Tanger Med Port Paperless Passage Initiative
Digitization of the port journey at Tanger Med

Tanger Med Port Paperless Passage Initiative: An Overview

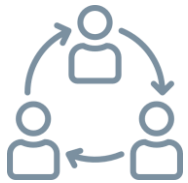
- The project aims to digitize the port journey process, encompassing everything from online declarations to port journey control, while ensuring that customer services are maintained or enhanced.
- The primary goals are to streamline operations, boost efficiency, and improve the overall customer experience at the port.

- **Keys drivers**

Customer centricity

Cutting-edge technologies

Data monitoring and analysis



Collaboration and partnerships

Open innovation

Sustainable mindset

Tanger Med Port Paperless Passage Initiative : An Overview

The main parts of the project are:

- **Development of Tanger Med's port information systems**: Enhancing and modernizing the digital infrastructure used for port operations.
- **Enhancements to the Port Community System (PCS) of Tanger Med**: Improving the integrated platform that facilitates communication and coordination among port stakeholders.
- **Information system exchanges with various partners**: Establishing efficient data exchange protocols and systems with partners such as shipping companies, logistics providers, and regulatory authorities.
- **Review and adaptation of business procedures regarding the import and export activities:** Integrating procedural changes to support the port's transition into a fully digitized one

Two types of operations :

- Remote operations conducted before the arrival of units at the port :

Anticipation

Convenience

Flow control

- Operations related to the physical passage of the unit through the port:

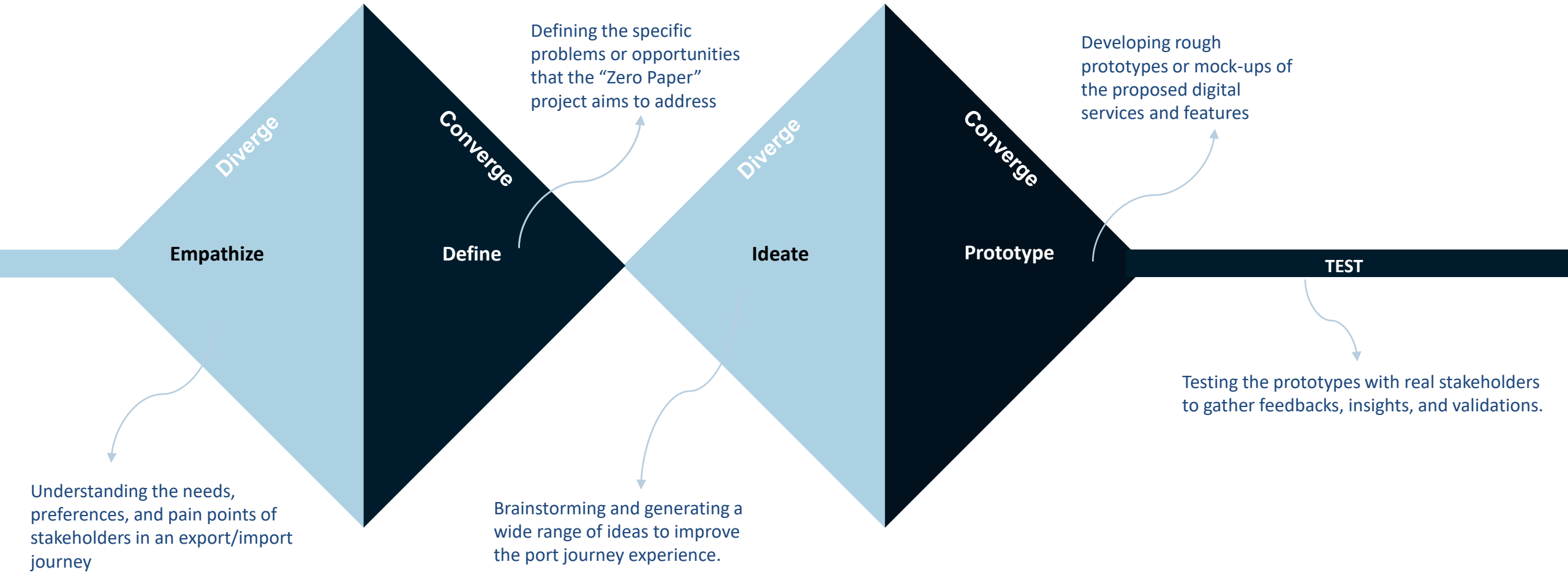
Security

Full Traceability

Efficiency

Followed methodology

A design thinking approach: a customer-centric method to uncover key areas of improvement.



