



GIS-BASED GULLY EROSION MONITORING AND SIMULATION

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ABSTRACT: Soil erosion, especially of valuable arable land, is a growing global issue, exacerbated by climate change. A major concern is the irreversibility of soil erosion, with annual soil loss often outpacing new soil formation. While sheet erosion leads to significant topsoil loss, gully erosion is particularly concerning due to its severe impact on landscapes. To mitigate gully erosion, identifying the most vulnerable areas is crucial. In this study, machine learning methods such as Random Forest, XGBoost, and SVM were used to map gully erosion susceptibility in Nepal. Various factors, including land use, soil, geology, and slope, were considered. The model performance was assessed using the Area Under the Curve (AUC) score, with initial results showing scores between 76% and 84%, indicating good predictive power across all methods. Beyond susceptibility mapping, simulating and predicting future gully development is essential for long-term erosion management. A QGIS plugin was developed to model gully erosion over time, requiring a digital elevation model (DEM) and soil parameters as inputs. The plugin predicts potential gullies by extrapolating drainage patterns from the DEM and calculates changes in gully depth, width, and volume. The results are then integrated into the DEM for 3D visualization. Validation of the tool on gullies in South Africa showed good alignment between predicted and observed gully dimensions, though some dynamic aspects varied. This approach provides a valuable tool for identifying at-risk areas and simulating future gully erosion, aiding in the development of effective mitigation strategies.



ANALYSIS OF THE IMPLEMENTATION OF THE NATIONAL CADASTRE AND LAND REGISTRATION PROGRAM IN THE NORTH-EAST DEVELOPMENT REGION

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ABSTRACT: The National Cadastre and Land-Registration Program (PNCCF) is one of Romania's most comprehensive governmental initiatives, aiming to systematically register properties in both the national cadastre and land registry. This paper seeks to evaluate the implementation of the PNCCF in the North-East Development Region—one of the country's largest and most diverse areas—by identifying the progress, challenges, and impact on economic and social development. The paper begins with a detailed overview of the program's legislative and institutional framework, highlighting the significance of cadastral registration for efficient land management, property security, and economic growth. It outlines the stages of PNCCF implementation, with a focus on the counties of Bacău, Botoșani, Iași, Neamț, Suceava, and Vaslui, each possessing unique geographic and demographic traits that shape the program's advancement. A key element of this analysis is the integration of Geographic Information Systems (GIS) technologies, which facilitate the collection, storage, and analysis of cadastral data. By incorporating cadastral information into GIS platforms, authorities can visualize and manage property data in real time, improving decision-making in territorial planning. This technology enhances accuracy and transparency, reduces errors in the land registration process, and ensures more efficient management of cadastral data.

SUSTAINABLE RURAL DEVELOPMENT AND ENVIRONMENTAL CONSERVATION IN THE DURMITOR REGION: A CASE STUDY OF ŽABLJAK, MONTENEGRO

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ABSTRACT: The Durmitor region, located in northwestern Montenegro, is recognized for its rich natural landscapes, including Durmitor National Park, which is a UNESCO World Heritage site. Žabljak, a small town within this region, has historically served as a hub for rural communities and a gateway for eco-tourism. However, rural areas in the Durmitor region face numerous challenges such as population decline, limited infrastructure, and environmental pressures, all of which threaten the ecological and socio-economic balance of the region. This paper explores the intersection of rural development and environmental conservation in the Durmitor region, with particular emphasis on Žabljak and its surrounding rural areas. We analyze the impact of land use policies, sustainable tourism, and agricultural practices on local livelihoods and environmental health. Using a combination of geospatial data (GIS), field research, and interviews with local stakeholders, we evaluate strategies for promoting sustainable development while preserving the region's unique natural and cultural heritage. Key findings suggest that integrated approaches to real estate assessment, land management, and environmental engineering are crucial for ensuring long-term sustainability. Furthermore, legal frameworks governing property rights and land use planning must be adapted to meet the region's specific needs. This research offers insights into how rural areas like Žabljak can balance economic growth with environmental stewardship, serving as a model for other regions facing similar challenges in balancing rural development and conservation.



