STRATEGY ON ICT DEVELOPMENT OF THE CUSTOMS ADMINISTRATION 2021 – 2025

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Contents

Document History				
Editione	Date of issue	Description	Amendments	
			Description of amendment	Amended pages/points/ chapters
1	2	3	4	5
01		First edition	/	/
02		Second edition	Aligned text in pursuant the Report no. 44.2-19/42 of the Government of the Republic of North Macedonia	P. 8, point. 5: Strategic objectives

Reference Documents	
Reference	Title of Document
Strategic Plan	Strategic Plan of the Customs Administration of the Republic of North Macedonia with Action Plan of the Customs Administration of the Republic of North Macedonia
EU Report	EC Progress Report
	Strategy on the Implementation of Interoperability (SII)
MASP	Multi-Annual Strategic Planning
	Guidelines on the Application and ICT Life-cycle Management
	Project Management Guide
	Law on Public Procurement

Terms and acronyms	Meaning
CA	Customs Administration of the Republic of North Macedonia
ICT	Information and Communication Technologies
IT	Information Technology
EU	European Union

EORI2	Economic Operators Registration and Identification subsystem 2
AES	Automated Export System
NCTS	New Computerized Transit System
CDEPS	Customs Declaration and Excise Document Processing System
ITO	Integrated Tariff Environment
DG TAXUD	Directorate - General for Taxation and Customs Union
ITIL	Information Technology Infrastructure Library
PRINCE2	PRojects IN Controlled Environments (Project management method)
TEMPO	TAXUD Electronic Management of Projects Online
RUP	Rational Unified Process (software development methodology)
RDBMS	Relational database management system
UCC	Union Customs Code
CD	Customs Decision
BTI	Binding Tariff Information
Sur.3	Surveillance 3
ITMS	Integrated Tariff Management System
NSW	National Single Window
UUM&DS	Uniform User Management & Digital Signature
CCN2	Common Communication Network 2
CS/RD2	Central Services/Reference Data 2
BI&DWH	Business Intelligence/Data Warehouse
CMS	Control Management System
CCTV-ANPR	Closed-circuit television -Automatic number plate recognition
DR	Disaster Recovery
HW	Hardware infrastructure

1. Summary

This document provides a roadmap for the development of the information and communication technology at the Customs Administration of the Republic of North Macedonia during the next five years (2021-2025). It encompasses the mission, vision and the strategic priorities and goals of the CA in ICT development, as well as the activities and the necessary resources for their realization.

2. Introduction

In the period 2021 – 2025 CA plans to implement several projects in all areas of customs operation, that should be IT supported. Most of these projects are part of the process of preparation for accession of the Republic of North Macedonia to the European Union (EU).

The grounds of this strategy incorporate user requirements and objectives derived from the business strategy of the CA, and are aligned with the priorities and plans at national and EU level.

The digitalization of the CA and the development of information and communication technologies is one of the key factors for a modern customs administration. In this context, the Customs Administration must be prepared for all challenges and to follow and develop new ICT technologies.

To tackle the forthcoming changes and the large number of complex projects that need to be realized in parallel in a short period of time, what is needed is a stable organization, motivated employees and a clear vision and roadmap to the future.

The application of international standards and methodologies will be a major step forward in achieving greater efficiency and success in project implementation of projects.

This strategy is a general framework of the activities that are to be realized in the forthcoming period and is it not focused on the details of their realization. The strategy is a "live" document that will be regularly updated to address the changes in ICT developments that will happen in the future.

3. Mission

The Customs Administration's mission on ICT development derives from the business strategy of the CA and covers:

- Support all CA activities to ensure automatic collection of customs and other duties in the best way possible;
- Support proper application of legislation in conducting the customs procedures through electronic systems;
- Support the CA management with the necessary analyzes for decision making;
- Support customs officers by establishing simple and efficient application solutions;
- Support the needs of the business community by simplifying the processes;
- Application of new technologies in the optimization of business processes;
- Support the fight against fraud and other dangerous illegal activities.

4. Vision

The vision of the Customs Administration for ICT development is through the establishment of a modern customs administration with high level of automation, efficiency and effectiveness in the operation and use of services, in accordance with the law:

- To be the leading ICT administration in the Republic of North Macedonia;
- To increase the efficiency of customs operations and to contribute to the reduction of fraud and corruption;
- To implement paperless environment in customs operations;
- To implement interconnection and interoperability with the EU customs systems;
- To implement easily accessible and simple user systems for our partners from the business community and other government institutions.

5. Strategic Objectives

Objective 1: Interconnectivity and Interoperability with the EU ICT Systems

The connection and the establishment of interoperability between the ICT systems of the CA and the EU systems is one of the most important preconditions for accession of the Republic of North Macedonia to the EU. This process involves realization of many projects for the implementation of several systems through defining a clear and precise timeframe and priorities, including the roles and responsibilities of all parties involved. In the past period, the CA implemented some ICT systems, which need to be properly altered and harmonized with those in the EU in the coming period.

