ACTIVITIES REPORT

2024

SURVEYING AND MAPPING AUTHORITY
OF THE REPUBLIC OF SLOVENIA

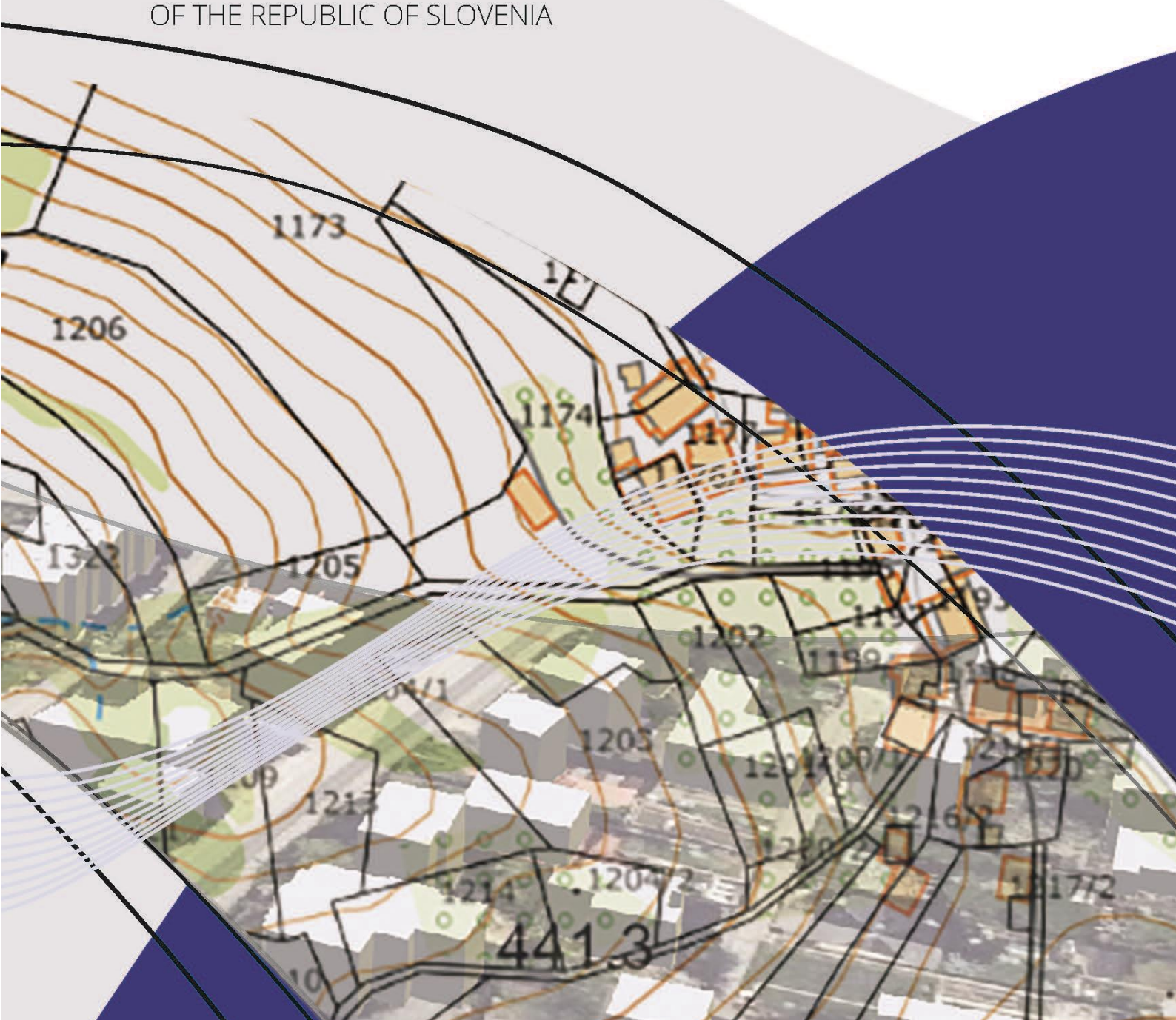

TABLE OF CONTENTS

1. FOREWORD

The year 2024 was characterized by digital breakthroughs and important professional challenges in the field of geodetic services. Numerous achievements confirm significant progress, especially in the area of efficient real estate and spatial management, which remains the core mission of the Surveying and Mapping Authority of the Republic of Slovenia.

"**Reliable spatial data: the foundation for effective spatial management in 2024.**"

For the Surveying and Mapping Authority of the Republic of Slovenia (SMA), 2024 was a year of major advances, system upgrades, and complex challenges.

Our work focused on providing reliable, up-to-date, and high-quality spatial data and integrating them into modern information systems. These data are essential for efficient spatial management, real estate valuation, and support for development and administrative processes at both national and local levels.

One of the key priorities in 2024 was the smooth execution of cadastral administrative procedures without backlogs and the successful operation of our IT systems in the Ministry of Digital Transformation's cloud environment – an important step toward the digitalization of public administration.

Despite the complexity of procedures and the large volumes of data, we consistently upheld the principles of professionalism, transparency, and security. Particular attention was given to the protection of personal data and compliance with contemporary security standards.

In 2024, we successfully adapted the mass valuation models to the current real estate market conditions, regularly updated spatial data, strengthened cooperation with local communities, and enhanced public access tools and spatial information services. We further improved user experience, public communication, and prepared for upcoming legislative and technological changes.

We extend our sincere thanks to all employees, partners, and users of our services for their constructive cooperation, support, and understanding in a year that demanded flexibility and professional excellence.

The following report presents the key achievements, activities, and performance data of the Surveying and Mapping Authority of the Republic of Slovenia in 2024.

Tomaž Petek
General Manager
Surveying and Mapping Authority of the Republic of Slovenia

2. 80 YEARS OF GEODETIC SERVICES IN SLOVENIA

The year 2024 marked a significant milestone – 80 years of geodetic services in Slovenia. Since 1944, geodetic activity has evolved into a key profession for spatial management, infrastructure development, and environmental protection. Although the Earth is not a perfect sphere, surveyors have, through their precision, helped improve our understanding of the space we live in.

For decades, geodetic data have enabled us to plan and organize space – from road design and building construction to parcel delineation and natural resource management. This is why spatial data holds economic value, legal status, and societal importance. On this anniversary, the geodetic service highlighted the role of location data in the digital age.

To mark the occasion, various materials were prepared: a **brochure** was published, **a promotional video** was created, and **a book titled "80 Years of Geodetic Services in Slovenia"** was released.

COMMEMORATIVE ACADEMY – THE ROLE AND FUTURE OF GEODETIC SERVICES

The central event of the 80th anniversary was a commemorative academy that brought together geodetic professionals, partners from the public and private sectors, and the general public. Through keynote speeches, awards, and showcases of modern approaches, the event emphasized the role of the geodetic profession as a foundation for spatial planning, real estate management, and spatial digitalization.

For the first time, participants could also watch a short film telling the story of geodetic services – from modest beginnings with theodolites and paper maps to today's use of GNSS technology, drones, and advanced data platforms.

The event honored all those who helped shape Slovenia's geodetic legacy over the decades and served as encouragement for young professionals to carry it forward through innovation.

HISTORY AND DEVELOPMENT

The institutional development of geodetic services in Slovenia began in 1944. The establishment of the geodetic section on January 20, 1944, in liberated territory marked the first organized effort by surveyors to provide topographic maps, restore land records, and lay the professional foundations for spatial planning and state-building.

In the immediate post-war years, surveyors played a crucial role in restoring the land cadastre, establishing primary geodetic networks, and developing cartography as the basis for planning, construction, and spatial governance.

In the decades following the war, the profession underwent rapid modernization – moving from classical measuring instruments to electronic total stations, GNSS satellite methods, laser scanning, and digital cartography. A major milestone was the introduction of real estate information systems, building records, spatial unit registries, and the digital cadastre.

As society entered the digital age, geodetic services transformed into key providers of spatial data – now accessible via the web and mobile platforms. They participate in national spatial policy development, support local communities, and provide critical data for the economy, environment, and security.

To commemorate the anniversary, a book titled “80 Years of Geodetic Services in Slovenia” was published, presenting major development milestones, institutional changes, and personal stories of surveyors who have built professional excellence across generations.

GEODESY IN THE SERVICE OF THE DIGITAL FUTURE

Today, geodetic services form a solid foundation for society’s digital transformation. Their role goes beyond traditional surveying – surveyors contribute to the development of smart cities, climate change monitoring, natural resource management, and the application of advanced spatial analytics.

Using **GIS, LiDAR, GNSS**, and **3D models**, they produce spatial data that serve as the basis for decision-making in public administration, the economy, and science. As such, surveyors have become key players in connecting data, technology, and sustainable development.

This anniversary is not only an opportunity to look back, but also to look ahead – with a clear vision for geodetic services to remain a modern and indispensable partner in understanding and managing space.

SELECTED TERMINOLOGY AND DATA PRODUCTS

The **zero-order geodetic network** forms the backbone of the national spatial coordinate system. In the field, these are the highest-quality national geodetic points at which continuous geodetic observations are carried out. The high precision of measurements at these points enables the monitoring and modeling of time-dependent changes in the spatial reference system caused by tectonic (geodynamic) activity.

The **Digital Terrain Model (DMR)** is a multi-layered digital representation of the terrain, incorporating elevation points, characteristic lines, terrain features, and geomorphology.

An orthophoto is an aerial photograph that, by taking into account terrain data and the absolute orientation of aerial images, is transformed into an orthogonal projection. The resulting product is metrically equivalent to a line drawing or a map. As part of the Cyclical Aerial Photography of Slovenia, which has been conducted by the Surveying and Mapping Authority since 1975, the **national orthophoto (DOF)** is produced.

Special Aerial Photography of Slovenia (*PAS)* / 1943 >
Cyclical Aerial Photography of Slovenia (*CAS)* / 1975 >
Laser Scanning of Slovenia (*LSS)* / 2011 >
Oblique Aerial Photography (*PAF)* / 2023 >

The **National Topographic Model (DTM)** is a collection of topographic data that includes both graphic and attribute data on objects, corresponding to the accuracy of the 1:5,000 scale.

The **National Topographic Map (DTK)** consists of topographic data that are cartographically processed in accordance with a standard editorial plan. The data are maintained in the national coordinate system and presented in the national cartographic projection. It is produced at a 1:50,000 scale, with 58 map sheets covering the entire territory of the country.

The **National Border Register** contains and maintains data on boundary points that define the national border of the Republic of Slovenia. The register stores information about the numbers of border points, the border sector, the method of boundary marker designation, as well as the markings and coordinates of the border points.

Consolidated Cadastre of Public Infrastructure (ZK GJI) is a database that contains information on civil engineering structures and networks serving specific types of public economic infrastructure of national or local importance (e.g., transport, energy, utility services, etc.).

