

WCO TECHNOLOGY AND INNOVATION FORUM

Kuala Lumpur, Malaysia 5 – 9 March, 2012

Electronic Transit Tracking and
Facilitation System
(Jordan model)

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Jordan customs

Introduction

- Transit trade involves the movements of goods across borders with duty unpaid, and without physical inspection in most cases.
- This raises the danger of smuggling the transit goods to the internal market, and the possibility of smuggling dangerous materials such as narcotics or explosives.

- To avoid the dangerous consequences of transit cargo trade, and to achieve better control on customs duties, most countries implement strong measures that includes high guarantees, and some time include physical inspection of transit cargo before allowing it to cross the country.

- Further to the measures mentioned above the trucks are escorted in groups during the journey.

These measures introduce significant delay to the international trade supply chain, in the main time do not guarantee the safety of the country from possible will planned smuggling.

Importance of transit trade to Jordan

- Economical points of view

More than one million trucks crosses Jordan yearly

- The annual value of transit trade 14 billion US\$
- The number of transit customs declarations are reaching half million per year.
- The value of transit guarantees is More than 10 billion US\$ annually.

- Geographical point of view
- The strategic geographical location of the kingdom made it center for the movement of goods between Europe, Africa and the Arabian Gulf region .



Reasons to adopt a modern efficient solution

- The transit trucks are considered as one of the most dangerous means of smuggling goods and dangerous materials.

Arms smuggling



Electronic equipment smuggling



- The density and irregular flow of trucks from neighboring countries has led to the emergence of traffic jams for trucks at customs houses.
- Some trucks have to wait many hours between the shifts of convoys and some times to stay overnight at border customs centers.



- The traditional customs escorting process (convoys) cause traffic jam at the high ways and disturb the smooth movements of passenger cars, and delay the movement of goods across the country.

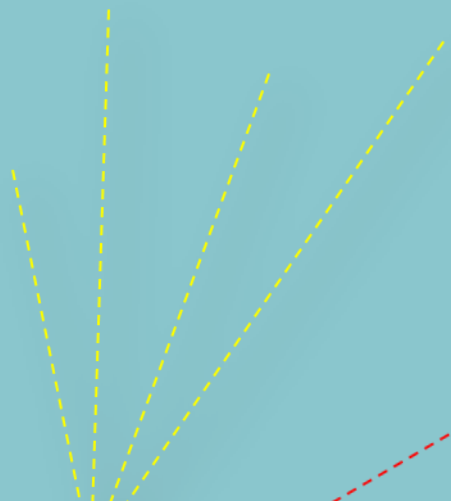
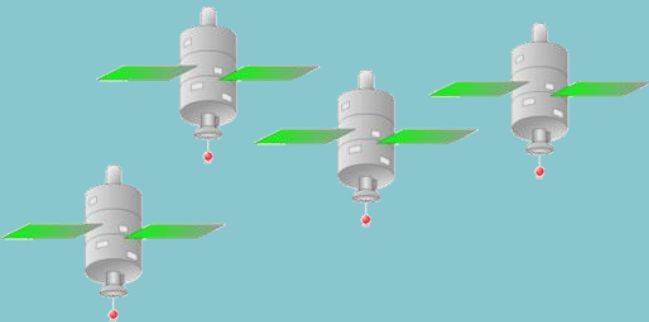
Integrating business processes through technologies

- Jordan Customs began the search for a solution to address these bottle necks and accelerate the movement of goods across the borders since 2003.
- Accordingly. Many experiments has been conducted and many modifications introduced to make it possible to benefit from vehicles tracking system to monitor and control the movement of transit trucks across the kingdom.



Electronic Transit Tracking and Facilitation System (Jordan model)





**GPRS
Networks**



**tracking
Unit**



The solution Components

A GPS unit :

- A device installed on the truck to determine its coordinates using GPS satellites signals.
- This unit is attached wirelessly to one or more electronic seal installed on doors of containers and trucks.
- The unit reports any tampering with it or with the e-seals



Electronic seal:

- The e- seal is used to seal the container doors and to connect the trailer with the tractor.
- Five seals can be attached to one tracking unit.
- The seals reports any tampering or illegal opening to the control center

Communications network (GSM/GPRS).

The task of this Communication system is to transfer violations and coordinates of the tracked truck in the form of an electronic signal from the vehicle to the control room and vice versa.

PDA and Wi-Fi:

used at the customs centers to initiate and terminate transit trip.



Control Center:

Consists of communication/ Data base and application servers necessary for processing electronic signals which are received from the trucks.

GIS/Digital Maps :

Electronic maps and Satellite images of the Kingdom are displayed on a large Monitor wall.