Specific activities:

- Preparation for interconnection and interoperability with the EU systems
- Implementation of systems harmonized with EU systems that can be established prior to EU accession

The particular projects and activities are defined in the CA Action Plan in the part related to interconnectivity and Interoperability with the EU Systems, which will be updated and harmonized with the priorities, scope and dynamics of realization of the projects from the EU Multi-Annual Strategic Plan for the Implementation of e-Customs (MASP[1]). The activities given in the Action Plan in Appendix 2 provide details for the first phase of project implementation that refers to the period 2021-2023 and depending on the projects most often refers to the national development of systems. In parallel with these activities, further analysis will be done for full harmonization with the EU systems through the implementation of future projects during the second phase in the period 2024-2025.

Objective 2: Implementation of the integration standards with the National interoperability platform

The implementation of interoperability standards in accordance with the National interoperability platform is an area that the CA covers in the phases of planning, needs assessment and implementation of projects for ICT development, taking into consideration the national regulations in the area of electronic management of services, electronic documents, electronic identification of confidential services, always keeping in mind the requirements and standards for interconnectivity and interoperability with the European Union ICT systems.

Specific activities:

[1] MASP - Multi-Annual Strategic Plan
https://ec.europa.eu/taxation_customs/general-information-customs/electronic-customs_en#heading_2

- Planning and defining the needs and standards for interconnectivity and interoperability in the process of development of new ICT systems in the Customs Administration;
- Implementation of needs and standards in accordance with the interoperability and interconnectivity regulations – both of the European Union and of the national domain.

Objective 3: Modernization of ICT environment

The application of state-of-the-art technological solutions in customs operations are the main pillars for the establishment of a modern customs administration. Investments in new ICT equipment, application development and system maintenance need to be carefully planned. Information management inside and outside the CA has to be constantly improved. In the future, computer crime will grow, and security, data protection and disaster recovery systems will increasingly gain importance.

Specific activities:

- Consolidation and modernization of the ICT infrastructure;
- Implementation of disaster recovery systems;
- Implementation of security management and data protection systems and standards;
- Implementation of systems for enhancement of interoperability at national and regional level (Data Warehouse, National Single Window) (some of the activities for this implementation are defined in the Action Plan of the CA in the part related to interconnectivity and interoperability with the EU systems);
- Application of new standards and techniques for the development and maintenance of ICT systems

Objective 4: Application of modern technologies and practices for implementation of the business requirements

One of the goals is application of modern standards and practices in defining and implementing the business requirements of the CA, primarily by using appropriate project methodology for implementation of new concepts and IT solutions proven on the IT market.

Specific activities:

- Use of modern project methodologies in the development of ICT systems;
- Implementation of new e-initiatives in customs operations (e-commerce, e-banking, e-learning).

Objective 5: Modernization of internet, intranet and social networks use in customs operations

The CA will strive to ensure greater transparency and timely provision of information for all participants in the customs procedures, as well as IT systems users, through greater use of the Internet, intranet and modern social networks.

Specific activities:

- Presence of the CA on all types of virtual media, including adaptation of customs applications;
- Modernization of internet and intranet site of the CA;
- Use of social media (Facebook, Twitter etc.).

6. Financial resources

The realization of the projects and activities indicated in the ICT Development Strategy in the CA will be primarily directed towards the following sources of financing:

- the Budget of the Republic of North Macedonia,
- EU IPA funds,
- the World Bank
- other international funds

To ensure timely and efficient application and use of funds it is necessary to ensure timely planning and preparation of project fiches covered in the strategic goals. Having in mind the complexity of the development and implementation of the planned systems and activities and the need for their permanent improvement, multi-annual financial support for the planned development is crucial.

7. Human Resources

One of the basic preconditions for achieving the strategic goals of this document, including the euro-integration process for EU accession, is to ensure appropriate organizational structure and a sufficient and necessary number of educated and motivated employees who will work on their realization.

Lack of employees in the ICT Sector is one of the reoccurring conclusions in the DG TAXUD IT Monitoring Missions Reports.

In the forthcoming period it is necessary to increase the number of employees who will work on the development and implementation of IT systems. The analyzes show that this number should be 5 new recruits per year.

Appropriate motivation should also be provided by increasing the income of the employees in the ICT Sector, rewards, through the provision of appropriate training and skills development and by improving the working conditions.

Motivated employees are the main driving force and tool in achieving the set goals.

8. Critical success factors

The achievement of the set goals of the ICT Development Strategy of the CA depends on the following factors:

- Strong dedication of the CA top management;
- Provision of the necessary financial and human resources;
- Strong dedication and motivation of employees.

