Recent Initiatives of
Bangladesh Customs Automation

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AUTOMATION has become the cornerstone of modern Customs operations, empowering Bangladesh Customs to streamline processes, enhance data management, optimize resource utilization, and provide seamless services to stakeholders. With a strong focus on harnessing the power of technologies, Bangladesh Customs has embarked on a transformative journey to digitize and optimize various aspects of Customs procedures. This newsletter will focus on the key automation initiatives undertaken by Bangladesh Customs, shedding light on the remarkable achievements and the profound impact they have had on the trade ecosystem. From network infrastructure upgradation to advanced database systems, from robust security measures to convenient e-payment services, a range of initiatives will be covered that are shaping the future of Customs operations in Bangladesh.

CUSTOMS AUTOMATION BRANCH
Customs Policy & ICT Wing
National Board of Revenue

What's inside

Bangladesh has made significant progress towards modernizing its Customs administration by massively computerizing Customs offices and completely automating Customs procedures. The automation of clearance procedures at the Custom House, Chittagong was the first step in the process. Later, the process of computerization and automation was extended to other major Customs stations. The ASYCUDA System is now used in 6 Custom Houses, 38 Customs Stations and 20 Off-docks in Bangladesh.

ASYCUDA (Automated SYstem for CUstoms DAta) is a computerized Customs Management System developed by the United Nations Conference on Trade and Development (UNCTAD). Bangladesh Customs is using ASYCUDA World which is the latest version of the ASYCUDA system that provides an integrated Customs management solution to streamline business procedures. It offers a range of modules and features to streamline Customs operations, including electronic Customs Declarations, Automated Document Processing, Risk Management, Inventory Control, Transit Management, Tariff Classification, Valuation, and Statistical Reporting.

Bangladesh Customs moved towards digitization by implementing ASYCUDA 2.6 in 1993. The next version, ASYCUDA++ was implemented in the Custom Houses of Dhaka, Chittagong, and Benapole in 2003.

The next major upgradation occurred in 2013, with the migration of ASYCUDA World. To meet users' demand and leverage updated technology, the system was upgraded again in 2016 and 2021. Currently, the ASYCUDA World system is operational 24/7, consolidating real-time data into a single source.

Customs Automation Upgradation

In 2021, Bangladesh Customs embarked on an ambitious journey to enhance its Customs Automation System, revolutionizing the way Customs operations are conducted. The upgrading procedures, spanning six stages, encompassed a comprehensive transformation of Server Infrastructure, Storage Systems, Network Infrastructure, Data Centers, and Internet Connectivity. This forward-thinking approach ensures that Bangladesh Customs is equipped with state-of-the-art technologies and infrastructure, laying a solid foundation for efficient and seamless Customs operations.

FEATURES OF THE UPGRADATION

NBR Data Center Expansion

The main Data Center for the Customs Automation system was originally constructed in a small space back in 2013 due to space limitations. The Data Center has undergone a remarkable transformation to meet the growing demands of modern Customs operations recently. To keep pace with recent technological advancements, several devices that had reached their end of life (EoL) were upgraded, enabling the Data Center to leverage the latest innovations in Data Processing, Storage, and Management. Furthermore, a dedicated power room has been established, further enhancing the Data Center's efficiency and resilience. To ensure optimal performance and reliability, redundancy has been integrated into the cooling and power systems. This crucial enhancement guarantees uninterrupted operations, even in the face of unforeseen circumstances. Additionally, the entire electrical system has been redesigned and structurally rebuilt, reinforcing the Data Center's capacity and stability.

Near Data Center Establishment

Bangladesh Customs has achieved another significant milestone in its pursuit of robust data management and uninterrupted operations by establishing a Near Data Center (NDC) at Custom House, Dhaka. This cutting-edge facility serves as a secondary data center, replicating real-time data from the primary center and ensuring consistent and reliable operations. The NDC plays a critical role in disaster recovery and business continuity, as it serves as a backup for the primary data center, mitigating the risk of data loss or downtime. With the NDC in place, Customs Automation can seamlessly switch operations between the primary and secondary centers in case of emergencies, ensuring uninterrupted access to crucial Customs data and systems.

