**OSCT CONTEST & Serious and Organised Crime S&T Research Call, October 2015**

**Requirement of Research: Threat Detection in Fast Parcels (HOS/15/051)**

Background

The Home Office OSCT Science and Technology Borders Programme has been developed following wide consultation with UK Border policy and operational stakeholders across Government. It aims to address some of the main threats to the border, as presented by the National Crime Agency, that are from contraband such as firearms and Class A drugs.

Whilst there are a variety of transport methods for these contrabands, there is agreement that Fast Parcels are a significant priority as there is a body of examples where this method has been used for criminal activity and agreement within government that this method constitutes a vulnerability.

The overarching aim of the Borders Programme is to reduce the risk to the United Kingdom from criminal or terrorist activity by reducing the illegal movement of goods (‘smuggling’) at the border; while facilitating the free movement of legitimate goods.

Inbound opportunities

A significant number of Fast Parcels entering the UK use aviation, with the remainder generally entering in Heavy Goods Vehicles (or sometimes smaller vehicles) from the continent. International regulations require that all inbound goods entering the UK via aviation are screened for aviation security purposes – i.e. to detect threats to the aircraft such as explosive devices or compressed gas cylinders.

There may also be opportunities to detect firearms (directly or indirectly) at the commencement of the inbound leg of a Fast Parcel’s journey – i.e., when it is outbound from the supplier to the customer (who is based abroad) to the Fast Parcel Operator, before the item enters the United Kingdom through the Fast Parcel Operator’s network.

Exploitation

After entering the United Kingdom, the larger Fast Parcel Operators may distribute parcels through a distribution ‘hub’ – which would generally use belted infrastructure to sort and move parcels in a semi-automated way in a warehouse-style building . The smaller distributors may not use such automation though, and use a more manual approach to sorting and moving parcels. Any new technological methods must be compatible with as much of this distribution infrastructure as possible and either be cost effective enough for widespread deployment or be mobile to enable Border Force staff to use the technology at a range or locations.

To enable effective exploitation, any approach has to either reduce or be neutral to the burden on staff-resources within Border Force and the Fast Parcel Operators. The approach would also need to have no negative impact on the Fast Parcel operation (at the distribution hubs or elsewhere) or, ideally, increase the flow of parcels through the system by facilitating better targeting of high risk illegal parcels by detecting firearms (and/or other contraband) efficiently.

Aim of this call

The aim of this call is to develop innovative ways to screen or detect the presence of firearms (and other contraband) in Fast Parcels.

**Requirement**

**Essential: To develop innovative approaches for screening and detecting firearms entering the UK in Fast Parcels.**

**Desirable: To develop innovative approaches for screening and detecting other types of contraband entering the United Kingdom in Fast Parcels.**

*Note: The priority is firearms, but detection techniques that can also detect other contraband are encouraged.*

*Note: This call is focused on Fast Parcels, although we are aware that solutions may also be relevant to international post entering the United Kingdom. Where this is the case, we may also seek opportunities (outside of this call) to exploit solutions in this market with the supplier.*

What we are looking for in Phase One

Novel, innovative approaches that have potential to significantly improve capability to:

* Screen / Detect a range of contraband in Fast Parcels
	+ The priority is firearms (whole weapons, components and/or ammunition)
	+ Other contraband (e.g. drugs, large amounts of cash) are of interest
* The proposal needs to consider how the technology could be exploited and used operationally by either Fast Parcel Operators as part of their systems or Border Force during the brief window of opportunity they have to search fast parcels on arrival in the UK
* The solution should have no adverse impact on parcel throughput or staff resource.

We are deliberately not setting highly specific, prescriptive requirements. We want new, innovative thinking.

Definitions

For the purposes of this call, the term ‘Innovation’ means, ‘applying existing technology and/or approaches in new areas, or developing new approaches and/or technology’.

A ‘Fast Parcel’ is defined as any express couriered consignment. The consignment may be any size (from small packet up to large pallet – or bigger). For the purposes of this call parcels can be assumed to be no larger than 75cm x 75cm x 75cm.

For the purposes of this call ‘Firearms’ are considered as: Any firearm from a handgun up to automatic assault weapons in fully assembled or component form, or ammunition. One parcel may contain all or just one of these components.

The ‘Detection’ process should provide a timely alert to a user of the likely presence of a firearm, or component or article of ammunition thereof, in a specific parcel.

The ‘End users’ of technology developed under this call might be (depending on a range of factors including cost, size, portability, detection performance, etc.) either UK Border Force or the Fast Parcel industry. Suppliers should consider how their potential solution might be taken up by the Fast Parcel Operators themselves.

For the purposes of this call ‘Contraband’ is considered to be illegal drugs, tobacco, cash, passports and counterfeit goods.

Data analytics

Although data analytics may present opportunities to detect the presence of firearms in Fast Parcels, bids that purely focus on data analytical approaches will not be funded out of this call.