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ADVANCED CUSTOMS TECHNOLOGIES (INTERNATIONAL LEGAL ASPECT)

GUIDE

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The research material examines practical aspects of the application of advanced customs technologies by the international customs community. The material was prepared based on an analysis of the experience of the Eurasian Economic Union (the EEU), the World Customs Organization (the WCO) and the Asia-Pacific Economic Community (APEC).

The conducted research can be useful for a wide range of specialists in the field of international customs cooperation and improvement of customs regulation based on international standards. It can be used by researchers, teachers, students, postgraduates and other categories of students in universities and regional training centers of the WCO in the specialties of "Customs" and "Jurisprudence", as well as specialists of customs and other executive bodies in the EEU Member States, the Eurasian Economic Commission (the EEC) experts for organization and implementation of mutually beneficial customs cooperation between the EEC and the WCO.

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INTRODUCTION

Relevance of the research topic. The World Customs Organization (hereinafter, the WCO) is actively working on the modernization of legal instruments and tools for the automation and digitalization of modern Customs activities through implementation of Smart Customs Project as well as creation of a Mini Group composed of interested Members and Observers to update the ICT Guidelines and to review the need to update the IT Guide for Executives (hereinafter, mini group, ICT legal tools).

The issue of introducing advanced customs technologies into the activities of modern Customs remains relevant for the Customs services of the Member States of the Eurasian Economic Union (hereinafter, the EEU, the Union), which are the WCO Members as well as the Eurasian Economic Commission (hereinafter, the EEC, the Commission), which as an observer takes part in the work of the WCO technical committees.

Customs regulation is one of the tools for creating favorable conditions for doing business and promoting the expansion of trade with third countries. Over the past 15 years, the EEU has created a unified legal framework in the area of customs regulation. The EEC Customs Cooperation Block pays special attention to the development of advanced customs technologies, including Single Window mechanism in the EEU Member States.

As part of building a dialogue with foreign partners, the Commission develops customs cooperation by expanding areas of interaction on current issues on the customs agenda, including improving customs administration, developing the institution of Digital (Smart) Customs, exchanging experience in introducing advanced digital technologies into activities of modern Customs, developing a Single Window mechanism, modern customs infrastructure and information exchange, improving the institution of customs transit and using navigation seals.

The authors' experience in the work of WCO technical committees allows us to conclude that today more emphasis needs to be placed on practical aspects of introducing Digital (Smart) Customs into the practice of customs administration.

For decision makers in Customs authorities, it is important to have a legal toolkit that allows them to manage promptly business processes of Digital

(Smart) Customs, as well as to understand modern customs technologies that are being implemented by the international customs community as part of the creation of a new customs operating model – digital (smart).

The purpose of this study is to form a list of advanced customs technologies planned for implementation and used by Customs services of the WCO Member States, as well as in the EEU.

The need to achieve the set goal has led to the formulation and solution of the following main tasks:

– to get acquainted with the WCO Smart Customs Project;

– to analyze the issues of modernizing the ICT Guidelines and to review the need to update the IT Guide for Executives within the framework of the WCO Mini Group;

– to study the WCO legal instruments and tools for development of Smart Customs institute posted on the Smart Customs Community Portal;

– to analyze the WCO and APEC research on implementation of advanced customs technologies in the activities of Customs authorities;

– to study scientific research on development of Smart Customs institute and implementation of advanced customs technologies;

– to analyze the EEU law in the field of customs regulation and projects being implemented to develop the institute of Digital (Smart) Customs;

– to study concepts for development of Smart Customs Institution in individual WCO Member States;

– to form a list of advanced customs technologies with brief explanations of their practical implementation in modern Customs;

– to consolidate the conceptual apparatus in terms of the implementation of advanced customs technologies (terms and definitions).

The conducted research can be useful for a wide range of specialists in the field of international customs cooperation and improvement of customs regulation based on international standards. The results of the work can be used within the framework of the functioning of the Mini Group and the WCO Permanent Technical Committee on modernization of the ICT legal tools.

This work can be used by researchers, teachers, students, postgraduates and other categories of students in universities and the WCO regional training centers in the specialties of ”Customs” and “Jurisprudence”, as well as specialists of Customs and other executive bodies in the EEU Member States, the EEC experts for development of the institute of Digital (Smart) Customs, the organization and implementation of mutually beneficial customs cooperation between the EEC and the WCO.

1. ABOUT THE WORLD CUSTOMS ORGANIZATION SMART CUSTOMS PROJECT

In May 2025, the World Customs Organization invited WCO Member States and Observers to participate in a survey on the Smart Customs Project.[1]

The international customs community rightly considers this initiative relevant and promising, as it aims to create a structured repository of stakeholder experience in the field of advanced customs technologies in support of the WCO Strategic Plan for 2022-2025 with the focus area "Technology and Innovation". The mentioned tool will allow WCO Members and Observers to study practices of stakeholders, supporting the solution of the problem of introducing advanced customs technologies into the activities of modern Customs. The work will be carried out through a special survey under the auspices of the Smart Customs Project.

In 2022, WCO Members identified "Technology and Innovation" as one of the three pillars of the WCO Strategic Plan 2022-2025 to advance customs digitalization and modernization.

As highlighted in the WCO/WTO Study Report on Disruptive Technologies (June 2022), the integrated use of technologies is critical for Smart Customs of the future. Currently, Customs administrations are implementing technologies largely independently creating a gap in their level of technological development.[2]

The WCO Smart Customs Project was launched in December 2023 for a period of 3 years with financial support from China Customs. It is a major initiative to bridge these gaps by promoting technological integration in Customs administrations worldwide. This project aims to further explore practical application and implementation of key disruptive technologies in customs operations.

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[1] Reference: In line with the WCO 2024 theme "Customs Engaging Traditional and New Partners", the WCO Smart Customs Project announced in June 2024 the engagement of external stakeholders, including the private sector, academia and international organizations, recognizing their role in shaping the discourse around disruptive technologies and their application in customs practice.

[2] WCO/WTO Study Report on Disruptive Technologies 2022. WCO.URL: https://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/wco-wto-study-report-on-disruptive-technologies-2022.aspx

The project will develop detailed reports on minimum technical specifications (for implementation/integration), costs and trends, as well as use cases, business processes, policy arrangements and legal requirements for the technologies under consideration. These were identified through regional consultations with WCO Members and a survey aimed at assessing Members' needs and the status of implementation of the technologies. All other technologies that are not currently under the focus of the project are being addressed through updating research report, as well as discussions via the community portal and regional workshops.[1]

The WCO identifies the following **objectives of the project**:

1. Identify Members' needs and technology implementation status.

The project aims to assess the current technology adoption landscape among WCO Members identifying needs and gaps in the implementation of advanced technologies.

2. Knowledge sharing and dissemination.

To promote the exchange of knowledge and best practices in the innovative use of technology in customs operations worldwide.

3. Technological research and understanding.

Providing a comprehensive understanding of available technologies relevant to customs.

4. Problems and definition.

To explore the challenges and barriers associated with the implementation and effective use of technology in Customs, taking into account strategic, sociological and cultural perspectives.[2]

For the convenience of users, the Smart Customs Platform contains information on previously conducted research on the topic of introducing advanced customs technologies into Customs work.

Thus, in order to position the experience of the People's Republic of China (hereinafter, the PRC) in developing the Smart Customs institute, the Smart Customs Project portal has posted an overview "China's Smart Customs Journey: Insights into Modernizing International Customs".[3] The following reports are also presented to experts:

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1 The WCO Smart Customs Project. URL: https://scp.wcoomd.org/wco-smart-customs-project

2 https://scp.wcoomd.org/project-objectives

3 China's Smart Customs Journey: Insights into Modernizing International Customs. WANG Ling jun. Vice Minister of the General Administration of Customs of the People's Republic of China. URL: https://scp.wcoomd.org/sites/default/files/2025-05/China%27s%20Smart%20Customs%20Journey-%20Insights%20into%20Modernizing%20International%20Customs.pdf

1. Case Study on the Adoption of Artificial Intelligence (AI) and Machine Learning (ML) in China Customs. January 2025.[1]

2. Detailed Report on the Adoption of Artificial Intelligence and Machine Learning in Customs. March 2025.[2]

3. Results of the WCO Smart Customs Survey. July 2024.[3]

In addition, the following WCO legal instruments and tools under the project are posted on the portal:

1. WCO/WTO Study Report on Disruptive Technologies. June 2022.[4]

2. The Role of Advanced Technologies in Cross-border Trade: A Customs Perspective. 2022[5]

3. WCO Capacity Building Framework on Data Analytics.[6]

4. Data Analysis Practitioner›s Handbook. June 2018.[7]

5. IT Guide for Executives. June 2018.[8]

6. General Annex Guidelines. Chapter 7. Application of Information and Communication Technology. Kyoto Convention. March 2014.[9] (hereinafter, the ICT Guidelines).

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[1] Case Study on the Adoption of Artificial Intelligence (AI) and Machine Learning (ML) in China Customs. January 2025. URL: https://scp.wcoomd.org/sites/default/files/2025-05/EN_Case%20study%20China_SCP_Jan25_0_0.pdf

[2] Detailed Report on the Adoption of Artificial Intelligence and Machine Learning in Customs. March 2025. URL: https://scp.wcoomd.org/sites/default/files/2025-03/public-version_detailed-report-on-the-adoption-of-ai-and-ml-in-customs.pdf

[3] Results of the WCO Smart Customs Survey. July 2024. URL: https://scp.wcoomd.org/sites/default/files/2025-05/Public%20_Report_%20EN%20_31072024.pdf

[4] WCO/WTO Study Report on Disruptive Technologies. June 2022. URL: https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/wco-wto-joint-report/wco-wto-study-report-on-disruptive-technologies-en.pdf?db=web

[5] The Role of Advanced Technologies in Cross-border Trade: A Customs Perspective. 2022. URL: https://www.wto.org/english/res_e/booksp_e/wcotech22_e.pdf

[6] WCO Capacity Building Framework on Data Analytics. URL: https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/capacity-building/instruments-and-tools/capacity-building-framework-on-data-analytics_en.pdf?db=web

[7] Data Analysis Practitioner's Handbook. June 2018. URL: https://www.wcoomd.org/-/media/wco/member/global/pdf/topics/facilitation/instruments-and-tools/tools/data_analysis_handbook/data_analysis_practitioners_handbook.pdf?db=web

[8] IT Guide for Executives. June 2018. URL: https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/it-guide-for-executives/it-guide-executives.pdf?db=web

[9] General Annex Guidelines. Chapter 7. Application of Information and Communication Technology. Kyoto Convention. WCO. URL: https://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/ict-guidelines/ict-guidelines.pdf?db=web

To enable participation in the survey, the WCO Secretariat has developed a survey form (Appendix 1).

It is worth noting that the WCO proposes to conduct a survey on the application of mainly ‘disruptive’ digital technologies, such as Blockchain, Big Data and Data Analytics, Artificial Intelligence and Machine Learning, Robots, Biometrics, Virtual, Augmented and Mixed Reality, Geospatial Mapping, Cloud Computing, Drones, Edge Computing, Smart Gate Systems, Automated lanes, Internet of Things, Scanners.

The conducted analysis of international experience showed us that the international Customs community, within the framework of the development of the Smart Customs institute, also positions other legal and technological solutions. At the same time, a complete list of advanced customs technologies in the WCO has not yet been formed.

Of course, participation in the survey of WCO Member States, Observers, including international organizations and academic circles is necessary. In our opinion, for the successful implementation of this intention, survey participants need a clear understanding of advanced customs technologies, which requires:

– to study previously conducted research by the WCO and other international organizations in terms of the implementation of advanced customs technologies, including those posted on the Smart Customs Portal;

– to review the WCO legal instruments and tools for development of the Smart Customs institute, posted on the Smart Customs Portal;

– to understand the practical aspects of implementing advanced customs technologies.

– when preparing analytical information and preparing for the survey, to take the following elements characterizing the institution of Digital (Smart) Customs as a basis (Table 1).

Table 1.

LIST OF ADVANCED CUSTOMS TECHNOLOGIES

Automation of customs administration

Item No.	Name of automation element
1	2
1.	Availability of a personal account for interaction with Customs authorities
2.	Electronic declaring: – including electronic transit declarations; – electronic declarations of goods for express cargo

Item No.	Name of automation element
1	2
3.	Automatic registration of goods declarations
4.	Automatic registration of transit declarations
5.	Auto release of declarations
6.	Automatic control of the correct classification of goods and detection of violations related to the declaration of false information about the classification code of goods
7.	Electronic preliminary informing
8.	Remote release of goods
9.	Automation of customs control processes after the release of goods (electronic customs inspection)
10.	Automatic selection of control objects
11.	Automation of selection of objects of customs control after release of goods
12.	Integration of information resources of Customs authorities with basic components of the e-government infrastructure
13.	Application of contactless methods of interaction between subjects of customs legal relations
14.	Electronic transit declarations
15.	Payment in a centralized manner (single personal account)
16.	Independent management of the payer's funds

Digitalization of customs administration

Item No.	Name of the digitalization element
1	2
Supranational projects in the EEU	
1.	Implementation of Goods Traceability System
2.	Use of navigation seals. End-to-end control of goods movement across the territory of the EEU
3.	Unified System of Customs Transit (electronic transit)
4.	Implementation of information interaction within the framework of common processes through the EEU Integrated Information System
5.	Implementation or participation in digital pilot projects, such as: digital transport corridors, goods marking, digitalization of rail transport within the framework of trade and economic cooperation with third countries and other similar projects

Item No.	Name of the digitalization element
1	2
Single Window mechanism	
6.	Ensuring the exchange of information with stakeholders through a single point of access (entry), as well as the absence of the need to submit relevant documents on paper
7.	Transition from electronic document management to data exchange
8.	Creation of an ecosystem for managing foreign economic activity based on the principles of managing data, processes, interactions and changes
9.	Implementation or participation in pilot projects within the framework of the national Single Window mechanism
10.	Coordinated border management: – within the country; – within the framework of interstate information interaction with Customs authorities of neighboring states; - combination of customs and border control functions
Electronic Commerce	
11.	Interaction of Customs authorities' information systems with electronic trading platforms
Customs infrastructure	
12.	Availability of Electronic Declaration Centers (EDC)
13.	Application of centralized automatic dispatching: – between the EDCs – between inspectors
Customs control	
14.	Smart, flexible, self-adjusting Risk Management System (RMS) (risk assessment of a consignment of goods)
15.	Digital Twins (predicting reactions to changes)
16.	Customs monitoring
17.	Online monitoring
18.	Preliminary decisions on choice of relevant forms of customs control before arrival of goods
19.	Automation of the process of control over correct classification of goods
20.	Electronic systems for verification (confirmation) of origin

Item No.	Name of the digitalization element
1	2
	Copyright protection
21.	Transition to exclusively electronic interaction with the copyright holder (when maintaining the customs register, as well as when revealing counterfeit goods)
	Customs declaration
22.	Conducting semantic analysis of information from the customs declaration, as well as accompanying documents (transport, commercial) and permits obtained by means of interdepartmental interaction
	Digital technologies
23.	Big Data
24.	Artificial Intelligence
25.	Cloud computing
26.	Internet of Things
27.	Blockchain
28.	Machine learning
29.	Mobile technologies, including the use of mobile devices
30.	Biometrics
31.	Augmented reality
	Smart (intelligent) checkpoint
32.	“Electronic coupon (line)” system
33.	Automatic registration of vehicle arrival
34.	Online categorization of consignment of goods
35.	Checking the possibility of automatic release of goods in accordance with the declared customs procedure
36.	Automatic introducing goods under the customs transit procedure
37.	Automatic reading and recognition of vehicle number plates
38.	Automatic radiation control
39.	Automatic weight control (weight and size complex)
40.	Automatic inspection using inspection and screening complexes (ISC)
41.	Application of Artificial Intelligence to the analysis of ISC images
42.	Image recognition (automatic detection of control objects)
43.	Smart analysis of ISC images;

Item No.	Name of the digitalization element
1	**2**
44.	Other types of control using technical means of customs control
45.	Unified information network of technical means
46.	Integration of a unified information network of technical means with information systems of state regulatory bodies
47.	Automatic decision making on the choice of operations procedure. *Note: data from technical customs control systems are automatically transmitted to the unified system of Customs authorities and are used when directing a vehicle through a red or green channel and when automatically performing customs operations*

2. MODERNIZATION OF THE WCO INFORMATION AND COMMUNICATIONS TECHNOLOGY GUIDELINES AND CONSIDERATION OF THE NEED TO UPDATE THE IT GUIDE FOR EXECUTIVES

At the 247th/248th sessions of the WCO Permanent Technical Committee (hereinafter, PTC, the Committee), which was held from 5 to 8 May 2025, under Agenda Item XI, it was decided to establish a Mini Group on Updating the ICT Guidelines and the IT Guide for Executives.

