



Building a Sustainable
Tomorrow:

Port Technology Innovation at Barbados Port Inc.

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Assistant Manager
Digital Innovation & Development



- Small, multipurpose port handling >90% of imports.
- Approx 1,100 vessel calls yearly.
- Over 1.1 million tonnes annually.
- ISO 9001:2015 Certified Port.
- Built the Caribbean's first homegrown Maritime Single Window.
- Built our own Port Community System.

Introduction to
Barbados Port Inc.





Challenges of a Small Port

1. Limited Space and Capacity
2. Vulnerability to External Shocks
3. Financial Constraints
4. Environmental and Compliance Pressures
5. High Energy Costs
6. Competition from Larger Ports
7. Human Resource Limitations



BPI Vision:

To be the most innovative green maritime hub in the world by 2030.

National Objective:

Barbados has a 2035 energy transition plan aiming for carbon neutrality.



**BARBADOS
PORT INC.**

Business Objectives

BPI identified 11 key objectives to pursue over the fiscal years 2021/22 to 2025/26 to meet the short-term strategic goals aligned with the vision, mission, and core values.

1. Strengthen the port's competitive position in cargo operations through strategic partnerships, secure and efficient cargo handling.
2. Improve cruise performance by increasing berthing capacity and strengthening marketing cooperation with industry stakeholders.
3. Enhance and diversify the port's revenue streams.
4. Navigate the process of labour reform to achieve more modern, efficient, and financially viable port operations.
5. Adopt an inclusive growth agenda that integrates future development plans with national economic growth ambitions, environmental, and social safeguards.
6. Reduce the carbon footprint.
7. Transition towards a digital services ecosystem.
8. Converge traditional (physical) security and cybersecurity into standard operating procedures.
9. Pursue continuous improvement through the development of an accountability framework.
10. Implement an effective performance measurement tool for the management team.
11. Enhance the organisational structure.



Figure 1: Port of Barbados,
Updated 2020 Master Plan
Source: BA

Innovation Awards & Recognition



BACK TO THE OFFICE REPORT			
COUNTRY:	Project Name:		Approval Date:
Barbados	Barbados Port Inc.		18-Dec-2020
Last visit date:	Date of this report:	Project No.:	Environmental Category
08-Nov-2021	23-Sep-2022	12683-01	B

A SUPERVISION DATE AND PARTICIPANTS

Dates: From 12-Sep-2022 to 16-Sep-2022
Participants (Bid Invest SEG): Seth Factor, Environmental and Social Lead Officer
Susana del Granado, Environmental and Social Officer

B MAIN FINDINGS

1. Digital innovation is becoming BPI's trademark. This initiative seeks to improve management and efficiencies at the Port. One example is the use of drone technology to increase security at the Port, other initiatives include maritime single window and port community systems that link different stakeholders' information flows.
2. BPI has increased the personnel dedicated to Environmental and Occupational Health and Safety. Two people were hired in Q3 2022.
3. In February 2022, BPI acquired a three-year ISO 9001:2015 certification. As part of it, BPI developed 102 procedures. In addition, BPI has an Environmental and Social Management System (ESMS), including 16 management procedures that still need to be fully integrated in Port's operations.
4. BPI hired a team of consultants to develop an Environmental Impact Assessment (EIA) for the Bulk Handling Facility (BHF). A biologist, Renata Goodridge, was included in the team to assess coral reef population and health. The report should be delivered by September 2023.