PERSPECTIVES AND FUTURE TRENDS FOR SCHOOL CARTOGRAPHY IN

REPUBLIC OF MOLDOVA

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ABSTRACT: The main goal of this article is to present and discuss the area named School Cartography in Republic of Moldova, corresponding to national curriculum for geography. This study intends to support further research in the field of school cartography, given the GIS-technologies development in our country. Beginning with the analysis of events related to the production of school atlases using GIS technologies, which begun in 2012 in State Enterprise Institute of Geodesy, Technical Surveys and Cadastre INGEOCAD, it was pointed out the main themes and difficulties. The results presented here emphasize the importance of all stages of use GIS technology in production of atlases for geography education from traditional paper version to digital one, during the last decade. The article also pays attention to some of the researches and contributions done by author, contains list of publications and examples related to the digital mapping. At the end, perspectives and future trends for school cartography based on the creation of an electronic GIS atlas of Republic of Moldova are presented. The relevance of the study is dictated by the main trends of digitization in education all over the world.

EVALUATION OF HOP VARIETIES USING SPECTRAL AND THERMAL CHARACTERISTICS DERIVED FROM UAV IMAGES

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ABSTRACT: Hops are a traditional crop grown in the Czech Republic. Hop varieties have different qualitative characteristics not only in terms of harvest, but also in terms of phenological development and diseases resistance. The presented study focused on varieties grown in both conventional and organic systems. Since hops are a crop grown in relatively small blocks in rows where bare soil shows through canopy in the early stages of growth, the use of UAVs is a convenient way for crop monitoring. The advantage is that the resulting images have a very high spatial resolution, and it is thus possible to separate green plants from the soil to derive accurate results. Normalized Difference Vegetation Index (NDVI), Leaf Area (LA) and Crop Water Stress Index (CWSI) were calculated to determine varieties characteristics and their response to weather, diseases pressure and agronomic interventions during the whole growing season 2023. The results showed that NDVI and LA had the same development trend for all varieties, but organic varieties had significantly lower values compared to conventional. The reason was a different response to diseases pressure. The CWSI values showed a different trend depending mainly on management system. However, it was clear from the coefficient of determination that, CWSI for organic Premiant was explained by 65% using NDVI (structure and health), while only 50% for organic Saaz. Leaf area affected CWSI in organic Premiant by 50% and in Saaz by 43%. For conventional hops, NDVI explained CWSI from 53% (Agnus), 60% (Premiant) to 63% (Sládek). In conventional hop plants, the leaf area was higher, and the diseases pressure was not significant. CWSI was affected by LA on average by 23%. The achieved results can be applied in determining the effectiveness of cultivation management and agrotechnical interventions, including hop irrigation.



THE STRUVE GEODETIC ARC – WORLD HERITAGE MONUMENT

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ABSTRACT: The Struve Geodetic Arc is a chain of triangulation survey stretching the 26°E line of longitude from Hammerfest in North Norway on the Arctic Ocean over 2, 820 km south to Izmail in Ukraine. The Arc was set up and measured between 1816 – 1855. The Arc Measurement has been defined as a method for determining the size and shape of the Earth by measurement of the length of the arc of triangulation and the astronomic coordinates of the ends of the arc. An arc of meridian is a line that runs in the true North-South direction. To approach the goal, F.G.W. Struve and other leaders of the arc measurement have set a high level of international co-operation in various directions, from political and administrative to scientific and technical.

