

Drafting Committee for the '*Asia-Pacific Plan of Action for Space Applications for Sustainable Development (2018-2030)*

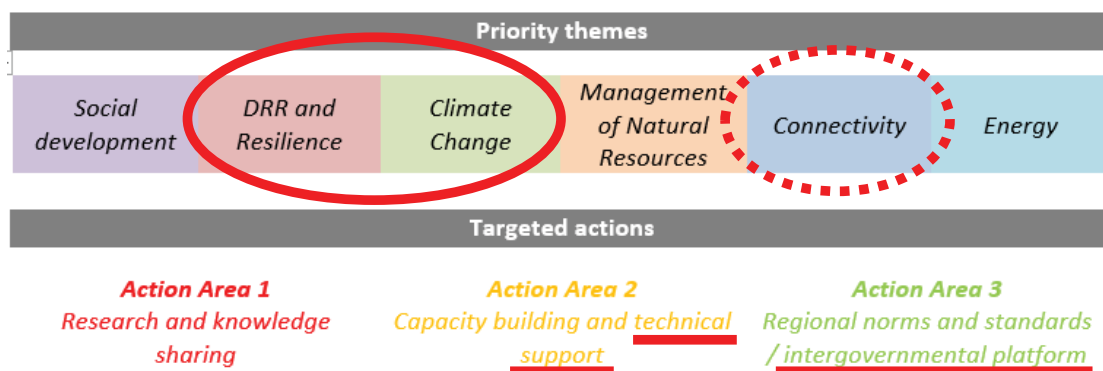
Japan

Bangkok, Thailand
31 May - 1 June 2018

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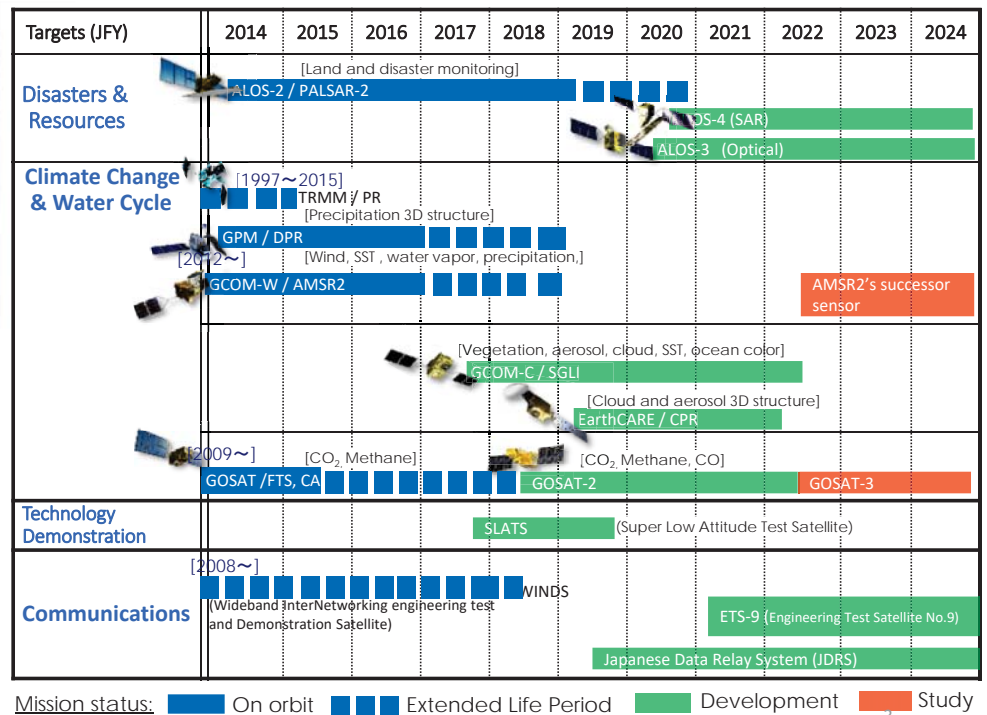
Scope:

This presentation is focusing to following themes and action area.