Mechanism of work:

Trip initiation

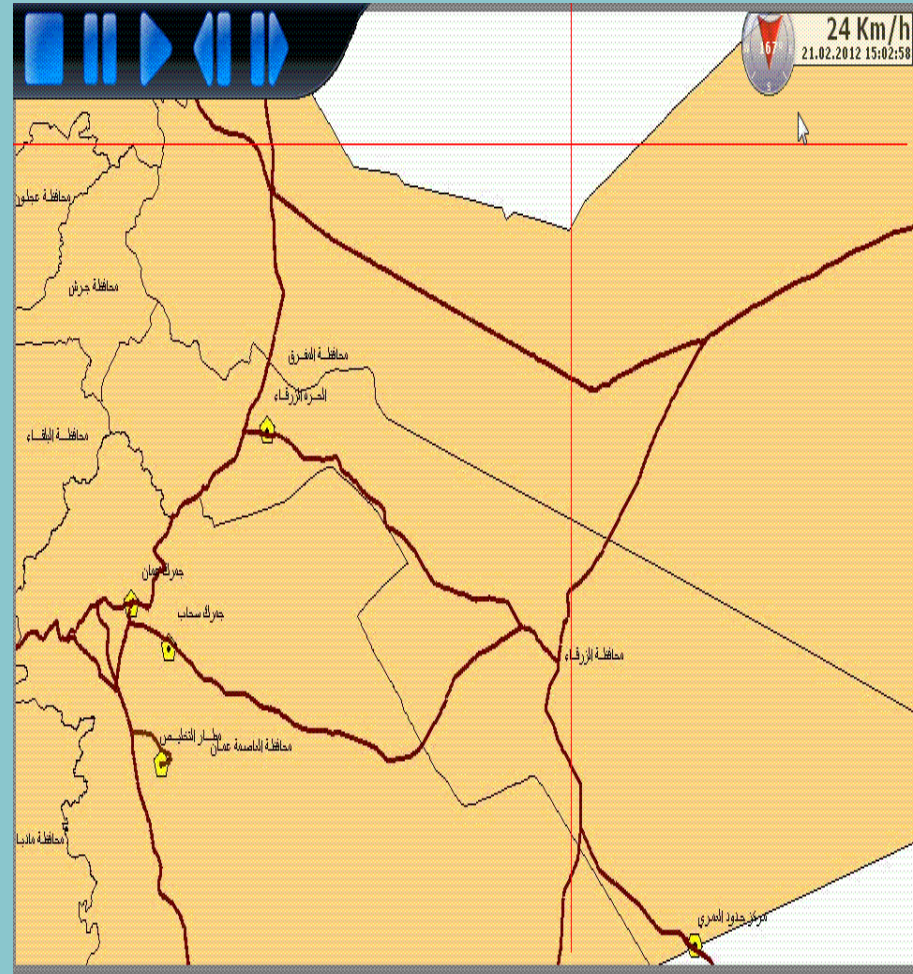
- Electronic Tracking devices and electronic seals are distributed to the concerned customs Centers involved in this system.
- After completing the customs declaration, the incoming transit trucks are moved to the electronic tracking yard, at which the tracking units and the electronic seals are configured and installed on the transit trucks, and the transit trip is initiated.
- The process of installation takes two minutes.

- The Devices Installation process and trip initiation takes two minutes.



During the trip

- The trucks are monitored on line from the central control room situated at customs head quarter.
- The system is capable of detecting any violations in the transit trip such as:
 - Tampering with the tracking unit or electronic seals



- Diverting from the pre assigned transit route
- Splitting the tractor from the trailer
- Opening the door of the containers
- Stopping at dangerous areas





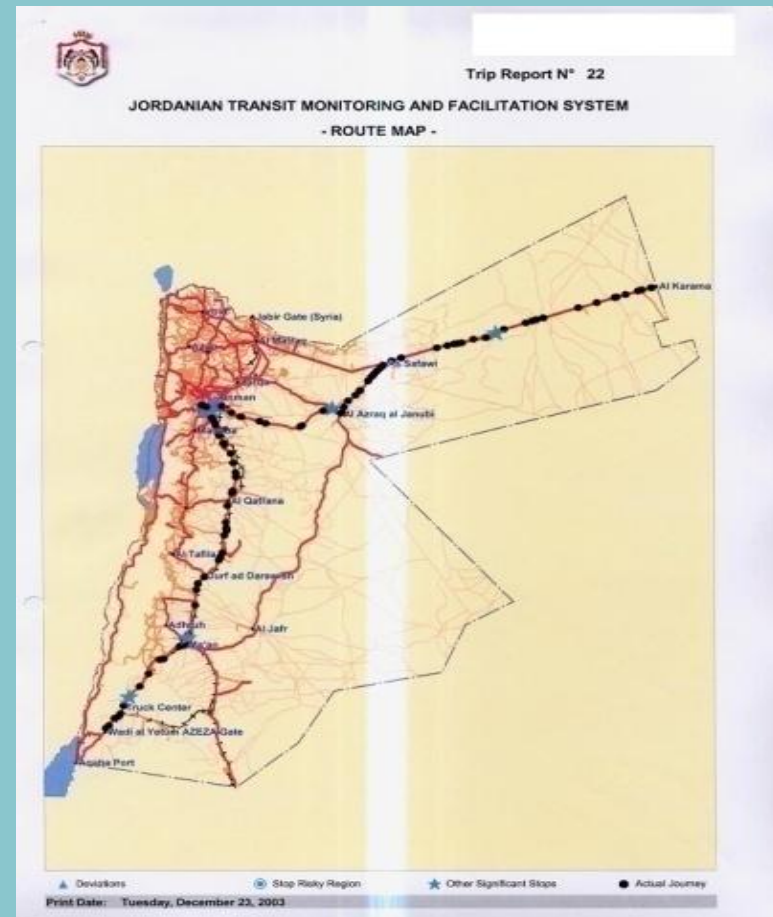
Violations Handling and trip termination

- Customs escort patrols and enforcement patrols are informed about any violations for follow up.
- A trip report of the journey is issued at the departure customs center to take the necessary procedures and show any violations committed during the transit journey.

