

CONCEPT
Digital Transformation of the Kyrgyz Republic for 2024-2028
Chapter 1: Introduction

Rapid technological development is changing the world as we know it, opening up unique opportunities for nations to overcome the most complex challenges. Particularly impressive is the experience of many countries that, in the context of the COVID-19 pandemic, have shown how digital technologies add resilience to public institutions that provide continuous and reliable public services. Today, we are witnessing how artificial intelligence technologies are making a breakthrough in human development, increasing productivity several times over and changing future professions forever. Constant technological change has become the new norm, including for our country.

The country is moving steadily forward in the digital direction and has achieved some successes. In particular, elections at all levels are conducted using biometric data of voters, which makes it impossible to commit many violations. The system of electronic interdepartmental interaction "Tunduk" has been implemented, which has become a bridge between information systems, improving data exchange and facilitating cooperation both in the public sphere and with the private sector. We have also implemented the State Portal for e-services and a mobile application for public services, through which citizens use digital documents and receive certificates and documents online from the comfort of their homes, located anywhere in the world. We established the State Agency for Personal Data Protection, which carefully protects citizens' rights and ensures that personal data processing complies with the law. Our attention to cybersecurity, expressed in the opening of the Center for Cybersecurity and the adopted Strategy for Cybersecurity, shows the state's readiness to respond to the challenges of cyber incidents.

Digitalization has also made a significant contribution to improving the efficiency of public administration. From the introduction and use of electronic document management systems to the successful automation of personnel records, we are confidently eliminating paper-based processes and increasing the efficiency of organizations. Through information systems, local governments register households and citizens, increasing the availability of public services, simplifying and speeding up service processes.

In priority areas in the social sector, such as education, health care and social assistance, key digitalization projects have been launched: information systems for enrolling children in schools and kindergartens, a national medical laboratory information system iLab has been created, a digital health profile has been introduced, and monitoring of the population's health status through a digital register of outpatient visits is being intensified.

However, despite the fact that technical conditions for digital interaction are being created everywhere in government agencies, the country's citizens have not

yet fully felt the results of digital transformation in their ordinary lives. Citizens expect breakthrough changes, when the introduction of innovative technologies makes their social and economic activity more comfortable and leads to a significant improvement in the quality of life.

In this regard, the main principle of digital transformation should be the primacy of the interests of the citizen and business, for which digital services should be easily accessible, intuitive and free of charge. At the same time, the number of digital services should not increase, but on the contrary, the flow of citizens' appeals to the state should be reduced as much as possible due to the strengthening of digital interaction between government agencies and commercial organizations.

Based on this, one of the strategic goals is a complete digital reform of public administration, which should significantly simplify and sometimes completely eliminate bureaucracy and reduce the cost of performing public functions. Digital data generated in all spheres, and especially in education and health care, should become a tool for measuring the efficiency of budget expenditures (taxpayer payments) and assessing the real situation in these areas. For this purpose, public institutions should completely reorganize internal processes to formulate public policy based on data and control the execution of tasks through digital tools.

In the digital transformation of the economy of the Kyrgyz Republic, we will pay special attention to traditionally strong sectors such as energy, mining, construction, telecommunications and others. The state will create all the necessary conditions for innovative activity, which will continue to increase the productivity of enterprises and the efficiency of resource utilization.

The proposed accelerated digital transformation of the Kyrgyz Republic will provide an opportunity to maximize the potential of digital technologies for the benefit of all citizens.

From now on, the contribution to digital transformation is the main indicator of the effectiveness of the state body and management of any level - from the Cabinet of Ministers of the Kyrgyz Republic to the self-government bodies. Failure to achieve the targets of digital transformation will be considered as a basis for addressing the responsibility of the relevant bodies and managers. Times of change are a chance for Kyrgyzstan to harness the power of technology to make a great leap towards prosperity and sustainable development.

The strategic goal of the Kyrgyz Republic is to create a digital ecosystem that promotes sustainable and inclusive development, improves public services, utilizes data in decision-making, empowers citizens and improves their quality of life, preserves and promotes our cultural heritage, creates a robust digital infrastructure, and fosters economic development and innovation.

As part of accelerating the digital transformation of the Kyrgyz Republic, we expect to achieve three key results by 2028:

- the efficiency of government agencies is improved by optimizing processes through the use of end-to-end digital platforms and systems in public administration and interaction, which should lead to a reduction in the number of government processes and the elimination of duplication;

- the interaction of the state with citizens and business is qualitatively improved and simplified. By reducing bureaucratic procedures and lowering the costs of providing government services, new opportunities are created for businesses, which, using the Internet and digital technologies, gain access to global financial and intellectual resources and international markets;

- state information systems and databases are integrated with each other to the maximum extent possible, which will eliminate data duplication, save resources for data collection and storage, accelerate data-based decision-making and also enable businesses to launch services for the population and businesses;

- development of the digital economy, thanks to widespread digitalization and automation of processes, strong public and private IT companies are emerging that can provide services and develop products that can compete with global suppliers.

One of the key objectives of this strategy is to make digital data accessible to both public and private entities. As a result, the ways in which citizens access government, financial and other services and services, including the use of familiar end-user platforms, will be significantly expanded. Instant combined services will emerge, allowing both the public and private sectors to provide integrated services.

Data obtained from users will be used to further improve public administration processes and services provided. Physical interaction with public authorities will be minimized and digital interaction will be prioritized when dealing with end-users.

For this purpose, public authorities should make full use of digital tools, expanding their capabilities to ultimately create a modern and responsive state apparatus to improve the quality of life of the society.

Chapter 2: Strategic Goals

§ 1. Reform of public administration to increase its efficiency through digital transformation of the processes of development and implementation of public policy, coordination and interaction of state bodies, as well as enforcement control

Kyrgyzstan has already made confident steps in the development of e-governance, but with the requirement of time it is necessary to embark on digital transformation and "smart" public administration. Digital governance implies a public administration architecture that will enable data-driven decision-making. For this purpose, public administration processes should be restructured (re-engineered) so as to collect information, integrate it, cross-process it, analyze and extract the necessary information for making managerial decisions as efficiently as possible.

When re-engineering public administration business processes, it is necessary to be guided by the main principle of digital transformation "digital first" (digital first), which means prioritizing records in digital registers. The digitization of paper-based processes should not be allowed. Digital citizen data should be used for this purpose first. The design of services and services should be digitally driven. In addition, all state and local government bodies, including judicial, law enforcement and legislative bodies, should fully switch to the use of digital documents. This includes not only the correspondence of state bodies on digital documents, but also all documents, decisions, local acts, contracts and agreements that should be adopted

and concluded initially in digital format and using digital data. If necessary, statements with a QR code may be issued for citizens to verify electronic signatures and confirm the validity of documents, including diplomas, certificates, pension books and others.

This also includes the prohibition for state and municipal bodies to request data from citizens, if this data is already available in the information systems of the state, as well as a ban on charging fees from citizens of the Kyrgyz Republic for access to data about them in any form, including when providing digital services.

At the same time, some business processes may affect the optimization of processes in several ministries and agencies at once. In this case, it is necessary to use a project approach for operational harmonization and coordination of actions. The digital platform for control over project groups will automate the initiation of project groups, identification of participants, tasks, and control over the design of a new business process and its launch.

