

**\*\* January 2021 News from Sentinel Asia Project Office \*\***

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1. [News] Emergency Observation of Disasters Occurring in January 2021. (as of 25 January)

(1) Earthquake in Indonesia

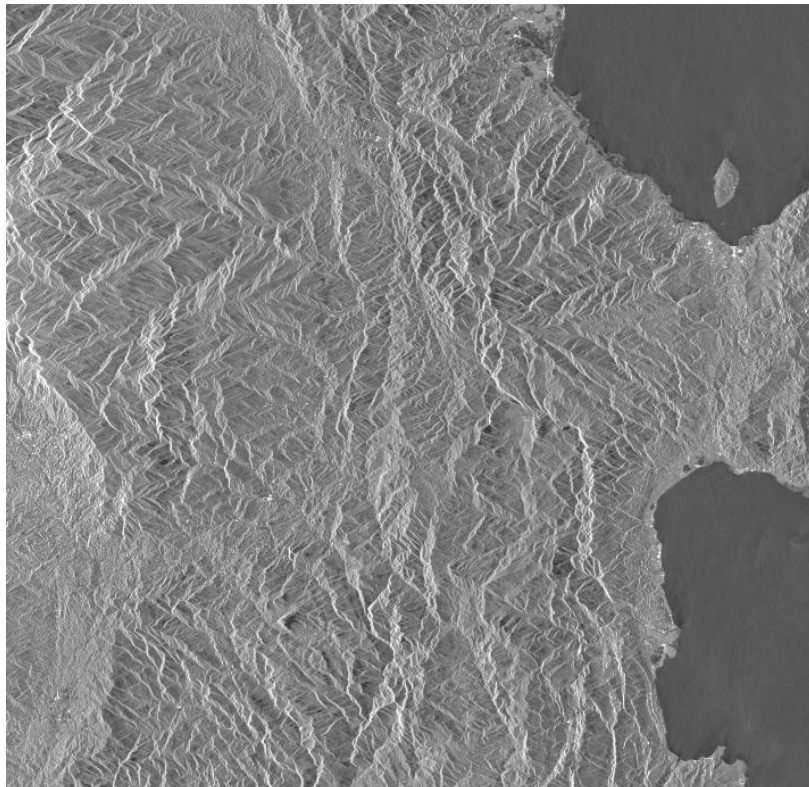
A magnitude 6.2 earthquake occurred in Majene, Indonesia on 15 January 2021. National Board for Disaster Management (BNPB) reported that at least 42 people (34 in Mamuju and 8 in Majene) died, 189 people in Mamuju Regency were seriously injured, around 637 people suffered minor injured and 15,000 residents had been displaced. (<https://www.bnpb.go.id/berita/-update-sebanyak-189-orang-dirawat-di-kabupaten-mamuju-pascagempa-m6-2->)

Indonesian National Institute of Aeronautics and Space (LAPAN) made an Emergency Observation Request (EOR) to Sentinel Asia on 15 January. This EOR was escalated to the International Disaster Charter. LAPAN assumed the role of Project Manager (PM) for this Disasters Charter activation. Among Data Provider Nodes (DPNs), Indian Space Research Organization (ISRO), Mohammed Bin Rashid Space Centre (MBRSC), National Applied Research Laboratories (NARL) and Japan Aerospace Exploration Agency (JAXA) provided their observation data. Among Data Analysis Nodes (DANs), Earth Observatory of Singapore (EOS) provided their VAPs. The information on the latest response by Sentinel Asia is available from the following link.