- Electronic Tracking devices and electronic seals are removed from the trucks at the departure center and the Control Center is informed as a pretext to use the device again on another truck on the opposite direction.
- A sub control room was built at the Enforcement Directorate and Customs Escort Directorate to manage and direct the patrols cars and address any violations committed by transit trucks.

Trip report

- A Trip report is issued at the end of each journey the report includes the following information:
 - Transit journey assigned route
 - Places of stops of trucks and duration of each stop in each location during the journey.



- Places where trucks deviates from its specified rout.
- Total time that the journey has taken.
- Violations committed during the journey and measures taken.
- X-Ray image of the tracked truck

Trip Report N° 22

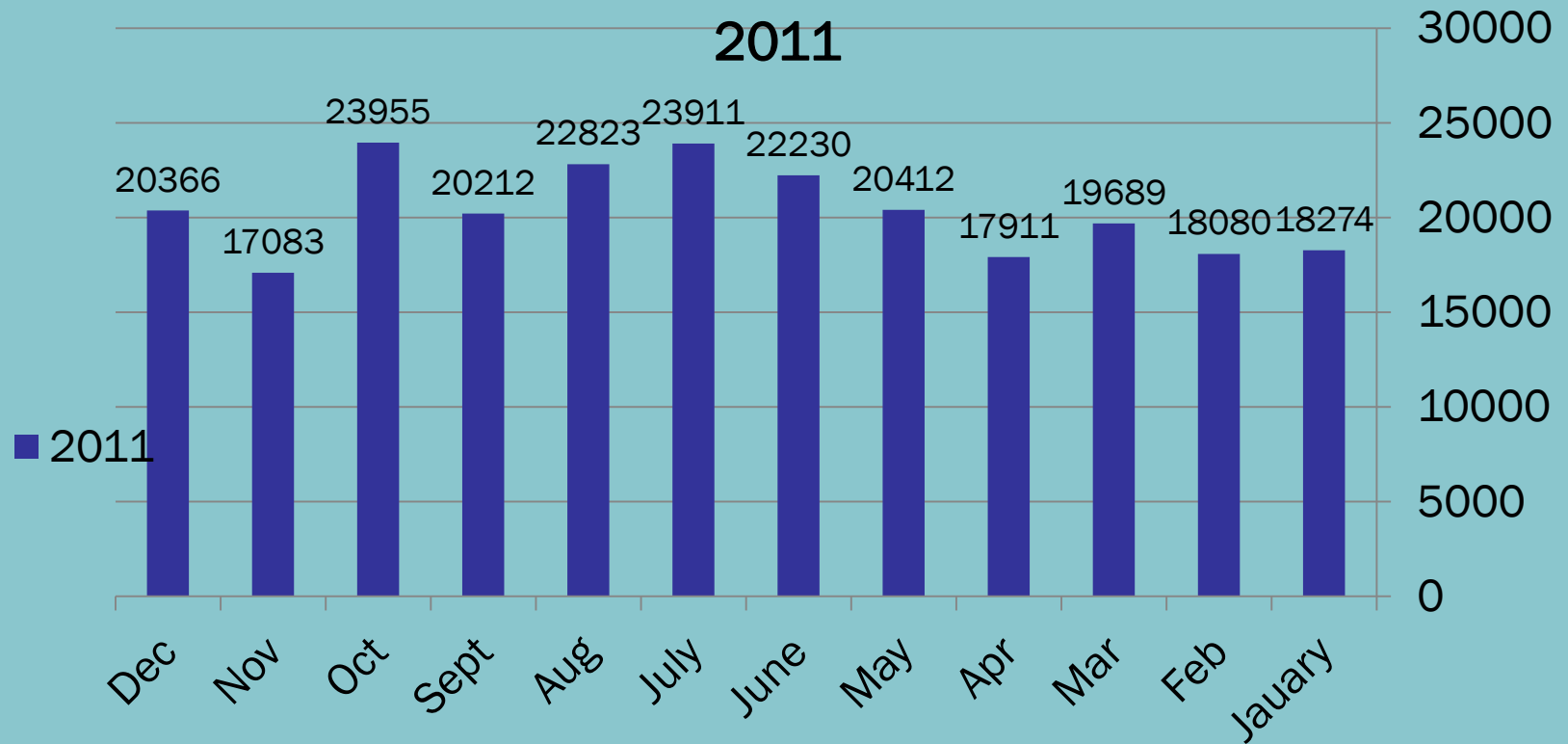
JORDANIAN TRANSIT MONITORING AND FACILITATION SYSTEM
- TRANSIT RISK ADVISORY -

1 - GENERAL INFORMATION	
COTRACK Mobile Unit Identification Number: 0007	
Truck Tractor Registration Plate: 129421	Trailer Registration Plate:
Truck Characteristics (Model and Colour): Mercedes Benz 1999, Black	
General Description of Goods Frozen Meat	
Transit Declaration Number	Place of Departure / Date Wadi al Yefum Gate 21-Dec-2003 03:03
	Place of Destination / Date Al Karana 22-Dec-2003 17:21
2 - TRIP ANALYSIS	
Route Deviation	Stops
System failure	Route Delays Exceeded
3 - RECOMMENDATION	
<input type="checkbox"/> No specific control required <input type="checkbox"/> Summary control and interrogation of driver <input type="checkbox"/> Control of the truck and physical inspection of the consignment required <input type="checkbox"/> Investigation to be launched	
Issued in Amman	
Date :	
Time :	

