

# CNS Port Automation Technology

*Chittagong Port Authority*

## Port Automation Overview

CNS' Port Automation solution has been designed to meet the demands of complex port operations around the world. Developed to meet the requirements for the automation and modernisation of Chittagong Port, this robust technology has already delivered substantial real-world results and as such is an important must have component for any port that is aspiring to become a major economic hub in the 21<sup>st</sup> Century.

A critical national asset, responsible for ninety percent of Bangladesh's export-import trade and commerce, Chittagong Port is crucial to the nation's continued economic success. As one of the busiest ports in the world and the backbone of shipping in the Bay of Bengal, providing transshipment rights to India, Nepal and Bhutan, the port occupies an important spot in the global trade network. As a result, congestion is a major challenge in Chittagong port, with the port being recorded as having an average congestion rate of 84.3 hours in 2017.

The port is operated by the Chittagong Port Authority (CPA), an autonomous body working under The Ministry of Shipping. CPA has four offices, including its Head Quarters located in the city of Chittagong. Of the other three offices, two of them are located in the capital of Dhaka and these offices operate as Liaison and ICD offices. The other office is in Pangaon that takes care of ICT operations. There are 17 Departments in CPA and each Department has multiple sections under them. CPA only has around 6500 employees working, even though they have a regulation to increase their strength up to 8679 employees. These employees laboriously work full time to maintain the day-to-day activities of CPA.

In the past CPA was using several systems to perform their daily activities, these systems were not unified leading to sub-optimal productivity and at times this could even lead to the replication of bureaucracy across port operations.

CNS therefore proposed a unified system to consolidate, integrate and modernise CPA systems, providing a single window system for all port operations. As such a comprehensive modernisation programme was developed and implemented, leading to the largest automation programme in CPA's history. As part of development and customization of Port automation system upgradation, CNS aims to automate CPA's all the existing processes of the current system. The scope of the work included the development of an online software system to perform operations of CPA offices and upgradation of database for more security and efficiency.

Cyber-security is an integral component of the Port Automation programme and features built-in countermeasures to deter hostile actions and any unauthorised access along with key data protection safeguards. CNS' expertise in data management and analysis has also been translated into the system with tools provided to help properly store and archive data collected. Our developers operate at ISO 27001 and as such our systems are designed with to uphold the highest level of Information Security Management.

The Port Automation Technology is itself a robust system, built to CMMi Level 5 standards, that has been specifically designed with the complex requirements of a major port in mind. The key technologies developed by CNS to deliver world leading automation and modernisation programs.

## Modules of the CPA Automation Program

A full list of the modules included in the CPA Automation program is provided below, demonstrating the true size and scope of this ambitious project:

- Automation of Payroll Management System
- Online Web based Overtime Management System
- Real Time Online Web based Attendance System
- Personnel Management Information System (PMIS)
- Online Recruitment Management
- House Allotment System
- Appointment/Schedule Management System
- Training Institute Automation
- Central Library Management System
- Case Management System
- Real Time Online Web Based CPA Vehicle Management System
- Letter Tracking System
- Contract Management System
- PF, Pension and Personal Loan Management System
- Digitalization and Storage of File Management System
- Database Management System in Security Departments
- Automation of marine department
- Internal Audit Objections Management System
- Vessel Traffic Management Information System (VTMIS)
- Hydrographic Automation System
- Automation of Computer equipment and peripherals maintenance
- Document Verification System
- Board Decision Computerization
- Government Audit Management system
- CCTV in CPA Area
- Electricity & Water Billing for Stakeholder
- Budget Monitoring System
- Fixed Asset System
- Central Inventory Management system in CPA
- Financial Accounting System (FAS)
- Ageing of Debtors/Creditors
- Provision Control Management System
- Online Vessel Billing System
- Mobile Apps for all Modules
- CPA Dashboard
- One Stop Service Centre (Port Trade Automation)
- Computerization of General Cargo Berths (GCB)
- Automation of Monitoring & Evaluation of activities of all departments
- Data Backup System
- Computerization of Dhaka ICD
- Computerization of Pangaon ICT
- Access Control System in CPA

- Equipment maintenance System
- Land Management System
- Container Terminal Management System (CTMS)
- Integration of existing access control and surveillance system for CPA
- Automation of Civil Engineering
- APP, DPP, PM (Works, Goods and Services)
- E-GP (E-Tendering System)
- E-Filing System