

VIII. Évfolyam 2. szám - 2013. június

József Padányi – György Vass

padanyi.jozsef@uni-nke.hu – gyorgy.vass@mfa.gov.hu

BANKNOTE TRACKING AS A TOOL FOR COUNTER TERRORISM FINANCING

Abstract

Banknote tracking could be a useful tool for counter terrorism financing upon the improvement of banknote scanning networks. The article: introduces the international FATF standards that give background for the improvement; provides an overview about the banknote scanning technology and new developments; as well as after analysing the weak points, offers options for the way forward in making the mentioned network more effective.

A bankjegyek nyomon-követése hasznos eszközként tudna szolgálni a terrorizmus finanszírozása elleni küzdelemben; ám ehhez a bankjegy-szkennerek hálózat fejlesztésre volna szükség. A cikk: bemutatja a FATF nemzetközi sztenderdjeit, melyek háttérrel biztosítanak a fejlesztés számára; áttekintést ad a bankjegy szkennelési technológiáról és az új fejlesztésekről; valamint, a gyenge pontok elemzése után, opciókat vázol fel, melyek mentén az említett hálózat hatékonysága növelhető.

Keywords: *FATF, banknote, tracking, terrorism, financing ~ FATF, bankjegy, nyomon követés, terrorizmus, finanszírozás*

INTRODUCTION

Tracking banknotes is an ‘old’ tool in the hand of investigation and intelligence services. It is a useful help in ransom cases, to make criminal cooperation networks and routes visible or collecting data about suspicious elements. To use this tool, services need to get information from spots where banknote identification can or have to be done. Mainly these spots are banks that by law and by their own interest have to verify banknotes as non-counterfeited. In general, retailers, shops, businesses are not prepared to do so. That means banks can connect to banknote scanning networks and databases of counter terrorism authorities but the lack of shops’ and businesses’ connection gives a limited effectiveness of these networks. This reason as well as national borders (with the lack of appropriate international cooperation) makes an additional limit to the effectiveness of banknote tracking, helping criminals and terrorists to cover their ‘routes’ and activities.

To raise the effectiveness of banknote tracking, the banknote scanning-network with centralized database background both national and international level should be improved, serving as a tool for counter terrorism financing.

The following article at first introduces FATF standards –that give background for improving cooperation at national and international levels – with a highlight on the difficulties of ‘Cash Couriers’ standard. At second gives overview of banknote scanning in practice (features of banknote scanners, new developments of banknote scanning research). At third, after analysing the weak points, offers 4 options as ways forward for the improvement of banknote scanning networks.

FATF

The Financial Action Task Force (FATF) is an inter-governmental body established in 1989 by the Ministers of its Member jurisdictions. The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system. The FATF is therefore a ‘policy-making body’ which works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas. [1]

The FATF has developed a series of Recommendations that are recognised as the international standard for combating money laundering (FATF 40 Recommendations) and the financing of terrorism (FATF 9 Special Recommendations) and proliferation of weapons of mass destruction. They form the basis for a co-ordinated response to these threats to the integrity of the financial system and help ensure a level playing field. First issued in 1990, the FATF Recommendations were revised in 1996, 2001, 2003, and most recently in 2012 to ensure that they remain up to date and relevant, and they are intended to be of universal application.

FATF 9 Special Recommendations

Recognizing the vital importance of taking action to combat the financing of terrorism, the FATF has agreed its 9 Special Recommendations, which, when combined with the FATF 40 Recommendations on money laundering, set out the basic framework to detect, prevent and suppress the financing of terrorism and terrorist acts. The 9 Special Recommendations for countries are as follows [2] (with a shortened, summarized content):

