

Technology investments to improve port **Sustainability, safety and efficiency – the way to AI**



Guilherme Custódio de Medeiros
Director of Operations and Logistics
Porto de São Francisco do Sul
Santa Catarina - Brazil



14th Regular Meeting of the CIP

The Scope of Artificial Intelligence:
Reshaping Strategies for Sustainable and Secure Ports

📍 Bridgetown, Barbados

📅 June 2026



AI



BABITONGA PORT COMPLEX

MORE THAN R\$ 2 BILLION IN INVESTMENTS
FROM 2023 TO 2026

PORT OF
SÃO FRANCISCO
DO SUL

GOVERNMENT OF
**SANTA
CATARINA**
SECRETARIAT OF PORTS,
AIRPORTS AND RAILWAYS



ACCESS CHANNEL DREDGING
R\$ 318 MILLION

PORT OF ITAPOÁ
R\$ 500 MILLION

TCS: R\$ 500 MILLION

ACCESS CHANNEL



TESC: R\$ 360 MILLION

TGSC: R\$ 500 MILLION



GREATER SECURITY
Controlled environment
and 24/7 monitoring.



GREATER EFFICIENCY
Automated processes and
more agile operations.



SMARTER DECISIONS
Real-time data for
strategic management.



OPERATIONAL TRANSFORMATION
Technology that drives
the future of the port.

DATA THAT CONNECTS. INTELLIGENCE THAT GENERATES RESULTS.

BABITONGA PORT COMPLEX



LARGEST PORT in cargo handling in the state of Santa Catarina.



Responsible for **52%** of Brazil's steel imports.



More than **1,200** vessel berthings annually within the Port Complex.



The Babitonga Port Complex handled **R\$ 25 billion**:
Exports: R\$ 10 billion
Imports: R\$ 15 billion

INNOVATION AND TECHNOLOGY

PORT AND BULK TERMINAL

➤ Total investment: **R\$ 22.7 million**

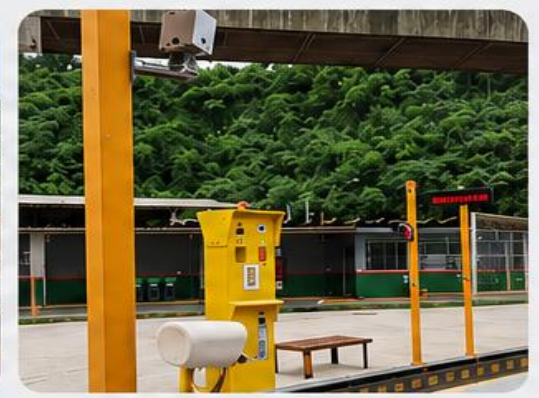
 **ACCESS CONTROL**
Greater security in access to the port and terminal.

 **24/7 MONITORING**
CCTV and continuous surveillance of all operations.


 **IT INFRASTRUCTURE**
High-performance servers and network.

 **INTEGRATED CONTROL ROOM**
Centralized management with state-of-the-art technology.


 **GREATER EFFICIENCY AND SECURITY**
Integrated processes, real-time data and more assertive decisions.



 **GREATER SECURITY**
Controlled environment and 24/7 monitoring.

 **GREATER EFFICIENCY**
Automated processes and more agile operations.

 **SMARTER DECISIONS**
Real-time data for strategic management.

 **OPERATIONAL TRANSFORMATION**
Technology that drives the future of the port.



CARGO MOVEMENT ANALYSIS

Real-time cargo movement analysis.



PERIOD COMPARISONS

Comparisons by period.



TREND AND SEASONALITY IDENTIFICATION

Identification of trends and seasonalities.



STRATEGIC MANAGEMENT AND DECISION MAKING

Supports strategic management and decision making.