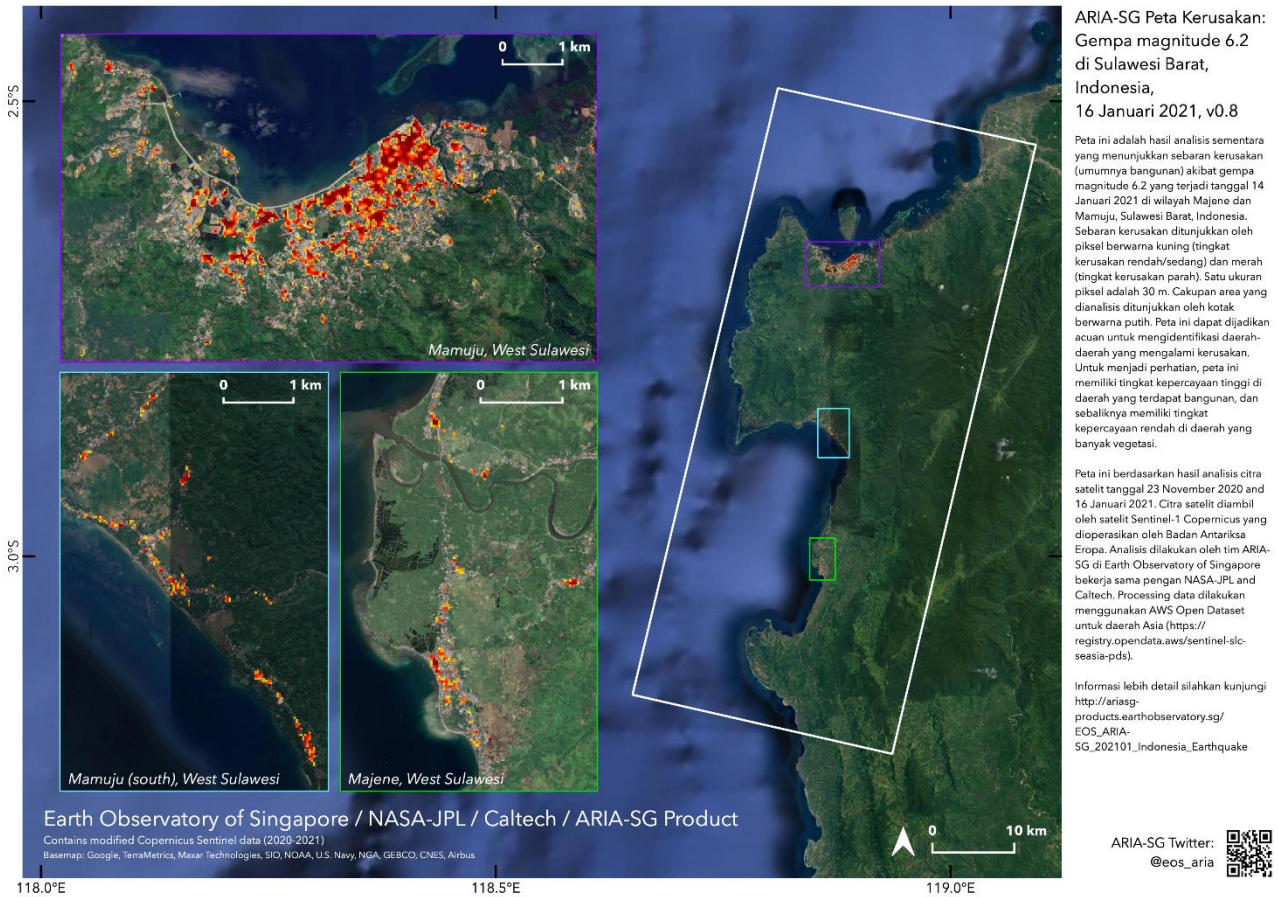
<https://sentinel-asia.org/EO/2021/article20210115ID.html>



Satellite image (KhalifaSat) provided by MBRSC



Satellite image (ALOS-2 PALSAR-2, L1.1) provided by JAXA



Product by EOS

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## 2. [Interview]

The Mohammed Bin Rashid Space Centre (MBRSC), founded in 2006, is home to the United Arab Emirates’ National Space Program. MBRSC builds and operates earth observation satellites, offering imaging and data analysis services. MBRSC has been a member of Sentinel Asia since 2017. In addition to its contribution to supply its observation data as Data Provider Node (DPN), recently MBRSC has been supporting Emergency Observation Requests (EORs) as Data Analysis Node (DAN) as well, by providing many value-added products.