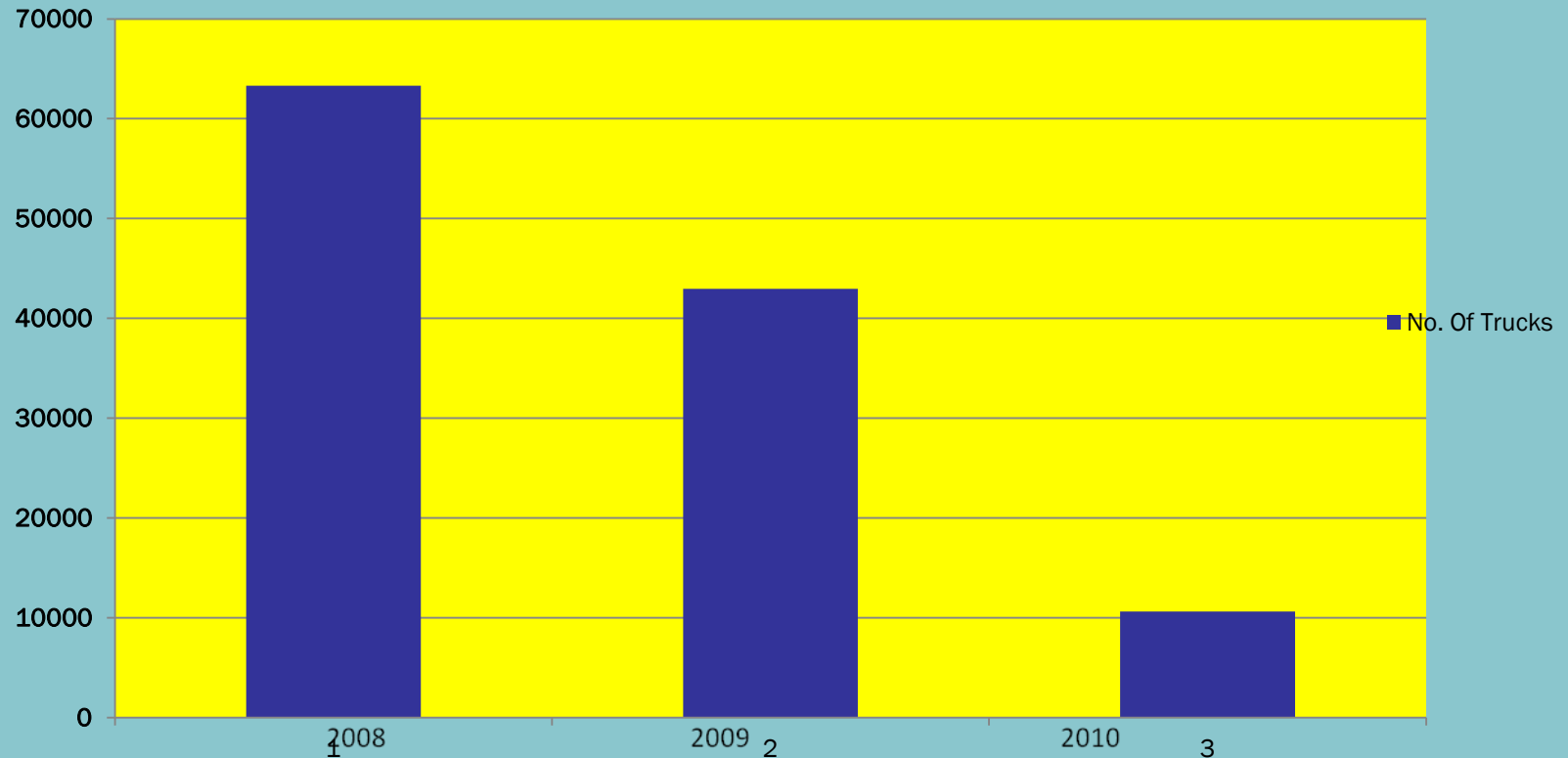
Print Date: Tuesday, December 23, 2003

Results and out comes

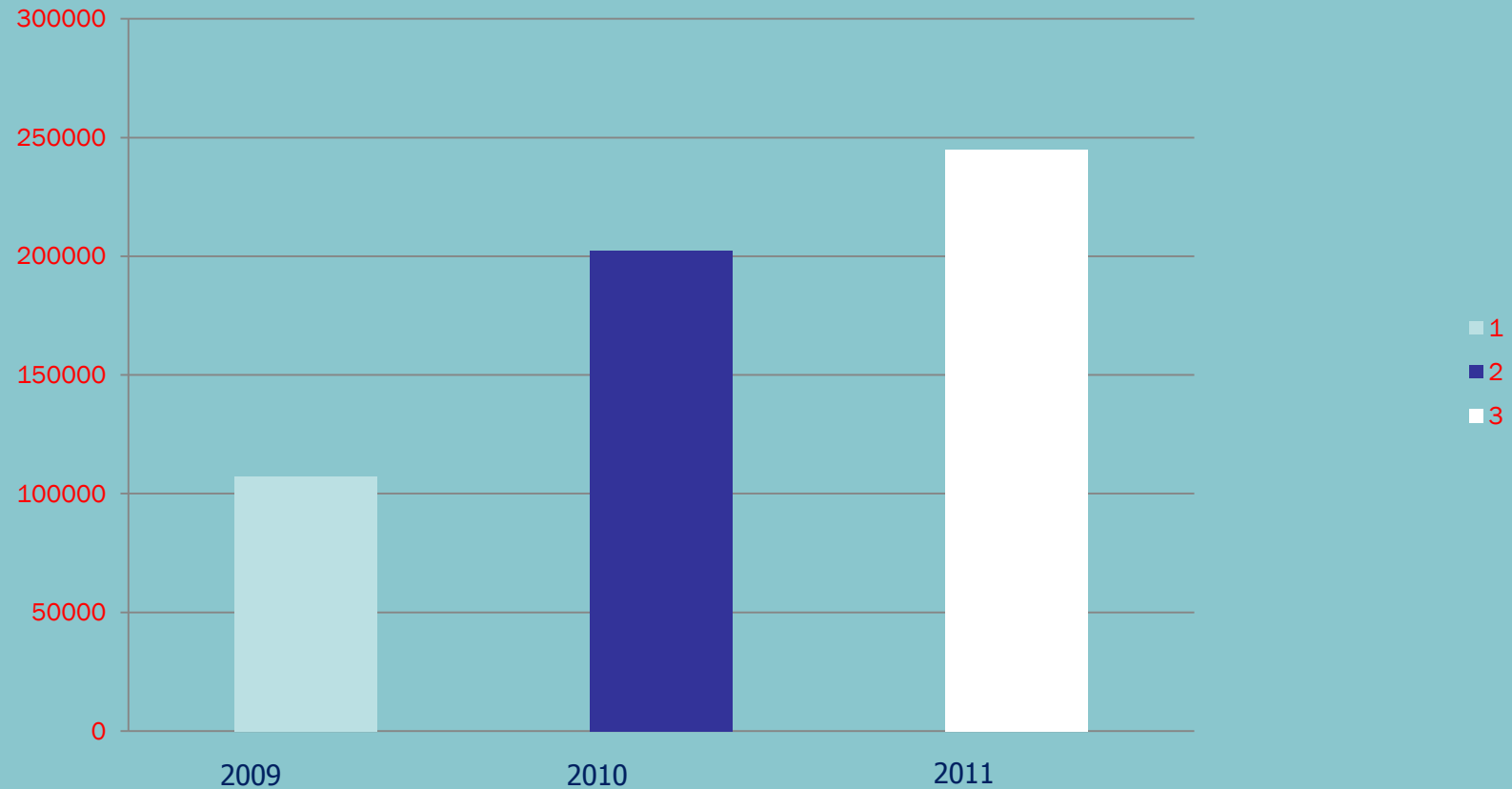
Tracking statistics over one year 2011



Rate of decline in escorted trucks



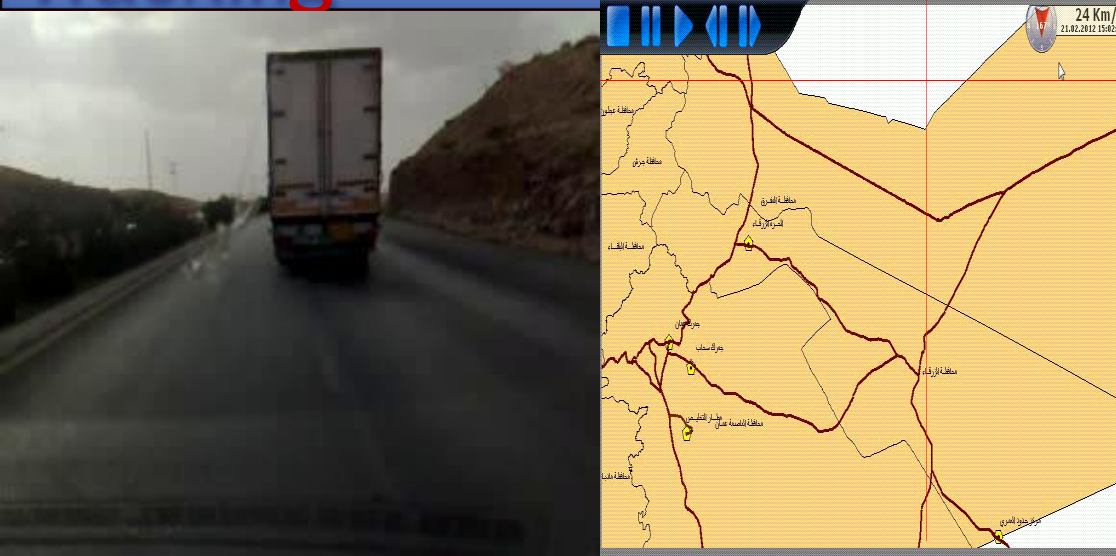
Tracked transit trips 2009 to 2011



- Jordan customs imposed a service fees of 30 \$ per trip for trucks that are willing to use the system.
- This made the system pay for it self and for future development.

