

# Developments towards reliable Information from Cash Registers

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While today's cash registers are very sophisticated and able to perform a multitude of functions that facilitate the efficient running of a business, they are also open to abuse. Tax administrations, aware of the risk of electronic sales suppression, cooperate in international expert groups to explore cost effective approaches to counter this fraud. Market parties acknowledge their responsibility. Invited by inspiring projects like INSIKA, suppliers and software developers bring in their expertise to develop reliable and auditable cash registers.

The permanent objective of the Dutch Tax and Customs Administration (DTCA) is to increase, keep or enforce compliance. DTCA aims at cooperation with software providers and other stakeholders to increase the reliability of the chain of information from the first registration in a business process to the complete and just accounting in tax returns. Responsive supervision directs proportionate response to the fiscal conduct and behaviour of the taxpayer and his suppliers and advisors. If necessary the response is firm and might end in criminal prosecution. If possible the interaction is open and constructive.

In the Netherlands producers and suppliers of cash registers recently developed a Standard for Reliable Cash Registers. In the second half of 2012 an independent quality mark authority, "Stichting Betrouwbare Afrekensystemen" will issue a quality mark for reliable cash registers ("Keurmerk Betrouwbaar Afrekensysteem").

Like Information Technology in general, techniques to abuse information by way of electronic sales suppression tends to develop and thus asks for continuous awareness and appropriate response to this threat. Development of reliable information of cash registers benefits of cooperation of stakeholders in projects like INSIKA. Not only by sharing technical expertise, but also by developing common responsibility as a basis for an open and fair market.

## 1 Problem

When dealing with small to medium sized enterprises reports and totals, generated by cash registers, are frequently used as the basis for tax returns. Unless businesses have internal controls that can verify the accuracy and completeness of such records, it is difficult for tax administrations to be sure about the accuracy of tax returns. While today's cash registers are very sophisticated and able to perform a multitude of functions that facilitate the efficient running of a business, they are also open to abuse.

Examples of such abuse may include sales that are not entered on the cash register and entries that are correctly recorded but are manipulated afterwards to suppress sales. Sales suppression is supported by electronic sales suppression facilities in three ways:

- A feature of the cash register is misused, like registering sales in training mode.

- Software programs in cash registers contain features that are designed to facilitate cash skimming (Phantomware).
- External software is used to manipulate data of cash registers (ZAPPER).

Note that the way fraud is committed differs with the size of the enterprise. Skimming cash receipts is an old fashioned tax fraud. A fraud traditionally associated with small or medium sized enterprises. Large businesses with formalized internal control mechanisms, external accountants, and professional management structures do not normally engage in skimming. Skimming frauds thrive when the owner (or a close family member) is the cashier.

Then again; when auditing enterprises, big or small, the audit programme has to cover the weaknesses in internal control and monitoring.

## 2 Rules and Regulations for reliable Cash Registers are not the sole Answer to the Problem

Very small businesses without or with only a few employees often don't need the management information from a cash register to run the business. So if they simply do not enter sales in their cash register it is the easiest way to avoid tax. If you are not aware of this fraudulent behaviour you start to overrate the more technical answers to fight fiscal fraud.

Greece and Italy are examples of countries with strict legal obligations concerning the cash economy. Shops and Retail businesses are obliged by law to use certified cash registers. Cash receipts have to be issued and the client is obliged to take and keep the ticket. Enforcing these obligations is an intensive and thus expensive way of countering sales suppression. If tax administrations do not apply appropriate supervision fraud will continue. In December 2011 the Italian Guardia di Finanza performed an intensive supervision in Cortina d'Ampezzo. While the investigation took place, Shops and Retail businesses showed an increase of sales up to 400 % compared to normal.

## 3 International Awareness

Tax administrations are more and more aware of the fact that although sales transactions are registered in a cash register or Point Of Sales system, this does NOT guarantee that sales are accounted for and end up in

tax returns. This awareness leads to both global and European projects to counter the problem.

