



Russian ISDE Chapter 2022 Report

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October 14, 2022

Introduction

The activity of the Russian ISDE Chapter in 2022 was based on the impetus given by the 8th Digital Earth Summit held in Russia in 2020. It was intended for the achieving the UN Sustainable Development Goals (SDG). Priority areas of work in 2022 are: 1) support the development of fundamental and applied issues of the Digital Earth concept, primarily in its interdisciplinary and interstate aspects; 2) involve new researchers and formation of targeted collaborations; 3) dissemination of the Digital Earth vision. The work was carried out in the forms of:

- R&D activities and presenting their results in scientific publications;
- holding our own thematic conferences;
- participation in relevant scientific events organized by other institutions;
- Publishing the Digital Earth Journal;
- lectures and outreach activities;
- maintaining the site of the Russian ISDE Chapter.

The negative trends that began with the COVID pandemic since 2020 continued to affect Russian ISDE Chapter activities. First and foremost, they affected spatial mobility. All but two conferences this year were attended remotely.

R&D activities

The Russian Scientific Depository Elibrary.ru by the beginning of October registered 931 publications issued in 2022 and including the phrase "Digital Earth" in Russian in various morphologies, but only a small part of them is related to the concept of Digital Earth indeed. Limiting the search to the condition of having the phrase in both Russian and English yields 80 publications, but even this number is overestimated. Up to now we aware of more than 10 articles on the subject of Digital Earth, prepared with the participation of Russian ISDE Chapter members and associated colleagues. Most of the papers contributed in 2022 will be published later. Some of them are summarized in Table 1.

Research on the grant #20-47-01001 from the Russian Science Foundation related to the concept of the Digital Earth were performed. International research collaborations are supported as well. Members of the Russian ISDE Chapter participate in some ISDE R&D and publishing projects.

Scientific event organised by Russian ISDE Chapter

In 2022, the Russian ISDE Chapter organized and held one traditional annual scientific event — the section "Digital Earth and Big Data" on 32nd GraphiCon-2022. 7 reports were presented, including 3 reports by the members of the Working Group 1 (WG1) of the ISDE. The conference was held in Ryazan (Russia) on September 19-22, 2022. Due to COVID consequences, it was held in mixed mode.



Figure 1: Persons physically attended Graphicon2022 in Ryazan

Attended academic events

By October 2022 the research of the members of the Russian ISDE Chapter on the DE topics were presented (in addition to GraphiCon2022) on at least 5 more academic events in Russia (2) and abroad - in Beijing (China), Paris (France), Tbilisi (Georgia). The topics of the conferences were extremely diverse: from space research and sustainable development to theology. 2 paper have already been published, and several more are waiting to be published.

Digital Earth journals

1. The annual Russian almanac about the Digital Earth "Geocontext" continues to be published. In 2020 the 10th volume of the journal will be published.
2. At the suggestion of the publishing house MDPI (Switzerland), an agreement has been reached to jointly prepare and publish a special edition of the journal Signals called "Interpreting of Signals". It is expected to consider the interpretation of signals and big data and understanding their meaning in a broad general scientific context and, in particular, to consider the interpretation of large geospatial data sets in the Digital Earth. The deadline for submissions is June 30, 2023.

The editors of this special issue of Signals and editorial board of «Geocontext» almanac cordially invite ISDE members and all colleagues to present their scientific findings in both journals.



Figure 2: Announcement of "Interpreting of Signals" special issue of Signals/MDPI journal.

Lectures and Outreach

Lecture and outreach activities are usually important for the Russian ISDE Chapter, but have been limited in 2020-2022 due to the limitation of mobility. So far, one lecture on Digital Earth has been given in 2022 at Adamas University in Kolkata, India (Figure 3) titled «Beyond the Maps: Understanding Geography Horizon».



Figure 3: Announcement of lecture "Beyond the Maps: Understanding Geography Horizon"

Site of the Russian ISDE Chapter

The COVID pandemic demonstrated the vital importance of online communications and websites in the new circumstances. Web site of the Russian ISDE Chapter was established in 2018 with URL: <http://derussia.ru> (Figure 4). The site is bilingual (English and Russian) and intended to be the information platform for sharing Digital Earth vision, as well as a platform for online services. Now the site is in the process of development, the services and the content base are limited. Their implementation is planned to be harmonized with the updating of other information sites (Geo-Context.org, etc.) in accordance with the new tasks.



Figure 4: Start page of the Russian ISDE Chapter site

Plans and Prospects

In 2022 the Russian ISDE Chapter and involved scientific community are concentrating their efforts on the formation, dissemination and implementation of the Digital Earth Vision as the magic cure that can ensure the sustainable development of mankind. We plan to preserve the already established basis, to actively involve new researchers, especially young people and specialists from various disciplines, including the Arts, in the development of Digital Earth scientific paradigm to form new grounds for growth. An important task remains the harmonization of our activities in the context of the global ISDE agenda. Studying the main directions of scientific and technological development of the Digital Earth and creative approach to challenges also remains among the priorities of the Russian ISDE Chapter.

Table 1. Selected 2022 papers of Russian ISDE Chapter members

Title	Authors	Countries (corresponding author's first)	Publisher/ Country	Language	Type	Picture
Digital Earth and Hybrid Crises of XXI: Remedy and Disease?	Eremchenko E., Zakharova A.	Russia	Springer/ Switzerland	English	Book Chapter	
Digital Health Earth for Covid-19: simulating pandemic emergency plan by open data from space applications	Monaco F., Del Mastro A., Eremchenko E., Nelson A.	Italy, Russia, Ireland	IAF (IAC22 Proceedings)/ France	English	Conference Paper	
Digital Earth: Prism of 2021	Eremchenko E.	Russia	Graphicon2022 Proceedings/ Russia	English	Conference Paper	Presented, to be Published
Netcentricity: True and Fictitious	Eremchenko E.	Russia	Graphicon2022 Proceedings/ Russia	Russian	Conference Paper	Presented, to be Published
Semiotics from Maps to Digital Earth: Conundrums and Challenges	Eremchenko E.	Russia	II International Scientific Conference Landscape Dimension of Sustainable Development/ Georgia	English	Conference Paper	
Scientific and Philosophical Problems of Education in the Digital Earth System	Derchacheva E., Kolesnik T.	Russia	Bulletin of the SRSTU/ Russia	Russian	Journal Paper	
Integral Methodology in Geospatial Researches	Eremchenko E., Kolosov V., Tikunov V.	Russia	«Science. Innovations. Technologies»/ Russia	Russian	Journal Paper	