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Ministry
of Digital Transform
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EU4DigitalUA

EU4DigitalUA

INFRASTRUCTURE | SERVICES | CYBERSECURITY



2020 — 2024





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The e-Governance Academy is an Estonian centre of excellence to increase the prosperity and openness of societies through digital transformation. In 20 years, we have cooperated with more than 280 organisations from 141 countries, supporting a more efficient use of information and communication technologies in governance and democratic processes. The core of our team consists of the architects and founders of the Estonian and Ukrainian e-state. More information: ega.ee

DEAR PARTNERS AND FRIENDS

We already live in a digital world where artificial intelligence is taking its first steps, and digital data streams have a more significant impact on GDP growth than traditional trade in goods. The digitalisation of the public sector is also moving forward. In almost four years of the EU4DigitalUA project, Ukraine has made a significant leap in the digitalisation of public administration, and we are glad to have contributed to this process.



These almost four years, the project worked under unusual circumstances - first the COVID-19 pandemic and then a full-scale Russian invasion. Despite these challenges, the project adapted and provided timely and necessary assistance. In response to the beginning of Russia's full-scale aggression, we contributed to the backup and strengthening of the digital government infrastructure elements, ensuring the operability of the main state registers.

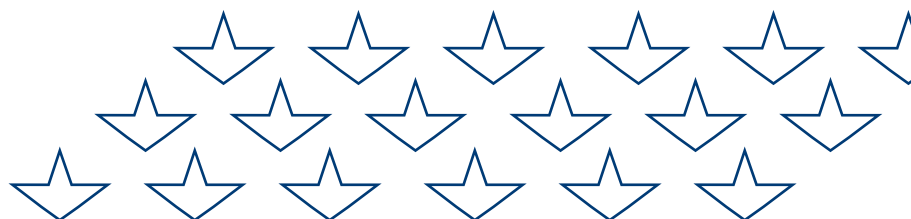
While implementing the EU4DigitalUA project over the last four years, the e-Governance Academy team shared Estonia's experience and best European practices in the e-governance sphere. Over these almost four years, we developed 54 e-services, including unique complex services such as e-Entrepreneur and the e-Residency program - uResidency. Our project developed Ukraine's public registers and supported upscaling the Trembita system. One of the brightest results of the project was the recognition by the European Commission of Ukrainian trust services as compatible with EU standards.

Our achievements were only possible because of strong support and cooperation with our partners and funding from the project donor - the European Union. Special thanks to the Ministry of Digital Transformation of Ukraine and all our partners for their active work, dedication, and leadership in working on Ukraine's digital transformation. Ukrainian expertise, openness to innovation, and readiness for cooperation have become the foundation for the successful implementation of the project.

I invite you to read about these and other achievements of the EU4DigitalUA project in our report.

Glory to Ukraine!
Sincerely,

Mari Pedak
EU4DigitalUA Project Manager



The **EU4DigitalUA** project started in October 2020 and continues until March 2024.

Its task is to support digital transformation, enhance cybersecurity and data protection, and implement the Association Agreement between Ukraine and the EU. The budget for the part of the project implemented by the e-Governance Academy amounted to about 10 million euros.

KEY ACHIEVEMENTS:

INTEROPERABILITY AND DIGITAL INFRASTRUCTURE OF THE GOVERNMENT



- Development of a Roadmap for registers
- Modernization of 10 registers
- Trembita training for 500+ specialists
- Scaling of Trembita to 5 billion transactions in the system
- Concept of Diia.Engine
- Implementation of Diia.Signature that meets EU standards

DEVELOPMENT OF ELECTRONIC SERVICES



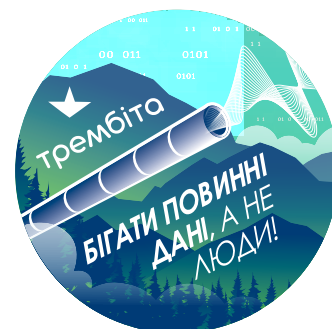
- Concept of the Digital Competence Center
- Functionality for issuing COVID certificates
- 11 services for state registration of civil status acts
- Digital education documents
- Online issuance of a non-conviction certificate
- e-service for war veterans
- e-Entrepreneur service that contains 15 services in one
- uResidency complex service

