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Institute of Remote Sensing and Digital Earth Chinese Academy of Sciences

RADI, Host Institution, Update Report on Activities: May 2016 – Nov 2017

RADI International Cooperation Office November 2017 | Tokyo, Japan

About RADI



The RADI is an independent research institute affiliated to CAS for remote sensing and digital Earth.

Mission

- Reception, processing, archiving and dissemination of remotely sensed data.
- Research and development on supporting new earth observation system, improving remote sensing data processing and analytical methodologies, and promoting multidisciplinary applications based on earth observation technology.
- Theoretical and technological research into key issues concerning Geo-spatial Information science and Digital Earth Platform.



Outline

- New Satellite Receiving Station established
- Earth Observation Data sharing for Disaster Emergency response
- Digital Belt and Road Program (DBAR)
- Update on RADI governance

New Satellite Receiving Station Established



Ground stations located in Beijing, Sanya, Kashgar, Kunming, and Kiruna.

and in such



China Remote Sensing Satellite North Polar Ground Station

In Dec, 2016, RADI opened the China Remote Sensing Satellite North Polar Ground Station (CNPGS), near Kiruna, Sweden. CNPGS is located at the Esrange Space Center, 200 kilometers north of the Arctic Circle.

CNPGS, China's first land satellite receiving station constructed overseas. It has a special geographical advantage, and can greatly increase the transmission efficiency of satellite data, and can effectively improve China's capability to rapidly access global remote sensing data, *which is of great significance for applications requiring rapid response to natural disasters.*

SatSee-Live (Virtual Ground Station)



No ground station infrastructure needed (e.g., antenna). Users get full path satellite data (Jpeg) in near real time through internet.

Benefits:

- To demonstrate remote sensing imaging process to the public
- To help users quickly access remote sensing image (full resolution, in near real-time)
- To distribute satellite data to a larger user community
- To lower the cost by providing bulk data

Specially useful for daily monitoring and detection of disaster emergency (fire spot, flood, etc.)

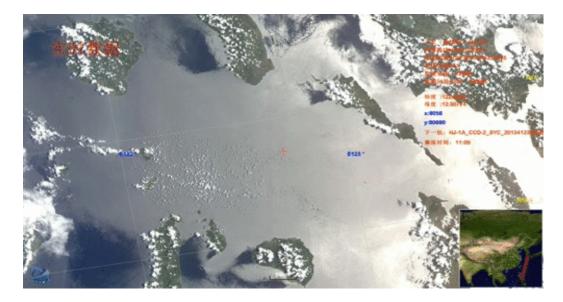


Image provided and displayed in client monitor

www.radi.cas.cn



Contribution to GEO Data Infrastructure

RADI is leading the work of China Global Earth Observation System of Systems (ChinaGEOSS) to encourage member countries to contribute to GEO Data Portal.

- RADI, as a coordinator of ChinaGEOSS, has contributed 120k images to GEO Portal in 2016, and will contribute 1 million images in 2017.
- The emergency data response mechanism, developed by RADI, has been successfully launched for huge natural disaster events and played important role for





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International service Portal

Chinese Emergency Data Response Mechanism



Also during the 2017 earthquake in Mexico, 146 scene images from 8 satellites (126.37 GB in total) were collected. During the New Zealand earthquake in 2016, seven satellites with 219 view images (120GB in total) were organized to provide timely service for New Zealand, Australia and other countries.

Office of Hon Gerry Brownlee

MP for Ilam Leader of the House Minister of Defence Minister of Civil Defence

Minister Responsible for the Earthquake Commission Minister supporting Greater Christchurch Regeneratior

1 FEB 2017

Professor Li Guoqing Co-Chair Linked Open Data for Global Disaster Risk Research (LODGD) of CODATA Head of Satellite Data Technology Division Institute of Remote Sensing and Digital Earth, CAS No.9 Dengzhuang South Road Haidian District Beijing, 100094 CHINA

Dear Professor Li

Re: Kaikoura 7.8 Magnitude Earthquake, 14 November 2016

On behalf of the New Zealand Government I would like to thank you for providing prompt and free access to the TripleSat satellite images of the Hurunui District immediately following the devastating Kaikoura Earthquake.

The Chinese satellite imagery, downloaded from the data integrated in the China-GEOSS portal, was then placed on the internet based ProjectOrbit portal named the Kaikoura GIS Viewer for use by all response and recovery organisations in New Zealand. The Kaikoura GIS Viewer was also accessed internationally by interested parties.

