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## **Technical and Institutional Aspects of an International SALW Tracing Instrument**

**Presentation by Michel Wéry and Ilhan Berkol (GRIP)  
to the Group of Governmental Experts on the Tracing of SALW  
(original in French)**

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# I/. PRECONDITIONS FOR TRACING

(by Michel WERY)

## 1. Introduction

The Groupe de Recherche et d'Information sur la Paix et la sécurité (GRIP) is a non-governmental research institute based in Brussels. For the past three years, we have dedicated considerable attention to questions concerning the traceability of small arms and light weapons, and plan to continue working on this issue.

As an independent research institute, we are in a privileged position in that we are free to tackle issues that could be considered too sensitive for a government-affiliated institute or agency. In light of this privileged position, we would like to share with you the results of our analysis of two issues in particular:

- (i) The desired elements of an international tracing instrument;
- (ii) How such an instrument could be established, given already-existing international mechanisms (in particular the Vienna Protocol).

## 2. An international instrument

### a) **Weapons concerned:**

Which weapons should be covered under the mechanism? It seems evident that all small arms and light weapons<sup>1</sup> as defined by the first Expert Group in 1997 should be covered, since they all potentially contribute to the perpetuation of conflicts and crime, and form part of the illicit arms market.

While, it is generally understood that the Programme of Action that resulted from the July 2001 UN Conference covers all small arms and light weapons<sup>2</sup>, but this has not been put on paper and some countries appear to be calling into question the definition in order to limit its scope.

As far as other existing international mechanisms are concerned, none presently covers all small arms and light weapons (furthermore, the covered SALW differ from one mechanism to the next). To cite but one important example, the Vienna Protocol<sup>3</sup> features three significant limitations/drawbacks in this regard:

- (i) It does not apply to transactions from State to State – at least when the national security provision is invoked (art. 4.2.)<sup>4</sup>;
- (ii) Investigations are only launched if a transnational criminal organisation is implicated in the transaction (art. 4.2.);

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<sup>1</sup> Since almost all illicit weapons started out as licit (and all licit weapons are susceptible to becoming part of an illicit traffic at some point), licit weapons must also be covered under the international instrument.

<sup>2</sup> It was understood during the Conference that the reports of the Group of governmental experts constituted the basis for the Programme of Action. The first report (1997) defined small arms and light weapons as all firearms of a calibre of less than 100 mm, as well as their ammunition and explosives.

<sup>3</sup> UN, Document A/55/383/Add.2, 20 March 2001.

<sup>4</sup> Certain countries even appear to interpret this article as excluding outright all inter-state transfers.

- (iii) The articles relating to traceability apply only to firearms, whereas ammunition and explosives are excluded (art. 3.a.)<sup>5</sup>.

The traceability of ammunition and explosives is of utmost importance, however, given that ammunition has an important short-term impact on the perpetuation of conflicts, and explosives are used extensively in acts of terrorism. By contrast, ammunition and explosives are presently the most difficult weapons to trace since, to begin with, they are not marked in such a way that they can be precisely identified.<sup>6</sup>

Finally, we also consider it desirable to ensure that weapons already in circulation are also marked in the medium-term.

## **b) What kind of international instrument?**

Seven important regional and international mechanisms linked to arms tracing currently exist, some of which are legally binding, others only politically.<sup>7</sup> They should evidently be taken into consideration in the design of a mechanism that would permit the precise and reliable tracing of small arms and light weapons.

GRIP recently completed a study<sup>8</sup> whose purpose was to determine the commonalities and differences between these mechanisms, and we arrived at the conclusion that it is difficult to create synergies between them. While a number of commonalities do exist, the extensive variations - when it comes to the geographical scope, but also to the weapons concerned, the objectives and the concrete implementation modalities - vary enormously :

- Weapons concerned: here we can speak of a *relative* convergence in the definition of firearms foreseen by some of these instruments, but these instruments exclude ammunition and explosives. Conversely, other instruments deal only with the latter and exclude firearms;
- Objectives: the Vienna Protocol concerns the fight against organised crime ; the UN Programme of Action concerns the illicit trade in all its aspects; the Convention on the Transport of Dangerous Goods concerns public security, and the Convention on the Marking of Plastic Explosives concerns the prevention of terrorist attacks – in short, each have quite different objectives;

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<sup>5</sup> While ammunition is included in the Vienna Protocol, it is excluded from the specific provisions related to traceability.

