International Cartographic Association
Association Cartographique Internationale

Development of Tactile Map Standards to Support Vulnerable Populations

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Keywords: tactile maps, standardization, data quality, metadata, visual impairment

Abstract:

Tactile maps are essential tools for enhancing accessibility to information for visually impaired individuals. These maps have evolved beyond simple production and distribution, to include web-based customized data provision services. The increasing use of digital Braille devices, the growth of initiatives producing tactile maps by relevant organizations, and the rise of digital services for visually impaired individuals all emphasize the importance of standardization to enhance the compatibility and usability of tactile map data. While studies highlighting the necessity of standardization and guidelines for tactile maps are ongoing internationally (Wabiński et al., 2022), research on the standardization of tactile maps in South Korea remains insufficient.

This study examines tactile map and geospatial information standards in South Korea and other countries to create a standard product specification for producing, managing, and delivering tactile map data services. The study outlines important elements such as data content and structure, data quality, portrayal, and metadata in accordance with the KS X ISO 19131 Geographic information - Data product specifications. Notably, it presents the data acquisition process and portrayal methods for elements represented on tactile maps, while integrating existing standards and regulations to enhance the effectiveness of the proposed standard.

The tactile map standard proposed in this study is expected to have wide applications in various fields, such as the development of digital tactile educational materials, data integration by tactile map production organizations, and POI data utilization by navigation service developers. Ultimately, it aims to significantly improve the quality and accessibility of tactile map services.

Acknowledgements

This study was supported by the National Geographic Information Institute in the Republic of Korea. This work was also supported by a grant from Kyung Hee University in 2024(KHU-20241058).

References

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Abstracts of the International Cartographic Association, 10, 117, 2025
32nd International Cartographic Conference (ICC 2025), 17–22 August 2025, Vancouver, Canada.
https://doi.org/10.5194/ica-abs-10-117-2025