Real Estate Cadastre (KN) is the fundamental and official register of data on the position, shape, physical characteristics, and other properties of land parcels, buildings, and parts of buildings. It reflects the actual condition of real estate and enables the registration of property rights in the Land Register of the Republic of Slovenia.

Real Estate Valuation Register (EVN) is a register of the values of all real estate in the Republic of Slovenia, where generalized values are calculated based on property data and the rules defined in valuation models.

Register of Spatial Units (RPE) is a database of administratively defined spatial units and streets. Spatial units include municipalities, settlements, administrative units, electoral units and districts, polling stations, school and postal districts, local, village, and city communities, as well as statistical and cohesion regions.

3. ABOUT THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA

The Surveying and Mapping Authority of the Republic of Slovenia is a body within the Ministry of Natural Resources and Spatial Planning, responsible for the registration of real estate, management of spatial records, and provision of geodetic and cartographic data. Through its activities, it supports the implementation of land policy, spatial planning, space digitalization, and environmental management.

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VISION AND STRATEGIC ORIENTATIONS

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) aims to remain a key professional and development institution in the field of spatial data and real estate records. Its vision is based on providing reliable, high-quality, and up-to-date spatial information, which forms the foundation for effective spatial planning, real estate management, the implementation of land policy, and sustainable spatial development.

The core strategic goals of the SMA are aligned with the vision of developing a comprehensive real estate system and an open and accessible national spatial data infrastructure. Key priorities include the establishment of a modern geodetic coordinate system enabling precise positioning in space and the provision of reliable services to users – both in real time and for further data processing needs (GNSS network SIGNAL).

A major strategic objective is the establishment of a multipurpose 3D cadastre, which will enable comprehensive management of ownership and the physical characteristics of real estate. At the same time, improvements are being made to the positional accuracy of cadastral data and to the modernization of land readjustment procedures to ensure greater alignment with spatial planning documents.

The SMA is committed to strengthening its role in the acquisition and management of topographic and cartographic data, particularly through the use of modern technologies such as laser scanning, aerial photography, and 3D modeling. This enhances insight into both the natural and built environment and provides effective support for spatial policies.

The SMA also plays an important role in the field of mass real estate valuation, where it develops and maintains valuation models, determines generalized market values, and monitors the real estate market. These data are essential for fair taxation, market transparency, and informed decision-making for all stakeholders.

Digital transformation is also progressing in the area of data integration. The SMA is developing standardized solutions that enable interoperability and efficient data exchange between systems and users – an essential step toward establishing a reliable and digitally supported spatial infrastructure.

MAIN AREAS OF WORK OF THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) performs a range of tasks essential to the functioning of the national spatial information system. Its core responsibilities include maintaining the Real Estate Cadastre, conducting mass property valuation, recording the national border, maintaining fundamental geodetic networks, and establishing and managing spatial data sets.

In addition, SMA is responsible for the spatial data infrastructure and the development of information systems that provide access to spatial data for both public administration and the general public.

In fulfilling its tasks, the SMA works closely with ministries, municipalities, other government bodies, as well as with international organizations and institutions.

The activities of the SMA cover a wide range of areas that are essential for the reliable and comprehensive management of geodetic data, as well as for the provision of high-quality spatial and real estate information. The core areas of operation include:

- Fundamental Geodetic System
- Real Estate Registration
- Mass Real Estate Valuation
- National Border
- Spatial Units and Addresses
- Consolidated Cadastre of Public Utility Infrastructure
- Topographic and Cartographic System
- Spatial Data Infrastructure and IT
- International Cooperation

ORGANIZATIONAL UNITS OF THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) consists of the following organizational units:

- Main Office
- Geodesy Office
- Mass Real Estate Valuation Office
- Real Estate Office
- Twelve Regional Surveying and Mapping Authorities with Local Geodetic Offices

Close cooperation between the individual units ensures the effective implementation of tasks and the provision of high-quality services and data to users. Together, they deliver accurate geodetic data and services that are essential for efficient spatial planning, property management, and national development. The SMA thus plays an important role in the development and management of space in Slovenia.

The offices, in cooperation with the regional Surveying and Mapping Authorities, perform key tasks in the fields of geodesy, real estate valuation, and real estate cadastre management in the Republic of Slovenia. Their responsibilities include the establishment and maintenance of geodetic infrastructure, the execution of geodetic measurements, real estate valuation, the management of real estate records, and the provision of professional support and services at the local level.

4. KEY ACTIVITIES OF THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA IN 2024

In line with its 2024 work program, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) carried out tasks in geodesy, topography, cartography, property registration, mass real estate valuation, and IT support, focusing on spatial infrastructure development and the Green Slovenian Location Framework (GreenSLO4D) as a strategic step towards digital spatial management.

"The Surveying and Mapping Authority shapes the future of space with advanced solutions and data."

In 2024, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) carried out numerous key tasks in managing the fundamental geodetic system, maintaining and developing spatial records, providing digital services, and distributing and issuing data. A significant part of its activities was also dedicated to monitoring and implementing mass real estate valuation, market analysis, and aligning spatial information with European directives and national development goals. By utilizing advanced technologies, automated systems, and integrating artificial intelligence, SMA accelerated the enhancement of existing processes and improved the user experience.

Collaboration in development and research projects also played an important role, especially within the framework of the Target Research Programs (Slovenian abbreviation: CRP), where SMA actively contributed to developing new methods, data models, and solutions for more efficient management of geodetic data. These projects included the development of tools for capturing and processing spatial information, semantic data harmonization, and support for the digitalization of spatial management.

In addition to professional and technical tasks, SMA also performed a wide range of administrative and organizational activities essential for the smooth operation of the authority. Notable among these were tasks related to public procurement, legal and human resources matters, financial management, and general organizational support, which ensured the effective functioning of the service at all levels.

According to the 2024 training plan, emphasis was placed on continuous employee development. Training focused on spatial records management, IT solutions, and procedural workflows, with many sessions held online to enable broader access, faster implementation, and easier participation regardless of location.

GREEN SLOVENIAN LOCATION FRAMEWORK (GREENSLO4D)

The Surveying and Mapping Authority of Slovenia, as the central spatial data institution, plays an active role in the Green Slovenian Location Framework (GreenSLO4D), a strategic project under the 2021–2026 Recovery and Resilience Plan. Coordinated with key ministries and agencies, the project is a major national response to the digitalisation of spatial planning, the environment, water management, nature conservation, and real estate.

"GreenSLO4D integrates data to support smart and sustainable management of the environment and spatial development."

The Green Slovenian Location Framework (GreenSLO4D) is designed as a response to the challenges of dispersed spatial growth, the need for comprehensive integration of investments into space, and as support for sustainable development in line with the European Green Deal guidelines. The key goal of the project is to **establish a modern, connected, and open digital data infrastructure** that will enable more efficient, transparent, and data-driven decision-making in the field of spatial management.

FIGURE 1: Planned outcomes of the GreenSLO4D project

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) leads the **Geoinformatics Project Group**, which plays a central role in coordinating the information systems of participating institutions, providing guidance on process digitalization, and developing spatial information solutions. Within the GreenSLO4D project, SMA is implementing a range of complex tasks, including the introduction of the fourth dimension to the national coordinate system, the development of a modern national topographic model, the digitization of data (such as LiDAR and floor plans), as well as the renewal of real estate valuation systems and the enhancement of cadastral data quality.

The project will make a significant contribution to greater integration among authorities and institutions, improved use of spatial and environmental data, and more efficient and sustainable management of space as a limited natural resource. Through its role, the SMA **provides expert and data support for the country's digital transformation in areas where high-quality spatial data serve as a foundation for successful planning and decision-making**.

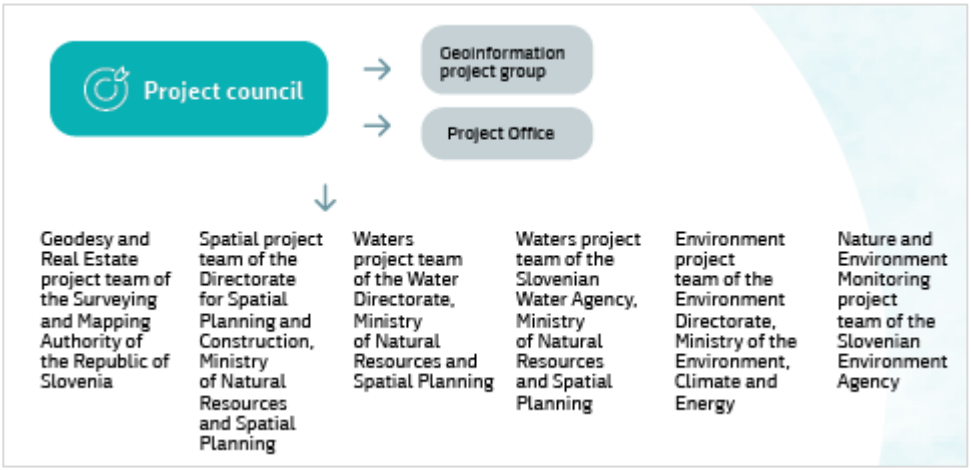


FIGURE 2: Organizational Structure of the GreenSLO4D Project

The second conference of the Green Slovenian Location Framework (GreenSLO4D) project was held on November 20, 2024, at Brdo pri Kranju. The event focused on connecting the digital and green transitions to enable smart management of space, real estate, water, and nature.

The central theme of this year's conference was nature and its connection with space, with a special emphasis on the presentation of the NarcIS information system, which integrates nature-related data from various sources.

The conference highlighted the importance of institutional cooperation and data integration for effective and sustainable management of space and natural resources.

FIGURE 3: General Manager of the SMA during his address at the GreenSLO4D project conference.

FIGURE 4: Peter Prešeren, SMA, during his presentation at the GreenSLO4D conference.

FIGURE 5: Guests at the moderated panel discussion.

At the Surveying and Mapping Authority of the Republic of Slovenia, the GreenSLO4D project is implemented within five thematic areas:

- INFRASTRUCTURE FOR SPATIAL INFORMATION
- NATIONAL COORDINATE SYSTEM
- NATIONAL TOPOGRAPHIC SYSTEM
- 3D CADASTRE
- MASS REAL ESTATE VALUATION

In 2024, the Surveying and Mapping Authority of the Republic of Slovenia carried out key activities within the GreenSLO4D project to achieve milestone T102, which relates to the establishment of a horizontally integrated spatial and environmental digital infrastructure.

→ BUILDING A JOINT SPATIAL AND ENVIRONMENTAL DIGITAL DATA INFRASTRUCTURE AND PREPARING A NATIONAL ACTION PLAN

The Joint Geoinformation Infrastructure, coordinated by the Surveying and Mapping Authority of the Republic of Slovenia, guided the renewal of process models of participating institutions and identified key connections between spatial, real estate, environmental, water, and nature domains. These connections, based on actual user needs, will be realized as a shared component hosted on the National Computing Cloud.

