

Sentinel Asia

Strategic Plan
2017-2027

-New Satellite Data Provisions and Systems-



November 2, 2018

Sentinel Asia Steering Committee Secretariat
Japan Aerospace Exploration Agency

I. New Satellite Data Provisions and Systems

End-users are requesting improvement of the data & information system; for example, rapid data provision after an incident and rapid access to products for local usage. Also, new data policies and data sharing guidelines should be in place to satisfy various user needs. These data/sharing policies need to be established in parallel to the development of an improved new system to make use of a system effectively addressing user needs.

Action Items

- Improvement for the Emergency Observation Request (EOR) System
Depicting User Needs
- Consider using Observation Opportunities by OPTEMIS of GISTDA
- Consider sharing plans of Observations, Data Provisions, Data Analysis Plan by DAN and Products Availability Plan
- Improvements to satellite data and VAP sharing using Data Services
- Develop Policy Guidelines and agreements with DPN for pre/post satellite data usage, covering all the activities under Sentinel Asia

I. New Satellite Data Provisions and Systems

No.	Item	Action
4.1.1-1-S	1. Revise EOR document	ADRC and JAXA
4.1.1-2-M	2. Satellite Operation Supporting Tool (including Web-EOR)	GISTDA leading
4.1.1-3-M	3. Satellite Observation Scenario in Each Type of Disaster for EOR order desk and Users	JAXA leading. All members contribution
4.1.2-1-M	4. Data Sharing System through Cloud Server	JAXA leading. JAXA asks other agencies to develop.
4.1.2-2-M	5. Portal Web Site for Sharing Observations and Activities	JAXA shows one demonstration. Collect from all members.
4.1.2-3-M	6. Web-GIS for Users	JAXA and GIC-AIT
4.1.3-1-M	7. Procedure of DPN and DAN (Revise), Particularly to Realize Step-3 by New Frame	

1. Revise EOR document

- ADRC and JAXA are discussing the revise of Emergency Observation Request form. It will be released in April, 2018.

Goal;

Updating new EOR including necessary information from users.

Schedule;

01/2018: Introducing new EOR format at JPTM

03/2018: Feedback from Sentinel Asia users.

04/2018: Release new EOR, and apply for requests.

Additional issue.

Requesters can request support from DANs.

Version20171010

<input type="checkbox"/> Building Damage	<input type="checkbox"/> Infra. Damage	<input type="checkbox"/> Lahar	<input type="checkbox"/> Others(_____)
Request for Data Analysis Node (DAN)			
<input type="checkbox"/> Ourselves	<input type="checkbox"/> DANs in own country	<input type="checkbox"/> P-DAN	<input type="checkbox"/> OTHERS (_____) <input type="checkbox"/> No request
SENTINEL ASIA			
EMERGENCY OBSERVATION REQUEST (EOR) FORM (2/2)			
Time limit for information to be uploaded on the SA WEB-portal (from date of SA activation)			
<input type="checkbox"/> Less than 24 hours	<input type="checkbox"/> Not exceed 4 days	<input type="checkbox"/> Not exceed 10 days	<input type="checkbox"/> Others:
※Based on the expected time limit, there might be cases where the delivery of information will be difficult to meet or the product to be delivered is assessed to be not enough at a given time. In such cases, we may not trigger Sentinel Asia.			
Date of Occurrence			
Date and time(UTC)			
Details, news source			

2.Satellite Operation Supporting Tool (including Web-EOR)

- GISTDA has developed OPTEMIS to support satellite operation plan. GISTDA modifies it for Sentinel Asia.
- OPTEMIS for SA has some important functions,
 - EOR on Web
 - Visualization on the status of DPN and DAN.
(Satellite acquisition time, sharing the footprints, data providing and other important functions.)

