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IMPROVING THE ALGORITHM FOR CONTROLLING THE CUSTOMS TRANSIT INFORMATION SYSTEM E-TRANSIT OF THE REPUBLIC OF UZBEKISTAN

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Abstract: This article examines the organization of customs transit and the development of the customs information system of the Republic of Uzbekistan. The experience of developed countries in organizing customs transit processes is analyzed. The main stages of the information system algorithm are studied. Particular attention is paid to the European Union's New Computerized Transit System (NCTS) in ensuring control over the arrival of transit cargo. Based on the analysis, a multi-stage algorithm for managing customs transit within the E-Tranzit information system of the Republic of Uzbekistan is proposed.

Key words: customs transit, NCTS, control algorithm, E-Tranzit information system, multimodal transportation.

Annotatsiya: Ushbu maqolada O'zbekiston Respublikasida bojxona tranzitini tashkil etish hamda bojxona axborot tizimining rivojlanishi masalalari ko'rib chiqilgan. Bojxona tranzitini tashkil etishda rivojlangan mamlakatlar tajribasi tahlil qilingan. Axborot tizimi algoritmining asosiy bosqichlari o'rganilgan. Xususan, Yevropa Ittifoqining Yangi kompyuterlashtirilgan tranzit tizimi (NCTS) orqali tranzit yuklarning kelishini nazorat qilish mexanizmlariga alohida e'tibor qaratilgan. Tadqiqot natijalariga asoslanib, O'zbekiston Respublikasining "E-Tranzit" axborot tizimi uchun bojxona tranzitini boshqarishning ko'p bosqichli algoritmi taklif etilgan.

Kalit so'zlar: bojxona tranziti, NCTS, boshqaruv algoritmi, E-Tranzit axborot tizimi, multimodal transport.

Аннотация: В статье рассматриваются вопросы организации таможенного транзита и развития таможенной информационной системы Республики Узбекистан. Проанализирован опыт развитых стран в сфере организации таможенного транзита. Изучены основные этапы алгоритма функционирования информационной системы. Особое внимание уделено европейской Новой компьютеризированной транзитной системе (НКТС) в части контроля прибытия транзитных грузов. По результатам исследования предложен многоэтапный алгоритм управления таможенным транзитом для информационной системы «Электронный транзит» Республики Узбекистан.

Ключевые слова: таможенный транзит, НКТС, алгоритм управления, информационная система «Электронный транзит», мультимодальные перевозки.

INTRODUCTION

In recent years, customs administrations in many countries, particularly landlocked countries, have been paying increased attention to customs transit issues. A study of the experience of developed countries shows that achieving effective customs transit largely depends on digitalization and the establishment of information exchange between customs services of all countries involved in the international supply chain and trade flows.

In Central America, the Transit International Merchandise (TIM) system operates to control transit procedures in Mexico, Nicaragua, Honduras, El Salvador, Guatemala, Costa Rica, and Panama.

Since 2022-year, customs transit management in the Republic of Uzbekistan has been carried out using the new E-Tranzit information system. This system enables decision-making based on the automation of information processes and technologies across all customs posts in the country. Over the course of its operation, the E-Tranzit information system has demonstrated its effectiveness: within one year, it processed 268,156 transit declarations, 61,176 documents under Book-11, and 182,120 other related documents.

At the same time, an analysis of the system's performance over the past period indicates that certain customs operations remain outside its coverage, which significantly affects the efficiency of customs authorities. Furthermore, the integration of the E-Tranzit information system with recognized international information systems, such as eTIR, NCTS, and the information systems of the EAEU, remains a pressing issue.

LITERATURE REVIEW

Modern scientific research on customs transit increasingly emphasizes the role of digital technologies, information exchange, and international cooperation in improving the efficiency of transit regimes. According to Aldaniyazov K. (2021-year), the experience of Kazakhstan in obtaining observer status in the EU Convention on Common Transit demonstrates the strategic importance of harmonizing national transit procedures with international standards to facilitate trade in Central Asia. This study highlights the institutional and technological prerequisites necessary for integrating national transit systems into global customs networks.

The digitalization of customs control and transit monitoring has been widely discussed in contemporary literature. Afonin D. N. (2022-year) examines the application of digital technologies in product traceability systems within customs control in the Russian Federation, emphasizing their significance for enhancing transparency and risk management in transit operations. The author concludes that automated control mechanisms substantially reduce administrative barriers and increase the effectiveness of customs supervision.