The Struve Geodetic Arc include 258 main triangles with 265 main and over 60 subsidiary station points that passes through ten countries, i.e. Norway, Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine. Each of the ten countries possesses some sites with reliable signs, which mark on the ground the positions of the geographical points where the measurements were performed. The ten countries concerned have contributed to the preparation of the documentation with a view to nominating the Arc for inscription on the World Heritage List. The World Heritage Committee inscribed the Struve Geodetic Arc on World Heritage List in July 2005. The World Heritage site includes 34 commemorative plaques or built obelisks out of the original 265 main station points. According to the common procedures and guidelines based on the World Heritage Convention, each State Party is responsible to take care of the preservation and other management of the sites within its territory. The Struve Geodetic Arc is one of the foremost scientific and technical achievements of its time, and it has a truly universal significance. For almost 200 years the Arc has connected from the Black Sea to the Arctic Ocean and will continue connected also in the future. The paper describes the status of Struve Geodetic Arc and procedure of the national legislation, preservation and Management Mechanism and joint international responsibility of the countries possessing the Struve Geodetic Arc sites.



METHODOLOGICAL PECULIARITIES WHEN DELIMITING REAL ESTATE IN THE REPUBLIC OF MOLDOVA

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ABSTRACT: A rather important statement of the 2014 Cadastre is the need to show the complete legal status of land (real estate), including public rights (first declaration). To ensure security the right to property, all rights to all real estate must be highlighted by the cadastral system of the future. The laws for the right to private property have always been dominant, they were always defined and defended the rights of citizens, and one of them being the guarantee of owning property. Thus, citizens' rights through the procedure for registering property rights are already protected above 100%, when legal certainty for public law is close to 0%. Since 2018, the Republic of Moldova has started to carry out "works on the delimitation of public property", which contributed enormously to the start of the procedure for registering the public property right.



THE IMPORTANCE OF NATIONAL SPATIAL DATA INFRASTRUCTURES IN THE CONTEXT OF THE GEOGRAPHIC INFORMATION GLOBALIZATION

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ABSTRACT: The aim of the paper is to analyze the impact of the phenomenon of geographic information globalization, that represents the current process through which geographic data and information are collected, integrated, shared and used on different platforms at a global level, compared to the current status of the National Spatial Data Infrastructure (NSDI) in the Republic of Moldova. The objectives of the study were: to approach the phenomenon of globalization of geographic data that has a significant impact on society through standardization, interoperability, access of the general public to a huge amount of geographical data, unimaginable a few years ago; to provide an overview of the spatial data infrastructure in the Republic of Moldova; to highlight the importance of adapting to new realities. Thus, it should be specified that in the context of technological development and the ever more persistent promotion of global spatial platforms and databases, NSDI will play a key role in providing verified official data, ensuring data standardization and interoperability, completing and updating data for areas where voluntary contributions are limited or hard-to-reach sectors, protecting confidential data and not lastly, planning, development and implementation of policies in the field.



USE OF AERIAL LASER SCAN DATA IN THE DEVELOPMENT OF THE TOPOGRAPHIC PLAN

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ABSTRACT: The authors highlight the advantages of using unmanned aerial vehicles (UAVs) and laser scanning as a modern approach in terrestrial surveying, comparing it with traditional data collection methods. The potential to derive topographic products from the point cloud generated by the survey is examined. This technology represents the latest innovation in modern cartographic data acquisition methods. UAV systems stand out for their flexibility and high efficiency in data capture. In this paper, the authors aim to showcase the benefits of employing UAVs and aerial laser scanning technology (Lidar) as a methodology to generate a 1:500 topographic plan derived from a point cloud. An overview of topographic and geodetic products is provided, emphasizing their significant economic potential, which remains regrettably underutilized in the Republic of Moldova.