9. Implementation of the strategy

The Strategy on ICT Development of the CA will be implemented through the Action Plan of the CA.

The realization of the planned activities needs to be previously approved by the Ministry of Finance.

The ICT Sector will regularly monitor and evaluate their implementation.

With the adoption of this Strategy, the 01.10.00.CT.038.02 ICT Development Strategy of the CA (2019-2023), No. 01-004364/19-0002 dated 11.03.2019 ceases to be valid.

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Appendices:

1. Appendix 1 – Organization and Policies for ICT Development of the CA
2. Appendix 2 – Action Plan of the CA for Interconnectivity and Interoperability of the CA with the EU Systems (2021 – 2023)

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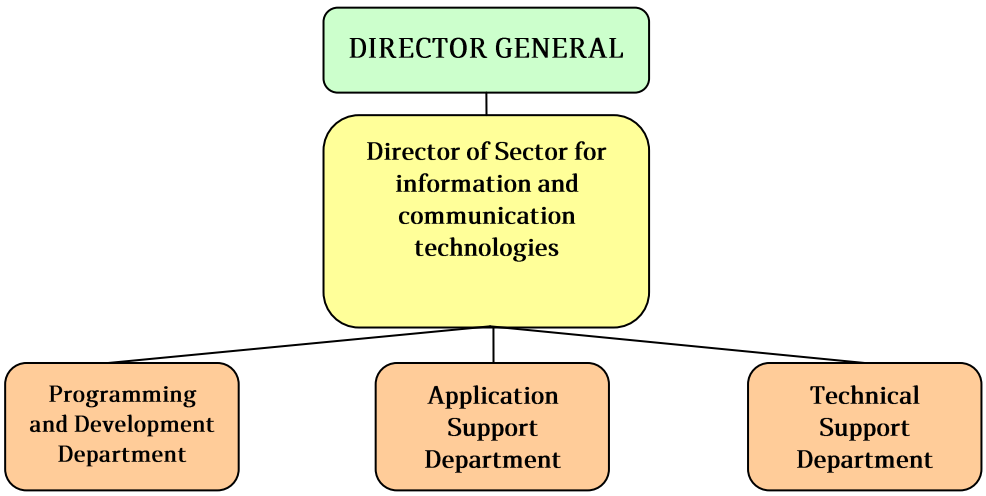
Original is kept in:	Information and Communication Technologies Sector Archives

Appendix 1 – Organization and Policies for ICT Development of the CA

1. Organizational structure of the ICT sector

1.1. Overview

1. The organizational structure of the ICT Sector and the assigned responsibilities are designed to optimize the resources needed to support the ICT Sector goals and the goals of the CA in their entirety. The adopted structure is similar to the structure established in numerous EU Member States.



Organizational Structure of the ICT Sector

2. To ensure the continuity of business processes, improve end-user support and management of ICT systems, but to also enable the application of ITIL recommendations and life cycle management methodologies, including project management, the ICT Sector will undergo a process of reorganization in the forthcoming period. The new reorganization and distribution of employees together with the new organizational structure and systematization will contribute to greater efficiency and effectiveness in achieving the stated goals and successful execution of the assigned responsibilities of the ICT Sector.

1.2. Necessary Resources

3. The extrapolation of data on the number of employees, based on 220 working days per year, results in the use of resources in the scope of 28 men / year only for the performance of basic operational activities (user technical and application support, monitoring systems, generation of reports, publishing content on the Internet and intranet).Considering the fact that the ICT Sector currently has 26 employees, it can be concluded that there is a shortage of 2 employees to perform these activities. An additional problem is the realization of all other obligations of the ICT Sector including preparation of strategic documentation,

preparation of documentation for new systems, review of the quality of new system documentation, participation in projects for development of new and upgrading of existing ICT systems and support for secondary systems such as the recording of working hours, the system for automatic reading of license plates and the video surveillance system, posting on the Internet and intranet, as well as participation in other commissions and working groups: which quite often are not within the scope of IT (members and chairmen of public procurement commissions, control commissions for acquiring economic operators with the status of Authorized economic operator, disciplinary procedures, etc.). This shortage is currently solved by the current ICT Sector employees by working overtime.

The lack of employees in the ICT Sector is one of the reoccurring conclusions in the DG TAXUD's IT Monitoring Mission Reports.

4. The ICT Sector at the moment has 26, not counting the Director of Sector. Given the current level of engagement of the employees identified above and the envisaged number of executives in accordance with the Rulebook on Systematization of job posts in the Customs Administration, there is a shortage of 30 persons or almost 54%. However, these levels of employment do not take into account the number of new projects that need to be implemented and realized over the next three to five years

5. Considering the size of the other ICT Sectors of the Customs Administrations in the European Union and the indicative figures from the European Commission's human resources units in terms of work force needed to support the introduction of new systems needed for EU accession, all empty jobs posts must be filled in as soon as possible. However, since the Sector does not have the capacity to absorb so many staff at the same time to maintain the current workload; it is considered that the level of employment should be increased by five persons per year.