Electronic Tracking

Traditional escorting



Main Advantages of this system

1. Direct contribution to Security and facilitation of International Trade Supply Chain as the system introduce maximum possible facilitation without sacrificing the security control.
2. Reduce smuggling in transit trucks passing through the kingdom

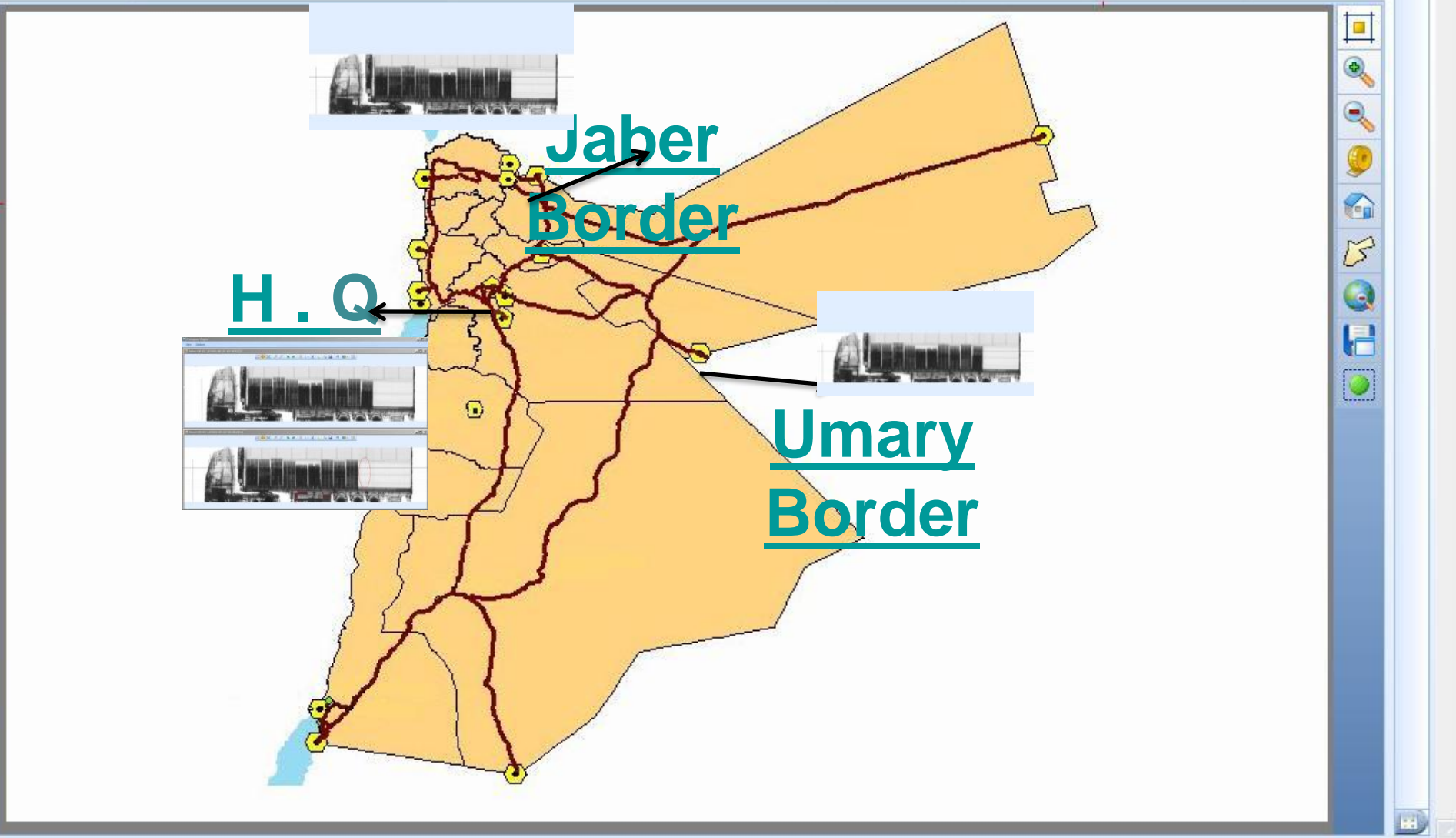
3. Immediate release of transit trucks from the entry point after completing customs procedures, without a need to wait for truck convoy and traditional escorting.
4. Reducing the waiting time of transit trucks inside custom houses from an average of 8 hours to few minutes.
5. Accelerating transit trucks movement across the kingdom and accordingly, reducing the cost of guarantees presented from freight and clearance companies by reducing their time release.
6. Reducing physical inspection of goods at points of entry and exit

