

Smart Container Reshaping Port's Operations

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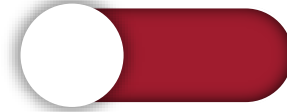
CIP-OAS Webinar
Industry 4.0 and its Advancement in the Port Sector

10/8/23



The mindset
shift towards

innovation



A set of
guidance fact sheets
for ports



https://issuu.com/portsandharbors/docs/iaph_the_mindset_shift_towards_innovation

CHAPTER 1

The time has
come for
innovation in ports

CHAPTER 2

Innovation in ports
- not only about
technology

CHAPTER 3

Innovation: its place within the organizational structure
of a port and how to develop an innovation ecosystem

CHAPTER 4

Tools for innovation:
Hackathons, Challenges, Pilots

CHAPTER 5

The role of an innovation hub &
infrastructures for innovation in ports

CHAPTER 6

Investment in Start-ups

SMART CONTAINER RESHAPING PORTS AND CUSTOMS OPERATIONS

AELER

**"IT IS TIME TO MOVE FROM TALKING
ABOUT THE IOT TECHNOLOGY TO THE
INNOVATIVE SOLUTIONS IT ENABLES,
SUCH AS THE 'SMART CONTAINER'."**



www.porttechnology.org

Smart Digital Ports of the Future



AELER

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https://www.linkedin.com/posts/gadi-benmoshe_smart-container-reshaping-ports-and-customs-activity-7074262040818724865-XLyS?utm_source=share&utm_medium=member_desktop

I What is the role of the Smart Containers in AELER Port Automation?



Use Case #1

Container Approaching Terminal

Smart Container
approaching
the terminal

sends message
to **PCS**



PCS conducts
internal inquiries
and performs
checks to ensure
all the information
needed was
received

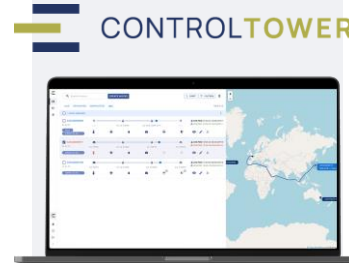


Use Case #2

Container number recognition
at the gate/crane

Without a need of OCR at the
gate/crane...

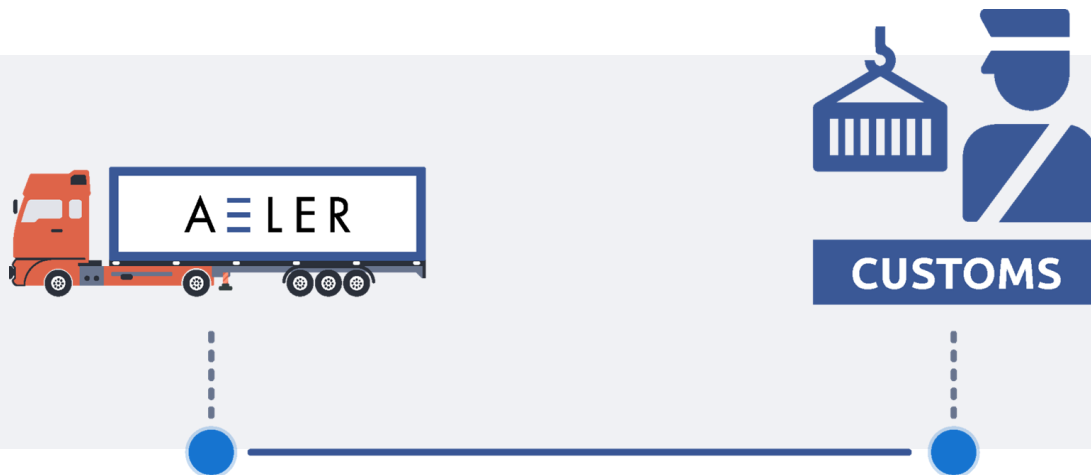
PCS communicates
With **Control Tower**
Control Tower
marks
marks
Green light
Red light



Control Tower
notifies
Freight Forwarder



Smart Container reshaping Customs Operations



Use Case #3

Track & Trace + Trigger event

- Smart Container, connected through GNSS antennas and global roaming, reports periodically the current location of the container to the Control Tower, which operates algorithms to identify geographical locations and the time of arrival or passing through the designated areas.
- Near-real time reports regarding routes deviation and crossing of the previously defined geofences can also be used as identifier for illegal activity with the container or/and cargo.
- In case of a suspicious route change or delays may identify an unauthorized activity with the transported cargo.
- This can be reported immediately through Control Tower to Customs and add risk score to trigger the need of inspection of the container.