Network Backbone Development

In a remarkable stride towards enhancing efficiency and staying at the forefront of technological advancements, Customs Automation has recently completed a significant upgradation to the network backbone. Stepping up from the previous 1G infrastructure, the automation system has now embraced a cutting-edge 10G network backbone, ushering in a new era of faster and more robust connectivity. This upgrade marks a momentous achievement, enabling the system to handle an increased volume of data traffic, enhance operational agility, and ensure seamless communication across the extensive network. With this state-of-the-art network infrastructure in place, Customs Automation system is poised to meet the demands of the digital age while facilitating trade and ensuring smoother Customs processes for the nation.

Database Upgradation

Customs Automation has successfully completed a significant upgradation to its Customs Automation System's database. The system has transitioned from Oracle 11g to the advanced Oracle 19c, bringing forth a multitude of benefits and paving the way for improved efficiency and reliability. This upgradation represents a major milestone in the digital transformation journey of Bangladesh Customs, as it harnesses the power of the latest database technology to enhance data management, security, and performance.

Server and Storage System Capacity Enhancement

Since 2013, Customs Automation System has used an Engineered System to guarantee excellent performance and zero downtime. It was necessary to increase server and storage capacity because system users were growing daily, and application functionalities were expanding. For that in 2021, Customs Automation System Server and Storage Capacity were enhanced considering the need for next 3-5 years.

Zero Data Loss Transmission Technology

Customs Automation has achieved a groundbreaking milestone in data transmission with the implementation of Zero Data Loss Transmission Technology, powered by Dense Wavelength Division Multiplexing (DWDM). This remarkable technological advancement has revolutionized the way data is transferred between Near Data Center (NDC) in Custom House, Dhaka, with the primary Data Center in NBR, ensuring secure and uninterrupted communication while eliminating any loss of critical information. DWDM, a cutting-edge optical networking technology, enables multiple data streams to be transmitted simultaneously over a single optical fiber, vastly increasing bandwidth capacity and reducing latency. With Zero Data Loss Transmission Technology, the system can now transmit mission-critical data in real-time, bolstering the efficiency and reliability of Customs operations. This significant upgrade highlights Customs Automation's commitment to staying at the forefront of technological innovation, enhancing data integrity, and optimizing the speed and accuracy of information exchange.

LAN Upgradation of Custom Houses

The internal Local Area Network (LAN) has recently undergone a major upgrade to address the challenges posed by the outdated system. The previous 1G network backbone, which had served its purpose for years, gradually became inadequate, leading to slow performance and network congestion. The consequences were terminated sessions and locked user IDs disrupting Customs operations. Compounded by the fact that the network devices had reached their end-of-life, the situation called for immediate action. Recognizing the critical need for an advanced and secure network, Customs Automation initiated a comprehensive upgradation. The new network infrastructure not only provides improved performance but also addresses security concerns. It also ensures a stable and reliable 10G network backbone, capable of meeting the growing demands of modern Customs operations.

Dhaka, Chittagong, ICD, Pangaon, Mongla, and Benapole— these six Custom Houses' LANs were updated from 1G to 10G using a new structured optical fiber connection with firewall, priority Wi-Fi, hardware-level redundancy, and Zone level VLAN as part of this Customs Automation Upgradation. Additionally, local Network Operation Centers (NOC) and Modular Data Centers were established in all these Custom Houses.

Customs Automation Security

Customs Automation has taken extensive steps to ensure the utmost security of its Customs Automation System, implementing a range of advanced security measures. These measures include Security Information and Event Management (SIEM), next-generation Firepower, Threat Defense Firewall, Anti-DDoS device, Active Directory, Privileged Access Management (PAM), Email Protection Solution, and SOPHOS Endpoint Security. This multi-layered approach to security provides robust protection against various cyber threats and unauthorized access. With these comprehensive security measures in place, Bangladesh Customs demonstrates its unwavering commitment to maintaining the highest standards of data security and protecting the integrity of the nation's trade ecosystem.