In Europe there is a FISCALIS project ZAPAT, (Zappers and Phantomware Activity Team), ZAPAT develops an audit program to discover and prevent fiscal fraud misusing cash registers.

The Organization of Economic Cooperation and Development (OECD) runs a project to counter the automatic sales suppression. In this project the OECD is working out the demands that can be held to reliability of cash registers. The paper on this issue will be issued in 2012 as well.

## 4 A general Model for considering Risks.

The vulnerabilities in terms of electronic sales suppression can be considered as present in specific risk areas of the POS system configuration. Each of these risk areas presents opportunities for sales data to be deleted, changed or, in the case of the actual transaction, not being recorded at all. The POS system suppliers in the Netherlands in conjunction with the tax authorities have developed a model of risks for POS systems in order to stimulate compliance with tax obligations.

The OECD's electronic sales suppression expert group has adapted the Dutch model to provide a general model for considering risks within POS systems. The model has five risk areas, the integrity of transactions, the software, the transaction data, external files and reporting possibilities. The figure 1 illustrates the five risk areas:

The first risk area is the **integrity of the transaction**. To safeguard the integrity of the transactions the cash register must contain measures to ensure that input of the transaction is complete, correct and on time. If input of the transaction is not complete, correct and on time, the system produces unreliable business information with risks in terms of the ability to make the right management decisions and to file accurate tax returns.

The second risk area is the **software** itself. The software needs to be designed to ensure integrity, confidentiality and availability of the process performed by the cash register system. If the system can not ensure integrity, confidentiality and availability, the system would again produce unreliable information with the risks to management decisions and accounting for tax. It is important to ensure that the software operates so as to store all information of all actions carried out on the cash register system and creates a clear