In the immediate aftermath of natural disasters, accurate information on the nature and the extent of damage is critically important for the efficient use of scare resources. The New Zealand Government is very appreciative of the assistance that you and your organisation provided in our time of need.

ours sincerely

Hon Gerry Brownlee Minister of Civil Defence



and loss estimati

not available. During the Kaikoura earthquake. IRDR's Disaster Loss DATA project and the CODATA Task Gr

corganized the above emergency response data sharing activity under the leadership of China GEO Office

that you and your organization provided in our time of need."

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caused by the earthquake. This information was made available through a web-based viewer to all governmen rming first response and mittigation measures. The Kaikoura Gi5 Viewer was also accessed internationally b

rmet based Project Orbit portal. This information includes imagery taken from helicopters, aircraft and satellite disruption to the main transport network in the Upper South Island, and the information was used for recovery and was viral to formulating engineering solutions for reconstruction efforts in Kakoura.

hanks-IRDR-and-CODATA-groups-for-their-help-following-2016-Kaikoura-earthquake

in New Zealand to provide TripleSat . Jilin-1A and FY satellite images of the affecte

HOME CODATA BLOG EVENTS NEWS ABOUT CODATA MEMBERS AREA CONTACT

Enter search term

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Data portal released for emergency response to Iraq-Iran Earthquake

Hours after Iraq-Iran Earthquake of Nov 12, 2017, Developed by RADI, ChinaGEOSS, launched the Disaster Data Response mechanism. An data portal for this event was released at 7:00 am of Nov 14.

It published the first bundle of data, with 249 scenes image from 5 satellites. Chinese high resolution satellites have made special observing plan to get post-disaster damage images as soon as possible.

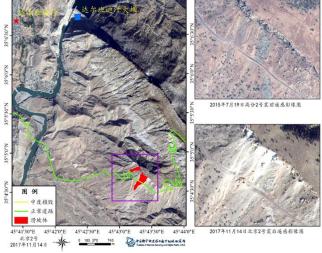
International user can access free data and related information via the link <u>http://www.chinageoss.org/IraqEarthQuake2017/en/index</u> .html.

It has been regarded as a best practice of GEO-based emergency response for Sendai Framework, paralleling with the government level mechanisms.



Data Portal

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Data Analysis

"Digital Belt And Road (DBAR)" Initiative



MELSCHILL.



Initiated at EOBAR, to be given full support by more than 20 countries

International Conference on Earth Observation for Belt and Road

2016年5月16日至17日 北京

空间认知国际会

16-17 May 2016, Beijing

Beijing Declaration on Earth Observation for Belt and Road

May 17, 2016

We, scientists, researchers, academics, engineers, educators and administrators from more than 20 countries, and representatives of international organizations, met in Beijing, China, at the International Symposium on Earth Observation (EO) for Belt and Road (EOBAR), co-hosted by the Division of Earth Sciences of the Chinese Academy of Sciences (CAS) and related ministries, commissions, and international organizations, on 16 and 17 May 2016.

Background





www.dbeltroad.org



A COMMON VISION TO ADVOCATE FOR THE INTEGRATION OF EARTH OBSERVATION AND BIG EARTH DATA IN DESIGN AND PLANNING OF ALL DEVELOPMENT, ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT ACTIVITIES AT LOCAL, NATIONAL, REGIONAL AND INTERNATIONAL SCALES UNDERTAKEN WITHIN THE B&R INITIATIVE.

DBAR Core Objectives



Knowledge gaps

To address knowledge gaps in earth system processes that constrain the attainment of the SDGs in B&R countries