CYBERSECURITY



- Two waves of practical cyber training
- Recommendations for information exchange on cyber threats
- Concept of the Trembita 2.0 system
- Subsystem for Personal Data Access Monitoring

INTEROPERABILITY AND DIGITAL GOVERNMENT INFRASTRUCTURE



REGISTERS DEVELOPMENT

To access an electronic service, Ukrainians must make just a few clicks. However, that's just the tip of the iceberg. Behind every service are registers and the exchange of data between them. This digital infrastructure is the foundation of a digital state. Within the framework of EU4DigitalUA, project experts supported the development of electronic registers and their interoperability through the Trembita system.

The project developed a methodology for the quantitative assessment of data quality in registers and **conducted research on data quality in 5 basic registers where the most essential data of citizens is stored:**

- State Register of Individual Taxpayers
- Unified State Demographic Register
- Unified State Register of Legal Entities, Individual Entrepreneurs, and Public Organizations
- State Register of Civil Status Acts
- State Register of Property Rights to Real Estate

The recommendations laid out in the research significantly improved data quality. They also formed a **Roadmap for the next four years** that outlines a clear plan for the sustainable development of the public register system according to EU standards.

Within the project, **ten registers were modernised**, and the **concept of Diia.Engine** (Platform of Registers) was developed. This concept was used to create the Diia.Engine platform, which was launched in September 2023. Also, on this platform, the project developed and launched the first two registers - the Register of Laboratory Assessments and the Register of Temporarily Occupied Territories.

Diia.Engine is a tool that allows ministries and government agencies to create and manage registers conveniently. It enables orderly and secure data storage in registers. At the same time, Diia.Engine facilitates automation and digitalisation of public services, accelerating digitalisation in general.



Trembita

Throughout the project's implementation, **EU4DigitalUA** experts supported the development of the Trembita system. This secure data exchange system is a key element of Ukraine's digital infrastructure.

Trembita facilitates data exchange between government bodies and local self-government through the interaction of their electronic registers/information systems, which is the basis of e-services. It allows citizens and businesses to use electronic services without unnecessary paperwork, saves time for public servants, prevents abuse, and increases the efficiency of the government apparatus.

EU4DigitalUA experts assisted in establishing connections between electronic registers of various government bodies through Trembita. For data exchange through Trembita, some government bodies need to open their electronic registers while others need to be able to retrieve information from them. This collaboration with government bodies enabled the creation of **59 web services and 66 web clients** based on the Trembita system.

Within the project, a **Subsystem for personal data access monitoring** was developed and technically implemented for Trembita. Thanks to this innovative solution, Trembita will be able to record who and when viewed Ukrainians' data. Citizens will receive notifications if an official checks their personal information.

The project's experts developed the Concept for the Creation and Implementation of the Trembita 2.0 System, which laid out a vision for developing Trembita over the next 5-7 years, taking into account its capacity to

continuously process the ever-increasing amounts of data securely. The project's experts introduced changes to the regulatory framework that considered the current needs of state institutions and laid the foundation for implementing the personal data access monitoring subsystem and Trembita 2.0. As part of the project, the eGA team provided comprehensive technical assistance upon request from system participants and developed instructions and training materials. Also, they released a new version of the secure exchange gateway based on the Unified eXchange Platform 1.12.6.


For the system to work more efficiently, the project's experts **trained 500+ key specialists** of government bodies and institutions working with Trembita.

EU4DigitalUA supported the development of the system throughout the entire project. Despite the full-scale Russian invasion, Trembita scaled up and became the foundation of Ukrainian digital transformation.

Trembita was launched in 2020. Since then, **the system has conducted more than 5 billion transactions** - data exchanges. Over three years, their number increased from 200 million to 5 billion. Now, the system performs the same amount of transactions in one week as it did in three months at the beginning of its work. If in 2021, 600-700 thousand data exchanges were made per day, by 2023, this figure has already reached 6-7 million, a 900% increase. The record number of transactions per day - around 145 million - was recorded immediately after the update of Diia in December 2023.