The national platform GeoSlovenia plays a central role in the development of spatial data and services. As a continuation and upgrade of the Infrastructure for Spatial Information, it provides open, standardized, and interoperable access to spatial content. In 2024, the first national GeoSlovenia conference was organized, bringing together stakeholders from various levels and presenting current digital solutions for sustainable spatial management.

Within the framework of the Joint Geoinformation Infrastructure, special emphasis was also placed on content supporting the goals of circular spatial economy and increasing user awareness of the importance of high-quality spatial data. Through training, professional events, and the development of supporting tools, digital competencies are strengthened, and proactive use of spatial information in public administration, economy, and local communities is encouraged.

FIGURE 6: The address of the General Manager at the first national GeoSlovenia conference.

→ OPERATIONS OF THE KNOWLEDGE CENTER AND SANDBOX FOR NEW TECHNOLOGIES

In 2024, the Knowledge Center continued implementing the Target Research Program (CRP), which addresses challenges related to establishing and ensuring the long-term sustainability of a competence center for geodesy and geoinformatics. Special emphasis was placed on analyzing technological challenges, developing competencies, and monitoring international trends in spatial data and geospatial infrastructure. As part of the program, regional consultations on cadastral procedures were held, along with the international EuroSRD workshop titled "Recruitment and Capacity Development Challenges in the Geospatial Domain."

The Sandbox for New Technologies also served in 2024 as a supportive environment for testing solutions aimed at further digitalizing spatial procedures. With a focus on the applied value of solutions and user experience design, the sandbox enabled pilot testing of technological possibilities, including simulations of service usage in a production environment.

In the field of digital operations of the SMA, work continued on the contact and call center, whose application was successfully deployed in the production environment of the Ministry of Public Administration in 2024. The system, operating at all 41 locations of the SMA, proved stable and reliable, especially during the trial period for real estate valuation calculations.

FIGURE 7: The Sandbox for New Technologies supports the development of innovative spatial solutions through simulations in realistic environments.

→ CONSTRUCTION AND FUNCTIONAL ESTABLISHMENT OF TWO ZERO-ORDER POINTS FOR THE FOURTH COMPONENT OF THE COORDINATE SYSTEM

To improve the quality and stability of the national coordinate system, the construction of two new zero-order GNSS points – Javorniški Rovt above Jesenice and Livade above Izola – was completed in 2024. These new points, equipped with side protections and connections to electrical and telecommunication infrastructure, represent a key physical foundation for further development of the so-called fourth component of the coordinate system.

The fourth component introduces a temporal dimension to the existing spatial network, enabling better monitoring of earth surface changes and greater accuracy in position determination. This is especially

important for long-term environmental monitoring, seismic movements, and sustainable spatial management.

The established infrastructure forms the basis for developing a digital twin of the space, built on a precise, temporally stable, and spatially coordinated geodetic foundation. This will enable real-time integration of spatial data, advanced analytics, and simulations, which are crucial for quality spatial management and digital support for everyday life processes.

FIGURE 8: Javorniški Rovt Point

FIGURE 9: Livade Point

→ CYCLIC LASER SCANNING OF SLOVENIA

Cyclic Laser Scanning of Slovenia (CLSS) is a strategic national project aimed at establishing regular and systematic acquisition of high-quality LiDAR data for the entire territory of the country. The data, collected through airborne laser scanning, enable the creation of accurate digital terrain models and support numerous applications in spatial planning, natural hazard monitoring, infrastructure, and

environmental observation. The project is carried out in multi-year cycles to ensure up-to-date and comprehensive spatial coverage.

In 2024, all tasks related to processing and validating data collected in 2023 for the areas of Ljubljana, Kočevje, Novo Mesto, and Kamnik were completed. Quality control was carried out, and the data were confirmed as suitable. Data acquisition continued for the areas of Celje, Velenje, Maribor, and Murska Sobota, with parts of Celje and Velenje already scanned in autumn 2023 due to flood-related needs. All collected data were successfully submitted, reviewed, and approved in 2024.

Despite the dependence of aerial data collection on weather conditions, the mission was completed without major complications. CLSS is one of the key foundations for renewing the national topographic system and developing the digital spatial twin, as it enables reliable and time-synchronized environmental monitoring.

→ 3D CADASTRE – DIGITIZATION OF REAL ESTATE DATA AND INTEGRATION OF CIVIL ENGINEERING STRUCTURES

As part of the 3D Cadastre project, the Surveying and Mapping Authority of the Republic of Slovenia is developing the legal and IT framework for transitioning to multi-dimensional real estate registration. The project covers several components: vectorization of floor plans, integration of BIM approaches, development of a quality control system for cadastral data, and the introduction of a register for civil engineering structures.

By 2024, vectorization of floor plans for approximately 155,000 buildings was nearly completed. The 3D data viewer was upgraded, pilot floor plans and BIM models were presented, and discussions with the Ministry of Natural Resources and Spatial Planning were held regarding the establishment of a BIM register. At the same time, the cadastral information system was enhanced with new functionalities for managing vectorized data and displaying 3D content.

In the field of civil engineering structures (GIO), a legislative proposal for their registration was finalized. The data model of the Consolidated Cadastre of Public Infrastructure was upgraded and aligned with the building cadastre and procedures for establishing the GIO register. A methodology for acquiring GIO-related data was also developed.

The second phase of the development of the real estate cadastre quality system was completed, including the implementation of a software solution for data quality control.

FIGURE 10 and *FIGURE 11: Upgraded SMA 3D Viewer as a tool for visualizing multi-dimensional real estate data.*

→ UPGRADE OF THE NATIONAL TOPOGRAPHIC SYSTEM

The National Topographic System serves as a unified and reliable foundation for spatial planning, land management, environmental policy implementation, crisis response, and infrastructure projects. Updating the system is essential for providing current, detailed, and cross-sectorally applicable topographic data, which also act as a reference base for digital spatial solutions, including the digital spatial twin.

In 2024, topographic and hydrographic data acquisition and quality control were carried out on 50 map sheets at a 1:5,000 scale. Out of the planned areas, 12 of 14 topographic and 6 of 8 hydrographic zones were completed. New content was added, including street names, cable cars, and power lines. Pilot production of 2.5D and 3D building models was also implemented. The feature catalogue and logical model of the National Topographic Model (DTM) were updated.

The topographic data maintenance system was redesigned, and a preliminary report for establishing a national topographic service was prepared. A methodology for georeferencing the archive of scanned aerial photographs was defined, along with custom software development for this task. All project activities proceeded according to schedule.

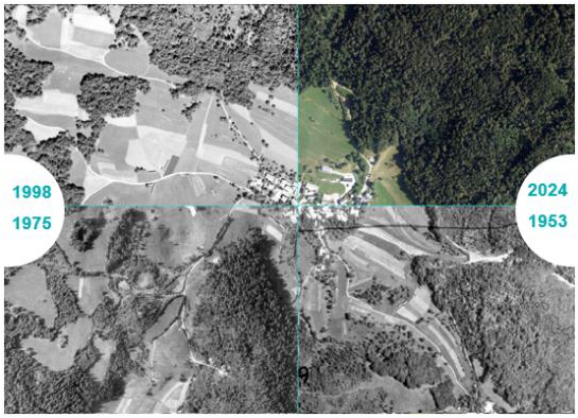


FIGURE 12: Georeferenced aerial photographs of various ages.

→ UPGRADE OF THE MASS REAL ESTATE VALUATION SYSTEM

The Mass Real Estate Valuation system is the central national framework for determining generalized property values, providing a transparent, data-driven, and legally grounded basis for various public and private purposes. It includes complex valuation models, real estate market analytics, and digital support for property owners in monitoring the value of their assets. In 2024, the system underwent a functional upgrade of its information infrastructure, including the development of new modules for analytics, modelling, data processing, and monitoring of special valuation units.

As part of this upgrade, work continued in 2024 on developing new modules for market analysis, property value modelling, management of special valuation units, and high-quality data processing. Special emphasis was placed on improving the transparency and accessibility of data for users and on preparing solutions that enhance the data-supported nature of the valuation process.

In the second half of 2024, a pilot calculation of property values was carried out, enabling users to review the proposed valuation models and estimated values. Following its completion, data transfer to the State

Cloud Infrastructure was initiated. The system will henceforth provide up-to-date and accessible real estate valuation data. All activities were carried out in accordance with the project timeline.

→ PROJECT OFFICE ACTIVITIES

The project office, led by the Surveying and Mapping Authority of the Republic of Slovenia (SMA) in cooperation with an external contractor, performs administrative, professional, legal, and communication support tasks for the implementation of the Green Slovenian Location Framework (GreenSLO4D) project. Its role includes coordinating activities among partners, preparing and reviewing documentation, providing advisory support in public procurement, and ensuring project tasks comply with the Recovery and Resilience Plan requirements. The project office is also responsible for monthly reporting and project promotion.

Within the framework of strategic and developmental content, the SMA coordinates the execution of research tasks financed through the Targeted Research Program. These tasks focus on key areas such as data quality, detection of spatial changes, and the development of the digital twin concept, which form the core content of the GreenSLO4D project.

Research Project: "Quality Management System for Ensuring Interoperability of Geospatial Information"

In 2024, the research task focused on developing a quality management system addressing the interoperability of geospatial data continued. A system concept was prepared, including fundamental concepts, a review of existing practices, and guidelines for its implementation within data workflows among various stakeholders.

Research Project: "Development of a System for Unified Detection of Physical Changes in Space Using Artificial Intelligence and New Technologies"

In the second half of 2024, a research task began with the aim of designing a system for faster and more reliable detection of changes in space. By the end of the year, a review of the current state in the field of physical change detection was conducted, new relevant data sources were identified, and the analysis of potential technological solutions was initiated.

Research Project: "Development of a Concept for the Geospatial Digital Twin of Slovenia to Support Complex Spatial Decision-Making at the National Level"

The research project was launched in 2024 with the aim of developing a concept for a national geospatial digital twin. In the first phase, an analysis of international best practices was carried out, including a review of relevant standards, literature sources, and potential data and technologies to support 3D modelling and real-time spatial decision-making.

ACTIVITIES IN OTHER AREAS OF WORK OF THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA

- GEODESY, TOPOGRAPHY, CARTOGRAPHY
- MASS REAL ESTATE VALUATION
- REAL ESTATE REGISTRATION
- INFORMATION TECHNOLOGY, DATA PUBLISHING AND INFRASTRUCTURE FOR SPATIAL INFORMATION

During 2024, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) performed the tasks of the national geodetic service across all areas defined by legislation and its annual work program. Activities focused on providing high-quality and up-to-date spatial data, managing real estate records, developing property valuation systems, maintaining the fundamental geodetic system, and preparing and updating cartographic and topographic data. Efforts were also directed at expanding the digital spatial infrastructure. Particular attention was given to ensuring the continuous operation of information systems and public access to data. The following sections outline the key activities carried out in each thematic area.

