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**CARGO SCANNING SYSTEMS:
Border Security and
Revenue Collection**

Encouraging trade

Robert Goodhouse of AS&E explains why Abu Dhabi Customs saw the implementation of a world-class security programme as a strategic priority for encouraging trade

There is a government-wide transformation going on within Abu Dhabi, the largest Emirate in the United Arab Emirates (UAE), which is designed 'to restructure and develop government to take the community to the next level of prosperity, improve the quality and service excellence of all the public institutions, and keep pace with global economic growth', according to HH Sheikh Mohammed Bin Khalifa, Chairman of the **Department of Finance** and Member of the **Abu Dhabi Executive Council**.

As part of this agenda, Abu Dhabi's Department of Finance released a five-year plan in 2008 which includes 12 strategic priorities designed to modernise and reprioritise Abu Dhabi's financial system. This plan, developed under the guidance of HH Sheikh Mohammed Bin Khalifa, and HE Hamad Al Hurr Al Suweidi, Undersecretary of the Department of Finance, ties security very closely with the economic success of Abu Dhabi, and as a means for encouraging trade.

The **Abu Dhabi Customs Administration (ADCA)** has been tasked with implementing the strategic priority to 'protect borders and citizens, facilitate trade, and collect revenues through effective Customs'. Their comprehensive and ambitious plan is focused on providing minimum trade restrictions with maximum security, utilising the best and latest technologies and practices worldwide.

Since the plan's inception in 2008, ADCA has made significant progress towards encouraging trade and providing state-of-the-art security. It is developing an integrated security solution for borders, seaports, and airports with risk-management strategies and world-class security equipment. ADCA is currently one of the few organisations leveraging risk management in the Middle East as part of its security procedures. All systems are tied to a central Network Operations Centre (NOC) that manages and processes risk analysis and also performance measurement.

Encouraging trade

ADCA's first steps in implementation have focused on encouraging trade. These are modernisation efforts to introduce new and convenient processes and procedures for Abu Dhabi companies engaged in import and export businesses, and have led to dramatic increases in Customs revenue. They include:

- a 'Gold Card' pre-clearance programme, which rewards well-run and compliant businesses in Abu Dhabi with a fast, electronic means to expedite Customs clearance
- bonded warehouses, which allow importers to store goods with no payment until they are entered for home consumption in the UAE, or are re-exported
- additional Customs lanes, which are designed to expedite traffic flow, expanding from one to up to eight traffic lanes in some locations.

Targeted risk analysis

The primary goal of ADCA is to achieve manifest verification, confirming the contents of a vehicle or container match the manifest. However, as Abu Dhabi is a key commercial economic hub, ADCA must also face the possible threat of explosives, bombs, nuclear devices, weapons, drugs and alcohol, stowaways, and other contraband entering the Emirates' borders.

Each vehicle that crosses Abu Dhabi's border is subject to a targeted risk analysis at the central NOC. The NOC gathers all information about a vehicle – such as manifest information, licence plate verification, and pre-screening images – and sends it to the risk management department. All information can be analysed to create a profile of goods crossing the border, as well as a profile of the numerous companies transporting the goods.

Much of this information is gathered before companies get to the border, so that they can use the data to generate risk analysis in a feedback loop. This data allows them to determine the threat level or illegality of any vehicle;

Robert Goodhouse is the Vice President of Middle East/Africa at American Science and Engineering Inc (AS&E).

Contact:
Robert Goodhouse
Tel: +1 978 262 8700
Fax: +1 978 262 8804
Web: www.as-e.com



Picture 1: OmniView Gantry Cargo and Vehicle Inspection Systems

'ADCA is developing an integrated security solution for borders, seaports, and airports with risk-management strategies and world-class security equipment'

isolate and concentrate on high risk freight forwarders or goods coming through the border; and allow other vehicles, typically 'Gold Card' holders, to go through the 'Green Lane' system and quickly pass through Customs. Vehicles and goods that are identified as suspicious or high-risk are then put through the 'Red Lane' system for high-intensity screening. This risk analysis allows ADCA to sustain an ongoing low-risk environment and reduce the number of vehicles that go through high-intensity screening devices or scanners.

When fully completed, NOC's vision

is to maintain control of all border crossings and monitor in real-time each location and their screening equipment, with instant access to all of the images from each vehicle passing through Abu Dhabi borders at four border sites, including the Ghuweifat Customs site, the largest border crossing in the Middle East, neighbouring Saudi Arabia.