Goal;

User supporting tool (SA-OPTEMIS) for EOR in new Sentinel Asia system in operation

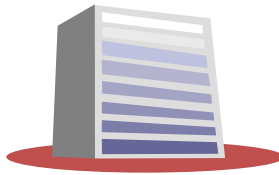
Schedule;

01/2018: Training SA-OPTEMIS for participants at JPTM

09/2018: Demonstration SA-OPTEMIS for EOR requesters by Japan Team

01/2019: Demonstration SA-OPTEMIS for EOR requesters by SA members(TBD)

04/2019: In Operation (TBD)



Sentinel Asia Members/Users

Sentinel Asia Member (Disaster Management Organization/Agency)

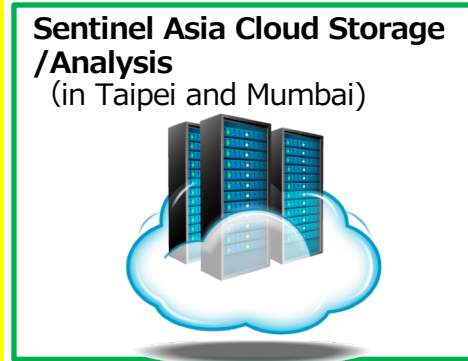
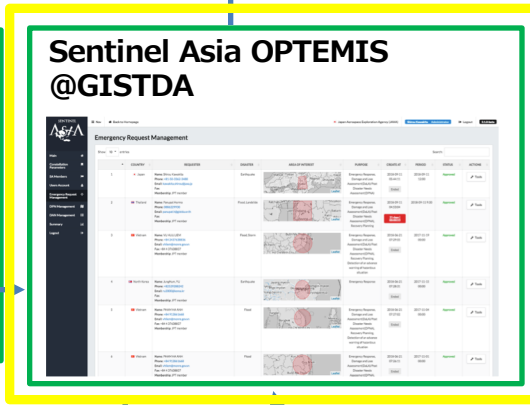
Notification/Communication by ADRC



Confirmation

Satellite images, VAPs and Information

Emergency Observation Request



Emergency Observation Request

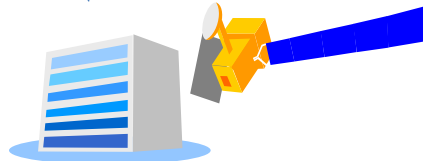
Status Report

Observation Data Download

VAP Upload

Observation Data Provision

Data Provide Node



Data Analysis Node



Emergency Request User's Interface

The screenshot shows the SAFA web application. The main area is a map of Southeast Asia with Yangon highlighted. The sidebar on the right contains a 'Send Request' button and a form with the following fields:

- 1 Select a satellites**
- 2 Feasibility Data**
- START**: 15/11/2017
- END**: 16/11/2017
- TYPE OF DISASTER**: All x
- OPTICAL**:
 - Low Resolution:
 - AQUA
 - NPP
 - RESOURCESAT-2
 - TERRA
 - Medium Resolution:
 - LANDSAT-8
 - THAICHOTE
 - VNREDSAT-1
 - High Resolution:
 - DUBAISAT-2
 - SENTINEL-2A
- SAR**:
 - ALOS-2
 - SENTINEL-1A
- Buttons**: Compute, Check All, Clear

အရေးပေါ်လေ့လာသူများကောင်းဆိုးခြင်း (EOR) ပုံစံ

အမည် * Panupat HORMA

ဖုန်းနံပါတ် * 886229930

အသေးစိတ်

အမျိုးအမည် * JPT member

အချိန် * 14/11/2017

အချိန် * 15/11/2017

မြန်မာဘာသာ (Burmese)

แบบฟอร์มคำขอใช้ภาพถ่ายดาวเทียมฉุกเฉิน (EOR)

ชื่อ-นามสกุล * Panupat HORMA

เบอร์ * +66886229930

รายละเอียด

ประเภทการใช้งาน * ภัยพิบัติ

วัตถุประสงค์ * ภัยพิบัติ

ประเภทการขอ * ภัยพิบัติ

กำหนดระยะเวลาในการให้บริการ * ภายใน 24 ชั่วโมง

วันเริ่ม * 14/11/2017

ภาษาไทย (Thai)

Mẫu Yêu cầu Khắc phục Khẩn Nại (EOR)

Tên * Satit Bumpenbun

Điện thoại * 0982514865

Chi tiết

Người dùng cuối theo kế hoạch * Thêm họa

Mục đích của Yêu cầu * - Select -

Loại thiên tai * - Select -

Giới hạn thời gian để tải thông tin lên công web SA * Dưới 24 giờ

Ngày bắt đầu * Ngày cuối *

Tiếng Việt (Vietnamese)