2. Methodologies and Management Policies

2.1. Methodology for Life-cycle and Project Management

6. The CA's strategic commitment is to apply the methodology for application life cycle and ICT systems management, which also covers projects as part of the life cycle. For this purpose, it has adopted Guidelines on Application Life Cycle and ICT Systems Management and Project Management Manual, thus adopting the key components of the world's best-known methodologies, such as PRINCE2, TEMPO, RUP, etc., taking into account the complexity and expected duration of the projects. The adopted methodology was positively assessed by DG TAXUD's IT monitoring missions.

7. The strategic commitment of the CA is to continuously improve the established methodology in accordance with the recommendations of the recognized project management and life cycle methodologies in order to fully align with them. Special attention will be paid to quality assurance in order to minimize the risk of project failure. This is also a recommendation from the DG TAXUD IT Monitoring Report.

8. The successful introduction of the life cycle management methodology has set up the grounds for the application of program management process, to which the CA will focus in the future. Program Management which is at a higher level of project management will not be dedicated solely to the management of several related projects, but it is necessary to focus on identifying strategic goals, directions and benefits that will achieve long-term improvement in the performance of CA

9. The program management process was initiated through the establishment of the Steering Committee for the implementation of the "e-Customs Programme", whose purpose is to manage and coordinate project activities for the improvement of key ICT systems.

   In addition, a Unit for projects and strategy has been established within the Department for International Cooperation, Projects and European Integration, which has responsibilities in the area of control and regular monitoring of the program for meeting the criteria and implementation of EU accession and coordination systems of developing projects.

   In the next period, the Customs Administration will be committed to improving the programme management process, primarily through the improvement of the activities and the established organisational structure for project management and monitoring.

2.2. Human Resources Management Policy

10. The policy that refers to human resources is to use all possible means to train a sufficient number of workers to an appropriate level of expertise to cope with the challenges associated with the ICT strategy. Special emphasis will be placed on the development and improvement of project management and special IT skills, which are inappropriate at this moment.

11. The IT Human Resources Policy should be developed as part of the Human Resource Management Policies in the CA.

12. To implement the ambitious computerization program based on the implementation of the proposed ICT strategy, it is necessary to have the evident lack of suitably qualified and experienced specialized IT staff corrected and additional resources with appropriate expertise to be made available to both the Headquarters and the regional Customs Houses.

13. As in many other countries, the public sector in North Macedonia is unable to compete with the private sector in terms of the amount of personal income of technical staff. The current economic situation makes the difference between the public and the private sector less critical. However, as the economies in the world improve and private investments increase, the comparative situation becomes worse.

14. The current shortage of work force in the ICT Sector, to some extent, is compensated by the willingness of the staff to work overtime. However, there is an annual limit on the amount of paid overtime, which allows each individual to work 190 hours overtime. In addition, overtime paid work requires a manager's approval and a separate report on the tasks that have been carried out to be submitted to cover payment of overtime work. These restrictions result in staff working significantly much unpaid overtime as a result of the sense of loyalty.

15. In the first Report of the European Commission's Directorate General for Taxation and Customs Union (DG TAXUD), the following remarks were made:
"We consider that the strategic plan should include a staff motivation program for joining the Customs Administration and remain for a longer period, and such a program should be introduced as soon as possible.

With regard to this issue, urgent measures should be taken to increase the attractiveness of Customs for young graduates and universities with all means available: greater personal incomes, bonus systems, organizing trainings and study visits, career plans , etc. "

16. The same recommendations were also given in the European Commission's Directorate-General for Taxation and Customs Union (DG TAXUD) Monitoring M Report, carried out in October 2011. These recommendations are repeated in the Report from the monitoring mission conducted in October 2013.

17. All the above-mentioned problems do not refer only to the CA, but to the public sector as a whole. Any possible solutions to these problems should be processed at Government level.

It will therefore be necessary to provide an adequate overtime budget and re-introduce the bonus system.

Consideration should also be given to providing additional income through specific additional payments for qualified IT staff or other incentive manners.

18. Appropriate training is considered a necessary component of the overall staff motivation policy. Training policies can be defined with a view to ensuring that all members of the development team, system support staff and system users receive sufficient and appropriate training to ensure that they are able to carry out their duties effectively.

19. Training needs for users and technical IT experts have been identified, documented and are an integral part of the CA training program. The overall training needs consist of:
    - general training in IT (IT project managers, system administrators, operating systems and systems maintenance experts, network and communication specialists, programmers);
    - IT technical training;
    - System use training.

