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**EFFECTIVE CARGO TRACKING SYSTEM WITH GPS AND RFID AS A TRANSPARENCY
AND CONTROL FACTOR IN LOGISTICS**

The current development of global logistics requires new approaches to ensuring transparency and operational control, where high-tech monitoring tools play an important role. The relevance of the topic is due to the need to reduce the risks of cargo loss, delays in supply, and insufficient control of logistics processes in real time. In modern supply chains, companies face increasing demands for accuracy, speed, and reliability of deliveries, which makes the implementation of digital tracking solutions especially important. The use of technologies such as GPS and RFID acts as the foundation for the creation of an effective tracking system that allows you to turn traditional logistics into a controlled and predictable process. These tools provide continuous access to information about the location, condition, and movement of goods, enabling faster decision-making and improved coordination between logistics participants. At the same time, each of these technologies has its own specificity and functional purpose, which allows them to be used both separately to solve highly specialized tasks and within the framework of a comprehensive approach to the management of goods flows, increasing overall efficiency and customer satisfaction.

The term GPS, abbreviated as «Global Positioning System» means satellite navigation system, provides users with position and time information in all climatic conditions. GPS is also used for navigation in planes, ships, cars and trucks [1, p. 529]. In the logistics field, GPS tracking makes it possible to control transportation routes, respond in a timely manner to deviations from the planned schedule, and increase transportation discipline. It is especially important for companies that deliver over long distances or work in conditions of unstable transport infrastructure, as it ensures the accuracy of data on the location of the cargo and allows forecasting the time of arrival. Thanks to continuous satellite control, the level of transport safety increases and the probability of unauthorized access to goods or deviation from a given route decreases. Thus, GPS technologies create the basis for more efficient logistics planning, help enterprises quickly make management decisions, reduce transportation time and form transparent interaction between all participants in the supply chain.

In practice, GPS tracking is widely applied by leading international companies to improve logistics efficiency. For example, Walmart, one of the world's largest retail corporations with an extensive distribution network, actively uses advanced digital tools to manage its transportation operations. By analyzing information from GPS, traffic patterns, and delivery schedules, Walmart is able to identify the most efficient routes for its trucks. This means trucks travel fewer miles and use less fuel [2, p. 1101]. Which shows that GPS helps not only to control the cargo, but also to really save on fuel due to smart path planning. In addition, such technologies improve delivery reliability, because companies can quickly adjust routes in case of traffic issues or delays.

On the other hand, if GPS is responsible for the outer perimeter and long-distance movement, then radio frequency identification technology focuses on point control of commodity units. «RFID is an ideal technology to source big data, partially in supply chains, because RFID tags are considered across supply chain process, which includes scanning raw materials, complying products, transporting goods, and storing products, with accuracy and speed» [3, p. 1].

If GPS is commonly used for long-range monitoring, then RFID is best suited for working inside warehouses or terminals. Instead of manually scanning each barcode, the system automatically records the presence of each box or pallet falling within the range of the reader. This allows you to instantly receive complete information about the cargo, significantly speeding up the reception and shipment of goods. As a result, logistics nodes work much faster, and the number of errors that previously arose due to the human factor is reduced to a minimum.

The practical application of RFID technologies confirms their effectiveness in the activities of leading international logistics operators. One example is DHL, a global leader in express delivery and contract logistics, which is actively implementing digital innovations to optimize warehouse and transportation processes. The

company's 2022 report stated that RFID technology reduced ship processing time by 20%, and lost ships decreased by less than 10% [4, p. 89]. This suggests that automated cargo identification significantly increases the accuracy of logistics operations, minimizes delays and reduces the risks of human-factor errors.

Another example of effective use of RFID is Maersk, one of the world's largest shipping corporations specializing in international container transportation. RFID technology is used by Maersk, a global shipping company that tracks containers in real time [4, p. 89]. Thanks to this, the company can quickly monitor the location of containers, reduce the risks of loss or delays in ports and increase the overall level of reliability of global supply chains.

Overall, the active implementation of digital monitoring technologies reflects the global transition of logistics toward smart and data-driven supply chain management. Modern companies increasingly rely on real-time information systems to ensure uninterrupted cargo movement, reduce uncertainty, and respond quickly to unexpected disruptions. GPS and RFID solutions not only improve transparency, but also form the technological basis for the development of integrated logistics platforms, where tracking, forecasting, and process automation are combined into a single management environment. As a result, enterprises gain stronger operational resilience, higher service quality, and improved competitiveness in the international market.

Therefore, the application of GPS and RFID technologies has become an essential component of modern logistics development. Their use ensures a higher level of transparency, accuracy, and coordination throughout the entire supply chain. By combining satellite navigation with automated identification systems, companies are able to strengthen operational control, minimize risks related to delays or cargo loss, and improve the overall efficiency of logistics processes. Consequently, such integrated tracking solutions support the formation of reliable, flexible, and customer-oriented supply networks that meet the requirements of today's global market.

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PROCUREMENT LOGISTICS STRATEGIES AND INNOVATIVE SOLUTIONS FOR THEIR IMPLEMENTATION IN DOMESTIC AGRICULTURAL ENTERPRISES

Identifying and taking into account the specific features of agriculture [1, pp. 11–12] in the process of developing procurement logistics strategies (Table 1) made it possible to justify innovative solutions for the implementation of these strategies by domestic agricultural enterprises.

The application of the “Global Sourcing” strategy for the procurement of material and technical resources necessary for agricultural production is limited by their sufficient availability in Ukraine and the need to take into account certain conditions of agricultural production in Ukraine. Therefore, in our opinion, a narrower source strategy – “Regional Sourcing” – is more acceptable for agricultural enterprises (for example, to meet the need for modern agricultural machinery).