EMERGENCY OBSERVATION REQUEST (EOR) FORM

Name * Panupat HORMA

Phone * 886229930

Details

Planned end-user of the observed information * Disaster

Purpose of the Request * - Select -

Type of Disaster * - Select -

Time limit for information to be uploaded on the SA WEB-portal * Less than 24 hours

End Date * 15/11/2017

English

Multi-Language EOR Form

Emergency Request User's Interface : DEMONSTRATION

SENTINEL ASIA Sentinel Asia Satellite Acquisition Feasibility Emergency Request Form Dashboard Logout

Send Request
Emergency Request Form

1 SELECT A SATELLITES **2** FEASIBILITY DATA

START (00:00 UTC) END (23:59 UTC)
Start Date End Date

TYPE OF DISASTER
All

OPTICAL

- Low Resolution
 - AQUA
 - NPP
 - SENTINEL-3A
 - TERRA
- Medium Resolution
 - LANDSAT-8
 - SENTINEL-2A
 - THAICHOTE
 - VNREDSAT-1
- High Resolution
 - DEIMOS-2
 - GEOEYE-1
 - WORLDVIEW-2
 - WORLDVIEW-3

SAR

- ALOS-2
- CSK-1
- CSK-2
- CSK-3
- CSK-4
- RADARSAT-2
- SENTINEL-1A

Compute Select All Clear

-30.63555 : 225.17578
1000 km
1000 mi

Leaflet

3.Satellite Observation Scenario in Each Type of Disaster for EOR order desk and Users

- JAXA made the draft of Satellite observation scenario for Sentinel Asia.
- The document has the specification of sensor on the satellite, suitable mode of observation and other important information to make a satellite operation plan.
- It can help users and satellite operators to make their plan.
- The document will be applied for OPTEMIS.

Goal;

Establishing the document of satellite observation scenario. The document can help users to make an EOR.

Schedule ;

08/2018: Feedback from Data Provider Node.

03/2019: Apply it for SA-OPTIMES.

04/2019: The document will be released on Sentinel Asia Web portal.

4.Data Sharing System through Cloud Server

- To deliver our data to DANs and users, a cloud server is the best way.
- There are several cloud server services, amazon, google, micro soft and so one. JAXA has a plan to evaluate the data provision performance with a cloud service (amazon cloud nominated).
- Could you join this performance test with us. (Uploading and downloading some data from the cloud site)
- In the future, we expect the cloud server do not share the data, but analyze the data automatically, because the data size is much larger than now (over 50GB) It would be great if we could challenge together (with DANs).

Goal;

New Sentinel Asia data provision ssystem with cloud server in operation.

Schedule;

02 and 05 /2018:Data Provision Test of cloud server with DPNs and DANs.

01/2019:Demonstration of New Data Provision System by NARL/NSPO and JAXA.

10/2019: New Data Provision Sytem in operation.



Sentinel Asia Members/Users

Sentinel Asia Member (Disaster Management Organization/Agency)

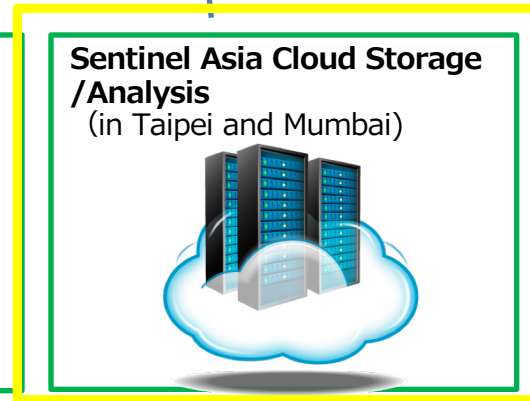
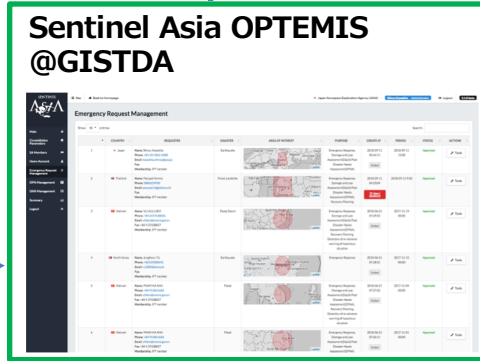
Notification/Communication by ADRC



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Emergency Observation Request



