



COOPERATION WITH SENTINEL ASIA TO PROVIDE SPACE INFORMATION SERVING FOR STORM EMERGENCY RESPOND

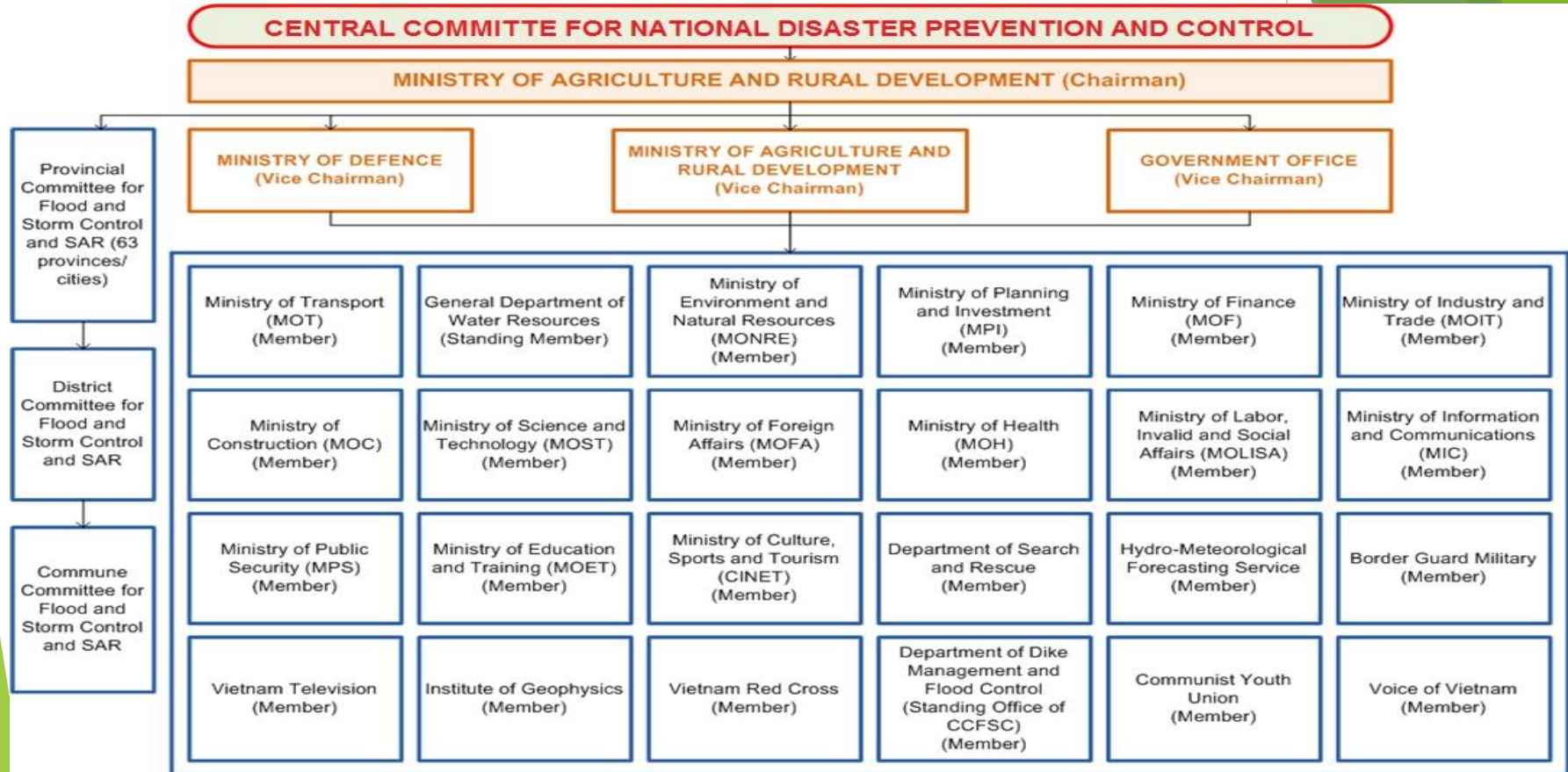
Kobe, 31 Oct, 2018

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Department of Science Tech. & International Cooperation
VIETNAM DISASTER MANAGEMENT AUTHORITY

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1. INTRODUCTION OF **CCNDPC & DMA** OF VIETNAM
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1. INTRODUCTION OF CENTRAL STEERING COMMITTEE FOR NDPC (CCNDPC) and FUNCTION OF VNDMA



1A. INTRODUCTION OF CENTRAL STEERING COMMITTEE FOR NDPC (CCNDPC)