1. Ratification and implementation of UN instruments :*Ratification and implementation of the: 1999 United Nations International Convention for the Suppression of the Financing of Terrorism; as well as the UN resolutions relating to the prevention and suppression of the financing of terrorist acts.*
2. Criminalizing the financing of terrorism and associated money laundering: *To criminalize: the financing of terrorism, terrorist acts and terrorist organizations.*
3. Freezing and confiscating terrorist assets: *To implement measures: to freeze funds or other assets of terrorists, those who finance terrorism and terrorist organizations in accordance with the UN resolutions.*
4. Reporting suspicious transactions related to terrorism: *If financial institutions, or other businesses or entities subject to anti-money laundering obligations, suspect that funds are linked or related to terrorist acts or terrorist organizations, they should be required to report their suspicions to the competent authorities.*
5. International Co-operation: *Each country should assist another country in investigations, inquiries and proceedings relating to the financing of terrorism, terrorist acts and terrorist organizations. Also should take all measures to ensure that they do not provide safe havens for financing of terrorism, terrorist acts or terrorist organizations.*
6. Alternative Remittance: *Taking measures to ensure that persons or legal entities, including agents, that provide a service for the transmission of money or value, should be licensed or registered and subject to all the FATF Recommendations.*
7. Wire transfers: *Taking measures to require financial institutions, including money remitters, to include accurate and meaningful originator information (name, address and account number) on funds transfers and related messages that are sent, and the information should remain with the transfer or related message through the payment chain.*
8. Non-profit organizations: *Countries should review the adequacy of laws and regulations that relate to entities that can be abused for the financing of terrorism. Non-profit organizations are particularly vulnerable, and countries should ensure that they cannot be misused: by terrorist organizations.*
9. Cash Couriers: *Countries should have measures in place to detect the physical cross-border transportation of currency and bearer negotiable instruments, including a declaration system or other disclosure obligation.*

Difficulties in effective implementation of Special Recommendation 9

The problem of detecting cross-border transportation of currency is in the nature that paper banknotes are not giving signals to detectors. Even the best controlled borders - at airports - have no special equipment to do so. Luggage can be scanned by X-ray – giving the possibility of finding a shape of bundle of banknotes – at the same time passenger itself scanned only for finding metal or toxic material (until the given person not suspicious that indicates thorough examination). Other, less controlled borders are not giving these options for finding cash couriers.

Keeping in mind that terrorist acts are not “so expensive”, it would be advisable to go after every possibility criminals could use to prepare an attack. To cover the preparation, it is a good way to keep the financing part quasi invisible which option could be provided for

terrorists by using cash and cash-couriers (as both of them hard to track for counter terrorist authorities).

To give an illustrating example: *the Commission established to investigate the 9/11 attacks against the US (9/11 Commission) estimated that those responsible spent no more than USD 500,000 in planning and executing the attacks.* [3] The task of cross-border carrying USD 500,000 in banknote bundle of USD 100 is approximately the same like cross carrying 30 pieces of smart-phone [4] (without the risk of a metal-detector alert) [5]. That means, if only one smart-phone dimension size bundle of USD 100 been carried at a time, more than USD 16,000 can be taken from one to another country that is relatively small amount of money to not find an everyday reason why not been declared by the courier if he or she called for a random examining.

The above mentioned *attack, which included air travel the training of commercial pilots and student grants, might not seem so expensive and the picture is more terrifying is we consider that locally organized car or suicide bombings are much cheaper.* (The Madrid bombings of 2004 are thought to have cost as little as USD 15,000 while the 2005 attacks on London may have cost only some USD 2,000.) [6]

These days cash couriers mean a heavy issue in counter terrorism financing. At the same time we have to admit, if banknote scanning network would be improved by FATF nations, the question of unequipped borders for cash couriers detecting would not be difficult issue. Because it is not the occasional cash courier (who most of the time might be unaware about the real purpose of cash carrying - thought to be a personal favour for an acquaintance who would like to send money to a relative) but the real addresser and addressee that should be traced (and whose identity would easily rest in unknowness upon the capture of the courier). As every scanning gives a mark on the way of a banknote, the more frequently a banknote been scanned the broader knowledge can be gained about the aim of the use of the banknote considered.