Emergency Observation Request

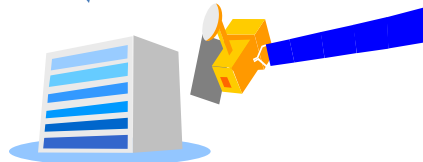
Status Report

Observation Data Download

VAP Upload

Observation Data Provision

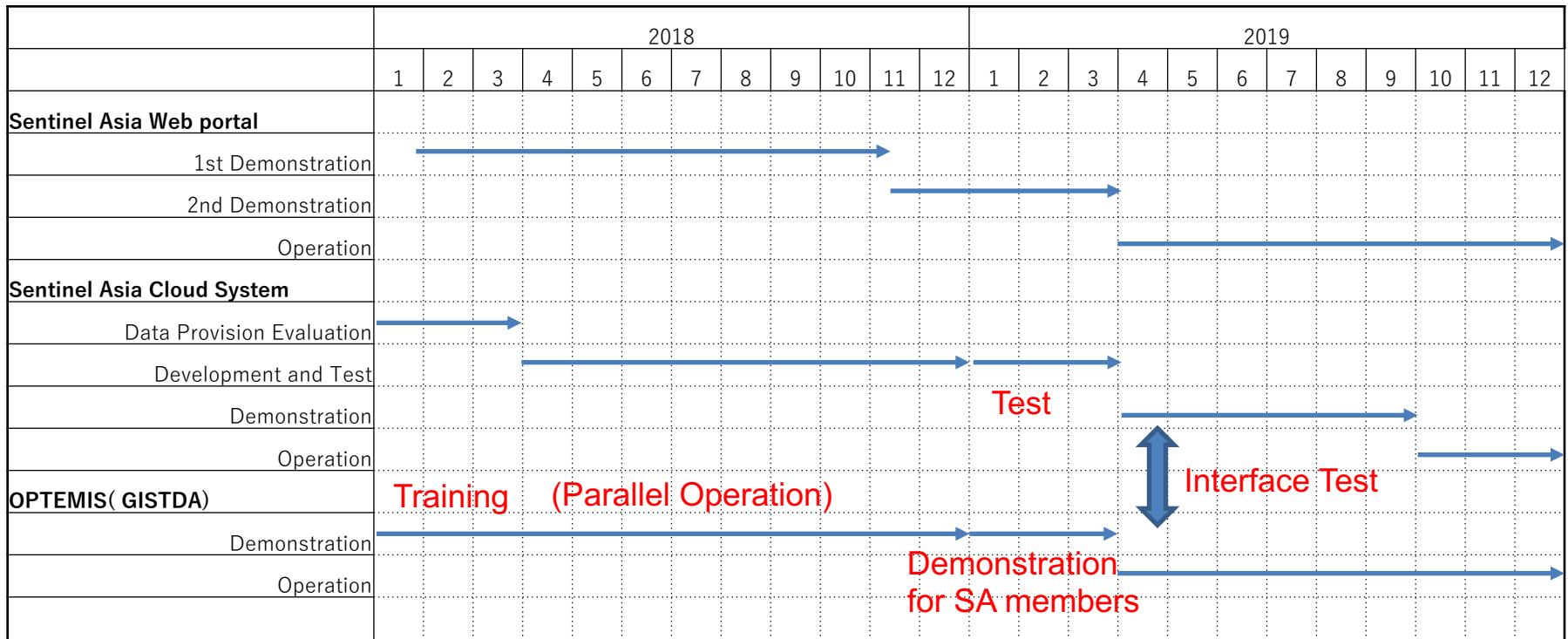
Data Provide Node



Data Analysis Node



Schedule



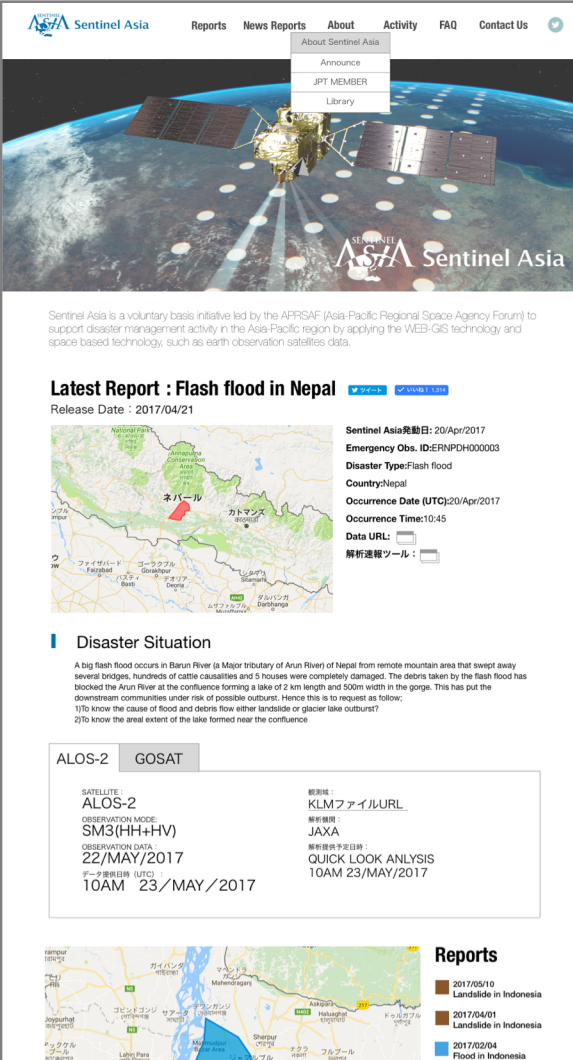
6. Portal Web Site for Sharing Observations and Activities

Target: User Information;

- A) Activities (EOR)
- B) About SA
- C) Announce
- D) News/Events
- E) Archives
- F) others

Goal;
New Sentinel Asia Portal site in operation

Schedule;
02/2018: Demonstration of new site for Sentinel Asia members.
~03/2019: Feedback from members.
04/2019: Release the new site.



The screenshot shows the Sentinel Asia website interface. At the top, there is a navigation menu with links for Reports, News Reports, About, Activity, FAQ, and Contact Us. Below the menu is a header image featuring a satellite in orbit over Earth, with the Sentinel Asia logo. The main content area displays a 'Latest Report : Flash flood in Nepal' with a release date of 2017/04/21. A map of Nepal shows the location of the flood. To the right of the map, there are details about the report, including the emergency observation ID, disaster type, country, occurrence date, and occurrence time. Below the map, there is a 'Disaster Situation' section