The following tasks will be realized in order to achieve the set goal:

- Ubiquitous introduction of digital platforms, information systems and databases into state processes. State bodies should form the necessary databases and registers based on functions and powers. This requires analysis and re-engineering of public administration processes, optimization of data exchange within the information systems of state bodies, as well as the provision of better digital services to citizens. One of the indicators of effective implementation of digital solutions should be the elimination of old/paper processes. When developing digital services, ensure that government agencies interact among themselves, with businesses and citizens exclusively through government systems;

- maximizing the elimination of human intervention in the digitization of processes. It is necessary to remove all unnecessary processes where a civil servant simply re-confirms data in state information systems. This should be eliminated right away in the design process;

- using digital project management platforms to develop new business processes in the provision of digital services to citizens. In order to quickly track the work of interdepartmental, cross-sectoral project teams, it is necessary to introduce a digital platform to monitor the implementation of decisions, including the launch of new business processes and optimized digital services to the population. The platform should enable consolidation and processing of information on the progress of project implementation from start to finish in accordance with specified time constraints and performance indicators. For example, when an energy or transportation project is initiated, it is assigned a unique identifier, then it is registered in this information system and the project status is periodically updated online until the project is completed;

- develop training programs for civil servants on digital skills, data management, analytics, and cybersecurity. Develop and approve requirements for digital competencies for civil servants at all levels of government. Ensure that new digital skills are integrated into everyday work processes so that employees can constantly apply them in practice. Introduce requirements for mandatory

certification of civil servants on digital competence into regulatory legal acts, and digital competence should be one of the criteria when entering the civil service;

- attracting competent IT specialists in the field of digitalization to the public sector is one of the important criteria. Attracted and current civil servants should be competent in automating their internal business processes, developing technical specifications and other necessary digital solutions, and be able to analyze and interpret data in order to make important decisions based on it.

§ 2. Deep integration of state information systems and databases to automate and simplify data exchange both between state agencies and between the state and businesses

To ensure proper integration of public and private information systems, approved identifiers and directories should be used, such as the use of Personal Identification Numbers (PINs) and Individual Taxpayer Numbers (ITNs) as the basis for creating records in public and private systems.

Ultimately, all data from government systems should be available to businesses within the framework of legislation, so that those using this data can create new integrated services for citizens and businesses. An example of such a service could be registering an individual entrepreneur and obtaining tax registration through a private service provider. This requires comprehensive assistance to the private sector in building information systems and expanding access to data held by the state to provide better digital services to the public.

In order to achieve the objective, the following tasks need to be accomplished:

- development of standards, protocols, open APIs to ensure compatibility and interoperability of data between different industries, organizations and systems. Regulating the collection, amendments, data exchange procedures for integration with other and information systems, ensuring the availability of up-to-date and meaningful overview of databases and datasets, data quality control and improvement on an ongoing basis using common standards and classifications, including international ones;

- ensuring data openness, promoting data sharing and cooperation between industries by creating platforms, mechanisms and incentives for data sharing, including data sharing agreements between government agencies, businesses, research institutes and others.

§ 3. Simplification of interaction between the state, society and business through the introduction of digital services

Simplifications will lead to a reduction in bureaucratic procedures and costs of providing public services, stimulating and expanding economic activity of the population.

Digital transformation and modern technologies have significantly changed the way of doing business, enabling companies to reach higher levels of competitiveness and markets. Lagging behind in the implementation of digital technologies threatens to make their businesses disappear or at least lose market share.

This requires maximizing the involvement of the business sector in the development and support of digital solutions that help the government provide services to the public. This principle is based on the belief that the business sector can make a significant contribution to improving public services and making them more accessible, convenient and efficient for citizens.

In order to achieve the set goal, the following tasks need to be accomplished:

- state and municipal services and services, including licensing, reporting and other authorization processes, should be available to citizens and entrepreneurs through portals and mobile applications not only through state platforms, but also through private mobile applications and systems;

- increasing the use of government databases for businesses to develop new services for the public. Conducting open and transparent tenders and requests among the business community for the development and provision of digital services, as well as ensuring and enforcing regulations and standards for data exchange to ensure the security and confidentiality of citizens' data.

§ 4. Data driven governments (data driven governments)

Data collected by public authorities are of strategic importance because they can be used to develop and evaluate overall policy, make decisions, plan and monitor public sector programs and services.

Data-driven governance will improve the efficiency of decision-making and the quality of public services, make processes transparent and ensure more informed decision-making, contributing to development and improving the lives of citizens.

In order to make effective decisions and optimize data-driven public sector processes, government agencies should actively collect and integrate data from various sources, including government databases, social media, public surveys, etc. This will provide a comprehensive view of the status and needs of citizens, as well as evaluate the effectiveness of programs and services.

It is necessary to organize a staff (IT analyst) in each state agency to analyze data, identify trends, patterns and relationships between different variables. This should help in making informed decisions and developing evidence-based strategies.

Also use machine learning algorithm and statistical models to enable government agencies to forecast and predict the outcomes of various programs in order to optimize resources and plan budgets.

The use of data should help create transparent and open systems of governance where citizens should have access to information about the activities of public bodies, decisions made and the performance of programs. This contributes to improving citizens' trust in public bodies and enhancing the effectiveness of governance.

§ 5. Artificial Intelligence

Artificial intelligence (AI) is one of the key technologies of digital transformation. It has the potential to transform traditional sectors of the economy and social sphere of Kyrgyzstan, increase the efficiency of public services and improve the quality of life of the population.

Priority projects on AI for digital transformation of Kyrgyzstan should be aimed at achieving the following goals:

- Improving the efficiency of public services. AI should be used to automate routine tasks, improve the accuracy and speed of information processing, and personalize services. For example, AI can be used to automate document processing in government agencies, develop personalized recommendations for citizens in health care, education and social security;

- development of new sectors of the economy. AI should be used to create new products and services, increase labor productivity and reduce production costs. For example, AI can be used to develop new medical technologies, automate production processes in industry and agriculture, and create new platforms for e-commerce;

- improving the quality of life of the population. AI should be used to improve security, reduce crime, and improve education and healthcare. For example, AI can be used to develop video surveillance and facial recognition systems, develop artificial intelligence systems to assist in decision-making in law enforcement agencies, and develop new methods of training and disease diagnosis.

Based on these objectives, it is necessary to implement the following priority AI projects for the digital transformation of Kyrgyzstan:

- creation of the National AI Platform, which includes a repository of AI models and data, AI startup gas pedals, and AI competence centers;

- support for AI research and development, which includes funding of AI research, establishment of AI research centers, training and internship of AI specialists abroad;

- establishment of a national council and later a center (institute) for AI development (ai.gov.kg). This council (center) will conduct expert examination of the implementation of the AI development strategy in the country, popularize AI in the professional community, involving schoolchildren and students in the process of teaching AI technologies, and introduce national normative regulations in the field of AI;

- introduce a training program in higher education institutions in the field of AI, machine and deep learning, neural networks and big data. In particular, training of the following specialties: Data Scientist, Data Engineer, AI Architect, Data Architect, AI Project Manager;

- creation of a high-performance computing center for research and development (R&D) in the field of AI technologies (AI Computing Center). The computing capacity of the center is 50 petaflops, with further potential to increase the capacity to 300 petaflops;

- creation of AI platforms that "understand and speak" the Kyrgyz language, recognize the Kyrgyz script, platforms for social data analysis, medical diagnostics in the Kyrgyz language, analysis of the agricultural sector, improvement of the transport system, documentation and preservation of Kyrgyz cultural heritage, and optimization in the energy sector.