CCNDPC:

Tasks of the Central Steering Committee for Natural Disaster Prevention and Control

- a/ To guide the formulation and urge the **implementation of national strategies, plans, policies, laws** on natural disaster prevention and control;
- b/ To guide the formulation of plans on response to natural disasters;
- c/ To direct and coordinate nationwide: to **direct the response** to natural disasters of **levels 3 and 4**;
 - To **coordinate** and support localities in responding to natural disasters of **levels 1 and 2**;
- d/ To decide on **urgent measures**, and **mobilize resources** of organizations and individuals in accordance with the Law on Natural Disaster Prevention and Control;
- e/ To direct the making of statistics on damages and needs for relief;
 - Propose the Government or the Prime Minister to decide on measures and resources for remediation nationwide;
- f) To examine and urge ministries, sectors and localities in carrying out natural disaster prevention and control activities.

1B. INTRODUCTION OF FUNCTION OF VNDMA

1. Submit for promulgation:

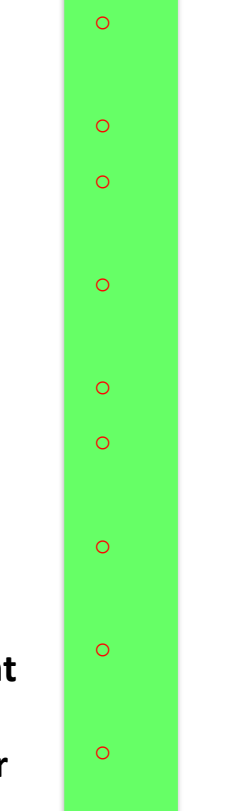
- a) Law projects, Resolutions by the National Assembly; Government Decrees; draft decisions, instructions by the Prime Minister, and other documents on natural disaster management activities.
- b) Long-term, mid-term and annual development strategies, planning
- c) National standards, national technical codes and specialized economic-technical norms;
- d) Technical instructions of N.D management.
- e) Propagation, dissemination and education of law on natural disaster management.

2. Direct, monitor and organize the implementation of legal documents, mechanisms, policies, strategies, planning, programs and projects in the field of natural disaster management.

3. Management of natural disaster risks (*4 stages: Preparedness, Prevention, Response, and Recovery*)

4. Dykes management.

2. COOPERATION WITH SENTINEL ASIA (S.A)

- 
- **2014:**
 - JAXA & Disaster Charter: [1st Request / activation](#): Collected Data, products from Sentinel Asia, Disaster Charter, Vietnamese DANs, AIT, Tokyo University
 - JAXA&AIT (GIC) in mini project activities (2014)
 - DMC Collaborated **STI** for processing, mapping, survey and report (BIG Flooding 2014, Quang Ninh province)
 - **2015:**
 - **Sign MOU between JAXA, WRD, VAST** (September 2015); [Building Implementation plans for 3 years of MOU](#)
 - JAXA&AIT (GIC) in mini project activities (2015)
 - **2016**
 - [2nd : Request / activation SA](#): DMC Collaborated **STI** for processing, mapping, survey and report (BIG DROUGHT 2015-2016, Central Highland of Viet Nam)
 - [3rd: Request / activation SA](#): DMC Collaborated **STI** for processing, mapping, survey and report (BIG DROUGHT 10-11/2016, Central Coastal province of Viet Nam)
 - **Present & further**
 - [4th: Request/ activation SA](#): for two flood event in October & November, 2016 in the central area of Vietnam.
 - **March 2017:** Cooperation to organization the **10 years anniversary** workshop and the **4th JPTM meeting in Hanoi** (2017)

2. COOPERATION WITH SENTINEL ASIA (S.A)

March 2017: Cooperation to organization the 10 years anniversary workshop and the 4th JPTM meeting in Hanoi (2017)

“Vietnam is one of the most active participants for S.A”(Mr. Syams Nassgrulaah, AIT)



10th Anniversary Commemoration
of Sentinel Asia
hosted by VAST/MARD/JAXA
Hanoi, March 7th, 2017



3. STORM DOKSURI AND NEEDS OF USING SPACE IMAGES

Storm Doksuri (Sept, 2017): The tenth Storm to affect Vietnam in 2017 - considered it as the "most powerful storm in a decade" with risk level 4 - Vietnam was placed under a **emergency** warning at "very high" risk level. Waves as high as 32 ft (10 m) were predicted offshore.

- Coastal provinces, therefore, announced plans to shut down beaches and ban fishing by September 14
- Base on forecast on magnitude and moving direction, the needed activated area has coordinates located between Ha Tinh and Quang Binh province with a radius of 150 km.



