

INTERACTIVE MUNICIPAL MAP AND ITS PLACE IN THE MODERN CLASSIFICATION OF ELECTRONIC AND DIGITAL MAPS

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The article provides an example of classification of electronic-digital maps by the property of display on the monitor screen, presence of a dynamic component. One of the new criteria-type of use is also proposed, since in the modern world the need for electronic and digital maps has significantly increased. The article describes the features of creating digital thematic maps for municipal institutions. We consider types of data about municipal institutions (addresses, information about managers, and territorial areas of responsibility), that will be displayed on the thematic layers of the digital map. The article sets out the requirements for conventional signs intended for displaying thematic information, and provides examples. The analysis of the features of creating map signs for their correct display on digital maps used in mobile devices is performed. The main criteria for creating new symbols for municipal digital maps are formulated. The article also presents a number of definitions: digital map, electronic map, digital map object, taken from GOST 28441-99.

Keywords: cartography, digital map, services, classification of digital maps, map signs, municipal organizations

REFERENCES

1. Nyrtsova, T. P., & Nyrtsov, M. V. (2014). Cartography of the future. Development Prospects. *Vestnik geodezii i kartografii [Bulletin of Geodesy and Cartography]*, 6(161), 5–10 [in Russian].
2. Voronkin, E. Yu., & Kasyanova, E. L. (2014). Creation of interactive cartographic web services. *Izvestiya vuzov. Geodeziya i aerofotos"emka [Izvestiya Vuzov. Geodesy and Aerophotography]*, 3, 87–92 [in Russian].
3. Voronkin, E. Yu., & Kasyanova, E. L. (2014). The use of "cloud technology" for geographic information mapping. *Izvestiya vuzov. Geodeziya i aerofotos"emka [Izvestiya Vuzov. Geodesy and Aerophotography]*, 4, 91–95 [in Russian].
4. Kasyanova, E. L. (1998). Structures and formats for the representation of spatial data in GIS. In *Sbornik mezhdunarodnoy nauchno-tekhnicheskoy konferentsii, posvyashchennoy 65-letiyu SSGA-NIIGAiK [Proceedings of International Scientific and Technical Conference dedicated to the 65th anniversary of the SSGA-NIIGAiK]* (pp. 15–17). Novosibirsk: SSGA Publ. [in Russian].
5. Kasyanova, E. L., & Kikin, P. M. (2012). The principles of automated construction of thematic layers. In *Sbornik materialov Interekspo GEO-Sibir-2012: Mezhdunarodnoy nauchnoy konferentsii: T. 1. Geoinformatsionnoe obespechenie territoriy, sovremennyye tekhnologii geoinformatsionnogo kartografirovaniya, razrabotki GIS, sozдание i vedenie tsifrovogo goroda i regiona [Proceedings of Interexpo GEO-Siberia-2012: International Scientific Conference: Vol. 1. Geoinformation Support of Territories, Modern Technologies of Geoinformational Mapping, GIS Development, Creation and Maintenance of a Digital City and Region]* (pp. 106–110). Novosibirsk: SSGA Publ. [in Russian].
6. Nyrtsov, M. V., Vetrova, V. V., & Nyrtsova, T. P. (2015). Cloud technologies in cartography. *Izvestiya vuzov. Geodeziya i aerofotos"emka [Izvestiya Vuzov. Geodesy and Aerophotography]*, 2, 19–23 [in Russian].
7. Monitoring of economic, social and cultural rights, chapter 20. (n. d.). Retrieved from http://www.un.org.tr/humanrights/vm/monitoring_economic_social_and_cultural_rights [in Russian].
8. Zbarazhsky, N. V. (2012). Types and classification of human rights organizations in relation to the protection of human rights. *Probely v rossiyskom zakonodatelstve [Gaps in Russian Legislation]*, 1, 13–15 [in Russian].
9. Kasyanova, E. L. (2009). Methods for the presentation of cartographic images on the Internet. In *Sbornik materialov GEO-Sibir-2009: T. 1, ch. 2 [Proceedings of GEO-Siberia-2009: Vol. 1, Part 2]* (pp. 242–245). Novosibirsk: SSGA Publ. [in Russian].
10. Krechetnikov, K. G., & Krechetnikova I. V. (n. d.). Social network services in education. Pacific Naval Institute named after S. O. Makarova. Retrieved from [http://ido.tsu.ru/other_res/pdf/3\(39\)_45.pdf](http://ido.tsu.ru/other_res/pdf/3(39)_45.pdf) [in Russian].
11. Gavrish, V. B., & Evdokimova, N. M. (2005). On the classification of electronic and digital cards. In *Sbornik materialov GEO-Sibir'-2005: T. 4 [Proceedings of GEO-Siberia-2005: Vol. 4]* (pp. 112–115). Novosibirsk: SSGA Publ. [in Russian].
12. Besimbaeva, O. G., Yartseva, V. F., Khmyrova, E. N., & Sinyak, R. V. (2015). Analysis of the occurrence of errors in the creation and updating of digital topographic maps. *Vestnik SGUGiT [Vestnik SSUGT]*, 2(30), 62–72 [in Russian].
13. Bugakov, P. Yu., Katsko, S. Yu., Basargin, A. A., & Voronkin, E. Yu. (2018). Analysis of the functionality of the Kepler.gl web application for visualization and analysis of large sets of spatial data. *Vestnik SGUGiT [Vestnik SSUGT]*, 23(4), 155–165 [in Russian].
14. Standards Russian Federation. (1999). GOST 28441-99. Group T02. Interstate Standard. Digital Cartography. Terms and definitions. Retrieved from ConsultantPlus online database [in Russian].
15. Karmanova M. V., & Komissarova E. V. (2019). Development of symbols for a digital cartographic support system. *Vestnik SGUGiT [Vestnik SSUGT]*, 24(1), 97–118 [in Russian].

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