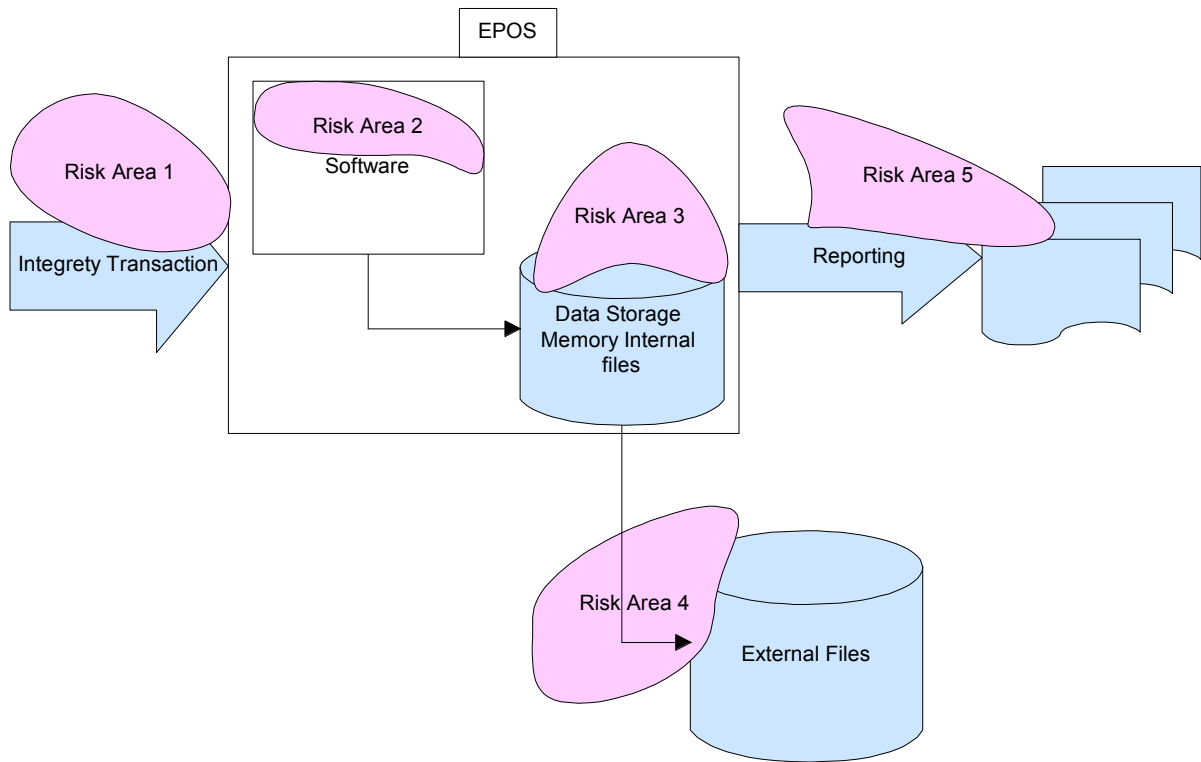


Figure 1: Risk areas

audit trail. This is necessary for effective management and control of the complete business process.

The third risk area is the **transaction data** created by the system for storage and reporting. This information, stored in memory and internal files, is the basis for all reporting and would also be within the scope of data to be examined for audits and investigations. It is in this area that the greatest risks arise of electronic sales suppression software (or other file tampering methods) being used to manipulate this information contained in transaction data.

The fourth risk area, **external files**, is the transfer to and storage of transaction data in offline files needed for example, when the electronic journal in an ECR is full. Generally, countries have laws that require persons to keep for a certain period appropriate books and accounts and this includes the data carriers on which these books and accounts are recorded. In some laws, the books and accounts should be organized in such a manner that it allows the tax auditor to audit them within a reasonable period of time. The external files could also be the files that are transferred on a daily basis from the POS system to the back office system on a separate computer (This is the case in one of the leading restaurant systems). The external files could also include the backup files for the cash register system. The backup files may be stored either

on an external media or on the hard drive within the system itself but in a different folder. The backup files may contain vital information for revealing the use of electronic sales suppression in a cash register system.

The fifth risk area is the **reporting possibilities**. This risk area is strongly connected to the second risk area, the software, which controls the reporting and therefore opens possibilities for manipulation in the design and creation of reports. The reports are important for the management of the business and are used to transfer information into the accounting system, to create tax returns etc. In case of loss of the transaction data, it is very important that the business owner can rely on hard copies of reports that will show all the transaction input and stored in the cash register.

## 5 Market Parties start to pick up their Responsibility

Not only governments care but various stakeholders and market parties are getting aware of the problem and are starting to realize that they have a responsibility as well.

The German working group on reliable cash registers INSIKA is a very successful example of an intensive cooperation between Government and marketpar-

ties. A firm basis to counter abuse of cash registers. With or without new legislation.

The cooperation of Developers, Scientists and the German Tax Administration in the INSIKA project offered society a thorough technical solution for reliable data of cash registers. The fiscal law also developed as part of INSIKA that would give a solid base for the introduction of this solution on the market did not pass political forces in Germany. Then again the technique is shared with governments and market parties in other countries. INSIKA has been a leading example for the Dutch Tax and Customs Administration (DTCA) to cooperate with market parties.

In Italy citizens can put an "app" on their smartphone to disclose suspected tax fraud. The application is to be found on <http://www.tassa.li/>. Tassa Li is Italian for "tax them". The idea is that people want the tax included in the price of their purchases being paid to the tax administration. It is remarkable that this is a private initiative of concerned civilians.

One of the public accounting firms in The Netherlands develops a management information system for the hospitality and catering businesses for the full chain of business processes. Ordering supplies, registration of sales, staff planning, banking up to accounting and filling out tax return forms. The sales registration is developed and supported by a developer and reseller of cash registers. Of course the accountant demands a reliable, complete and auditable cash register report in this chain of information.

Global developers of cash registers start to realize that there is a shared responsibility. In 2012 a big Japanese firm is developing two lines of reliable cash registers for the Dutch and the German market. The cash registers will be introduced on the market in autumn 2012. Obviously the attention that recently is paid to the problem by supervising Tax Administrations in different countries and the fact that this stakeholder has been involved in countering the problem results in the fact that this global player starts to pick up its responsibility.