Issues related to the development of international transport corridors are addressed by Lozinsky A. N. and Sazonov S. L. (2022-year), who analyze the formation of the China–ASEAN land–sea trade corridor. Their research underscores the growing importance of coordinated customs transit procedures and interoperable information systems in supporting large-scale multimodal transportation projects.

The experience of the European Union in automating customs transit processes is particularly relevant for Uzbekistan. Mukhtorov I. M., Dusmukhmedov A. I., and Saidov A. A. (2023-year) examine the adaptation of EU transit automation practices to the customs system of the Republic of Uzbekistan. Their findings confirm that the implementation of electronic transit systems contributes to improved control efficiency, reduced clearance time, and enhanced coordination between customs authorities.

International organizations also provide methodological guidance on transit regulation. The World Customs Organization's Transit Handbook (2017-year) outlines key principles for establishing efficient transit regimes, emphasizing risk-based control, information exchange, and the use of digital platforms as fundamental elements of modern customs administration.

Practical aspects of information system interoperability are reflected in the CTC Traders API Phase-4 Service Guide (2023-year), which details technical solutions for data exchange within the New Computerized

Transit System framework. These guidelines illustrate best practices for ensuring system compatibility and real-time data sharing between customs stakeholders.

Finally, national academic contributions play a crucial role in shaping theoretical and practical approaches to customs security and transit management. Musaeva Sh. A. (2025-year) comprehensively examines customs control and security issues, providing a conceptual foundation for the development of advanced customs information systems in Uzbekistan.

RESEARCH METHODOLOGY

The study employed a systematic approach, marketing analysis, benchmarking, and digital metrics. Mass surveillance methods were applied to collect and analyze data obtained from social media platforms.

ANALYSIS AND RESULTS

The aim of this study was to develop proposals for improving the algorithm of the E-Tranzit information system for managing customs transit, based on the results of a comparative analysis with the information system of the European Union — NCTS.

The legal basis of the European common method of transporting goods is formed by unified laws, regulations, and standards of the European Union in the fields of civil law, taxation, banking, and insurance legislation, as well as the EU road code and other regulatory documents. One of the key documents governing transit organization is the agreement between the countries of the European Union and the countries of the European Free Trade Association on trade using a Single Administrative Document for the transport of goods (SAD Convention of 22-May-1987). In this regard, cargo transit is classified into the following types: internal and external; general, international, and postal.

Intrastate customs transit is a transit procedure applicable exclusively within a single country or customs territory, where the customs offices of departure and destination are located within the same territory. Any required security measures apply only to transit movements within the territory controlled by the customs authority.

International customs transit refers to a transit movement conducted as part of a single customs transit operation during which one or more customs borders are crossed in accordance with a bilateral or multilateral agreement. Such agreements usually establish the form of goods declaration for customs transit and, if required, the application of guarantees in each territory controlled by the parties to the agreement.

Within the framework of the European Union transit system, NCTS operates through the implementation of the following subsystems:

– a subsystem for generating and transmitting data in the Single Administrative Message (SAM) format. Preliminary notification of customs authorities of countries of departure is carried out using the “feedback” principle, which enables faster data transmission and confirmation of the arrival of goods and vehicles at the destination;

– a subsystem for managing a database of lost, stolen, and counterfeit customs seals and stamps used for issuing notifications of cargo transportation and guarantee certificates;

– a product coding subsystem;

– a warning subsystem that enables the transmission of notifications regarding the transportation of high-risk goods from customs offices of shipment to customs transit offices and destination customs offices.

The technology for controlling transit cargo using NCTS includes the following stages. The customs declaration is submitted in electronic form by the foreign trade participant to the customs authority at the place of departure. The electronic declaration may be prepared independently or with the assistance of customs authorities at the place of departure.

The customs declaration must contain all required data and comply with established format specifications, as the system automatically verifies data accuracy. If any discrepancies with approved data are detected or if the declaration does not meet established requirements, NCTS records the violation and refuses acceptance of the customs declaration. In such cases, the foreign trade participant must correct the errors for the declaration to be accepted (Figure-1).

After acceptance, NCTS registers the customs declaration and assigns it a unique registration number. Upon receipt of the registration notification, the customs authority of departure makes a decision on conducting customs control within 15–30-minutes, in accordance with the recommendations of the risk management system.

After completion of all customs control procedures at the customs office of departure, the goods are released under the transit procedure, and the system prints an accompanying transit document. This document, together with the list of transported goods, must accompany the cargo throughout the entire transit period.

