

Application of low-altitude UAV aerial photography system in 1:2000 orthophoto map production

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The paper discusses the application of low-altitude UAV aerial photography system in aerial photography of large area in Yunnan province with 0.2m resolution for the first time, and successfully researches the main technical procedure of producing 1:2000 orthophoto maps (DOM). At the same time, the accuracy statistics during the operation, and multiple data checking and test, accuracy statistics and quality evaluation of data are operated. So this paper provides a favorable reference for both the use of low-altitude UAV aerial system in aerial photography of large area with high-resolution and the production of 1:2000 orthophoto maps.

After the project is completed, field investigation checking and accuracy analysis are operated on orthophoto maps. The results indicate that the 1:2000 orthophoto maps in 14 basins of Qujing City of 5250 square kilometers produced by the low-altitude UAV aerial photography system have the characteristics of clear images, moderate contrast, uniform colors and tones, no images dislocation, no images distortion, no garland. And the stitched images are seamless with high accuracy of math, which can meet the technical design requirements and the work need of the rural collective land ownership registration and certification. In addition, because many aspects in the project are guaranteed, such as the flying quality, image quality, photo control quality, data quality of internal work, the quality of the final orthophoto maps is ensured. The author introduced the aerial photography use of low-altitude UAV aerial system in large area of Yunnan Province with high-resolution for the first time, and successfully researched the main technical procedure of producing 1:2000 orthophoto maps, aiming to play a favorable role for the widely use of the low-altitude UAV aerial photography system in industries of the future life.