4. RESULTS OF ACTIVATION SENTINEL ASIA

Activation process:

- 14/09/2017: ADRC has received a request to activate disaster events on the Sentinel Asia (S.A) system and assisted in monitoring Storm Doksuri (Storm number 10 in Vietnam in 2017).
- 16/09/2017: Sentinel Asia announced that it would not be able to use optical satellite imagery due to its cloudy location.
- 17/09/2017: The Sentinel Asia system has taken and updated the image on the system (low resolution image on website for reference). The original ALOS-2 /PALSAR-2 satellite image was sent to the Sentinel Asia analysts' Center for information technology - Asian Institute of Technology (GIC-AIT-Thailand).
- 20/09/2017: Photographic images from the satellite ResourceSat-2 of India, photographed area of Nghe An on 19/9/2017 updated to the Sentinel Asia system (low resolution photo on website for reference)
- 21/9/2017: Updated photos / maps to Sentinel Asia system.

Process for shooting ALOS-2 / PALSAR-2 on 17/9/2017. 17h59 (UTC)

Sentinel Asia Emergency Observation Request Form

The screenshot shows the Sentinel Asia Emergency Observation Request Form interface. The main map displays the Area of Interest (AOI) and Observation scenes in Vietnam. The form includes the following details:

- Observer (your name and organization):**
 - Your name: Chia Cuiyong
 - Your organization: Observation Management Policy and Technology Center
 - Your phone: +84-43627511
 - Your cellular phone: +84 912048914
 - Your e-mail: chuiyong@jrc.jp@gmail.com
- Time limit for information to be updated on the SAWE portal:**
 - Less than 24 hours
 - Not exceed 4 days
 - Not exceed 10 days
 - Others: Based on the expected time limit, there might be cases when the delivery of information will be difficult to meet the products to be delivered. It is assumed to be notified at a given time. In such cases, we may not register Sentinel Asia.
- Date of occurrence:**
 - Date and time (UTC): From 15th Sep 2017 to 19th Sep 2017
 - Details news source: Link: <http://www.ncvnm.gov.vn/web/vp/vn/DM/24/2027/Default.aspx>
- Request details:**
 - Request ID: 146
 - Request start time: 18.25
 - Request end time: 2017/09
 - Request status: 146

Coordinates of center point:

- Latitude : 17.918336
- Longitude : 106.169511
- Radius : 150 km

The table below shows the request entries:

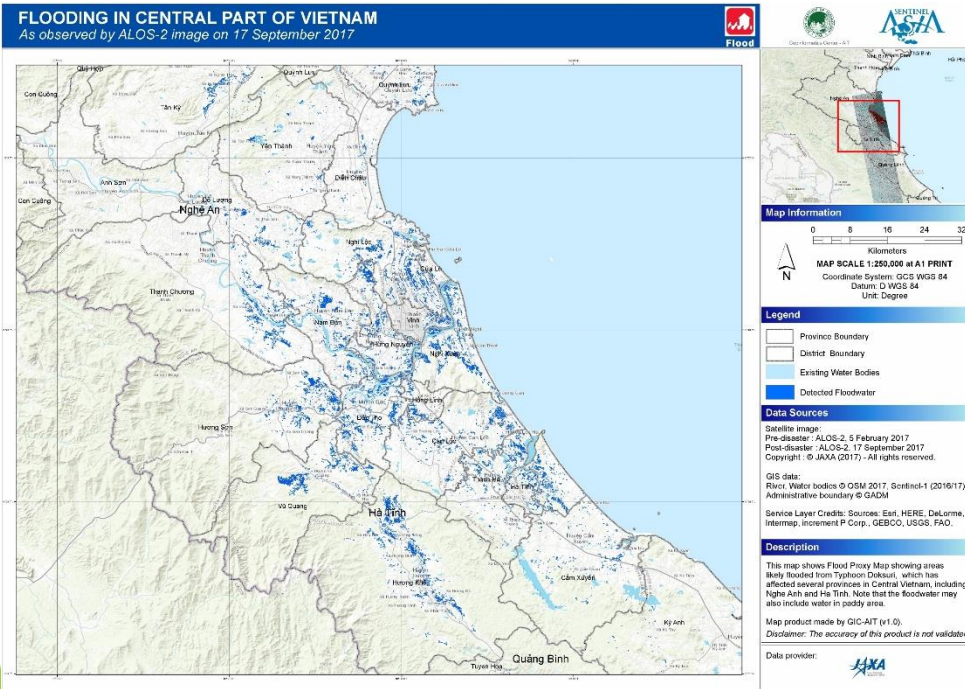
Request ID	Request Name	Request Type	Request Mode	Request Direction	Request Beam	Request Altitude	Request Date	Request Status		
3	ALOS-2	PALSAR-2	SM3	HH+HV	右	F2-5	28.2	アセンディング	2017/09/17	146
4	ALOS-2	PALSAR-2	SM3	HH+HV	右	F2-5	28.2	アセンディング	2017/09/17	146
5	ALOS-2	PALSAR-2	SM3	HH+HV	右	F2-5	28.2	アセンディング	2017/09/17	146
6	ALOS-2	PALSAR-2	SM3	HH+HV	右	F2-5	28.2	アセンディング	2017/09/17	146
7	ALOS-2	PALSAR-2	SM3	HH+HV	右	F2-5	28.2	アセンディング	2017/09/17	146