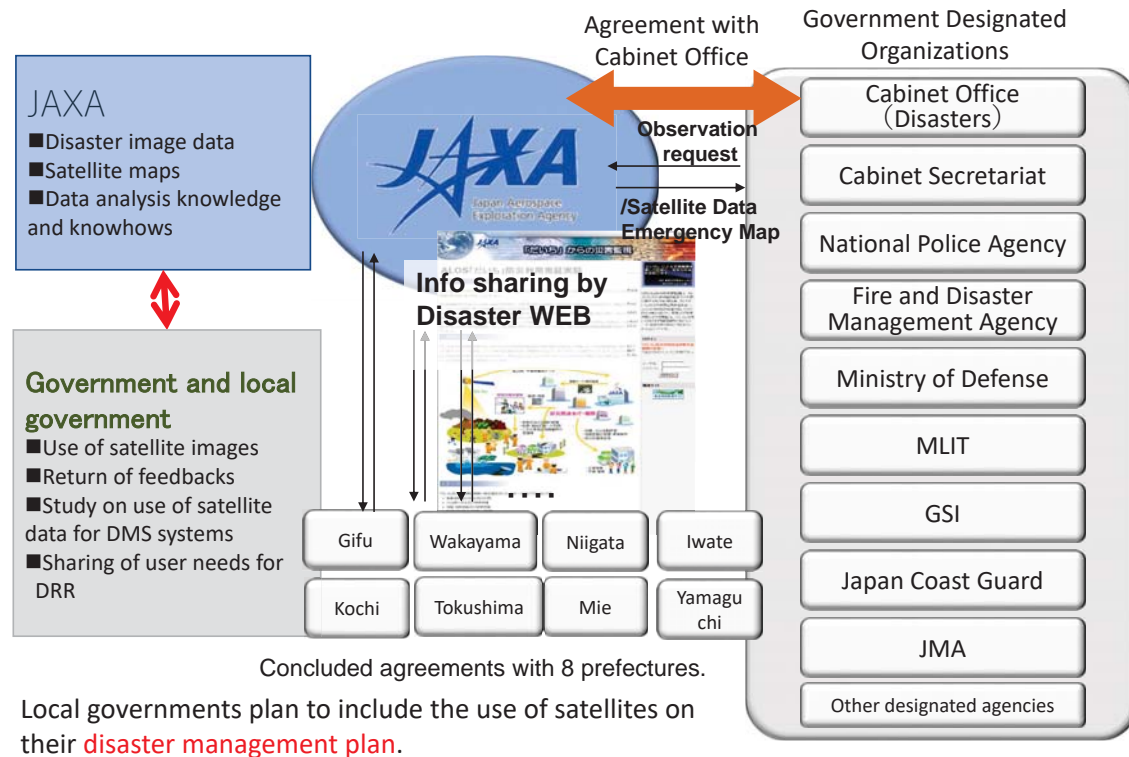
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JAXA's Satellite program



DRR and Resilience

Collaboration with DRR organizations in Japan



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Use of Satellite Images for DRR Drills in Japan

JAXA participates in local government's DRR drills by providing satellite image data for rapid damage assessment demonstration.



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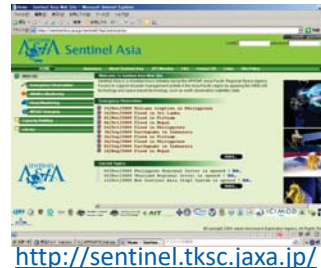
Int'l collaboration: APRSAF / Sentinel Asia

Sentinel Asia is a voluntary initiative by a collaboration between space agencies and disaster management agencies, applying remote sensing and Web-GIS technologies to assist disaster management in the Asia-Pacific region.

In Oct 2005, APRSAF-12, in Kitakyushu, Japan, the plan to initiate the pilot project was approved.
http://www.aprsaf.org/data/aprsaf12_data/day3/5_sswg%20sumrepo.pdf

In Feb 2006, Joint Project Team (JPT) was organized and Sentinel Asia has started.