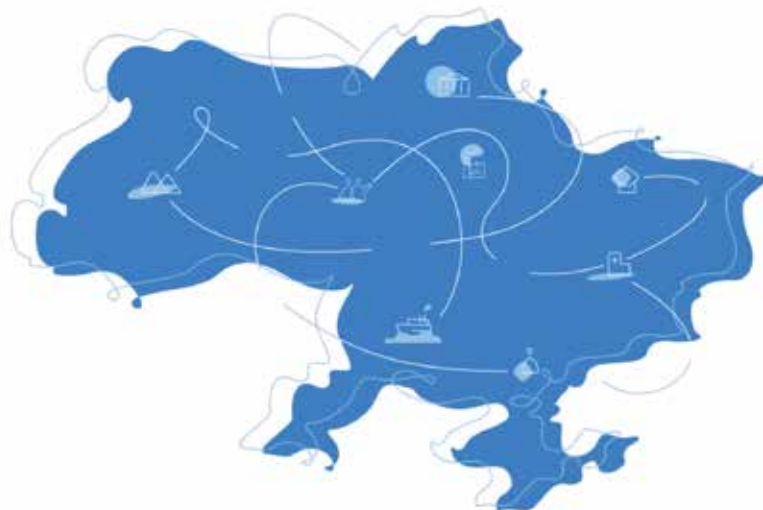
* **Web service** – a software application that facilitates interaction between information systems. It provides other institutions with the ability to retrieve information from an electronic register into which it is integrated.

** **Web client** a software application that facilitates the sending of requests from one institution to the electronic registers of another and receive responses from them.


 The upscaling of Trembita proves that even under martial law, the demand for digital services among citizens and businesses is constantly growing. The large volume of transactions indicates a change in the culture of using electronic services among Ukrainians. They have become an integral part of life. In addition, the system has already earned the trust of government bodies - more and more registers are being connected to it. Trembita, initially an innovation for pioneers, has become the norm for most government institutions in 2024.

Oleg Burba,

Head of the Interoperability and Government Digital Infrastructure component

TREMBITA HELPS OVERCOME THE CHALLENGES OF WAR

Trembita has proven its effectiveness as a tool for management and interaction under martial law. In 2024 alone, nearly 28 million transactions were made through the system with the Unified Information Database on Internally Displaced Persons (IDPs) and almost 12 million with the State Register of Damaged and Destroyed Property. Both registers are among the top ten most popular queries in Trembita. Thanks to this, Ukrainians can receive services, including eRecovery and services for IDPs, such as obtaining an IDP certificate or applying for financial assistance.

At the same time, with the support of EU4DigitalUA, the Ministry of Defense began using Trembita to improve the quality of data in the register of military conscripts. The system checks and reconciles information with other registers to avoid, for example, cases where

a deceased person receives a conscription notice. According to the Ministry of Defense, thanks to this process, the quality of data filling in the register of military obligees has already increased from 27% to 88% because duplicates and outdated data were removed.

Since its launch, Trembita has conducted 5 billion transactions. Here's what these numbers mean for Ukrainians:

- 447+ thousand newborns registered through eMakyatko (eBaby) service
- 279+ thousand Ukrainians received their first passport and ID code as part of the ID14 service.
- 20,5+ thousand marriage applications have been submitted since service's launch.

ELECTRONIC IDENTIFICATION

Ukraine has become the first and for now the only country outside the EU whose electronic trust services (Diia.Signature) are compatible with the EU's eIDAS infrastructure.

In April 2023, Ukraine was included in the list of TC AdES LOTL countries adopted by the European Commission, which contains information about the electronic trust services of countries that are not EU members. This allows the EU to recognize the electronic signatures of Ukrainians through the connection between Ukrainian and European systems. Thus, Ukrainian companies working with Europe can use electronic document management and speed up their business processes.

This step will provide Ukrainian businesses access to the EU's single digital market and the ability to conduct online transactions without hindrance. As noted by the Institute of European Studies, joining the EU's single

digital market could contribute to an increase in Ukraine's GDP by 3% to 12%, potentially amounting to billions of euros.