QUALITATIVE AND QUANTITATIVE ANALYSIS OF PLÉIADES AND WORLD-VIEW 3 HIGH RESOLUTION DEMS

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ABSTRACT: Recently, generating Digital Elevation Models (DEMs) from high-resolution stereo satellite imagery has gained significant interest as a research topic. The sub-meter Ground Sampling Distance (GSD) offered by these images suggests that decimeter-level accuracy can be achieved. The Pléiades and WorldView-3 sensors, advanced optical Earth observation satellites, are capable of capturing multiple perspectives of the same location in a single pass, providing valuable data for 3D modeling and extraction. Photogrammetrically derived DEMs are essential for applications in engineering, land planning, geomorphology, forestry, infrastructure, urban modeling, change detection, disaster management, and city planning. To ensure reliable analyses for the various applications, high quality elevation models are required. Therefore, the primary focus of this research investigation is to analyse and evaluate the geometric quality potential of DEMs derived from high-resolution Pléiades and WorldView-3 stereo and tri-stereo satellite imagery. The study area located in Allentsteig, Lower Austria is characterized by a hilly landscape with arable land and coniferous forests, and elevations ranging from 300 to 690 meters a.s.l. The entire photogrammetric workflow begins with VHR stereo/tri-stereo satellite imagery and includes the following processing steps: image orientation with improved Rational Polynomial Coefficients (RPCs), dense image matching, and 3D reconstruction using the forward intersection technique. The resulting 3D point clouds serve as input for deriving high resolution Digital Surface Models, whose accuracy is evaluated using reference Ground Control and Check Points (GCPs, CPs) and a LiDAR Digital Terrain Model (DTM). The vertical accuracy shows RMSE values of 0.96 m and of 0.37 m for Pléiades and WorldView-3 DSMs, respectively. To improve this outcome, the photogrammetrically derived DSMs were further aligned to the reference lidar DTM by applying an affine 3D transformation using the Least Squares Matching Technique (LSM). The results indicate improved vertical accuracy of 0.61 meters for Pléiades tri-stereo scenes and 0.24 meters for WorldView-3 tri-stereo scenes, respectively.



GIS APPLICATIONS FOR SPATIAL DATA ANALYSIS: MAPINFO VS QGIS

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ABSTRACT: In the context of the effective development of digital cadastral plans, the use of GIS software plays an essential role in the management and analysis of spatial data. The present study aims to compare two of the most popular software used in cadaster (older versions): MapInfo and QGIS. Both solutions have a variety of tools for creating, editing, analyzing, and viewing geographic data, but differ significantly in functionality, interface design, and associated costs. Exploring the interaction between these softwares, we will analyze their strengths and their use in other areas such as: urban planning, natural resource management, etc. Ultimately, the decision to use MapInfo or QGIS will depend on several factors, including available budget, project complexity, user experience level, and particular needs.



MONITORING AQUATIC BODIES USING GOOGLE EARTH GIS APPLICATIONS

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ABSTRACT: In the Republic of Moldova more than 5,000 smaller dams have been built on rivers. The lifespan of them is usually 30-50 years. Considering that most of them were built in the years 1960-1980, many of them have an expired exploitation period and the others are at the limit of the exploitation period. Another important aspect is the fact that their maintenance in the last 30 years was far below the requirements. The latest analyzes and findings highlight the precarious state of the hydrotechnical constructions, as well as the lack of an effective tool for periodic monitoring of aquatic bodies, which represents an environmental risk, especially floods. About the 126 reservoirs, have a capture capacity of more than one million m³ volume, which are used for fishing, irrigation, water supply, recreation. The effects of climate changes in recent years, marked by pronounced droughts on the one hand and torrential rains on the other, estimate the state of high risk of hydrotechnical constructions, especially the regularization systems. In this context the goal of this research is the monitoring and assessing of the current conditions of water body through a simple geoinformational application, easily accessible to officials, employees in the field. In this scope monitoring and administrate to assure the visualization and transparency of water body the application on the "blogspot.com" platform was created with properly configured geographic interest patterns. Cartographic data were published on Google Maps and integrated in blog. Thus, by accessing the blog, the views of the lake, the hydrotechnical constructions, the points of interest, with the necessary attributes is accessing with the possibility for the spatial analyses. The preliminary results show the positive effects and high interest of the stakeholders concerning of WebGIS technology for the assessment of environmental conditions of water body.