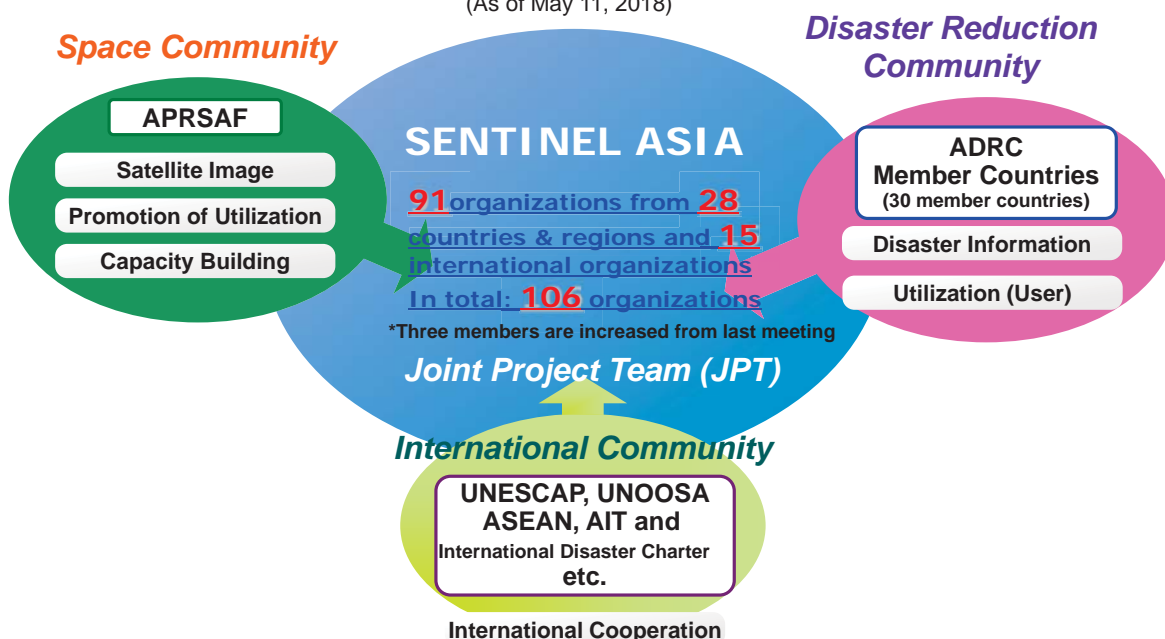
Sentinel Asia is the first initiative under APRSAF.



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Member Status

(As of May 11, 2018)



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Sentinel Asia Constellation contributing to Emergency Observations