The state will stimulate state and local self-government bodies that want to implement systems and solutions for data analysis, automation and monitoring systems based on AI technologies.

Chapter 3: Building Digital Infrastructure

In order to develop effective digital transformation, it is necessary to build a modern sustainable technical infrastructure that will provide citizens and business communities with broadband internet network, enable storage and processing of large data sets using cloud technologies.

Digital infrastructure forms the basis of Kyrgyzstan's digitalization goals, without which other strategic directions cannot be implemented. In this regard, it is necessary to ensure a high degree of confidence in achieving the goals of digital infrastructure development.

Planned digital infrastructure projects:

§ 1. Creation of the State Data Processing Center (hereinafter - SDPC) and the "Government Cloud - G-Cloud" platform

The flow of information required for the activities of government agencies and enterprises, ensuring interaction and data exchange between government agencies is constantly increasing. The volume of information to be processed and analyzed is constantly growing, the number of automated information systems in use is increasing rapidly, and there is a need to centralize data processing in a single IT space.

Establishment of the State Data Processing Center will ensure increased productivity of state and municipal bodies, optimization of IT infrastructure, guaranteed efficiency and uninterrupted operation, thereby improving the quality of state and municipal services and significant financial savings in the implementation and development of IT projects and IT infrastructure.

To launch a full-fledged ecosystem of digital transformation of the Kyrgyz Republic, it is advisable to introduce a specialized platform "Government Cloud - G-Cloud", designed for use by all government agencies, departments and enterprises.

Under the definition of cloud platform (cloud computing) is considered a model for providing ubiquitous, convenient network access "on demand" to a common pool of customizable computing resources (networks, servers, memory, applications and services) that can be provided in a short time with minimal management efforts or minimal interaction with the technical operator.

Create a centralized repository (physical or virtual) that will host specialized systems for managing, storing, processing and disseminating information and data.

Creation and deployment of high-performance IT infrastructure and local physical servers that support applications and workloads through physical infrastructure pools.

Network reliability is ensured through secure external communication channels. Infrastructure management with the help of the operational portal is carried out through a special VPN tunnel, which is encrypted with special protocols in accordance with certain standards.

The platform provides for the provision of public services:

- infrastructure as a service one of the service models by which users are provided with information technology resources;
- virtual servers with specified computing power, operating system and network access;

- platform as a service consumer gets access to the use of information technology platforms (operating systems, database management systems, software, development and testing tools hosted in the Cloud). In this model, the entire information technology infrastructure, including computing networks, servers, storage systems, is fully managed by the owner. The owner also defines a set of platform types available to users. The user is given the opportunity to use the platforms, create virtual instances of them, install, develop, test, and operate application software on them, while dynamically changing the amount of computational resources consumed.

The move to a centralized infrastructure will provide the Government with an opportunity to optimize ICT costs and rationalize their use, while public authorities will be able to use products tested by experts, a multitude of off-the-shelf solutions and best practices, and accelerated acquisition of new capacities and information systems.

As a result of implementation, there will be a transition from the creation of separate disparate implementation models to the model of centralized formation and lease of necessary capacities and services. Compliance with reliability (redundancy) and information security requirements will be ensured through a unified policy and standards, as well as a significant reduction in budget financing for the creation, modernization, operation, and support of information systems of government agencies and departments. Unified information security standards, optimization of IT equipment of state bodies, flexible scaling and cost reduction of solutions to ensure continuous service availability, security and disaster recovery will be introduced.

§ 2. Construction of fiber-optic communication lines (hereinafter - FOCL)

The communications industry is one of the key areas in the construction of infrastructure, one of the main factors in the development of public-private partnership, allowing to achieve high indicators of development of information communication community in the Kyrgyz Republic. At the same time, it will enable the development of business sector infrastructure, creation of favorable conditions for attracting international donors and investments, solution of social security issues, development of automated electronic services, electric and postal communication networks, satellite communication systems, television and radio broadcasting systems.

Currently, the priority areas are to provide all settlements of the Kyrgyz Republic with high-speed and affordable Internet through the construction of fiber-optic communication lines, to provide municipal and social facilities, as well as the population in the regions to high-speed Internet. This measure will help residents in the regions to receive electronic services, conduct business via the Internet, receive online education and of course participate in the e-governance system.

FOCL construction should be simplified through legislative measures such as updating outdated land acquisition regulations, mandatory pre-installation of last-mile fiber, and encouraging infrastructure sharing among network operators.

A co-deployment approach should be applied to the design of FOCLs with sections of transportation, energy and other infrastructure. In urban areas, it should be mandatory in the designs of capital structures to lay down approach paths for telecommunications infrastructure, provide technical rooms for telecommunications equipment, and share sewer infrastructure and trolleybus lines.

§ 3. Creating conditions for digitization of archival data

In the world of modern information technologies almost no organization can do without an electronic archive, which will maximally preserve all documents of historical, economic, political, social, cultural value of the Kyrgyz Republic, replenishment of the National Archive Fund of the Kyrgyz Republic, as well as creating conditions to meet the needs of citizens, government agencies of the Kyrgyz Republic, organizations and departments in retrospective information. Most of the paper archive needs digitalization and creation of an electronic archive.

Work on the formation of electronic archive is one of the most important stages in the process of formation of modern information and telecommunication infrastructure and provision of quality public services on its basis.

Also, the full functioning of automated information systems depends on the availability of up-to-date and reliable information stored in information bases and archival documents.

In this regard, government agencies need to organize work on the step-by-step digitization of their archival documents. First of all, digitization should start with the most relevant data for the needs of state bodies, local governments and business structures, namely data on citizens (in the field of health care, education, pensions, law enforcement and others) using a set of specialized technical and software tools.

§ 4. Creation of the State Digital Archive

Creation of the State Archive of Electronic Documents is one of the most important stages in the process of formation of modern information and telecommunication infrastructure and provision of quality public services on its basis.

With the introduction of the electronic document management system and other digital solutions in state bodies, there is an urgent problem of ensuring long-term preservation of the electronic documents created. In addition, most of the paper archive needs to be digitized.

§ 5. Development of spatial data infrastructure

The development of spatial data infrastructure (hereinafter - SDI) will be one of the main state information resources, integrating information from many disparate sources and linking it to a specific geographical location or time period. SDI is intended to be the main tool in statistics, management, analysis, modeling and terrain planning, in investment and transparency in land, infrastructure, environmental, economic sectors.

The development of SDI is conditioned by objective needs of citizens, organizations, public authorities and local self-government bodies in effective use of reliable, operative and relevant spatial data.

