

# The Problem of Ensuring Cross-border Personal Data Transfer and Methods for Its Solving



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What is Personal Data ?

- Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data (1981)
- EU: the last legislative act about PD is GDPR (2018)
- Russia, Federal Law No. 152-FZ of June 27, 2006, "On Personal Data"
- Customs Union of the Eurasian Economic Community

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## Legal Regulation

Mandatory organizational arrangements include:

1. **restriction of access not entitled to receive relevant information containing PD**
2. **encryption of information in accordance with applicable law for transmission over open communication channels.**

In accordance with section 4 of article 19 of the Law, the composition and content of the necessary measures to ensure the security of personal data are also established by the federal executive authority, the security commissioner (currently the Federal Security Service of Russia). Certificates issued by the Federal Security Service (FSS) and the Federal Technical and Export Control Service (FSTEC) confirm compliance with information protection tools requirements.

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Problems arising:

- **transportation of Information Protection Cryptographic Tools (IPCT) for the territory of the Russian Federation requires separate permissions of FSTEC**
- **abroad, there is another country's legislation in the area of PD**
- **abroad, another country has information protection legislation, including IPCT.**

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Many universities have geographically distributed branches, including outside the country.

Document flow, where, among other things, PD are transmitted (students, employees, trainees).

- For preparation of diplomas of higher education must be transmitted PD (Name, Surname, date of birth, passport data).
- If the university has a single EDMS, there are tasks of transfer information (reading, modification) from the main university to the branch and vice versa. To prepare numerous statistical reports, it is necessary to collect numerous data, some of which belong to the PD category.

## MPEI

More than 15,000 students of all levels of education - from secondary vocational education to graduate school

As a legal entity, MPEI has a geographically distributed structure:  
main institute in Moscow and 5 branches

- Smolensk (Russia),
- Volzhsky (Russia),
- Konakovo (Russia),
- Dushanbe (Tajikistan, 2013) and Tashkent (Uzbekistan, 2019).

- The problem of automation of cross-border PD transfer was appeared
- Not enough attention is paid to the issue of legal regulation and the choice of technology for safe cross-border data transfer
- From the experience of working with branches within the country, we can conclude that the appropriate method of transmitting information that meets the requirements of the law is to create Internet connection

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- VPN (Virtual Private Network) technology can be used to ensure cross-border transfer of PD in accordance with regulatory requirements.
- Like creating a dedicated VPN communication channel, you can establish an encrypted connection between two members (or networks) and create a global network from existing local networks.
- VPN traffic is transmitted over IP traffic and uses UDP or TCP as a transport-level protocol, allowing it to safely pass through the Internet. To hide the data transmitted in the VPN, it is encrypted.
- There are VPN hardware solutions that provide maximum protection, as well as software or protocol-based implementation.



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Since VPN is a cryptographic tool, the use of this technology is regulated by the order of the FSS of Russia on July 10, 2014 No.378 . VPNs used must be certified as cryptographic information protection tools.

In the territory of the Russian Federation, we can mention software and hardware solutions of the following manufacturers:

- Centralized complex to protect network infrastructure and create VPN networks “Hardware and Software Cryptographic Gateway “Continent” (Security code).
  - Family of security gateways “ViPNet Coordinator HW” (InfoTecS) .
  - S-Terra VPN Software and Hardware Complex (S-Terra).
  - StoneGate SSL VPN (New security technologies).
  - Family of products ZASTAVA (Elvis-Plus).
  - OpenVPN-GOST (Cryptocom).

## COMPARATIVE ANALYSIS OF CERTIFIED VPN TOOLS IN RUSSIA

	<i>Type of encryption</i>	<i>VPN level</i>	<i>Encryption algorithms</i>	<i>Cost</i>
Hardware and Software Cryptographic Gateway “Continent“	Hardware	Channel	GOST 28147-89	High
ViPNet Coordinator HW5000	Hardware	Channel Network	GOST 28147-89	High
S-Terra products	Hardware Software	Network	GOST R 34.12-2015	High
StoneGate SSL VPN	Software	Session	GOST R 34.12-2015	n/d
Family of products ZASTAVA	Hardware Software	Session	GOST 28147-89	Middle
OpenVPN-GOST	Software	Session	GOST 28147-89	Low