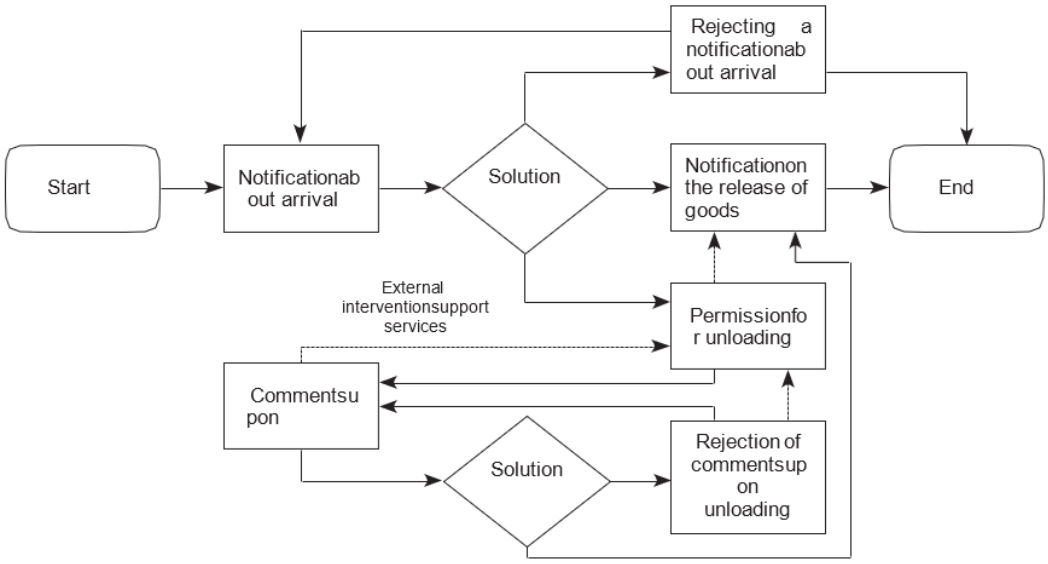

Fig.-1. Block diagram of the NCTS interaction algorithm with users [6].

Simultaneously with printing the accompanying transit document, NCTS sends a notification to the designated customs office of destination. The notification contains information extracted from the customs declaration, enabling the destination customs authority to carry out control upon the actual arrival of the cargo.

If the route of delivery passes through transit customs authorities, NCTS also sends relevant notifications to these authorities to ensure monitoring of cargo movement.

Upon arrival at the transit customs office, the accompanying transit document must be presented to the relevant authority. Its electronic original is automatically retrieved in NCTS using the unique registration number, after which transit procedures may continue. A notification of arrival is sent to the customs office of departure.

The customs office of destination, having received prior notification, possesses complete information regarding the completed transit operations and can determine the appropriate form of control. Following the application of control measures, the destination customs authority within NCTS notifies the customs office of departure of the results.

In the activities of the customs authorities of the Republic of Uzbekistan, the E-Tranzit information system has been introduced. Its development took into account international best practices as well as national legislative specifics. The E-Tranzit system consists of the following subsystems:

a subsystem for foreign trade participants, enabling submission of a preliminary transit declaration prior to arrival at the customs border of the Republic of Uzbekistan (http://cargo.customs.uz);

a subsystem for customs officers to perform customs procedures such as customs inspection, transport control, and related operations;

a subsystem for users of related ministries and agencies authorized to license, certify goods, and issue permits for their import into the territory of the Republic.

The transit declaration is submitted by foreign trade participants through the E-Tranzit information system. Data entry is carried out in four stages, while document generation is completed at the fifth stage.

1. General information:
– type of transport;
– customs sender;
– country of origin of transportation;
– country of destination of transportation.
2. Transport information:
– information about the carrier;
– transport data;
– driver data.
3. Cargo information:
– shipping documents;
– information on goods;
– non-tariff measures regulating foreign trade.
4. Guarantees and fees:
– guarantees;

– fees.

5. Document formation:
6. – in the form of an invoice;
7. – transit declaration format.

The procedure for submitting a transit declaration through the E-Tranzit information system was approved by the decision of the State Customs Committee of the Republic of Uzbekistan and registered by the Ministry of Justice of the Republic of Uzbekistan on 31-August-2022, No.-3382.