Banknote scanners in practice

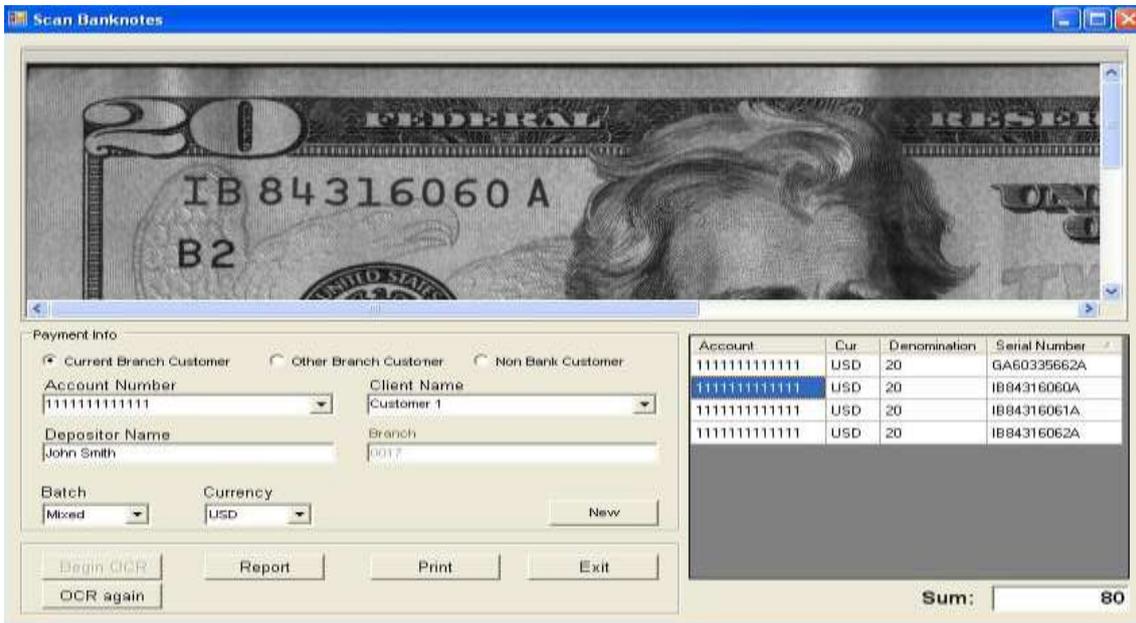
Banknote scanners scan banknotes and retrieves via Optical Character Recognition (OCR) all denominations and serial numbers. The latter will be matched with a database containing all suspicious or fraudulent serials of banknotes. Price of a banknote scanner with serial number detection is from 600-700 USD. [7]

Key features of Banknote Scanners:

(As a result of studying products of three major manufacture companies: BellCon - Denmark [8], Bars GmbH – Germany [9], LevantNet - Lebanon [10].)

- *OCR can be performed either for each payment or each End of Day*
- *Scan Bank Notes along with entering all useful information like account Number, Customer Name, Depositary Name, etc.*
- *Reports can be generated and printed like: All serial numbers scanned by given branch of a bank on a given date, all fraudulent bank notes with all related information.*
- *Can operate with multiple kinds of databases, and Access and has no limitation concerning the number of records in the database.*
- *The application's response time is a factor of the speed of the network environment where it operates. The speed of retrieval/update of data in the database is only affected by the network's speed and availability.*
- *A typical batch of banknotes on a 90 doc/min scanner fully processed by the application (scanned, OCR controlled, corrected and printed) is done in approximately 1 to 2 minutes.*

- Multicurrency system (USD, LBP, EUR, etc.) can be suited to more currencies if needed.
- Read both serial numbers of scanned banknotes in order to minimize manual input for unread banknotes. Also offers the possibility for a second OCR for that purpose.
- Multiple testing criteria: suspected banknotes fraudulent banknotes, banknotes scanned before. Tests are done against a centralized database containing the serials.
- Scan a mixed batch of different denominations (5, 10, 20, 50, 100 USD) without sorting the bills and get the totals / bill + volume of bills / denomination.
- Generate two reports per transaction: images of banknotes / serial numbers.
- An interface with the existing banking system can be done to retrieve customer accounts and to store images and information on the bank's server.
- Review all scanned banknotes along with their images.
- Test any banknote using a simple input of serial and denomination.