For the development of spatial data infrastructure, it is necessary:

- all state organizations to use a unified state platform of SDI in their information systems, to create spatial data repositories;
- define standards and regulations for spatial data exchange (to ensure compatibility of spatial data from different sources and facilitate their use in different applications), including open platforms for access to spatial data from different sources, including state data, business, IOT, tools for their analysis and visualization;
- provide APIs for government agencies and businesses to integrate SDI. The IPD platform should ensure seamlessness, accessibility and reliability;
- create a geoportal/geosite with spatial data, with the tools necessary to upload/download data (API).

Chapter 4. Strategic digital initiatives by sectors until 2028

The primary objective of the digital transformation of public administration for the period 2024-2028 is the development and implementation of sectoral information systems, as well as their integration with each other and the business. As part of the program for the comprehensive digital transformation of public administration, it is planned to implement a number of key projects in the sectors discussed below.

§ 1. Digital health

The goal of digital health transformation is to increase the efficiency of the health care system by: improving the quality of health care, increasing the accessibility of health care services, building more efficient management of health care resources and budgets through digital systems and analytics, simplifying and automating document management and administrative processes in the health care system.

The data ecosystem in the health care system should ensure full and timely registration of information about each patient's visit to the health care organization and the services received by the patient. Health care organizations, regardless of their form of ownership and departmental affiliation, must transmit all medical data on patients, including test results, appointments, prescriptions, diagnoses and other medical data. This data should be available to citizens through state platforms, as well as through the services of non-governmental organizations, with the exception of medical data of employees of internal affairs bodies of the Kyrgyz Republic.

To improve the diagnosis of diseases and the selection of the most effective treatment methods, the main priority is the active development and implementation of artificial intelligence technologies. By analyzing the accumulated large amounts of data and using artificial intelligence, it will be possible to detect early signs of serious diseases and provide patients with information together with doctors to make the right decisions regarding their health and treatment.

We face uneven access to health services in different remote regions of the country. In some places, there is a shortage of medical personnel, and sometimes the qualifications of doctors are insufficient to accurately diagnose and treat certain diseases. With the use of modern communication and information technologies, we can reduce this gap and improve the level of medical services.

In order to achieve this goal, it is necessary to ensure that medical staff are trained in digital skills, from continuing professional development to the application of artificial intelligence in practice.

Planned projects in the healthcare system:

- introduction of a digital medical record, which should include the following data: patient identification data, history of visits to health care organizations of all levels (family doctor groups, general medical practice centers, territorial hospitals, etc.) regardless of their form of ownership, medical history, treatment received and medical services rendered, results of tests and medical examinations, information on allergies, vaccinations, data of doctors who performed the treatment, data on the patient's health insurance, consents and authorizations

Data can be accessed by:

- patients themselves, in order to track their health indicators, receive medication reminders, and access online consultations, via a mobile app or web portal;

- health professionals anywhere in the country, with the patient's consent, to facilitate the admission of a new patient and improve the quality of diagnosis;

- medical institutions and research institutes;

- implementation of a system to automate the internal processes of healthcare facilities, including:

- interaction with patients: electronic registration of patients, online appointment with a specialist, in the laboratory, alerts and reminders to patients about upcoming visits, implementation of quality control systems of service, automatic management of the schedule of doctors' appointments, diagnostic procedures, generation of medical reports, prescriptions;

- management of the material and technical base of a medical institution: monitoring of hospital workload, management of medicines and hospital stocks;

- automation of financing and the process of allocation of funds within the framework of mandatory health insurance (MHI);

- automation of electronic prescription issuance, online tracking of medicines from prescription to purchase in a pharmacy through the introduction of electronic prescriptions, informing patients about the availability of medicines;

- automation of online applications for licensing of medical and pharmaceutical activities, processing of applications, monitoring of licenses;

- automation of statistical data collection from medical information systems, generation of reports for regulatory authorities, minimizing the burden on medical workers;

- development of a register of medical workers, including data from the digital personnel accounting system: basic identification and qualification data, length of service, positions, etc. Collection of data on professional development programs for medical staff, including development of systems to improve digital skills in the use of medical equipment, software, telemedicine;

- developing protocols for data exchange with private clinics, social services, the pension fund, and insurance companies to optimize processes and improve services to citizens;

- digitalization of the MHIF is aimed at strengthening control and tracking of the spending of insurance funds, as well as improving the quality and accessibility of medical services for citizens by:

Creating a unified register of insured citizens and integrating the insured status into the digital medical card. Integration with tax services, pension fund, civil registration authorities to clarify the insured status. The electronic MHI policy should also be available through the “Tunduk” system;

automation of settlements between medical institutions and the Federal MHI Fund, control over correctness and timeliness of payments. Public reports on spending, integration with financial monitoring systems.

§ 2. Digital education

Digital education should track the full path of citizens through the education system from kindergarten to graduation and employment, by exchanging data between the tax system and the electronic labor book system in order to understand how effective the training system is.

The formation of three main electronic registers should be the basis for the digitalization of education:

- a unified register of school pupils, of vocational technical education students and university students;

- a register of teachers and educators in the education system;

- a register of educational institutions. Data from all three registers should provide the central information system for education management, where data are analyzed for management decision-making.

Priority tasks of digitalization in the education system:

- finalizing an education management information system whose main task is to monitor and evaluate the effectiveness of the entire education system, including automated analytics of the relationship of interventions to student learning outcomes, measuring the impact of digital interventions. Data should influence policy decisions, identify areas for improvement and ensure accountability in the education sector;

- a register of all students in pre-school, school, secondary and higher vocational education systems. In the school system, student data should be collected directly from the mandatory electronic diary system. All students' grades should be entered into the system online, from which statistics on academic performance, attendance and other indicators of the effectiveness of the educational process are automatically generated, which in turn should free teachers from the formation and submission of any kind of reporting to the school management. The system should be centralized and integrated with the systems of other ministries and departments, whose data reflect the social, demographic and medical status of the child. Within the framework of public-private partnership, it is necessary to enable businesses to provide services to end-users of the educational system: parents, students, and teachers. For example, an electronic diary, for example, can additionally automatically notify a parent about a child's absence from classes. Also, for example, the data from the electronic diary system should be used to calculate how much money is allocated for meals;

- a unified Register of teachers and educators of the education system should combine the functionality of personnel management, display the timeliness of professional development, and contain complete information on its professional development. The platform should enable teachers to independently update information in their profile, electronically apply for vacancies. All teaching vacancies in the country should be displayed on the platform; when a teacher is hired, he/she should automatically appear in the register of employed teachers, etc.;

- the register of educational institutions (EI) should include EI of any level, funding (public and private), and contain data on the material and technical base at the moment, legal documentation (charters, licenses, etc.), professional direction, teaching staff, information on technical equipment (equipment and Internet), information on boards of trustees, information on the provision of teaching materials;

- a unified digital library of all textbooks and learning materials, which should be available in online format for downloading by students and freely available for revision by teachers;

- information systems for the formation and storage of digital certificates and digital diplomas, which should be automatically generated from data on students' academic performance, and be available through state platforms for use when enrolling in other EI and confirming the validity of their paper counterparts;

- digital online school: the introduction of a hybrid - continuing education system should start with the launch of a pilot online school with full use of distance technologies that has state accreditation and has the right to issue certificates to graduates. Initially, the pilot can be launched for children with disabilities and migrant children;

- a digital education platform for the development of digital skills for all population groups starting from school. The digital skills training program should include the use of e-mail, government services, basic office programs, and the ability to protect one's digital personal data;

- digitalization of attestation of scientific and scientific-pedagogical personnel of higher qualification, which makes it possible to track the full path of applicants for academic degrees and academic titles from the moment of approval of the topic of scientific research to the receipt of a diploma or certificate, through the exchange of data between academic councils of higher education institutions, research institutes, dissertation councils, and expert councils.