20. Given the costs of technical training and the fact that higher trained personnel can be attracted to better paid jobs in the private sector as part of their training policy, the CA requires staff attending expensive training courses to undertake that they will remain for a certain period after the training or will refund the costs for the training.

2.3. Policy on External Support Engagement

21. Regardless of the insufficient capacity of the ICT Sector, outsourcing is a practice applied in the European countries for maintenance of customs IT systems. Moreover, in the European countries, the provision of external support for maintenance of the systems is practiced for a longer period, i.e. at least for three years. Taking into account the importance of these IT systems, the CA needs to follow and apply this practice.

    The necessity of providing external support is also given in the conclusions of the European Commission's DG TAXUD Monitoring Mission Report, conducted in October 2013. These conclusions note that no public administration in the EU can afford enough staff in the IT sectors to ensure the functioning, development and maintenance of IT systems. Therefore, it is recommended that the maintenance be part of the financial plans and provide a budget.

22. Given that the development of application solutions is becoming more complicated, so is the volume of various documents and models that must be generated during the development process, as well as the number of experts taking part in their preparation.

23. The main objective is to support and maintain a stable development environment by introducing new methodologies and to ensure that changes will not occur accidentally, but be monitored from the moment they occur until their ultimate efficient and effective implementation.

24. Due to the fact that the administrative capacity does not allow the ICT Sector to follow

these tasks, and experience has shown that it is not possible to realize them at a satisfactory level, we are strategically oriented toward the engagement of long-term, tested partners who first and foremost, must to meet the criteria of confidentiality and security.

25. Considering the difficulty in recruiting qualified staff in the CA, a policy has been adopted to outsourcing in order to carry out certain activities as much as possible, while respecting the aspects of confidentiality and criticality of this policy. However, outsourcing is not a global solution because even in that case it still requires internal staff with sufficient knowledge of externally developed systems and their interaction with other systems in order to manage external support.

26. To achieve the improvement of ICT services for end-users, the ICT Sector is fully committed to applying the recommendations contained in ITIL. In this regard, the establishment of a Service Level Agreements (SLA) process has been initiated, which covers the management of contracts for the maintenance of ICT systems with external entities, as well as the management of contracts with external entities for projects under development. This process has been taken into consideration in the drafting of the new organization and systematization of the ICT Sector.

2.4.Policy on Financing

27. Possibilities for funding IT projects have been provided and procedures for assessing and reviewing the respective budgets have been introduced.

28. Based on the ICT Development Strategy, budget projections are made in relation to the planned costs over the next three years.

    Every June or July, the development plans or ongoing activities are reviewed by the ICT Sector and estimates for budget funds are generated for the next year.

    The IT budget consists of four main components: IT development, system maintenance, salaries and specialized IT training. Indicative system maintenance costs are calculated as 15/20 per cent of system development and the costs for implementation of each system.

    The ICT budget is estimated and included in the financial plans of the CA. After consideration by the senior management and possible changes, the final budget requests are submitted to the Ministry of Finance for approval. These budgetary requests are often reduced by the Ministry of Finance when compiling the overall national budget. The national budget is then submitted for approval by the Government and the Parliament.

29. Accounting systems and procedures for monitoring IT costs have been established and regular reporting of differences compared to the planned consumption is in place.

30. Funding is available primarily from the following sources:
    - Budget of the Republic of North Macedonia
    - IPA programme and / or bilateral support
    - World Bank
    - Donations (various forms)

2.5. Policy on ICT related Procurement

31. ICT procurement is in accordance with established ICT policies for installation and maintenance of hardware, software and communications and technical training.

32. In the case of state-funded projects, procurements shall be carried out in accordance with the Law on Public Procurement. For that purpose, a Public Procurement Department has been established in the CA, responsible for checking the procurement procedures and for ensuring compliance with all rules and procedures for conducting public procurement.

33. In case of external funded projects, procurement rules defined by the donor agency are observed.

34. The technical specifications for the development of new software solutions, as well as for the improvement of the existing systems, are prepared by the responsible persons from the ICT Sector in close cooperation with the responsible persons from the business part in the role of holders of the specific system. The prepared technical specifications, in accordance with the Guidelines for life cycle management of applications and ICT systems, are reviewed and adopted by the Committee for life cycle management of applications and ICT systems.

35. As laid down in the part related to Technical Policy and System Environment, the current applications in the CA function on a broad specter of technical platforms. Therefore, in accordance with the Law on Public Procurement, the ICT Sector aims to reduce the variation of technical platforms in the future in order to simplify the technical support arrangements and engagement of external support and training needs for CA technical staff and system users. Compliance with this policy is made difficult because the ICT Department's budget is approved year by year. This hinders the possibility for multi-year contracts with selected suppliers and increases the requirements for resources to participate in the evaluation procedures.

