

Correspondence between the GSD of Digital Aerial Photographs and the Scale of Maps – Japanese Case Study and Multi-Country Comparison

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SUMMARY

It has been more than a decade since digital cameras replaced film cameras as the mainstay of aerial photography. Maps are also shifting from print to digital, but our industry's main customers, local governments in Japan, have not yet abandoned the concept of traditional map scale, so we classify the specifications of digital photographs and digital maps using the term "map information level," which corresponds to the map scale as specified in the General Standard of Operation Specifications for Public Surveys. In addition, since the Standard basically inherits the historical process of printed map production practiced by using film photographs, the ground sample distance (GSD) of digital aerial photographs and the ground position accuracy of digital maps assigned to each "map information level" seem too coarse from the perspective of current equipment and technology.

This study clarifies the current situation of the GSD of digital aerial photographs in public surveying in Japan and compares the results with the standards for digital aerial photography in Germany, the United Kingdom, and the United States. As a result, we perceive the difference in ideas among these countries and there seems to be no common international standard.

We will refer to these findings to plan aerial photography experiments necessary to specify the relevant GSD and ground position accuracy. Then, we will compile the results obtained in a new format of specifications suitable for digital aerial photography together with a correspondence table between GSD and the traditional map scale.

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