GEODESY, TOPOGRAPHY AND CARTOGRAPHY

Foundation for Accurate Spatial Data and Effective Land Management.

In 2024, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) continued to carry out tasks that significantly contribute to the maintenance of the National Geodetic Reference System, the development of modern geodetic networks, digital cartographic data and models, and the support for other areas related to spatial records and land management.

The **National Geodetic Reference System** comprises regular activities through which the SMA provides professional geodetic guidelines and technical frameworks for the accurate positioning of spatial data. The continuous operation of Global Navigation Satellite System (GNSS) stations and national geodetic reference points ensures the integrity of the national coordinate system, enabling precise determination of the location of objects and phenomena in space. Slovenia is also integrated into the European Coordinate Reference System.

In 2024, the stable operation of the **SIGNAL national GNSS network** and the **zero-order geodetic network** was ensured. Upgrades of hardware at several GNSS stations were carried out, along with software maintenance and updates, network administration and coordination, and technical support to users. Routine calculations of daily coordinates, velocity vectors, and time series were performed to monitor spatial changes, particularly those caused by geodynamic processes.

As part of the planned upgrade of the zero-order geodetic network, the construction of **new geodetic reference points** at Javorniški Rovt and Livade above Izola was completed in 2024. These points will be integrated into the national ground movement monitoring system in the future. Measurement equipment was installed, and the sites were put into test operation. The zero-order geodetic network forms the backbone of the national spatial coordinate system, comprising the highest-quality national geodetic reference points, where continuous geodetic observations are carried out. The high precision of these measurements enables the monitoring and modelling of time-dependent changes in the spatial reference system, primarily due to **tectonic (geodynamic) activity**.

In the field of **geodetic infrastructure**, **measurement and field activities** continued, including the maintenance of trigonometric points, leveling lines, and elevation control points. Micro-network surveys were performed, along with the verification of geodetic points for updating land cadastre data and technical inspections in border areas with the Republic of Croatia.

Maintenance work on **benchmarks** and **national borders** also continued, including the **restoration of boundary markers, geodetic surveys, and the updating of records**. Special attention was given to areas where conditions are being prepared for the demarcation of the border with the Republic of Croatia. Surveys were carried out in six cadastral municipalities.

The National Topographic System provides positional and descriptive data on the physical landscape and built features, as well as official state maps for the territory of the Republic of Slovenia. It consists of topographic data (relief, hydrography, land cover, buildings, transport infrastructure), geographical names, remote sensing data (aerial photographs, orthophotos, and laser scanning imagery), and national topographic and overview maps.

Remote sensing technologies enable the capture of high-quality imagery of terrain and objects from the air or space, which is essential for the creation and maintenance of topographic data, cartographic products, and support for spatial planning. The data of the National Topographic System serve as a fundamental basis for navigation, tourism, urban planning, security operations, and a wide range of other activities.

In 2024, the SMA continued with the **cyclical acquisition of spatial data**. Aerial photography of central Slovenia was conducted, the orthophoto was updated, and dedicated laser scanning was carried out in four areas to meet the needs of other government sectors.

The collected data were used to **update the national topographic model** and to enhance **3D spatial visualisations**.

Special attention was devoted to pilot testing the **automated acquisition of 2.5D and 3D building models**, based on laser scanning data, to establish **height-accurate building representations**. This technology represents a key step toward developing a high-quality **3D topographic infrastructure**, which will enable improved spatial analysis, simulation, crisis response, and more efficient urban planning.

A **pilot 3D viewer** was also developed to display the **classified point cloud**, allowing visual interpretation of terrain and objects in three dimensions.

Ten sheets of the **national topographic map** at a scale of 1:50,000 (DTK 50) were updated. Other components of the national topographic infrastructure were regularly maintained, and the SMA provided updated content for **European datasets**, such as **EuroRegionalMap** and **EuroBoundaryMap**.

The **Commission for the Standardization of Geographical Names** continued reviewing proposals for the naming of settlements and streets. The **hydronym standardization project** was completed, during which the names of water bodies were reviewed both linguistically and geographically and forwarded to municipalities for review and confirmation.

In the area of **national border maintenance** with Italy, Austria, and Hungary, the planned activities defined by the bilateral commissions were carried out. These included regular inspections of boundary markers and additional work such as the arrangement of boundary signs, surveying activities, and vegetation clearance. Along the border with the Republic of Croatia, work continued to prepare the geodetic base for border demarcation, with a focus on the processing of field data and the interpretation of the border alignment.

Key Highlights:

GNSS SIGNAL Network
Upgraded and stable operation of the national GNSS network, ensuring precise and reliable positioning.

Zero-Order Geodetic Network
Two new points of the combined zero-order geodetic network established at Javorniški Rovt and Livade locations.

Geodetic Infrastructure
Micro-network measurements and benchmark maintenance completed.

National Border Maintenance
Field measurements completed, boundary markers restored, and data processed to support border demarcation with Croatia.

Topographic Data
Aerial photography of western Slovenia and laser scanning of new areas. Capture of topographic data.

3D Building Models
Automated 3D building model acquisition tested as part of upgrading the national spatial model.

Topographic Maps
Ten sheets of the national topographic map at a 1:50,000 scale (DTK 50) were updated.

Geographical Names
Hydronym standardization project completed; names of water bodies reviewed and confirmed.

MASS REAL ESTATE VALUATION

With a comprehensive mass valuation system, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) provides transparent, up-to-date, and comparable data on the value of all real estate properties in Slovenia.

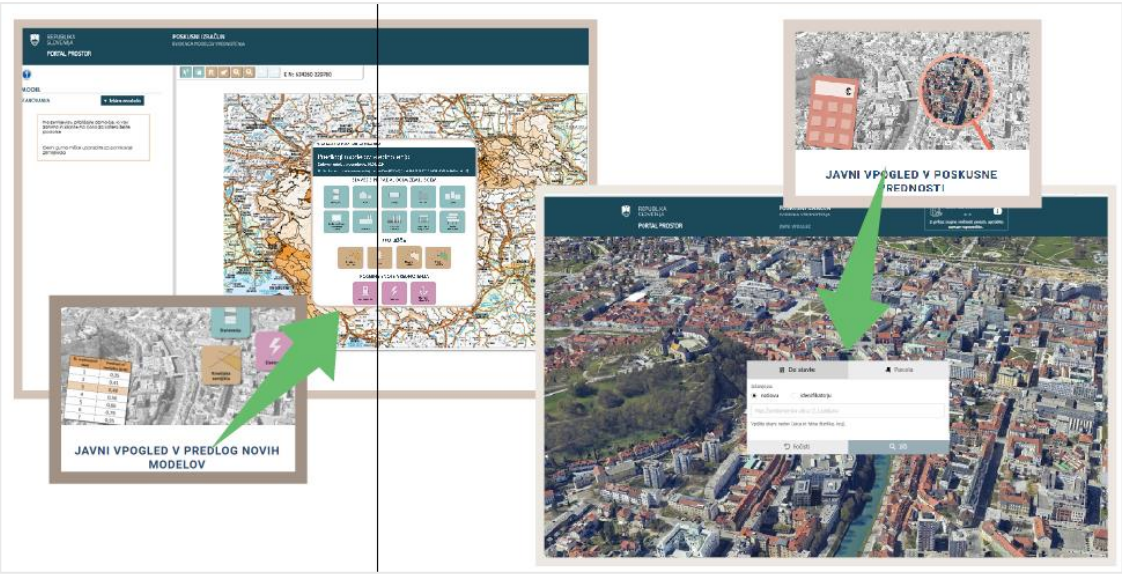
In 2024, the SMA successfully carried out one of the key tasks in the field of mass real estate valuation – a **trial calculation of generalized property values** for over 9 million properties in Slovenia, in accordance with the Real Estate Mass Valuation Act (ZMVN-1).

As the competent valuation authority, the SMA is obligated under Article 10 of the Real Estate Mass Valuation Act (ZMVN-1) to regularly review the valuation models. During this process, it determined that the models defined in the currently valid **Decree on Real Estate Valuation Models**, adopted in March 2020 and in use since 1 April 2020, no longer meet the criteria set out in the Act. Consequently, all valuation models had to be updated and newly defined to reflect current real estate market conditions.

Based on an analysis of the real estate market, which has seen significant price increases over the past decade (e.g., apartments +101%, houses +70%, land +77%), **17 valuation models** were developed, supported by detailed expert documentation. These models classify all properties in Slovenia by use into the following groups:

- **10 models for buildings and parts of buildings together with associated land**, e.g., apartments (STA), houses (HIS), garages (GAR), offices (PPP), industry (IND), etc.
- **4 models for land**, such as building land (STZ), agricultural land (KME), forest land (GOZ), and other land (DRZ),
- **3 models for special valuation units**, e.g., power plants (PNE), petrol stations (PNB), marinas (PNP).

The models were reviewed by the professional public and coordinated with municipalities. The proposed valuation models were publicly disclosed. The broader public was presented with trial calculated property values based on the proposed valuation models and fundamental property data. A total of **212 municipalities** participated in the process, regional consultations were held, and users had the opportunity to review the trial calculations via the Prostor portal.



FIGURES 13 and 14: Public access to the proposed new valuation models and trial property values (https://www.e-prostor.gov.si/)

The SMA received more than **14,000 comments** from property owners, all of which were professionally reviewed. In parallel, preparations were underway for the official attribution of **generalized property values** and for the preparation of data for **summary certificates**, which will be issued in the first half of 2025 following the adoption of the new Decree determining real estate valuation models.

Significant emphasis was placed on **market analysis**—over **40,000 transactions** and **30,000 leases** were analyzed, serving as input for improving the valuation models and valuation zones. These analyses also incorporated macroeconomic indicators, socio-economic data, construction cost trends, and historical sale and rental prices**.**

The value of the real estate capital in Slovenia has increased from **EUR 160 billion in 2017** to nearly **EUR 300 billion in 2024**, primarily due to rising market prices.

Data processing in the real estate market was carried out on a regular basis. The empirical state of the market was presented in the **Annual Report on the Real Estate Market for 2023** and the **Semi-Annual Report for 2024 on the Slovenian Real Estate Market**.

In the area of **information system development and modernization**, new modules for value calculation were introduced, the user interface for both internal and external users was upgraded, and export formats were added. The public access system was also improved, including tools such as the "Valuation Model Viewer," "Valuation Zone Viewer," and access to statistical analyses of the real estate market.

As part of the upgrade to analytical tools, efforts to integrate **artificial intelligence (AI)** into the mass valuation system are ongoing. AI has been used primarily for price time-adjustment, value prediction for specific dates, data extrapolation, and zoning support. In test environments, the potential of AI is being explored to suggest valuation models that better respond to market dynamics and spatial characteristics.