## **6 The Dutch Tax and Customs Administration is exploring new Approaches**

In the last decade the Dutch Tax and Customs Administration (DTCA) is developing new approaches to maintain fiscal law. The permanent objective of DTCA is to increase, keep or enforce compliance.

Computerized support of financial administrative processes is nowadays changing in a very fast pace.

Online bookkeeping, data storage "in the cloud", and the rollout of Standard Business Reporting (SBR) all lead to new services and service providers.

The Horizontal Monitoring Program for Business and Accounting Software aims at cooperation with software providers to increase the reliability and verifiability of software systems. This goal recently has been depicted in the document "Horizontal Monitoring + Software = Automatically Right from The Start".

The quality of tax returns in the end depends largely on the quality of information throughout the chain. An information chain from the complete and just registration of supplies, through complete and just registration of sales, through complete and just registration of (costs of) staff, through complete and just processing of primary data in accounting and payroll systems up to the complete and just processing of accountings in tax returns.

DTCA is involved in consultations with private parties (like software developers, software resellers and external audit firms) to increase the quality of development of the financial chain from transaction to tax return or declaration.

### **6.1 Reliable Cash Registers Foundation (Stichting Betrouwbare Afrekensystemen)**

On the subject of electronic sales suppression DTCA discussed the problem of sales suppression open and fair with developers, distributors and resellers of cash registers. In several meetings in different settings DTCA explained the difficulties they encounter when they investigate completeness of sales of enterprises using ordinary cash registers. DTCA even stated that in some cases the weaknesses are that apparent that developers risk the possibility to be subjected to criminal prosecution.

Market parties confirmed that cash registers tend to be that flexible that, by lack of a consistent audit trail and other measurements to ensure the integrity of data and reports, most of the cash registers are easily misused.

As solution against skimming developers and resellers of cash registers proposed to develop a quality mark for reliable cash registers. DTCA supports this idea. About 90 market parties subscribed the intention to develop the qualitymark and comply to rules of correct behaviour.

A standard for reliable cash registers has been set. The standard describes four risk areas or management objectives:

1. The integrity of the registration of all events.
2. The software.
3. The storage of the data.
4. The reports and export of the data.

The standard is available at the Reliable Cash Registers Foundation, <http://www.keurmerkafrekensystemen.nl/>.

At this moment market parties, DTCA and public IT-auditors develop a self assessment program for the development of reliable cash registers.

Provided that Tax Administration supervises in a professional and consistent way, market parties aim at gaining market advantage by selling their products with a "Reliable Cash Register Qualitymark".

## 7 Responsive Supervision

The cooperation of the developers, distributors and suppliers to develop and install reliable cash register did not come spontaneous. The last decade DTCA is in different ways raising the awareness of the stakeholders that they have a responsibility in this.

There were several projects to arise attention for the quality of the sales administration of hospitality and catering business. Entrepreneurs and their fiscal advisors were informed in detail about the specific obligations for cash registers to store and hand over data in detail for investigation. When transactions are registered but have not been stored, the standard jurisprudence leads to change the burden of proof to the taxpayer.

This kind of projects led to increase of tax return up to 6 % for the area where DTCA ran these pilot projects.

Parallel to the Horizontal monitoring programme for software developers for cash registers DTCA is developing a supervision programme for the cash economy. The main idea in this programme is that any action of DTCA to maintain the law is a direct and in proportionate response to the fiscal conduct and behaviour of the taxpayer and his suppliers and advisors.

### 7.1 Responsive Supervision on the Detection of Phantomware in a Cash Register.

In 2010 an important development in the cash economy took place. The Dutch Fiscal Crime Unit, called FIOD, investigated a developer of points of sale. There

were strong indications that one of the systems developed and sold by this entrepreneur contained zapper software. The entrepreneur is subjected to criminal prosecution.