3. Technical Policies and System Environment

36. The CA is a complex organizational structure, with great diversity of activities it performs. As such, a complex ICT infrastructure has been developed over the past few years. The

infrastructure supports the daily work of the CA and all its components (headquarters, customs houses and customs offices, joint services, etc.).

3.1. Application Development and Implementation

37. The main driving forces for application development are the modernization and fulfillment of the prerequisites for integration with the EU systems. The first factor is the internal driver, while the latter is external influence.

38. All active applications are dedicated to fulfillment of the business requirements, that is, the three main pillars of ICT support in CA:
    - IT support for the implementation of customs procedures
    - IT support for the operations and activities of the Control and Investigation Sector
    - IT support for the overall operation of the Customs Administration (asset management, administrative technical work and logistic support)

39. In addition to the afore-mentioned, specific objective is the interconnection with the EU systems as an operational step towards the process of integration with the European Union.

40. Due to the complexity and diversity of activities that the CA performs, a complex ICT structure has been developed over the past few years. The infrastructure supports the daily work of the CA and all its components (Headquarters, customs houses and customs offices, etc.)

41. The ICT Sector in the application Service Desk keeps detailed information on each of these used applications. The information contains details on a number of aspects, including the functionality, storage, use, hardware and software platforms, etc.

3.2.ICT Infrastructure

42. The CA within the Service Desk keeps detailed records of all hardware and software (servers, network equipment, licenses, etc.), as well as records of personal and portable computers, printers and other equipment at the customs offices, Customs Offices and the Headquarters.

43. To enhance the management of ICT services, the CA is committed to applying the best practices contained in ITIL and in that direction the ICT Sector has started to establish a configuration a configuration management process that is part of the Service Desk. This Database should contain the details and interrelationships between all configuration units. In this way, greater control of all ICT components will be provided, incidents and reports will

be resolved faster and easier, changes will be managed more efficiently and costs will be optimized.

44. In the period 2019-2020, virtualization and consolidation of the hardware and system environment of the key customs systems (CDEPS, NCTS, ITE and EXIM) were done, which are now based on similar platforms and use the same architecture.

    Consolidation and virtualization offer many benefits, especially for the ICT Sector, including:
    - enhance of management (access to all servers from one place)
    - resource allocation, which means allocating CPU resources and storage resources when needed and in the required amount
    - load balancing
    - failover
    - Structured and simplified networking and many other benefits.

45. The ICT Sector is committed to consolidation and virtualization to apply to other smaller systems currently in operation at the CU, based on a variety of hardware and system platforms.

    In parallel, in the next period we will work on the integration of several smaller applications and systems in a smaller number of new applications and systems that will result in facilitating the process of providing support and maintenance.

46. To support the work of such a distributed organization as the CU, a robust and robust communication infrastructure is needed. The infrastructure is optimized to cover all applications that are in operation and planned, to offer balanced growth and to be ready to receive new technologies.

47. Commercial operators have been hired for the infrastructure and therefore service level agreements have been signed in order to maintain the level of availability and security. Due to the fact that the uninterrupted operation of the border crossings affects the flow of goods and persons, in addition to the primary ones, reserve connections have been established at all border crossing points.

48. In addition to the activities for continuous improvement of the ICT infrastructure and monitoring of the latest changes in IT technology, a project for reconstruction of the data center has been started, which should be realized during the period 2021-2022. With this project it is expected that CU will get a modern data center that meets the relevant world standards in the field, ie the standards for fire protection, vandalism, explosion protection, water and dust protection, protection against demolition of elements and debris on the data center, and similar standards.

3.3. Security

49. Security is a notable concern and problem for all ICT systems today. Even when the safety of the system is relatively high, security solutions must be constantly upgraded due to the complex and sensitive nature of customs operations.

50. The main security objectives of the CA include:
    - minimize the loss of data of the CA
    - minimizing the loss of user data
    - defining and maintaining security principles and methodologies
    - ensuring that the principles are properly applied in practice.

    The security aspects will include the following:
    - Physical security of ICT equipment
    - Software security and antivirus
    - Network content filtering
    - Remote access
    - Limited use of data transfer devices (USB flash drives, floppy disks, CDs)
    - Level of privileges
    - e-mail rules and security
    - secure file transfer
    - secure communication with other entities
    - security monitoring and detection of breaches
    - disposing / destroying equipment (in terms of sensitive data)
    - PKI infrastructure
    - General Backup Resource Policy

3.4. Data Protection and Disaster Recovery

51. Establishing a strict and precise data protection policy is crucial for maintaining data history and rapid data recovery, thus ensuring business continuity.