with a description of the flood and its impact. At the bottom, there is a table showing satellite data for ALOS-2 and GOSAT, including the satellite name, observation mode, observation date, and time. A 'Reports' section at the bottom right shows a list of reports with dates and locations.

Latest Report : Flash flood in Nepal
Release Date : 2017/04/21

Sentinel Asia発動日: 20/Apr/2017
Emergency Obs. ID:ERNPDH000003
Disaster Type:Flash flood
Country:Nepal
Occurrence Date (UTC):20/Apr/2017
Occurrence Time:10:45
Data URL:
解析速報ツール:

Disaster Situation

A big flash flood occurs in Barun River (a Major tributary of Arun River) of Nepal from remote mountain area that swept away several bridges, hundreds of cattle casualties and 5 houses were completely damaged. The debris taken by the flash flood has blocked the Arun River at the confluence forming a lake of 2 km length and 500m width in the gorge. This has put the downstream communities under risk of possible outburst. Hence this is to request as follow:
1)To know the cause of flood and debris flow either landslide or glacier lake outburst?
2)To know the areal extent of the lake formed near the confluence

SATELLITE	OBSERVATION MODE	OBSERVATION DATE	時間
ALOS-2	SM3(HH+HV)	22/MAY/2017	10AM 23/MAY/2017
GOSAT	KLMファイルURL	QUICK LOOK ANALYSIS	10AM 23/MAY/2017

