

Terms of Reference  
on  
the Joint Project Team  
for  
Sentinel Asia Step-3

Preamble

*Recognizing* the spirit of the recommendations of the Asia-Pacific Regional Space Agency Forum (APRSAF-12) held at Kita-Kyushu, Japan,

*Confirming* the necessity to utilize the space technology to reduce society's suffering from the damages caused by natural disasters,

*Desiring* the promotion of the international cooperation in the Asia-Pacific region,

*Confirming* the achievement of Sentinel Asia Step-2 and the recommendation to promote the Sentinel Asia Step-3 at the APRSAF-18 held in Singapore,

*Believing* the importance of the sustainable development for Sentinel Asia,

This Terms of Reference on the Joint Project Team for Sentinel Asia Step-3 has been established as follows:

Item 1. Purpose

This Terms of Reference defines the membership, responsibilities, implementation and other terms related to the Joint Project Team for Sentinel Asia Step-3 (hereafter called the "JPT-3"), established to promote disaster information sharing projects as initiated under the Sentinel Asia Project which comprises the international cooperation on the best efforts basis.

## Item 2. Membership

### 1. JPT-3 Membership

The JPT-3 is open to space agencies, disaster management organizations in the Asia-Pacific region and regional / international organizations who wish to participate in disaster information sharing activities. The JPT-3 member organizations (hereinafter called the “JPT-3 Member Organizations”) are listed in the Attachment hereto.

### 2. Node Membership

#### I. Data Provider Node member

Data Provider Node members (hereafter called the “DPN”) are JPT-3 Member Organizations that provide satellite data in accordance with Item 3 hereof, the list of which is attached hereto in the Attachment and, the terms and conditions of which are to be defined separately in the “Procedure of DPN”.

#### II. Data Analysis Node member

Data Analysis Nodes (hereafter called the “DAN”) are JPT-3 Member Organizations that analyze data provided by the DPN in accordance with Item 3 hereof, the list of which is attached hereto in the Attachment and the terms and conditions of which are to be defined separately in the “Procedure of DAN”.

## Item 3. Responsibility

### 1. The JPT-3 Member Organizations shall conduct the following activities;

- Perform an implementation plan,
- Promote the capacity building activities,
- Promote the outreach activities,
- Maintain the point of contact, inform in case of change
- Investigate and refine user requirements,
- Participate in the JPT-3 meetings,
- Activate the Sentinel Asia when disaster happens in the Asia Pacific region, in accordance with the “Procedure of Emergency Observation Request (EOR)” which is to be

- determined separately,
- Report to the Secretariat and/or other JPT-3 Member Organizations the result of the Sentinel Asia Activation from the user viewpoint in a timely manner, and
  - Conduct relevant activity not only for emergency phase but also for other phases in the disaster management cycle to contribute to the mitigation of disaster.
2. The DPN members shall implement the following tasks;
    - Provide its own satellite data based upon a request from a JPT-3 Member Organization to the extent permitted by the data policy of each DPN when disaster happens,
    - Draft documents related to the management of Sentinel Asia, and
    - Participate in the DPN/DAN Node meetings and in teleconferences if necessary.
  3. The DAN members shall implement the following tasks;
    - Analyze the satellite data provided by the DPN, make value-added products and disclose the result through the Sentinel Asia System to the extent the domestic legislation of each DAN permits, and
    - Participate in the DPN/DAN Node meetings and in teleconferences if necessary.

#### Item 4. Implementation

1. The management plan of JPT-3 will be established with the unanimous consent of JPT-3 Member Organizations that participate in the JPT-3 meetings (hereinafter “JPTM”) to be held once a year. If deemed necessary with regard to the nature of subjects, such unanimous consent of JPT-3 Member Organizations may be substituted by the one at ad-hoc online-based JPTM or email-based communications.
2. The JPT-3 will establish the Steering Committee (hereinafter “SC”) in order to refer the strategy of Sentinel Asia. The results of discussion at the SC will be reported to JPTM for approval. The details of the SC will be set forth separately.
3. The JPT-3 may establish its working groups and/or technical teams, if necessary, which details will be set forth separately.

4. The DPN and the DAN may jointly hold the Node meeting and/or the teleconferences on the occasion of JPT-3 meeting and as occasion demands.