THE BONNE PSEUDO-CONIC PROJECTION FOR THE TERRITORY OF THE REPUBLIC OF MOLDOVA

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ABSTRACT: The paper presents a study on the equivalent pseudo-conic Bonne map projection for the representation of the territory of the Republic of Moldova and the associated cartographic grid, providing a rigorous and efficient mathematical method for calculating point positions within this projection. The primary aim of the study is to ensure increased accuracy of cartographic data and to minimize specific deformation errors, such as linear and angular distortions, which may occur during the process of depicting the Earth's surface on maps. The article delves into the methodological details of the calculations involved in applying the Bonne projection, focusing on the analysis of geometric errors and identifying the most effective techniques for determining these errors. Additionally, it offers a comprehensive approach to the process of automating calculations by developing specialized algorithms implemented using modern programming languages. These algorithms are capable of generating precise results, which can subsequently be exported in formats compatible with CAD or GIS systems, facilitating their integration into professional cartographic workflows. Another aspect of the paper is the graphical analysis of the territory of the Republic of Moldova in the Bonne projection. The graphical representation was carried out using AutoCAD software, highlighting both the advantages and limitations of this projection, with a precise indication of the deformations encountered. The paper emphasizes the importance of algorithmizing the calculation process as part of modernizing the geospatial infrastructure, underlining the relevance of using an equivalent projection to achieve a faithful representation of the Earth's surface.



CREATING AN INTERACTIVE GIS-BASED MAP FOR THE TECHNICAL UNIVERSITY OF MOLDOVA CAMPUS USING QGIS AND WEB TECHNOLOGIES

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ABSTRACT: This study details the process of developing an interactive map of the Technical University of Moldova campus using QGIS, an open-source GIS tool and the QGIS2Web plugin also some coding lines. This study involved gathering and structuring spatial data for campus buildings and other essential facilities, which were then visualized on an interactive map offering a clear and user-friendly representation of campus building locations. Pop-up windows were set up for each point of interest to show information such as building identifiers, available dormitories, working hours, contact information, and links to faculty webpages, ensuring users can easily retrieve relevant details. To make the map accessible online, the research utilized the Leaflet JavaScript library, which facilitated adding interactive features and integrating the map on a local server. The final map presents a simple and intuitive interface, allowing users to explore the campus, find specific locations, and access necessary information quickly. This project highlights the potential of open-source GIS tools as an effective and accessible method for mapping university campuses, aiding in spatial orientation and streamlining information access. The interactive map created can serve as a reference for other universities wishing to develop similar systems, showcasing how GIS and web technologies can enhance the user experience in academic environments.



THE USE OF ORTHOPHOTOPLANS IN CADASTRAL WORK IN THE REPUBLIC OF MOLDOVA

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ABSTRACT: The use of orthophotoplans in cadastral works is an important aspect of modern technology and geographic information systems used in the context of cadastral works. An orthophotoplan can be used in a wide range of cadastral activities, including mapping and updating cadastral maps, determining property boundaries, land valuation, emphasizing their importance in modernizing and streamlining property registration and delimitation processes.



THE NEED FOR THE CONSOLIDATION OF AGRICULTURAL LANDS

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ABSTRACT: The Republic of Moldova being an agrarian country, where about 80% of the country's soils are chernozems, would benefit from a significant increase in the productivity of agricultural crops. The agrarian reform implemented in the Republic of Moldova in the 1990s contributed to the excessive fragmentation of agricultural land into small plots, which considerably reduced the productivity of the land and its rational use. This problem was and is present in the field of agriculture. In order to solve it, it is necessary to apply modern methods of territorial organization, one of the most effective would be the further application of the land consolidation process. In this context, it is necessary to develop/update the legislation on territorial organization, based on the practice of European countries, which successfully implement these methodologies. The paper analyzes projects on the consolidation of agricultural land carried out both in the Republic of Moldova and in some countries of the European Union. As a result, it is worth mentioning the current need to consolidate agricultural lands in the Republic of Moldova as well as the development of solutions to speed up this process, which is very necessary for efficient agriculture. It will give farmers, farmers, the opportunity to apply innovative, sustainable and competitive land tillage practices, by applying rotation systems, by using advantageous irrigation technologies, by their rational processing, by combating erosion, etc.