Precise GPS
Location

Use Case #4

Door Opening, real-time notification

- Unauthorized door opening/closing can be used as identifier for illegal activity with the container or/and cargo.
- Smart Container's sensors identify such an unauthorized action and reports in real time through Smart Container's Control Tower to Customs the following parameters:
 - / Door status: open/close
 - / Geographical location (lat/long)
 - / Time stamp
- Such information layers enable the context of the action and can be used for considering extra inspection in case of the door opening event outside of the defined geographical zones of interest / geofences.
- Lack of such incidents show that the transportation wasn't interrupted from the moment of loading the cargo and container closing, reducing its risk score and the need of physical inspection.



Door opening
notification

Use Case #5

Smart Container Supporting Cybersecurity Resilience

Yard inventory count and registration

Suppose that because of a cyber-attack the **TOS database can't be restored** and, as a result, there is a need to **manually count and register the inventory** of thousands of containers in the port yard.

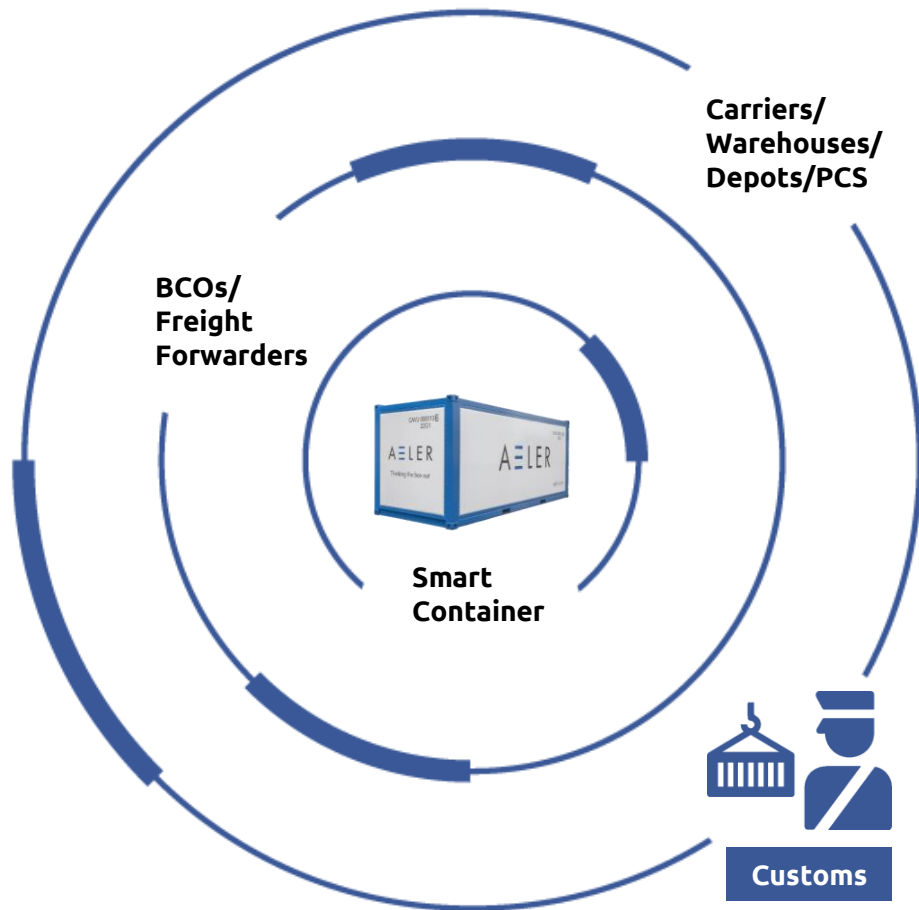
However, if the yard is filled with **Smart Containers** which can instantly transmit their **identification Numbers and locations**, the **TOS database can be immediately updated**.

This can **save many hours of manual work** and enable a **quick recovery from the cyber-attack**.



Smart Container: Re-inventing the role of the container in the port's ecosystem :

Together with the
important stakeholders



Smart Container Reshaping Port's Operations

**Let's innovate
together!**

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