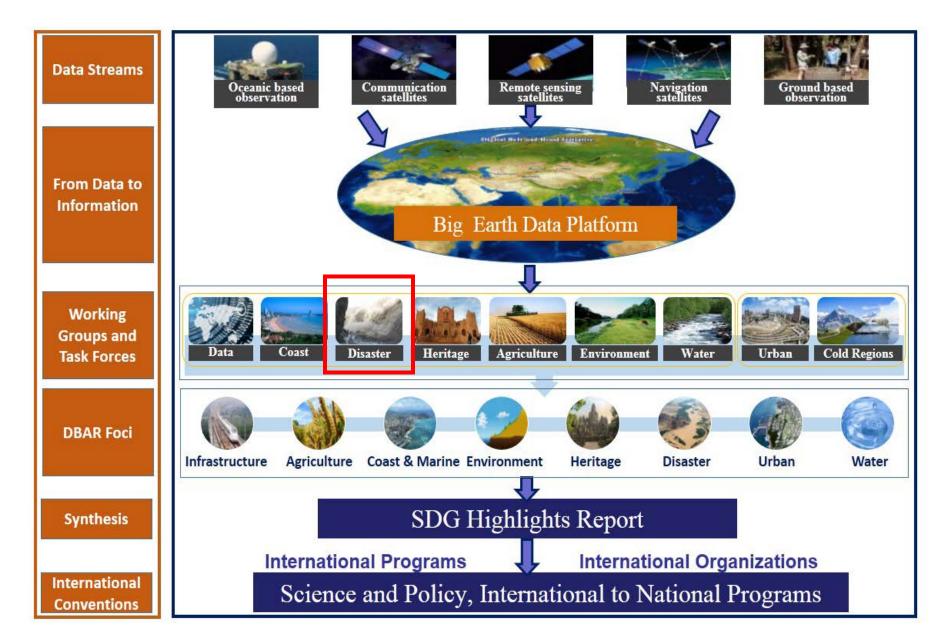
Capacity building

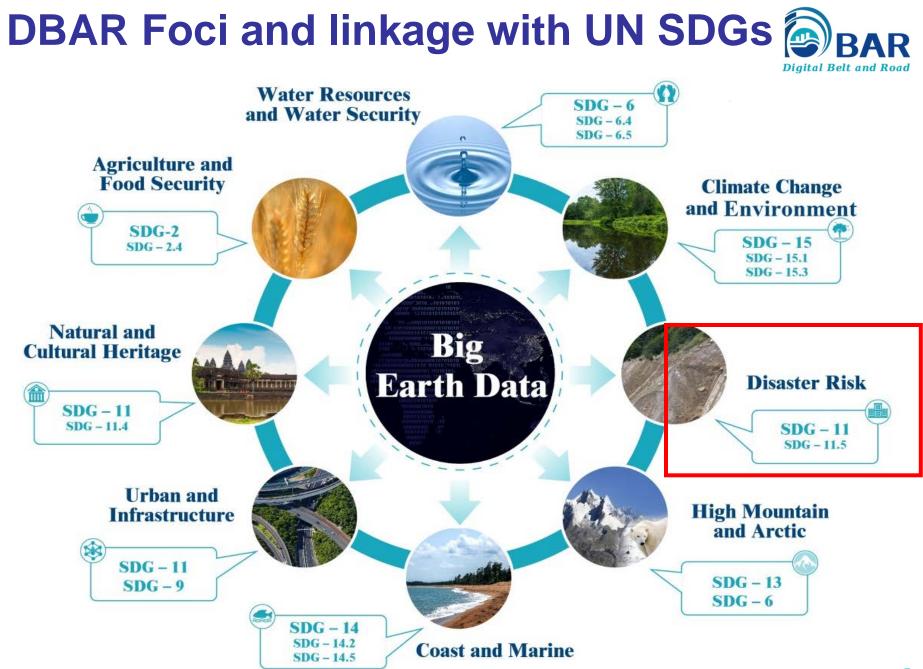
To enhance capacity building and technology transfer within a system of partnerships and research networks.

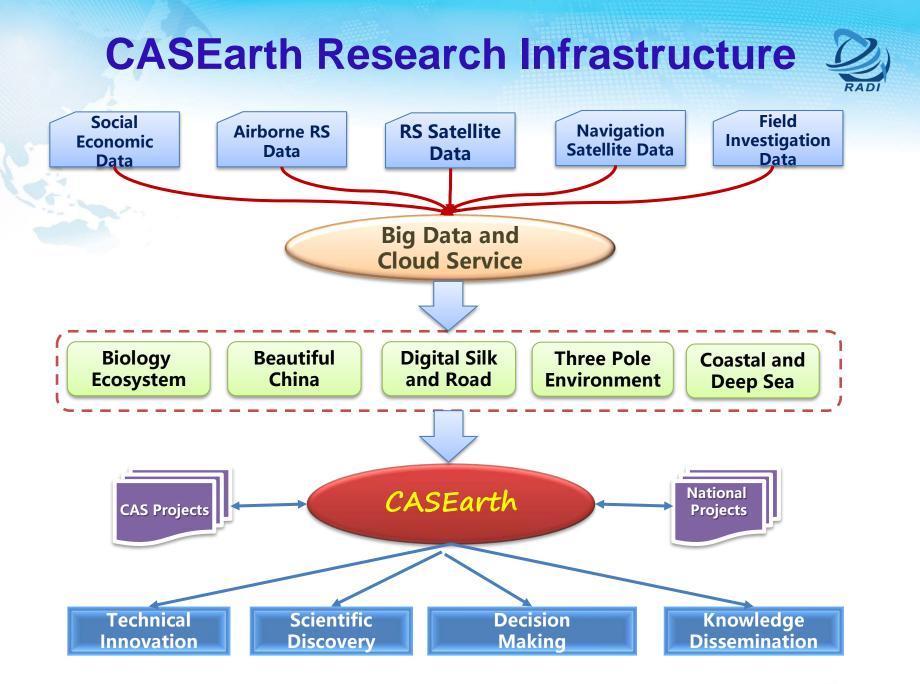
To promote advanced scienceBig Earthand decision support servicesData Servicesto extract effectiveInformation from massive,diverse and ever-growingvolumes of Big Earth Data.

