

Updation of Existing Geological Map of Katingan Coal Mine Area, Indonesia

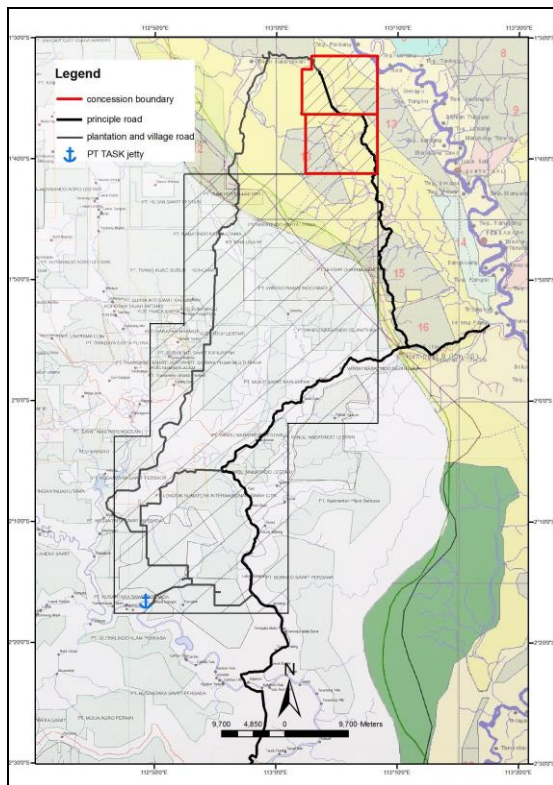


Figure1. Map showing satellite image of the study area

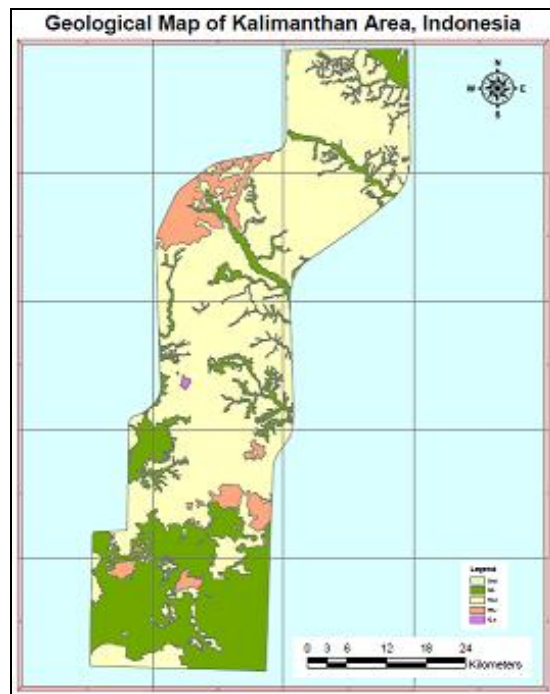


Figure2. Part of Geological map

Business Need:

A mining company had leased out a coal concession in Katingan area in Indonesia. They had an existing Geological Map of the Area depicting the boundaries of various lithological units. This geological map was at 1:100,000 scale.

The business need was to update surface boundaries of the lithological unit, using High Resolution Satellite Image.

Area Covered:

The area covered for this study existed in Katingan Coal Mine Area, Indonesia.

Inputs Used:

- Satellite Image - TerraSAR X at 3.0m resolution
- Landsat Image

Business Solution:

Since Katingan Area falls in a tropical climatic zone, it is always covered with cloud. To get recent cloud free optical image was very difficult.

Excel Geomatics proposed to use Terra SAR-X image of the study area. Three images, covering the study area, were procured for this study.

TerraSAR X images were enhanced to remove the speckles. Merging of TerraSAR X data was done with the Landsat data.

The radar-landsat merged image was overlaid on the existing geological map to understand the spectral signature and pattern of a particular lithology on the satellite image. Further digitization was done on the image to enhance/modify the lithological boundary.

Lithological boundary not represented at 1:100,000 scale but having identical signature on the image, were identified on the image and were digitized.

Further GIS database of the Geological Map was prepared.

Layouts were created at requisite scales for the 'Concession area' and the remaining 'Study Area'

Project Shipment:

The following shipments were made-

- i) Layout showing updated Geological Map of the Concession area at 1:5000 scale
- ii) Layout showing update Geological Map of the remaining study area at 1:25,000 scale
- iii) Related GIS layers