The PTC encouraged delegates to participate in the Mini Group and noted that a progress report should be submitted to the Committee in October 2025 (hereinafter, ICT Guidelines, ICT, IT Guide, WCO legal tools).

To implement this decision, the WCO Secretariat on 28.05.2025 invited Members and Observers interested in participating in this group, including the EEC, to send information about their representatives to participate in the work of the Mini Group. The Customs Cooperation Block of the Eurasian Economic Commission became part of it.

On June 17, 2025, the 1st meeting (virtual meeting) of the Mini Group took place.

To achieve the set task – modernization of the mentioned WCO legal tools, we proceed from the following provisions.

1. The experience of modernizing the WCO legal instruments and tools, in particular the International Convention on the Simplification and Harmonization of Customs Procedures (hereinafter, the Kyoto Convention), has shown that the lack of a concept and methodology for modernizing the WCO legal instrument (tool) does not allow to carry out this work properly. An example of this is the attempt to modernize the Kyoto Convention in the period of 2018-2023.

To modernize the ICT Guidelines and the IT Guide for Executives, it is necessary to prepare a concept (concept note) and methodology for modernization, which disclose such elements as goal, objectives, specific result, etc.

2. When modernizing the mentioned WCO legal tools, it is necessary to appeal to the developed WCO legal instruments and tools that reflect the positive experience of the WCO Member States and Observers in terms of ICT implementation (the list is presented in Appendix 2).

3. As part of the Kyoto Convention Modernization Project (2018-2023), the WCO Secretariat and the experts of the Revised Kyoto Convention Management Committee have consolidated all proposals from WCO Member States and Observers on the modernization of Chapter 7 of the General Annex and the Guidelines thereto.

In this context, the WCO Secretariat and members of the Mini Group are invited to refer to the document Annex II to doc. PO0160Ea "Findings of the Assessment of Developed Recommendations Against the RKC and existing WCO instruments and tools (step 2)", which reflects the approaches of the international customs community to the modernization of the Kyoto Convention on the use of ICT.

4. The EEC is studying international experience in implementing ICT in the activities of modern Customs. As part of the modernization of the abovementioned WCO legal tools, members of the Mini Group are advised to review the following Asia-Pacific Economic Community documents, which deal with practical aspects of the ICT use, including advanced customs technologies:

Compendium of Smart Customs Practices for APEC Economies. Asia-Pacific Economic Cooperation. Submitted by: People's Republic of China November 2023.[1]

Findings and Practices on Smart Customs in APEC. Free Zones/Free Trade Ports. APEC Sub-Committee on Customs Procedures. March 2024.[2]

5. Today, the WCO is implementing the Smart Customs Project, which accumulates international experience in implementing advanced customs technologies (see §1 of this Guide). The WCO Secretariat and members of the Mini Group are invited to refer to the reporting materials of this project and consider the possibility of using them when updating the WCO legal tools.

6. Based on the time period set for the preparation of proposals for the modernization of the named WCO legal tools (September 2025), which are planned to be announced at the PTC meeting on October 28-30, 2025, and also taking into account the summer period (vacations), the optimal option for solving the task set by the PTC may be the development by a Mini Group of a concept (conceptual approaches) for the modernization of legal tools.

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[1] Compendium of Smart Customs Practices for APEC Economies. Asia-Pacific Economic Cooperation. Submitted by: People's Republic of China November 2023. URL: https://www.apec.org/docs/default-source/groups/sccp/compendiumofsmartcustompracticesforapececonomies_0424.pdf?sfvrsn=acc161e1_2

[2] Detailed Report on the Adoption of Artificial Intelligence and Machine Learning in Customs. March 2025. URL: https://scp.wcoomd.org/sites/default/files/2025-03/public-version_detailed-report-on-the-adoption-of-ai-and-ml-in-customs.pdf

7. In the event of amendments to the WCO tools without prior approval by the PTC of the revision concept, there is a risk that the proposed amendments will be rejected by Member States, since the mandate to carry out such a large-scale work has not been formally granted to the Mini Group.

8. The IT Guide states that it contains information and data on the strategic management process concerning the use of ICT in Customs. This WCO tool contains information on strategic planning, strategic aspects, and project management in the field of ICT.

The existence of the IT Guide is assessed positively, as it should form *a clear understanding* among the executives of Customs authorities and authorized persons responsible for the development of customs administration and the application of advanced customs technologies *about existing ICTs, their characteristics and practical approaches (aspects) for the implementation of ICTs in practice.*

At the same time, the IT Guide lacks the following important elements:

– detailed information about ICT itself, including advanced digital technologies that are advisable to implement in modern Customs;

– classification of such technologies and their description;

– legal and technical recommendations for the implementation of ICT, including advanced ICT;

– practical examples and review of ICT practical use in the field of customs regulation.

9. The IT Guide refer to the development by the World Customs Organization of a Digital Customs Maturity Model and a Digital Customs Concept.

Such concept and model could become good tools for development of Digital (Smart) Customs.

In this regard, it is proposed to introduce a descriptive part of the mentioned concept of Digital Customs development, as well as explanations (description) to the figure of the Digital Customs Maturity Model.

10. The IT Guide does not disclose the concept of Digital Customs (organization, process, technology, or their combination), it is proposed to provide an interpretation of these terms.

11. In the absence of an understanding of the term ‘Digital Customs’, the IT Guide mentions the concept of Maturity Model of Digital Customs, which appears to be ambiguous.

12. The IT Guide operates with the concept of Digital Customs. At the same time, the WCO agenda includes the urgent issue of developing the institution of Smart Customs. In this regard, it is proposed to bring the text of the WCO legal tools under consideration to a single conceptual apparatus.

13. In our opinion, it is advisable to reflect in the IT Guide a complete list of WCO legal instruments and tools that regulate issues of ICT implementation, as well as to optimize the content of the IT Guide, in which 43 pages out of 77 pages of text are devoted to the Bali Agreement (TFA).

14. To date, we have systematized advanced customs technologies based on the study of international experience (see § 4 of this study).

We express our readiness to present the results of this work within the framework of the Mini Group, as well as at the next session of the WCO Permanent Technical Committee.

The results obtained, in our opinion, will allow us to fill the IT Guide with useful information regarding the implementation of advanced ICT.

We believe that the list of advanced customs technologies we are developing with brief explanations can be added as an appendix to the IT Guide.

15. An innovative solution could be *the development of the* ***WCO Reference Model of Digital (Smart) Customs***.

We express our readiness to voice the experience of the Eurasian Economic Union in creating a reference model at the regulatory level.

16. In our opinion, the IT Guide would be significantly enriched if its provisions contained a draft *Model (Reference) Concept for the Development of Digital (Smart) Customs*.

As a basis, we propose to turn to the conceptual approaches (concepts) of Smart Customs developed in the People Republic of China, Hong Kong (China) and Japan. As a promising direction of work, we propose to develop a ***Maturity Model of Digital (Smart) Customs*** with a text description of its main elements.

3. DEVELOPMENT OF THE SMART CUSTOMS INSTITUTE IN THE EURASIAN ECONOMIC UNION

The Eurasian Economic Commission is a permanent regulatory body of the Eurasian Economic Union (hereinafter, the EEC, the Commission), which includes the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation. The main task of the Commission is to ensure the conditions for the functioning and development of the Union. A single customs territory has been created in the EEU, and uniform customs regulation is being implemented.

The legal basis for the Electronic Customs institute in the Union Member States is laid down in the EEU modernized Customs Code of 2018, which defines such important principles as: electronic customs declaring, automatic registration of customs declarations, automatic release of goods. The document provided the possibility of filing in goods declarations without providing documents confirming the information declared in customs declaration, and laid down the implementation mechanism of Single Window principle. One of the most important tasks is to expand the use of digital technologies in customs regulation, which would ensure automatic customs operations without the participation of officials. Thus, the goal is to make customs control less visible to businesses and less costly, both on the part of government bodies and on the part of businesses.[1]

On December 11, 2020, the Heads of State of the Union adopted the Strategic Directions for the Development of Eurasian Economic Integration until 2025 (hereinafter, Strategy). The Strategy includes more than 300 measures for the development of Eurasian economic integration. The implementation of the Strategy will create the conditions and tools for the digital transformation of the Union, ensuring the comprehensive implementation of digital technologies in economic processes, the unity of customs administration in the EEU customs territory, and increasing the efficiency of the supranational bodies of the Union.

In the area of customs regulation, the Strategy defines the following areas:

– extension of use of digital technologies that ensure an automatic execution of customs operations;

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[1] *Dubrovskaya T.V.* Improving customs regulation in the EEU at the present stage. Transcript of a speech from the round table meeting “EEU 2021 - work without borders”, held within the framework of the International Congress of Entrepreneurs of the EEU, June 2021. URL: https://customs-academy.net/?p=15831

– ensuring a unified standard for carrying out customs operations and customs control;

– further unification of electronic document exchange between Customs authorities and foreign trade participants;

– regulation of electronic commerce issues;

– ensuring the functioning of a Unified Transit System.

Currently, the Commission and the EEU Member States are carrying out large-scale work to develop customs regulation based on the new technological order.

In our opinion, the main elements of the Smart Customs institute are:

– availability of a paperless information system for Customs authorities;

– application of contactless methods of interaction between subjects of customs legal relations;

– electronic declaring;

– availability of a smart, flexible, self-adjusting risk management system (RMS);

– preliminary decisions on choice of relevant forms of customs control before arrival of goods;

– availability of an electronic system for customs clearance (release) of goods;

– availability of a personal account for a foreign trade participant (economic operator) for interaction with Customs authorities;

– availability of an automated system for checking customs value;

– automatic control of the correct classification of goods and detection of violations related to the submission of false information about the classification code;

– carrying out customs operations by Customs authorities through information systems without the participation of Customs officials (automatic registration of customs declarations, automatic release of declarations, etc.);

– electronic advance notification;

– remote release of goods;

– automatic selection of control objects;

– payment of fees in a centralized manner;

– implementation of Goods Traceability System;

– use of navigation seals, end-to-end control of the movement of goods across the territory of the Union;

– unified system of customs transit (electronic transit);

– Creation of a Single Window mechanism;

– implementation of information interaction within the framework of Common Processes through the integrated information system of the Union;

– availability of Electronic Declaring Centers;

– application of smart video surveillance systems at customs infrastructure facilities and foreign trade participants;

– conducting a semantic analysis of information from the customs declaration, as well as accompanying documents (transport, commercial) and permits obtained through interdepartmental interaction;

– Big Data: presence of a specialized Customs service unit for processing Customs service data, which ensures fast, uninterrupted and reliable operation of a single automated information system of Customs authorities, and also creates conditions for the introduction of Artificial Intelligence (hereinafter, AI) mechanisms and further improvement of the processes of automation of customs operations without the participation of Customs officials; introduction of an information system of Customs authorities that automatically performs risk analysis based on Big Data (based on customs declarations); the use of an AI image recognition system to assist customs officials in identifying smuggling during inspection (non-intrusive control) using Big Data; use of AI-based Big Data, their study and analysis for customs control, the selection of objects of control after release of goods;

– Artificial Intelligence: availability of data storage for recording graphic data and developing analysis models; use of advanced information systems to enhance risk profiling, as well as customs clearance (release) of goods transported by individuals and legal entities, cargo and vehicles; use of AI system for identification, analysis of the contents of transported goods based on X-ray images; use of AI models for automatic verification of goods information;

– Internet of Things: for tracking and positioning navigation seals, online monitoring of goods movement;

– Blockchain: for use within the framework of the development of the national Single Window mechanism, as well as in the interaction of the Single Windows of states; to organize the exchange of information (data) between Customs services for customs purposes, including when producing import customs declarations from one state to another; ensuring traceability of goods;

– smart checkpoint: the main elements, the operation of which is integrated into a single information space of checkpoints - the electronic coupon (line) system; automatic registration of arrival; online categorization of consignments of goods; automatic placement of goods under the customs transit procedure; automatic reading and recognition of vehicle number plates; automatic radiation control; automatic weight and size control; automatic inspection using non-intrusive inspection system (complex) (NIIS); use of AI for the analysis of portal NIIS images; image recognition (automatic detection of objects of inspection); smart analysis of images of inspection and screening complexes; a single information network of technical means;

– mobile technologies, including the use of mobile devices;

– augmented reality technology;

– drones.

The implementation of the named organizational, legal and technical elements of Smart Customs is a relevant area of work in the field of customs administration.

At the same time, in accordance with the Customs Code of the Union, the development, creation, implementation, operation, maintenance, modernization of information systems, information technologies and means of information protection used in the performance of customs operations are carried out in accordance with the legislation of the Member States of the Union. The Customs authorities of the Member States of the Union use information systems and information technologies developed, produced and (or) acquired by Customs authorities in accordance with their legislation.[1]

In 2023, the Board of the Eurasian Economic Commission adopted the Recommendation of December 27, 2023 № 43 "On advanced digital technologies recommended for implementation in order to improve the Single Window mechanism in the system of regulation of foreign economic activity".[2] Confirming the importance and need for the earliest possible transition of national Single Window mechanisms to a new development trajectory, as well as the implementation of effective management of data, processes and information interaction, the Union Member States are recommended to consider the possibility of:

– implementation of such advanced digital technologies as Blockchain, the Internet of Things, Big Data analytics, Artificial Intelligence and Machine Learning (hereinafter, advanced digital technologies) into the activities of state bodies and organizations of the Member States, vested in accordance with the legislation of their Member States with powers to perform state functions (administrative procedures) and provide state services;

– testing advanced digital technologies in the framework of pilot projects for the implementation of the Single Window mechanism, as well as demonstrating the results of such projects to other Member States;

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1 Article 365. Customs Code of the Eurasian Economic Union (Appendix № 1 to the Treaty on the Customs Code of the Eurasian Economic Union). Consultant-Plus. URL:https://www.consultant.ru/document/cons_doc_LAW_215315/4e0269a249f8b029a67181007c65fc39ff 936535/

2 Recommendation of the Board of the Eurasian Economic Commission of December 27, 2023 № 43 "On advanced digital technologies recommended for implementation in order to improve the Single Window mechanism in the system of regulation of foreign economic activity". URL: https://www.alta.ru/tamdoc/23rk0043/

– taking into account the relevant experience of Member States and international experience in the development and implementation of the national Single Window mechanism and the application of advanced digital technologies.[1]

The following projects related to the development of the Smart Customs institute are being successfully implemented within the Union:

1. ***Single Window.*** The Commission, together with the EEU Member States, is working to *develop national mechanisms for a Single Window* according to common rules and standards.