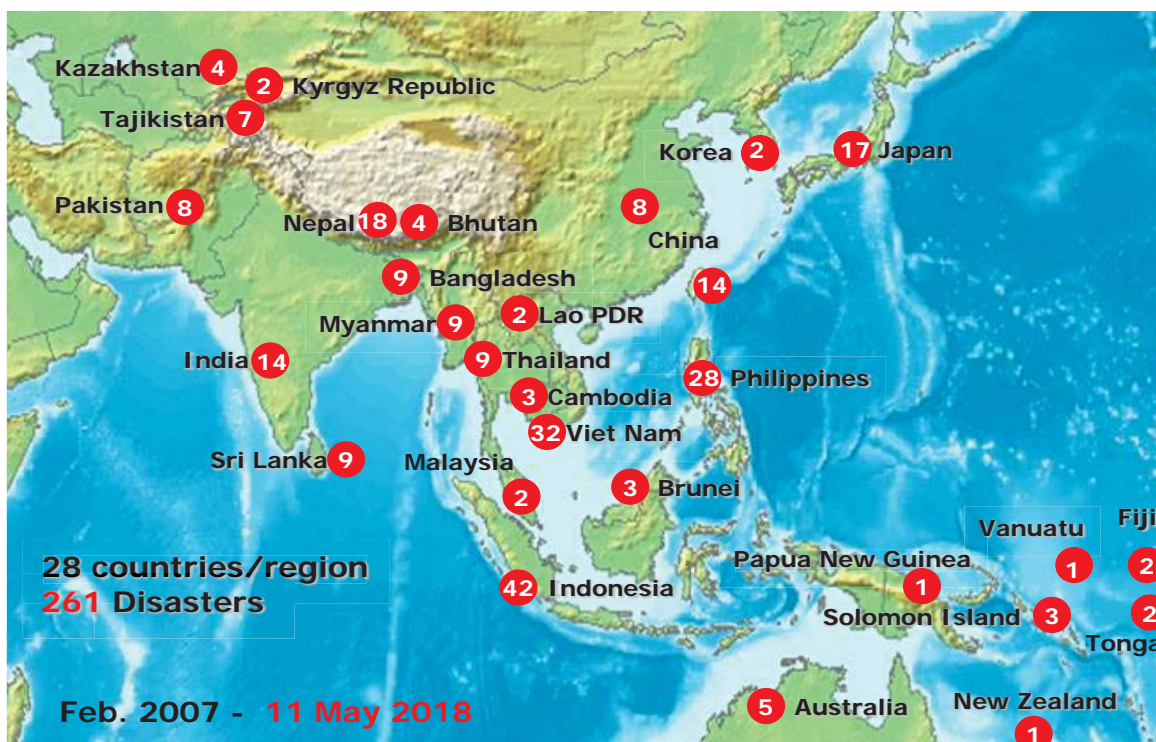


International
Charter



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EOR Review, Responded Disaster by Geographical Distribution



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Climate Change

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About APRSAF and SAFE



Established in 1993
<http://aprsaf.org>



APRSAF is the largest space-related conference in the Asia-Pacific region. Over 40 countries and regions take part in APRSAF. APRSAF is enhancing space activities in the Asia-Pacific region. APRSAF also supports the establishment of international projects as solutions for common issues, such as disaster management and environmental protection, so that participating parties will benefit from mutual cooperation.

One of initiatives of APRSAF



Space Applications for
Environment (SAFE)

Established in 2008

- To contribute **environmental activities** in Asia-Pacific region by enhancing capability of **satellite technology**. Such as rice crop monitoring, oil palm monitoring, haze monitoring, flood forecasting, etc.
- SAFE prototyping(Conducted 26 prototypes so far) and SAFE workshop twice a year.
- Prototype results should be put into **operational and sustainable use**.
- Every activity is operated by **voluntary manner**.

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Concept of SAFE Prototyping



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SAFE prototypes

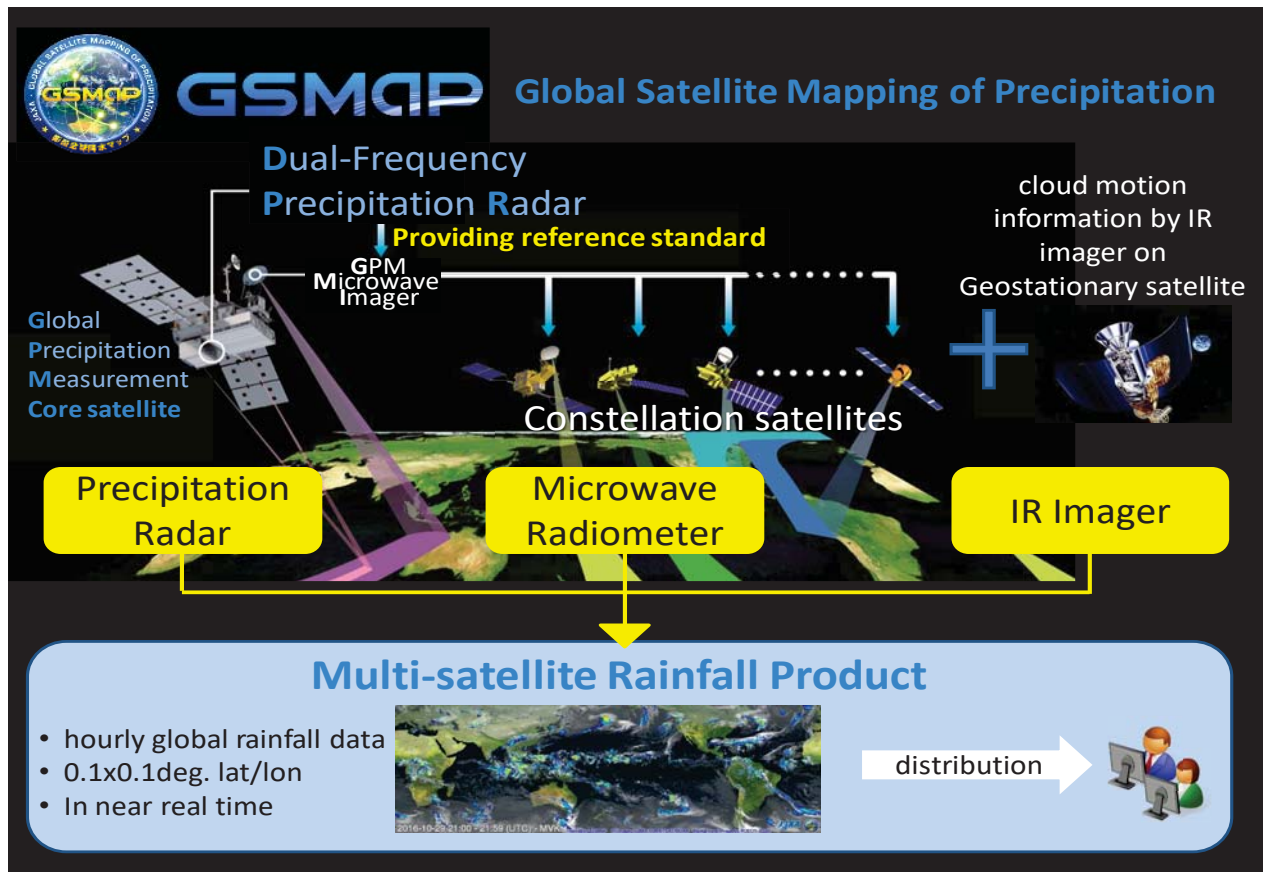
21 completed, 5 completing, and 1 ongoing (as of Dec 13, 2017)

