

The Organization of Interdisciplinary Research at WDC–Ukraine

Kostiantyn Yefremov

WDC–Geoinformatics and Sustainable Development (WDC–Ukraine)

k.yefremov@wdc.org.ua

Modern research of complex systems requires their simultaneous study from the standpoint of many scientific disciplines, which is a prerequisite for a more complete picture of the world by the creation of interdisciplinary models received from the system compliance of the empirical data, models, and methods of various scientific fields.

One complex interdisciplinary problem is the evaluation of the effectiveness of public policy and public management in terms of the sustainable development concept. The solution to this problem has been delegated to WDC–Ukraine on a regular basis by the System Analysis Committee at the Presidium of the National Academy of Sciences of Ukraine.

To conduct such research, WDC–Ukraine has successfully established an interconnection between data holders at the level of exchange and transformation of large volumes of geophysical and socioeconomic data from different types of sources. WDC–Ukraine has developed methods of data processing and analysis for these interconnections, including tools of systemic compliance of the interdisciplinary data, systematization, data mining, adequacy assessment, analysis of the quality, and correctness of the data.

The research team of WDC–Ukraine has also established a methodology for quantitative evaluation of sustainable development of the regions of Ukraine and of countries, in the context of safety and quality of human life. The peculiarity of the methodology lies in its consideration of the vulnerability of the studied systems to global and regional risks and threats, and in an evaluation of critical values of threat indicators [1].

Using its developed mathematic models and software, WDC–Ukraine annually performs and publishes an analysis of the sustainable development of both countries and the regions of Ukraine, which—except for methodological aspects—contains detailed profiles of the studied regions, accompanied by experts' comments. The results of the study and interactive tools for comparative analysis are available on the WDC–Ukraine portal: <http://wdc.org.ua>.

This presentation is expected to consider in detail the organizational, software, and hardware tools that make up a platform for interdisciplinary research, and that have been developed and used by WDC–Ukraine.

References

1. Zgurovsky, M., Boldak, A., & Yefremov, K. (2013) Intelligent analysis and the systemic adjustment of scientific data in interdisciplinary research. *Cybernetics and Systems Analysis*, 49(4), 541–552