The aim of the project is to change approaches to customs regulation – to create a qualitatively new, effective, but not burdensome for business, customs regulation, supported by modern information technologies.

The project responds to current challenges and is designed to ensure the unimpeded movement of goods both within the Eurasian space and beyond by:

– collection of data contained in commercial, transport and other documents mediating the process of delivery of goods on a Single Window platform based on the principle of joint use of data by all regulatory authorities, as well as participants in foreign economic activity;

– a single virtual information space of data (data pipeline), designed to ensure cross-border data exchange;

– optimized business processes when performing customs operations and customs control.

In the context of the new economic reality, modern Customs is entrusted with solving important tasks aimed, first of all, at ensuring unified customs regulation in the EEU, improving the quality and reducing the time frame for the provision of public services, increasing the transparency and predictability of business processes.

It is necessary to ensure the transition from documents to data, implement end-to-end digital technologies, overcome the digital divide by developing smart checkpoints, implementing predictive analytics, developing national Single Window mechanisms and ensuring the synchronization of all digital projects implemented by the Union.

To date, *the significant results of the work carried out by the Commission* together with Member States include:

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[1] Recommendation of the Board of the Eurasian Economic Commission of December 27, 2023 № 43 "On advanced digital technologies recommended for implementation in order to improve the Single Window mechanism in the system of regulation of foreign economic activity". URL: https://www.alta.ru/tamdoc/23rk0043/

– the existence of *a Reference Model of a National Single Window Mechanism* as a basic document serving as a guide for Member States in building their national Single Windows based on uniform requirements and principles;[1]

– the presence *of functioning information systems (portals) implementing the national Single Window mechanism.*

The Union countries have adopted strategic documents aimed at full-scale digitalization of Customs authorities and creation of smart checkpoints.

2. Unified Customs Transit System. Today, active work is underway to develop *a Unified Customs Transit System* (hereinafter, UCTS) in the Union, one of the elements of which is a mechanism for tracking the transportation of goods using navigation seals. In April 2023, the Agreement on the Use of Navigation Seals in the EEU to Track Transportation dated 19.04.2022 entered into force,[2] which provides for tracking using navigation seals both goods under customs control and a number of goods moved in accordance with the customs procedure of customs transit and the customs procedure of export. The agreement provides for the possibility of applying seals on the territory of a third party.

Another instrument for the development of the UCTS is *the Agreement on the Unified Customs Transit System of the EEU and a Third Party (Third Parties).*[3] One of the most important tasks in this area is to ensure the openness of the Union's transit system, which will allow interested countries that are not members of the Union to join it. It is envisaged that one electronic customs document will be used throughout the entire route of goods and, in fact, the creation of one transit space for all participants in the Union's transit system.

The dynamic ***development of modern customs infrastructure*** at checkpoints, the use of information technologies, modern technical systems and their integration into a single ecosystem of Digital (Smart) Customs contributes to the development of seamless logistics, a secure supply chain of goods and the growth of international transportation volumes.

3. Navigation seals. The most important stage in the development of the Union's transit potential is the adoption of the Agreement on the Use of Navigation Seals in the EEU to Track Shipments.

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1 See the Decision of the Eurasian Intergovernmental Council of April 30, 2019 № 6 "On the Description of the Reference Model of the National Single Window Mechanism in the Foreign Economic Activity Regulation System Activities". URL : https :// www . alta . ru / tamdoc / 19 ms 0006/

2 Agreement of 19 April 2022 on the use of navigation seals in the Eurasian Economic Union to track shipments. URL: https :// www . alta . ru / tamdoc / 22 bn 0065/

3 Agreement on a Unified Customs Transit System between the Eurasian Economic Union and a third party (third parties) (St. Petersburg, December 26, 2024). URL : https://www.alta.ru/tamdoc/24bn0222/

The scope of the Agreement extends exclusively to transportation carried out through the territories of two or more Union Member States. This Agreement is a fundamental document that introduces the regulation of a new institution of control over the transportation of goods and vehicles in the Union – "navigation seals".

The use of this technology allows for online monitoring of a vehicle from a distance of hundreds and thousands of kilometers and recording of every illegal action with goods located in a sealed cargo compartment, if any.

The agreement is aimed at minimizing governmental control measures during the transportation of goods (during transit, export and within the framework of mutual trade) and ensuring their legal circulation.

In general, the implementation of the Agreement will simplify and speed up the procedure for delivering goods to the recipient, by minimizing government control measures and, accordingly, reducing business overhead costs, and this is primarily the time that carriers are currently losing while passing physical control conducted by various regulatory authorities.

The use of navigation seals ensures absolute "transparency" of transportation. As a result, the share of "gray", shadow trade turnover, from which bona fide producers and consumers suffer, is guaranteed to decrease. Today's realities indicate that the new modern control tool meets the interests of both regulatory authorities and foreign trade entities.

4. Smart checkpoint. The EEC pays serious attention to the issue of developing an infrastructure of checkpoints across the EEU customs border. Together with the Customs services of the Union, the necessary measures are being implemented to establish uniform mandatory requirements for all countries of the Union for the customs infrastructure on the external border of the Union.

The Union is moving in line with international experience in terms of equipment and arrangement of checkpoints; there are good examples implemented in the Union states. The task is to generalize the existing experience of the Eurasian five countries and the best world practices, as well as to ensure their uniform application throughout the Union.

To ensure seamless movement of goods, it is necessary to simultaneously develop physical infrastructure of checkpoints and implement digital technologies. Priority should be given to organizing work at checkpoints located along international transport corridors passing through the EEU territory.

In this context, the creation and implementation of a Smart Checkpoint model is an actual issue. The architecture of a smart checkpoint consists of information technology elements that are optimally built and adapted to the conditions of each specific checkpoint, taking into account the type of transport.

Inspection and screening systems (NIIS), weighing and size control systems, a system for recognizing state registration numbers of vehicles, a system for detecting fissile and radioactive materials are the main elements whose operation will be integrated into a single information space of checkpoints.

Full-scale implementation of Smart Checkpoint models in practical activities will allow: to transform the implementation of all necessary forms of customs control into a seamless process, significantly accelerating the movement of goods through the checkpoint; to reduce logistics and transportation costs; to create incentives and conditions for the development of an Authorized Economic Operator (AEO); to increase the share of preliminary declaration of goods.

The implementation of the named elements will allow in the future to create a new Operational Model of Customs based on the principles of data, process and change management – invisible, fast, flexible, effective for the state and convenient for business, and should be based on 3 main principles:

– data management – maximum use of automated solutions based on data provided online through a Single Window mechanism and containing integrated information from various sources (purchase and sale agreements, shipping documents, invoices, permits, movement along the route during delivery to the end consumer), including cross-border exchange with third countries;

– process management – preliminary algorithmic modeling of business processes for their subsequent regulatory consolidation, widespread use of digital technologies in customs administration: from technologies for tracking the movement of goods online and the Internet of Things (digital seals, tags), to monitoring the flow of goods, ensuring their end-to-end identification in order to simplify the crossing of goods across the customs border;[1]

– change management – a mechanism for promptly responding to emerging challenges through the use of a risk management system based on predictive analytics, Big Data processing using elements of Artificial Intelligence.[2]

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[1] Strategy of the Activities of the Customs Cooperation Block of the Eurasian Economic Commission until 2025 (Head of the Strategy development project - Sekerabayeva D.K., Deputy Head of the Division of Advanced Customs Technologies of the Department of Customs Legislation and Law Enforcement Practice of the EEC). EEC.URL:https :// eec.eaeunion.org/upload/ medialibrary /993/ STRATEGIYA-2025.pdf

[2] Ibid.

4. LIST OF ADVANCED CUSTOMS TECHNOLOGIES WITH EXPLANATIONS

In order to prepare practical proposals for modernization of the WCO legal tools on ICT within the framework of the Mini Group, we studied the experience of the EEU, the WCO and APEC. In addition, we studied research materials of the scientific community devoted to the introduction of advanced customs technologies in customs administration, the development of Digital (Smart) Customs.

Based on the results of the work carried out, a list of advanced customs technologies with brief explanations and practical examples was prepared. We believe that such systematization of open research and reporting materials of the EEU, APEC and the WCO will allow members of the WCO Mini Group, as well as interested parties, whose competence includes issues of improving customs regulation and trade facilitation, to obtain comprehensive information on current digital customs technologies and the prospects for development of the institution of Smart (Digital) Customs.

Moreover, the systematized material can be used in the preparation of national concepts for development of the Digital (Smart) Customs institution in the WCO Member States, customs and economic unions.

For ease of use of the obtained results, a dictionary of terms and definitions has also been compiled, which reveals the content of the technologies implemented within the framework of the Digital (Smart) Customs institute.

A complete list of sources used to compile the dictionary and the list of technologies is presented in the section “List of sources used”.

TERMS AND DEFINITIONS

№	Term	Definition
1	**Automated system for checking customs value**	▸ A specialized software package of Customs service designed to analyze and verify the declared customs value of goods declared during customs clearance of goods and vehicles.
2	**Biometrics**	▸ Measurement and statistical analysis of physical and behavioral characteristics of a person.

№	Term	Definition
	Big Data	▸ A project that provides hardware and software for collecting data from any source. The goal of the project is to manage data on import and export of goods, collect revenues and support data growth in the future.
3	**Virtual reality**	▸ A technology that allows users to be fully immersed in a virtual environment using a headset, allowing them to interact and work with digital objects.
4	**Augmented reality**	▸ A technology that projects digital content into a user's field of view through a mobile device or headset, allowing the user to interact with the real world while maintaining the ability to move freely and use their hands.
5	**Mixed reality**	▸ A combination of augmented and virtual reality that allows users to manipulate and interact with digital content in a real-world environment.
6	**Drone**	▸ An unmanned aerial, sea vehicle or vehicle controlled by remote control or computers (information system).
7	**Data**	▸ Information provided, used, processed or transmitted by users of the Single Window in the course of their activities.
8	**Demonstration of pilot projects**	▸ The process of conducting test launches of new systems, services, functionality, technologies that are created to ensure convenient interaction between legal entities and organizations with government bodies.
9	**Dispatching**	▸ Automatic distribution of goods declarations between Customs authorities in accordance with established criteria.
10	**Single personal account**	▸ An account of a foreign trade participant where funds are stored that are used as an advance payment for future customs duties and taxes.
11	**Information**	▸ Statements (messages, data) regardless of the form of their presentation.
12	**Information system**	▸ A set of information technologies and technical means that ensure the processing of information resources.

№	Term	Definition
13	**Information and communication technologies**	▸ A set of methods and means for implementing information technologies and telecommunication processes.
14	**Information technology**	▸ Processes, methods of searching, collecting, accumulating, systematizing, storing, refining, processing, providing, distributing and deleting (destroying) information, as well as methods for implementing such processes and methods.
15	**Information resource**	▸ An ordered set of documented information (databases, other arrays of information) contained in information systems.
16	**Information resources of Customs authorities**	▸ An ordered set of documented information (databases, other arrays of information) contained in the information systems of Customs authorities.
17	**Artificial Intelligence (AI)**	▸ An area of computer science that changes behavior based on observed, collected, and analyzed data without explicit programming. It is a broad term that includes various technologies such as machine learning, deep learning, computer vision, and natural language processing.
18	**Internet of Things (IoT)**	▸ A network of sensors and smart devices connected to the Internet that can send and receive data and that are often found in vehicles, buildings, and objects equipped with electronics.
19	**Personal account for interaction with Customs authorities**	▸ An automated subsystem designed to provide, on the basis of Web technologies, personalized information interaction between persons engaged in foreign economic activity, persons whose interests in relation to goods are affected by decisions, actions (inaction) of Customs authorities directly and individually (external users), with Customs authorities.
20	**Personal account (Single Window)**	▸ A multifunctional secure service that allows interaction with other users within existing processes and provides access to the functions of the Single Window mechanism.
21	**Machine learning**	▸ A subset of Artificial Intelligence that enables computers to learn without being explicitly programmed.

№	Term	Definition
22	**Single Window mechanism**	A mechanism for interaction between government agencies regulating foreign economic activity and participants of foreign economic activity that allows participants of foreign economic activity to submit documents once in a standardized form through a single access channel for subsequent use by interested government agencies and other organizations in accordance with their competence when monitoring the implementation of foreign economic activity.
23	**Reference Model of the National Single Window Mechanism**	▸ It is an innovative cross-border intellectual mechanism that allows interested parties to receive a range of services for carrying out export, import and transit operations in the course of interaction with government agencies and (or) authorized organizations of Member States.
24	**Mobile technologies (MT)**	▸ Technologies that are always with the user. They include portable two-way communication devices, computing devices, and the network technologies that connect them. MT is a set of hardware and software that provides wireless communication and access to information through portable devices such as smartphones, tablets, laptops, and other mobile terminals.
25	**Navigation seal**	▸ A technical device consisting of a sealing element and an electronic unit, operating on the basis of navigation satellite system technologies and providing the transmission of information related to the tracking object. Tracking objects are goods (products), vehicles.
26	**Cloud computing**	▸ Distributed digital data processing technologies that provide computer resources to an Internet user as an online service.
27	**General process within the Union**	▸ Operations and procedures regulated (established) by international treaties and acts constituting the law of the Union and the legislation of the Member States, which begin in the territory of one of the Member States and end (change) in the territory of another Member State.

№	Term	Definition
28	**Advanced customs technologies**	‣ Innovative tools and methods based on advanced technologies that are being introduced into customs activities with the aim of automating, digitalizing customs processes, increasing the efficiency of customs operations and customs control, as well as collecting, storing, processing information and interaction of Customs authorities with other subjects of the customs process.
29	**Preliminary information**	‣ Information in electronic form on goods intended for movement across the customs border, international transport vehicles transporting such goods, time and place of arrival of goods in the customs territory, passengers arriving in the customs territory.
30	**Traceability**	‣ Organization of accounting of goods subject to traceability and operations related to the circulation of such goods using national traceability systems.
31	**National Traceability System**	‣ A state information system that ensures collection, recording and storage of information on goods subject to traceability, and transactions related to the circulation of such goods.
32	**Traceability mechanism**	‣ A system that operates on the basis of the exchange of information from national traceability systems and ensures traceability for the purpose of monitoring the circulation of goods.
33	**Blockchain**	‣ A decentralized and distributed digital record (or registry) of transactions with a timestamp, in which transactions are securely stored in a permanent and virtually unchangeable manner using various cryptographic methods.
34	**Video surveillance system**	‣ A set of technical means designed for visual monitoring and recording of events in protected or controlled customs control zones.
35	**Subjects of electronic interaction**	‣ Government bodies, individuals or legal entities interacting within the framework of relations arising in the process of drafting, sending, transmitting, receiving, storing and using electronic documents, as well as information in electronic form.

№	Term	Definition
36	**Coordinated border management**	▸A coordinated approach by border control agencies (authorized bodies at the border), both domestic and international, in the context of seeking greater efficiency in managing trade and tourism flows, ensuring compliance with the law; includes the optimization of parallel processes and technologies, allowing various government agencies to cooperate effectively in resolving border issues.
37	**Customs monitoring**	▸A customs control tool for assessing the activities of a foreign trade participant (economic operator) and warning it of potential risks that may subsequently lead to negative effects of violating customs legislation.
38	**Electronic Declaration Center**	▸A specialized Customs authority whose powers are limited exclusively to the performance of customs operations in relation to goods declared using information technology for submitting information to Customs authorities in electronic form for the purposes of customs clearance of goods, including using the Internet information and telecommunications network.
39	**Digital Twin**	▸A constantly changing digital copy (digital profile, digital model) of a foreign economic activity participant, which allows, using methods of mathematical and statistical (predictive) analysis, to evaluate and model (predict) the behavior of this object or the development of processes with it in order to determine the need to carry out control measures in relation to it.
40	**Electronic form of interaction**	▸A method of information interaction based on the use of information and communication technologies.
41	**Electronic view (form) of document**	▸Information, data, presented in a form suitable for human perception using electronic computers, as well as for transmission and processing using information and communication technologies in compliance with established requirements for format and structure.