1. Figure. Featured screen shots of scanning [9]

Banknotes List

Account: 22222222222222222222 Time: 9:28:30AM
 Name: Customer 2 Date: 7/12/2007
 User ID: admin
 Branch: 007

	Pay Date	Pay Time	Account	Depositor	Type	Serial Number	Suspected
20	20070712	09:27:01	22222222222222222222	John Smith	20	EB60909909I	False
	20070712	09:27:01	22222222222222222222	John Smith	20	EB62130252J	False
	20070712	09:27:01	22222222222222222222	John Smith	20	IB56003601A	False
50	20070712	09:27:01	22222222222222222222	John Smith	50	AL12647530C	False
	20070712	09:27:01	22222222222222222222	John Smith	50	EL27532137A	False
	20070712	09:27:01	22222222222222222222	John Smith	50	EG76010068A	False

2. Figure. Report example of scanning [9]

New banknote scanning development: Transmitting information wirelessly to a scanner research

Researches to further develop the scanning technology of banknotes for making them more traceable and for other security reasons (anti-counterfeit measures) are in process in different part of the world. In Germany (Max Planck Institute of Solid State Research) [10], in Japan (Institute for Advanced Materials Research at Hiroshima University and Department of Electrical Engineering at University of Tokyo) [11] and in Saudi Arabia (Functional Nanomaterials and Devices Laboratory at the King Abdullah University of Science and Technology) [12] researchers achieved considerable results on the same basis: putting nano-electronic devices on (or in) the banknote which can send radio signal to a scanner, that could realize a so called Radio Frequency IDentification (RFID) of banknotes. [13]

These researches could lead to the improvement of banknote scanning technology towards a stage when banknotes do not have to be inserted in a specific scanner but from a distance they can be identified by using wireless technology. This could help the improvement of border control not even mentioned the possibility of mobile scanning which would offer a possibility even to trace banknotes continuously, instead of today's reality when banknote scanners are stationary installed in spots where banknotes are only able to give a 'check-in signal' to databases if they actually have been scanned there.

Four possible ways forward for improving banknote scanning networks

1) At the price of USD 600-700, banknote scanners installation and plus their connection to the relative networks might seem acceptable price for banks. At the same time this extra burden might be too big for small retail shops and small businesses. Taking into consideration that FATF states are not at the same level of strength in an economical aspect, investing that amount of money by a small shop owner seems to be impossible in a not so developed country. So, as a possible way forward could be to provide subvention for banknote scanner acquisition and network connection for smaller players of the markets.

2) Until the prices of banknote scanners are not subjects to subvention, only bank and financially strong business networks can be required to help counter terrorist financing by installing these equipments and connecting them to the relative networks. Regarding to the framework to do so, FATF Recommendation 9 (among the 40 on money laundering) already offers a standard for it: 'Financial institutions should, in relation to cross-border correspondent banking and other similar relationships, gather sufficient information about a respondent institution and assess the respondent institution's anti-money laundering and terrorist financing controls.' According to this standard, not only financial institutions but businesses could be encouraged as well - that could be reflected in the next revision of the standard – as another (budgetary easier) way forward additional to the previously mentioned.

Problem of non FATF member countries

In developed economies, increased supervision and growing vigilance have improved detection of terrorist funds. [14] Terrorist networks, such as al-Qaida, are now frequently working in and through (non FATF member) transition countries, exploiting their weak regulatory capacities and vulnerability to corruption. Inadequate bank supervision, weak anti-money laundering legislation, ineffective law enforcement and a culture of 'no-questions-asked' bank secrecy [15], combine with informal networks of corrupt officials and criminal organisations to help terrorists – and terrorist financiers – avoid detection.

3) One approach as a way forward - that is a complex and mainly political task - to make these countries less attractive for terrorist organisations is to make them introduce FATF standards.

4) Other approach as a way forward might be that business originated from or linked to FATF countries encouraged to introduce FATF standards (fully or partially) in the running of their offices and units established in the considered country. With that, even a non FATF country would be available to help fighting against terrorism financing.