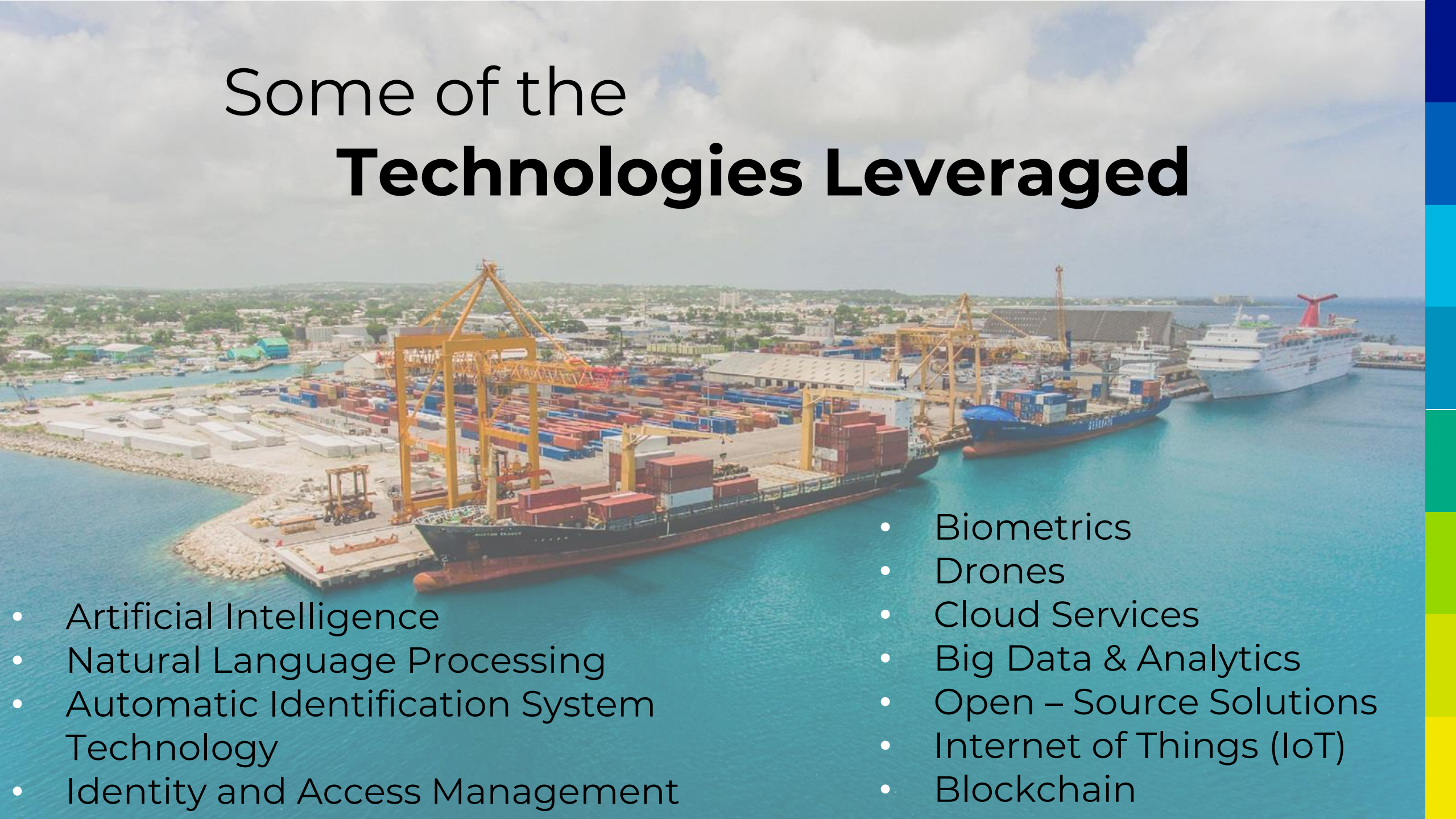
"Digital innovation is becoming BPI's trademark. This initiative seeks to improve management and efficiencies at the Port"...such initiatives are the Maritime Single Window and the Port Community System..."



Some of the **Technologies Leveraged**

- Artificial Intelligence
- Natural Language Processing
- Automatic Identification System Technology
- Identity and Access Management

- Biometrics
- Drones
- Cloud Services
- Big Data & Analytics
- Open – Source Solutions
- Internet of Things (IoT)
- Blockchain