52. Considering the importance of ICT systems, and in accordance with the recommendations contained in the Report of the IT Monitoring Mission of DG TAXUD, the CU is implementing a project implemented through EU support programs, which will improve the confidentiality of the computer -data center at the central location and a new trusted computer - data center at a remote location (Disaster Recovery) will be established, which will aim to enable recovery after a disaster, ie to ensure business continuity in a crisis situation.

3.5. System access management

53. In trying to balance the complex infrastructure, which contains many inherited old systems, it is very important to unify access to data and services. Through system integration, a multi-layered model needs to be developed that will enable consistent and transparent access to existing systems, along with communication with EU systems and keeping pace with their continuous improvement and development.

54. One of the important points for consolidation is the introduction of several key systems that will provide a more secure, but at the same time simpler model for access control data. Those key components are:
    - Central user directory, based on LDAP, with an appropriate organizational structure corresponding to the CU. This system will make it easier for users to manage, deploy and deny access rights, less pressure on the Service Desk regarding access problems and login users. A potential threat to this model is the only critical risk point, but this can be overcome by using PKI infrastructure (public key infrastructure) and hardware such as SmartCards.
    - Enabling a central service for authentication and/or individual login. This way, users will have much easier access to the data where they have authorized access.

3.6. Internal user management

55. Working with users and maintaining their rights and privileges for access control is one of the most difficult and time consuming processes for the CU ICT Sector. Most of the tasks related to this management are related to the alignment of privileges with administrative decisions and job duties imposed by the operational/business sectors.

56. Moving the maintenance of user credentials and profiles to the business sectors will have multiple benefits, both for the ICT Sector and for other business sectors. In this way, a closer correlation between IT authorizations and the levels of business processes and authorizations for each user will be enabled. Therefore, administrative changes and policies can be implemented immediately and effectively in the form of IT authorizations. For this it is necessary to move all the information data in the business sectors. Another effect of the transformation will be to reduce the pressure with user maintenance of the ICT department. Finally, in order to realize the transfer of maintenance, the appropriate software tools should be introduced, for mapping the administrative with IT policies.

57. In general, there are 3 methods for users management
    - centralized - usually IT-centric
    - distributed - usually business-centric
    - mixed centralized and distributed method

    All of these methods have unique challenges and opportunities. Best practices are achieved through the use of mixed management, where both the IT and business sectors share responsibility for managing and controlling user access rights and privileges.

3.7. External customer management (maintenance and customer support)

58. The strategic commitment of the CA is to establish a system for unified management of external users (Economic Operators, Traders) and their access to customs systems (UUM & DS - Unified User Management & Digital Signatures).

59. The project will enable the unified identification of external users, their access to national customs systems, and access to EU customs systems including European centralized customs services, in accordance with security policies, legal provisions and operational responsibilities.

    This way of managing external users will ensure safe access management and avoidance of associated risks.

60. The main objectives of this way of managing the access of external users are:
    - Access of external users to the national customs and central European systems;
    - Enabling the external users to independently manage the range of customs functionalities or parts of the customs operations, as well as to independently manage the representatives (natural persons-individuals) of their operations in certain scope of operations;
    - Support for the use of electronic signatures (in accordance with national and European eIDAS regulations).

3.8. Knowledge and e-learning base

61. The daily use of a variety of systems by users in distributed locations is highly dependent on the user's knowledge of the particular systems. To achieve a deeper knowledge of the systems and their operations, a knowledge base has been established within the Service Desk. It aims to enable users to search for previously answered questions and solved problems.

62. The ICT Sector is committed to the continuous improvement of the established:
    - Knowledge base intended for end users, and
    - Knowledge base intended for the employees in the ICT Sector.

    The knowledge base for the employees in the ICT Sector is supplemented and maintained by the employees in the sector themselves, while the other sectors should be included in the supplementation and maintenance of the knowledge base for the end users.

63. In terms of content, additional e-learning capacities can be added, planned to be realized in

the following period.

With the use of e-learning facilities, continuous training and re-training for employees should be carried out. .

3.9.Service Desk, Incident and Problem Solving

64. Providing the necessary support to a large number of users of various systems usually takes a lot of time and human resources. As systems become more complex and the number of users increases, this factor can become a serious threat to day-to-day operations. In order to solve such problems, a Service Desk has been established which is a ticketing system and enables coordination between the ICT and the business sectors. This system allows users to report their problems in a centralized location. The system then creates a ticket and according to the established procedure for categorization of the applications according to their complexity, the application is awarded at the first level or second level of support. The first level of support is provided by the Service Desk, and the second by other departments (either ICT or another sector). The user can follow the process of solving their problems and participate. All problems and their solutions then become an integral part of the knowledge base and are used in the future.