№	Term	Definition
42	**Electronic document**	▸ An electronic document certified by an electronic digital signature (electronic signature) and meeting the requirements of the general infrastructure for documenting information in electronic form.
43	**Electronic locks (E-locks)**	▸ Advanced locking systems used to secure cargo containers during transportation. These locks typically use electronic mechanisms such as passwords, biometrics, or electronic keys to control access to the container.
44	**Electronic systems for verification (confirmation) of the country of origin of goods**	▸ Technologies designed for automated verification and confirmation of information on the country of origin of goods within the framework of control and supervisory activities of Customs authorities.
45	**Risk management**	▸ Systematic activities of Customs authorities to minimize the likelihood of events related to non-compliance with international treaties in the field of customs regulation and legislation on customs regulation, and possible damage from their occurrence.
46	**E-commerce**	▸ A set of technical and organizational forms for conducting financial and trade transactions using electronic systems.
		▸ All transactions which are effected digitally through a computer network (e.g., the Internet), and result in physical goods flows subject to Customs formalities.

LIST OF ADVANCED CUSTOMS TECHNOLOGIES

Automation of customs administration

№	Name of automation element	Practical aspects of application
1	2	3
1	**Paperless information system of Customs authorities**	▸ Customs operations may be performed using information systems and information technologies of Customs authorities, declarants and other interested parties, as well as information systems of state bodies (organizations) of the Member States within the framework of information interaction. Customs authorities use information systems and information technologies developed, produced and (or) acquired by Customs authorities in accordance with the legislation. In order to form information resources of Customs authorities, Customs authorities collect and process information on goods moved across the customs border of the Union and the persons moving them.
2	**Electronic customs clearance system (release of goods)**	▸ The release of goods is processed using the customs authority's information system by generating an electronic document. The customs authority shall notify in electronic form of the release of goods the person carrying out temporary storage of the goods in respect of which the goods have been released, and in cases established by the legislation on customs regulation, other persons, if there is interaction between the information system of the customs authority and the information systems of such persons, within the period established in accordance with the legislation of the Member States on customs regulation.
		▸ Data (information) is exchanged in the Customs service information systems between its structural divisions.
		▸ The presence of an Integrated information system for customs operations – a system for online obtaining information on the status of foreign trade operations carried out in the process of customs clearance (release) of goods.
		▸ Combining statistics with information and communication technologies (ICT) online within the frames of supply chain of goods and rendering services.

№	Name of automation element	Practical aspects of application
1	2	3
3	**Availability of a personal account for interaction with Customs authorities**	▸ Use of the automated subsystem (AS) "Personal Account", which is designed to provide personalized information interaction of persons engaged in foreign economic activity, persons whose interests in relation to goods are affected by decisions, actions (inaction) of Customs authorities directly and individually (external users), with Customs authorities on the basis of Web technologies. AS "Personal Account" is located on the information resources of the Customs service in the information and telecommunications network Internet. AP "Personal Account" operates 24 hours a day. The use of the personal account allows for information interaction of participants of foreign economic activity (economic operators) with Customs authorities in a mode close to online. ▸ Within the framework of the Single Window mechanism, the personal account is a multifunctional secure service that allows for interaction with other users within the framework of existing processes and provides access to the functions of the Single Window mechanism.
4	**Electronic declaration:** **– including electronic transit declarations;** **– electronic declarations of goods for express cargo**	▸ Customs declaring is carried out in electronic form. In this case, a customs declaration in the form of an electronic document (electronic customs declaration) is used.
		▸ Implementation of electronic declaration terminals located at the customs checkpoint at the airport of arrival.
		▸ Declaring of goods by individuals can be done using electronic applications. Electronic customs declaration is a digital application for notifying customs about goods carried by passengers or crew members.
		▸ Implementation of declaration system for vessel – an electronic registration system for foreign yacht/cruise vessel owners who intend to visit the territorial waters of the state (a web application designed to simplify the registration of foreign yacht/cruise vessel owners and entrepreneurs)

№	Name of automation element	Practical aspects of application
1	2	3
5	**Electronic transit declarations**	▸ When placing goods under the customs procedure of customs transit declaration can be carried out in electronic form.
6	**Automatic registration of goods declaration**	▸ Certain customs operations may be carried out by Customs authorities through the customs information system without the participation of customs officials, in particular, the automatic registration of customs declarations submitted in the form of an electronic document (*goods declaration*, transit declaration, passenger customs declaration, vehicle declaration). Algorithms for automatic checks of compliance with the conditions of automatic registration of goods declarations (ARGD) and automatic release of goods, implemented in the standard software of Customs authorities. The essence of the technology (ARGD) is that a legally significant action - registration of a declaration sent to the customs authority via the Internet - is performed without the direct participation of officials. Format-logical control of the electronic declaration is carried out without the participation of a customs representative. The validity of the electronic signature, the fact of payment of customs duties, the presence of the necessary documents in the electronic register of Customs authorities are checked by the program. If all conditions are met, the electronic declaration is registered automatically. Then it is sent to the customs inspector for control. The average time for automatic release of goods is 4–5 minutes.
7	**Automatic registration of transit declarations**	▸ After passing the transit declaration submitted in the form of an electronic document (hereinafter, ETD – electronic transit declaration), the format control of the ETD's compliance with the structure and formats of the ETD established by customs legislation, and checking the authenticity of the declarant's electronic signature, within 10 minutes, the format-logical control (hereinafter, FLC) is carried out automatically for the purpose of checking for signs of the presence of grounds for refusing to register the ETD.

№	Name of automation element	Practical aspects of application
1	2	3
		After passing the transit declaration submitted in the form of an electronic document (hereinafter, ETD – electronic transit declaration), the format control of the ETD's compliance with the structure and formats of the ETD established by customs legislation, and checking the authenticity of the declarant's electronic signature, within 10 minutes, the format-logical control (hereinafter, FLC) is carried out automatically for the purpose of checking for signs of the presence of grounds for refusing to register the ETD. After passing the FLC, the ETD is automatically sent to the customs authority of departure via the Unified automated information system (UAIS) of the Customs authorities. When the ETD is received by Customs authority of departure, the UAIS of the Customs authorities automatically records the date and time of its submission to the customs authority and sends an electronic message from the UAIS of the customs authorities to the declarant containing information on the date and time of receipt of the ETD by the Customs authority of departure. When passing the FLC, the ETD is registered via the UAIS of the Customs authorities by assigning a registration number in automatic mode. After the ETD is registered, an electronic document containing its registration number and time of registration is automatically sent to the declarant from the UAIS of the Customs authorities.
8	**Automatic release of declaration**	▸ Automatic release is a technology that enables automatic release of a declaration without the participation of customs officials.
9	**Automatic control of the correct classification of goods and detection of violations related to the declaring of false information about the classification code of goods**	▸ Automation of goods classification processes and identification of violations related to the declaration of an incorrect classification code of goods.

№	Name of automation element	Practical aspects of application
1	2	3
10	**Electronic advance (preliminary) notification**	▸ This is a technology that allows foreign trade participants to provide information about transported goods and vehicles before their actual arrival in the customs territory. Preliminary information means information in electronic form on goods intended for movement across the customs border, international transport vehicles transporting such goods, time and place of arrival of goods in the customs territory, passengers arriving in the customs territory. The purpose of submitting preliminary information is to obtain information by Customs authorities on goods planned for movement across the customs border for risk assessment and making preliminary decisions on the selection of objects, forms of customs control and measures to ensure customs control before the arrival of goods in the customs territory. Preliminary information submitted in the form of an electronic document can be used in the performance of customs operations related to notification of the arrival of goods in the customs territory, placing goods in temporary storage, customs declaring, as well as in the performance of other customs operations.
		▸ Formation of partnerships, implementation of information solutions for interaction with participants of foreign economic activity (economic operators), including with operators of e-commerce platforms to further expand the range of available preliminary information and simplify customs clearance (release) of goods.
11	**Remote release of goods**	▸ This is a technology that ensures the division of customs operations into documentary and actual control processes, which are carried out by various Customs authorities (the declaration is submitted to the internal customs post, and the goods themselves are stored in a border temporary storage warehouse (TSW) or an adjacent customs control zone, where their actual control is carried out).

№	Name of automation element	Practical aspects of application
1	2	3
		With its implementation, it became possible for foreign trade participants to submit customs declarations to any of the electronic declaration centers specially created in all regional Customs administrations. At the same time, the declared goods may actually be located in the region of activity of other Customs authorities of the state, including at border terminals.
12	**Automation of customs control processes after the release of goods (electronic customs inspection)**	The implementation of the “customs inspection” service of the “Personal Account” hardware and software tool allows for the exchange of documents and information in electronic form with Customs authorities during customs inspections.
13	**Automatic selection of control objects**	Development of algorithms for automatic selection of objects of customs control after the release of goods and visualization of information about such objects in software tools of Customs authorities.
14	**Automation of selection of objects of customs control after release of goods**	Expanding the practice of automatic (automated) selection of objects of customs control after the release of goods (persons in respect of whom customs control is planned to be carried out after the release of goods), namely: – improving the risk-oriented approach when selecting objects of customs control after the release of goods to ensure the selectivity of its implementation, updating the criteria for selecting objects of customs inspections, using digital technologies; – implementation and use of a goods traceability system when selecting objects of customs control after the release of goods. Reasons for selecting objects of customs control after the release of goods: analytical work, information and analytical information from structural divisions, information on identifying risks in accordance with risk profiles, information from the law enforcement unit, information from regulatory authorities, information from individuals and legal entities (appeals).

№	Name of automation element	Practical aspects of application
1	2	3
		Control area: customs value, accuracy of declared information on the characteristics of goods, correctness of classification and determination of the country of origin of goods, tariff preferences, and application of benefits.
15	**Integration of information resources of Customs authorities with basic components of the e-government infrastructure**	▸ Integration of an ordered set of documented information (databases, other arrays of information) contained in the information systems of Customs authorities with the components of the infrastructure that ensures the information technology interaction of information systems in the provision of public services and the performance of public functions in electronic form.
16	**Application of contactless methods of interaction between subjects of customs legal relations**	▸ Contactless methods of interaction between subjects of customs legal relations are modern technologies and processes that allow interaction between participants in foreign economic activity (economic operator) and Customs authorities in electronic form without the need for physical contact or personal presence.
17	**Payments in a centralized manner (SPA – Single Personal Account)**	▸ Centralization of customs payments using single personal accounts. The technology has been developed to improve the system of paying customs duties in the electronic form of declaring, remote release of goods and remote payment technologies, simplify settlements on customs payments, reduce the time for the passage of funds and the time for customs declaring. A single personal account is an account of a participant in foreign economic activity, where funds are stored that are used as an advance payment for future customs duties and taxes. The single personal account allows settlements with any Customs authorities. Such a system allows declarants to more effectively manage funds and plan their spending. And Customs authorities can better control their movement. All this makes the procedure more transparent. The main objectives of the transition to centralization of accounting of customs and other payments and the maintenance of a single personal account of a foreign trade participant are:

№	Name of automation element	Practical aspects of application
1	2	3
		– simplification of the system for recording the movement of funds in the personal account of a foreign economic activity participant; – organization of document flow of a foreign economic activity participant in electronic form through the use of WEB technologies; – the use of modern information technologies for paying customs and other payments, the use of electronic terminals, payment terminals and ATMs, including remote payment; – improving operational and budgetary accounting of payments from foreign economic activity by centralizing it at the Customs service level in order to increase the efficiency of generating reports submitted to authorized bodies.
18	**Independent management of the payer's funds**	▸ Technology that enables an individual or legal entity to independently manage financial resources. Within the framework of the technology application, the payer has the opportunity to use any methods of customs duties payment, including electronic technologies of online payment, and remote payment from the workplace.
		▸ Payment of customs duties by individuals through payment terminals, electronic terminals and ATMs located outside the locations of Customs authorities, in cash or bank cards, the servicing of which is carried out by customs payment operators.
		▸ Implementation of online payment platforms (services) and electronic money transfer mechanisms.
		▸ Payment of customs duties during customs clearance (release) of goods using credit cards or smartphones with two-dimensional codes.
		▸ Provision of services for self-payment of customs duties at the border through the use of mobile applications of the Customs service.
		▸ Remote payment of customs duties by individuals in relation to goods for personal use transported by carriers (courier services and forwarding companies) to individuals receiving the goods.

№	Name of automation element	Practical aspects of application
1	2	3
19	**Automated system for checking customs value**	▸ Availability of an Automated system for checking the customs value of imported goods. An Automated system for checking the customs value is a specialized software package of the Customs service, designed to analyze and verify the declared customs value of goods declared during customs clearance of goods and vehicles.

Digitalization of customs administration

№	Name of the digitalization element	Practical aspects of application
1	2	3
20	**Goods traceability system**	▸ Traceability system is aimed at minimizing the risks of import and circulation of counterfeit and contraband goods on the territory of the state and maintaining a fair competitive environment on the domestic market. It is implemented in a documentary manner without the use of additional software, identification marks and reading devices. "Traceability" is the organization of accounting of goods subject to traceability and transactions related to the circulation of such goods using national traceability systems. National Traceability System (NTS) is an information system of a Member State that ensures the collection, accounting and storage of information on goods subject to traceability and transactions related to the circulation of such goods. In turn, the "traceability mechanism" is a system that functions on the basis of the exchange of information from national traceability systems and ensures traceability for the purpose of monitoring the circulation of goods. NTS is applied to foreign goods released under the customs procedure of release for domestic consumption. All information on the movement of goods from documents is consolidated in the NTS, where it is compared, thus ensuring the traceability of imported goods throughout their entire life cycle. Traceability of goods is ensured through batch-by-batch accounting and the use of electronic documents.

№	Name of the digitalization element	Practical aspects of application
1	2	3
21	**Navigation seals. End-to-end control of the movement of goods across the territory of a state (economic union)**	▸ Navigation seal – a technical device consisting of a sealing element and an electronic unit, operating on the basis of navigation satellite system technologies and providing for the transmission of information related to the tracking object. Tracking object - goods (products), vehicles. For the period of tracking a specific shipment, the navigation seal must contain: – a unique transportation number generated in the information system of the national operator that tracks the transportation; – the registration number of the transit declaration (in relation to goods placed under the customs procedure of customs transit), the registration number of the goods declaration (in relation to goods under customs control) or the number(s) of the transport (shipment) documents (when transporting Union goods within the framework of mutual trade between Member States); – information from the customs declaration (if any); information on the implementation of customs control in relation to goods and vehicles of international transportation when placing goods under the customs procedure of customs transit, as well as electronic documents issued based on the results of its implementation, including photographs obtained during customs control using an inspection and search complex (if any), and customs inspection reports (if any); – electronic documents (information) accompanying the transportation of goods (customs declaration (if any), transport (shipment) documents, invoice, vehicle registration certificate (truck and trailer); – electronic documents (information) confirming compliance with prohibitions and restrictions in accordance with customs legislation.