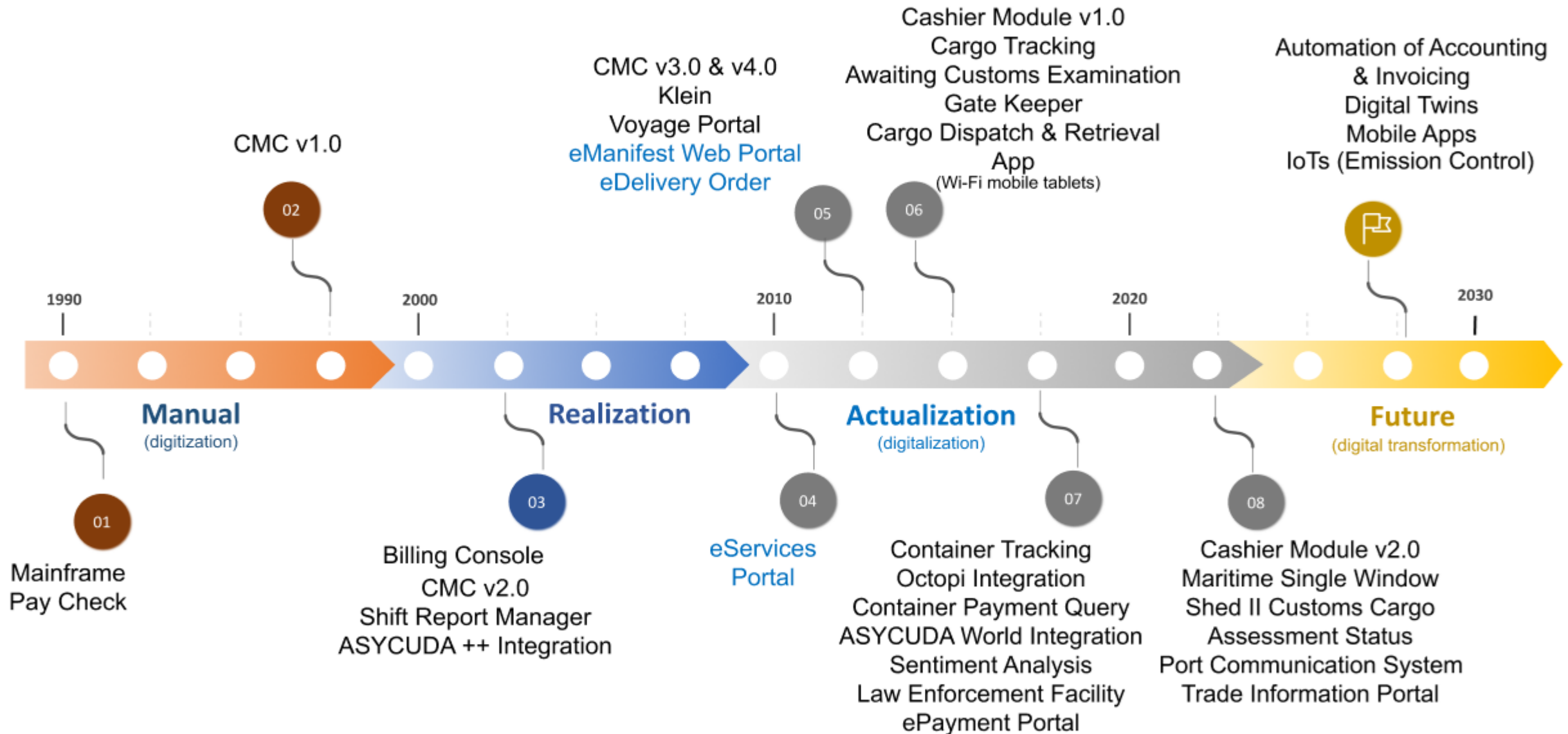
Connectivity between people and systems

Information and Communication Technology

- Internet of Things
- Edge Computing
- Cloud Platforms
- Satellite Communication



BPI's Digital Transformation Journey



Port Community System



Port Community (External)

**Barbados Customs
and Excise Department**

**Ministry of Tourism
and International Trade**

**Ministry of Energy and
Business Development**

**Ministry of Agriculture
–
Veterinary Services**

**Ministry of Agriculture
–
Plant Quarantine**

**Ministry of Health
and Wellness**

**Ministry of Innovation,
Science and
Smart Technology**

**Ministry of Finance,
Economic Affairs
and Investment**

**Barbados
Postal Service**

**Shipping Association
of Barbados**

**Barbados Customs Brokers
and Clerks Association**

**Transportation
Intermediaries
of Barbados**

**Barbados Chamber of
Commerce and Industry**

**Barbados Private
Sector Association**

**Police &
Law Enforcement**

Barbados Workers' Union

Maritime Single Window



Security by Design



BARBADOS
PORT INC.