4. RESULTS OF ACTIVATION SENTINEL ASIA



Activation productions:

FLOODING IN CENTRAL PART OF VIETNAM
As observed by ALOS-2 image on 17 September 2017



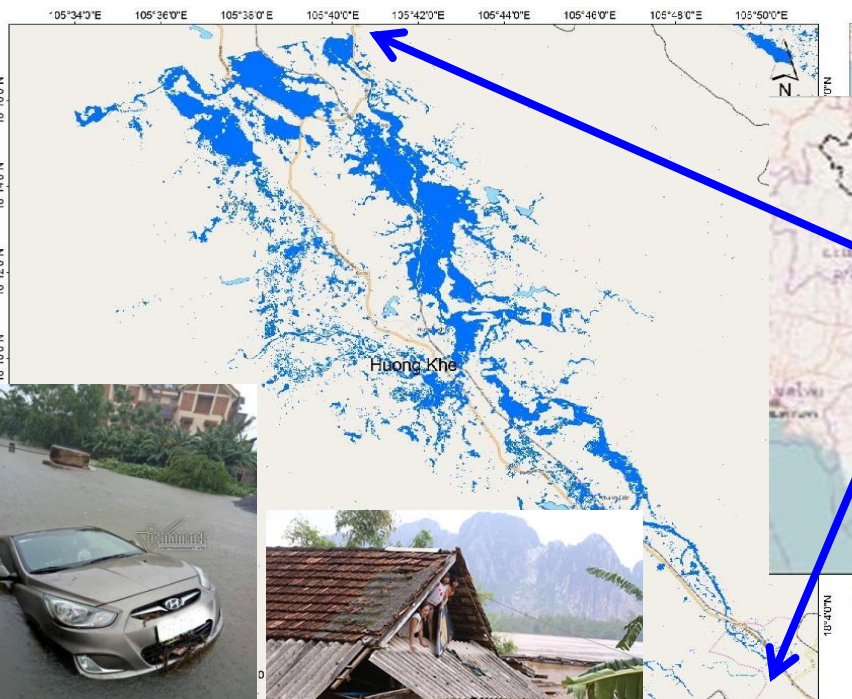
Flooding Areas in Central Part of Vietnam – as observed by ALOS-2 image on Sept 17th 2017 at DOKSURI storm

Optical Image taken on Sept, 19th 2017 by ResourceSat-2 of India

4. RESULTS OF ACTIVATION SENTINEL ASIA

Other Activation for flood in Oct, 2016

DETECTED WATER IN HUONG KHE DISTRICT, HA TINH PROVINCE, VIETNAM (16

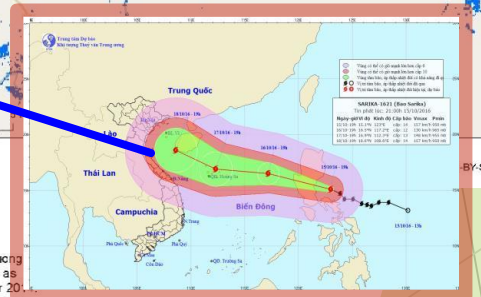


POST-DISASTER IMAGE
 Satellite: Sensor: ALOS-2/ PALSAR-2
 Date: 16 Oct 2016
 © JAXA

Coordinate System: GCS_WGS_84
 Datum: D_WGS_84
 Unit: Degree

This map shows detected water area in Minh Hoa district, Quan Binh province, Vietnam as observed from ALOS-2 data on 16 October 2014. Image processing using thresholding technique was applied to extract the water area.

Disclaimer: The accuracy of this product is not validated.