№	Name of the digitalization element	Practical aspects of application
1	2	3
22	**Tracking system ”Electronic locks / intelligent (smart) border crossing schemes”**	▸ Implementation of the Single Electronic Lock Scheme and Smart Crossing Scheme of the border to speed up customs clearance and simplify the flow of goods (movement of goods). Only one mutually recognized electronic lock is used to connect with the accelerated customs clearance system. Goods are controlled according to the principle of “across the border with one electronic lock under separate control”. Electronic locks (E-locks) are advanced locking systems used to secure cargo containers during transit. These locks typically use electronic mechanisms such as passwords, biometrics, or electronic keys to control access to the container. They provide increased security by preventing unauthorized access and tampering with cargo. An E – Lock is a system that combines RFID and GPS technology into a single lock.
		▸ Customs transit control using electronic sealing system: RFID technology.
		▸ Using electronic seals to lock containers while simultaneously tracking the GPS signals of containers at checkpoints.
		▸ Simplifying the movement of goods under customs control between free trade zones using RFID technology.
23	**Unified System of Customs Transit (electronic transit)**	▸ The Unified System of Customs Transit of the Union and a third party(ies) is a system based on the following: – application of a single transit declaration in the form of an electronic document; – use of a single security for the fulfillment of the obligation to pay customs duties, taxes, special, anti-dumping, and countervailing duties; – application of certain special simplifications (customs benefits) granted to authorized economic operators of Member States and third party(ies);

№	Name of the digitalization element	Practical aspects of application
1	2	3
		– the use of navigation seals to track the transportation of goods along the entire route of the transported goods in accordance with the customs procedure of customs transit through the customs territory of the Union and the customs territory of a third party (third parties); – mutual recognition of decisions taken by Customs authorities and the results of customs control, taking into account the provisions of the international treaty of the Union with a third party (third parties) on a single system of customs transit of the Union and the third party (third parties) and their use exclusively for the performance of the tasks and functions assigned to the Customs authorities. Development of a Unified transit system (in the EEU). One of the main elements of such a system is the use of modern technologies, including those that allow for the automation of customs operations. The Customs Service (of Russia) has ensured the application of the procedure for electronic declaration of transit, and automated technologies for this process are being actively introduced. The development of electronic transit helps to minimize contacts between officials and participants in the transport process and to establish their interaction in electronic form. An important element of the Unified transit system in the EEU is the large-scale use of the latest technologies and technical means of tracking the movement of goods in the work of Customs authorities, primarily electronic navigation seals. The introduction of electronic navigation seals allows for the simplification of transit procedures, minimization of the risks of false information being provided during customs declaring of goods, and the full collection of customs duties.

№	Name of the digitalization element	Practical aspects of application
1	2	3
24	**Information interaction within the framework of common processes through the Integrated information system of the Union**	▸ The common process within the EEU is the operations and procedures regulated (established) by international treaties and acts constituting the law of the EEU and the legislation of the Member States, which begin on the territory of one of the Member States and end (change) on the territory of another Member State. The implementation of common processes within the EEU is ensured using the Integrated information system (EEU). The standard list of technological documents regulating information interaction during the implementation of the common process by means of the integrated system includes the following documents: – rules of information interaction during the implementation of a general process by means of an integrated system; – regulations for information interaction between participants of the common process during implementation by means of an integrated system of the common process; – description of the formats and structures of electronic documents and information used for the implementation of the common process by means of the integrated system; – the order of joining the common process.
Single Window mechanism		
25	**Single Window mechanism**	▸ The Single Window mechanism is a mechanism for interaction between government agencies regulating foreign economic activity and participants of foreign economic activity, which allows participants of foreign economic activity (economic operators) to submit documents once in a standardized form through a single access channel for subsequent use by interested government agencies and other organizations in accordance with their competence when monitoring the implementation of foreign economic activity.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		The Single Window mechanism is a mechanism for interaction between government agencies regulating foreign economic activity and participants of foreign economic activity, which allows participants of foreign economic activity (economic operators) to submit documents once in a standardized form through a single access channel for subsequent use by interested government agencies and other organizations in accordance with their competence when monitoring the implementation of foreign economic activity. The Single Window mechanism is a digital ecosystem that: – connects businesses and regulators in a single digital space; – manages data, processes, interactions and changes (at all levels - B2B; B2G; G2G). – describes the organizational, legal and technological foundations of managing foreign economic activity. *The areas of state regulation that the Single Window covers are*: the area of customs, currency, tax, customs-tariff, non-tariff, technical regulation, the area of application of sanitary, veterinary-sanitary, quarantine phytosanitary measures, the area of regulation of financial services (banking, insurance), transport and transportation, protection and defense of intellectual property rights. *Types of activities:* foreign trade, activities related to the provision of transport and logistics services, financial services (banking, insurance), as well as activities in the field of customs. *Subjects:* Government bodies of the Member States: in the field of customs, taxation, customs-tariff and non-tariff regulation; government bodies of the Member States implementing: issuance of permits related to foreign economic activity, transport control, sanitary, veterinary-sanitary, quarantine phytosanitary control (supervision), control (supervision) over compliance with technical regulations, export, radiation, currency and other types of state control;

№	Name of the digitalization element	Practical aspects of application
1	2	3
		Organizations authorized to issue permits, including chambers of commerce and industry, certification bodies and testing laboratories (centers) carrying out work in the field of assessment (confirmation) of compliance with the requirements of technical regulations of the Union; Interested parties: legal entities, individual entrepreneur engaged in foreign economic activity; persons engaged in customs activities (customs representatives (brokers), customs carriers, owners of temporary storage warehouses, owners of customs warehouses, owners of free warehouses, owners of duty-free shops); authorized economic operators; transport and forwarding, logistics companies, carriers, express carriers; airport administrations, automobile and railway checkpoints; banks and insurance organizations; patent organizations (patent attorneys), postal operators and other organizations.
		▸ Ensuring the exchange of information with interested parties through a single point of access, as well as the absence of the need to submit relevant documents on paper.
		▸ Create a foreign trade data exchange platform to share online container logistics dynamics between ports. It allows online tracking cargo logistics information between two locations and performing intelligent (smart) queries. With this tool, companies can better predict customs clearance (release), production and delivery of goods.
		▸ Development of a Single Window mechanism as a unified information and technological platform for participants in foreign economic activity in order to simplify the submission of documents for customs and trade purposes.
		▸ Using AI and Machine Learning to enhance risk assessment capabilities in cargo inspection in the Single Window Customs Clearance module. Application areas include classification of goods descriptions according to the HS, analysis of anomalous trade patterns, and visualization of relationships between entities.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Implementation of a licensing system based on the principle of a Single Window mechanism, which allows the information system to check the implementation of an import license in order to speed up the process of customs clearance (release) of goods.
26	**Transition from electronic document management to data exchange**	▸ The transition from electronic document management to data exchange is an evolution in the ways in which traders and government agencies interact, moving away from the traditional transfer of electronic documents (such as scans, PDF files or electronic forms) to an automated exchange of structured data between information systems. The digitalization of Customs administrations plays a crucial role in the development of cross-border paperless trade. A key factor in further progress is the establishment of seamless data exchange between Customs authorities. Enhanced data exchange mechanisms enable Customs authorities to verify the accuracy and reliability of data for customs purposes without requiring traders to provide paper documents. This is particularly relevant in the context of digital transit corridors, where online data exchange for customs purposes ensures a smoother movement of goods across borders without unnecessary delays and repeated physical inspections.
27	**Ecosystem for managing foreign economic activity (a new operating model for customs) based on the principles of managing data, processes, interactions and changes**	▸ Changing the existing customs operating model based on the principles of data, process and change management – invisible, fast, flexible, efficient for the state and convenient for business – should be based on 3 main principles: – data management – maximum use of automated solutions based on data provided through a Single Window mechanism online and containing integrated information from various sources (purchase and sale agreements, shipping documents, invoices, permits, movement along the route during delivery to the end consumer), including cross-border exchange with third countries;

№	Name of the digitalization element	Practical aspects of application
1	2	3
		– process management – preliminary algorithmic modeling of business processes for their subsequent regulatory consolidation, widespread use of digital technologies in customs administration: from technologies for tracking the movement of goods online and the Internet of Things (digital seals, tags), to monitoring the flow of goods, ensuring their end-to-end identification in order to simplify the crossing of goods across the customs border; – change management – a mechanism for promptly responding to emerging challenges through the use of a risk management system based on predictive analytics, Big Data processing using elements of Artificial Intelligence.
28	**Pilot projects within the framework of the national Single Window mechanism**	▸ Pilot projects for the implementation of national Single Window mechanisms is a process of conducting test launches of new systems, services, functionality, technologies that are created to ensure convenient interaction between legal entities and organizations with government agencies. The purpose is to check the operation of these mechanisms and their compatibility with each other, as well as the possibility of exchanging data between them. Such pilot projects allow identifying problems and shortcomings in the system and making the necessary adjustments before its full implementation. *The objectives* of the pilot project may include: 1. Assessment of the technical and informational equipment for the implementation of individual elements of the national Single Window mechanism. 2. Conducting an analysis and determining a list of public services that can be integrated into the Single Window system. 3. Establishing and testing the effectiveness of the mechanism for exchanging information between various organizations and departments. 4. Involvement of participants (entrepreneurs, business entities, civil servants) in the pilot process to assess the ease of use of the mechanism.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		5. Collecting feedback and analyzing the results of the pilot project to make adjustments and improve the Single Window mechanism. In general, the pilot project for the development of the Single Window mechanism is aimed at creating a basis for further expansion and improvement of the system of public services for business entities. *Pilot Project Demonstration Forms* 1. Presentation – presentation of the project using a slide show, presentation or demonstration video. 2. Conducting information events - organizing seminars, webinars and other events where the work of the pilot project is demonstrated. 3. Demonstration of working prototypes or models - creating working prototypes or models to show the functionality and benefits of the project. 4. Open demonstrations - organizing open events or exhibitions where the project can be demonstrated to the general public.
		▸ Application of Artificial Intelligence and Machine Learning in a Single Window environment.
29	**Coordinated border management:** **– within the country;** **– within the framework of interstate information interaction with Customs authorities of neighboring states;** **- combination of customs and border control functions**	▸ Coordinated Border Management (CBM) is a coordinated approach by border control agencies (authorized bodies at the border), both domestic and international, in the context of seeking greater efficiency in managing trade and tourism flows while ensuring compliance with the law. CBM involves the optimization of parallel processes and technologies, allowing various government agencies to effectively cooperate in addressing border issues. To optimize operations border authorities need to fully utilize the technological capabilities (technologies) and resources that facilitate CBM. CBM improves efficiency by reducing data duplication. Providing data to the government through a single system reduces duplication and the costs of providing, collecting, analyzing, and disseminating data.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Implementation of an intelligent (smart) border management system, which may include automated passport control, biometric identification systems, electronic gates and electronic visa systems. Using these technologies, customs can speed up the clearance (release) of goods, reduce waiting times and simplify border crossings.
		▸ Creation of an information website on cooperation in SPS (sanitary, phytosanitary and veterinary measures) between states – this specialized information resource (smart platform) in the field of SPS provides comprehensive services, including queries on rules and standards, notifications, comparative reviews, risk information. It allows the exchange of SPS rules and standards between states, technical measures for trade and information on agri-food products.
E-commerce		
30	**Interaction of information systems of Customs authorities with electronic trading platforms and other entities within the framework of the institution of electronic commerce**	▸ E-Commerce: all transactions which are effected digitally through a computer network (e.g., the Internet), and result in physical goods flows subject to customs formalities. E-Commerce is also understood as a set of technical and organizational forms of financial and trade transactions carried out using electronic systems.
		▸ Development of information resources of Customs authorities for customs clearance (release) of e-commerce goods.
		▸ Organization of traceability of goods within the framework of the institute of electronic commerce.
		▸ Cooperation and interaction with economic operators, including customs brokers (representatives) and operators of e-commerce platforms.
		▸ Creation of a new institution in the customs sphere – electronic trade operators (ETO), which provide logistics for operations with purchased goods, interaction with Internet platforms and Customs authorities.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ The ETO carries out customs operations in relation to goods transported within the framework of international e-commerce and sent in international mail or delivered by a carrier as express cargo.
		▸ Development of a new type of customs declaration – declaration of goods for e-commerce (with a new set of data for goods for e-commerce).
		▸ Placing the responsibility for collecting import duties on electronic trading platforms.
		▸ The ETO declares the goods on behalf of the recipient and pays customs duties. This allows for simplified clearance (release) of goods transported via e-commerce, while maintaining the required level of control.
		▸ Application of advanced customs technologies related to obtaining, comprehensive analysis of data and data exchange between Customs authorities, platforms and logistics companies.
		▸ Standardization of data requirements within the framework of the e-commerce institute, necessary for the application of the RMS.
		▸ Creating conditions for the Customs service to obtain data for use within the RMS. Data from electronic platforms should be uploaded to the Customs authorities' information systems for risk assessment.
		▸ Granting to Customs service the competence to access electronic platforms to obtain data on e-commerce goods.
		▸ Application of Big Data to identify critical information for customs purposes and RMS application.
		▸ Based on Big Data analysis, the Customs service identifies buyers and sellers and requests additional information from them in order to monitor compliance with customs legislation.
		▸ Application of Artificial Intelligence (AI) in the context of monitoring the movement of e-commerce goods, such as analyzing customer account status using AI.
		▸ Implementation of a digital passport for e-commerce goods.

№	Name of the digitalization element	Practical aspects of application
1	2	3
Customs infrastructure		
31	**Electronic Declaration Centers (EDC)**	▸ The Electronic Declaration Center is a specialized customs authority that ensures the implementation of the tasks and functions of the Customs service, which, in terms of customs operations, are related to the customs declaring of goods exclusively in electronic form.
32	**Centralized automatic dispatching:** **– between electronic declaring centers;** **– between inspectors**	▸ Dispatching means the automatic distribution of goods declarations between Customs authorities in accordance with established criteria. Automatic distribution of customs declarations using remote goods release technology (via EDC) is carried out in accordance with the following criteria: – depending on the competence of the EDC to carry out customs operations in relation to certain categories of goods (excisable goods, petroleum products); – by type of transport: goods imported by sea transport are subject to distribution in the sea EDC, goods imported by air transport – in the air EDC, regardless of the placement of imported goods under the customs procedure of customs transit; – declarations for other goods are distributed between the EDC depending on the place of tax registration of the declarant or its separate subdivision (according to the registration reason code and TIN of the declarant).
33	**Application of video surveillance system**	▸ A video surveillance system is a set of technical means designed for visual monitoring and recording of events in protected or controlled customs control zones.
		▸ The main inspection lines are integrated with online video surveillance, allowing for safer and more efficient processing of information, optimizing traffic flow and ensuring a safe and smooth border crossing process for individuals wishing to enter the country.
		▸ Use of video surveillance systems for customs control purposes at the following locations: warehouse entrances, import warehouses, export warehouses, transit warehouses, unloading areas for containers moving by sea and air or by air and sea, express parcel

