

CHAPTER VI

CONCLUSION AND RECOMMENDATION

This work is to determine the relative applications of ASTER image over Landsat TM and geocoverage map. It will not be possible to validate applications of actual ASTER sensor until the orbital system becomes operational. However, this work using the simulator data appears to support the assertion that ASTER will become a viable means for producing advanced DEM products.

The data describes the steps to implement the UTM coordinate system, WGS 84, zone 47 North and most importantly to find a way to orthorectify the image. This is proven successful and could also be used in other similar mapping system. Spatial data accuracy is independent of map scale and display scale. Ground Control Points are not being used for accurate georeferencing of the images in this work. The number and quality of the available Ground Control Points is also the greatest point of uncertainty in the here presented process of rectifying an ASTER image.

One of the problem of GIS is the question of how the geometrical information will be mapped. Considering geometrical information in general should be considered that contains the absolute geometry. Absolute means, that the position of an object is referenced to a global reference frame, in the case of a GIS to an actual coordinate system and the relative geometrical information like local coordinates, boundaries.

The mountains show variegated tones and colors owing to the variations in slope, aspect, elevation, rock types, and other factors. Aluvial, fans stand out in moderate to light tones. VNIR and SWIR spectral signatures and rock unit maps derived from ASTER and Landsat TM data generally agree with those extracted from multispectral resolution data, thus validating the multispectral instruments' performances. Analysis of the SWIR of ASTER data allow mapping of characteristic minerals associated with mineral, lithology, including carbonates, and hydrothermal silica. Clouds contain a mixture of both water and ice particles but water gives the lowest value and cloud gives high value. So surface materials are significantly different for an application may be distinguished by very subtle differences in their spectral patterns.

Remote sensing techniques could be used successfully to extract the structural geological information (lineaments), geomorphology, and drainage pattern analysis generally from the study area. The interpreted lineaments are correlated to the faults shown published map of the area and this indicate that the digitally processed remote sensing data could confirm most of the previously mapped fault.

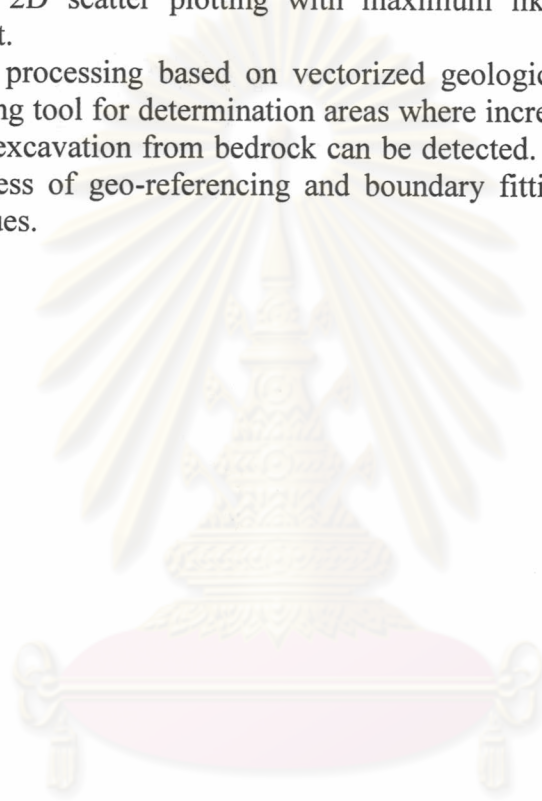
The dentritic drainage pattern of the area extracted from the Landsat Tm and ASTER image and existing topographic map can give a geological information concerning the parent rock units. The dentritic pattern is indicative of lithological and structural and topographic homogeneity. It is also indicative of crystalline rock, which is typical of the geology of the study area that consists mainly of crystalline rocks.

The morphology reflects processes influencing landform formation and potentially active processes working on landform. Landsat TM image analysis could provide an effective way to analyse for processes depositional environment and help asses their impact. The result of this type of study might be useful to help further detailed geological mapping.

DEM data can be used for geological interpretation in terms of morphology, lithology and structure recognition. The derivation of DEM (digital elevation Modelling) data is a fundamental step in terrain analysis. In the shaded relief image, tone, the primary basic element, is the gray level within a certain pixel of the image. This gray level is proportion to the deviation angle from the normal incident of light from the sun. The more deviated the angle is the gray level is higher – move up to 256 level (0 to 255) direction. Therefore, the attribute of tone in a pixel of shaded relief image depends on its slope and aspect.

Classification accuracy assessment is an important step of image classification process. According to classification results in the study area was obtained by using colour composite technique with overall accuracy of 16 %. In order to investigate appropriateness of 2D scatter plotting with maximum likelihood classification was applied to this result.

The data processing based on vectorized geological maps was proven as a scanning to digitizing tool for determination areas where increased indoor random values caused by random excavation from bedrock can be detected. The geological map shows how the effectiveness of geo-referencing and boundary fitting can be overlaid using adjustment techniques.



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