

## Accuracy Of Topographic Mapping Using Different Scanning Resolutions

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The primary variable in digital image mapping throughput is the vast volume of image data. It is a problem hindering end-to-end digital mapping technology from realizing its full potential. The file size of a scanned standard aerial photograph ranges between tens of megabytes to more than a gigabyte. The actual size depends on the resolution and scanning mode, i.e., panchromatic versus color. In a production environment, where hundreds of stereo models are processed, the vast quantities of digital data can easily saturate any mass storage system regardless of its size. The scale of output mapping, the required detail level of extracted information, and the target accuracy, all are factors in specifying the scale of photographic coverage. Scanning resolution is also defined accordingly. In practice, when accuracy is a priority, photographic coverage is usually scanned with high resolution. Be that as it may, there is no clear evidence that the elevation and positional accuracies are strongly affected by the resolution of the image.

In this paper, experiments show that within specific limits, there is a slow-varying relation between the scanning resolution and the accuracy of surface extracted using automated matching methods. Experiments were conducted on same images scanned with increasingly higher resolutions. The surface was generated using the automated extraction techniques, and certain points were compared to high accuracy checkpoints. The resulting accuracy of the generated data was analyzed. It is demonstrated that scanning resolution has limited impact on surface accuracy.