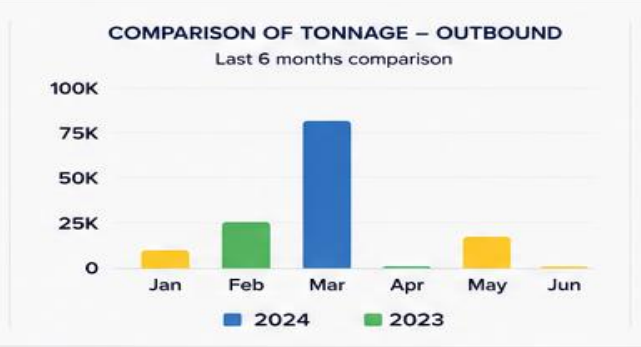
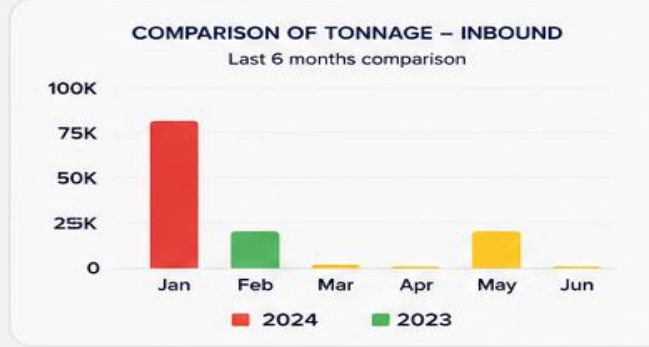
WASTE CONTROL AND ENVIRONMENTAL COMPLIANCE

Waste control and environmental compliance.



AI THAT ANTICIPATES SCENARIOS AND DRIVES RESULTS.

Artificial Intelligence that anticipates scenarios and drives results.



CARGO MOVEMENT			
Period: Last 6 months			
CARGO TYPE	INBOUND (t)	OUTBOUND (t)	BALANCE (t)
Container	152,842	145,673	7,169
Break Bulk Cargo	98,721	87,654	11,067
General Cargo (Unitized)	76,543	69,321	7,222
Solid Bulk	45,231	38,765	6,466
Liquid Bulk	32,109	28,432	3,677
TOTAL	405,446	369,845	35,601



GREATER SECURITY
Controlled environment and 24/7 monitoring.



GREATER EFFICIENCY
Automated processes and more agile operations.



SMARTER DECISIONS
Real-time data for strategic management.















OPERATIONAL TRANSFORMATION
Technology that drives the future of the port.



Babitonga Bay: The Smart Estuary

How Artificial Intelligence and real-time monitoring are transforming port infrastructure into a predictive and sustainable ecosystem.

THE PARADIGM SHIFT IN PORT MONITORING

TRADITIONAL MODEL	ASPECT	INTELLIGENT ECOSYSTEM
 <p>Manual and periodic sampling.</p>	 <p>DATA COLLECTION</p>	 <p>Continuous real-time sensors (24/7).</p>
 <p>Slow human review.</p>	 <p>ANALYSIS</p>	 <p>Neural Networks and Computer Vision (e.g.: YOLO).</p>
 <p>Reactive (days to weeks).</p>	 <p>RESPONSE TIME</p>	 <p>Predictive and immediate (automated alerts).</p>
 <p>Isolated and technical reports.</p>	 <p>TRANSPARENCY</p>	 <p>Integrated and accessible web platforms for stakeholders.</p>



GREATER SECURITY
Controlled environment and 24/7 monitoring.



GREATER EFFICIENCY
Automated processes and more agile operations.



SMARTER DECISIONS
Real-time data for strategic management.



OPERATIONAL TRANSFORMATION
Technology that drives the future of the port.

DATA THAT CONNECTS. INTELLIGENCE THAT GENERATES RESULTS.

THE PROOF OF CONCEPT: DREDGING THE CONNECTIVITY CHANNEL

THE DIGITAL SHIELD



THE THREAT:
Sediment plume
from dredging



THE DIGITAL BARRIER:
Strategic monitoring
probes



THE PROTECTED ZONE:
Sensitive mariculture
area



The first real-time environmental monitoring in aquaculture infrastructure works in Babitonga Bay acted as **preventive protection, mitigating risks** before impacts reach sensitive ecosystems.



GREATER SECURITY

Controlled environment
and 24/7 monitoring.