○ ongoing
● completing
● completed

Country (proposal number)	Agriculture (7)	Drought (2)	Water resource (7)	Coast (3)	Forest (4)	Atmosphere (1)	Ecosystem (1)	Fishery (2)
Vietnam (6)	●		● ●	●	● ●			
Indonesia (6)	● ●	● ●			●	○		
Sri Lanka (4)			●	●			●	●
Cambodia (3)	●		● ●					
Malaysia (2)	● ●							
Lao P.D.R (1)					●			
Bangladesh (1)				●				
Pakistan (1)			●					
Thailand (1)								●
Myanmar(1)	●							
International Organization (1)			●					

- More information at SAFE portal site: <http://www.eorc.jaxa.jp/SAFE/>

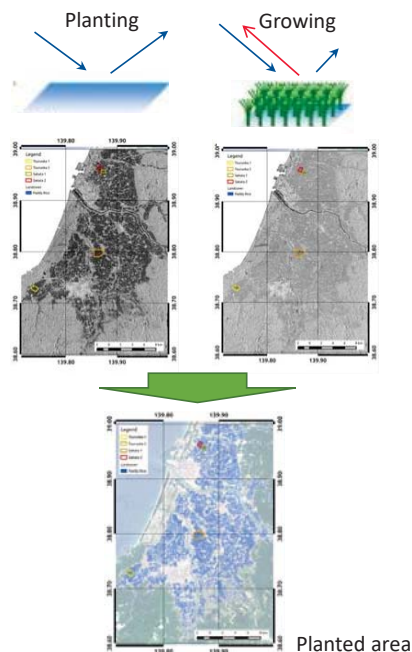
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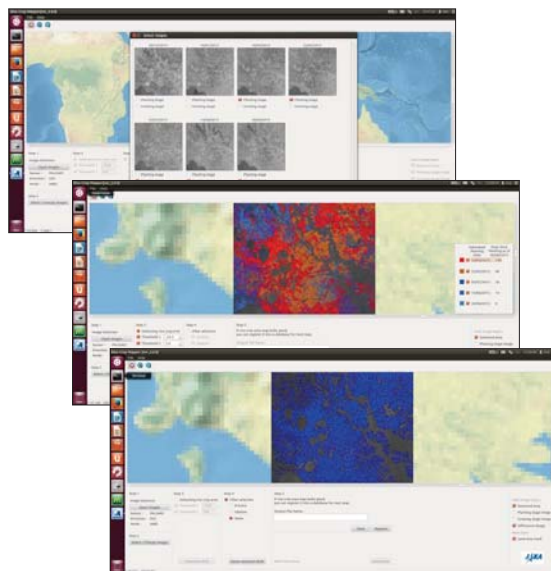
Rice Crop Monitoring Using ALOS-2 ScanSAR data

Rice Planted Area Identification



Rice Mapping Software (INAHOR)

