Quality Improvement of the Cadastral Index Map

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SUMMARY

ABSTRACT

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The Finnish cadastral index map contains about 11 million boundary markers. Of these, about 2 million are located in city areas and the other 9 million in rural areas and on forest land where the Cadastre is kept by the National Land Survey of Finland (NLS). There is no accurate information on the existence of the boundary markers in rural areas and forests but approx. 10-20% of those are estimated to be missing.

Approx. 70% of boundary markers in rural areas and on forested land have coordinates with a posi-tional accuracy of 1.0 meter or better. The positional accuracy indicates a 67% probability of the posi-tional accuracy of the boundary marker. The positional accuracy of the remaining approx. 3 million boundary markers varies between approx. 1 and 10 meter.

NLS has launched a project to improve the reliability of the boundaries of the cadastral index map. There is no quick and cost-efficient solution for improving the accuracy of the 3 million boundary markers.

The problem with all effective remote sensing methods is that the boundary markers must be made visible in the terrain, meaning that it makes more sense to measure it directly. The solution could be crowdsourcing. It is likely that smartphones will be able to reach a better than 1 meter positional accu-racy within a few years. In this case, the smartphone could be used to determine or verify the location of the property boundaries. Property owners and forestry professionals could be

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encouraged to check the location of their property boundaries using a smartphone.

"Find a boundary marker in the forest" A smartphone game application helps find and identify boundary markers. When boundary marker is identified, the user sets up his or her smart phone on the boundary marker, takes a picture and measures coordinates simultaneously. Then the application sends all in-formation automatically to the NLS were the information is verified and the cadastral index map updated.

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