GREATER EFFICIENCY

Automated processes and
more agile operations.



SMARTER DECISIONS

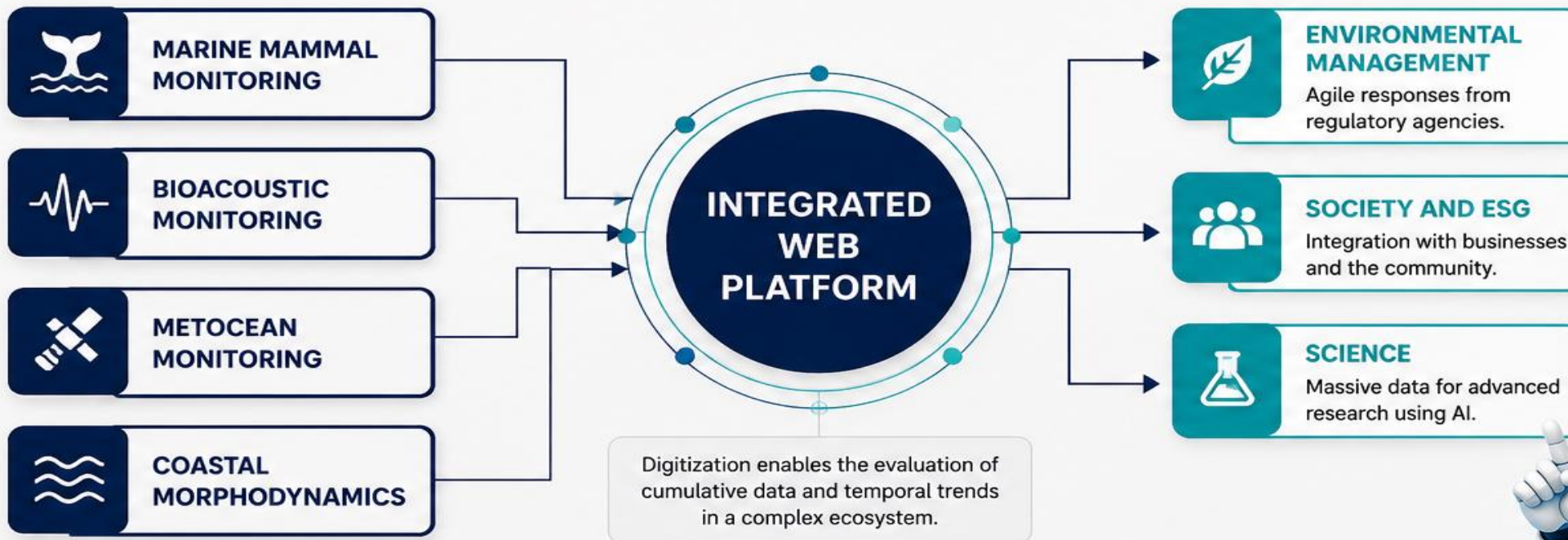
Real-time data for
strategic management.



OPERATIONAL TRANSFORMATION

Technology that drives
the future of the port.

PMAI: THE DIGITAL NERVOUS SYSTEM OF BABITONGA BAY



GREATER SECURITY
Controlled environment
and 24/7 monitoring.



GREATER EFFICIENCY
Automated processes and
more agile operations.



SMARTER DECISIONS
Real-time data for
strategic management.



OPERATIONAL TRANSFORMATION
Technology that drives
the future of the port.

THANK YOU!



Guilherme Custódio de Medeiros

Director of Operations and Logistics

Port of São Francisco do Sul

Santa Catarina – Brazil

guilherme.medeiros@portosfs.com.br



14th Regular Meeting of the CIP

The Scope of Artificial Intelligence:
Reshaping Strategies for Sustainable and Secure Ports

📍 Bridgetown, Barbados

📅 June 2026



GREATER SECURITY

Controlled environment
and 24/7 monitoring.



GREATER EFFICIENCY

Automated processes and
more agile operations.



SMARTER DECISIONS

Real-time data for
strategic management.



OPERATIONAL TRANSFORMATION

Technology that drives
the future of the port.