World-class security: technology

Once a vehicle comes to Ghuweifat, there are a wide variety of technologies from a host of vendors that Abu Dhabi Customs utilises to gain essential information about that vehicle to ensure the safety of Abu Dhabi and its people.

X-ray detection technology solutions from US-based **American Science and Engineering Inc. (AS&E)** make up the largest and most visible portion of the security measures at Ghuweifat. When officials from ADCA first visited AS&E's facilities in the US and tested the technology firsthand, they found AS&E's products, with its proprietary *Z Backscatter* technology, to be the best for cargo material discrimination and advanced detection of everything from explosives, weapons, drugs to contraband, while optimising

throughput and safety.

Saeed Al Muhairi, General Manager, Department of Finance, General Administration of ADCA, commented: 'The AS&E products scan vehicles and provide an unbelievably clear image of what is inside. It is just like viewing a photo and is easy to understand what you are looking at. The quality is the best we have seen, and AS&E was also the only major security vendor to pass our rigorous tests, detecting weapons we had cleverly hidden in vehicles that other competitors' products missed. No other company could offer this type of view or detection.'

At the Ghuweifat Customs site, AS&E systems provide three key components of vehicle clearance: the *Z Backscatter Van (ZBV)* is used for pre-screening to isolate empty vehicles; the *OmniView Gantry* multi-view, high-energy inspection system is used for high-intensity, comprehensive cargo screening; and the *Z Portal* screening system is used for multi-view, passenger vehicle screening. This x-ray technology is used in combination with other technologies for maximum threat and contraband detection. These other technologies include trace detection



Picture 1: AS&E's Z Portal Vehicle Screening System

'High-risk passenger vehicles enter the 'Red Lane' system through AS&E's Z Portal Vehicle Screening System'

systems, transit car tracking devices, under vehicle camera systems, license plate readers, and radiation threat detection portals.

All vehicles entering Ghuweifat, both cargo and passenger vehicles, are pre-screened by AS&E's ZBV mobile inspection system for initial screening, to add more information to the data already gathered regarding vehicles' risk analyses. The ZBV has become well known in Abu Dhabi – multiple agencies are interested in using it due to its mobility and versatility with its drive-by capability and ability to be redeployed at a new location at a moment's notice. The ZBV is able to isolate empty cargo vehicles, allowing them to move forward to the Green Lane system and quickly enter Abu Dhabi, as well as identify those vehicles requiring additional inspection in the Red Lane system.

Suspicious goods vehicles requiring the 'Red Lane' inspection pass through one of two AS&E OmniView Gantry Cargo and Vehicle Inspection Systems for high intensity screening (see Picture 1). OmniView provides multi-view high energy transmission and penetration into dense cargo in combination with three Z Backscatter x-ray views – without the need for an exterior building or heavy shielding.

Passenger vehicles are also subject to the risk analysis and the analysis done is similar to cargo vehicles. High-risk passenger vehicles enter the 'Red Lane' system through AS&E's Z Portal Vehicle Screening System (see Picture 2) designed for high-traffic, high throughput, drive-through environments – providing a three-side

view (left, right, and top down imaging) of passenger vehicles which is safe for drivers and operators.

Next steps

With performance monitoring being a key focus for all of Abu Dhabi's Department of Finance Strategic Priorities, Abu Dhabi Customs is especially interested in keeping close watch of their progress, according to Mr Al Muhairi.

'We have already received much recognition for Ghuweifat, and look forward to being fully operational there later this year and at our other border crossings. We have designed Ghuweifat to be an international commercial trade hub and the site has already gained recognition from the **World Customs Organization (WCO)** as a centre of excellence, whose members plan to visit the site within the coming months, viewing it as a model to obtain ideas for other government bodies and countries. Cutting edge technology, such as AS&E's Z Backscatter x-ray solutions, will play an important role in the success at this location, as well as for the additional projects planned for the future.'

Mr Al Muhairi continued: 'In an age of such fierce global economic competition, we are pleased that security is seen as a key priority for the transformation of Abu Dhabi's government – this top level attention to security as a means to encourage trade will ensure high level performance and accountability, and we look forward to proving how this will ultimately bring more business to the region.'