§ 3. Digitalization of social assistance

Digitalization of the process of providing state social assistance to citizens should ensure a fast, efficient and transparent process of providing social assistance to those in need, reduce bureaucratic barriers and reduce the likelihood of corruption and fraud. Priority tasks in the system of social protection and development:

- creation of the Unified Social Security System (hereinafter - USSS): a single digital platform for online registration and application for social assistance, with the possibility of downloading the necessary documents, and eliminating physical visits to the offices of social services. The system enables online viewing of the status of applications and the history of benefits and payments for all recipients;

- integration of USSS with other government systems, such as tax and pension fund, to automatically verify the conditions under which a citizen can receive social payments. Integration with medical institutions to take into account medical conditions (e.g., disability) when determining eligibility for social payments. In addition, the additional use of algorithms and artificial intelligence will automate the determination of eligibility for social assistance based on the information provided;

- introduction of an electronic social certificate, where social benefits, disability, child allowances, and other payments received by each citizen are registered;

- identification of persons in need of social assistance;

- non-cash system of transferring social payments to bank accounts and other methods of payment for citizens, which will facilitate tracking of payments for further monitoring and analytics;

- automated analysis of data on vulnerable segments of the population, data on payments and distribution of funds, demographic indicators of recipients of social benefits and payments in order to identify trends, optimize programs and improve support for those in need;

- with the assistance of businesses, embedding social protection services into existing websites and mobile applications (cellular operators, banks and others), including services to check the status of payments, notifications of changes, and the ability to send applications and documents via smartphone;

- development of informational videos, instructions and chatbots that will help citizens understand the social payments system and correctly execute all necessary documents. Launch of online consultations.

§ 4. Digitalization of work and employment

The digitalization of work and employment aims to speed up the job search process for job seekers by automating and making public employment services more efficient. Labor market analysis, labor market forecasting, and close integration with education systems.

Priority tasks for the digitalization of this area are:

- Development of labor information systems that allow job seekers to find vacancies and submit online applications for employment/unemployment status, and employers to post vacancies. The systems should allow online registration for retraining and employment support programs;

- Integration of labor information systems with:

- existing websites and mobile applications (cellular operators, banks, etc.) to expand the range of services for job search and new employees, including notifications of new vacancies, notifications of suitable resumes, etc.; and

- educational institutions for automated exchange of data on graduates and specializations for quick employment and diploma verification system for confirmation of diplomas, certificates, etc.; and

- a credential verification system for validation of diplomas, certificates, etc.;

- online preparation, signing and registration of digital labor contracts with automatic data transfer to tax and pension authorities;

- automation of labor market analysis: automation of labor market analysis on digital platforms, the data will be integrated from existing information systems in the labor sphere: forecasting of demand for personnel, analysis of deficit and surplus of professions, preparation of recommendations for educational institutions on requests for different specialties;

- development of a system of feedback, performance evaluation and recording feedback, ratings and recommendations in the portfolios of employers and employees, as well as recording feedback and ratings of job seekers on the work of territorial divisions;

- introduction of a digital work record book and integration with various government services and commercial organizations.

§ 5. Digitalization of agriculture

Digitalization of agriculture focuses primarily on establishing a system for data collection, analysis and dissemination in the agricultural sector, including the creation of data sharing and reporting platforms for farmers. Access to accurate and timely data enables evidence-based agricultural practices and effective agricultural policies. The digitalization of agriculture will help to increase productivity, reduce resource consumption and improve the quality of agricultural products, ultimately contributing to rural economic improvement and food security.

The key digitalization projects for this area are:

- creation of digital agricultural maps (integration with GIS platforms, space images): by types of crops sown, soil characteristics, maps of irrigation and irrigation systems (water availability, irrigation schemes), maps of markets and logistics. This will allow for optimal planning and utilization of land plots;

- creation of digital registers of agricultural plots containing information on types of crops on the plot, fertilizers and pesticides used for more accurate recording, monitoring and analysis of data for planning the choice of direction - up to marketing of products. According to the input parameters and the use of artificial intelligence technologies, recommendations can be made on how to manage the plot, increase yields, etc.;

- to improve data accuracy, it is necessary to use agricultural drones and satellite surveillance systems, which help to monitor the condition of fields, determine the optimal time for irrigation and harvesting, as well as timely inform about the presence of pests and diseases;

- development of a unified system of identification and traceability of farm animals and products of animal origin to create an integral system of accounting of farm animals and traceability of products of animal origin, primarily food products. The introduction of an integrated chain of traceability will make it possible to track the supply of these products from the producer to the final consumer, which will contribute to improving the quality and safety of food products and meet the interests of society, to have access to information on the origin of food products of animal origin. This system will help owners of animals, processors of raw materials of animal origin to enter accounting documentation on all necessary veterinary and sanitary measures and production processes through a personal account in the system; bringing the identification of animals to completion;

- development of a unified accreditation information system to develop a subsystem of end-to-end analysis, collection and storage of information on the results of accredited persons (testing laboratories, inspection bodies). Putting these subsystems into operation will increase consumer confidence in the quality of products, increase the openness of interaction between the state and business and allow applying a risk-oriented approach to the timely detection of violations in the activities of accredited persons.

The main functions of the information system are:

- maintaining registers of accredited conformity assessment bodies;
- acceptance of applications for accreditation;
- generation of regulatory and analytical reporting.

In order to conduct a unified state policy in the field of halal industry development it is necessary to develop and introduce an information system of traceability for certified "halal" production with the subsequent integration with the system of interdepartmental electronic interaction "Tunduk". The information system in this case will provide traceability and reliability of information on certified production by means of QR code marking of "halal" products and services as an integrated and organizational system to manage the whole flow of information on raw materials, products, services and other from suppliers to end consumers. Ultimately, the QR code product labeling system will allow consumers to scan the QR code with a smartphone camera to instantly authenticate products and services for "halal" status using a mobile application;

- creation of an information system for control over irrigation systems (using sensors) in order to more accurately determine water demand for different crops, to provide management, monitoring and regulation of the state and use of water resources, irrigation and land reclamation infrastructure facilities. The use of data from this system will allow rational planning and use of budget funds for construction and cleaning of irrigation facilities;

- promoting public-private partnerships to create digital services for livestock farms, crop farms, launching online agricultural marketplaces, online markets for the sale and purchase of agricultural products, animals and livestock products, which facilitates business expansion and access to new customers. These services can provide real-time market information, facilitate direct sales, ensure traceability and optimize logistics. Digital marketplaces should increase access to markets for smallholder farmers;

- training farmers on the use of digital tools and technologies in livestock production, including training on information management and data analysis, use of digital precision farming technologies, remote sensing techniques, promotion of their products through digital marketplaces;

- developing regulations that promote the adoption of digital technologies, protect data privacy, and remove any legal or regulatory barriers to the digitalization of agriculture.