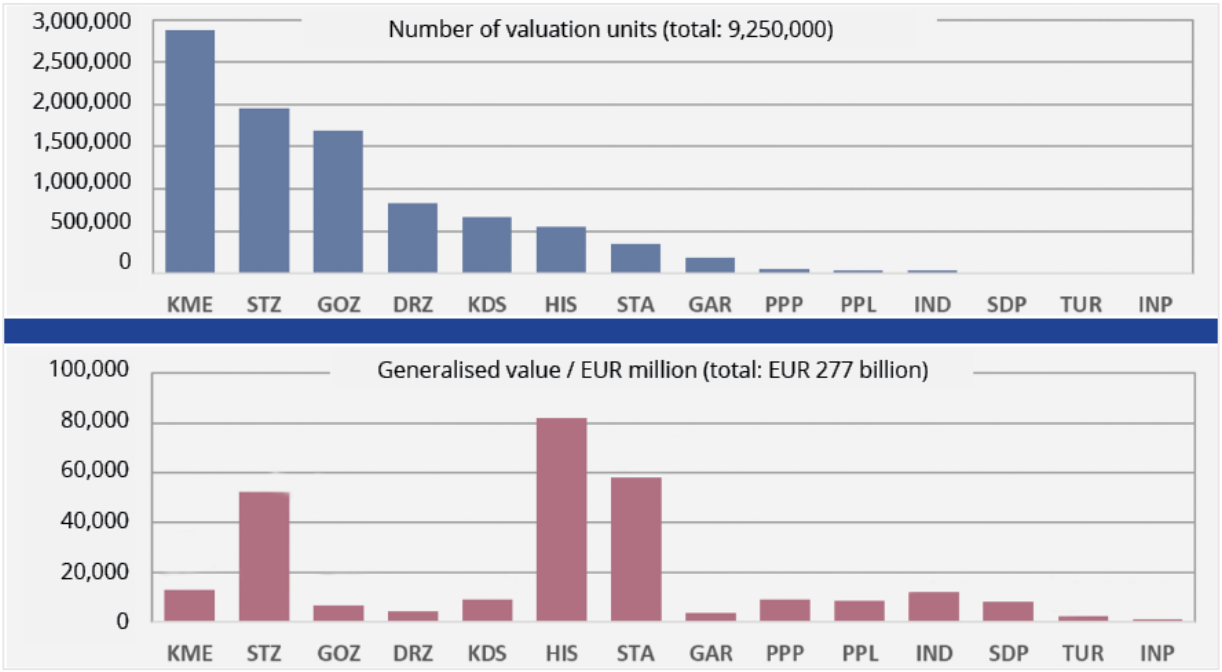


FIGURE 15: Graphs showing the Number of Valuation Units and Generalised Values (as of 10 June 2024)

Key Highlights:

Trial Valuation Calculation
Trial calculation conducted for over 9 million properties in line with the Real Estate Mass Valuation Act (ZMVN-1).

Model Review
Existing models found inconsistent with current market conditions – new models prepared for implementation in 2025.

17 New Valuation Models
Developed 17 models: 10 for buildings, 4 for land, and 3 for special valuation units (e.g., power plants, marinas).

Collaboration with Municipalities
All Slovenian municipalities involved – regional consultations held and models publicly disclosed.

14,000 Comments from Owners
Over 14,000 owner comments received, professionally reviewed, and incorporated into model improvements.

Market Analytics and Price Growth
Analyzed 40,000 sales and 30,000 rentals; total real estate capital rose from EUR 160B to EUR 298B.

Annual Market Reports
Published annual and semi-annual reports on the Slovenian real estate market with trend and price analysis.

Information System Upgrade
Implemented new modules and tools for calculations, visualizations, and statistics – publicly accessible.

Use of Artificial Intelligence
AI used for price forecasting, time-based adjustments, and support in defining valuation zones.

REAL ESTATE REGISTRATION

Real estate registration provides legally, spatially, and value-based organized information on land, buildings, and parts of buildings, serving as the foundation for secure property management and spatial planning.

The Real Estate Office and the Regional Surveying and Mapping Authorities carried out regular procedures in 2024, which included both core record-keeping tasks and activities aimed at improving data quality. Administrative procedures were conducted in accordance with the Real Estate Records Act (ZEN), which defines the conditions and procedures for registering data in the Real Estate Cadastre for land parcels, buildings, and parts of buildings, as well as in the Register of Spatial Units and the Register of Addresses.

In 2024, a total of **71,105 administrative procedures** were completed – an average of more than **5,900 per month** – and **10,455 official certificates** were issued based on the data from real estate records. Thanks to the established IT solution for the Real Estate Cadastre and the unified process involving both surveying companies and SMA staff, procedures were stable, electronic, and time-efficient.

TABLE 1: Overview of Resolved and Submitted Requests and Issued Certificates in 2024

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
RESOLVED REQUESTS	5,759	6,044	5,983	6,151	6,009	5,027	5,756	5,613	5,773	6,518	6,654	5,818	**71,105**
RECEIVED REQUESTS	5,809	5,394	6,218	6,245	5,927	4,874	5,511	5,226	6,381	6,633	6,649	6,188	**71,055**
CERTIFICATES ISSUED	**1,668**	**1,033**	**971**	**766**	**829**	**579**	**756**	**745**	**879**	**863**	**784**	**572**	**10,455**

Processes to improve spatial accuracy were initiated in 25 areas, aiming to enhance the quality of land records, particularly by aligning parcel boundaries with their actual situation on the ground. Preparations for new cadastral surveys in accordance with the Real Estate Cadastre Act (ZKN) also continued. The first public tender for the implementation of a new survey in part of cadastral municipality 198 Boračeva was published.

A systematic review of **land rating** was carried out in areas that experienced significant changes in land use or land characteristics. Key areas reviewed included the Karst region, Bela krajina, and Suha krajina. As part of maintaining the graphical layer of areas with uniform land rating, inspections of special influences (such as rockiness) also continued.

In 2024, additional checks and harmonisation of **actual land use data** were carried out, along with updates to information on **buildings and building parts** where discrepancies between the records and the actual situation on the ground were identified. Comparisons were also made using automated analyses based on aerial imagery and laser scanning.

The SMA continued to provide **IT support** for the operation of the cadastre, both for internal and external users. Maintenance of the **Cadastre Information System** included technical assistance to users, data management in XML format, support to the Regional Surveying and Mapping Authorities, and participation in resolving potential system errors.

Together with existing procedures and updated solutions, the SMA maintained a high standard of data quality in the records, ensuring transparency, timeliness, and reliability of data for citizens, businesses, and public institutions.

The system for recording the Consolidated Cadastre of Public Infrastructure operated smoothly. In 2024, a total of **1,540 documentation sets for infrastructure facilities** and **93 for connection points** were submitted, contributing to improved accuracy and usability of records for spatial planning and infrastructure development.

Key Highlights:

1,105 Administrative Procedures Completed
Stable execution of procedures under the Real Estate Records Act, supported electronically and in cooperation with surveying companies.

10,455 Certificates Issued
Over 10,000 certificates from real estate records delivered digitally.

Spatial Data Improved in 25 Areas
Parcel boundaries aligned with the actual ground situation to enhance data accuracy.

New Surveys Initiated
First tender launched under the Real Estate Cadastre Act in the cadastral municipality of Boračeva.

Systematic Land Rating Reviews
Land use and characteristics reviewed in areas of change (Kras, Bela krajina, etc.).

Updates to Building and Land Use Data
Data aligned with actual conditions, supported by laser scanning and aerial imagery.

Cadastre Information System Maintained
Technical support, XML data processing, and cooperation with regional authorities.

Consolidated Cadastre of Public Infrastructure
1,540 infrastructure and 93 connection point documentation sets recorded in 2024.

Accurate and Reliable Data
High-quality, transparent records for citizens, businesses, and public institutions.

INFORMATION TECHNOLOGY, DATA PUBLISHING AND INFRASTRUCTURE FOR SPATIAL INFORMATION

In 2024, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) continued a wide range of activities related to the operation of information systems, the development of digital services, and the provision of high-quality geodetic data.

Tasks related to the maintenance and development of the Cadastre Information System and other key systems continued, including the Register of Spatial Units, the Consolidated Cadastre of Public Infrastructure, and the Mass Real Estate Valuation System. In cooperation with the Ministry of Digital Transformation, technical support was provided for both internal and external users, and coordination was ensured for the smooth functioning of the entire geospatial information infrastructure.

Content-related and technical maintenance was carried out on the SMA's web portals, including the **Prostor portal**, the system for electronic data submission, and online viewing tools. Improved functionalities for accessing spatial data were made available to users. Regular data extracts and transfers were also provided to other public institutions, such as the Supreme Court, the Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES), and the Ministry of the Interior. Data dissemination also took place at local geodetic offices.

User support for digital geodetic content was strengthened, particularly through electronic channels, e-services, and automated data outputs. The **digitisation of archival aerial photographs** continued in cooperation with the Archives of the Republic of Slovenia, contributing to the preservation of the national collection and enabling easy digital access.

The **GNSS network SIGNAL** underwent regular system upgrades for the distribution of correction data and integration with international networks. Advanced GNSS data transmission services were provided to users for geodetic surveying and precise positioning.

As part of the **European INSPIRE directive**, the SMA continued its role as the **national contact point** in 2024. It ensured the smooth operation of Slovenia's INSPIRE spatial data infrastructure (Slovenian INSPIRE Metadata System, Slovenian Registry and Code List System, web services), and carried out monitoring and reporting tasks to the European Commission via the INSPIRE Geoportal. The SMA also participated in the coordination groups **MIG-P** (Maintenance and Implementation Group for Policy) and **MIG-T** (Maintenance and Implementation Group for Technology), where implementation procedures, specification updates, and data interoperability issues were discussed.

Special focus was placed on introducing **new digital solutions for spatial management**, especially within the Green Slovenian Location Framework project (GreenSLO4D). Spatial data collections were upgraded to support better information use in key sectors such as urban planning, agriculture, environmental protection, and the real estate market.

By participating in **targeted development projects** and other national and European initiatives, the SMA continued to develop open data standards, semantic connectivity, and automated user notifications about data changes.

Key Highlights:

Maintenance of Core Systems

Upgrades to the Cadastre, Register of Spatial Units, Consolidated Cadastre of Public Infrastructure, and the Mass Valuation System.

Technical Support for Users
Stable support for internal and external users ensured in cooperation with the Ministry of Digital Transformation.

Web Portals and Services
Enhanced functionality of the Prostor portal, viewing tools, and the data transmission system.

Data Issuance for Institutions and Public
Regular data transfers (Supreme Court, AJPES, Ministry of the Interior) and data provision at surveying offices.