<sup>6</sup> Many firearms are inadequately marked, but nonetheless contain markings. Explosives and ammunition are rarely marked such that they can be traced. In keeping with international regulations concerning the transport of dangerous goods, a significant number of states ensure that the packaging of these goods is marked for transport; however, one need only change the contents of the package in order to render these markings useless.

<sup>7</sup> These include: (i) the Protocol Against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, a supplement to the United Nations Convention Against Transnational Organised Crime; (ii) the UN Programme of Action to prevent, combat and eradicate the illicit trade in small arms and light weapons in all its aspects (20 July 2001); (iii) the Convention on the Marking of Plastic Explosives for the Purpose of Identification (1 March 1991); (iv) the UN model regulations on the transport of dangerous goods (12<sup>th</sup> edition, August 2001) and the European Agreement concerning the international carriage of dangerous goods by road; (v) the OAS Inter-American Convention Against the Illicit Manufacturing of and Trafficking in Firearms, Ammunition, Explosives, and other Related Materials (13 November 1997); (vi) the Southern African Development Community's Protocol on the Control of Firearms, Ammunition and other Related Materials (14 August 2001); (vii) the OSCE Document on small arms and light weapons (24 November 2000).

<sup>8</sup> To be published by UNIDIR and the Small Arms Survey.

- The numerous concrete modalities for marking, data registration and exchange also vary considerably, as shown in the comparative tables of this study.

In conclusion, the lowest common denominator between these texts is not much greater than nil. Establishing synergies between them would thus imply important efforts towards harmonization; and to achieve this it would be necessary to amend each of the texts, thereby implying the reconvening of numerous negotiations.

According to Professor Pierre Klein of the Center for International Law of the Université Libre de Bruxelles, it would make more sense to negotiate a new instrument within the framework of an international forum. The precise modalities and provisions related to marking, registration and tracing found in the Programme of Action could be determined, and an all-encompassing mechanism elaborated in the form of a Convention.

In so far as possible, the elaboration of this mechanism should be based on the provisions of existing mechanisms such that it would not contradict these. It would also be useful to see to it that existing institutions and practices are used and developed as much as possible.

### **3. Marking and registration: indispensable preconditions for tracing**

Tracing can only be accomplished quickly and effectively if prior marking and registration was undertaken in an appropriate manner. It is therefore essential to consider the following:

#### **a) Appropriate marking:**

Marking must impart on a weapon a unique and easy identification, and must be reliable and inexpensive. With this in mind, we feel that the following issues must be accorded significant attention:

- a) The contents of the markings : apart from a unique serial number, the manufacturer's identification as well as the country of manufacture, it seems necessary to include also the year of manufacture, if only to signal whether a weapon was produced before or after the entry into force of the new instrument. The OSCE Document is the only one which takes this into consideration;
- b) Applying a simple marking upon import which would identify the country and year of import. This provision is found in the Vienna Protocol, and has a dual function:
  - (i) By indicating the last country of import, tracing is facilitated as investigators can know where to begin their search, and
  - (ii) It can offer a starting point in the event that data contained in the registries can not be accessed or is faulty.

In the event that false import markings are applied by a trafficker, tracing is still possible. Investigators would only need to begin in the country of manufacture and reconstitute, as in a classical investigation, the successive chain of exportation that the weapon followed.

- c) Harmonization of markings would considerably facilitate subsequent efforts. Among other aspects, markings should be expressed alphanumerically in order to facilitate the registration process;
- d) Traditional markings are very easy to erase (and in 30% of cases it is not possible to recuperate them). It is therefore important to foresee a «security» marking that is indelible or very difficult to destroy<sup>9</sup>, and that can be turned to in the event that traditional markings have been damaged. This security marking should include the same information as with traditional markings (but should not replace these, since traditional markings have the advantage of being easy to read). As explained in the annex, the laser marking technique allows security markings to be applied simply and economically.
- e) We could foresee more flexible provisions for ammunition and explosives:
  - (i) On the one hand, applying traditional markings should be sufficient because it is difficult and of little efficiency to traffickers to erase them;
  - (ii) On the other hand, it would be possible to assign a unique batch number rather than a unique number per piece.
- f) Finally, it is important to ensure that existing weapons are progressively marked in an appropriate manner, or else destroyed. As for ammunition, the application of security markings could also be rendered non obligatory.