65. This system will be continuously improved in order to ensure the continuity of business processes and to achieve continuous improvement of end-user support. According to the recommendations of ITIL, a distinction will be made between incident and problem and appropriate processes will be established for their solution and monitoring.

3.10. Standards and Methodologies

66. The CA's ICT systems are constantly changing and developing. Until now, all ICT related implementation goals have been achieved through the establishment of modern, stable, integrated systems that cover all work processes and data necessary for the functioning of the customs system as a whole, in real time.

67. The main principles of the CA in the current and future implementation are:
    - service orientation
    - interconnection and interoperability
    - business project management
    - security.

68. Further systematic development and upgrade of existing solutions are conditioned by the needs for modernization (and paperless environment) and the priorities related to interoperability and interconnection with the EU. For this purpose, it is necessary to apply methodologies and standards.

69. The establishment and application of the international standard ISO 27001 (Information Technology - Security Techniques - Information Systems Security Management) will enable the improvement of IT security. The implementation of this standard will establish a management system that will provide protection of the entire operation of the Customs Administration by ensuring the security, confidentiality, integrity and availability of ICT systems and data. This will be achieved through the application of a systematic approach to the management of sensitive information of the institution, as well as through the application of an appropriate risk management methodology that includes a plan for the treatment of identified risks to IT security. The system that will be implemented in accordance with the requirements of ISO 27001 will cover all employees, processes and ICT systems.

70. ITIL (Information Technology Infrastructure library) is the world's most widely accepted IT service management approach. ITIL provides a cohesive set of best practices extracted from public and private sectors internationally. ITIL is a consistent and thorough document on best practices in IT service management. Thousands of organizations around the world use this philosophy, and an entire ITIL philosophy around the guidelines contained in the ITIL books and the accompanying professional qualification scheme has been developed. By applying the ITIL recommendations, a systematic and professional approach to the management of the provision of IT services is provided. The adoption of ITIL guidelines offers a wide range of benefits for the users, including:
    - reduced costs
    - better IT services using acknowledged best practices
    - greater customer satisfaction by providing a more professional approach to service provision
    - standards and guidelines
    - greater productivity
    - better use of skills and experiences
    - better delivery of third party services through the specification of ITIL or ISO 20000 as a standard for service delivery during procurement of services.

3.11. Technical Documentation Standards

71. When drafting technical documentation, one of the primary goals is to ensure that the document is written consistently ensuring uniform continuity for the reader. Although there are standards for creating software documentation for specific industry sectors, there is no specific standard for general software documentation. However, many organizations, especially larger organizations and consulting firms, have their own internal documentation standards. The technical software documentation should describe how the application works. As such, it can act as an information handbook for users such as developers, technical architects and designers who are affected by the application's function.

72. Documenting software is often a long lasting and tedious process. Problems arise if the documentation is created independently from the application source code. In the worst case scenario, this can lead to inconsistencies between the application and its documentation, which can later cause problems and confusion.

73. Keeping synchronized documentation with the application's source code becomes much easier if the application contains the documentation within the source code itself. Programming languages such as Java and .NET Framework have official documentation standards.

74. Part of the contractual obligations with the companies engaged for the development of the new IT solutions, as well as for the improvement of the existing systems, is the submission of the source (program) code which must be properly documented and packaged in a form that will allow the CU easy maintenance and further development or upgrade of the software application. In addition to the code, it is necessary to deliver appropriate tools and program documentation

4. Freedom of Information, Data Protection and Health and Safety

75. The Government's policy on Freedom of Information, Data Protection and Health and Safety has been implemented. The introduced systems and procedures meet the requirements of the related national legislation.

76. The methodology includes guidelines for:
    - risk assessment;
    - results record keeping;
    - risk control and reduction;
    - training;
    - support and maintenance.

5. Sustenance of the Strategy

77. The ultimate responsibility for sustaining the ICT strategy lies with the Director of the ICT Sector of the CA.

78. It is essential that the ICT Sector be represented at the highest levels within the Customs Administration. To demonstrate the importance of ICT, the key role that ICT will play in the processes of transformation of customs and future successes of the organization, the Director of the ICT Sector should be responsible for fine tuning and advancing the ICT strategy, set priorities and identify a number of high level IT-related policies. The ICT Sector

Director needs to ensure that the organization responsible for IT completes its IT projects on time, works effectively on the necessary systems and that these activities are in line with the ICT strategy in the best possible way.

79. The Strategy shall be reviewed by the Committee for Life Cycle Application and ICT Systems Management at least once a year, but it will be subject to review / revision in case of amendments to the business strategy.

80. The regular meetings of the Committee for Life Cycle Application and ICT Systems Management are needed to ensure that the strategy is updated and that it still meets the business requirements in the most efficient way possible. Amendments to the ICT Strategy shall be announced and the system holders shall be informed about any significant amendments.