Support for Digital Content
Strengthened e-services and automated data outputs to improve user support.

Digitization of Aerial imagery
Collaboration with the Archives of the Republic of Slovenia to preserve the national aerial imagery collection and ensure digital access.

GNSS SIGNAL Network Upgrade
Modernised correction data transmission and integration with international networks for improved precision and interoperability.

Implementation of the INSPIRE Directive
National contact point managing the metadata system and reporting to the European Commission.

GreenSLO4D Digital Solutions for Spatial Management
Upgraded spatial datasets supporting urban planning, agriculture, environmental protection, and the real estate sector.

Open Standards and User Notifications
Development of interoperable solutions, semantic integration, and automated user notifications about data changes.

5. ACCESS TO DIGITAL GEODETIC DATA

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) provides the public with secure, easy, and tailored access to spatial data.

PROSTOR PORTAL: https://www.e-prostor.gov.si/

Through electronic channels and web portals, such as the **Prostor portal**, the SMA ensures uninterrupted access to geodetic data. Applications are divided into three access categories based on user type: **public access** (for the general public), **personal access** (for individuals), and **registered access** (for registered users). This structure allows customized data viewing according to user needs and legally defined rights.

PUBLIC ACCESS

View:

- public web viewer for geodetic data - Javni vpogled (JV)
- archived public viewer, discontinued 31.3.2020
- 3D test viewer
- view into current real estate values
- view into the Register of Valuation Models
- access to active cadastral procedures
- viewer of archival land cadastral plans
- SMA public web services (WMS, WMTS)
- access to mass valuation information

Data Downloads:

- public web portal for geodetic data - Javni geodetski podatki (JGP)
- Slovene INSPIRE Metadata System
- various geodetic applications (SiTraNet, SiVis, SITRIK, 3TRA, ETRS89-SI, ITRS-SI)
- SMA public web services (WFS, OGC OpenApi - Features)
- Public Rest dedicated web services

PERSONAL ACCESS

View:

- personal viewer for owned real estate

Data Downloads:

- requesting non-public data

REGISTERED ACCESS

View:

- view for registered users

Data Downloads:

- information system of the Consolidated Cadastre of Public Infrastructure
- SIGNAL network

Data Management:

- reporting to the Real Estate Market Register
- cadastral information system (IS kataster)

SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA AS A KEY SPATIAL DATA CONNECTOR

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) serves as the central link between diverse spatial data types and their users for strategic decision-making. At its core are datasets on real estate, spatial units, engineering structures, topography, and base layers – all aligned to a common coordinate system. These data are essential for sectors ranging from spatial planning, healthcare, and energy to defense and agriculture. With technological support and digital solutions, SMA enables efficient spatial management and fosters the development of a sustainable and smart society.

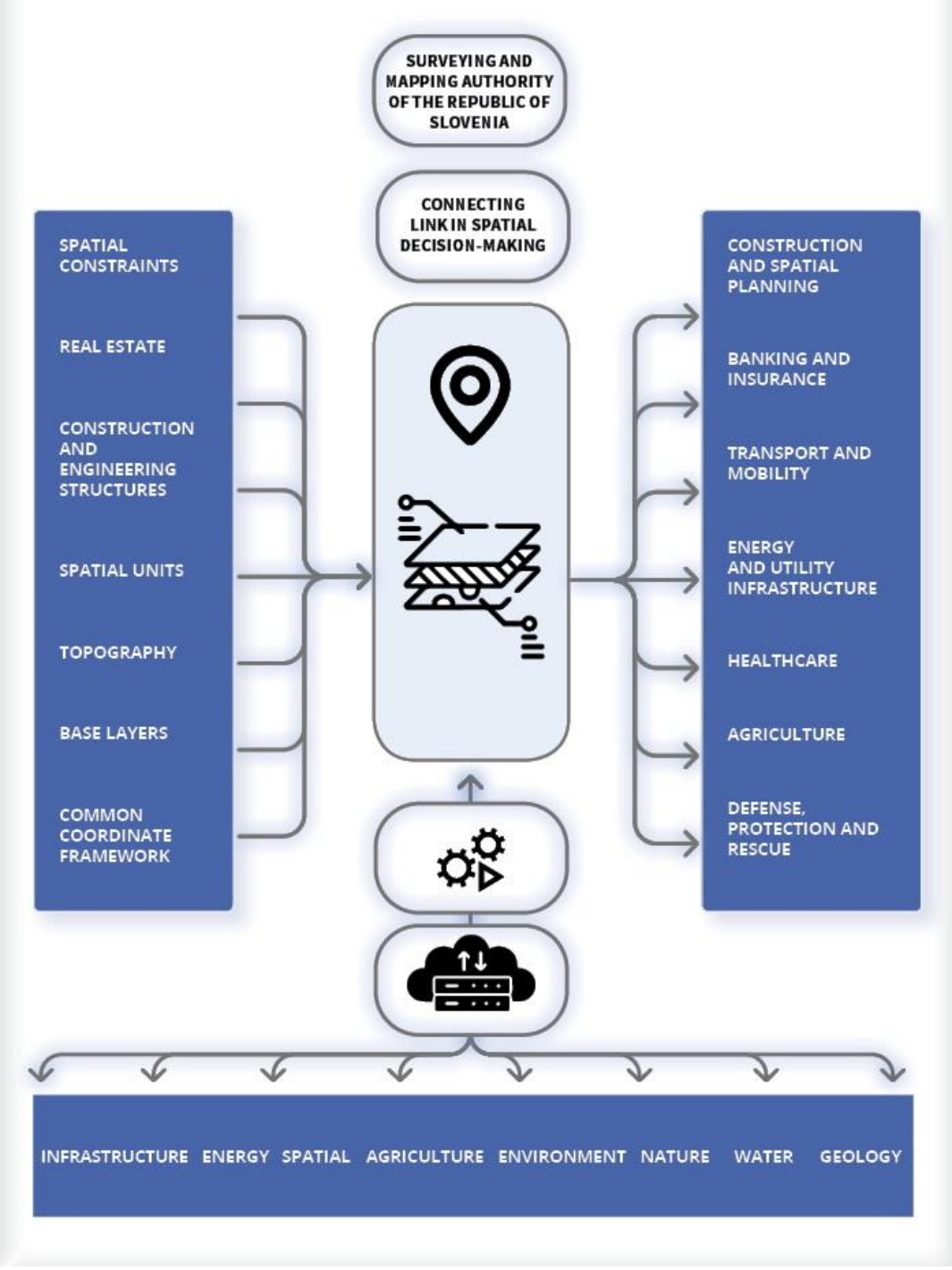


FIGURE 16: Graphic representation – SMA as a Key Integrator of Spatial Data

6. HUMAN RESOURCES

At the end of 2024, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) employed 449 staff members, of whom 314 worked at the twelve Regional Surveying and Mapping Authorities and 135 at the central offices. Compared to the end of 2023, the number of employees decreased by 1.5%, primarily due to retirements.

TABLE 2: Number of employees in the Central and Regional SMA Offices

Number of employees in Central and Regional SMA Offices on December 31, 2024	
Main Office	42
Real Estate Office	29
Mass Real Estate Valuation Office	27
Geodesy Office	25
Project unit	6
Outside Organizational Units	6
Regional Office Ljubljana	67
Regional Office Celje	30
Regional Office Kranj	25
Regional Office Koper	22
Regional Office Nova Gorica	29
Regional Office Murska Sobota	22
Regional Office Maribor	28
Regional Office Novo mesto	24
Regional Office Sevnica	17
Regional Office Ptuj	16
Regional Office Velenje	18
Regional Office Slovenj Gradec	16
TOTAL	449

The majority of SMA employees are surveying professionals with higher or university-level education. In addition to surveyors, the SMA also employs other specialists, including lawyers, economists, agronomists, IT experts, and administrative-technical staff.

The human resources policy is aligned with public administration strategies and focuses on high-quality management, as well as the continuous improvement of professional competence and operational efficiency.

TABLE 3: Employee structure by field of education

Employee structure by field of education in 2024	%
Surveyors	60%
Agronomists	2%
IT specialists	2%
Lawyers, economists and administrative staff	36%
TOTAL	100%

7. FINANCE

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) is primarily financed from the national budget and, to a lesser extent, from revenue generated through its own activities, particularly the operation of the permanent GNSS station network SIGNAL. The Annual Work Program of the National Geodetic Service is approved by the Government of the Republic of Slovenia.

In 2024, the total financial realization of the adopted budget reached 98.21%. The largest share of funds – 60% – was allocated to employee salaries. Approximately 15% was used for professional tasks within the Authority's mandate, while the remainder covered day-to-day operations, investments, and material costs.

In 2024, the total budget available to the SMA amounted to EUR 30,959,885. After reallocations approved by the Government of the Republic of Slovenia, it was reduced to EUR 29,733,161. Despite this adjustment, a high execution rate of 98.21% was achieved, corresponding to EUR 29,199,596 in total expenditure.

TABLE 4: Adopted and Effective Budget and Budget Execution in 2024

ADOPTED BUDGET	30,959,885
VALID BUDGET	29,733,161
FINANCIAL REALIZATION	29,199,596

TABLE 5: Financial realisation of the budget in 2024

SPENDING THE BUDGET IN 2024	%
Salaries	60%
Professional tasks of the SMA	15%
Investments and Material Costs	25%
TOTAL	100%

8. PROFESSIONAL AND INTERNATIONAL ROLE OF THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA

By engaging in professional networks and international organisations, the Surveying and Mapping Authority of the Republic of Slovenia (SMA) contributes to the advancement of the geodetic profession and the adoption of modern practices. In doing so, it strengthens both the efficiency of its domestic operations and Slovenia's visibility in the international arena.

"The Surveying and Mapping Authority promotes professional development and raises Slovenia's profile internationally."

COOPERATION WITH THE PROFESSIONAL COMMUNITY

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) actively **cooperates with various professional and academic institutions and associations**, including the Slovenian Chamber of Engineers (IZS), the Faculty of Civil and Geodetic Engineering (FGG), the Economic Interest Association of Surveying Contractors (GIZ GI), the Association of Surveyors of Slovenia (ZGS), individual local surveying societies, and the Association of Court Experts and Appraisers in the Field of Surveying in Slovenia (DSICGEOS).

At the beginning of 2023, a **Joint Consultative Group of experts** was established to coordinate activities related to the implementation of the Real Estate Cadastre Act and the use of IT solutions supporting its effective execution.

Based on legal provisions, a **Committee for expert audit in cadastral procedures** was also established. It includes representatives of the SMA, the Slovenian Chamber of Engineers, the Chamber of Architecture and Spatial Planning of Slovenia (ZAPS), the Faculty of Civil and Geodetic Engineering, and the Association of Court Experts and Appraisers in the Field of Surveying in Slovenia.