Enhanced Support and Assistance with Customs Helpdesk

Customs Automation has taken a significant step towards improving user experience and ensuring seamless Customs operations by introducing a dedicated helpline number, 16134. This helpline serves as a central point of contact for users and stakeholders seeking customs-related support and assistance. With the implementation of the helpline, Bangladesh Customs aims to provide prompt and reliable customer service, addressing queries, concerns, and providing guidance on various Customs procedures. Whether it is Import/Export Regulations, Tariff Classifications, Documentation Requirements, or any other Customs-related inquiries, users can now reach out to the helpline for assistance.

Bangladesh Customs has also developed a web-based help desk e-ticketing system. When users encounter a problem with NBR's system (it could be a network database BI or an application issue, for example), they can create a ticket through the eTicket web page, which is very user-friendly and simple to use.

Integration with BEPZA

The task of integrating the systems of Bangladesh Customs and Bangladesh Export Processing Zone Authority (BEPZA) was completed in 2022. This interconnectivity has made it very simple to provide information on BEPZA's issued Import-Export Permit to both BEPZA and ASYCUDA World System systems. Previously, logging into the BEPZA system was required to verify and select BEPZA's IP/EP-related information. Verifying this information is now seamless, and no Bill of Entry can be submitted by creating false documents of BEPZA Permits, which is eradicating fraud and forgery. The task of submitting Bill of Entries for import through the import permit provided by BEPZA began on September 14, 2022, and the export permit from January 23, 2023. Through this integration, transparency, accountability, and digitization are assured.

Customs Automation
Help Desk

Dial
16134

IP Address Binding

The Customs Automation System uses the OTP (One Time Password) module to strengthen and secure the log-in procedure. Initiatives have been taken to assign fixed IP addresses to the ASYCUDA World system for Customs Officials of Custom Houses on 22.01.2023 to improve security. In this process, only a specific computer's IP address will be specified against an ASYCUDA World System user ID, and the said user will have no option to log into the system from any other IP address than the specified computer. In this case, Customs regulations will be processed using a Local Area Network (LAN), and even if a user's User ID, password, or OTP is compromised, they will not be able to log into the system due to the fixed IP address.

C&F Agent Fixation for the Importers

The ASYCUDA World system now requires the identification of C&F agents against each importer under bonded warehouse facility to ensure proper accountability through the system, close monitoring of Customs procedures, easy identification of responsible persons in case of irregularities, and, most importantly, as part of effective measures to prevent revenue evasion. The procedure of implementation at all Customs offices started on August 3, 2022. The issue of product clearance through forgery can easily be identified after tagging the nominated C&F agents against the importers in the ASYCUDA System, Through this tagging, transparency, and accountability is ensured. Since the module is fully operational, no C&F agent other than the designated C&F agent against each importer will be able to perform any Bill of Entry-related activities in ASYCUDA System.

Unified BL for Land Customs Stations

In ASYCUDA World System, Land Customs Stations used to submit Bills of Lading in various formats. Since the Bill of Lading was submitted in different formats, the quality and identity of the Bill of Lading could not be preserved in Customs Systems. As a result, uncovering the desired information through data analysis for various requirements was difficult. From January 1, 2023, Custom House, Benapole, and all Land Customs Stations started submitting Bill of Lading in an automated and standardized format.

Valuation Module

The Valuation Module was introduced to the ASYCUDA World System on May 11, 2022. The determination of a single and uniform Customs value for all imported goods in all Customs stations is critical, according to the Customs Valuation (Valuation of Imported Goods) Rules, 2000. A detailed description of the product, model number, art number, part number, or related information entry has been made mandatory through this module to ensure the correct pricing of any product, thereby assisting in the creation of an effective database. It should be noted that if an HS Code of a product is under this module, Revenue Officers and Assistant Revenue Officers cannot complete assesment of the Bill of Entry assessment without performing the specific functions of the Valuation Module, which ensures the correct value is incorporated in the system. Because of this valuation

impartial and equitable.

IATA-based Manifest for Air Cargoes

Initially, air cargo manifest submissions were the same as sea cargo manifest submissions. The International Air Transport Association (IATA) has created an international format for submitting air manifests. Following this international standard, the manifest data of air cargoes will be automatically synchronized in real-time in the ASYCUDA World System. Although progress in Bangladesh's cross-border paperless trade is slow, the process was launched on June 14, 2022, by incorporating the IATA manifest submission format into the ASYCUDA World System. Most of the major airlines now use this prescribed format to submit air cargo manifests, saving time and money while ensuring paperless Customs procedures.