Reports

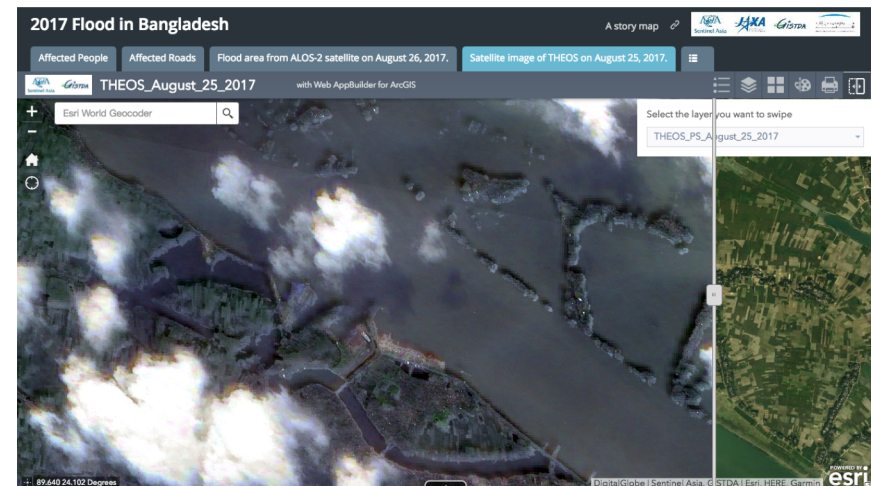
- 2017/05/10 Landslide in Indonesia
- 2017/04/01 Landslide in Indonesia
- 2017/02/04 Flood in Indonesia

7. Web-GIS for users or requesters

- To enhance and promote SA for Uses, Web-GIS is a good tool.
- JAXA and AIT have demonstrated their own Web-GIS (based on ArcGIS online) to requesters since last May.
- Web-GIS will be introduced to Sentinel Asia new system.
- JAXA will announce some demonstrations to users, and be given their feedback.

Goal;
Web-GIS in operation in new SA system

Schedule;
07/2017: Demonstrated for EOR requesters
~04/2018: Feedback from members.
10/2019: Release.



Flood in Bangladesh, by JAXA



Sentinel Asia Members/Users

Sentinel Asia Member (Disaster Management Organization/Agency)

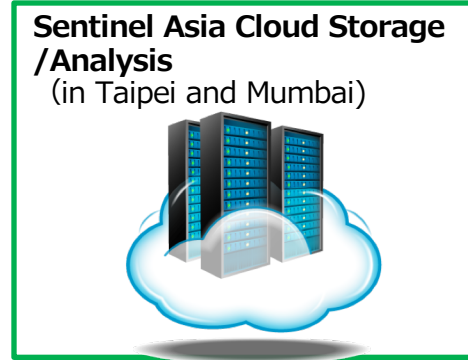
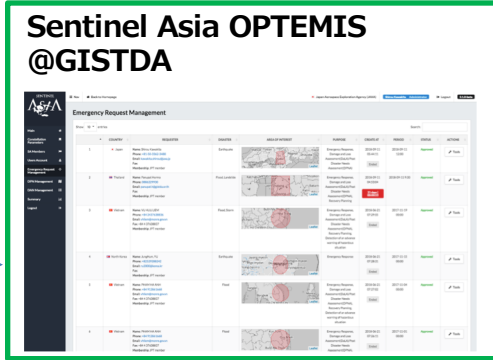
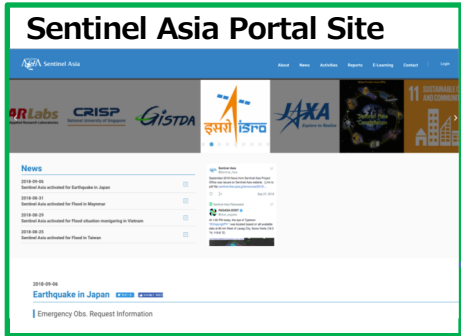
Notification/Communication by ADRC



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Emergency Observation Request

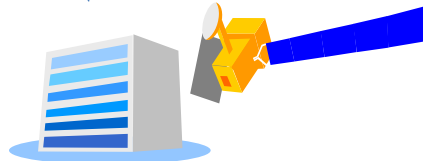
Status Report

Observation Data Download

VAP Upload

Observation Data Provision

Data Provide Node



Data Analysis Node



8. Procedure of DPN and DAN (Revise), Particularly to Realize Step-3 by new frame

- We do not have the data policy related to pre- and post-disaster phase supported by space technology.
- The Step—3 activity and WGs will propose to realize Step-3 by space technology.
- From their proposal, we will start new procedure (data protocol for pre/post-disaster) of DPN and DAN.

Goal;

Establishing the document with data provision policy for entire disaster management phases by DPNs.

Schedule;

This item have to be linked to Category IV Step-3 activates. It will be discussion with that item.