§ 6. Digitalization of ecology and subsoil use

Digitalization of ecology and subsoil use is aimed at monitoring, analysis and management of the environmental situation in order to protect the environment,

increase the efficiency of subsoil use, reduce costs, and ensure a more responsible attitude of companies to the environment. Information systems in this area will help create a transparent, efficient and operational monitoring system in the industry, actively involving citizens, business and the state in this process.

Integration of environmental monitoring systems with health care, agricultural, and industrial systems will allow for a comprehensive analysis of the impact of environmental factors on the economy and various aspects of society:

- creation of an information system for environmental monitoring that collects data from sensors and transducers that track the quality of air, water, soil, radiation levels and other environmental indicators. The information system should include:

 - visualization of system data using interactive maps, including data on protected areas, waste disposal sites, ecological risk zones, etc.;

 - application of satellite imagery for monitoring landscape changes, forest fires and soil degradation;

 - application of artificial intelligence to analyze environmental data, predict and model environmental disasters, analyze climate change trends and environmental conditions.

System data may include geographical information, chemical composition, quantitative indicators and other characteristics;

- creation of an information system for accounting and monitoring of natural resources: digitalization of data on the use of water and forest resources, minerals and minerals to optimize their use and prevent overconsumption. Digitalization of mining data through the introduction of smart sensors to monitor in real time the state of equipment and mining processes at the fields for operational decision-making, analysis of factors and safety at the fields, and prevention of accidents;

- implementation of geographic information systems (GIS) to visualize and analyze geospatial data on natural resources to facilitate decision-making and planning for the use of these resources. For example, geologists and engineers will be able to locate deposits more accurately and optimize extraction and control processes;

 - as part of the digitalization of the national spatial data infrastructure (NSDI) and creation of a digital terrain model throughout the Kyrgyz Republic, launching a geoinformation portal providing access to online cartographic services, raster image banks, maps, cadastres, address registry, and geo-metadata. The platform should allow analyzing and visualizing geodata such as field locations, topography, satellite images, etc.;

 - a digital waste registry: tracking, collection and analysis of data on the volume and composition of industrial and household waste, as well as control over its disposal;

 - a system for online processing of environmental impact assessment applications, reports, and licensing applications to ensure transparency and simplify environmental impact assessment procedures;

 - development of educational programs and platforms using virtual and augmented reality to train employees and students. Development of digital field

models that will accurately reproduce all parameters and conditions to simulate various scenarios for optimizing the production process and ensuring safety.

§ 7. Digital Energy

Digitalization of energy is a comprehensive process of implementing digital technologies and solutions to optimize, improve the efficiency and resilience of energy supply systems and increase safety for citizens and the environment. Digitalization of the energy sector should ensure sustainability and transparency of the entire energy complex of Kyrgyzstan, from production to consumption, through data exchange between different services and authorities.

This process includes the implementation of the following projects:

- creation of a digital register of energy sector facilities, including producers (with online indication of the amount of electricity generated), consumers (with online indication of the amount of energy/gas consumed). For this purpose, meters should be used that themselves transmit IOT information to a centralized data collection and processing system;

- smart meters: installation of smart meters that allow tracking and transmission of energy consumption data in real time, which facilitates more accurate metering and optimization of consumption. Installation of smart meters on infrastructure units, reservoirs should use devices that automatically read water level, water inflow and water outlet;

- data integration and analytics: integration with other government information systems to perform big data analysis and consumption forecasting, optimize energy production and distribution, and manage networks and resources;

- introduction of smart grids that enable more efficient management of electricity distribution and consumption. This includes automation of grid management processes, metering and analysis of consumption data, and feedback between consumers and suppliers;

- digital twin of the power system: creation of a digital model of the power system that allows analyzing and optimizing the system's performance in a virtual environment;

- online library of technical documentation: all necessary manuals, standards and technical specifications should be available for downloading by market participants;

- automation of administrative procedures: licensing, certification and other procedures should be available online, reducing the time and resources required to complete them.

§ 8. Digital transport

Digitalization of transport and the road sector involves the use of up-to-date data (obtained online) to develop approaches to planning road maintenance, construction and repair.

Given the current realities, there is an urgent need to create a unified digital transportation infrastructure, which will include the following activities:

- development of a digital register of transport infrastructure objects: airlines, air and water vessels, a unified register of carriers, including intra-republican

communications, etc. These registers should be publicly available and updated online;

- online licensing and issuance of permits: creation of an information system for electronic processing of applications for licenses for cargo transportation, air transportation, and issuance of electronic forms of permits for international transportation;

- creation of the Digital Road Map (DRM) - digitization of all roads in the territory of the republic (in connection with the unified NSDI map), the data should contain information on road surfaces, qualitative and quantitative indicators;

- introduction of an information system to control road construction, including:

 - a system for automatic budget planning for road maintenance and upkeep (RAMS – road asset management system), which will allow for independent prioritization of road works, which in turn will allow for rational planning and use of budget funds;

 - a system for automated monitoring of road construction, in order to ensure the quality of the road under construction and transparency in all stages of construction. Road repair works should be considered completed (accepted by the customer) only after the mobile laboratory conducts the final registration and recording of road parameters in the DRM;

 - installation of GPS-trackers on all road construction equipment, which will allow control over all stages of road construction, including fuel control sensors, which will provide the necessary analytics on rational and efficient use of equipment and its timely maintenance;

- introduction of an information system to control passenger transportation, including:

 - widespread use of sensors for remote control of equipment and vehicles (for data collection), determining their location and navigation (OIT): traffic lights, road signs, special equipment, vehicles engaged in passenger transportation;

 - use of data from traffic violation cameras to implement intelligent transportation systems for effective traffic regulation, traffic congestion analysis, decision-making on road construction or road widening;

 - introduction of a single electronic ticket and other digital services in passenger transportation;

- introduction of an information system for freight transportation control, including:

 - introduction of an automated system of weight and gauge control. Installation of a dynamic system of weight and dimensional control will eliminate corruption risks in the field of transportation control, as well as reduce wear and tear of highways. Also, integration with the systems of other state bodies will allow to get additional analytics on cargo flow in order to bring out of the shadow turnover. It is supposed to be integrated into a unified system of offenses with the formation of online protocols of violations on the example of Safe City. Weight and dimensional control should automatically generate a fine in case of violation, and payment should be through various mobile applications available on the market;

- systems for fixing the condition and location of cargo and reservation of transport and logistics capacities, online issuance of electronic shipping documents: the first stage for intra-republican traffic, the second stage with EDS recognition for international freight and passenger transportation;

- creation of an automated system for monitoring the harmful impact of transport on the environment in order to reduce emissions and increase the share of environmentally friendly vehicles and carsharing services. Creation of preferential conditions for electric vehicle users (tax exemption, free parking, etc.).

§ 9. Digitalization of legislative processes

The digitalization of legislative processes requires a comprehensive approach and the introduction of modern information technologies at all stages of the creation, discussion and adoption of legislative acts. It should ensure a more open, transparent and effective legislative process, in which every citizen can participate and influence the decisions taken.