- Estimation of rice planted area and growing stage -



(Oyoshi et al., Paddy Water Env, 2016)

Connectivity

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Great East Japan Earthquake and Tsunami in 2011

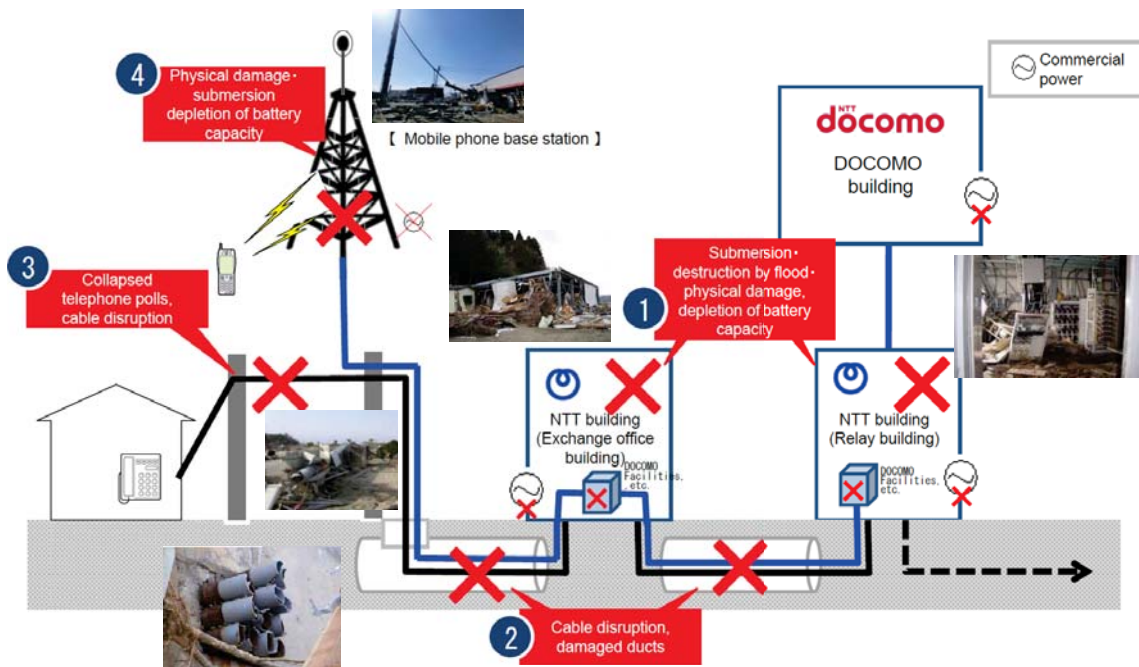


Otsuchi Town, Iwate



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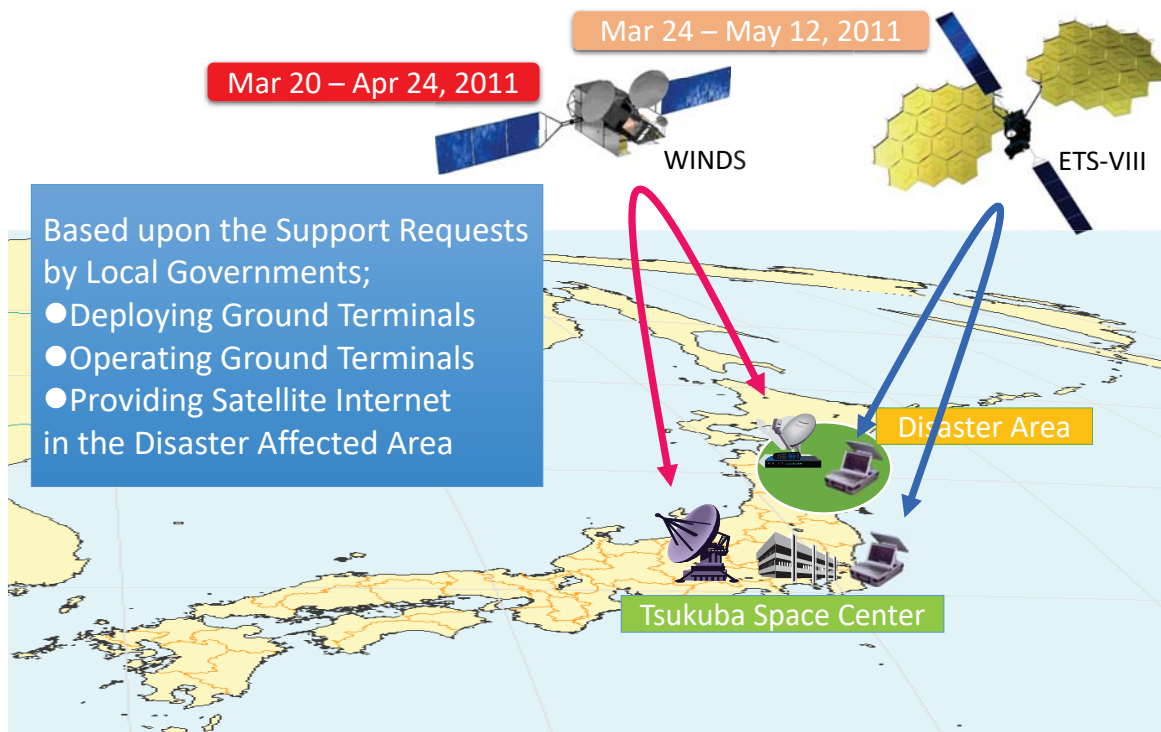
Damages of Telecom Facilities on Ground