User Management System

The introduction of the User Management System has been significant for an efficient and secured approach to user

management in the Customs environment. This innovative system revolutionizes the way user accounts are created, transferred, activated, and deactivated within the Customs ecosystem. The era of manual processes relying on letters, SMS, or emails is now a distant memory. With the implementation of UMS, the entire user management process has been automated, ensuring efficiency, accuracy, and enhanced security. The UMS simplifies and centralizes the management of ASYCUDA World users, providing a seamless and controlled environment for account creation, transfer, activation, and deactivation.

Asset Management System (AMS)

The Customs Automation System is currently operational throughout Bangladesh. NBR has a large IT infrastructure and a large number of assets to run the ASYCUDA World application. To this end, Customs Automation has developed a web based software solution to store the information about these IT assets as well as track, assign, and monitor them.

This system keeps track of IT Assets (Software, Hardware, and Licenses), Asset Distributions, Asset Profiles, and Assets by Site/Office. A unique Asset Issue Tracker and report generation feature makes this software more convenient.

Postmaster - Two Factor Authentication (OTP) & Notification

To secure ASYCUDA World System Application user access, NBR implemented some important features in ASYCUDA World Application. There is now a system for the authentication of a user by their ASYCUDA World System registered mobile number. The system, Postmaster, will send a One-Time Password (OTP), also known as a one-time pin or dynamic password that is valid for only one login session. The system can also be used to send individual and bulk emails, as well as bulk SMS messages with information. Now the importers and exporters can get instant notification about manifest registration, Bill of Entry Registration, Assessment, Payment, etc. through SMS from this system.

Customs Central Archiving and Document Management System (CCA DMS)

A specialized system has been developed to archive and manage Customs Documents. This system will store important Customs Documents, SROs, Contract Agreements, Orders, Letters, Legislatures, etc. digitally. This digital archiving system has security control, universal control support, scan-in paper documents, version controlling, and restoration.

## Customs Agent Management System

A central management system has been developed to manage the Customs Agents (C&F Agents, Shipping Agents, and Freight Forwarders) operations. This system stores data on Licensing, Checking License Expiration, License Cancellation, and License Tracking.

Human Resource Development

Customs Automation takes immense pride in its commitment to nurturing and developing its Human Resources. The training initiative aimed to enhance the expertise and competency of Customs officers, enabling them to adapt to the evolving technological landscape and effectively navigate the complex Customs procedures. Participants received rigorous training sessions conducted by industry experts, covering a wide array of relevant topics. These training sessions provided officers with in-depth knowledge of Systems, Databases, Networks & Security, Applications, and general business processes. In addition to the comprehensive training, the officers were awarded OEM certifications to participants who successfully completed the program.

Introducing the "Scope of Work" for ASYCUDA Users

Bangladesh Customs has introduced a comprehensive "Scope of Work" for users within the Customs system, defining specific roles and responsibilities of each of the users. This initiative aims to establish clear guidelines, expectations and responsibilities ensuring seamless collaboration and optimized Customs operations. It provides a framework that outlines the tasks, duties, and accountabilities of users within the Customs Automation system. It also ensures that each user understands their role and contributes effectively to the overall Customs process. The "Scope of Work" also facilitates effective coordination between different entities, fostering collaboration and ultimately enhancing trade facilitation.
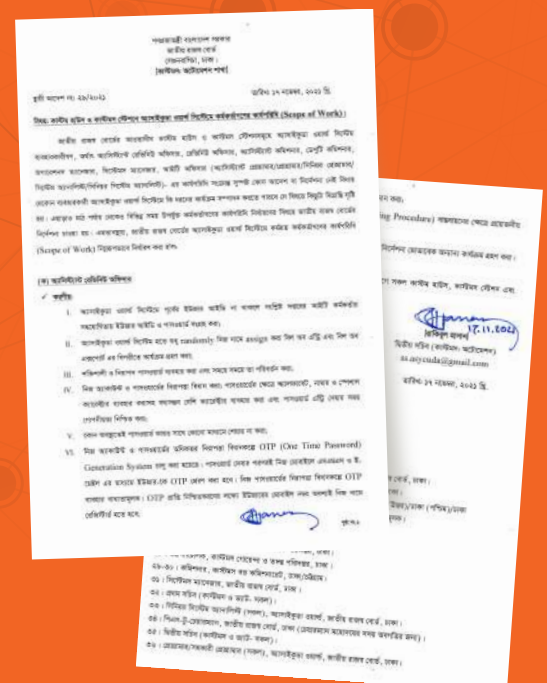
Streamlined Customs Payments: e-Payment for Duty Taxes

