



# Defense Fuels Logistics in Theatre

## Inventory Accounting, Reconciliation and Tactical Fuels Management



**Varec Tactical Fuels System:**  
Tactical Mobile Computer, Tactical Fuel Gauge,  
Tactical Interface Converter and Tactical Data Unit



The North Atlantic Treaty Organization (NATO) is an intergovernmental military alliance between 29 independent member countries across North America and Europe. NATO constitutes a system of collective defense whereby its member states agree to mutual defense in response to an attack by any external party.

Three NATO members (the United States, France and the United Kingdom) are permanent members of the United Nations Security Council. The Allied Joint Force Command Brunssum is a NATO command at Brunssum, the Netherlands. The Resolute Support Mission (RSM), a follow-on mission to the International Security Assistance Force (ISAF), is a NATO-led mission consisting of over 13,000 personnel in the Islamic Republic of Afghanistan.

### SITUATION

Fuel provision and management for NATO forces in Afghanistan for the ISAF and subsequent RSM has been heavily dependent on contractor support. Theatre level oversight of these contractors is handled by a small group of management personnel and fuel technical officers from the NATO Support Procurement Agency (NSPA) and Joint Forces Command (JFC) Brunssum.

Given the operational tempo and scale of the Afghanistan theatre, effective oversight of the contractors managing bulk fuel installations, stock levels and monthly provisioning was extremely challenging. NSPA wanted to leverage the latest technology to assist its team in managing all aspects of the fuel supply chain from the Afghanistan border entry points to receipt in the main Bulk Fuel Installations (BFIs) at NATO bases. This included finding a solution that would manage inventory levels and record financial transactions for NATO member nations in theatre, as well as report any fuel related issues. In order to meet the operational requirements imposed by the Afghanistan Ministry of Finance, including the audit and taxation rules, it was critical for NSPA to be able to accurately account for fuel stock levels and transactions.

### SOLUTION

In early 2014, NSPA selected Varec to provide a fuels management solution to replace its manual entry, paperbased fuel accounting system. NSPA was transitioning the fuel contracts from the NATO-developed Basic Ordering Agreements (BOA) to new contracts that would commence on 31 July 2014. NSPA's highly-aggressive timeline required the automated solution be fully operational by the go-live date.

Varec's FuelsManager® Defense software, a three tier solution, would be utilized for the full end-to-end transaction capture. FuelsManager mobile, installed on handheld devices and combined with mag-stripe printers, are used to capture the transactions at the point of sale.

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Any NSPA-issued fuel card or US DoD AIR card, once swiped on the card reader device, accurately identifies the customer at the flight line or the retail point of sale. The equipment barcode, QR code or RFID tag is scanned to identify the base Life Support Equipment that is being refueled. A second electronic signature, and scan of the customer's personal ID card, can also be captured to further identify the fuel recipient.

At each main military installation, transactions from each handheld device are synchronized to a FuelsManager Defense laptop via docking station to provide a consolidated list of all transactions at that particular installation. The transactions at each installation are then synchronized, via secure satellite communications, through to the FuelsManager Defense Enterprise servers at NSPA headquarters in Luxembourg. The Enterprise servers provide a summary view of the entire theatre's fuel operations, while also enabling management to drill down to view transactions at a particular military installation. An interface to NSPA's SAP financial accounting system was also developed to enable accurate and timely invoicing of NATO nations that were issued fuel.

Varec provides liquid level measurement of military collapsible bladder tanks in theatre through its TacFuels® solution, the only automated bladder tank gauging solution on the market. To assist in fraud deterrence and detection, FuelsManager Defense also has the capability to support an in-transit visibility solution, which includes GPS monitoring of mobile assets and fuel volume.

## RESULTS

The full end-to-end solution, described as the NATO Fuel Monitoring System (NFMS), was implemented and operational as required at Harmid Karzai International Airport (HKIA) on 31 July 2014. The NFMS was expanded to other military installations in Afghanistan at Kandahar Airfield (KAF) and Herat on 1 December 2014. Since the NFMS go-live, over 1 million fuel transactions have been recorded. Users are able to query the system for summary data over a date range or drill down to the specifics of a particular transaction. This accuracy has been extremely beneficial not only to NSPA and JFC, but also the fuel contractors managing the fuel installations in Afghanistan. They are now able to provide a complete list of all transactions as part of their taxation submissions to the Afghan Ministry of Finance.

The flexibility of the NFMS has enabled it to be expanded to support other NATO missions, such as the Enhanced Forward Presence mission in the Baltic States. NSPA also utilizes the NFMS to record flight line services requests and fuel issues for NATO countries at over 3,000 airports globally. In addition, the vast amount of operational data that has been recorded in the NFMS since the go-live date has been highly useful in identifying consumption trends, and provides valuable planning data to enable better forecasting of fuel consumption in future conflicts.



FuelsManager on IECEx Certified Handheld and Fuel Receipt from Mag-Stripe Printer



Equipment Barcode in Theatre Being Scanned with Handheld Device



Tactical Data Unit in Theatre used to Collect Pressure and Flow Measurements from Gauges



TacFuels Automated Tank Gauge on a Collapsible Bladder in Theatre