#### **b) Appropriate record-keeping :**

In order to trace small arms and light weapons quickly and precisely, it is also important to take into account the following elements in the process of keeping their records :

- a) Records should be kept of all international and internal transactions;
- b) Information to be registered: at a minimum, all indispensable information (the coordinates of those involved in the transaction, contents of the markings, the description and quantity of the weapons, date, etc), but it would also be very useful to register any information normally required in customs documents. These include the intermediaries and transport companies as well as the route taken by the weapons – in short, information that could prove essential in tracing an eventual diversion of weapons towards the illicit market.
- c) The length of time during which data should be conserved should correspond to the lethality of the weapons concerned. Whereas a number of existing mechanisms consider that all SALW manufactured in the twentieth century are dangerous and should be controlled, either they do not specify, or explicitly limit the time during which data must be kept in the registries (i.e. the Vienna Protocol requires that data be kept only 10 years). This paradox should be avoided, particularly as information technology allows registers to be maintained efficiently at marginal cost;

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<sup>9</sup> At least not without damaging the weapon.

- d) Each state should designate a body to manage a single national registry, or – in the case of federal or confederate states where this may pose a problem – a body that would be in close contact with the different national registries in such a way as to have a unique national contact point to exchange information with those of other countries. This entity should be identical to, or closely associated with, the national contact point foreseen in the Programme of Action.

As far as the maintenance of electronic registries and the development of security markings are concerned, it would be useful to foresee the possibility of providing technical assistance to least developed countries. In both cases, the costs do not appear to be excessive.

## II / TRACING OPERATIONS (by Ilhan BERKOL)

### 4. Interpol

Interpol is currently the only organisation that seeks to undertake international tracing operations. It therefore seems logical to ask whether Interpol could form the basis for a broader tracing system than that which exists at present.

As you are undoubtedly aware, Interpol includes police from 178 countries and has had a firearms identification system in place, IWETS, since 1987<sup>10</sup>. Concretely, when the police in a member country find weapons used in a crime, they can fill out a standardised form, which is then synthesised and registered in a database where it can be compared with other information.

This is a useful system, but one can question whether IWETS is the most appropriate system given the objectives outlined in the UN Programme of Action. Apart from the obvious need to equip it with greater means to meet these objectives<sup>11</sup>, two fundamental problems are apparent:

- First, the database only considers a small proportion of weapons and explosives – those discovered in the scope of a criminal offence and only insofar as this information has been relayed to Interpol. Furthermore, almost all illicit weapons were once licit. If they are not registered while they are still licit, we greatly reduce the possibility to trace them. In addition to the police, registering licit weapons requires links with numerous other organisations and agencies.
- Secondly, IWETS exists primarily in the context of the fight against crime, whereas a large number (if not the majority) of weapons used for negative purposes fall into a different context – that of violent conflicts<sup>12</sup>.

We can therefore question whether Interpol is the most well-adapted structure to fulfil these missions, which fall at present over-and-above its traditional scope of competence<sup>13</sup>.

Furthermore, we note that regional initiatives (OAS, ECOWAS), to be effective, require global measures in order to overcome implementation difficulties. A universal and harmonised system would greatly facilitate existing formalities that are relatively time-consuming and in which the exchange of information is difficult to put in place due to the variety of procedures from one country to the next. For these reasons, it seems preferable to

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<sup>10</sup> IWETS is the acronym for “Interpol Weapons and Explosives Tracking System”.

<sup>11</sup> At present only one person is charged with the coordination of the entire system (see the GRIP report «Marking and Tracing of Small Arms and Light Weapons», special issue, 2002, Box 3.3). In certain countries such as Great Britain, one person is responsible for matters related to arms trafficking at the national level, but this is not the case in all countries.

<sup>12</sup> A large proportion of the weapons used in crimes are military weapons. These weapons end up back in our societies through a « boomerang » effect via internal conflicts.