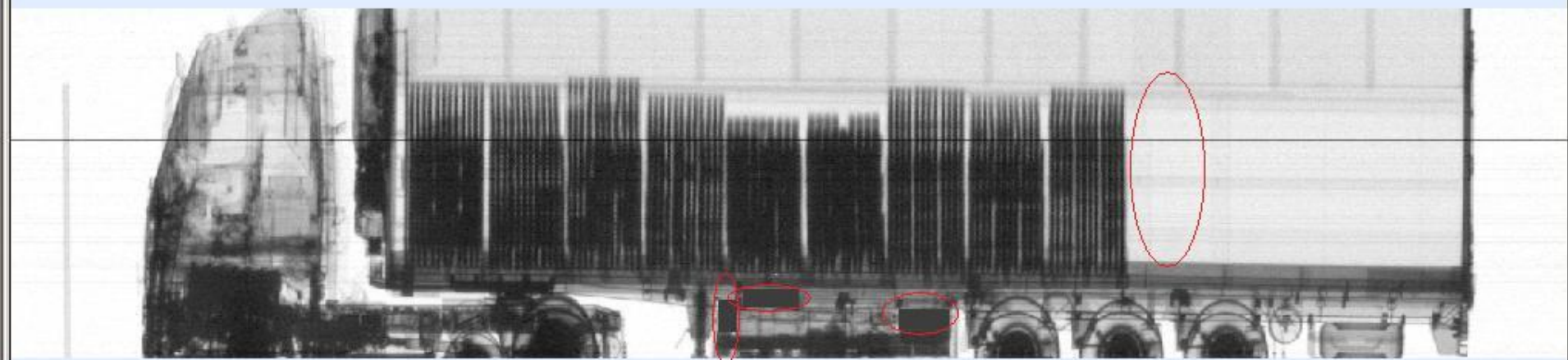
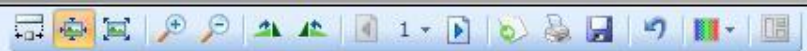
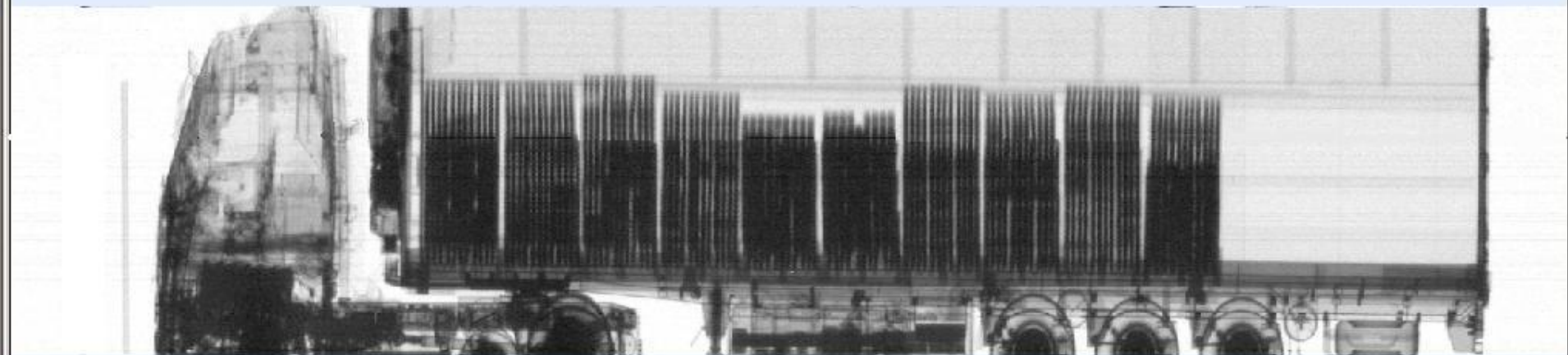
- 7. Saving time and costs for the private sector.**
- 8. Excellent tool to reduce and some time eliminate the congestion of containers at Aqaba sea port.**
- 9. Increasing the volume of transit trade across the kingdom and adoption of Jordan as a fast transit country among countries of the region.**

Future development

X-Ray integration

1. The system has been connected to the X-Ray Cargo scanners at each border crossing.
2. The x-ray images of the scanned trucks is attached to the trip report.
3. The trucks that commits violation during the journey will be scanned again at the exit border and the x-ray images is compared, before allowing the trucks to leave the country.





Back

- **Risk analyses Integration**

1. A risk analyses system will be developed and integrated with the tracking system for the assessment of the risk level of each violation committed by the trucks during the transit journey
2. These assessment will be used to mobilize the customs patrol to inspect each violation.