The key projects to realize this task are:

- creation of a Centralized Database of all draft laws, amendments and documents. The possibility of online viewing of the status of the bill and its history of changes;

- the database should be supported by an electronic document management system for quick transfer and discussion of draft laws between different departments and structures, tracking of changes and automatic registration of all actions with the document. The system should be integrated with other state information systems, such as systems of registration of normative acts, judicial system, etc.;

- automation of expert examination of draft laws: use of artificial intelligence for the initial verification of draft laws for compliance with standards and laws;

- creation of an online platform for public discussions and gathering feedback on draft laws. Introduction of tools for online polls and votes on important issues.

§ 10. Digitalization of the judiciary

The digitalization of the judicial system in Kyrgyzstan represents a transition to an automated, efficient and transparent system of processing court cases. This process aims to ensure faster and fairer access to justice for all citizens. The digitalization of the judicial system will create a modern, efficient and open environment in which the rights and interests of every citizen are guaranteed to be protected.

Key projects for the digitalization of the judicial system may include:

- creation of the Unified Judicial Information System (UJIS) - a centralized database of all court cases, their statuses and decisions, with access for the parties to the case materials and the possibility of filing documents through the system;

- introduction of electronic document management in the courts with a complete rejection of paper media, including automated processing, storage and transmission of court documents;

- integration with other state systems: communication with law enforcement agencies, notaries, registries and other structures to accelerate information exchange;

- launch of online broadcasting of court hearings to ensure that court proceedings are open and accessible to the public;

- digital court notifications: automatic sending of notifications to the parties to a case through electronic channels (e-mail, SMS, mobile applications);
- electronic system for payment of state duties and fees: a fast, secure and transparent way to pay via UJIS or mobile applications;
- training and professional development for judges and court staff: courses on working with new digital tools and platforms;
- digital services for lawyers and prosecutors: online access to case files, possibility to file motions and other documents;
- a public portal of court decisions: access to the texts of decisions, analytical reports by category of cases, and statistics on the work of courts.

§ 11. Digitalization of the law enforcement system

Digitalization of the law enforcement system in Kyrgyzstan implies the creation of effective, transparent and open mechanisms for the work of internal affairs bodies, prosecutor's offices, courts and other structures related to law enforcement and security.

The key projects for the successful digitalization of this system are:

- further development of the Unified Register of Offenses (URO) with the possibility of automatic recording of offenses - a centralized database of all occurring offenses, their statuses and electronic documentation of proceedings on offenses, integration with other state databases (registers of motor vehicles, real estate, electronic notary, etc.);

- introduction of the "Electronic Criminal Case" system, which is a unified electronic database for all law enforcement agencies of the country, as well as prosecutor's offices and courts that will be granted access, covering all aspects of the law enforcement agencies' activities, including investigative and supervisory units, as well as the institution of public prosecution of the prosecutor's office, and accumulating data on all stages of proceedings, from registration of the application to the moment of sentencing in a criminal case, the system will be used as a basis for the development of the "Electronic Criminal Case" system.

- development of an information system in the field of probation, designed to automate the collection, transfer, storage, use and provision of complete information about the probation client, as well as to ensure authentication and secure access to the documents of the probation body, which has been implemented and introduced in all bodies of the Probation Department under the Ministry of Justice of the Kyrgyz Republic;

- creation of an automated information system for forensic examination, which will enable the electronicization of all processes related to office work, as well as specific functions required in the daily work of experts;

- introduction of a video surveillance system using artificial intelligence (facial recognition, automatic detection of suspicious activity) and integration with the URO;

- development and implementation of digital forensics tools and technologies for analyzing digital traces, working with big data and conducting cyber investigations;

- training and professional development of personnel, conducting courses and trainings on new digital tools and ethics of interaction in the online environment. Education and training of trainers on working with digital tools among law enforcement officers;

- introduction of electronic means of tracking in the bodies of internal affairs of the Kyrgyz Republic in order to monitor persons subject to preventive measures and penalties not related to restriction of freedom;

- digitization of the certificate of non-criminal record, which will automate the process of providing a certificate of absence/presence of a criminal record and exclude visits to centers and service points of the Ministry of Internal Affairs of the Kyrgyz Republic;

- introduction of digital documents in all branches of law enforcement, including digital hunting tickets and digital weapons permits.

§ 12. Digital development of the armed forces

The digital development of the armed forces includes the creation and development of infrastructure, information systems with databases for various purposes, as well as the education and training of military personnel to work with digital technologies. This makes it possible to solve a wide range of tasks, including optimizing command and control, improving the accuracy of troop and combat equipment location, rapid information exchange between units, and automating many processes related to the application of the Armed Forces.

The application of digital technologies in defense includes the following areas:

- Expanding training.

Digital technologies will be used to train servicemen in various areas, including strategic and operational planning for the use of the armed forces and mastering various types of weapons and military equipment.

It is necessary to introduce the use of simulators, virtual reality devices and other training technologies into the training process of all categories of servicemen, creating an environment that is as close to combat as possible so that servicemen can gain skills and practical experience;

- introduction of a digital platform for accounting for weapons, equipment and logistics.

The introduction of these digital platforms will ensure online analysis of the situation, operational management, and quality decision-making;

- digitalization of military registration.

The use of modern technologies in the military registration system will facilitate the work of employees of military commissions in terms of registration (deregistration) of servicemen, persons liable for military duty and conscripts at their place of residence, obtaining information on changes in the surname, first name and patronymic, date and place of birth by persons liable for military duty or conscription, as well as registration of the death of a person liable for military duty or conscription through integration with the information systems of state bodies.

§ 13. Digital cities

Urban infrastructure management requires the creation of a virtual model of a real city by integrating data from different line ministries and agencies within the same geographical area. The profile of a digital city can be formed by integrating:

- national spatial data infrastructure information, cadastral information of infrastructure facilities, etc.;
- data from construction management systems;
- data from the information system on environmental monitoring (air quality, water quality, soil quality, radiation level and other environmental indicators) collected by the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic;
- data from systems on transportation regulation, road traffic, pavement, etc.;
- data from public utilities: electricity, gas, water and other data.

Based on the collected data, visualization, analysis, urban development planning and automation of urban management processes should be carried out.

§ 14. Digital transformation of the construction industry

The introduction of digital management mechanisms in the construction industry will ensure the organization of effective and interactive interaction between the state body and the applicant in order to counteract corrupt practices, as well as reduce the number of procedures for the implementation of projects in the construction sector. In addition, the transition to the electronic format will reduce the construction timeframe in the implementation of investment and construction activities, which will also affect the pace of construction in the country. Reduction of the time of issuing permits due to digital transformation: acceleration of the processes of architectural and urban planning opinion, development of design documentation, approval of the project for energy supply with the RPS, and state expertise.

At the same time, the cities of Bishkek and Osh should have digital twins, which will contain all the information on municipal infrastructure and facilities.

The following are the key directions in the construction industry:

- development of a unified electronic platform for managing the construction industry ("Unified Integrated Management System for the Construction Industry") with automation of all business processes in this area (obtaining all pre-permit documents with a single application) when providing services and integration of all existing information systems;
- phased introduction of BIM-modeling (Building Information Modeling);
- development and implementation of the information system "State Urban Planning Cadastre";
- education and training for specialists - development and implementation of programs to train specialists to work with new digital tools and technologies.