<sup>13</sup> It would also seem reasonable to move beyond the scope of criminality and to create a new structure for weapons found in the context of violent conflicts.



adopt an international tracing instrument having a much greater scope, and which recognises the relationship between crime and violent conflict.

## **5. Tracing mechanism<sup>14</sup>**

Each State designates a national point of contact that will be the authority/administration to act as a liaison with other State Parties in order to ensure the proper execution of the obligations outlined within the scope of an international instrument<sup>15</sup>.

The tracing operation is effectuated in three stages:

### **a) Data exchange**

- Contracting Parties shall ensure without restriction the exchange of data relative to illicit small arms and light weapons; this exchange shall be conducted through the national contact points.
- In the case of other small arms and light weapons, States Parties shall exchange the following data<sup>16</sup> on a regular basis<sup>17</sup> and insofar as possible:
  - i. manufacture (the marking system and techniques used, and authorized manufacturers);
  - ii. transfers (exports to and imports from other States Parties, transits, information available concerning national legislation, existing practices and controls, authorized vendors and intermediaries);
  - iii. existing stockpiles (management, inventory, security, surplus, losses, theft);
  - iv. seized small arms and light weapons, as well as illicit trafficking in these weapons (condemnation of morally or physically implicated persons, sanctions, destruction et destruction methods, neutralization).

### **b) International Agency**

- An international small arms and light weapons inspection Agency shall be established within the United Nations. According to professor Eric David from "Centre de Droit International" of "Université Libre de Bruxelles", the structure of the control agency foreseen for the control of chemical weapons could be applied for small arms and light weapons. However, the statutes could be simplified.<sup>18</sup>

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<sup>14</sup> For further details concerning proposals for the organisation of an international Agency see the GRIP Report «Marking and Tracing of Small Arms and Light Weapons», special issue, 2002, par. 6.3 à 6.5.

<sup>15</sup> Foreseen in the Programme of Action of the UN Conference of July 2001 (Art. II.5.) and other existing mechanisms (for example, Art. 13.2. of the Vienna Protocol). This entity could also be responsible for controlling markings and in-field registration, and for any other issues related to small arms and light weapons. This would facilitate traceability and constitute an improvement over the current situation whereby six or seven different agencies are involved, rendering investigations practically impossible to carry out.

<sup>16</sup> Numerous clauses exist on the exchange of data and cooperation among states in different existing mechanisms (for example the OSCE document on small arms, FSC.DOC/1/00, 24 November 2000); See also the GRIP study undertaken on behalf of UNIDIR comparing existing principal mechanisms related to weapons traceability (May 2002).

<sup>17</sup> In the case of an investigation, a deadline of 48 to 72 hours may be set (taking into account statutory holidays).

<sup>18</sup> More detailed institutional provisions will need to be elaborated, including the Agency's statutes, powers, composition, etc.

- The international Agency shall be responsible for operations involving the tracing of small arms and light weapons. To this end, the Agency shall ensure that all data related to the manufacture, stockpiling and transaction of small arms and light weapons transmitted to it by the national point of contact is permanently centralized. Data collected by the Agency can not be transmitted to a State Party except within the framework of an official investigation into the illicit manufacture or transfer of small arms or light weapons<sup>19</sup>.
- An alternative would be to render the international Agency responsible only for small arms and light weapons tracing operations. In this case, it could launch investigations into the manufacture or transfer of illicit small arms and light weapons. If the Agency decides to launch an investigation, the State Party concerned should ensure that all data relevant to the investigation found in its national registry is transferred by its national point of contact to the Agency<sup>20</sup>.
- In order to respect the national security of States, all data should be kept confidential and should not be communicated other than within the framework of an official investigation<sup>21</sup>.

### **c) Inspections**

- Inspections shall be undertaken<sup>22</sup> upon expedition, at the eventual transit points and upon reception of small arms and light weapons, by means of the national points of contact or agencies authorized by them to this effect. Each State Party is responsible for inspections on its own territory. Inspections shall involve the verification of documents relevant to the transaction, as well as of related markings and the verification that the weapons cited are conform to the documentation.
- Data collected in the course of an inspection shall be cross-checked by those national points of contact concerned, with a view to preventing any diversion of small arms and light weapons to the illicit market.
- States Parties shall ensure that stockpiles of small arms and light weapons situated on their territory are subject to appropriate inspection and inventory measures<sup>23</sup>. These operations shall be undertaken by the national point of contact concerned or by agencies authorized by the latter to this effect.