4 Enhancement areas

4 main areas of improvement

1. Online declaration, request for port movement authorization, and remote billing
2. The port passage (Digital port movement authorization)
3. Scanning process
4. Facilitating controls and operations during a port journey

Tanger Med Port Paperless Passage Initiative

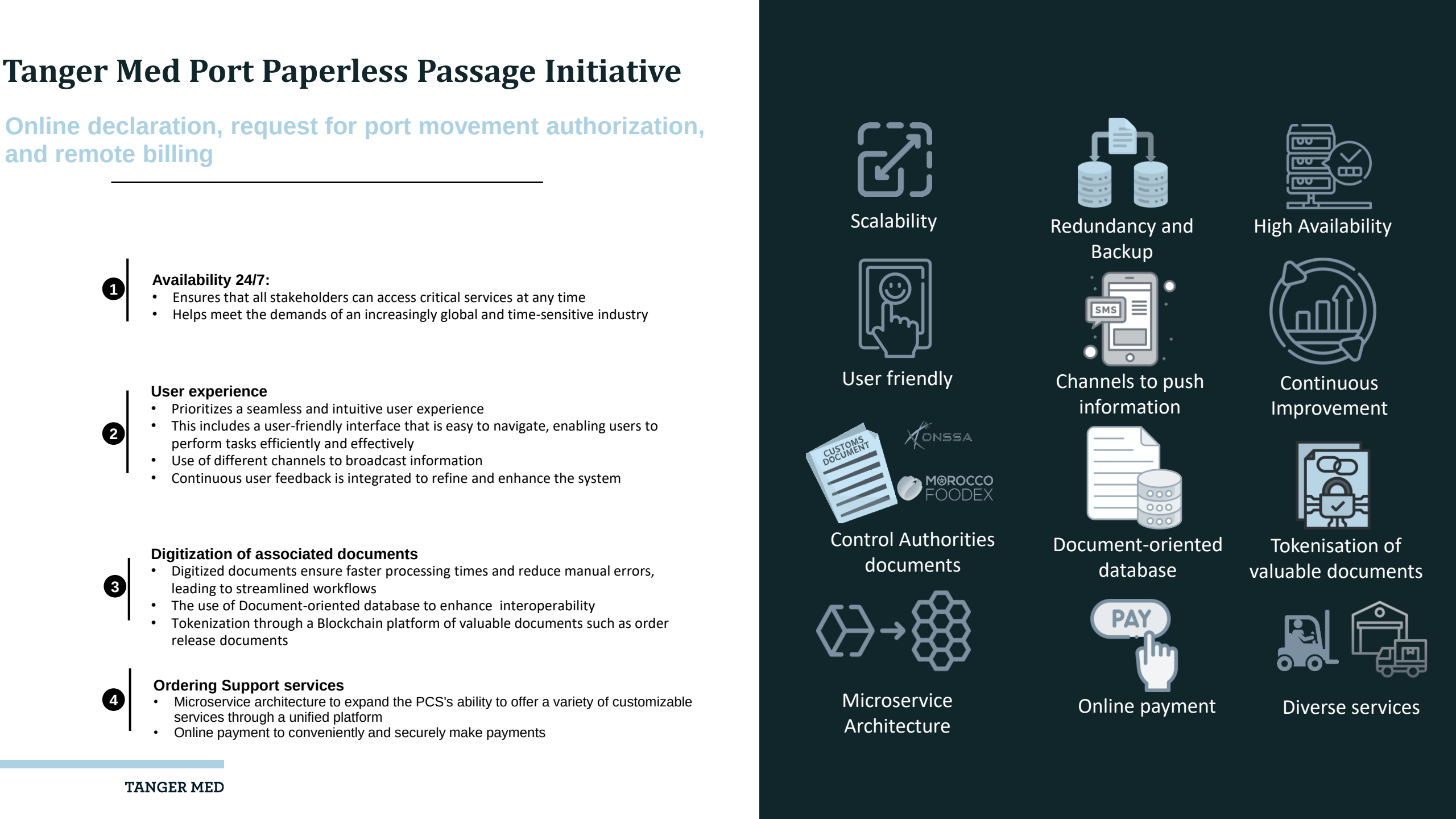
Online declaration, request for port movement authorization, and remote billing