The administration – including a client list – was confiscated. With this client list the Tax administration started an inquiry to the compliance of the clients on that list. Therefore an exploratory inspection was conducted by making copies of the data of the POS-systems from a representative group of clients. The results showed a normal compliance rate. About 85 % did not use the zapper module, 15 % however did. The trouble was to find them without using unnecessary force and misuse of means. Therefore a strategy was developed and a policy rule published.

The strategy was to ask all relevant clients of the developer to make a statement about the type of cash register they used, the actual usage of the zapper module and their willingness to repair fiscal damage and take measures to prevent damage in future. To make this an attractive option for non-compliant users of this POS a uniform fine rate was amended by the Ministry of Finance. This rule took the fact that such a user cooperated in consideration and maximised the penalty if one complied to an improvement accord. There are four conditions to participate in this accord:

- First the user has to be transparent about the facts concerning his fraud.
- Second the user needs to calculate the right turnovers and profits of the last five years.
- Third the user needs to take measures to prevent the possibility of this fraud in future.
- And last but not least, all tax bills and fines have to be paid without delay.

All this is written down in a contract and signed by the user, financial advisor, tax inspector and tax collector.

There were three kinds of reactions on the request to make the statement. A few admitted the fraud instantly. They were led into making the compliance agreement. Others denied. In this group there were some of which the tax administration had information about the use of zapper software. These became all subject of a tax audit. The ones of whom the tax administration did not have any indication of tax fraud were sometimes subjected to a compliance check to research the reliability of their declaration. Some of the users of the POS did not respond to our request at all. They were called by our local inspectors and even

visited when that didn't help. This way we received in fact all declarations we asked for.

At this moment we are evaluating the results of this strategy. One of the effects we hoped for is an effect on the producers and traders of cash registers. For years our contacts with producers and traders of these systems were on a "good to be in contact" level. Periodically some of the producers and traders were invited by the Tax administration to share information. This resulted in a brochure to inform the users of cash registers about their legal obligations. Real cooperation wasn't possible because of the complexity of the group, lack of knowledge and absence of interest to make POS reliable according to law. One can say that at that time the producers and traders of cash registers were caught in a prisoner's dilemma. The first one to develop or sell reliable cash registers would lose market share and therefore weaken his position compared to his competitors. Also the relation between producer and client was corrupted. It is the client who asks for the possibility to fraud and it is the producer who provides the means to do so. They are both caught in a fraudulent scheme and therefore susceptible to extortion.

Publication of our policy rule and the results of our explorative research caused quite a stir in the national media. The message was that the secretary of state would not accept unreliable cash registers anymore and that the tax administration had the means to detect these systems. For all users the possibility to repair fiscal damage in the past and to take measures to comply in future was presented. These publications were

actively brought into the attention of the producers and traders of cash registers. The sense of urgency to undertake necessary steps towards reliable cash registers was felt. Feedback sessions were arranged and at the 18th of April 2011 a letter of intent was signed by 70 producers and traders of cash registers and the Director General of the tax administration. All parties declared that after the first of July 2013 no unreliable Points of Sale would be sold anymore and the simple cash registers would only be sold with a declaration of settings made by the producer. There will be a quality mark for reliable cash registers and points of sale.

Since then we see the market of producers and traders of cash registers organising itself. Knowledge about standards, methods and techniques are exchanged and an independent quality mark authority will be installed and functioning. (see <http://www.keurmerkafrekensystemen.nl/>) All this is done by market parties temporarily facilitated by the Tax administration.

The Dutch tax administration would like to go on on this path of improving the first and important stage in the chain from financial transaction to assessment or return. Therefore it develops a method to monitor compliance risks and enhance or enforce durable improvement of compliance behaviour. One of the ways this will be done is by influencing all relevant actors in the cash economy by making use of their interests. Much is yet to be learned but we are convinced it can be done. The cooperation of market parties in the INSIKA project has been an inspiring example.