

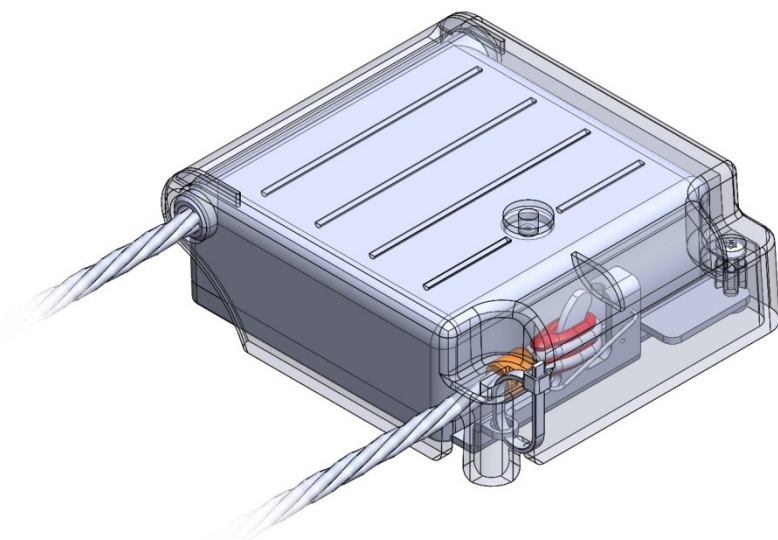
## Background

Technical United were a solution provider to Saudi customs providing solutions to the examination of cargo and vehicles on entry to Saudi Arabia. Saudi Arabia has land borders with seven different countries and a large number of major sea ports. A significant burden for Saudi customs is the inspection of cargo on entry to the country which is intended for transshipment across Saudi Arabia and for which intended the shipping destination is outside the country. These shipments require inspection on entry and exit to ensure undeclared or illegal goods are not entering the country.



## Solution

With Technical United, Tactiq developed a tracker and lock system. This system allowed a tracker to be installed in the cab of goods vehicles making transshipments and the installation of up to 5 locks on the cargo of these vehicles.



The locks communicated to the tracker indicating the status of each lock. The tracker communicated to a server the location of the vehicle and the status of locks throughout its journey. At the exit port the journey of the vehicle can be examined and the status and history of the locks. If the route and time taken are appropriate and the locks have not been opened since being fitted at the entry port then no inspection is necessary.

Tactiq worked with Technical United to define the architecture of the system and communication protocols. Tactiq developed the lock and tracker electronics and software and working with our design partner the industrial and mechanical design.

The product includes 3G communications using GPRS, GNSS based location system and ISM based communication between locks and tracker. Trackers stored messages for later transmission if communication was temporarily unavailable ensuring reliable reporting of routes and status. Locks which were opened or failed to communicate for an extended time period generated alert messages that the end user could use to respond proactively to suspicious events. The locks had measures to detect tampering and ensure unauthorised entry would be detected even if unable to communicate and subsequently closed.

Both elements were battery powered the tracker rechargeable from the vehicles via a standards charger. The locks having a battery live in excess of 5 years and capable of operating at extreme temperatures.

Tactiq managed the manufacture, assembly and test of the units using UK based electronics manufacture and moulding. The system has been successfully deployed in Saudi Arabia providing a significant reduction in labour for the end client.