1. **Availability 24/7:**
   - Ensures that all stakeholders can access critical services at any time
   - Helps meet the demands of an increasingly global and time-sensitive industry

2. **User experience**
   - Prioritizes a seamless and intuitive user experience
   - This includes a user-friendly interface that is easy to navigate, enabling users to perform tasks efficiently and effectively
   - Use of different channels to broadcast information
   - Continuous user feedback is integrated to refine and enhance the system

3. **Digitization of associated documents**
   - Digitized documents ensure faster processing times and reduce manual errors, leading to streamlined workflows
   - The use of Document-oriented database to enhance interoperability
   - Tokenization through a Blockchain platform of valuable documents such as order release documents

4. **Ordering Support services**
   - Microservice architecture to expand the PCS's ability to offer a variety of customizable services through a unified platform
   - Online payment to conveniently and securely make payments



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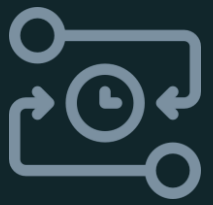
The port passage (Digital port movement authorization)

- Use of RFID technology for digitizing the port movement authorization
- Employment of both PDAs and antennas for effective tracking and management
- Fixed antennas are strategically placed throughout the port area to create RFID zones
- These antennas detect RFID tags within their range, automatically capturing data as tagged items pass through or near these zones.
- The collected data is exchanged with the concerned stakeholders to create a shared value.

Efficiency

RFID enables quick and automated identification of AMPs, reducing the time spent on manual checks and paperwork



Real-Time Tracking

Real-time tracking of AMPs throughout the port, enhancing visibility and operational control

Increased Security

RFID tags are encrypted and provide secure access control, reducing the risk of unauthorized handling of AMPs.

Sustainability

Reduced paper usage and improved resource utilization contribute to environmental sustainability efforts

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Scanning process

- "Digital check-in process" refers to the transformation of traditional paper-based check-in procedures into electronic or digital formats.
- All the documents are sent in a digital and a secure format once a trigger event is received.
- Transport clerks do not need to print or show any documents
- RFID Antennas and automatic barriers are employed to ensure that only units with a valid check-in status are granted access to the scanning zone.
- After the scanning process, the results, which include the data and findings obtained from the scans, are digitally forwarded to the customs authorities.

Fully automated scanning process..

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Facilitating controls and operations during a port journey

1 EDI exchanges with partners

Documents and control results needed in order to finalize formalities regarding import and export of goods