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October 2016
 DMC & STI requested S.A for
 Emergency Observations for flood
 in October, 2016; AIT processed

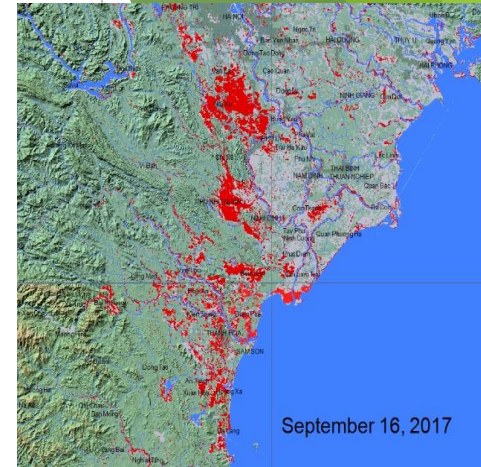


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4. RESULTS OF ACTIVATION SENTINEL ASIA

Challenges and Difficulties:

- Slow activation time to S.A system and receive satellite image: need 2-3 days to activate; S.A does not provide satellite images (level 1a) data, only provides product after analysis, so long product arrival time (2-3 days after shooting photo).
- Not be active in the process of shooting and analyzing photos, so that, assessment of the damage situation may not be as quick as needed.
- Not yet official coordination mechanism between the internal agencies involved in remote sensing to support the establishment of maps for real-time rapid assessment of disasters.



5. CONCLUSION AND RECOMMENDATION

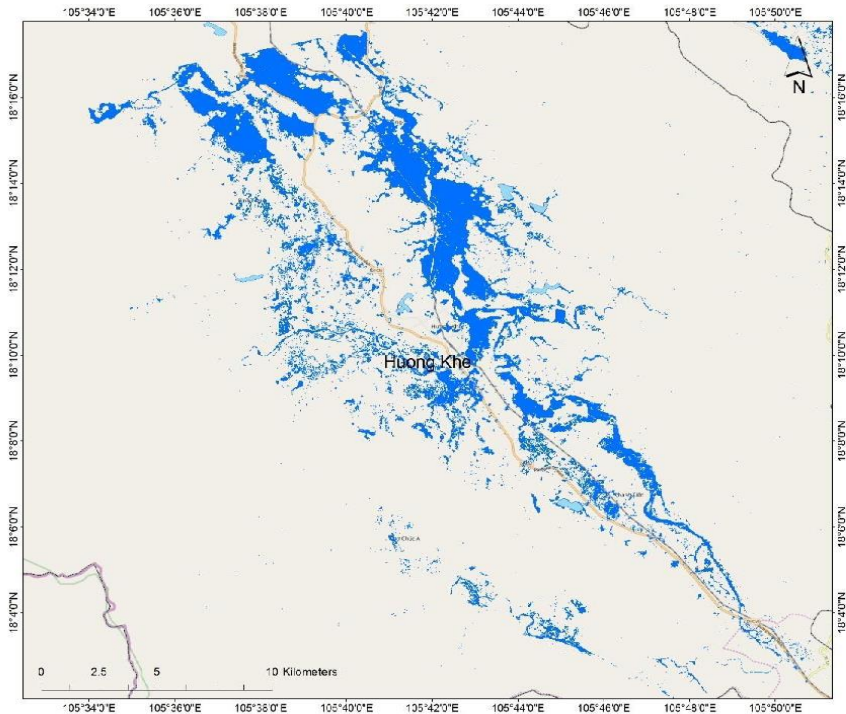
- Thanks for helping from S.A to member countries;
- Satellite Image is essential to emergency respond; important basis to assess the losses & damage;
- Need to enhance the technical capacity to reduce the time to capture and analyze images;
- Countries should be proactive to estimate the target area to request help from Sentinel Asia; Prepare appropriate resource to receive pictures/maps and capacity to analyze information from production maps to provide assistance to emergency respond;
- Training technical staffs to hand over the technology is needed;
- MOU between Vietnam and S.A should be reviewed and extended for time being.



THANK YOU VERY MUCH!

VIETNAM DISASTER MANAGEMENT AUTHORITY
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

DETECTED WATER IN HUONG KHE DISTRICT, HA TINH PROVINCE, VIETNAM (16 OCT 2016)




Date: 10/19/2016

Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA



Legend

 Detected Water

MAP SCALE 1:60,000

POST-DISASTER IMAGE

Satellite/ Sensor: ALOS-2/ FALSAR-2

Date: 16 Oct 2016

© JAXA

Coordinate System: GCS_WGS_84

Datum: D_WGS_84

Unit: Degree

This map shows detected water area in Huong Khe district, Quan Binh province, Vietnam as observed from ALOS-2 data on 16 October 2014. Image processing using thresholding technique was applied to extract the water area.

Disclaimer: The accuracy of this product is not validated.