CONCLUSIONS

Banknote scanning networks with centralized databases could contribute significantly to counter terrorism financing. As it was presented in the article, banknote scanning is an easy use (continuously developing) technique that could provide a lot of beneficial information. At the same time, effectiveness of banknote scanning networks are limited because of the lack of sufficient participants in the system. Today such networks are built on the participation of banks. To improve the effectiveness, retailers, shops, businesses should be encouraged to purchase scanners and connect themselves to the relevant networks as well. International standards could be modified by a slight change to encourage their participation. However, acquisition prices of banknote scanners are too high to make it as a basic requirement for running small businesses, shops – that would be needed to improve considerably the usefulness of these networks. Introducing subventions could be a way forward. Though subventions are difficult in fiscally hard eras, improvement of banknote scanning networks has other profitable aspects than the one described in this article (being beneficial for counter terrorist financing). As these tools *could help governments to go after the so-called 'grey-economy' which works mainly in cash and might be underreporting their income* [16] – introducing subventions for improvement might be worth of consideration.

References

- [1] <http://www.fatf-gafi.org/pages/aboutus> 23 January 2013
- [2] <http://www.fatf-gafi.org/topics/fatfrecommendations/documents/ixspecialrecommendations.html> 23 January 2013
- [3] Mark Pieth and Stephanie Eymann: Combating the financing of terrorism: the 'Guantanamo Principle', Countering Terrorist Financing: The Practitioner's Point of View (Mark Pieth, Daniel Thelesklaf, Radha Ivory – editors), Bern, 2009, p. 164-165.
- [4] Dimension of a USD 100 banknote is approximately 155.96 x 66.29 x 0.11 mm (~ 6.14 x 2.61 x 0.0043 inch) with the weight of around 1 gram. (USD banknotes have a uniform size)
<http://www.dimensionsinfo.com/banknote-dimension> 2 February 2013
- [5] USD banknotes paper consist of cotton ~ 75% and linen ~ 25%
<http://www.moneyfactory.gov/faqlibrary.html> 19 March 2013
- [6] Mark Rice-Oxley: 'Why terror financing is so tough to track down', The Christian Science Monitor, 8 March 2006,
<http://www.csmonitor.com/2006/0308/p04s01-woeu.html>
- [7] <http://www.sulit.com.ph/index.php/view+classifieds/id/1825155/Serial+Number+Reader/Banknote+Counter/Verifier?referralKeywords=banknote+serial+number+scanner&event=Search+Ranking.Position,1-1,1#description> 23 January 2013
- [8] <http://www.bellcon.com/banknote-detectors.html> 23 January 2013

- [9] <http://www.bars-technology.de/bars.php?name=viewdownloadbrochuresandimages>
23 January 2013
- [10] <http://www.levantnet.net/SolutionsNote.aspx> 23 January 2013
- [11] <http://www.levantnet.net/files/pdf/LevantNote2011.pdf> 23 January 2013
- [12] Alyssa Danigelis: Follow the money: tiny transistors track cash
http://www.nbcnews.com/id/41762609/ns/technology_and_science-innovation
4 February 2013
- [13] Ute Zschieschang, Tatsuya Yamamoto, Kazuo Takimiya, Hirokazu Kuwabara, Masaaki Ikeda, Tsuyoshi Sekitani, Takao Someya and Hagen Klauk: Organic Electronics on Banknotes, *Advanced Materials*, Volume 23, Issue 5, 1 February 2011, p 654-658
- [14] M.A. Khan, Unnat Bhansali, and Husam Alshareef: High-Performance Non-Volatile Organic Ferroelectric Memory on Banknotes, *Advanced Materials*, Volume 24, Issue 16, 24 April 2012, p 2165-2170
- [15] Steven Cherry: Techwise Conversations - Trackable Banknotes, at Last,
28 August 2012,
<http://m.spectrum.ieee.org/podcast/computing/embedded-systems/trackable-banknotes-at-lastt>
- [16] Kilian Strauss: Combating terrorist financing: are transition countries the weak link?, *Countering Terrorist Financing: The Practitioner's Point of View* (Mark Pieth, Daniel Thelesklaf, Radha Ivory – eds.), Bern, 2009, p. 118-119.
- [17] Maurice Greenberg, William Wechsler and Lee Wolosky: *Terrorist Financing, Report of an Independent Task Force*, Council on Foreign Relations Press, Washington DC, 2002
- [18] Steven Cherry: Techwise Conversations - Trackable Banknotes, at Last,
28 August 2012,
<http://m.spectrum.ieee.org/podcast/computing/embedded-systems/trackable-banknotes-at-last>