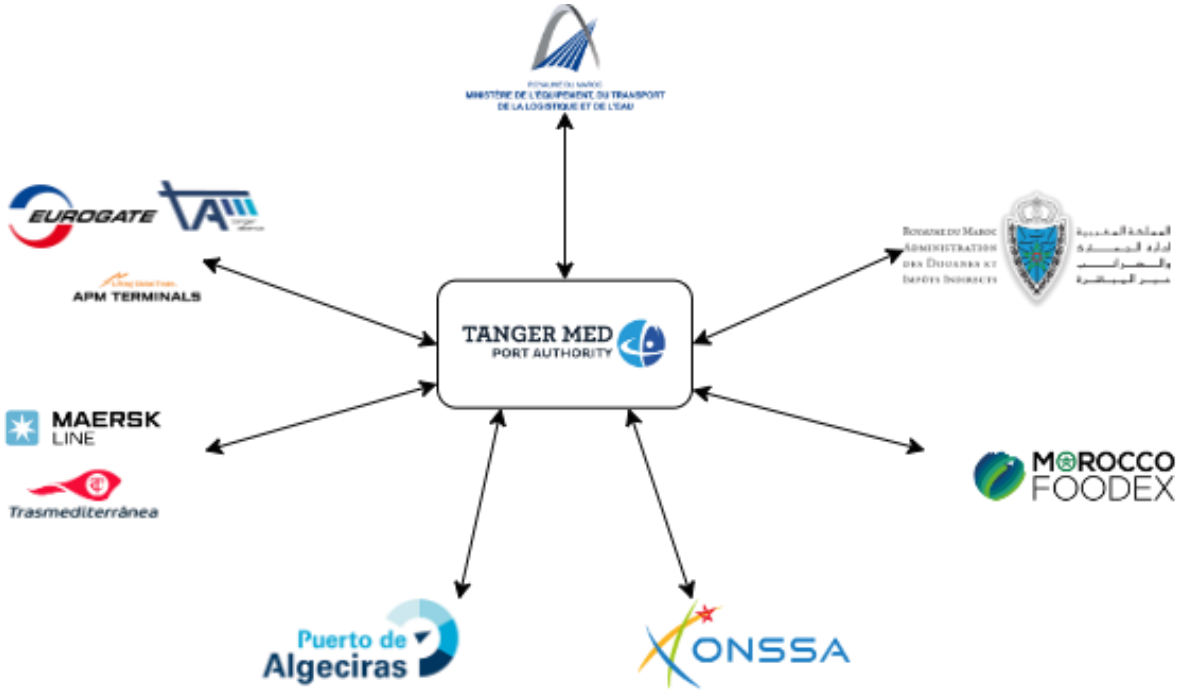
2 Control management system

Module for planning physical visit operations for import units
A digital appointment scheduling system integrated within the PCS
Enhancing both the customer experience and the efficiency of field operations

3 E-book system

Online Reservation Platform
An intuitive online platform where transporters can check ferry schedules and browse available tickets

Data exchanges with the main partners..



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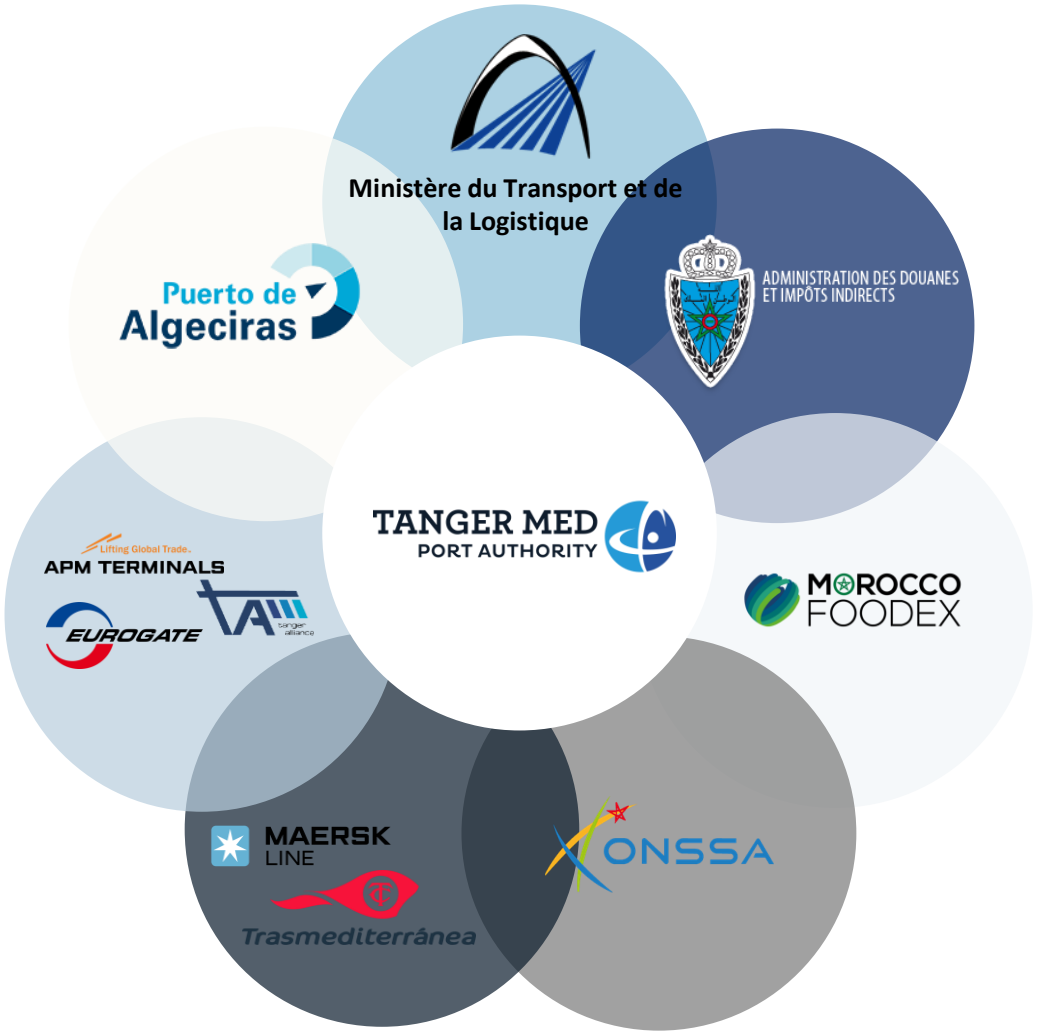