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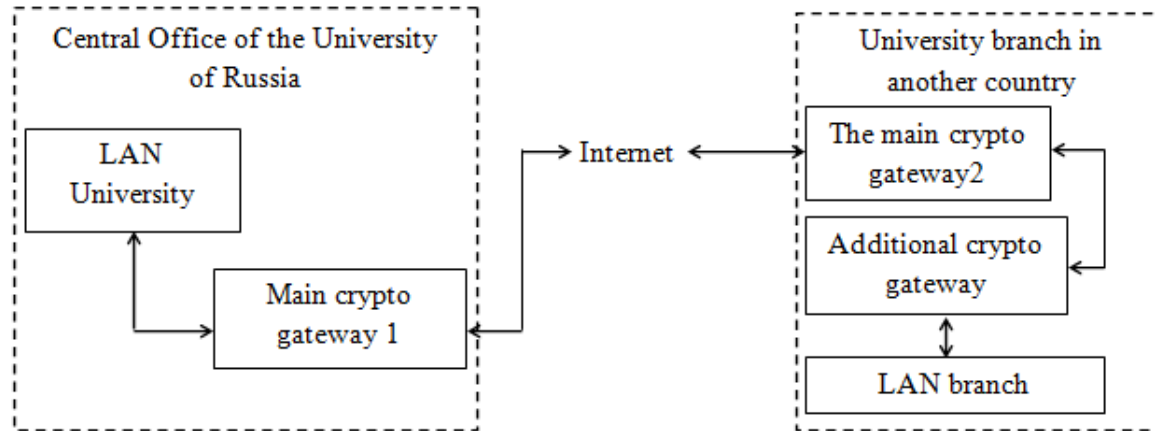
Based on comparative analysis and in order to minimize the cost of purchasing and transferring the necessary equipment for use abroad, you can recommend the OpenVPN-GOST product.

- This product is only implemented by software, making it easier to transfer and administer.
- The cost of a license to use this product is the lowest.

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It is possible that the legislation of another country requires the use of other encryption algorithms (e.g. AES). In this case, an additional cryptographic gateway will be required for cross-border transmission of sensitive information.

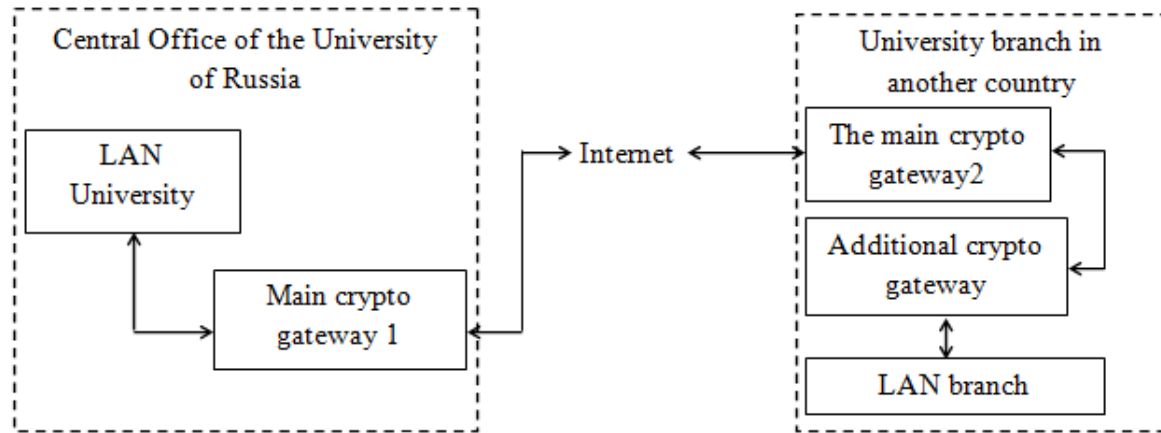
The additional gateway, together with the main gateway, will have to encrypt and decrypt network traffic using different encryption algorithms.



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The main crypto gateway 2 can be located on a server in Russia or on a server in another country.

An additional cryptographic gateway can be created with the help of solutions of foreign manufacturers (Cisco ASA, F5 Networks VPN, NetScaler, Pulse Secure, SonicWALL, etc.)



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- In this article we considered the problem of cross-border transfer of information containing PD of students, teachers, and other people in branches of higher educational institutions in other countries. A review of regulatory documents in the field of regulation of cross-border transfer of personal data is made.
- Existing methods and software and hardware for transmitting PD over computer networks are analyzed. All these methods and tools are based on VPN technology.
- It is proposed to use the OpenVPN-GOST product to ensure the security of cross-border data transmission between countries belonging to the Customs Union of the Eurasian Economic Community.
- A scheme is proposed to ensure the security of cross-border transfer of PD between Russian universities and their affiliates in countries whose legislation requires the use of other encryption algorithms.

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- Proposed a scheme to ensure the security of cross-border transfer of PD between Russian universities and their affiliates in countries whose legislation requires the use of other encryption algorithms.
  
- If the branch of the university is located in a country where it is impossible to export IPCT, there are two solutions for this task:
  - place the main crypto gateway 2 on the territory of the diplomatic mission of the university country in the country of the branch;
  - use the legal entity of the country of the branch, which has the right to apply IPCT of the country of the university.

## Conclusion

- Based on an analysis of existing laws and other regulations, it is concluded that it is mandatory to prepare a package of internal university regulations in the field of cross-border transmission of PD.
- Not enough attention is paid to the issue of legal regulation and the choice of technology for safe cross-border data transfer
- It is necessary to develop existing and create new software tools VPN connections, taking into account the specifics of their use by educational institutions.



# Thank you for attention!

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