Within the framework of the EU4DigitalUA project, our experts worked on aligning Ukrainian legislation to mutually recognize qualified trust services and implement EU standards in electronic identification. EU4DigitalUA experts contributed to the development and adoption of 74 legal acts.

Besides legislative changes, our project was also involved in the technical support of the process. EU4DigitalUA experts supported the deployment of the eIDAS node into Ukraine's integrated electronic identification system (id.gov.ua). This node belongs to the EU's digital infrastructure and allows for electronic identification through electronic exchange.



E-SERVICES DEVELOPMENT

Throughout the entire project, EU4DigitalUA experts worked on scaling and standardizing the process of public electronic services development, including their reengineering. The experts developed a concept and laid the groundwork for the future launch of a revolutionary platform - the Digital Competence Centre. This hub of knowledge and applied skills in developing e-services and its professionals will assist in digital solutions' «turn-key» development. The Digital Competence Centre will significantly speed up the digitalization of services for state bodies in the future, thanks to knowledge, information, and tools for both the technical development of the service and its legislation framework. The Digital Competence Centre has already started its work within the new DT4UA project financed by the European Union.

The project team also developed methodological recommendations for the reengineering and implementing e-services for the Ministry of Digital Transformation. This is a «Wikipedia» of public sphere digitization in terms of e-services. Methodological recommendations accumulate information about IT structures in the public sector, practical experience in digitizing dozens of services, and the theoretical base of the GovTech sector. They also cover related areas, for example, the basics of fundraising, reengineering principles, information about existing digitalized and useful public registers, and specific advice on digitalization at the local level. Also, within the project, the Testbed/Toolkit platform was developed, where knowledge, recommendations, and code of existing e-services will be collected and can be reused in new projects.

10 SERVICES FOR CIVIL REGISTER OFFICES

Thanks to the EU4DigitalUA team, in case of loss of a certificate or extract about birth, death, name change, or marriage, Ukrainians can order its re-issuance on the Diia portal. It is enough to fill out an application in a few clicks and pick it up within 3 days or have it delivered by courier to your home. The re-issuance of certificates is especially

relevant during the full-scale war when many Ukrainians urgently left their homes and could not take documents with them.

Previously, to reissue an extract or certificate, one had to visit the Office for registration of Civil Status Acts twice. Now, Ukrainians can do it on the Diia portal and collect the document at the Civil Status Acts office or order delivery by mail directly to their home. Since the service's launch, 56 thousand duplicates and extracts have been received, with the most frequent orders being duplicates of birth certificates, marriage certificates, and marriage registration extracts.

CERTIFICATES AND EXTRACTS AVAILABLE FOR REISSUANCE:

Birth

Death

Name change

Marriage

Divorce

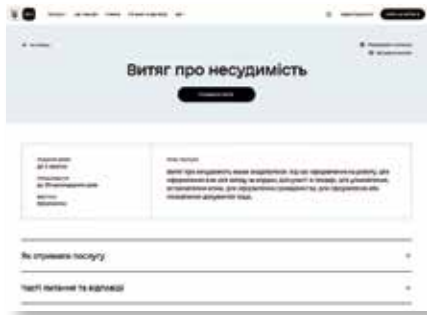
EDUCATIONAL DOCUMENTS

Завдяки цьому сервісу, всі документи про освіту які містяться в Єдиній державній електронній базі з питань освіти відображаються в застосунку «Дія» разом з унікальним електронним ідентифікатором (QR-кодом). Для цього експерти проєкту працювали над розробкою взаємодій між мобільним застосунком «Дія» і Єдиною державною базою даних про освіту.

Особа, яка досягла 14-річного віку, може сформулювати в застосунку «Дія» документи про базову середню освіту, про повну загальну середню освіту, про професійну, про фахову передвищу освіту, а також про вищу освіту.



Завдяки електронним документам про освіту не треба робити ксерокопії при прийомі на роботу, а також в майбутньому можна буде зареєструватися на вступ до закладів вищої освіти. При втраті атестату чи диплому — у кілька кліків можна отримати інформацію в електронній формі. Це спростить доступ до освіти та працевлаштування громадян, які втратили фізичні документи через війну.