#### Item 5. Secretariat

1. Japan Aerospace Exploration Agency (JAXA) shall undertake to be the secretariat of Sentinel Asia.
2. The DPN and the DAN members may also support the activities of the secretariat for Sentinel Asia Step-3.
3. JAXA shall keep two project offices, one in Tokyo and the other in an appropriate place in the Asia-Pacific region.
4. In the event that the JPT-3 acknowledges that it is necessary to conclude an arrangement, for and on behalf of, the JPT-3, the secretariat may conclude an arrangement based on the prior authorization of the JPT-3. **In such case, in principle, the director of project office in Tokyo as set forth in the preceding paragraph (director for the Satellite Applications and Operations Center of JAXA (hereinafter "SAOC")) will sign as the Executive Secretary of JPT-3. In the event the director for SAOC is not available, the director for another project office in the Asia-Pacific region as set forth in the preceding paragraph (the director for JAXA Bangkok Office) or an official duly delegated by the director for SAOC may sign on behalf of the Executive Secretary of JPT-3.**

#### Item 6. Accession

1. Any organization as defined in the Item 2 may accede to the JPT-3 with the unanimous consent of JPT-3 Member Organizations.
2. An organization wishing to accede to the JPT-3 (hereinafter the "Candidate Member") shall express the intention by sending a formal letter of intent to the secretariat. As soon as the secretariat receives the formal letter of intent, the secretariat will send e-mail to all JPT-3 Member Organizations for their approval. Unless an objection from JPT-3 Member Organizations is expressed within two weeks, the Candidate Member will be granted the status of a JPT-3

and the secretarial shall promptly issue the letter of confirmation on behalf of the JPT-3.

Item 7. Withdrawal

Any JPT-3 Member Organization may withdraw from the JPT-3 by notifying the secretariat in writing of its intention to withdraw 90 days in advance.

Item 8. Duration

The JPT-3 shall enter into effects on January 1, 2013, and be valid as long as the projects defined in the Item 1 are in progress

Item 9. Modification

This Terms of Reference may be modified by consensus of the JPT-3.

No.	Country / Region	No.	Organization	DPN	DAN
1	Armenia	1	Ministry of Emergency Situation (MES)		
2	Australia	2	CSIRO Office of Space Science and Applications (COSSA)		
		3	Geoscience Australia (GA)		
		4	Australian Bureau of Meteorology		
3	Bangladesh	5	Bangladesh Space Research and Remote Sensing Organization (SPARRSO)		
4	Bhutan	6	Ministry of Home & Cultural Affairs		
		7	Department of Survey and Land Records		
		8	Royal University of Bhutan		
		9	Department of Geology and Mines (DGM)		
		10	Ministry of Works and Human Settlement (MoWHS)		
5	Brunei	11	Survey Department, Ministry of Development		○
6	Cambodia	12	Ministry of Land Management, Urban Planning and Construction		
		13	National Committee for Disaster Management (NCDM)		
7	China	14	National Disaster Reduction Center of China (NDRCC)		
		15	Institute of Geology, China Earthquake Administration (IG, CEA)		○
		16	Beijing Normal University (BNU)		
		17	Sichuan University		○
		18	Institute of Space and Earth Information Science , Chinese University of Hong Kong (CUHK)		○
19	Institute of Mountain Hazards and Environment (IMHE), Chinese Academy of Sciences (CAS)		○		
8	Fiji	20	Fiji National Disaster Management Office (NDMO)		
9	India	21	Indian Space Research Organization (ISRO)	○	○
		22	University of Kashmir		

		23	Gauhati University		
		24	Symbiosis Institute of Geoinformatics		

10	Indonesia	25	National Coordinating Board for Disaster Management (BAKORNAS PBP)		
		26	National Institute of Aeronautics and Space (LAPAN)		○
		27	Institute of Technology Bandung		
		28	Universitas Jenderal Achmad Yani (UNJANI)		
		29	Agency for the Assessment and Application of Technology (BPPT)		○
		30	Center for Remote Sensing and Ocean Science (CReSOS), Udayana University		○
		31	Ministry of Marine Affairs and Fisheries		○
11	Japan	32	Keio University		
		33	Japan Aerospace Exploration Agency (JAXA)	○	○
		34	Infrastructure Development Institute (IDI) Japan (IFNet)		
		35	Hokkaido University		
		36	Yamaguchi University		○
		37	International Digital Earth Applied Science Research Center (IDEAS), Chubu Institute for Advanced Studies , Chubu University		○
		38	Chiba University		○
		39	Hiroshima Institute of Technology		○
		40	Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology		○
		41	Laboratory of Remote Sensing and Geoinformatics for Disaster Management (ReGID), Tohoku University		○
		42	Center for Spatial Information Science, The University of Tokyo		○
		43	National Research Institute for Earth Science and Disaster Resilience (NIED)		
12	Kazakhstan	44	National Center of Space Researches and Technologies		○
13	Korea	45	Korea Aerospace Research Institute (KARI)	○	○
		46	National Disaster Management Research Institute		○