Between 15 October and 14 November 2024, the SMA organized **eight regional expert consultations** across Slovenia. These events were intended for SMA employees and cadastral procedure contractors, with a focus on current topics such as the interpretation of existing data, land accuracy and registration, and updates in the field of mass real estate valuation. The events were held within the framework of the strategic project *Green Slovenian Location Framework (GreenSLO4D)*.

Special attention was also given to the **52nd Surveying Day**, held in October 2024 under the motto *"Surveying – Location – Information."* The event emphasised the importance of high-quality spatial data for effective planning, spatial management, and data integration. On this occasion, the SMA received a plaque from the Association of Surveyors of Slovenia, recognising its outstanding contribution to the profession and to the digital transformation of geoinformatics.

In 2024, the travelling exhibition ***"Every Millimetre Counts – Surveying in Slovenia Through Time"*** was hosted by the Historical Archives in Ptuj, where it opened on 21 March to mark World Surveyors' Day. Due to high public interest, it remained on display until the end of the year.

The exhibition was prepared by the Technical Museum of Slovenia in cooperation with the SMA, the Association of Surveyors of Slovenia, and the Department of Geodesy at the Faculty of Civil and Geodetic Engineering, University of Ljubljana. It features several panels presenting the history of surveying,

measurement methods, cartographic development, the land cadastre, the role of surveying in spatial planning and national territory formation, scientific achievements, and practical case studies.

Special emphasis is placed on Janez Vajkard Valvasor, presented through an ambient installation as a key figure in Slovenian cartographic history. The exhibition includes over 20 historical surveying instruments and artefacts displayed in showcases, enriched with multimedia content and interactive 3D presentations.

The exhibition was previously shown in Pivka (2022), Ljubljana and Sevnica (2023), and at the start of 2024 in Gorizia. Its stop in Ptuj continued its mission of raising public awareness about the importance of surveying in spatial development, infrastructure planning, and sustainable real estate management.

FIGURE 17 in FIGURE 18: The ambient display of Janez Vajkard Valvasor and a selection of historical geodetic instruments featured in the exhibition

Surveying for Children

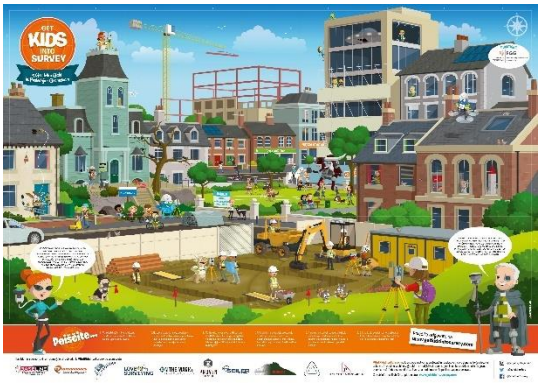
With the aim of introducing the field of surveying to younger generations, the SMA prepared **fun and exploratory educational materials for primary school children** in 2024. These materials present basic surveying concepts – such as measurement, orientation, mapping, and spatial awareness – in a colourful and accessible way.

The posters are designed to spark curiosity and promote an early understanding of the importance of space. They are intended for use in schools, libraries, technical days, and open house events. At the same time, they represent an important step toward long-term awareness of the significance of spatial data and the role of surveying in society.

The SMA plans to further expand these materials in the future with interactive digital content and workshops for children and young people.

The original posters were created by the UK-based team *Get Kids Into Survey*.

Posters and quizzes are available at:
https://www.getkidsintosurvey.com/resources/



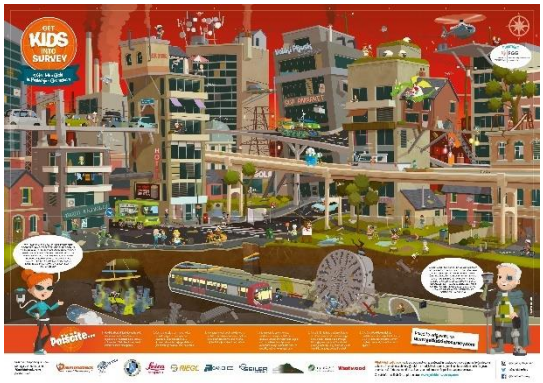


FIGURE 19 in FIGURE 20: Fun educational posters for children on the topic of surveying

THE SURVEYING AND MAPPING AUTHORITY OF THE REPUBLIC OF SLOVENIA IN THE INTERNATIONAL ARENA

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) has for many years been an active and respected member of EuroGeographics and UN-GGIM: Europe. With its professional expertise and experience, the SMA contributes significantly to the development of international standards and policies in the field of spatial data. In 2024, it assumed the chairmanship of the *EuroGeographics* Board, confirming its reputation and influence within the European geodetic community.

In addition to its involvement in *EuroGeographics* and UN-GGIM: Europe, the SMA is engaged in several other key international organizations. Notably, these include the United Nations Group of Experts on Geographical Names (UNGEGN), the Working Party on Land Administration (WPLA) under the United Nations Economic Commission for Europe (UNECE), and the Permanent Committee on Cadastre in the European Union (PCC).

Furthermore, the SMA participates in European Spatial Data Research (EuroSDR), which connects national mapping and cadastral authorities with research institutions and universities across Europe. It is also a member of the European Position Determination System (EUPOS) and the European Reference Frame Sub-Commission (EUREF) of the International Association of Geodesy (IAG).
As the national contact point for fulfilling obligations under the European INSPIRE Directive, the SMA coordinates the development of spatial information infrastructure in the Republic of Slovenia.

Participation in international organizations and professional networks enables the SMA to exchange best practices, stay informed on emerging trends in geodesy and cartography, and contribute to the development of modern spatial data management solutions. Its active role at both the European and global levels strengthens Slovenia's standing in the geodetic profession and ensures effective integration into international geoinformation infrastructure initiatives.

In 2024, the SMA also actively collaborated with peer institutions in the European region and the Southwestern Balkans, implementing activities in line with the strategic objectives set out in the Declaration on the Foreign Policy of the Republic of Slovenia (National Assembly) and the Annual Work Program of the National Geodetic Service.

CONNECTED TO EUROPE AND THE WORLD FOR A SUSTAINABLE FUTURE OF SURVEYING

In 2024, representatives of the Surveying and Mapping Authority of the Republic of Slovenia (SMA) took part in eleven key international events across Europe, Asia, and North America. Their participation in expert meetings, conferences, and general assemblies highlights Slovenia's active role in the global geodetic community and contributes to the advancement of spatial data, the exchange of best practices, and strengthened cooperation with international partners.

SKOPJE, NORTH MACEDONIA

February 2024 – Spatial Data Infrastructure Days 2024

From 21 to 22 February 2024, the fifth edition of the Spatial Data Infrastructure Days was held in Skopje, organized by the Agency for Real Estate Cadastre of the Republic of North Macedonia. The event focused on the development of spatial data infrastructure in the host country and facilitated the exchange of experiences and best practices among participants from over ten countries.

A total of 21 presentations showcased progress in spatial data interoperability and process improvement through data reuse. In the opening session, the General Manager of the Surveying and Mapping Authority of the Republic of Slovenia, Mr. Tomaž Petek, presented the Slovenian project Green Slovenian Location Framework (GreenSLO4D), which generated significant interest.

The conference offered a comprehensive overview of the status of national spatial data infrastructures in countries such as Slovenia, the Netherlands, Croatia, Albania, Kosovo, Greece, and Bosnia and Herzegovina.

ZAGREB, CROATIA

February 2024 – 16th Professional Meeting of the Surveying Authorities of Slovenia and Croatia

On 27 February 2024, the 16th professional meeting of the leadership of the Surveying and Mapping Authorities of the Republic of Slovenia and the Republic of Croatia was held in Zagreb. The meeting focused on exchanging experiences and best practices in the areas under the remit of both institutions.

The discussions included current activities and a constructive dialogue on improving access to spatial data, connecting digital spatial data infrastructures, and the ongoing modernization of geodetic systems to enhance data exchange efficiency. Despite the interruption of physical meetings during the Covid-19 pandemic, cooperation between the two authorities remained uninterrupted. Participants emphasized the importance of continuing collaboration in surveying services, spatial information, and future-oriented regional integration and innovation.

SEVILLA, SPAIN

March 2024 – EuroGeographics General Assembly;
Tomaž Petek, General Manager of SMA, elected President

From 17 to 19 March 2024, the regular General Assembly of EuroGeographics was held in Seville, Spain, bringing together 115 representatives from 42 countries and 10 partner organizations. Hosted by the Spanish National Geographic Institute, the event addressed achievements in cartography, geodesy, land registration, and the development of spatial data infrastructures.

Discussions highlighted progress in spatial data integration, user-focused services, and efficient data reuse. Participants also explored the future of geospatial information in the context of global change, artificial intelligence, and the Sustainable Development Goals. At the close of the Assembly, members approved the 2023 financial report, adopted the 2024 work program and budget, and elected new members to the management board.

Tomaž Petek, General Manager of the Surveying and Mapping Authority of the Republic of Slovenia, was elected as the new President of EuroGeographics.

DEQING, CHINA

April 2024 – Meeting of the International Advisory Committee (IAC) for the United Nations Global Geospatial Knowledge and Innovation Centre (UN-GGKIC)

On 17 and 18 April 2024, the meeting of the International Advisory Committee (IAC) for the United Nations Global Geospatial Knowledge and Innovation Centre (UN-GGKIC) was held in Deqing, China. The event was attended by Tomaž Petek, General Manager of the Surveying and Mapping Authority of the Republic of Slovenia.

The UN-GGKIC was established under the auspices of the United Nations to support countries—particularly developing nations—in building capacity for geospatial data management. The meeting concluded with the adoption of a strategic plan and work program, including technical assistance, knowledge exchange, and the development of innovation platforms. The Centre is expected to play a key role in supporting the

Sustainable Development Goals and implementing the Integrated Geospatial Information Framework (IGIF).

BANJA LUKA, BOSNIA AND HERZEGOVINA

April 2024 – Geospatial Data Days 2024

The first international Geospatial Data Days conference was held in Banja Luka on 22–23 April 2024, focusing on the development of spatial data infrastructure (SDI). The event brought together representatives from former Yugoslav countries, along with guests from Sweden, the Netherlands, and the World Bank, to exchange experiences and perspectives on SDI development.

Slovenia was represented by Dr. Primož Mavsar and Dr. Andreja Švab Lenarčič, who presented progress within the Slovenian geoinformation community, with a particular focus on the Geo Slovenia project. Slovenia was recognized for its cross-sectoral integration processes, while representatives from more advanced countries emphasized user-centric SDI development as a key factor for long-term success.