Commemorating MBRSC’s first provision of KhalifaSat data in August 2020, the Sentinel Asia Secretariat (Dr. Shiro Kawakita, Mr. Takanori Miyoshi and staff members) interviewed Ms. Alia Mohammad Al Mekhyat and Ms. Shaikha Ahmed Albsher of MBRSC for their contribution to the Sentinel Asia.

### *Sentinel Asia Secretariat*

On behalf of the secretariat, I warmly thank you for giving us this opportunity to interview you concerning your contribution and support for Sentinel Asia. Looking back on the history of the partnership between MBRSC and Sentinel Asia, we could cite the

milestone event, “the Steering Committee (SC) joint mission to MBRSC” in 2017 right after MBRSC joined Sentinel Asia as a DPN member. Colleagues from Asian Disaster Reduction Center (ADRC), Asian Institute of Technology (AIT), Geo-Informatics and Space Technology Development Agency (GISTDA), and JAXA visited you. Since then, MBRSC has been supporting Sentinel Asia activities, by providing Dubaisat-2 images and a lot of fruitful input as a SC member. I remember on the occasion of SC joint mission, MBRSC colleagues kindly showed us around facilities, such as a ground control room and a clean room in which a flight model of KhalifaSat was being assembled. After that, it was successfully launched with JAXA’s Greenhouse Gases Observing Satellite IBUKI-2 (GOSAT-2) on H-IIA launch vehicle. Then, at the SC meeting in June last year you expressed that you would register KhalifaSat as part of Sentinel Asia’s constellation, and then you did indeed provide the image! The first KhalifaSat image provided last August was so vivid and enabled us to capture the situation clearly and to support the requester. We are really pleased to see how the partnership has been strengthened and we are grateful for your dedicated commitment and support. Today, we would like to hear from you more detailed information on the data provision of KhalifaSat and your motivation.

### ***MBRSC***

We appreciate the nice words, as well as we are glad you visited us to witness the assembly of our third and most advanced satellite, KhalifaSat, and now after the successful launch, we are working with data acquired by KhalifaSat.

Firstly, speaking of Sentinel Asia, we are much honored to be part of this noble initiative. It is a great honor to help humankind by mitigating impacts of disasters using our space-based resources, whether through our satellite imagery or our value added products. From our side, I can assure you that our team has expanded from your last visit, which you can see on with the OPTEMIS system. In fact, we have updated the plan and the operation status. Thus, currently, once we receive any emergency observation requests, such requests are immediately directed to our mission planner. Then, the mission planner will immediately task the satellite to capture the area affected by the disaster. Of course, that depends on the availability of the satellite such as where the satellite is in orbit, as well as on the priority list we have. Subsequently, mission planners will place the order and task the satellite, whether it is using KhalifaSat or DubaiSat-2, and go ahead with the imaging whenever it is applicable. Once the satellites are tasked and the image is captured and downloaded successfully, the task will be handed over to another colleague at our Image Processing Section. Once the image is processed, it will be uploaded on the OPTEMIS server for Sentinel Asia colleagues so that they can benefit from the image, and distribute it to the concerned party. Previously, we had a different approach, it was one person handling all those tasks. Now as we have explained, we have one person dedicated to a specific task in order to simplify and speed

up the process. And we believe it has developed and improved our contribution and participation in the Sentinel Asia initiative.

### ***Sentinel Asia Secretariat***

We are really impressed that you have upgraded the whole workflow for Sentinel Asia. Now we can expect further support for the Sentinel Asia community. In terms of the EOR operation procedure including the system, is there anything that the secretariat should improve in order to facilitate your response to EORs?

### ***MBRSC***

Honestly, when we started using the system, it was an exceptionally smooth process. We even mentioned that in several emails to the team from Sentinel Asia, the system is super clear and simple. Uploading any imagery is quite simple and very easy, especially after the latest update. We could even demonstrate the usage of the system to our team members very easily. It is indeed efficient to work using this system. From our end, there is only one matter that we need to take into consideration, which is cloud coverage. In fact, since our satellites are optical satellites we find it difficult to provide data for disasters such as flooding with cloud coverage. Therefore, although we always try to respond to Sentinel Asia's EORs and indeed we do behind the scene tasking, it is not always that we are able to upload data on the system in such cases.

