The ‘Swiss Army Knife’ Approach to Border Control

Multitasking in a Multi-Threat World

WIBC Uppsala 2013
The presentation is in 5 parts and summarises the conference paper. The concept of the 'Swiss Army Knife', multi-technology approach, is really just the logical extension of progress in border control technology.

The introduction of biometrics, electronic passports, baggage and people scanning, fast online databases and local and wide area networks, is set of tools for increased efficiency and effectiveness in clearing passengers and freight at borders.

But these techniques and technologies still seem to be used singly and in different parts of the border clearance process.

So, we start with a look at the problems which border control agencies all have
The problem

Different border agencies each have different responsibilities - and different technologies to achieve their business objectives.

The trend towards ‘integrated border management’ means that agencies need to work together or to form a single agency (eg UK Border Agency, US Bureau of Customs and Border Protection...)

Passengers and crew border crossers are increasing in number every year and demand faster, more convenient immigration and customs clearance.
“There is a strong antipathy to unnecessary queuing in the developed world and there is a trend, certainly within Europe, is to remove barriers to international travel.”

CHRIS HURREY, WIBC CONFERENCE PAPER, 19 PAGE 1
The problem

Skilled border officers do not get a full picture of each passenger’s risk profile, immigration and travel history, criminal record.

Officers cannot immediately see what each passenger is carrying inside their luggage or on their person.

Officers trained for one purpose (eg passport control) may take time to learn the skills of another (eg customs or anti-terrorism).
“On any inbound flight or ship or vehicle queue there will a small number of potential immigration or customs offenders, security risks or criminals. But which ones are they?”

CHRIS HURREY, WIBC CONFERENCE PAPER 19, PAGE 1
The concept of the ‘multi-tool’

The Swiss Army Knife or multi-tool brings together a number of techniques and technologies into a single tool.

Border officers need a similar approach so that they can handle immigration, customs, crime and terrorism challenges – all at the same time.

The tool might provide them with access to as much information as possible about each passenger, their travel documents, their travel behaviour, their belongings and baggage in one transaction.
The concept of the ‘multi-tool’

The multi-tool allows a single border transaction (eg a ‘FastPass’ automated border control crossing via an e-Gate or a conventional passport check) to carry out a number of simultaneous tasks:

- Check a passenger, travel document
- Make multiple watch list and commercial database checks
- Analyse travel and personal profiles for risk assessment by individual agencies
- Link passengers to X-rays of their baggage and hand baggage
- Look for unusual hidden objects inside clothes
The concept of the ‘multi-tool’

The concept can bring data and images from an number of different sources for analysis by an ABC system (such as ‘FastPass’) or by a border control officer.

Passenger security, carrier reservation systems, fraud-prevention agencies, can present information for officers to drill down into.

Why have lots of tools available for border control located in different places with different access methods when one tool could do?
Technology we already have

Optical-electronic passport scanning

Biometrics – the ability to match live samples with templates already given – eg registered traveller programmes (RTP) (eg Privium at Schiphol, IRIS in the UK).

Watch lists – eg the Schengen Information System, national police criminal databases, the Interpol Stolen/Lost Travel Documents (SLTD) system

Advance Passenger Information (API) and Passenger Name Record (PNR) – used in the UK and Europe, North America etc.
Technology we already have

Open source information and intelligence systems.

Databases of specimen documents eg passports, ID cards to allow instant comparison with passengers’ documents

Scanning equipment to check baggage for hidden dangerous or anomalous items

Scanning and testing equipment for explosives, drugs, cash, meat, tobacco and alcohol. . .
Bringing it all together

What if we could put all those systems and technologies together and use them all during one border crossing transaction?

It’s just DATA.
Imagine border control desks where face and iris images are taken and compared to biometric databases as the passenger speaks to the officer. These are linked to passport scans, watch list check results, API and PNR risk profiling and presented on the officer’s screen.
While all this is happening, a passive millimetric wave scanning system is looking for objects concealed beneath the passenger’s clothes and ‘sniffers’ are detecting odours and traces of chemicals from around the passengers.
As the officer speaks to the passenger, cameras and sensors monitor the passenger’s body temperature, blood-flow in the face and micro-musculature movements, microphones record the passenger’s responses and analyses the voice prints for signs of stress.
The next decision is the officer’s alone: To admit the passenger or send them to secondary examination. If the latter, a summary of the information and results goes automatically to the secondary examination area.
... seeks and extension of stay; arrested, brought before a court, sent to prison; seeks state-funded medical treatment or social security benefits, seeks employment, driving licence etc. In these circumstances the passenger’s identity (as used on arrival) and immigration status can quickly be determined.
When the passenger leaves the country then the carrier’s check in system or port security system can inform the border agency automatically that the passenger has departed. Passive biometric systems such as face recognition and stand-off iris can ensure that the body who entered the country is the one who leaves.
The future

A multi-technology, multi-use toolset may still be science fiction – like horseless carriages, flight and organ transplants.

Research and prototyping is required to determine whether these discrete technologies, now used separately, will work together.

In addition to practicality there are issues around privacy, data protection and how much intrusion by the State is justified.
The future

The main questions facing a concept like the multi-tool approach:

1 Could it really work?

2 Could it work in the border agency’s physical, legal and ethical environment?

3 Could there be there any real operational and financial benefits?
The ‘Swiss Army Knife’ Approach to Border Control - 20

Special thanks to Finland’s VTT for presenting this topic

Questions to the author:

Chris Hurrey

email  chris.hurrey@ntlworld.com

mobile  +44 7969 90 71 93