Compressing the Geospatial Data of Testing Grounds

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Abstract: The paper discusses an algorithm for obtaining the compressed spatial images of testing grounds, which are described by attribute data. The attributive representations of data make it possible to use the hardware and software resources of geographical information systems (GIS) more economically. The objects, that can be presented by a boundary, are considered as the observable ones. The efficiency of the testing ground description is achieved by representing all its areas by boundaries, encoding the boundaries using the Freeman code, and applying the entropy encoding at the last stage of image processing. At the same time, the compressed set of attributive data can be unpacked into the original image with almost no recovery errors or with acceptable accuracy, but not below the limit set by the specification. The theoretical principles of the method are illustrated by the example of processing the segmented image of the contour. The comparative assessment of the efficiency of compression of the combined method under consideration and that of the entropy encoding method is presented.