

Contents

| | |
|--|------------|
| Preface..... | 3 |
| 1. Introduction..... | 5 |
| 1.1. Overview | 5 |
| 1.2. The basics of examining of cartographic products..... | 6 |
| 2. Information value of the map | 9 |
| 2.1. Graphical space-filling and complexity of the map..... | 9 |
| 2.2. Relation of graphic variables and map's usability..... | 10 |
| 3. Evaluation methods in cartography | 13 |
| 3.1. Principles of research methods and techniques | 15 |
| 3.2. Subjectively-based evaluation methods | 17 |
| 3.3. Objectively-based evaluation methods..... | 20 |
| 3.4. Mixed-research design | 22 |
| 4. Usability of the map | 25 |
| 4.1. Aspects of usability | 25 |
| 5. Usability testing of cartographic visualizations | 28 |
| 5.1. Types of tasks on the map | 30 |
| 5.2. Structural model of solution of cartographic tasks..... | 33 |
| 6. Psychological aspects of working with the map | 35 |
| 6.1. Perception of visual information | 36 |
| 6.2. Locating and recognizing objects..... | 37 |
| 7. Inter-individual differences in visual perception | 41 |
| 7.1. Cognitive style..... | 41 |
| 7.2. Characteristics of cognitive styles..... | 43 |
| 7.3. Cognitive style in cartographic research | 46 |
| 8. Possibilities of testing differences between users | 48 |
| 8.1. Object and spatial imagery tests | 48 |
| 8.2. Tests of global-analytical dimension of cognitive style | 49 |
| 9. Research software Hypothesis | 51 |
| 9.1. Technology | 53 |
| 9.2. Database structure | 55 |
| 10. Functionality of the software Hypothesis..... | 56 |
| 10.1. Description of XML configuration files | 57 |
| 10.2. Types of components, which can compose a slide | 64 |
| 10.3. The Map element – an image with functions for receiving feedback | 66 |
| 10.4. Sections of the element <i>Map: Layers</i> | 69 |
| 10.5. Sections of the element <i>Map: Controls</i> | 76 |
| 11. Hypothesis Manager | 83 |
| 12. Conclusion | 88 |
| References | 90 |
| Appendix 1 – database tables information | 100 |
| Appendix 2 – database ER diagram..... | 106 |