EXTRACT OF NON-CONVICTION

Thanks to this service, all educational documents stored in the Unified State Electronic Database on Education are displayed in the Diia app along with a unique electronic identifier (QR code). For this, project experts worked on developing interactions between the Diia mobile app and the Unified State Database on Education. A person older than 14 can form documents about basic secondary education, complete general secondary education, vocational, specialized secondary, and higher education in the Diia app.

Thanks to electronic educational documents, there is no need to make photocopies of diplomas when applying for a job, and in the future, it will be possible to register for admission to higher education institutions. If you lose a certificate or diploma, you can get information electronically in a few clicks. This simplifies access to education and employment for citizens who lost physical documents due to the war.

E-ENTREPRENEUR

e-Entrepreneur As part of the project, the first complex service for entrepreneurs in Ukraine was developed. It will be useful for Ukrainians who are just planning to start a new business as well as for current entrepreneurs who want to scale or change their business direction.

e-Entrepreneur is also unique in technical terms because it is the only comprehensive e-service without a single entry point – meaning each entrepreneur can choose to order all services or only those needed by the user.

Thanks to e-Entrepreneur, receiving all services necessary for starting or developing one's own business with a single application will be possible. Thus, starting a business will be significantly easier and faster. Previously, to launch a business, one had to visit various government offices and gather permits, a process that could take up to a month and a half. Now, it is enough to fill out an application on the Diia portal in 20 minutes without leaving home.

e-Entrepreneur combines 15 services necessary for opening or developing one's own business, such as:

- State registration of an individual entrepreneur;

- Registration of a fire safety declaration;
- Submission of information about vacancies;
- Registration as a value-added tax (VAT) payer;
- Opening a bank account;
- Notification about hiring an employee
- Others

e-Entrepreneur is still developing, so more services will be added in the future within the new DT4UA project.

MARRIAGE REGISTRATION APPLICATION

On the Diia portal, one can apply for state marriage registration and immediately choose the ceremony's place, time, format, and hall. Previously, to submit a marriage application, future spouses had to visit the civil register office together, manually fill out paper applications, undergo verification by a state registrar, pay the fee, and then return to the civil institution to discuss the ceremony details with an employee. Today, the entire process takes less than 15 minutes.

In the first year of service operation, over 20,500 couples submitted marriage applications on the Diia portal. The highest number of electronic marriage applications was in the Kyiv, Lviv, and Odesa regions. Interesting fact - women submitted 53% of the applications.



SUPPORT FOR DIGITIZATION OF SERVICES FOR WAR VETERANS

EU4DigitalUA, together with the UNDP in Ukraine, IREX, and RedRose CPS Limited, supported the Ministry of Veterans Affairs and the Ukrainian Red Cross Society project to provide financial assistance to veterans who have acquired a disability of group I or II as a result of the war. The process of applying was fully digitized by EU4DigitalUA experts and takes only 2-3 minutes, with the personal data of the recipients of

financial assistance being anonymized and encrypted for payment processing.

The effectiveness of this digital solution was proven in practice - over 4,000 applications were submitted in just the first week. As of the end of 2023, 24,929 veterans have received financial assistance. In total, Ukrainian veterans have received 400 million hryvnias within this program.

uRESIDENCY

The EU4DigitalUA project supported the development of a comprehensive e-service for the e-Residency program on the Diia Portal. This allows citizens of other countries to register, conduct business, and pay taxes in Ukraine. The program is aimed at small business owners from Asia and Europe, focusing on IT professionals and specialists providing online services in the creative economy sector. uResidency envisages that foreigners can register a business and automatically pay taxes to the Ukrainian budget. Initially, the program will be available to citizens of four countries – India,

Pakistan, Thailand, and Slovenia – with plans to expand the list gradually.

Foreign entrepreneurs do not need to travel to Ukraine to become e-residents. To obtain the status, one must undergo a one-time offline verification at a Ukrainian consular institution in the country of residence. All other processes, from applying for participation in the program to opening a bank account, occur entirely online.