№	Name of the digitalization element	Practical aspects of application
1	2	3
		processing points, warehouses for cargo inspected and released alongside an aircraft, special sections for valuable goods, warehouses for detained goods and other locations deemed necessary by customs.
		▸ Using video surveillance in the parcel inspection area along the streamlined parcel conveyor line to achieve the process of online tracking, recording and monitoring.
		▸ Use of body cameras by Customs officers to ensure transparency in the inspection process of goods and vehicles.
		▸ Use of a video surveillance system at the workplace of a customs official for round-the-clock monitoring of all confiscated contraband goods.
		▸ Using AI-powered security camera systems to detect high-risk passengers.
		▸ Remote physical inspection at the port. Designation of a physical inspection zone for sea containers, covered by video surveillance cameras, in which only authorized employees, who organize and control loading and unloading operations at the port, can transit. The customs officer and the importer or his/her customs agent (representative) participate in the control activities remotely from their premises or the external environment of the port and monitor the activities via monitors, giving instructions (directives) on the selection and opening of packages. The goal is to reduce the risk of transit inside the port and achieve social distancing.
Customs control		
34	**Smart, flexible, self-adjusting risk management system (RMS) (risk assessment of a batch of goods)**	▸ Risk management is a systematic activity of Customs authorities to minimize the likelihood of events related to non-compliance with international treaties and acts in the field of customs regulation and the legislation of Member States on customs regulation, and possible damage from their occurrence.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ The risk management system applies Big Data and other technologies to collect, identify and compare risk information to help build an early warning system for risk profiles.
		▸ Conducting customs control and selection of customs declarations for customs control purposes based on analytical models, data mining, neural networks and other tools.
		▸ Implementation of a subject-oriented model of the risk management system based on the distribution of participants of foreign economic activity into three risk level categories (low, medium and high).
		▸ Implementation of technology for automatic online assessment of the risk level of each consignment of goods. The main element of the model is an analytical circuit operating on the basis of Artificial Intelligence and Machine learning technologies. Implementation of technology for automatic risk assessment of consignments of goods will help to reduce the administrative burden on bona fide businesses. The decision of Customs authorities on the need to apply risk minimization measures will depend on the totality of all characteristics of the goods, the conditions of their movement across the customs border and the category of the declarant.
		▸ Implementation of a vehicle inspection and analysis system by providing comprehensive data support, instant risk profiling capabilities to facilitate customs clearance (release) of goods transported by individuals in vehicles across the customs border.
		▸ The availability of a set of programs based on Big Data technology and Artificial Intelligence algorithms that allow for intelligent (smart) risk assessment online based on the information (data) specified in the customs declaration, automatic selection of the object of customs control, quantitative assessment of the risk level and issuance of instructions for carrying out control measures.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Smart (Intelligent) data analysis for risk management and crime prevention purposes.
		▸ Application of AI and Machine learning for improved risk management processes (feedback on inspection results, segmentation (categorization) of subjects, automatic assessment and updating of risk profiles).
35	**Digital Twins (Predicting Response to Change)**	▸ Implementation of a model for selecting objects of customs control taking into account the Digital Twin technology. Digital Twin is a constantly changing digital copy (digital profile, digital model) of a foreign trade participant (economic operator), which allows, using mathematical and statistical (predictive) analysis methods, to evaluate and model (forecast) the behavior of this object or the development of processes with it in order to determine the need for control measures in relation to it. For this purpose, an automated algorithm is used that allows evaluating both the object itself and its behavior, including critical changes in this behavior in terms of the consequences. The implementation of such a model should ensure the selection of objects of customs control after the release of goods with the highest risks of violating customs legislation and eliminate an unreasonable control burden on business.
36	**Customs monitoring**	▸ The mechanism (technology) of customs monitoring ensures a comprehensive assessment by the customs authority of the activities of a foreign trade participant (economic operator), including using the Digital Twin technology, and the prevention of potential risks that may subsequently lead to negative consequences in the form of legal or economic sanctions. It is important and relevant for businesses to have the opportunity to have their activities checked by customs to identify risks of violation of the law. It is equally important for businesses to have the opportunity to correct mistakes made without being punished by regulatory authorities.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		Based on the results of customs monitoring, a foreign trade participant (economic operator) is granted the right to minimize risks and eliminate violations within the framework of self-control, including through voluntary payment of customs duties, within the timeframes established by law. The essence of customs monitoring is that the state evaluates the activities of a foreign trade participant (economic operator) and warns it of potential risks that may subsequently lead to negative effects in the form of legal or economic sanctions. The advantages of participation in customs monitoring are exemption from customs inspections; exemption from submitting annual reports of the AEO.
37	**Online monitoring**	▸ Implementation of technology (mechanism) of online customs monitoring.
38	**Preliminary decisions on selection of forms of customs control before the arrival of goods**	▸ Customs operations carried out by Customs authorities to make preliminary decisions on the selection of objects, forms of customs control and measures to ensure the implementation of customs control, prior to the arrival of goods in the customs territory, including for the preparation of decisions on the unloading of aircraft.
39	**Automation of the process of control over the correct classification of goods**	▸ Detection of cases of incorrect classification of goods (in accordance with the HS) for customs purposes using AI.
40	**Electronic systems for verification (confirmation) of the country of origin of goods**	▸ Application of electronic systems of certification and verification of origin of goods aimed at simplifying the procedure for confirming the origin of goods and obtaining tariff preferences. Electronic systems of verification (confirmation) of the country of origin of goods are technologies designed for automated verification and confirmation of information about the country of origin of goods within the framework of control and supervisory activities of Customs authorities. The implementation of this technology involves the interaction of Customs services of foreign countries within the framework of customs cooperation.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Use of the electronic (information) system of Customs authorities for the exchange of data on certificates of origin between the Customs services of states within the framework of a free trade agreement.
		▸ Implementation of a system of advance rulings on origin through digital (information) application systems (an importer or exporter can request information on the origin of goods from customs before importing them by submitting a request through the customs information system).
Copyright protection		
41	**Transition to exclusively electronic interaction with the copyright holder (when maintaining the customs register, as well as when identifying counterfeit goods)**	▸ Interaction between Customs authorities and the copyright holder who has exclusive rights to the result of intellectual activity or to the means of individualization (when maintaining a customs register, as well as when identifying counterfeit goods) through ICT.
Customs declaring		
42	**Conducting semantic analysis of information from the goods declaration, as well as accompanying documents (transport, commercial) and permits obtained through interdepartmental interaction**	▸ Semantic analysis is implemented through the use of a set of software tools of Customs authorities that ensure the processing of unstructured data contained in customs documents during the implementation of customs procedures and customs control. For example, within the framework of semantics, semantic analysis is carried out to check controlled goods, associated with the need to analyze, together with the descriptive part of the goods, the characteristics of the goods indicated in separate fields of column 31 in the structure of the goods declaration in order to determine whether the goods are controlled – dual-use goods – or, conversely, uncontrolled. The role of semantic analysis is to expand the practice of using automatic decision-making technologies, improving the risk management system.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		By means of semantic analysis, the automation of the following processes of information and reference support during customs operations and customs control is carried out:– execution of information and reference requests during customs control; – execution of information and reference requests when implementing departmental control; – formation of metadata necessary for the functioning of algorithms for linguistic and semantic processing of unstructured information in the process of executing information and reference queries; – testing of non-formalized indicators of risk profiles. Semantic analysis, implemented in Customs authorities, from the point of view of practical significance, will allow optimizing the work of Customs authorities in the following areas: – carry out automatic release of goods for which prohibitions and restrictions have been established that are not implemented in the automatic release algorithms; – introduce electronic verification systems for certificates of origin of goods, replacing the providing the original certificates of origin on paper; – apply customs monitoring to identify signs of possible violation of customs legislation; – expand the interaction of interested parties with the institute of the information operator, improving the technology of data exchange between participants of foreign economic activity (economic operators) and Customs authorities; – implementation of semantic analysis of images from inspection and screening systems by type of transport.
Authorized Economic Operator (AEO)		
43	**Digitalization of the AEO Institute**	▸ Implementation of automated data exchange (use of a digital platform) on AEO between Customs services of foreign countries that are parties to agreements on mutual recognition of the AEO legal status.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Implementation of mutual recognition programs for AEOs using blockchain. Creation of a blockchain platform for secure exchange of data and operations of certified AEOs within the framework of mutual recognition agreements.
		▸ Implementation of a secure, reliable and traceable mechanism for the exchange of data between customs services on AEO certificates and maintenance (accounting) of all records (information) relating to each issued AEO certificate.
Digital (advanced) technologies		
44	**Big Data**	▸ Big Data generally refers to extremely large data sets that exceed the processing capabilities of traditional data storage and analysis methods. In the era of Big Data, data analytics refers to the application of computer systems to analyze large data sets to support decision making. It is an interdisciplinary field that combines complex technologies such as statistics, machine learning, pattern recognition, systems theory, operations research, and Artificial Intelligence. Big Data is a project that provides hardware and software for collecting data from any source. The goal of the project is to manage data on import and export of goods, collect revenues and support data growth in the future. This project can display data in the form of a manager report and a user report (operational report) in web browsers and mobile devices to support information on Customs administration management, trade facilitation and revenue growth.
		▸ The existence of legal acts, including strategic plans, on the use of Big Data in the field of customs regulation.
		▸ Creation of a Customs Service Data Processing Center that ensures fast, uninterrupted and reliable operation of a single automated information system of Customs authorities; creates conditions for the introduction of Artificial Intelligence mechanisms and further improvement of the automation processes of customs operations without the participation of customs officials.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Improving the RMS through comparison and analysis of Big Data on cargo, senders, recipients and history of trade operations.
		▸ Analysis of foreign trade statistics, establishment of trends and directions of development, identification of discrepancies.
		▸ Automation of the goods classification process.
		▸ Implementation of a Big Data platform for cross-border trade, through which customs receives external information from port operators, transport companies, importers and exporters.
		▸ Creation of an (information) platform for data exchange and joint use of information resources of government agencies – implementation of data exchange and joint risk analysis between entities such as Customs authorities, banks, railways, ports, airlines, postal services and civil aviation (fight against smuggling).
		▸ Conducting risk-based inspection of goods, supported by data analysis within the framework of a Single Window mechanism.
		▸ Implementation of an information system of Customs authorities that automatically performs risk analysis based on Big Data (based on customs declarations).
		▸ Use of a customs violation analysis (information) system that applies Artificial Intelligence, Big Data analytics and predictive analytics to identify hidden trends, patterns, relationships and anomalies in various customs-related violations.
		▸ Combating customs violations such as illegal trafficking of dangerous drugs, sale, illegal import of tobacco products, illegal import and export of endangered species of nature and fauna.
		▸ Application of Big Data analytics system on intellectual property rights (IPR) to combat IPR crimes.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Applying AI image recognition system to assist customs officials in detecting contraband during X-ray inspection using Big Data to improve inspection efficiency and ensure convenient customs clearance (release) of goods.
		▸ Using AI-based Big Data, studying and analyzing it to conduct customs control, selecting objects of control after the release of goods.
		▸ Application of business analytics and interconnection between different (information) customs systems such as local, central and cloud services aimed at detecting illegal goods.
		▸ Using web search (web crawling) to automatically collect information from the Internet. Web crawling – is the process of automatically searching in the Internet to gather information from websites. It involves examining multiple pages on a single site (or even across different sites) to gather huge amounts of data. Large-scale search engines use search engines and other companies to index sites and gather data for a variety of purposes.
45	**Artificial Intelligence**	▸ Artificial Intelligence (AI) is a field of computer science that modifies behavior based on observed, collected, and analyzed data without explicit programming. It is a broad term that includes various technologies such as machine learning, deep learning, computer vision, and natural language processing.
		▸ The existence of advisory bodies in the field of public administration on the use of AI.
		▸ The existence of legal acts, including strategic plans, on the use of AI in the field of customs regulation, as well as the development of Smart Customs.
		▸ Availability of storage for recording graphic data and developing analysis models (Artificial Intelligence etc.).

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Use of advanced information systems to enhance risk profiling and customs clearance (release) of goods transported by individuals, cargo and vehicles (X-ray image assessment platform; vehicle inspection and strategic analysis system; queue control system for customs clearance (release) of air cargo; intelligent (smart) assessment of duties on various categories of goods; Big Data system on cargo).
		▸ The RMS uses intelligent (smart) analytical tools to replace traditional manual sequential review of documents and creates a new model for monitoring and preventing customs and tax risks, which is based on the prevention of industry and corporate risks.
		▸ Risk assessment of customs procedures within the framework of Big Data analysis on goods and entities within the supply chain of goods.
		▸ Automatic online assessment of risk level of goods batches.
		▸ Integration of risk management system segments at the supranational level within the economic/customs union.
		▸ Exchange of results of application of risk management system between state control bodies. Smart (intelligent) data analysis.
		▸ Intelligent (smart) review, image analysis, which covers various regulatory areas such as the movement of goods by sea, road, rail, express transportation, postal items, cross-border e-commerce, control of the movement of goods by individuals, and control of the movement of individuals.
		▸ Using AI to assess risk, provide and analyze data during inspection of goods, using augmented/mixed reality glasses to detect contraband and counterfeit goods.
		▸ Use of AI in (non-intrusive) X-ray inspection.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Application of AI system for identification, analysis of the contents of transported goods based on X-ray images.
		▸ Identification of the contents of postal items based on X-ray images and their automatic sorting (high-risk goods) for subsequent control.
		▸ Application of AI in non-intrusive inspection: goods subject to safety inspection are automatically compared with HS goods codes.
		▸ Online providing a prompt (alarm signal) to a customs official (when interacting with the customs information system) regarding goods or items that do not correspond to the information declared in the customs declaration.
		▸ Using AI to identify documents, goods and individuals.
		▸ Using AI models to check goods information automatically.
		▸ Development of special intelligent (smart) models to identify violations of customs regulations.
		▸ Using an intelligent (smart) document verification model that collects and organizes archived certificate image data and uses image classification and recognition algorithms to provide fast intelligent (smart) recognition, training and application in document package verification, it ensures text detection and key information recognition in documents with a high recognition rate.
		▸ Document verification and risk analysis, to carry out smart (intelligent) identification and comparison of images of submitted documents (phytosanitary and quarantine certificates).
		▸ Detection of counterfeit and invalid documents (phytosanitary and quarantine certificates).
		▸ Identification of certificates of origin within the framework of bilateral agreements between the Customs services of countries.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Using an intelligent (smart) model to recognize exotic pests in ports – automatically collects data on these organisms to ensure rapid and accurate species identification.
		▸ Using AI to implement a revenue collection model that ensures that appropriate duties and taxes are collected.
		▸ The use of AI for the classification of goods in accordance with the Harmonized System (HS), simplifying the work of users and providing greater compliance and certainty for customs and the private sector.
		▸ Automation of the process of classification of goods in accordance with the HS using AI: development and application of a single information space implemented in the form of a remote virtual cloud of foreign economic activity, which allows economic operators to carry out interconnected work and facilitate customs control.
		▸ Applying AI in customs inspections to identify deviations faster and enable customs auditors to focus on areas of non-compliance.
		▸ Trademark authenticity assessment as an anti-counterfeiting measure.
		▸ Develop an intelligent (smart) seizure management system that enables online monitoring of the location of seized goods in the warehouse and optimizes the utilization of warehouse space through the use of technologies such as RFID, which can significantly improve the overall efficiency of warehouse management.
		▸ Application of AI-based customs information system for crime analysis and prediction - an intelligent (smart) analytics platform for processing intelligence, operational information, investigating cases and detecting crimes.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Application of AI in customs: video analytics and text/document analytics. Text/Document analytics is the use of intelligent (smart) document processing (a combination of AI technologies such as natural language processing, computer vision and machine learning) to collect, extract and process data from unstructured/ semi-structured information from commercial documents (e.g. invoices, packing lists) into usable data.
		▸ The application of "AI-powered video analytics" technology to identify container and vehicle numbers in international transportation. This tool aims to enhance risk assessment capabilities by collecting more data on cross-border freight vehicles for Big Data analysis.
		▸ Implementation of intelligent (smart) liquor duty assessment: enables quick assessment of duty amount by instantly matching liquor labels with databases, which improves the efficiency of liquor duty assessment and reduces passenger waiting time.
		▸ Implementation of an automated guidance and assistance system (decision support). This is an AI-based virtual assistant for consulting customs officials on customs administration issues (customs control, customs procedures, classification, value, origin, etc.).
		▸ Development of a Smart (Intelligent) Checkpoint.
		▸ Application of the Digital Twin technology. Implementation of a model for selecting objects of customs control taking into account the Digital Twin technology.
		▸ Monitoring and control of logistics in customs warehouses and temporary storage areas.