## **6. General Points**

Several means of preventing the diversion of small arms and light weapons to the illicit market can be recommended:

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<sup>19</sup> Note that the purpose of the Agency is not to render the licit trade transparent, but rather to identify responsibility in the event of a diversion of weapons to the illicit market. The centralization of data would enable a tracing operation to be launched without losing time and without the risk that essential information may be inaccessible (such as in the event of a refusal or loss).

<sup>20</sup> The Agency could also collaborate with Interpol and other international institutions, such as the World Customs Organization, etc.

<sup>21</sup> Note that as far as commercial confidentiality and security are concerned, numerous treaties exist that could serve as models. One example is the Chemical Weapons Convention.

<sup>22</sup> Similar to the controls undertaken by agencies charged with approving the transport of dangerous goods (e.g. the *Institut Belge de l'Emballage* in Belgium) as well as surveillance companies used in international commerce (e.g. Société Générale de Surveillance, SGS)

<sup>23</sup> See the OSCE Document, Section IV, Art. B.1.i-ix. *Op cit.*

- Countries wishing to re-export weapons should notify in advance the country of origin.
- The registration of all manufacturers, vendors and brokers with the national authorities should be obligatory in order to manufacture or deal in firearms and ammunition.
- The registers of manufacturers and vendors should be kept in electronic format. Stockpiles and all movements (including non-pecuniary and intra-community transfers) should be communicated regularly to the national point of contact.
- A good intrinsic control would be to prohibit transport companies, insurance companies and financial institutions from carrying out or underwriting transactions involving small arms and light weapons unless these are accompanied by documentation conforming to existing laws and conventions applying to such transactions.
- Regulate the transport of small arms and light weapons such that authorization shall only be granted to transport companies specially authorized to transport arms<sup>24</sup>.
- Particular attention should be paid to brokers who often intervene as relay for the diversion of weapons towards the illicit market<sup>25</sup>. Brokers should be obliged to inform the Agency and request a licence from the authorities in their country of residence (including in the country of transit). They should be held accountable for the goods until their reception by the buyer. The usefulness of establishing a recourse to extraterritorial jurisdiction in the regulation of small arms and light weapons transactions should be examined on the basis of provisions contained in international humanitarian law.
- In order to avoid the eventual diversion of weapons towards the illicit market during transport or while in a country of transit, one solution would be to impose CIF (Cost, Insurance, Freight) requirements for all sales; that is, to include the cost, transport insurance and freight in the total cost<sup>26</sup>. The goods would then belong to the seller and it would be his/her responsibility to ensure that they are delivered to the buyer, under the control of the authorities of the importing country.
- Similarly, export and import licences for numerous commodities (eg. Dairy products, meats, pasta, agricultural produce) are subject to strict financial guarantees in many countries. A similar guarantee system could be applied to the sale of small arms and light weapons.
- The sale of surplus military weapons and seized weapons on the civilian market should be forbidden, and surpluses should be systematically destroyed.
- As far as licensed production is concerned, the quantities produced should not exceed the needs of the country in which they are produced, and the exportation of this production should be forbidden, as should the granting of new production licenses.

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<sup>24</sup> The potential to include this clause in the Convention as a preventative measure also requires further consideration. It aims to prevent the diversion of small arms and light weapons to the illicit market through the use of unauthorized transport companies.

<sup>25</sup> A model convention on brokering was established by the American NGO «The Fund for Peace». This foresees the registration of brokers and a license request for each transaction.

<sup>26</sup> For example, for the exportation of sugar from the European Union, the granting of subsidies (which are as important as the price of sugar on the international market) is conditional upon the provision of maritime bills of lading and manifestos certified by the port authorities in the country of destination. Under these conditions, vendors can only sell with CIF terms to ensure the effective importation of the product by the buyer.