§ 15. Digitalization for disaster risk reduction

Digitalization for disaster risk reduction is a strategic process that contributes to the safety and resilience of people and infrastructure in emergencies through the collection, storage and use of information data and technologies. Digital technologies and innovations will support disaster risk monitoring and forecasting, situation modeling and decision-making, while information systems and education

platforms will make our populations more prepared to respond to emergencies. Digital technologies are essential for the implementation of preparedness, prevention, rapid response and coordination in emergency situations.

Key projects for the successful digitalization of this area are:

- development of the Unified Information and Management System development and equipping with modern information technologies for monitoring and coordination of actions at the threat and occurrence of emergencies in order to promptly respond to threats and coordinate the state system of Civil Protection in emergencies;

- development of forecasting and early warning systems, integration of modern hydrometeorological technologies and models to provide accurate and timely forecasts and warnings of approaching disasters;

- development of information systems for fire accounting, analysis and monitoring of fire activity. Utilizing data from information systems to identify geographic areas with increased fire risk and develop risk reduction strategies;

- developing information systems for fire safety inspection and monitoring. Developing and implementing an information system for fire and safety inspection and control supervisors in a variety of industries, including manufacturing and construction. Using data from information systems to conduct risk analysis and develop fire risk reduction strategies;

- development of information systems for tracking engineering, fire and rescue equipment. Creation of a location tracking system using GPS and sensors. Integration of equipment location data with the emergency management information system for rapid response to calls and coordination of actions;

- digital training and public education. Development of digital educational resources and online platforms to educate the public about safe behavior and actions in emergency situations, including fires and natural disasters;

- development of the public notification system and expansion of zone coverage. Introduction and development of modern public alert systems to promptly inform citizens about the threat and occurrence of emergencies. Expansion of zone coverage, including remote and vulnerable areas, to maximize public safety.

§ 16. Cybersecurity and protection of personal data

In today's world, cybersecurity is an integral part of the digital resilience of public and private digital services and information and communication infrastructures. It is important to understand that the growing pace of digitalization inevitably entails an increase in the number of information assets that require protection against cybercrime, especially in relation to critical information infrastructure objects that are important for the security of the country and the well-being of citizens.

Personal data security is the basis for the successful development of any modern organization, including the public sector. Compliance with the requirements of international and interstate standards in the field of information protection serves as a basis for the stable activity of public institutions. In order to ensure the protection of personal data, each organization should develop and maintain the

processes of information systems and technologies management, as well as ensure the proper level of integrity, availability and confidentiality of information.

Raising awareness of the population, business representatives, public authorities on the rights to personal data protection, popularization of privacy, better ways of data protection, measures that stimulate the development of technological tools for personal control over personal information, is currently a necessity, as citizens are little aware of the risks associated with the processing of personal data and their rights to their protection.

This is especially relevant in conditions when public authorities and private entities use biometric data of citizens to ensure effective digital transformation. In the future, it is envisaged to actively use information and communication technologies to achieve the goals of modernization of public administration, economy and social sphere through innovative technologies, where only personal data will be the main identifier of the citizen.

In order to solve the above-mentioned tasks, it is necessary to implement a set of measures, including, among others, the following:

- ensuring awareness raising among citizens, state and municipal employees, as well as business representatives about personal data protection and the basics of cyber security;

- carrying out works on strengthening the coordination, educational and control functions of the authorized state authority for personal data protection;

- further institutional establishment and development of the State Agency for Personal Data Protection under the Cabinet of Ministers of the Kyrgyz Republic as an authorized body in the field of personal data protection;

- implementation of the state IT-audit system in the field of personal data protection and cyber security officers;

- development, implementation and wide promotion of the system of personal data protection of children.

§ 17. Digitalization of physical culture and sport

Due to the lack of a single information resource in the field of physical culture and sport, as well as a single automated information system that will ensure the collection, analysis and dissemination for use in the Kyrgyz Republic of best practices and experience in the development of physical culture and sport, there is a need to develop a single digital outline of physical culture and sport, electronic passport of a professional athlete and information systems in each sport, their integration with information systems of the Kyrgyz Republic. This will improve interaction between federations and international organizations, as well as bring openness to the activities of sports organizations.

Online licensing of judges and awarding titles to coaches and athletes - creation of an information system for electronic processing of applications for licenses and titles of Master of Sports and Master of Sports International Class.

Creation of a digital map of sports facilities, sections and sports schools across the country - digitization of all the mentioned sports facilities on the territory of the republic, the data should contain information on the location and quantitative indicators of athletes.

Transfer of "paper" processes in the sphere of physical culture and sports into digital form using a single portal of public services integrated with the system "Tunduk".

§ 18. Digitalization of the electoral process

Digital technologies have been actively and successfully applied in the electoral process of the Kyrgyz Republic since the beginning of the reform of the electoral system in 2015. Two election cycles have been completed under the electoral model with the use of electronic technologies.

From 2025, a new electoral cycle will begin in the Kyrgyz Republic, providing for elections at all levels.

In order to increase the inclusiveness, credibility and transparency of the electoral process, improve electronic election management and create a favorable environment for expanding the realization of citizens' electoral rights, the following main directions of digitalization of the electoral process have been developed and planned:

- in order to update voter registration, ensure the security of transmitted/received information, conduct backup and archiving of the voter database, it is necessary to improve the functionality of the voter registration program.

At the same time, it is necessary to automate the format of exchange of voter databases through the "Tunduk" IEIS when forming the preliminary voter list and linking biometric data of voters for identification after the formation of the final voter list;

- to ensure the electoral rights and accounting of persons with disabilities, it is necessary to automate, together with the Ministry of Labor, Social Security and Migration of the Kyrgyz Republic, the map of needs of voters with disabilities in the context of polling stations;

- development and introduction into the electoral process of a form of online voter identification with the updating of the biometric data base of citizens for adaptation to new (electronic) voting formats;

- in order to further improve voter identification, it is proposed to update the program and introduce new combined identification devices, combined with all modules in one unit, which demonstrated high efficiency, ease of operation and use during the testing in 2023.

In order to create conditions for expanding the possibility of exercising the electoral rights of citizens and increasing voter turnout, taking into account the recommendation of the People's Kurultai (Publicly representative, deliberative and supervisory assembly of the people's representation) to provide migrants with the opportunity to vote online in the elections (November 25-26, 2022), the possibility of introducing electronic and remote forms of voting with online identification is being considered.

Electronic and remote voting expands the possibility of access to voting for citizens in internal and external migration who are unable to vote on election day at the polling station at the place of permanent registration. These voting formats are also a form of activation of youth participation in voting.

In order to improve the objectivity, inclusiveness of the registration process, ensure equal legal conditions for candidates, eliminate human factors and introduce anti-corruption measures, it is proposed to improve the process of registration of candidates for elections by expanding and improving data exchange with authorized state bodies (Ministry of Digital Development, Ministry of Internal Affairs, Ministry of Education and Science, Ministry of Justice, etc.) through the “Tunduk” IEIS.

It is necessary to complete the digitalization of the database of authorized state bodies and fully automate the verification of information about candidates with the provision of official conclusions on approved forms on the compliance of candidates with legal requirements.

When developing and updating systems and programs used in the electoral process, the introduction of specialized blockchain technology software and methods is considered as an additional tool for public control of the reliability and transparency of voting results.