Cutting-edge technologies to support the digital shift of Tanger Med : Blockchain as an example

Scope

A blockchain-based system for certified cargo pick up

A payment gateway for secure and automated transactions

Tokenization of documents

Deliverables

- A fully functional blockchain Platform for certified cargo pick up.
- Centralization of Decentralized Business Rules via smart contracts.
- Tokenized versions of essential documents (Delivery Orders,..).
- A user-friendly interface for stakeholders to access and use the system.
- Providing multiple ways for stakeholders to interface with the blockchain (APIs, Interfaces, RPC calls,..)

Objectives

Data collaboration
- To enhance data collaboration by providing a secure, transparent, and decentralized way to share and manage data

Security and Efficiency
- To implement a secure and efficient process for certified cargo pick up using blockchain technology.

Transparency and traceability
- To enhance transparency and traceability in cargo handling and pick-up operations.

Reducing Risk and Fraud
- To reduce the risk of fraud and improve overall security in the cargo pick-up process..

Streamlining processes
- To streamline documentation and automate key processes using smart contracts.

Cutting-edge technologies to support the digital shift of Tanger Med : Blockchain as an example

USE CASE 1

Tokenization of the Original Delivery Order

Tokenization of the Original Delivery Order (ODO) required for the removal of goods at the container terminals. This use case aims to eliminate the need for the original manual ODO, which is still required by the container terminals, by replacing it with several digital Container Delivery Orders (CDOs), each corresponding to one of the containers mentioned in the said ODO.

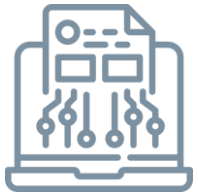
USE CASE 2

Integration of the 'Payment Gateway' component

Integration of the 'Payment Gateway' component into the Tanger Med Blockchain platform, thereby enabling the exploration of potential decentralized finance use cases in the port ecosystem and the logistics chain in general. The proof of concept (POC) for the payment of the bill of lading exchange fees in ODO and/or maritime transport fees was successfully completed in December 2023.

Cutting-edge technologies to support the digital shift of Tanger Med : Blockchain as an example

Tanger Med Blockchain perspectives



E-bill of lading: The tokenization of the bill of lading is of crucial importance in the digitization of the maritime sector. It will enable a secure digital representation of the document, facilitating exchanges and reducing reliance on physical documents.

Payments related to the E-Bill of lading: Integrating payments associated with the digital bill of lading into our blockchain project represents an innovative perspective in the field of maritime transport. Through blockchain, transactions related to the loading and unloading of goods can be conducted via the 'Payment Gateway', thereby reducing payment delays and risks of errors.

TANGER MED