BRNO, CZECH REPUBLIC

May 2024 – 39th Meeting of Surveying Authorities from the Former Habsburg Monarchy

From 14 to 16 May 2024, Brno hosted the 39th meeting of surveying authorities from the former Habsburg Monarchy, focusing on updating cadastral data and improving land administration methodologies.

The Surveying and Mapping Authority of the Republic of Slovenia was represented by Vasja Kavčič, Jože Dajnko, and Dominik Zupan. Vasja Kavčič gave a presentation on the maintenance of the Slovenian Real Estate Cadastre, including routine procedures, vectorization of floor plans, and the data quality control system. The meeting provided insights into various cadastral systems, promoted the exchange of best practices, and opened opportunities for continued regional cooperation in cadastre improvements.

BANJA LUKA, BOSNIA AND HERZEGOVINA

June 2024 – 16th Regional Conference on Cadastre and Spatial Data Infrastructure

Slovenia participated in the 16th Regional Conference on Cadastre and Spatial Data Infrastructure, held on 25–26 June 2024 in Banja Luka. The event brought together surveying authorities from the Western Balkans, international donors, and professional associations. Key topics included geospatial infrastructure, cadastre, the real estate market, and sustainable development.

Special attention was given to the implementation of the 2019 Memorandum of Cooperation and the strengthening of institutional capacities. Representatives of the Surveying and Mapping Authority of the Republic of Slovenia presented the system of actual joint land use, while General Manager Tomaž Petek presented the role and activities of EuroGeographics. Participants reaffirmed their commitment to continued regional cooperation, with the next conference scheduled for 2025 in Montenegro.

NEW YORK, UNITED STATES

August 2024 – 14th UN-GGIM Session

Tomaž Petek, General Manager of SMA, on the UN-GGIM Europe Executive Committee

Slovenia participated in the 14th session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM), held from 7 to 9 August 2024 at UN Headquarters in New York. The event gathered 238 delegates from 75 countries, along with 108 representatives from academia, the private sector, and international organizations.

Tomaž Petek, General Manager of the Surveying and Mapping Authority of the Republic of Slovenia, attended as a member of the Executive Committee of UN-GGIM Europe. He contributed to discussions on strategic directions in global and national geospatial governance, integrated geospatial policy, and the implementation of the UN's Integrated Geospatial Information Framework (IGIF). The session adopted

several key documents, including the draft of the first global development program for geodesy, and confirmed the agenda for the 2025 session.

FRUŠKA GORA, SERBIA

October 2024 – 1st Congress of Surveyors of Serbia and Republika Srpska

From 13 to 15 October 2024, representatives of the Surveying and Mapping Authority of the Republic of Slovenia participated in the First Congress of Surveyors of Serbia and Republika Srpska, held at the Fruške Terme resort in Fruška Gora. The event brought together more than 500 professionals from across the region.

Organized by the Republic Geodetic Authority of Serbia and the Republic Authority for Geodetic and Property Affairs of Republika Srpska, the congress focused on digitalization, sustainable development, and the evolving role of geodesy in society. Tomaž Petek, General Manager of the Surveying and Mapping Authority and Chair of the EuroGeographics Management Board, delivered a keynote address titled Geospatial Ecosystem for Sustainable Development. Damjan Kvas, MSc, participated in a panel discussion on public-private cooperation in cadastral procedures.

The conference concluded with a joint declaration highlighting the importance of digitalization, data integration, innovation, and professional independence in shaping sustainable geospatial solutions for the future.

NEUM, BOSNIA AND HERZEGOVINA

October 2024 – Spatial Data Infrastructure Days of the Federation of Bosnia and Herzegovina

The Federation of Bosnia and Herzegovina Spatial Data Infrastructure Days took place on 17–18 October 2024 in Neum, bringing together around 100 participants from 58 institutions, including international organizations, academic institutions, and the private sector.

Organized by the Federal Administration for Geodetic and Real Property Affairs of the Federation of BiH, with support from the Swedish-funded DELEF project, the conference provided a platform for discussions on digital transformation and the environmental sustainability of spatial data.

Tomaž Petek, General Manager of the Surveying and Mapping Authority and Chair of the EuroGeographics Management Board, was an invited keynote speaker. He emphasized the importance of spatial data integration in supporting sustainable development and modern land management.

BRDO PRI KRANJU, SLOVENIA

December 2024 – European Forum for Geography and Statistics (EFGS 2024)

The European Forum for Geography and Statistics (EFGS 2024) was held from 10 to 12 December 2024 at Brdo pri Kranju under the slogan Empowering Data for Shaping Europe’s Future.

Organized by the Statistical Office of the Republic of Slovenia and the Surveying and Mapping Authority, in cooperation with Eurostat, the conference brought together leading experts in geography and statistics. Topics included the implementation of the Global Statistical Geospatial Framework, demographic change, digital transformation, sustainable development, and the European Data Strategy.

9. FUTURE PLANNED ACTIVITIES

The Surveying and Mapping Authority of the Republic of Slovenia (SMA) will continue its efforts in 2025 to enhance the quality of spatial and real estate registers and to develop digital solutions that support users. A key priority remains the improvement of data quality, particularly the graphical layer of the Real Estate Cadastre, as well as the enhancement of positional accuracy through local homogenisation and new surveys.

"Advanced infrastructure for efficient and digital spatial management of the future."

SMA aspires to be a leading innovator and trusted partner in the field of spatial data and real estate management. Its activities support sustainable spatial development and the digital transformation of society. The Authority will continue to develop and upgrade advanced geodetic and information infrastructures that enable the reliable, up-to-date, and comprehensive collection, processing, and distribution of spatial data.

A cornerstone of this vision is the establishment of integrated digital solutions that ensure data connectivity and interoperability, facilitating digital collaboration among stakeholders at local, national, and international levels. SMA will remain at the forefront of adopting new technologies such as artificial intelligence, process automation, and 3D modelling – each contributing to greater efficiency and precision.

Special emphasis will be placed on the **project "Let's Enter the Digital Space – VAIKARDD"** (Slovene: "Vstopimo v digitalni prostor – VAIKARDD"), which focuses on 3D/4D data collection, emerging technologies, and the development of a digital geospatial twin. This twin will become a key tool for spatial planning, infrastructure management, and evidence-based policymaking. Digitalisation, integration, and data transparency will accelerate and improve decision-making, enhance information access, and increase user trust.

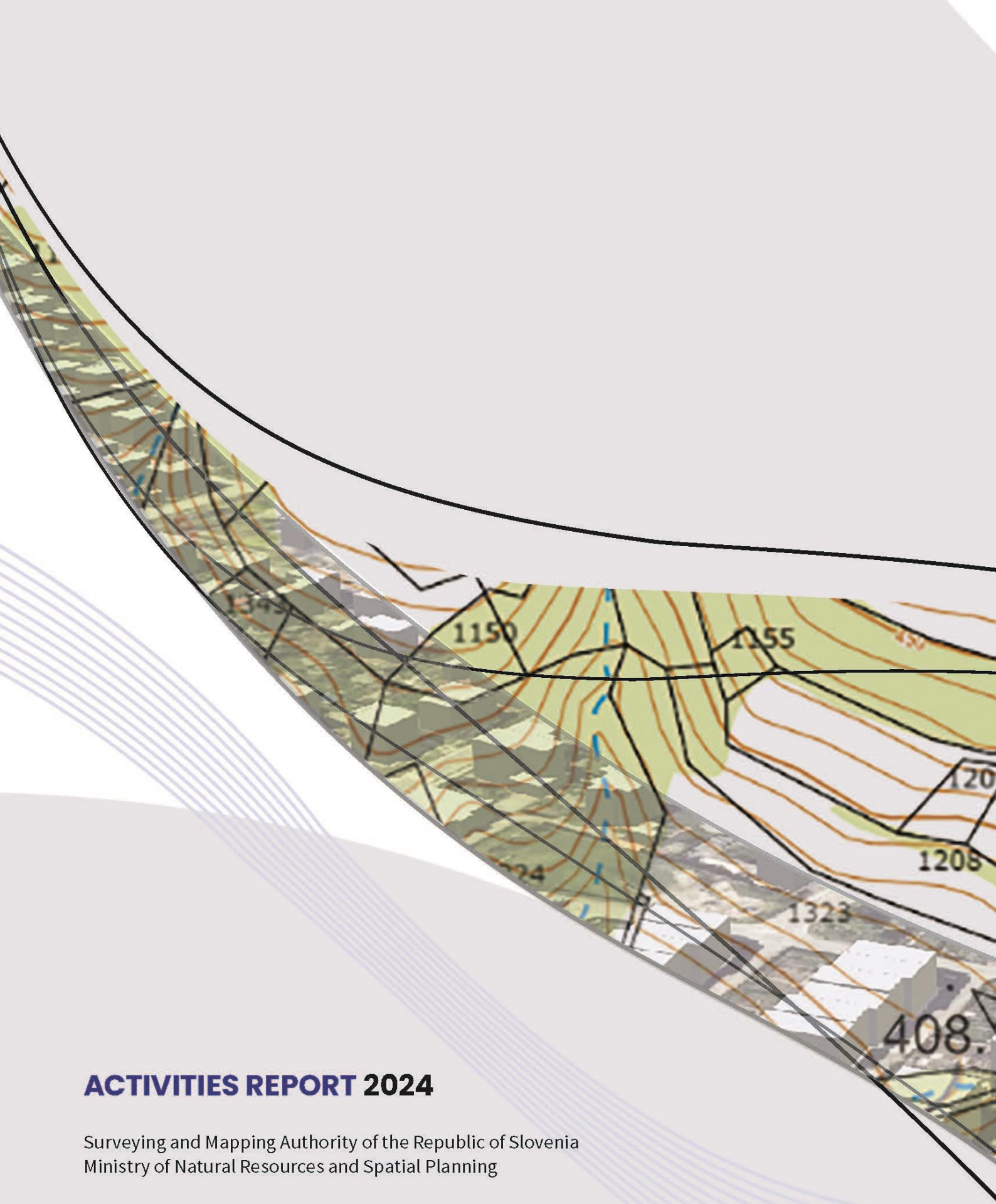
SMA will also continue investing in the professional development of its staff, equipping them with the expertise and skills required to leverage cutting-edge technologies and implement innovative solutions to spatial challenges. International cooperation will further strengthen knowledge exchange and the sharing of best practices, contributing to the ongoing modernisation of the geodetic service.

A comprehensive approach to developing spatial data and infrastructure will ensure that SMA remains a centre of digital excellence and a key institution in the governance and management of Slovenia's territory—in line with the needs of a modern society.

10. SLOVENIA IN NUMBERS

(Statistic on some general spatial data in Slovenia, representative for December 31st, 2024)

- house numbers 575.413
- streets 10.478
- settlements 6.035
- municipalities 212
- land plots 5.810.112
- buildings 1.172.070
- parts of buildings 1.909.815
- cadastral municipalities 2.698



ACTIVITIES REPORT 2024

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