Maritime Single Window

Username or email

 |jdoe or jdoe@barbadosport.com

Password

 *****

Login



<https://pcs.barbadosport.com/>

Blockchain Technology

Barbados Maritime Single Window



Facilitation of International Maritime Traffic Act,
2024

FINAL CERTIFICATE OF CLEARANCE ON ARRIVAL

Ship Name:	AL DREAMER
Type of Ship:	GENERAL CARGO
Gross Tonnage:	2961
IMO Number:	8599954
Call Sign:	9LU2439
Port of Registry:	
Date of Registry:	2023-May-28
Passenger Amount (where Applicable):	0
Date and time of virtual arrival in Barbados:	2025-Jul-08 06:30 HRS
Expected date and time of actual arrival in Barbados:	2025-Jul-08 06:30 HRS
Issued by:	Comptroller of Customs
Date of Issue:	2025-Jul-08
Time of Issue:	08:40

In accordance with section 12 of the Facilitation of International Maritime Traffic Act, 2024 (Act 2024-) - the Ship AL DREAMER has been inspected and has satisfied the requirements of the Immigration Act, Cap. 190, Customs Act, Cap. 66 and Health Services (Assignment of Public Inspectors to Private Businesses) Regulations, 1986 (S.I. 1986 No. 143).

The Ship AL DREAMER is granted Final Clearance to enter the Port of Bridgetown.

Issued by:	Comptroller of Customs
Date of Issue:	2025-Jul-08
Time of Issue:	08:40





Physical Security



Artificial Intelligence

Recent Events



Alarm Sugar Store Reefer Entrance
Sugar Store Road View 5:18:02 PM

Sugar Store Reefer Entrance Ack



Alarm Tri 1 Warehouse Road South View
Tri 1 Warehouse Road South View 5:04:11 PM

Tri 1 Warehouse Road South View Ack



Alarm Reefer Park Northwest View
Tri 1 Warehouse Road East View Reefer Park 5:14:31 PM

Reefer Park Northwest View Ack




Alarm Reefer Park Southview
Tri 3 Reefer Park Southview 5:15:05 PM

Reefer Park Southview Ack

Overview

BPI SEC NVR 3 (1 of 6)



BPI SEC NVR 3 (2 of 6)



BPI SEC NVR 3 (3 of 6)



BPI SEC NVR 3 (4 of 6)



BPI SEC NVR 3 (5 of 6)



BPI SEC NVR 3 (6 of 6)



Big Data & Business Intelligence

Overview

For Period 2025-Jun-08 to 2025-Jul-08

2025-Jun-08

2025-Jul-08

FILTER

Vessel Statistics

Cruise Calls

5



Cargo Calls

67



Passenger Arrivals

5,037



Crew Members

3,160



Cargo Handling Statistics



50

Manifests



3,218

Containers



834

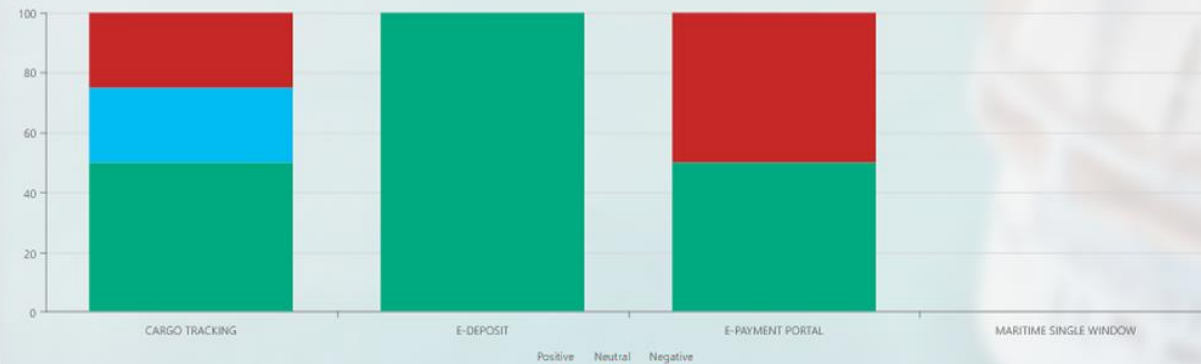
Vehicles



16,884

Breakbulk

Customer Sentiment



Personal Effects

Documents OK'ed

869



Gate Passes Exited

839



Customers Returned

189



Turnaround Time per Customer

209 mins



Container Throughput

2,974

Terminal

119

Private Warehouses

Cargo Types

Vehicles

834



Breakbulk

16,884



Dry Containers

2,784



Reefers

434



Containers

3,218





1.

Technology

Blockchain, IoT, Big Data,
Analytics, Cloud Computing

2.

Legislation

Data Protection Act
Electronic Transaction Act
OGA's Act

3.

Paradigm Shift

Change Management
Inter-agency Collaboration
Responsible Data Sharing

Key Takeaways

BUSINESS
NOT AS USUAL



Thank You!

For further information please
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