

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 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

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 intention, 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 secretariat 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 | | |

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| | | 23 | Gauhati University | | |
| | | 24 | Symbiosis Institute of Geoinformatics | | |

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| 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 | | |

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| 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) | | |

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| | | 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) | | |
| 29 | International | 92 | Asian Institute of Technology (AIT) | | ○ |

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