Abstract

Geology is one area that has an important role for the growth of national development. Needs of geological information will increase along with national industrial sector growth and regional development in Indonesia, so it is necessary to support mapping on a more detailed scale maps. For mapping the entire territory of Indonesia with an approximation area 1.9 million km² at 1:50,000 scale using conventional methods would take about 50-100 years. The advancement of information technology, so remote sensing technology for mapping the geological elements in the whole of Indonesia is one of alternatives to solve these problems.

Geological mapping using Radarsat 2 imagery data and Landsat 8 Nangapinoh area, West Kalimantan is one of the applications of remote sensing technology. Radarsat 2 imagery data that exists in high resolution is processed and analyzed to obtain geological information about the elements that exist in the area with a 1:50,000 scale. Radarsat 2 data in DSM (Digital Surface Model) and ORRI (Ortho Rectified Radar Image) form with a spatial resolution about 10 meters and 3,125 meters, they are supported by Landsat 8 which has a good spectral resolution as well as other supporting data, processed using image processing software and GIS application to get the geological information Nangapinoh area. Image interpretation in this study...
is done visually by using 7 key of the interpretation parameters morphological appearance, the flow pattern of the river supported by field observation data, laboratory analysis and documentation of the previous field.

The result of this study is a geological map from remote sensing result with scale 1:50.000, and elements of geological information in Nangapinoh sheet (1515-51) of West Kalimantan. Result of interpretation can be known that the lithology of the area are in the form of Pinoh Metamorphics (PzTRp), Menunuk Volcanics (Klm), Tonalite Sepauk (KIs), Biwa Gabbro (Kub), Metamorphics (PzTRm), Tebidah Formation (Tot), Alluvium (Qa), Sintang Intrusives (Toms) and Dissected Alluvium (Qat). The dominate lithology is Tebidah Formation (Tot) and area include of 233,606 km². Whereas the geological structure of this study area is shown in the lineaments.

Keywords : Geological Mapping, Remote Sensing, Radarsat 2, Landsat 8.