(C) NTT
From Press Release of Mar 30, 2011

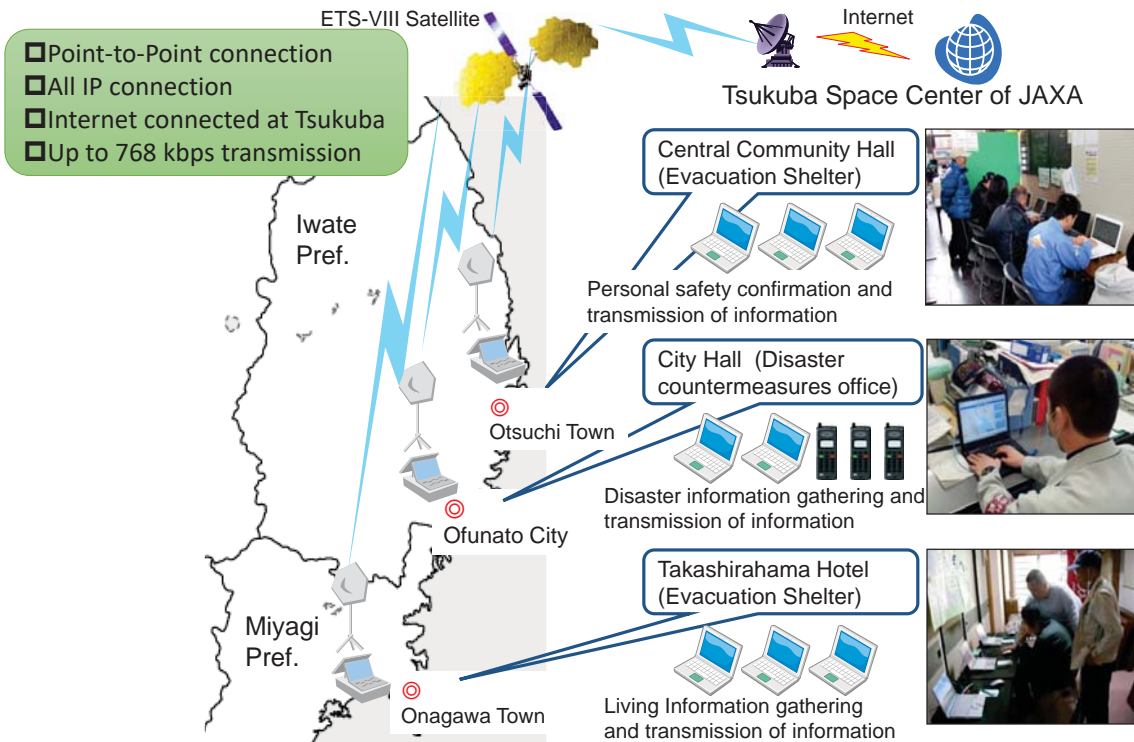
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JAXA's Support Activities with Communications Satellites