## **7. Conclusion**

- As long as weapons, ammunition or explosives are not used in an abusive manner, this draft Convention should ensure the confidentiality of commercial transactions;
- Nothing should stop countries from associating themselves with such a system. An international treaty would help countries to accept more easily the limits set out, and to harmonise national legislation;
- These two presentations have provided an overview of the salient points of our analysis. In conclusion, I would like to announce that GRIP is presently working together with jurists to elaborate a martyr-text of convention on the tracing of small arms and light weapons. We do not presume to substitute the role of states in elaborating such a text, but rather to stimulate the debate based on a concrete and precise proposal. This proposal, which is similar to what we have discussed here, is the result of a combination of ambition and realism as far as technical and economic feasibility is concerned.

## Annex : Laser marking and its cost

→ **«Classical» marking.** Stamping is the technique usually used to mark arms and ammunition cases, but it is not always the least expensive technique. Some hard materials require more sophisticated marking techniques, such as computer-guided micro-percussion. However, stamping is no longer applicable for composite materials that are increasingly in use in the manufacture of new generation weapons. Marking by injection moulds does not allow for the inclusion of a lot of information per cm<sup>2</sup>, and numerous companies have therefore turned to laser marking techniques (particularly in the United States).

→ **«Security» marking.** Depending on the type of weapon, security marking can be undertaken by stamping or by laser engraving. The use of other techniques such as the insertion of an electronic tag or the addition of chemical tracers could also be envisaged. However, computer-guided laser techniques offer an inexpensive solution along with flexibility and advantages to the producer.

→ **Advantages of laser marking.** This allows the marking of a maximum of information<sup>27</sup> on an area of just several mm<sup>2</sup> without coming into contact with the material. In this way small, fragile yet strategic components or parts of components could be marked. The trafficker seeking to erase this marking would thereby compromise the operability of the weapon. It is necessary to determine, however, the best marking site for each type of weapon (notably to avoid marking components that are easy or inexpensive to replace). A committee of experts, in cooperation with manufacturers, could verify that the solution chosen corresponds to the criteria of indelibility<sup>28</sup>. Finally, we should note that ammunition and explosives can also be marked using laser techniques.

Laser marking can be automated using a specific software that would allow the system to be adapted to several types of markings<sup>29</sup>. Apart from the fact that it has the advantage of offering the producer flexibility, the laser can also be used for other purposes, such as cutting. European manufacturers have already begun to use this technique in order to satisfy the demands of their American clients<sup>30</sup>.

→ **The cost of laser marking.** The firm TLC (Troukens Laser & Consulting bvba) based in Aarschot, Belgium, has indicated that the cost of an instrument for marking small arms and light weapons would be around US \$48.000, with a supplementary cost of approximately US \$10.000 to integrate the instrument in the production circuit. Total cost: US \$60.000<sup>31</sup>. This investment would be quickly recuperated through serial manufacture, as is the case in the armaments industry.

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<sup>27</sup> Legislation, or the clients themselves, require that an increasing number of information or logos are marked.

<sup>28</sup> Such a committee of experts was created in the framework of the Convention on the Transport of Dangerous Goods by Road, for example (cfr. article 4.2.c).

<sup>29</sup> Contingent upon, for example, the availability of another transformer (without changing the entire automation system) optimised for a predetermined form. Quality control is integrated in the system.

<sup>30</sup> Based on our interview with a technical representative of the FN Herstal in Belgium, this firm already uses laser markings for their American clients.

<sup>31</sup> This is the normal price of any usual sophisticated laboratory instrument.

Furthermore, the Swiss firm SIG (Suisse) has produced a revolver prototype that comprises four different security markings and has evaluated its serial manufacturing costs as follows:

<b>Number of units to mark</b>	<b>Laser marking - Cost per unit (in euros)</b>	<b>Electronic tag - Cost per unit (in euros)</b>
10	21,70	-
50	4,70	-
100	2,56	-
1.000	0,65	4,37
5.000	0,47	-
10.000	0,44	2,81

Figures provided by F. Schütz

## **GRIP Bibliography on the topic**

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GRIP has published several studies on Marking and Tracing.

They are available in English and in French :

- On the following addresses : [www.grip.org](http://www.grip.org) and [www.grip.org/research/com.html#na1](http://www.grip.org/research/com.html#na1) ;
- Or by introducing a request at [i.berkol@grip.org](mailto:i.berkol@grip.org) and/or [m.wery@grip.org](mailto:m.wery@grip.org)