THE USE OF SPECIALIST SOFTWARE AND GEOPORTALS IN THE TEACHING PROCESS

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ABSTRACT: This article aims to briefly present the specialized software used in the specialized classes, namely in the Geodesy, Topography and Cartography training program, as well as the products made by the students. This article presents the application of GIS (Geographic Information System) technologies, namely the QGIS (Quantum GIS) application in the development of digital and analog maps for different fields studied within the College of Ecology. The stages and production of maps is a complex process that involves the collection, matching and selection of data from various sources, the design and layout of map representations, verification, updating and preparation for the final format. QGIS applications offer the possibility to option result safely and easily. These maps can be used to improve the current situation of various fields involved in the national economy in the Republic of Moldova.



DELIMITATION OF PUBLIC PROPERTY AND EFFICIENT USE OF THE STATE PUBLIC PROPERTY IN REPUBLIC OF MOLDOVA

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ABSTRACT: The delimitation of public owned lands is the process of identifying the ownership of public owned lands, including determining the domain of ownership (public and private), establishing the borders of public owned lands, elaboration of the cadastral documentation for the purpose of authenticating the right of the land owner and registering public owned lands of the state and of the administrative-territorial units of level I and II, also by domains, in the immovable property register. Recently, in Republic of Moldova, the process of illegal privatization of publicly owned lands has intensified significantly, due to the lack of a well-defined informational system regarding to the management of these lands by the central and local public authorities. Thus, the public property of the state and the public property of the territorial-administrative units cannot be monitored and protected, as long as the correct record of the data regarding the delimitation materials is not ensured. Therefore, the non-execution of the delimitation works of public owned lands involves a large number of misdoings (unauthorized land management, non-imposition of taxes, illegal privatization, undermining of investments, non-accumulation of budget revenues, etc.)



GEODETIC SOLUTIONS FOR MONITORING THE CONSTRUCTIONS BEHAVIOR (DAMS)

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ABSTRACT: The paper presents some classic and modern solutions for monitoring construction movements using geodetic methods and technologies. The current theoretical and technological scientific research in the field of geodesy, information technology, digitization and the implementation of its results in various fields, such as construction, today allow a development and modernization of the monitoring of construction behavior. In this sense, the collective of the Center for Research in Spatial Geodesy, Photogrammetry, Remote Sensing and GIS (GEOS) from Dept. of Geodesy and Photogrammetry of UTCB tackled several research topics, aimed mainly at determining some geometric elements of constructions, which undergo changes during the exploitation period: horizontal (2D) and vertical (1D) displacements or 3D displacements. Classical methods and technologies used (triangulation, trilateration, leveling / total stations, precision levels), but also modern methods and technologies (3D space satellite networks, combined networks / GNSS systems, robotic total stations, electronic levels) are presented. Starting from the experience of some works carried out, the importance of other aspects is also emphasized such as: the need to know specific reference and coordinate systems (local/global) and methods of processing combined measurements (classical and satellite), good knowledge of particular elements of constructions, the transition from discontinuous to continuous monitoring, etc. Some examples of recent studies are presented, including the experimental implementation of a "low cost" system for continuous spatial monitoring of a construction (dam) based on satellite technology (GNSS).