### ***Sentinel Asia Secretariat***

It is great to hear that MBRSC always tries to respond to Sentinel Asia's EORs, even if the DubaiSat and KhalifaSat data are not uploaded to OPTEMIS. Thank you very much again for your outstanding support to Sentinel Asia EORs. MBRSC satellites are always useful because the resolutions are high. As in the case of the recent EORs for Beirut and Izmir which you provided KhalifaSat images, the Sentinel Asia community would really appreciate your support. At the same time, as you mentioned, for optical satellites, cloud coverage is always a challenge. In this regard, in order to have more supports from your side, perhaps we could ask requesters to narrow down the area. In many cases, the area of interest stated by the requesters may be too large, and it might be difficult for you to task under cloud-free environment, but if requesters are able to narrow down the specific area of interest, and then it will become easier for you to proceed. Would that work?

### ***MBRSC***

Definitely, that will help us. If we have cloud coverage in the scene, we can specify the exact area in which the disaster occurred at. In addition, we can either upload the image even if it had cloud coverage, it might be of benefit. If the image is 90% cloudy but remaining 10% area is not affected and could benefit, and leave it up to end user to assess.

We hope this step will improve our contribution further.

***Sentinel Asia Secretariat***

Speaking of MBRSC's support, recently, MBRSC has been active not only as a DPN but also as a DAN. Could you tell us how you are working on generating value added products?

***MBRSC***

MBRSC was strongly motivated to contribute as a DAN member, and worked on placing a new process in order to participate as a DAN. Based on the requests placed on the system, we search and order the most suitable available data, and start on our analysis process to provide products as fast as possible.

This participation is helping us in utilizing present data sources, and developing MBRSC's geospatial analysis expertise to provide critical information for disaster stricken areas. We aim to provide an analytical assessment of disasters, such as floods or earthquakes, in order to assess and take vital and effective decisions to reduce or eliminate any fatal risks.

***Sentinel Asia Secretariat***

In terms of your activity as a DAN, I remember that the Director of MBRSC mentioned, during our joint visit mission to MBRSC three years ago, that MBRSC would like to contribute to EOR as DAN as well in the future. Now you are indeed supporting EOR as DAN, for which we are grateful to you.

***MBRSC***

Three years ago, we had only one person working on value added products. We have expanded the team and a member joined the team to support. So now after three years, we are pleased to further support Sentinel Asia, as both a DPN and DAN.

***Sentinel Asia Secretariat***

As you know, Sentinel Asia is not a small community. We have many agencies from the west to east. Do you have any expectation for future cooperation with the Sentinel Asia and its members?

***MBRSC***

From our side, of course, we are honored to support the Sentinel Asia for as many years as possible. And we hope for further partnerships and collaborations that will help and assist Sentinel Asia and to mitigate the effects of natural disasters, and hopefully we would like to help reduce any post disaster damage on humankind. Also, we will do our best to further support such great initiative.

Additionally, we have a new satellite currently under development, named “MBZ-Sat”. Although we will provide you with the further detailed information later once determined, we can tell you now that the satellite will be with an improved Image Capture resolution. MBZ-Sat will also have an improved performance regarding data processing and downloads.

***Sentinel Asia Secretariat***

We are really excited to hear that. Even current Dubaisat-2 and KhalifaSat provide very high-resolution images and with more enhanced capability, MBZ-Sat will be further benefit the Sentinel Asia community. Thank you very much for your kind offer. Finally, we thank you once again for giving us the opportunity to interview you. We are pleased with and really grateful for your support for Sentinel Asia.



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3. [Information]

Sentinel Asia has uploaded the list of "ALL" emergency observation responses (over 300!) on the Sentinel Asia web portal.

<https://sentinel-asia.org/EO/EmergencyObservation.html>

You can browse, all VAPs (estimated flood maps and others provided by DANs), and thumbnails of satellite images on the site.

It would be great if they could help you understand our work, operation and efforts.