HOW URESIDENCY WORKS:

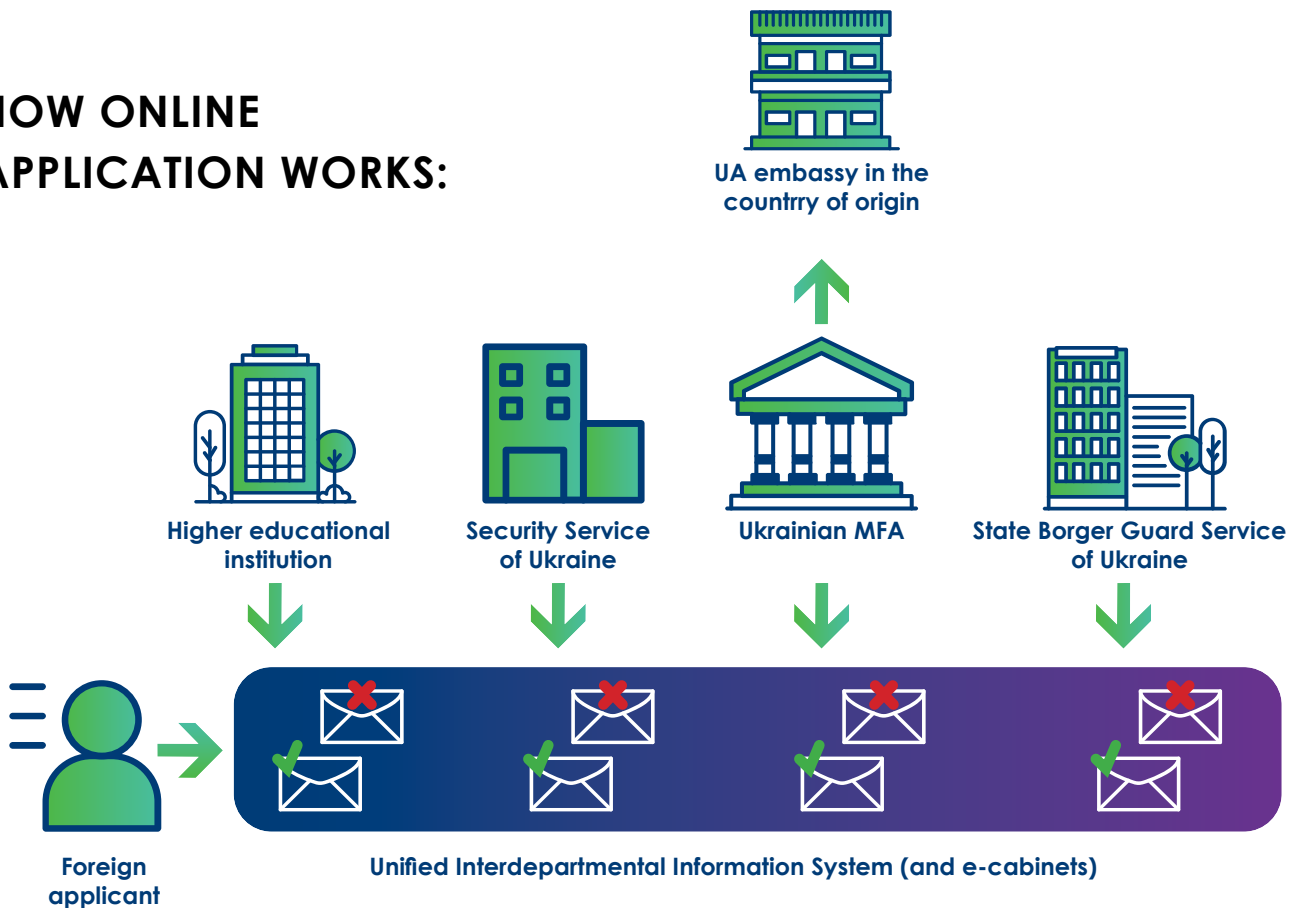
- 1 The e-resident applies via the mobile app or web interface.
- 2 The administrator checks the application for inclusion in sanction lists.
- 3 The Ministry of Internal Affairs and the Security Service of Ukraine review the application.
- 4 After the review, the applicant is given a tax ID.
- 5 The applicant schedules a visit to the foreign diplomatic institution in their country of residence for identification.
- 6 The applicant visits the foreign diplomatic institution and undergoes identification.
- 7 The State Tax Service assigns the previously given tax ID to the individual based on the identification data.
- 8 Having been identified, the applicant generates a Diia.Signature in the mobile app and obtain e-resident status. The development of a mobile app for e-residents will be realized in the next project - DT4UA.
- 9 With this status, the e-resident can apply through the mobile app or personal cabinet on the Diia portal to register as an individual entrepreneur.
- 10 e-Residents can open bank accounts in Ukrainian banks to receive funds from entrepreneurial activities.
- 11 The bank where the account is opened acts as the tax agent for the e-resident automatically pays the taxes for the e-resident and reports to the control bodies.

