

Method and Practice of Quality Inspection and Evaluation of the Land Cover Classification Achievement in the Geographic Conditions Monitoring Project

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Key words: Cartography; Geoinformation/GI; Land management; Remote sensing; Standards; geographic conditions monitoring; land cover; quality inspection and evaluation; quality element; classification accuracy

SUMMARY

This paper discusses the method and practice of the quality inspection and evaluation of the land cover classification achievement of the ongoing national geographic conditions monitoring project of China. The land cover classification achievement is one of the important achievements of the monitoring project, and quality control plays a crucial role in ensuring product quality. To make a thorough investigation into the situation and distribution of the natural and human geographic elements, the land cover classification achievement mainly uses high-resolution remote sensing images (GF-2, ZY-3, WV-2, et al.) as data source, and has been designed with a hierarchical and detailed three-level land cover classification system, including 8 1st level classes, 52 2nd level classes and 104 3rd level classes. Also, distinguished from the fundamental surveying and mapping products, such as digital linear graph, the land cover classification achievement is mainly produced for the use of geospatial statistic and analysis, rather than for the traditional use of cartographic purpose. To ensure product quality can meet the requirements of the end users, the primary problem faced by the quality inspection and acceptance of the land cover classification achievement is, how to conduct scientific and objective quality inspection and evaluation. Therefore, a new type of quality inspection and evaluation method has been developed, which is based on the characteristics of the land cover classification achievement. The core of the new method is to use the misclassified area rate as quality measure for the core quality element of classification accuracy of the land cover classification achievement. In practical use, this new method has been successfully used and has been proved to be intuitive, easy to operate and adaptable to different regions nationwide, which helps to meet the product quality control target of “comprehensiveness, authenticity and accuracy” of the monitoring project, and also can provide technical references for quality control of the future unified national natural resources monitoring.

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FIG e-Working Week 2021

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Virtually in the Netherlands, 21–25 June 2021