



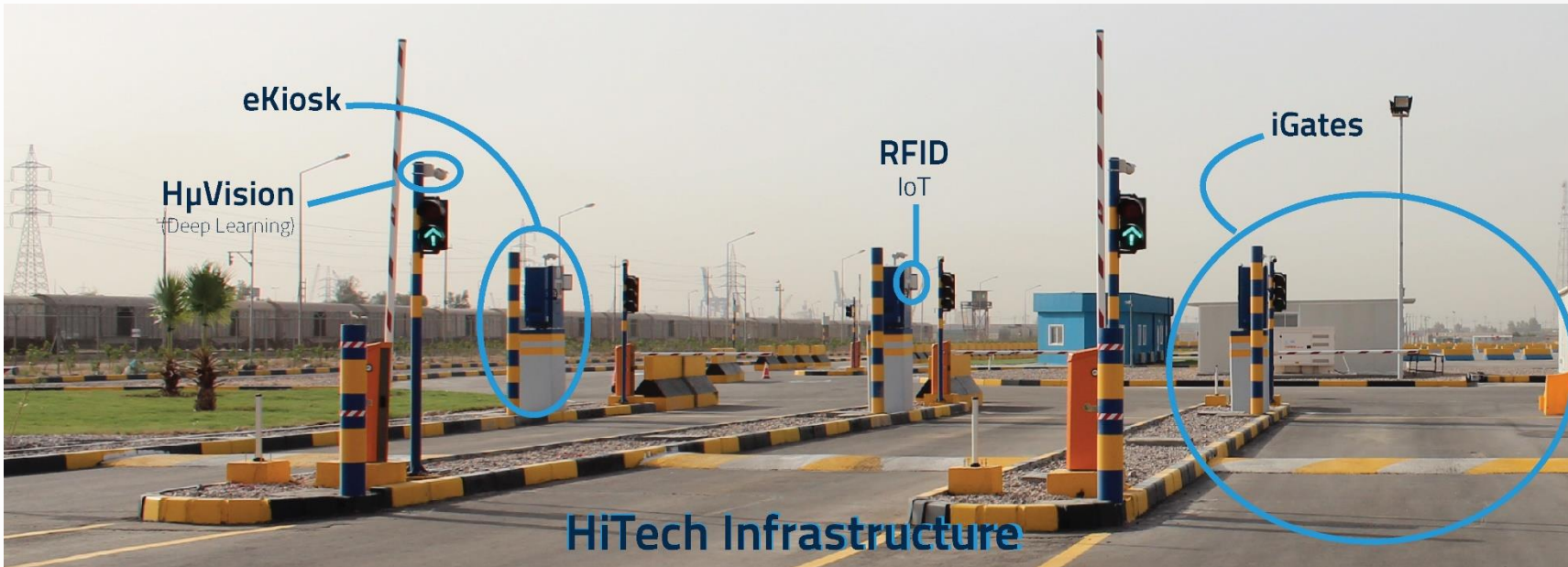
Trade & Transport
Facilitation In Action

Enhancing Port and Hub to Hinterland Connectivity with HiTech Innovation

Jan 25th, 2023

Nafith International LLC

- Trade & Transport Facilitation infrastructure and Logistics Technology
- Port access business in USA since 2001
- IFC (World Bank Group), Foursan Fund investors, US and Jordanian partners
- National Projects to digitize national logistics of countries/ cities/ hubs
- Decongest logistics hubs/ ports/ borders, secure cargo corridors
- PPP BOT projects in Jordan, Iraq and Oman
- Process 6000 trucks / day in all operations
- Holds international patents in RFID and Weighing
- Applies in-house developed and manufactured IoT and Deep Vision in Logistics operations



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**

iGates



Hinterland Cycle Efficiency by Mode

Maximize Port/Hub Capacity



+25%

Standard Booking

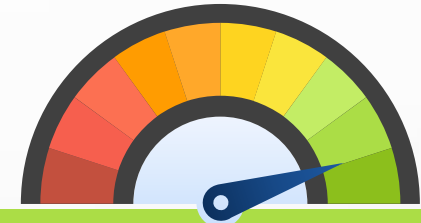
- Operate at your own risk of congestion
- Deal with truck waiting times, outside the port
- High truck dwell times
- More delay at the gate
- Slow port gates
- Negative environmental effect
- Higher hinterland transport costs