Lessons learned

- Operational lessons:
 - It has been noticed during the last year that the number of smuggling cases by transit trade reduced significantly, and as well, the number of organized smuggling within customs centers has increased, which indicate that the tracking system deters the smuggler from handling the smuggled goods during the transit trip,

the goods have to reach the customs centre (border or internal) and the smugglers need to try to handle their smuggled goods by organized means inside the customs centre.

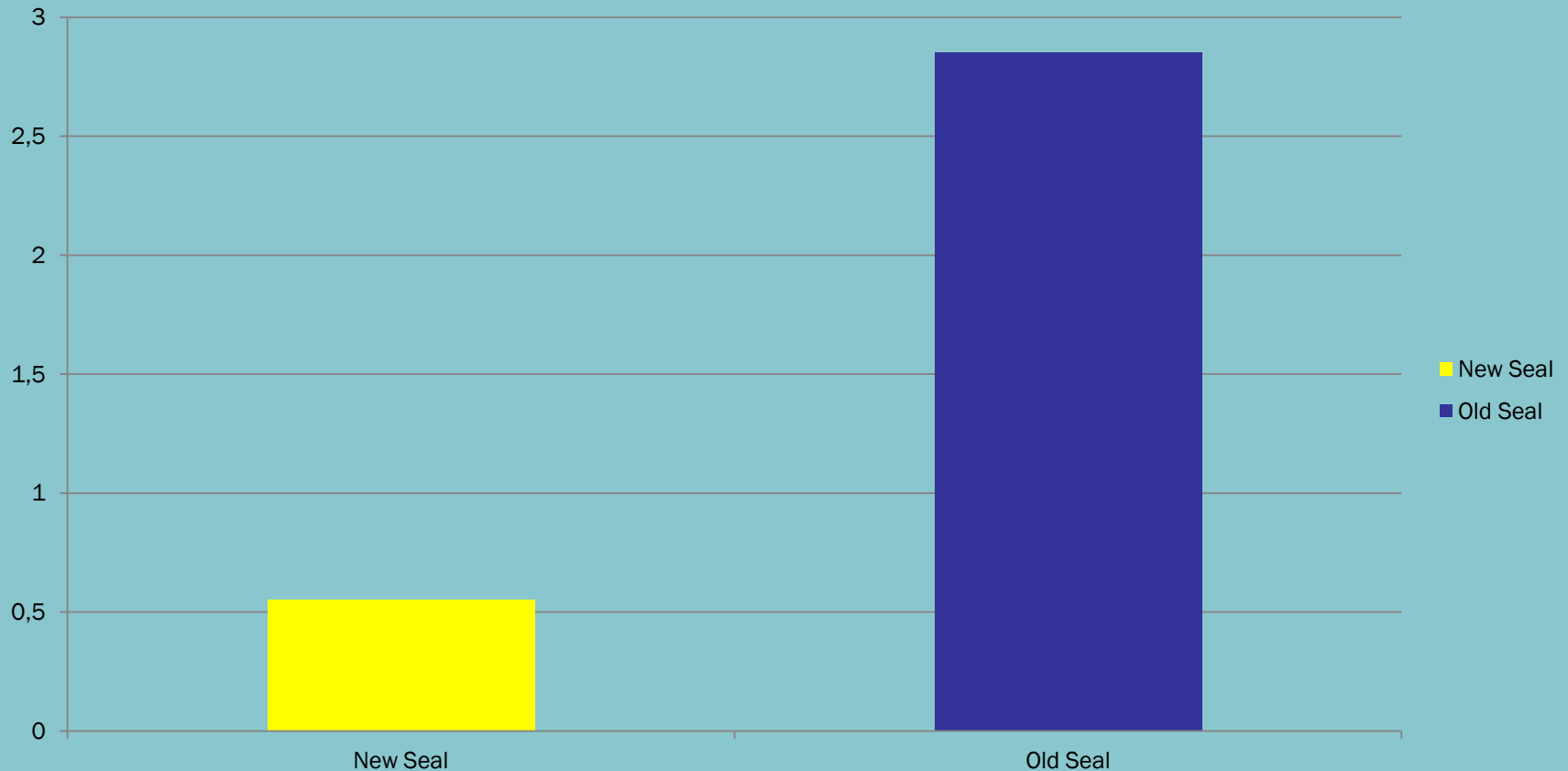
- As some of the customs centers terminate transit trips more than initiated trips, extra tracking units and electronic seals at these centers must be transferred to other customs centers that initiate more trips than are terminated

Handling the extra units and transferring them between customs centers need to be well planned and at accurate time intervals to avoid any shortage of tracking units at high traffic centers.

-The patrol cars that investigate the violations committed by the transit trucks must be distributed along the transit route to ensure that any truck can be reached in less than 30 minutes.

False alarm rate per seal per trip

False Alarm Rate



Aqaba Port

- Tracking system exhibit an excellent tool to reduce and some time eliminate the congestion of containers at Aqaba sea port.
- Container are monitored and transferred to internal port for inspection and evaluation



More information

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