№	Name of the digitalization element	Practical aspects of application
1	2	3
46	**Machine Learning**	▸ Machine Learning is a subset of Artificial Intelligence that enables computers to learn without being explicitly programmed. It is a process that uses mathematical models to predict outcomes rather than relying on a set of instructions. This can be achieved by identifying patterns in data, building analytical models, and using them to make predictions and decisions. Machine Learning is similar to human learning in that increased experience can improve accuracy.
47	**Cloud computing**	▸ Cloud computing – technologies of distributed processing of digital data, with the help of which computer (information) resources are provided to the Internet user as an online service. An example is the centralization of the Unified Automated Information System of Customs Authorities, the Main Data Processing Center. Essence: a model for providing computer resources such as computing power, data storage and software via a network (usually the Internet). Customs application: in customs activities, cloud technologies can be used for data storage and processing, information exchange, risk management, analytics and monitoring, customs facilitation and cooperation between Customs authorities and foreign trade participants (economic operators). The central link of cloud technologies is becoming specialized services and systems, including regulatory and legal sections, data arrays, and open points of interaction between participants of customs legal relations.
48	**Internet of Things**	▸ The Internet of Things (IoT) is a network of sensors and smart devices connected to the Internet that can send and receive data and are often found in vehicles, buildings, and electronics-equipped items. The IoT enables tracking of goods throughout the supply chain and can reduce trade costs by improving the efficiency of shipping and transporting goods.
		▸ IoT is used for online tracking and positioning seals, monitoring the movement of goods.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		‣ Implementation of a Machine Learning system for reading X-ray images.
		‣ To identify and compare the information provided in the customs declaration, using non-intrusive scanners integrated with AI technology (for optical character recognition) linked to the customs information system. The vehicle number and container number are compared with the stored information from the customs declaration.
		‣ To pay customs duties and taxes. Payment can be made using a customs document such as an import declaration or payment form with a QR code, barcode or reference number indicated on the document and paid through a bank, online banking, ATM or other form of bank payment service, or paid through the official cash desk in large convenience stores.
		‣ To collect data and improve the efficiency of its processing and to manage the vast network of sensors used by customs.
		‣ IoT is used by logistics companies to track the quantity and status of goods in transit online, and by retailers to track the location of goods.
		‣ Participation of customs in the IoT network provides access to various information and data on the supply chain of goods, which allows responding to violations of customs regulations, for example, to learn in advance about the surplus or shortage of imported/exported goods.
49	**Blockchain**	‣ Blockchain is a decentralized and distributed digital record (or ledger) of transactions with a timestamp, in which transactions are securely stored in a permanent and virtually unchangeable manner using various cryptographic methods.
		‣ It is used within the framework of the development of the national Single Window mechanism, as well as in the interaction (interconnection) of the Single Windows of states.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ It is used for the exchange of information and interaction at the national and international levels between authorized bodies in the field of customs administration and trade facilitation.
		▸ It facilitates the digitalization of paper documents for customs purposes, with the aim of reducing the risk of data loss in the event of an emergency.
		▸ Providing access for Customs authorities and foreign trade participants (economic operators) to logistics information for the purpose of tracking and tracing goods along global supply chains.
		▸ It is used to organize the exchange of information (data) between Customs services for customs purposes, including when submitting import customs declarations from one state to another.
		▸ To exchange information (data) on customs clearance and logistics status from port to port when moving goods in containers between countries.
		▸ Exchange of information (data) about the AEO and the e-commerce environment.
		▸ Blockchain is used in the electronic exchange of certificates of origin data (between countries) in order to achieve document compatibility for cross-border paperless trade, and allows for the issuance and verification of such certificates.
		▸ Ensures proper verification of licenses, certificates of origin and compliance.
		▸ Ensuring traceability of goods.
		▸ Container tracking and control. Establishment of a joint service between states for tracking and controlling containers. It is implemented through a network information trading platform, which, based on Blockchain technology, collects data from various sources in two countries for a single submitting. The foreign trade participant (economic operator) receives all information about the status of its goods by initializing in the information system and entering the container number.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Development of a Blockchain platform for tracking cargo, collecting and exchanging data on international transactions, foreign trade participants, express delivery services, Customs authorities and other interested parties.
		▸ Electronic verification using Blockchain and dynamic QR code – authentication technology using dynamic QR code to improve online verification of registration of a foreign trade participant (economic operator).
50	**Mobile technologies (wireless communication technology), including the use of mobile devices**	▸ Mobile technologies are technologies that are always with the user. They include portable two-way communication devices, computing devices, and the network technologies that connect them. Mobile technologies are a set of hardware and software that provide wireless communication and access to information through portable devices such as smartphones, tablets, laptops, and other mobile terminals. They allow users to stay connected and work with data outside of stationary premises.
		▸ Conducting intelligent (smart) inspection. Using 5G tablet as 5G primary devices.
		▸ Use of wearable devices in the form of smart glasses that enable customs officials to share images of cargo with relevant customs units and conduct consultations with them online.
		▸ Transmission of audio and video information to the Customs service surveillance (control) department, collected by smart glasses at the place of customs control.
		▸ Use of mobile applications of Customs authorities, which are provided to customs officers working in the front line (place of control) during inspections and search activities on cargo, post and passenger routes. The application allows customs officials to fill out the required reports, performing their functions at any place where control activities are carried out.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ The use of the listed technologies helps to capture image information, overcome barriers in data transmission and form panoramic images of objects and personnel under observation (control), which allows for subsequent multidimensional assessment, risk analysis and selection of an object of customs control, significantly increasing the efficiency of supervision and customs clearance (release) of goods.
		▸ The presence of a Monitoring and Control Center (a structural unit of the Customs service) that interacts with Customs officers conducting control activities using audio and video devices online to receive directly information on the results of control. Such a center ensures the improvement of customs control capabilities on the place and cooperation between front-line Customs officers and rear departments.
51	**Biometrics**	▸ Biometrics is the measurement and statistical analysis of physical and behavioral characteristics of an individual. The basic premise of this field is that each individual is distinctly unique and can therefore be identified through his/her physical or behavioral traits. Modern technology has also led to significant advances in facial recognition, DNA, and iris scanning technologies, which open up new sources of information for verifying an individual's identity. In addition to the above sources of biometric data, other examples may include palm prints, hand geometry, and smell/aroma. Behavioral characteristics may also serve to biometrically identify an individual. Such behavioral identifiers include typing rhythm, gait, and voice recognition.
		▸ Identification of high-risk passengers and vehicles using visual search and facial recognition technology at the border, applying technology that uses biosignals and facial expressions of passengers.
		▸ Use of biometric identification services for visa and border crossing purposes, as well as recognition of identification information.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Installing intelligent (smart) gates to declare the health status of passengers at the entry and exit ports. The gates are connected to the intelligent (smart) health screening system and have functions such as temperature measurement, facial recognition, document recognition, fingerprint collection, and QR code collection.
		▸ The Customs Risk Management Department is empowered to issue inspection and interception requests based on passenger facial recognition information and automatically trigger an alarm when the inspection object passes through the gate to carry out interception.
		▸ Ensuring the collection and comparison of fingerprints associated with contraband goods, the collection and comparison of voices of suspects, and the collection and comparison of biological traces (e.g. DNA analysis).
		▸ Use for detection of endangered species of plants and animals, as well as products related to them – implementation of biometric technology for analysis and identification of biological species.
52	**Augmented reality technology**	▸ Virtual reality, augmented reality and mixed reality, which create fully simulated worlds or integrate digital elements into real environments, are of great importance in customs training. *Virtual reality* fully immerses users in a virtual environment, *augmented reality* projects digital content into a real environment and *mixed reality* integrates digital content with the real world. The differences between these (immersive) technologies are: 1. Virtual reality allows users to be fully immersed in a virtual environment using a headset, allowing them to interact and work with digital objects.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		2. Augmented reality projects digital content into the user's field of view through a mobile device or headset, allowing the user to interact with the real world while maintaining the ability to move freely and use their hands. 3. Mixed reality is a combination of augmented and virtual reality that allows users to manipulate and interact with digital content in a real-world environment.
		▸ Integrated application of various technologies such as business process (customs operation) prompts, voice commands, remote calls and knowledge base storage, online audio and video communication, multi-conference rooms, voice-to-text conversion, audio, video and image information storage, QR code recognition, infrared temperature measurement, face recognition, etc., suitable for scenarios such as joint vehicle quarantine and inspection operations, and exhibit identification during exhibition tours, online providing decision-making information and on the spot guidance for both Customs officers and internal services, and conducting rapid on the spot disposal of goods.
		▸ Augmented and mixed reality can be used to project visual assistance into the physical world, such as during physical inspections.
		▸ The use of augmented reality glasses allows customs officials to immerse themselves in various business scenarios and collect information on a customs information resource (platform) of Big Data.
		▸ Using an augmented reality headset to work with a goods library with the ability to search, compare and identify counterfeit goods using 3D visualization.
		▸ Using augmented reality for educational simulations.
		▸ Identification and assessment of vehicles (e.g. warning the agents if the vehicle is below ground level in case of smuggling) and providing translation services when interacting with foreign language speakers.

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ To provide Customs officers with a video recording of the inspection of an individual's personal belongings, and to design the environment in which a container or vessel is inspected.
		▸ To visualize large data sets. Big Data is difficult to visualize and manipulate for a non-expert. With mixed reality data can be projected into the physical world as digital objects that can be manipulated like real objects.
		▸ They have potential applications in customs control of goods, protection of intellectual property rights and training of customs officials.
53	**Drones**	▸ According to Webster's dictionary, a drone is an unmanned aircraft or craft controlled by remote control or on-board computers. Unmanned aerial vehicles (UAVs) are a component of an unmanned aircraft system (UAS), which includes the UAV, a ground controller, and a communications system between the two. Drone technology offers a high level of autonomy. Using GPS signals for navigation and Wi-Fi for communication, some models require human operators to guide manually the vehicle via radio remote control, using onboard cameras that can act as digital eyes from several kilometers away, depending on battery power. Other, more sophisticated vehicles can follow fully programmed procedures for takeoff, flight, delivery, and landing without human intervention.
		▸ Using robots to inspect container cargo.
		▸ To monitor illegal activities in the field of customs administration.
		▸ Using camera-equipped drones to measure the complexity and effectiveness of land and maritime border control monitoring.
		▸ Using underwater drones to monitor and control customs control facilities.
		▸ Monitoring of the coastline and other sensitive areas.

№	Name of the digitalization element	Practical aspects of application
1	2	3
Creating of smart (intelligent) checkpoint		
54	**Smart (Intelligent) Checkpoint**	▸ Creation and implementation of a Smart Checkpoint model. The architecture of a smart checkpoint consists of information technology elements that are optimally built and adapted to the conditions of each specific checkpoint, taking into account the type of transport. Inspection and screening complexes, weighing and dimensional complexes, a system for recognizing state registration numbers (plates) of vehicles, a system for detecting fissile and radioactive materials - these are the main elements whose operation will be integrated into a single information space of checkpoints. Full-scale implementation of Smart Checkpoint models in practical activities will allow: – transform the implementation of all necessary forms of customs control into a seamless process, significantly accelerating the movement of goods through the checkpoint; – reduce logistics and transportation costs; – create incentives and conditions for the development of authorized economic operators (AEOs); – increase the share of preliminary declaring of goods.
55	**Electronic ticket system (electronic queue)**	▸ A digital solution designed to automate and optimize the processes of control and passing of goods and vehicles across the border. The date and time reservation mechanism (“electronic queue”) is a free digital service that allows freight carriers to save time, reduce financial costs, and also ensures the ordering of queues of freight vehicles in front of automobile checkpoints.
56	**Automatic registration of vehicle arrivals**	▸ Application of an automated customs control system at border checkpoints, ensuring automatic registration of arrivals.
57	**Categorization of consignment of goods online**	▸ Implementation of technology for automatic online assessment of the risk level of each batch of goods as part of the development of a risk management system.

№	Name of the digitalization element	Practical aspects of application
1	2	3
58	**Checking the possibility of automatic release of goods in accordance with the declared customs procedure**	▸ This is a process whereby the customs information system automatically analyses the submitted customs declaration in order to automatically release it without the participation of customs officials.
59	**Automatic placement (introducing) of goods under the customs transit procedure**	▸ Automatic placement (introducing) of goods under the customs transit procedure
60	**Automatic reading and recognition of vehicle registration plates**	▸ It is a computer vision and image processing technology that enables the recording, recognition and processing of vehicle registration plates online.
61	**Automatic passing of radiation control**	▸ Implementation of radiation monitoring of goods and vehicles transported across the customs border in automatic mode.
62	**Automatic weight control (weight and dimension complex)**	▸ Conducting an automatic assessment of compliance with the requirements for the movement of heavy and large-sized vehicles (weight and size control) within the framework of state control (supervision) over the implementation of international road transport at checkpoints across the state border.
63	**Automatic inspection using inspection and screening complexes (ISC)**	▸ Carrying out customs control of goods and vehicles using inspection and screening complexes in automatic mode
64	**Application of Artificial Intelligence to the analysis of portal ISC images**	▸ See item 45
65	**Image recognition (automatic detection of control objects)**	▸ See item 45
66	**Intelligent (smart) analysis of images from inspection and screening complexes**	▸ See item 45

№	Name of the digitalization element	Practical aspects of application
1	2	3
		▸ Implementation of modern inspection equipment (scanners) with AI and automatic contraband detection functions, including computed tomography (CT) scanners and devices for automatic detection of hidden items (goods) as part of non-intrusive inspection, simplification of customs clearance (release) of goods carried by passengers and cargo.
		▸ Availability of AI-enabled image analysis algorithm modules such as identification of declared goods, detection of concealed goods, identification of empty containers.
		▸ AI-enabled image analysis, passenger car scanning, including foreign object recognition algorithm and multi-category target detection algorithm.
		▸ AI-enabled image analysis for top-view passenger vehicle scanners.
		▸ Using AI-based models to interpret X-ray images.
		▸ Automatic display of a warning (signal) to customs officials when threats are detected during non-intrusive inspections.
		▸ Using the X-ray image evaluation (information) platform: enables online comparison of X-ray images of vehicles with the X-ray image database to improve inspection efficiency.
		▸ Implementation of intelligent (smart) image comparison function for Customs authorities checking express and postal parcels with electronic data on customs clearance.
		▸ Analyzing container images obtained using X-ray scanners to improve cargo inspection efficiency.
		▸ Exchange of X-ray images between Customs services.
		▸ Application of barcode scanning technology to collect and read data integrated with parcel information into an inspection (information) system (as part of multi-angle synchronous non-intrusive inspection of containers and vehicles).

№	Name of the digitalization element	Practical aspects of application
1	2	3
67	**Unified information network of technical means**	▸ Creation of a unified information network of technical means of Customs authorities. Reference: when conducting customs control, Customs authorities may use technical means of customs control (equipment, instrumentation, measuring instruments, devices and tools) and other technical means.
68	**Integration of a unified information network of technical means with information systems of state regulatory bodies**	▸ This is the process of combining and interacting technical means with the information systems of state regulatory bodies.
69	**Automatic decision on selection of the performing operations order**	▸ Automatic decision on selection of the performing operations order.
	Consulting	
70	**Availability of consultation channels on issues of intelligent (smart) customs control and services**	▸ Establishing one or more customs information consultation channels such as hotlines, consultation centers, official website email addresses and chatbot to meet the needs of business and the public to provide instant and accurate answers to individuals' inquiries.
		▸ The use of an interactive response system, which includes a virtual robotic customs ambassador at checkpoints and an online chatbot on the Customs service website to provide instant and accurate responses to individuals' queries.
	Working with personnel	
71	**Digital solutions for staff training**	▸ Implementation of web applications for knowledge management of Customs officers, which are available to all Customs service departments.
	Development of international customs cooperation	
	▸ Includes a set of the following activities in such areas: – exchange of preliminary information on goods and vehicles, as well as information used within the framework of the risk management system; – mutual recognition of customs control results and AEO status; – joint measures to simplify customs procedures in mutual trade; – cooperation in the fight against counterfeiting and illegal movement of funds; – implementation of an electronic system for certification of the origin of goods; – exchange of statistical data on mutual trade.	