14	Kyrgyz	47	Central Asian Institute of Applied Geosciences (CAIAG)		○
15	Lao P.D.R	48	Ministry of Labor and Social Welfare		
		49	Water Resources and Environment Administration, Prime Minister's Office (PMO)		
16	Malaysia	50	National Security Division, Prime Minister's Department		
		51	Malaysian Remote Sensing Agency		
		52	National Space Agency of Malaysia (ANGKASA)		○
17	Mongolia	53	National Remote Sensing Center of Mongolia (NRSC)		
18	Myanmar	54	Department of Meteorology and Hydrology		
		55	Relief and Resettlement Department		
		56	Myanmar Earthquake Committee (MEC)		
19	Nepal	57	Department of Water Induced Disaster Prevention		
		58	Survey Department of Nepal		
		59	Land Management Training Centre (LMTC)		
		60	Department of Hydrology and Meteorology (DHM), Ministry of Population & Environment		
20	Pakistan	61	Pakistan Space & Upper Atmosphere Research Commission (SUPARCO)		○
21	Papua New Guinea	62	National Disaster Centre (NDC)		
22	Philippines	63	Office of Civil Defense–National Disaster Coordinating Council (NDCC)		
		64	National Mapping and Resource Information Authority (NAMRIA)		○
		65	Bureau of Soils and Water Management (BSWM)		
		66	Mines and Geosciences Bureau (MGB)		
		67	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)		○
		68	Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)		

		69	Philippine Institute of Volcanology and Seismology (PHIVOLCS)		○
		70	Manila Observatory		○
		71	National Institute of Geological Sciences, University of the Philippines (NIGS)		○
23	Singapore	72	Centre for Remote Imaging, Sensing and Processing (CRISP) National University of Singapore	○	○
		73	Earth Observatory of Singapore (EOS)		○
24	Sri Lanka	74	Survey Department of Sri Lanka		○
		75	Ministry of Disaster Management		○
25	Taiwan	76	National Applied Research Laboratories (NARL)	○	○
		77	Center for Space and Remote Sensing Research, National Central University (CSRSR, NCU)		○
26	Thailand	78	Geo-Informatics and Space Technology Development Agency(GISTDA)	○	○
		79	Department of Disaster Prevention and Mitigation (DDPM)		
		80	Department of Water Resources(DWR)		
		81	Royal Forest Department(RFD)		
		82	National Park, Wildlife and Plant Conservation Department		
		83	Royal Irrigation Department (RID)		
		84	Land Development Department(LDD)		
		85	Andaman Environment and Natural Disaster Research Center (ANED)		○
27	United Arab Emirates	86	Mohammed Bin Rashid Space Centre (MBRSC)	○	○
28	Vietnam	87	Vietnamese Academy of Science and Technology (VAST)	○	○
		88	Ministry of Agriculture and Rural Development (MARD)		
		89	Ministry of Natural Resources and Environment (MONRE)		○
		90	Ministry of Defense (MOD)		
		91	Ministry of Science and Technology (MOST)		

		92	Vietnam Institute of Geosciences and Mineral Resources (VIGMR)		
29	International Organization	93	Asian Institute of Technology (AIT)		○
		94	ASEAN-Secretariat		
		95	UNESCAP		
		96	UNOOSA		
		97	International Center for Integrated Mountain Development (ICIMOD)		○
		98	Coordinating Committee for Geoscience Programmes In East and South East Asia (CCOP)		
		99	International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO		
		100	Asian Disaster Reduction Center (ADRC)		○
		101	Pacific Islands Applied Geoscience Commission (SOPAC)		○
		102	World Bank(WB)		
		103	International Water Management Institute (IWMI)		○
		104	Asian Development Bank (ADB)		○
		105	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA CENTRE)		
		106	World Wide Fund for Nature (WWF) – Pakistan		
		107	Asian Disaster Preparedness Center (ADPC)		○
		108	Myanmar Information Management Unit (MIMU)		