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### Accuracy Assessment of the Land-use Map

Accuracy assessment using confusion matrix was applied to both six-band based and nine-band based classification results. To do so, 647 pixels were evaluated with respect to field reference. It was found that by using six reflective bands as classification input, an overall accuracy of 88.71% was obtained. With nine bands including three texture-filtered bands as the input, the overall accuracy was 93.34% that means the introduction of textural information increased the classification accuracy. As discussed previously in Section 5.3.2, the transformed divergence values increase with the involvement of texture-filtered bands and the accuracy assessment result has thus proven a parallel finding.

However, a closer look to the accuracy level of individual classes showed slight differences. It was found that land-use categories such as plantations tend to show lower accuracy level in nine-band based classification result (e.g. 89.44% for rubber plantation, as compared with 92.37% for the same category resulted by six-band classification). This is probably due to the 'edge effect' resulted by the texture filtering process. High accuracy level was found primarily on urban features and mosaic of rice fields or mix garden. These categories consistently showed higher accuracy level, e.g. 94.22%, 94.10%, and 93.82% for industrial areas, typical denser urban settlement, and commerce areas mixed with settlement respectively, in comparison with accuracy levels of corresponding categories (91.52%, 86.76%, and 88.21%) generated by six-band based classification. This means that textural information may significantly increase the classification accuracy in built up areas.

### Next Agenda/Further Studies

This study has demonstrated the development of image processing method, which incorporates spectral, textural, and ecological information in order to generate more detailed land-use information. Methodologically, there are some other aspects to be considered for a better result, and they may be included in the next/further studies:

1. With the increase of very high-resolution images availability (IKONOS, QuickBird, IRS-Pan, and SPOT-5), the textural information becomes more important so that they can be used in combination with the lower spatial resolution images, or can be used separately. This study used the same spatial resolution to define textural information of the neighbourhood pixels, but by incorporating a higher spatial resolution image (even using scanned aerial photographs), the textural information within the lower spatial resolution image can be defined, so that the 'edge-effect' on the final result can be minimised or be removed









