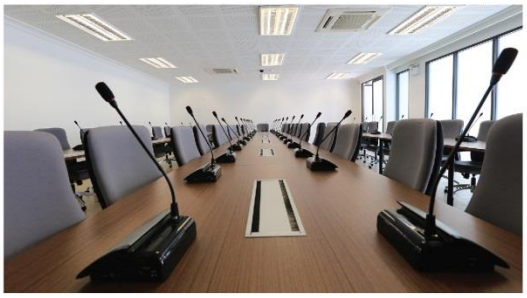
SCOPE OF ACTIVITIES

- Training
- Research
- Exchange Researcher









FACILITIES

- HRH Princess Maha Chakri Sirindhorn office
- Two 40-seats training rooms
- Two research and laboratory rooms
- 4 meeting rooms, with the capacities of 200, 45, 20 and 20 audiences
- 3 reception rooms
- 1 Library room
- 20 rooms for offices, canteen, first-aid, storage, training media, and others
- 23 rooms of vertical view dormitory

Geo-Informatics and Space Technology Development Agency (Public Organization)
Ministry of Science and Technology
Tel. 0 2561 4504-5 ext. 421, 431

Ground Receiving Station of Thaichote



Space Inspirium

ZONE 1: Universe

ZONE 2: Historical Technology of Space

ZONE 3: Life Begins to Space



ZONE 7: Geo Informatics

ZONE 8: Remote Sensing

ZONE 9: Global Navigation Satellite System

ZONE 10: Geographic Information Systems

Weather Information

One of the most attractive features that attract visitors from around the world to visit Thailand is the warm weather and sparkling sunlight. The peak in temperature normally comes in mid-April. By June, the summer is at its departure gate so the temperature is less warm at about 33° C (91.4° F) during the daylight time and 24°C (75.2° F) at night.

Similar to other countries, during the seasonal transition, rain is to be expected. Umbrella or rain coat are recommended and can be bought easily at various convenience stores. Several pairs of socks along with waterproof shoes can be helpful if it rains in consecutive days.

Electric Power voltage in Thailand



In Thailand the standard voltage is 220 V. The standard frequency is 50 Hz. The power sockets that are used are of type A / B / C. Below you find pictures of these power sockets and corresponding plugs. And we provide more information about the voltage and frequency. Your need for an adapter or converter depends on the voltage, frequency and power plugs in Thailand.







International Sim Cards

Pre-paid mobile sim card can be purchased at convenience stores such as 7-11 and Family Mart which can be found at airport terminal. You will need to show your identity card or passport.

Contact Information



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[During training course, you can contact me at mobile phone 087-807-5515]



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[During training course, you can contact me
at mobile phone 096-241-4954]

Notice

- Please take note that you must have your workshop-badge all the time during the training.
- Please pay prompt attention to training notice
- Please keep your room key with you until you check out
- Please take note that the organizers of the training will cover only the accommodation and meals during the workshop. Any additional expenses: e.g. phone calls, laundry, drinks, etc. need to be covered by yourself

ANNEX I

Note:

If you do not speak Thai, you might want to use the following text and show it to the local people or taxi driver to indicate where you need to go:

"**Please take me to Thaichote ground receiving station where located on highway no.331 (Sriracha) , Chonburi please**"

"ช่วยไปส่งฉันที่สถานีควบคุมและรับสัญญาณดาวเทียมไทยโชตซึ่งอยู่ที่ถนนหมายเลย 331 ด้วยครับ/ค่ะ"

"**Please help me to call to Mr. Jakrapong at mobile phone number 087-807-5515**"

"กรุณาช่วยฉัน โทรเข้ามือถือคุณจักรพงษ์หมายเลข 087-807-5515 ด้วยครับ/ค่ะ"

"**Please help me to call to Ms. Nalini at mobile phone number 098-284-8458**"

"กรุณาช่วยฉัน โทรเข้ามือถือคุณนลินีหมายเลข 096-241-4954 ด้วยครับ/ค่ะ"

"**Thank you**"

"ขอบคุณครับ / ขอบคุณค่ะ"

Male – Cob Kun Cup

Female – Cob Kun Ka

ANNEX II: Emergency call in Thailand

To reach an English-speaking operator call the Tourist Police or in the case of an accident, an ambulance service from one of the many international hospitals in Thailand.

Emergency Services	Telephone
Tourist Police	1155
Police (General Emergency Call)	191
Ambulance and Rescue	1554
Fire Brigades	199
National Disaster Warning Centre	1860
Crime	1195
Medical Emergency Call	1669
Tourist Service Center	1672