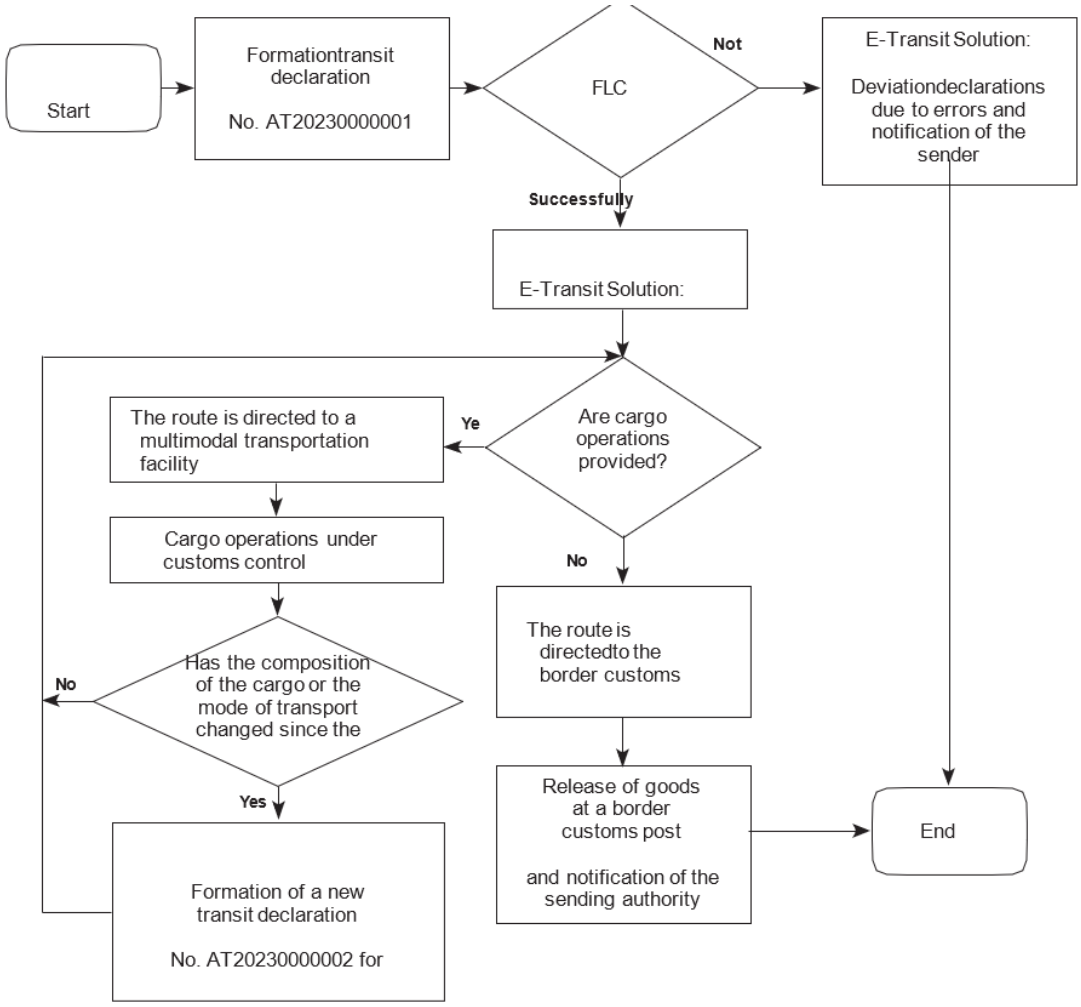

Fig.-2. Block diagram of the customs transit control algorithm for multimodal transportation using the E-Tranzit information system (author's development).

One of the distinctive features of the E-Tranzit information system is its capability to regulate multimodal transit transportation, including control over consolidated cargo destined for different recipients. The system allows registration of cargo operations such as unloading, reloading, and changes in transport mode, all of which are carried out under customs control. The flowchart of the customs transit control algorithm for multimodal transportation using the E-Tranzit information system is presented in Figure-2.

The proposed algorithm has been integrated into the functionality of the E-Tranzit information system as a separate module titled "Cargo Operations." Trial operation of the updated system has demonstrated that the new "Cargo Operations" module enables effective management of customs transit in multimodal shipments and creates favorable conditions for participants in foreign trade.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the earlier version of the E-Tranzit information system did not allow for the management of multimodal transport shipments and required the submission of a new transit declaration after each cargo operation. Timekeeping studies conducted following the implementation of the updated version of the E-Tranzit

information system confirm that it contributes to an increase in the throughput capacity of customs posts by 1.5–2-times.

At the same time, under conditions of the practical operation of information systems in industrial environments, there remains a need for further improvement of the E-Tranzit information system, particularly in terms of its integration with the risk management system and the enhancement of customs transit targeting mechanisms.

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