ONLINE ADMISSION TO UKRAINIAN UNIVERSITIES FOR FOREIGN STUDENTS

As part of the EU4DigitalUA project, the Unified Interdepartmental Information System software for recruiting foreign applicants to Ukrainian universities has been modernized in collaboration with the Ministry of Education and Science and the Ministry of Digital Transformation. Thanks to modernization, foreign citizens will have the opportunity to receive a complex e-service that includes 5 simple electronic services for

admission to higher education institutions in Ukraine. Also, thanks to the project's implementation, interdepartmental interaction between higher education institutions, foreign diplomatic institutions, the Security Service of Ukraine, the State Border Guard Service of Ukraine, and the Ministry of Education and Science of Ukraine will be carried out electronically.

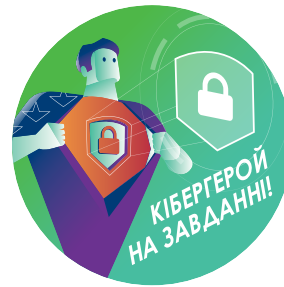
HOW ONLINE APPLICATION WORKS:



The foreign applicant chooses a university online, submits documents, receives an educational offer, and receives an electronic invitation to study. For countries with migration risks, the Security Service of Ukraine approves the invitation, simplifying the visa process.

After approval by the university, the invitation appears in the applicant's electronic cabinet, allowing him or her to follow the visa process. Upon entering Ukraine, the State Border Guard Service verifies the purpose of the visit.

CYBERSECURITY



At the end of 2021, before the full-scale invasion, the project conducted two waves of cyber exercises for representatives of the Security Service of Ukraine, Cyber Police, Ministry of Defense, State Special Communication Service, and the National Bank of Ukraine. These trainings helped participants gain practical skills in responding to security incidents, establish coordination between agencies, and exchange experience.

During the first wave of exercises, participants engaged in threat hunting. Professionals from key state entities responsible for cybersecurity conducted in-depth investigations of indicators left by attackers and how they move between network systems. The second wave of exercises used a live fire method. The cyber training team conducted an intensive real-time attack on a virtual infrastructure of teams from the main cybersecurity entities.

The project team also developed recommendations for exchanging information about cyber threats based on EU standards. This now aids in implementing an information

exchange system about cyber threats, harmonizing Ukrainian legislation with European standards, and improving responses to large-scale cyber attacks by Russia during the war.

After the war began, the EU4DigitalUA project immediately began assisting Ukrainian government bodies to increase their resilience in critical situations. Project experts and Ukrainian partners managed to introduce amendments to the regulatory framework in the shortest possible time, allowing state databases to be relocated to secure locations, supporting the migration of some registers to the cloud, and finding another opportunities for placing registers in various secure locations.



COVID CERTIFICATES

In response to the COVID-19 pandemic challenges, the EU4DigitalUA project supported the development of electronic COVID certificates. For this purpose, the project successfully integrated the Electronic Health Care System of the Ministry of Health of Ukraine with the Diia app.

Thanks to this innovation, over 12 million Ukrainians have received certificates,

becoming one of the largest-scale e-services. Ukraine was ahead of many countries, becoming one of the first states outside the European Union and the first in the European neighbourhood whose digital COVID certificate was officially recognized by the EU. The innovative Diia.Signature was applied for the first time for issuing certificates.