DEVELOPMENT OF THE DIGITAL NATIONAL FARMERS REGISTRY AND IMPLEMENTATION OF THE PILOT PHASE, AS A COMPONENT OF THE VISION FOR INTEGRATED ADMINISTRATION AND CONTROL SYSTEM

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ABSTRACT: The Republic Moldova has gained the EU candidate status in June 2022. On the basis of 2023 progress report, the EU commission has recommended and the European Council adopted on 15. December 2023, the decision on European Council to open accession negotiations with the republic of Moldova. Despite the fact that the negotiation process in Chapter 11 has not been started, it has to be taken into account, that for its closure, all of the Common Agricultural Policy requirements need to be met in full. For fully operational Integrated Administration and Control System that would means:

- Intervention framework aligned, including intervention budgeting and conditionality;
- Legal and institutional framework aligned, paying agency accredited, supporting information systems certified;
- Mandatory Integrated Administration and Control System elements established and operational;
- the Common Agricultural Policy strategic plan developed and envelopes defined, at the time of accession.



GNSS RTK and RTX multi-constellation determinations in critical obstruction scenarios

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ABSTRACT: The continuous evolution of Global Navigation Satellite Systems (GNSS) has enabled the emergence of new global constellations, such as Galileo and BeiDou, as well as the development of high-precision correction services designed for real-time GNSS measurements. These innovative parameters support various geospatial applications, allowing for both enhanced multi-constellation positioning accuracy and improved resilience against disruptive factors. Among these services, real-time corrections via RTX (Real Time eXtended) and RTK (Real Time Kinematic) represent two complementary solutions offered by private providers as well as national and international organizations. This study investigates the performance of the global RTX correction solution, provided by Trimble, in comparison with nationally provided RTK corrections under critical obstruction conditions. These obstruction scenarios simulate challenging usage environments, such as dense urban areas, forests, and other settings where satellite visibility is restricted. The research assesses the impact of obstruction scenarios on positioning accuracy and fixed solution stability, with RTX corrections received directly via satellite and RTK corrections transmitted through terrestrial GSM networks. Comparative analyses reveal that multi-constellation RTX solutions provide superior positioning stability under challenging obstruction conditions; however, their accuracy has not yet reached the level of RTK solutions that rely on spatially well-distributed networks of permanent reference stations. The conclusions of this study are significant for users in geodesy and other geospatial fields, offering clear insights into the optimal selection of positioning equipment and technical solutions based on specific usage scenarios.



THE AUTOMATED INFORMATION SYSTEM "STATE REGISTER OF PROTECTED AREAS":

CONCEPTUALIZATION AND DESIGN

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ABSTRACT: The paper presents the process of conceptualization and design of the Automated Information System "State Register of Protected Areas" - laying the foundations for the implementation of an efficient tool that would ensure an integrated management of data about the state natural protected areas in the Republic of Moldova. On the one hand, it would represent the official source of data about the protected areas on the territory of the Republic of Moldova, on the other - the unified information space available to all interested users. The system will have the functionality of collecting, processing, transmitting and keeping the information, in order to record the data on the protected areas. The phases followed during the conceptualization and design process include the conceptual design, the logical design, the database modeling, physical design, analysis and the implementation of the system.



PRUT BASIN PROTECTED AREAS GEODATABASE, A TOOL FOR THEIR TOURISM PROMOTION

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ABSTRACT: Prut river basin, part of the Republic of Moldova side is a region characterized by a biodiversity of major significance at the national and regional level and a high density of protected areas too. In the near future, a RAMSAR site is expected to be designated in this area covering approximately 15,468 ha.

The present paper aims to present the geodatabase development of protected areas from the Prut River basin (MD side) for future utilization in tourism promotion. Design and development of spatial database is based on Data Specification for Protected Sites established in Annex I of the INSPIRE Directive. As this data specification was primarily thought for natural protected sites preservation, a modification is necessary to fulfil touristic purposes. Authors propose an extension related to administrative information including vulnerability status; the description of the feature itself as a tourist resource, and last one is dedicated to the inclusion of additional multimedia data (images, video etc.).