



State of the Art Technologies at Your Gate That Will Increase Port Efficiency

Nov 1st, 2023

Hinterland/Yard/Berth Cycles



Hinterland Cycles



Hinterland



Dry Port / Free Zone

Cargo Port

Hinterland Cycle



- Basics

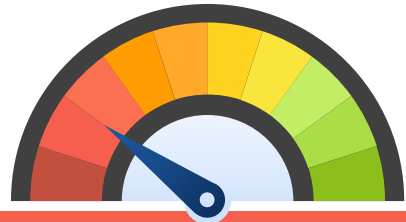
- Assume “No Friction”:
- Info before arrival of trucks
- Booking/appointment system
- Digitalize pre-gate and out-gate processes
- Install eGates, auto-Weighing
- **Capacity management of everything – MAXIMIZE**
- Operate at max efficiency ... all the time

- **Friction** is

- Teamsters
- Labor Unions
- Trucking unions
- Equipment shifting
- Equipment maintenance
- **Traffic outside the port**
- **Capacity Management at adjacent ports**

Hinterland Cycle Efficiency by Mode

Maximize Port/Hub Capacity



+25%

Standard Booking

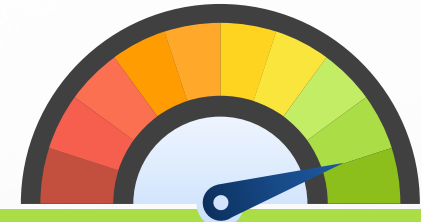
- Operate at your own risk of congestion
- Deal with truck waiting times, outside the port
- High truck dwell times
- More delay at the gate
- Slow port gates
- Negative environmental effect
- Higher hinterland transport costs



+70%

Truck Appointment

- Digitalizes a wide part of the Hinterland cycle
- Very small Infrastructure investment
- Prone to port Friction
- Pre-determined capacity = max capacity
- Open slots are lost capacity
- Data analytics yield negligible enhancement
- Port specific, negative optimization of Logistics for multiple ports in one zone



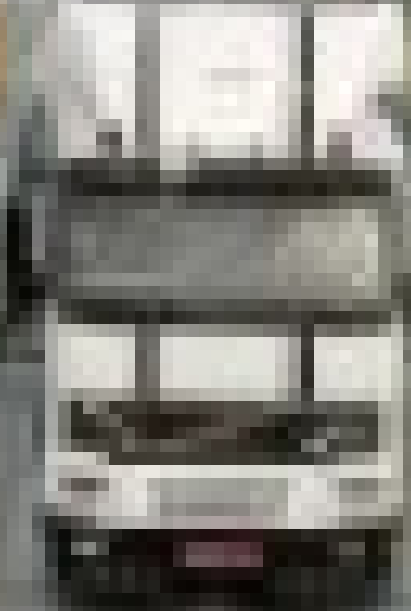
++90%

Scheduling System

- Step up from the Appointment System
- Mutes Friction effects
- Operate at max capacity, or even higher
- Apply Data analytics to reach extreme optimization
- Close coupling with Yard and Berth cycles
- Requires minor infrastructure investment
- Can be a Port Authority project to add an extra layer of logistics optimization



