сортування вагонів на станції. Автоматизація процесу прицільного гальмування відчепів привела до скорочення довжини «вікон» майже на 90%. Крім того, швидкість співударяння була знижена до 5,6 км/год.

Зазначене вище показує, що завдяки автоматизації вдається забезпечити більш точне та безпечне гальмування відчепів, зменшуючи можливість виникнення аварій та пошкоджень. Такі показники свідчать про високу ефективність автоматизованих систем керування та контролю в роботі з відчепами.

[1] Огар О.М. Розвиток теорії експлуатації та методів розрахунку конструктивно-технологічних параметрів сортувальних гірок : дис. … д-ра техн. наук : 05.22.20. Харків, 2011. 368 с.
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## ANALYSIS OF THE CAUSES OF INTERNATIONAL CARGO DELAYS DURING CUSTOMS CONTROL AT CHECKPOINTS IN UKRAINE

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Customs clearance, as a mandatory procedure for obtaining permission for goods transported to any country, is often one of the determining links of the logistics chain in the overall duration of the delivery of goods. The increase in the volumes of cargo transported from Ukraine to other European countries by rail in recent years has led to an increase in waiting time at checkpoints and border railway stations. At the same time, the waiting time for customs control at certain checkpoints reached up to 25 days. This results in an extended delivery period and serves as a reason for the reduction in the value of domestic goods, making them less attractive in the international market. Therefore, the question of reducing the waiting time for customs procedures is a strategically important task that should be addressed comprehensively, taking into account the technical and technological components of this process.

In contemporary scientific literature, there are not as many articles and works dedicated to the improvement of customs clearance technology. Significantly more attention has been given to developing measures in the financial and economic aspects of customs procedures — increasing revenues and fees, implementing tariffication in accordance with modern international standards.

Therefore, firstly, it is necessary to develop technical solutions and technological measures to improve customs services with the aim of reducing the time cargo spends under customs control and avoiding large queues at the border.

With the onset of the war in Ukraine, more than half of domestic enterprises either partially or completely ceased their operations due to the destruction of facilities and infrastructure, the occupation of regions, high levels of uncertainty and risks, disruptions in material-technical and production ties, and forced mass migrations of the population. These factors also impacted the transportation sector of the country, the enterprises of which constitute 11% of the total in the industrial sector.

Significant changes have also occurred in the export-import component of freight transportation. After the blockade of seaports, the export cargo flow was redirected to western border crossings. However, the capacity of EU infrastructure currently cannot handle the processing of large volumes of Ukrainian exports. The insufficient number of railway crossings with different track gauges hinders the transportation of goods by rail. The technical capacity and fleet size of neighboring countries are also inadequate.

Moreover, the process of rail freight transportation is accompanied by prolonged customs clearance, leading to additional delays. By the middle of 2023, the export of goods from Ukraine had decreased by over 35-40%. This reduction occurred across all modes of transport, but considering that before the war, over 90% of goods were exported through seaports, the export logistics underwent significant changes.

The analysis of the reasons for the significant duration of procedures during customs control, as provided in [1], allows for categorization into three groups: technological, technical, and issues related to document processing.

The reasons for problems with customs documents include:

- a large number of accompanying documents and obtaining certificates of origin for goods at the customs, the absence of simplified rules for determining the origin of goods, and the taking of samples of goods;
- inaccuracies in cargo information, non-compliance of the cargo with the provided information;
- the absence of a complete set of necessary documents;
- inconsistency between Ukrainian and foreign transportation documents;
- changes in the customs value of goods or requirements for its increase.

Technological factors influencing the duration of customs procedures include:

- lack of transparency in decision-making, conflicting with the requirements of international trade laws and control compliance developed by the WTO;
- complexity of the procedure, which depends on the customs regime, type of cargo, destination or origin country, reputation of the cargo owner;
- intellectual property rights control as one of the formal customs control procedures;
- quality control of goods for certain types of cargo, especially valuable ones;
- shortage of inspectors on-site due to significant workload of customs officials on railways after redirecting cargo flows from maritime transport;

Technical delays at customs are caused by reasons such as:

- lack of proper customs infrastructure, equipment, and software;
- manual decision-making processes;

- the need for scanning and weighing vehicles in the absence of regulatory documents regulating the use of scanning systems during customs control.

The key answer to accelerating customs procedures and avoiding delays in the movement of international goods lies in the systematic development of customs procedure execution technology that aligns with international standards and modern technical support for customs through automated decision support systems. The implementation of such measures will significantly impact the activities of Ukrainian businesses and the personnel of regional customs offices.

[1] Simplification of trade procedures in Ukraine: evaluations and expectations of business. Kyiv. 2021. 275 p.

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## АНАЛІЗ СУЧАСНОГО СТАНУ ЦИФРОВІЗАЦІЇ МИТНИХ ФОРМАЛЬНОСТЕЙ НА ПРИКОРДОННИХ ПЕРЕДАВАЛЬНИХ СТАНЦІЯХ УКРАЇНИ

## ANALYSIS THE CURRENT STATE DIGITALIZATION OF CUSTOMS FORMALITIES AT BORDER TRANSMISSION STATIONS OF UKRAINE OPERATIONS IN RAILWAY CONNECTION

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Одним із факторів, що впливає негативно на транспортний процес, є нерівномірність залізничних перевезень. Неузгодженість дій вантажовласників із суміжними органами держави призводить до затримок вагонів через тривале проведення митних операцій.

Ргідно зі «Стратегією здійснення цифрового розвитку, цифрових трансформацій і цифровізації системи управління державними фінансами на період до 2025 року» [1] Українські ІТ-спеціалісти вже почали трансформацію Держмитслужби України. Вже вдалось оновити систему управління ризиками та митного оформлення (АСУР 2.0 та АСМО 2.0), яка інтегрована з системою NCTS (Нова комп'ютерізована транзитна система). Оновлена автоматизована система управління ризиками створена щоб перевести частину паперових