+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 (**Tinàmica**) 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

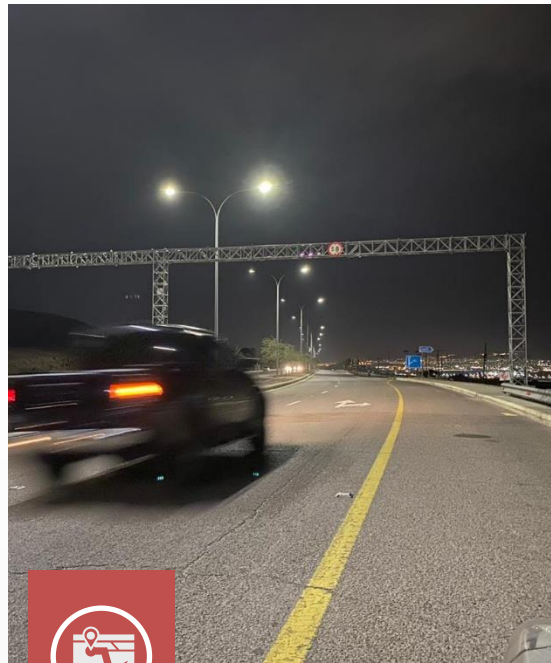
Tools & Technology



iGates

Centrally controlled

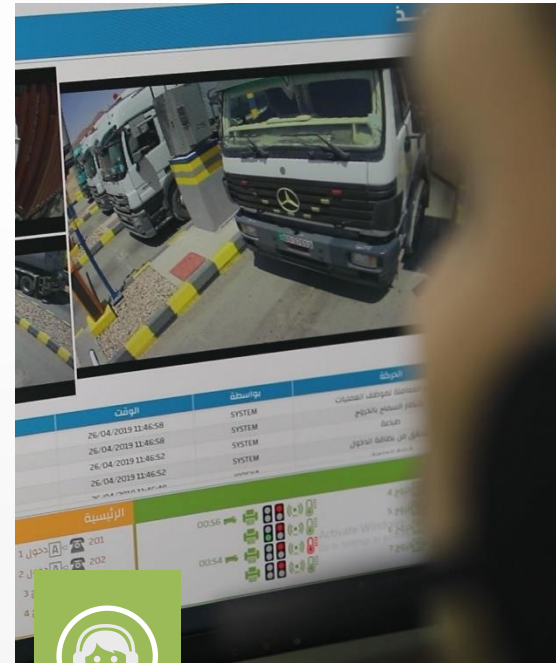
iGates are manufactured and delivered by NFIDENT, a wholly owned factory/subsidiary of Nafith



iPortals

Sense everything

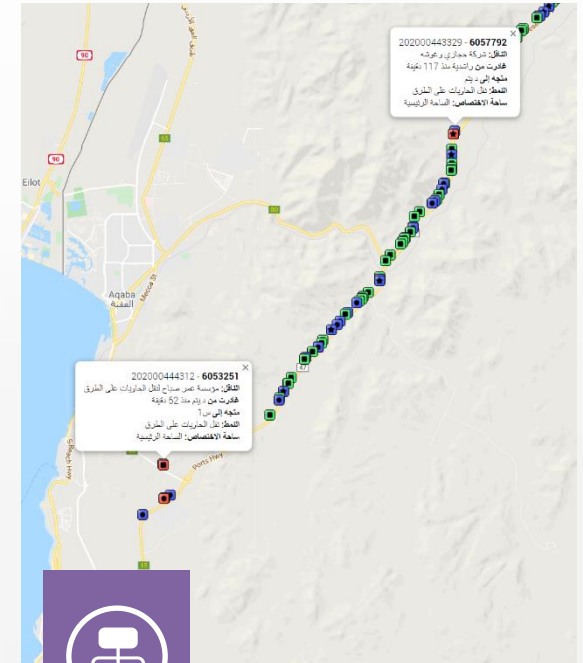
iPortals Categorize vehicles, streamlined monitoring, using Deep Learning/Vision



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

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

What's on the Horizon

One-Step Weighing (patent pending)

- 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 pre-piloting

Truck and Cargo 2D Imaging using DL

- Scan Truck and container 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
- Extract all texts and integrate with TOS or Zone OS
- Currently under piloting



Thank You

Please visit our Booth

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