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Tools & Technology

IoT, D/L, Edge Tech



eSeals

Secure Cargo on the Move



eID Cards

Long Range For Truck drivers and Access Mgmt



Truck eID

Secure RFID tags, Trailer/Chassis eSeals



Deep Vision

Deep Learning Edge Technology for Traffic Sensing



Weigh In Motion

Axle Load Mgmt, Advanced Vehicle Sensing



Internet of Things

Continuous Development into the Future

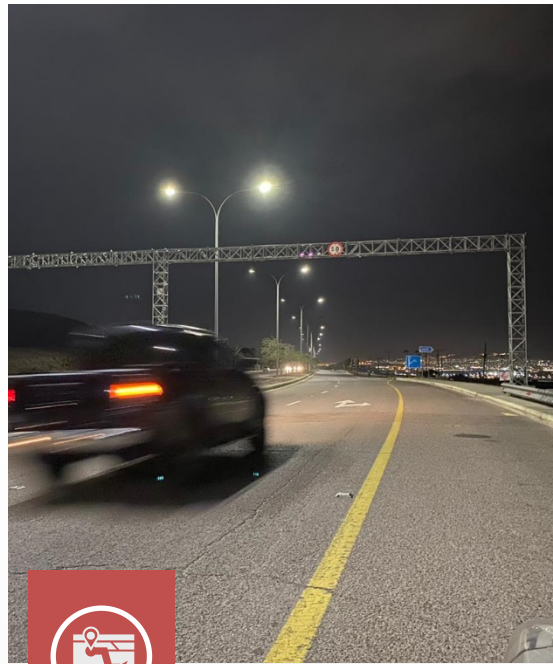
Tools & Technology



iGates

Centrally controlled

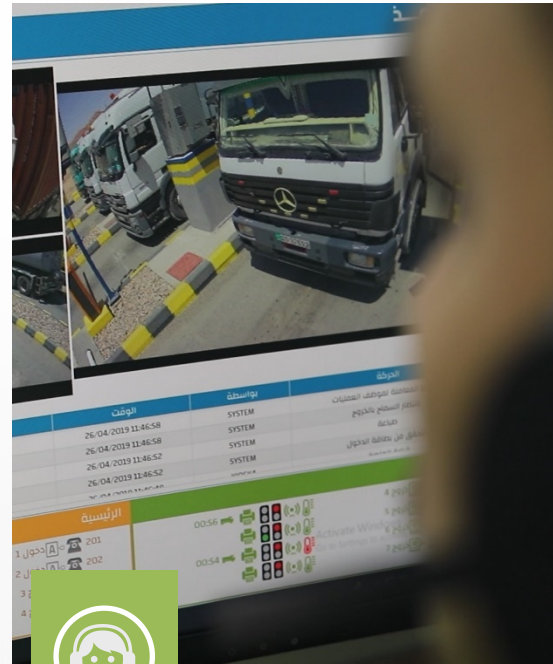
iGates are manufactured and delivered by NFIDENT, a wholly owned factory/subsidiary of Nafith



iPortals

Sense everything

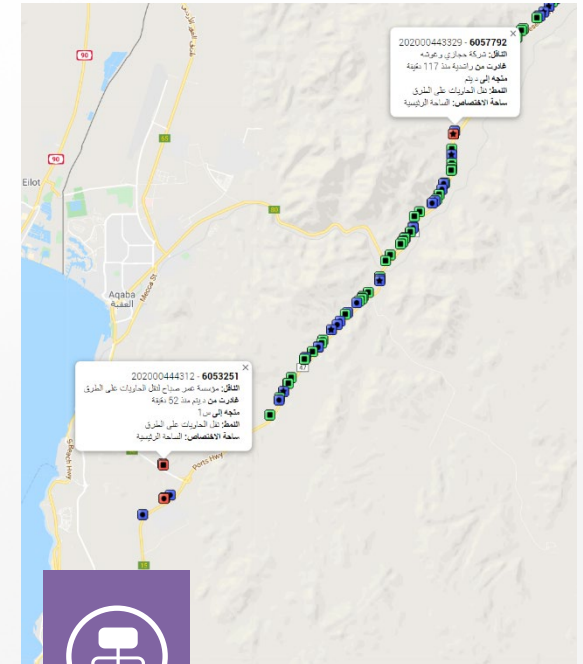
iPortals Categorize vehicles, streamlined monitoring, using Deep Learning/Vision



CC Centers

Control & Monitor

Command and Controls Center that covers all logistics events and interventions



Logistics Systems

NFlow, NCheck, NStar

Platforms are web, mobile, GIS, Data Analytics, Dashboards, accessible within a centralized entry point

What's on the Horizon

One-Step Weighing (patent published)

- Weigh cargo while it is on the truck
- Reduce weighing operations by up to 90%
- Decrease Hub/Port truck turn-around-time by as much as 15%
- RoI is very large
- Currently under piloting

Truck and Cargo 2D Imaging using DL

- Scan Truck and container Hi Res, with depth, using 2D LiDAR at the gate
- Detect anomalies in the container with up to mm's in accuracy
- Create layered mesh on top of the 2D Hi Res Image for DL
- Extract all texts and integrate with TOS or Zone OS
- Currently under piloting



Thank You

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