CONCLUSIONS AND RECOMMENDATIONS

The development of organizational, legal and technical instruments for the implementation of advanced customs technologies in customs administration is on the agenda of the Customs services of the EEU Member States, as well as the international customs community in the WCO.

Today, the WCO Smart Customs Project is an excellent tool, a repository that accumulates international experience in the development and implementation of modern methods, technologies and necessary instruments for the automation and digitalization of customs administration. After its launch, the WCO Secretariat in 2025 initiated the work on modernizing the ICT Guidelines and the IT Guide within the framework of the WCO Mini Group. Of course, such work is very relevant and in demand among the expert community of Customs officers and researchers involved into the process of improving customs regulation and trade facilitation.

It is worth noting that participation in the WCO Smart Customs Project for an interested entity is limited to the status of a WCO Member. We believe that customs and economic unions can be admitted to the project for the exchange of experience.

Despite the existence of a series of research papers on development of the Smart Customs institute and, above all, the introduction of advanced customs technologies, it seems that other WCO projects – the creation of Digital (Electronic) Customs, as well as the Single Window mechanism - remain in a "frozen" state. To date, there is no permanent WCO working body, whose competence includes issues of development of the named institutions. Thus, the WCO Information Management Sub-Committee, which previously dealt with this issue, has been abolished.

There is no reference concept and model (maturity) of Digital (Smart) Customs, which are so necessary, in our opinion, for understanding the prospects for modernizing customs regulation. We are confident that they need to be developed at the level of the WCO legal instruments and tools.

There is no clear answer to the question about the characteristics of electronic, digital, smart Customs, as well as their interpretation (definition of concepts) at the WCO level (technology, process, organization or a set of named elements). Moreover, there is no clear understanding of the relationship between the Single Window institution and the Digital (Smart) Customs institution.

For precisely this reason we welcome the WCO initiative to modernize its ICT legal framework.

We adhere to the position on the need to create a separate permanent WCO working body involved into development and monitoring of methodological and practical aspects of the ICT development, advanced technologies, the institute of Digital (Smart) Customs, e-commerce and the Single Window mechanism.

This analytical review provides brief information on the WCO Smart Customs Project implemented by the WCO, and formalizes our proposals for modernization of the ICT Guidelines and IT Guide within the framework of the WCO Mini Group. During the study we researched the WCO legal instruments and tools for the development of the Smart Customs institute, posted on the Smart Customs Portal, as well the EEU, the WCO and APEC experience in terms of the introduction of advanced customs technologies in the activities of Customs authorities. In addition, the concepts for the development of the Smart Customs in individual WCO Member States were studied.

The goal of the study has been achieved – a list of advanced (digital) customs technologies has been formed (compiled) with brief explanations of their planning and practical implementation in modern Customs.

The prospect of further research – formation of references in the context of each technology to the legal acts of the WCO Member States. This will allow to get acquainted with the array of foreign legal acts that regulate legal relations associated with the ICT introduction, information interaction of Customs services, and through the method of comparative law to prepare proposals (if necessary) for the modernization of national/supranational legislation in terms of the development and implementation of advanced customs technologies and the development of the institute of Digital (Smart) Customs.

The obtained results can be used in the development of national (supranational) concepts for development of the Digital (Smart) Customs institution.

We are confident that the summary of information on advanced customs technologies accompanied by brief explanations, that we have prepared, can be used as an appendix to the WCO ICT Guidelines and the WCO IT Guide for Executives.

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APPENDIX

Appendix 1

WORLD CUSTOMS ORGANIZATION QUESTIONNAIRE FORM TO CONDUCT A SURVEY ON THE SMART CUSTOMS PROJECT

The proposal of the Secretariat of the World Customs Organization to conduct an analysis of the application of advanced customs technologies in the activities of Customs authorities involves filling out a questionnaire on the organization's page,[1] which includes the following fields:

WCO Survey for a structured repository of Stakeholders' experiences with disruptive technologies

1. Organization
2. Respondent's full name
3. Email
4. Country
5. Stakeholder group (international organization)

WCO Survey for a structured repository of Stakeholders' experiences with disruptive technologies

6. Title of the project/programme/initiative in the field of Smart Customs (If your organization has more than one project/programme/initiative, please complete a separate survey for each project)

7.a Primary technology targeted

Blockchain
Big Data and data analytics
Artificial Intelligence and machine learning
Robots
Biometrics
Virtual, augmented and mixed reality
Geospatial mapping
Cloud computing

[1] WCO Survey. URL: https://survey2.wcoomd.org/anonymous/survey/1d19c3a3-8b6e-4fd9-a726-2d4fa9e6dfa2?page=2cc27c55

Drones
Edge computing
Smart gate systems
Automated lanes
Internet of Things
Scanners
Other

7.b Secondary technology used/necessary for the deployment of the project/programme/initiative

Blockchain
Big Data and data analytics
Artificial Intelligence and machine learning
Robots
Biometrics
Virtual, augmented and mixed reality
Geospatial mapping
Cloud computing
Drones
Edge computing
Smart gate systems
Automated lanes
Internet of Things
Scanners
Other

8. Use cases

Operational efficiency and trade facilitation
Improved governance, decision-making, and transparency
Rick management, fraud detection, and security
Intelligence and surveillance
Human resource management and capacity building
Data management and analytics
User experience and communication
Innovation and research
Other use cases

9. Performance improvements

Increased trust in the relationship with trade
Smoother movement of people
Smoother movement of goods

Paperless trade
Increased quality of services
More efficient clearance and delivery in e-commerce
Increased compliance with classification rules
Increased voluntary revenue compliance
Fairer revenue collection
Increased use of technical targeting and detection capabilities on goods and passengers
Increased effectiveness in combating illicit trade in excisable products (tobacco, alcohol, petroleum and oil, etc.)
Increased effectiveness in combating illicit trafficking of cultural heritage
Increased effectiveness in safeguarding public health
Increased effectiveness in the fight against counterfeit goods and piracy, including sustainability in disposal of seized goods
Increased effectiveness in combating drugs trafficking
Increased effectiveness in the fight against environmental threats
Increased public security by combating proliferation of weapons and materials of mass destruction, trafficking of small arms and explosives, and illicit diversion of dual use
Enhanced efficiency and accuracy in financial investigations aimed at combating money laundering and terrorism financing, including asset recovery
More accurate budget-based strategy planning
More competent and engaged staff
Advanced level of accountability
Advanced level of integrity
Improved gender balance of staff at all levels

10. Status of adoption/development

Adopted/operational (full deployment)
Under development (including proof of concept and pilots)
Planned (feasibility study undertaken)
Under consideration (feasibility study not undertaken)

11. Brief outline of the project/programme/initiative (500 words maximum) - describing how a technology is used to achieve a particular goal

11.a Details of the scale of the project (e.g. geographical scope, quantity and types of devices, etc.)

12. Benefits of the project/programme/initiative

Cost savings

Human resource savings

Increased efficiency

Others

13. What are the major takeaways, including challenges, opportunities and future technology plans?

File No 1 – Max 10 MB (upload relevant project documents, related articles or news items, multimedia materials & images, etc. here)

Choose file

File No 2 – Max 10 MB (upload relevant project documents, related articles or news items, multimedia materials & images, etc. here)

Choose file

File No 3 – Max 10 MB (upload relevant project documents, related articles or news items, multimedia materials & images, etc. here)

Choose file

14. If there is any specific information you have provided that you do not wish to share with all WCO Members, please indicate it clearly, referencing the relevant question number

Appendix 2

LIST OF LEGAL INSTRUMENTS AND TOOLS FOR THE DEVELOPMENT OF THE DIGITAL (SMART) CUSTOMS INSTITUTION

INFORM SYSTEMS AND INFORM TECHNOLOGIES/ ADVANCED TECHNOLOGIES		
1	WCO Technology and Innovation Forum: Background Paper. Stefan Aniszewski . WCO Research Paper No. 4. November 2009	2009
2	Guidelines on Application of Information and Communication Technology. Kyoto Convention. General Annex. Chapter 7. Version 7. WCO. March 2014	2014
3	Implications of Big Data for Customs. How It Can Support Risk Management Capabilities. Yotaro Okazaki. WCO Research Paper No. 39. WCO. March 2017	2017
4	IT Guide for Executives. June 2018	2018
5	Unveiling the Potential of Blockchain for Customs. Yotaro Okazaki. WCO Research Paper No. 45. WCO. June 2018	2018
6	Emerging Technology Impacting Customs (Formerly Current/Future Trends). Electronic Crime Expert Group.Version 2.0. Annex IV to Doc. EC0215E. WCO. August 2018.	2018
7	Data Analysis Practitioner's Handbook. WCO, June 2018	2018
8	Declaration of the World Customs Organization on Cross-border E-commerce. Beijing Declaration. February 2018. First Global Cross-border E-Commerce Conference. Beijing Declaration. Beijing, China. February 10, 2018 [+ ICT]	2018
9	Use of the ICT – WTO Agreement on Trade Facilitation. D/2019/0448/20. WCO. June 2018 [+ ICT]	2018
10	Study Report on Disruptive Technologies. World Customs Organization. June, 2019	2019
11	Digital Customs. WCO Experience: Monograph. Mozer Sergei. Moscow: Publishing House of the Russian Customs Academy. 266 pages. June, 2019.	2019
12	Digital Customs. WCO Experience: Report. Mozer Sergei (ItemVII of the Agenda– Update of the RKC ICT Guidelines) Revised Kyoto Convention Management Committee. 20th Meeting, 17-18 June, 2019. Brussels, Belgium.	2019
13	Compendium of Smart Customs Practices for APEC Economies. Asia-Pacific Economic Cooperation. Submitted by: People's Republic of China November 2023.	2023
14	Findings and Practices on Smart Customs in APEC. Free Zones/Free Trade Ports. APEC Sub-Committee on Customs Procedures. March 2024	2024

15	Detailed report on the adoption of Artificial Intelligence and machine learning in customs. March 2025.	2025
16	Results of the WCO Smart Customs Survey. 2025	2025
17	Case Study on the adoption of Artificial Intelligence (AI) and Machine Learning (ML) in China Customs, 2025	2025
18	China's Smart Customs Journey: Insights into Modernizing International Customs. WANG Ling jun. Vice Minister of the General Administration of Customs of the People's Republic of China.	2025
	DATA/DATA MODEL	
19	Recommendation of the Customs Co-operation Council concerning the Electronic Transmission and Authentication of Customs and other Relevant Regulatory Information. June 16 , 1981; revised June 24 , 2005	1981
20	Recommendation of the Customs Co-operation Council concerning the Use of Codes for the Representation of Data Elements. T2-383. May 22 , 1984	1984
21	Recommendation of the Customs Co-operation Council concerning the Use of the CCC/IATA Data Interchange Standards.TC2-3843. June 21st , 1988	1988
22	Declaration of the Customs Co-operation Council concerning Harmonization/Computerization of Customs Procedures and a Strategy for the 21st Century - Washington Declaration. July 1989	1989
23	Recommendation of the Customs Co-operation Council concerning the Use of the United Nations Trade Data Elements Directory (UNTDED). 26th June 1990	1990
24	Recommendation of the Customs Co-operation Council concerning the Use of the UN/EDIFACT Rules for Electronic Data Interchange. TC2-3841. 26th June 1990	1990
25	Recommendation of the Customs Co-operation Council concerning the Use of the WCO Data Mapping Guide for Customs UN/EDIFACT Messages. TC2-3845. June 21 , 1995	1995
26	WCO Data Model, Single Window Data Harmonization. Version 2. (Guidelines) WCO, February 2007 [+ Data Model, Data Harmonization]	2007
27	Recommendation of the Customs Co-operation Council concerning the Use of WCO Data Model (27 June 2009)	2009
28	Single Window Data Harmonization and Standardization in the Republic of Macedonia. Slavica Kutirov. Customs Administration of the Republic of Macedonia. February 12, 2009 (?) [+ Data Harmonization]	2009
29	Guide to the Exchange of Customs Valuation Information. WCO, 2010 (?)	2010
30	SAFE Data Element Maintenance Mechanism. D/2010/0048/10. WCO, 2010	2010

31	WCO Data Model XML Guidelines. 2nd Edition. WCO. February 27, 2012	2012
32	Message Modifications: Approved Revision Process PNRGOV. Version 12.1. WCO/IATA/ICAO. August 1, 2012	2012
33	Guidelines on the Development and Use of a National Valuation Database as a Risk Assessment Tool. WCO, 2012 (?) [+ Data]	2012
34	WCO DM Maintenance Procedure. WCO, 2012 (?)	2012
35	WCO XML Schema Customization Guidelines. WCO, 2012 (?)	2012
36	Passenger and Airport Data Interchange Standards. EDIFACT Implementation Guide. PNRGOV PADIS EDIFACT Implementation Guide. PNRGOV (version 17.1) 2013 (?)	2013
37	Globally Networked Customs Utility Block. Bilateral/Multi-Lateral Export & Transit Data Exchange "your export is my entry". Proposed by South Africa and Swaziland. 2013 (?)	2013
38	Passenger and Airport Data Interchange Standards. EDIFACT Implementation Guide. PNRGOV PADIS EDIFACT Implementation Guide. PNRGOV (version 13.1). IATA, 2013	2013
39	Guidelines for Customs Administrations. National Customs Enforcement Network (nCEN). Version 3.0. WCO, 2013(?)	2013
40	Globally Networked Customs Utility Block. AEO Mutual Recognition. Proposed by EU and US. Version 1.20. April 11 , 2013	2013
41	Passenger and Airport Data Interchange Standards. XML Implementation Guide. PNR Data Pushed to States or Other Authorities. PNRGOV message. Version 16.1 (2013?) [+ Data]	2013
42	Air Transport & Travel Industry. Functional and Business Principles. PNRGOV. Version 17.1 (2014?)	2014
43	Globally Networked Customs Utility Block. Systematic Electronic Exchange of Data (SEED). Your Exit is My Entry. Your Pre-Arrival Data Assessed by My Risk Criteria. Proposed by Serbia. Supported by SEED Beneficiary Administrations in Western Balkans. GNC Utility Block - SEED. June 09, 2014	2014
44	Globally Networked Customs Utility Block. Control Mutual Agreement. Proposed by CH and EU. Version 2.10. March 3d, 2014.	2014
45	Guidelines for Strengthening Cooperation and the Exchanging of Information between Customs and Tax Authorities at the National Level. WCO. October 2016. V. Developing a Memorandum of Understanding/Agreement (MOU/MOA). II. India. Data Sharing policy. February 2015.	2015

46	Guidelines for Strengthening Cooperation and the Exchanging of Information Between Customs and Tax Authorities at the National level. WCO. October 2016. V. Developing a Memorandum of Understanding/Agreement (MOU/ MOA). III. Malaysia. Data Sharing policy. 2015 (?)	2015
47	Tools for Reducing Revenue Risks and the Revenue Gap: (I) Mirror Analysis Guide, including Case Study (Cameroon). Revenue Package. WCO. June, 2015 [+ Data]	2015
48	Guidelines for Strengthening Cooperation and the Exchanging of Information between Customs and Tax Authorities at the National Level. WCO. October 2016. V. Developing a Memorandum of Understanding/Agreement (MOU/ MOA). V. Serbia. Data Sharing Policy. 2015 (?)	2015
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The scientific publication

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ADVANCED CUSTOMS TECHNOLOGIES (INTERNATIONAL LEGAL ASPECT)

Guide

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