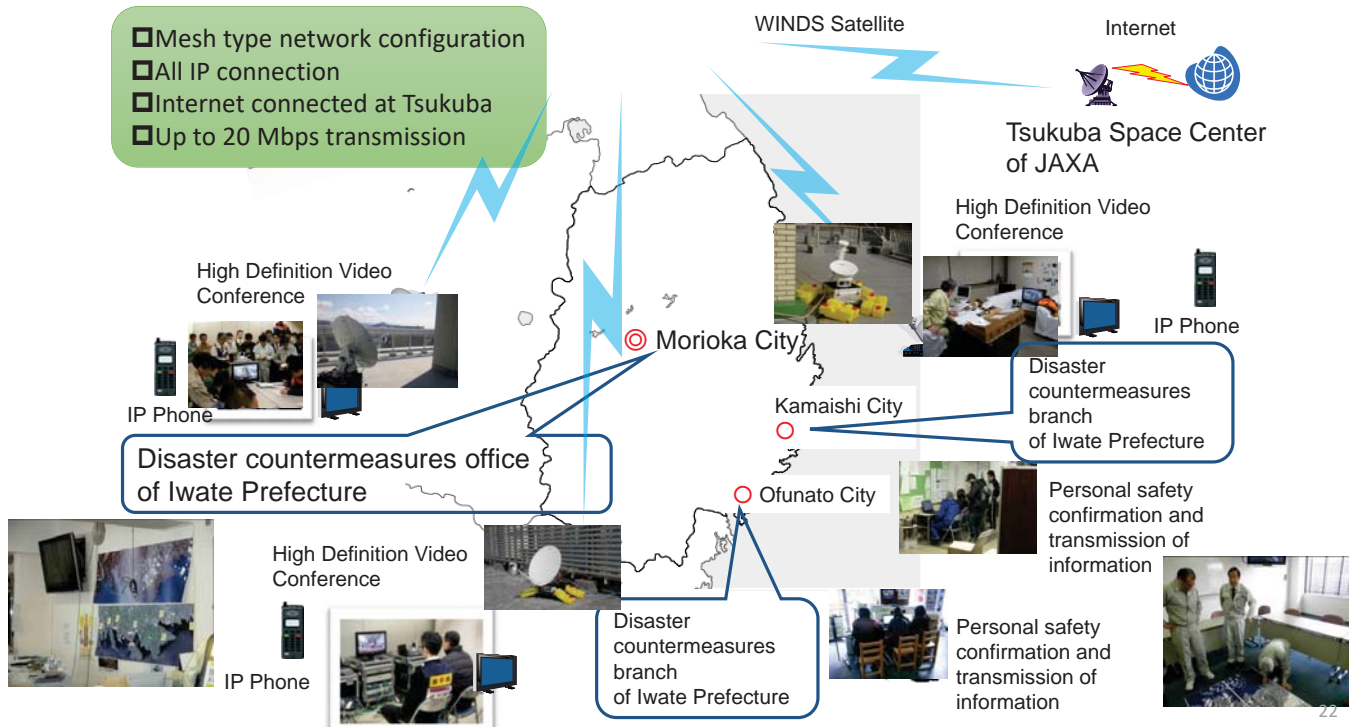


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JAXA's Support Activities with Communication Satellites



JAXA's Support Activities with Communication Satellites



JAXA's experience

Connectivity of Sentinel Asia:

Data distribution of Sentinel Asia was changed from Communication Satellite line to Internet line in 2017. ETS-8, Engineering test satellite for communication finished its operation and WINDS is in post operation phase. Currently, JAXA doesn't have other communication satellites on orbit.

Difficulty of disaster communication:

Communication traffic concentrates in a few days after disaster occurred. JAXA has checked WINDS Earth station remotely once a month but the station has not been used so much on other calm days. Keeping the station available everyday is difficult in some countries.

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Suggestions on a way forward

DRR and Resilience, Climate Change:

Joining to international framework such as APRSAF is a first step to use space technology for DRR and Resilience, Climate Change.

Connectivity:

Some space agencies have already shifted weight from satellite communication to Earth observation, space science and space exploration. Most of communication satellites and cables are operated by private companies. Therefore, some kind of agreement between disaster management organization and communication carrier which provides communication line with low cost or free of charge in emergency cases would be useful.

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