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## **ASEAN Mineral Database and Information System (AMDIS)**

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We developed AMDIS using web-based GIS integrated by free and open source software and the Open Geospatial Consortium standards. The system is composed of the local databases and the centralized GIS. The local databases created and updated using the centralized GIS are accessible from the portal site. The system introduces distinct advantages over traditional GIS, including the following.

(1)A global reach: Anyone in the world can access web GIS applications from their computers or mobile devices. (2)A large number of users: A web GIS can be used by dozens or hundreds of users simultaneously. (3)Better cross-platform capability: Web GIS that relies on HTML clients will typically support different operating systems such as Microsoft Windows, Linux, and Apple Mac OS. (4)Charge free for users: The vast majority of internet content is free of charge to end users, and this is true of web GIS. (5)Charge free for provider: As web GIS is developed based on free software, the provider do not need to buy software or pay to use web GIS. (6)Easy to use: Web GIS is commonly designed for simplicity, intuition, and convenience, making it typically much easier to use than traditional GIS. (7)Unified updates: For web GIS, one update works for all clients.

Raising transparency of mineral information to mining companies and to the public, AMDIS shows that mineral resources are abundant throughout the ASEAN region.

In order to identify potential and distribution of mineral resources, geologic map is a good reference. Currently, the base geologic map of AMDIS was provided by the OneGeology project, which is not seamless. However, merging geological maps, we find many discontinuities over cross-border areas. A geologic map is made independently in each country based on domestic discussions, so that a national geologic map is original and unique. This is a reason why geologic discontinuities appear over cross-border areas. The discontinuity obscures continuous tectonic structures and consequently veils mineral resource potential.

In cooperation with ASEAN community, Geological Survey of Japan started a project of ASEAN seamless geology. To compile seamless geology, geologists should find discontinuities, identify reasons, obtain an international consensus and finally digitize all revised. It seems an everlasting job. Refusing the problem, we develop a fresh solution. This is "Harmonization", which is, without touching a whole area, focusing and re-compiling discontinuities of only cross-border areas.

In 2015, Japan organized an international team involving seven ASEAN countries for a field survey in west Cambodia near Cambodia-Thailand boundary. The team pushed through into margins of Cambodia and found a clear tectonic structure of basement consisting of Permian and Triassic sediments. The structure is continuous from Thailand to Cambodia which has never been identified from a mosaic of two national geologic maps of Cambodia and Thailand. But remote-sensing images clearly delineate the

basement running through international boundary. The geologic survey we conducted resulted in a ground truth of remote-sensing interpretation. We are aware that the remote-sensing technology is powerful for an area where several countries connect together by land.

Recently, international field survey teams have been organized since conflicts ceased in the Indo-Chin Peninsula. Harmonized geology activities provide good occasions of man-to-man talks accelerating organizing international teams. After all, we know that “harmonized geology” creates exactly two things, namely, a harmony of geology and a harmony of people.