www.dbeltroad.org

Framework of DBAR







www.radi.cas.cn

DBAR Working Groups





Big Earth Data (DBAR-DATA)

Co-Chairs: LI Guoqing

Silap Boupha



Agriculture and Food Security (DBAR-AGRI)

Co-Chairs: WU Bingfang Shukri Ahamd



Coastal Zone (DBAR-COAST)

Co-Chairs: LI Zhang LIN Hui Mazlan bin Hashim



Natural and Cultural Heritage (DBAR-HERITAGE)

Co-Chairs: WANG Xinyuan Shahina Tariq Rosa Lasaponara Houcine Khatteli



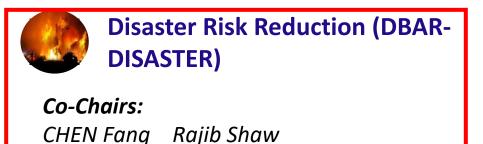
Water (DBAR-WATER)

Co-Chairs: JIA Li Marco Mancini Bob Su



Environment Change (DBAR-ENVI)

Co-Chairs: LI Xinwu JIA Gensuo Howard E. Epstein



www.dbeltroad.org

Kick off Meeting of DBAR WGs/TFs BAR



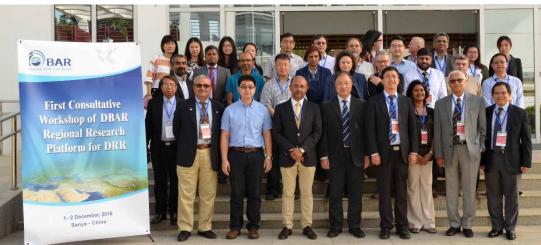






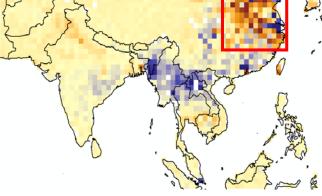


Diaital Belt and Road



DBAR DRR WG





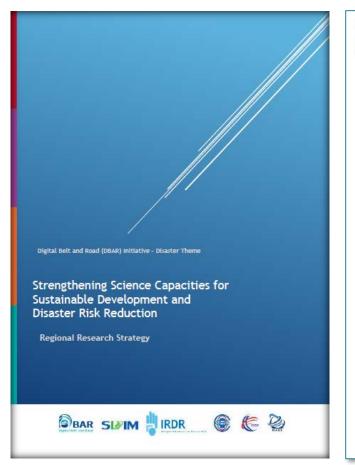
Regional Level- fire emission

Country Level- Sri Lanka drought

Monitoring Platform

Activities of DBAR Disaster WG In close collaboration with IRDR

Regional Research Strategy Report



Capacity Building: National Science and Technology Plan

Framework of Science Technology Plan for Implementation of SFDRR

1. Background (2 pages)

BAR 🗏 IRDR

- Science technology for public policy
- Evidence based decision-making
- Review of application of science and technology in DRR
 Linking science technology plan to the SFDRR, the Sustainable Development Goals and the Paris arreement

2. Context of the Plan (4 pages)

- Summary of National Science Technology Plan (if available)
 - Background, rational, goal and strategies
 - Strategic actions
 Implementation framework
 - Implementation framework
 Performance Monitoring and Evaluation
- Summary of National DRR Plan (if SFDRR implementation plan is available, please focus on that)
 - · HFA (if the plan is before SFDRR) or SFDRR priority of actions
 - Role of science and technology mentioned in the DRR Plan
 - Financial mechanism
- Science technology status
 - Countries who have conducted science technology mapping with the status report, can refer to the key findings there
- 3. Purpose and key objectives (0.5 page)
 - This section needs to focus on specific purposes and key objectives of the Science and Technology Plan. The actions identified in the section 4 (under SFDRR) needs to be linked to the objectives mentioned here.
- Specific actions under SFDRR priorities (4 pages)

 Refer to the Global Road Map of Science Technology in DRR. There are 39 specific actions and 7 outcomes of the road map.



International Training Workshop Organized with 20 Participants from 15 Countries





Sanya China

www.dbeltroad.org



Updates on RADI Governance Issues

- New merging with another two CAS Institutes to establish the Spatial Information Academy, CAS
- New Leadership of RADI
- RADI will continuously make our due contribution and dedication to IRDR IPO as promised
- Warm welcome Qunli HAN, a new IRDR/IPO ED

Thanks!



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