Bangladesh Customs has embraced digital transformation by implementing e-payment services across all the Customs stations. This groundbreaking initiative enables stakeholders to conveniently pay duties and taxes using the e-payment platform, revolutionizing the Customs payment process. With the introduction of e-payment, stakeholders can now settle duty and taxes swiftly and securely through electronic channels, eliminating the need for traditional cash transactions. The system supports both e-payment and prepayment options, allowing stakeholders to plan and make payments in advance, further enhancing efficiency and convenience. This technological advancement not only simplifies the payment process but also enhances transparency and accountability, reducing the likelihood of errors and ensuring smoother Customs operations.

Future Upgradation Plan
a. Security Operation Center

A Security Operations Center (SOC) is a facility that houses an information security team in charge of continuously monitoring and analyzing an organization's security posture. The goal of the SOC team is to detect, analyze, and respond to cybersecurity incidents through the use of a combination of technology solutions and a strong set of processes. Security Operations Centers are staffed with Security Analysts and Engineers, as well as Managers who oversee security operations.

In future, the Customs Automation National Team aims to set up a Security Operation Center (SOC) to ensure the data and information security of critical Customs data.

b. Data Recovery Center in Non-Seismic Geographic Zone

The north and north-eastern regions of Bangladesh are more vulnerable to Geological Seismic Tremors or Earthquakes. All three Customs Data Centers are currently located in earthquake-prone Zone II areas (two in Dhaka, one in Chittagong). To ensure the safety and protection of Customs Data in the event of an earthquake, the Customs Automation team wants to propose the establishment of a Data Recovery Center in our country's earthquake-safe (Zone-III) South-Western region.

c. Business Process Reengineering

Keeping in mind the provisions of the Trade Facilitation Agreement (TFA) and Revised Kyoto Convention (RKC), Bangladesh Customs will be heading towards a paperless Customs process in future. Considering the rules and regulations of TFA and RKC, existing business processes will be reengineered to ensure maximum trade facilitation.

d. Enhanced Security with Biometric Authentication

Customs Automation is taking a proactive step towards reinforcing the security of the ASYCUDA World System. A cutting-edge biometric authentication feature for system login will be introduced in near future in the Customs environment. This will integrate finger-based biometrics, adding an extra layer of security to ensure secure access to the Customs system. Biometric authentication, with its unique and inherent characteristics, provides an unparalleled level of identity verification. By utilizing finger-based biometrics, users will be required to authenticate their identity using their unique fingerprint patterns. This advanced security measure will significantly reduce the risk of unauthorized access, identity fraud, and data breaches within the ASYCUDA System. This additional layer of security will not only bolster the confidentiality of data but also enhance the overall trust and confidence stakeholders place in the Customs system.

T H E T E A M

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The 21st century is the century of the fourth industrial revolution based on information technology. Data in every area of taxation is critical to informed decision-making. It is possible to make the current Customs related procedures of Bangladesh Customs completely digital by introducing various types of modern technologies including Artificial Intelligence, Machine Learning, Robotics, Internet of Things (IoT), Blockchain in the Customs system. Some initiatives was taken earlier, more needs to be taken in near future. Bangladesh Customs is anticipated to achieve a fully paperless Customs system soon, strengthening this development towards Digital Customs. National Board of Revenue is dedicated to building a stable, business-friendly, and people-centered economy as well as fully automated Customs system.

CUSTOMS POLICY WING

NATIONAL BOARD OF REVENUE

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH