Assessing technologies to counter the diversion of small arms and light weapons

Side-event to the PoA Review Conference 4

26 June 2024
Sarah Grand-Clément, UNIDIR
Why examine the use of technology?

• Significant attention has already been devoted to develop measures and initiatives to strengthen counter diversion of conventional weapons and related components.

• Some technologies have been the focus of discussions in multilateral forums or even tested for strengthening counter-diversion initiatives.

• However, there is a gap between increased attention on the potential use of technology and actual broad-scale use for countering diversion.
Phase 1: Framework to identify and assess technologies to counter diversion of conventional weapons

1. Aim of technology use
2. Identification of potential technologies that respond to the stated aim
3. Analysis of the context of implementation
## Parameters for the assessment of the technologies

<table>
<thead>
<tr>
<th>Less complex technologies</th>
<th>More complex technologies</th>
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<tbody>
<tr>
<td>2D codes</td>
<td>Big data analysis (AI)</td>
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<tr>
<td>Chemical coding</td>
<td>Natural Language Processing (NLP) (AI)</td>
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<tr>
<td>DNA coding</td>
<td>Computer vision (AI)</td>
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<tr>
<td>Document authentication</td>
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<tr>
<td>Electronic seals (eSeals)</td>
<td>Sensors</td>
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<td>Global navigation</td>
<td>Internet of Things (IoT)</td>
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<td>satellite system (GNSS)</td>
<td>Distributed ledger Technology (DLT)</td>
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<tr>
<td>and mobile tracking</td>
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<td>Near field communication (NFC)</td>
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<td>Radio-frequency identification (RFID)</td>
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Parameters for the assessment of the technologies

- Lifecycle stage
  - Pre-export
  - Transfer
  - Post-delivery

- Counter-diversion element
  - Prevention
  - Detection
  - Identification
Systemic barriers and options and avenues to overcome these

<table>
<thead>
<tr>
<th>Options and Avenues to Overcome Barriers</th>
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<tbody>
<tr>
<td>• Fragmentation among the multiple actors involved in SALW;</td>
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<tr>
<td>• Practicalities of technology development and adoption;</td>
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<td>• Lack of infrastructure (digital, physical, regulatory) surrounding the technology;</td>
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<td>• Cost of technology;</td>
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<td>• National security considerations;</td>
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<td>• Lack of sufficient knowledgeable personnel; and</td>
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<td>• Need for data and data management.</td>
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<td>• Strengthening international and regional collaboration and inter-agency cooperation;</td>
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<tr>
<td>• Building up the evidence and knowledge base;</td>
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<tr>
<td>• Undertaking institutional capacity-building and individual training; and</td>
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<tr>
<td>• Reinforcing or establishing the appropriate physical, regulatory and digital infrastructure</td>
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</tbody>
</table>
Thank you for your attention

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2005 - 2024

ITI - Marking of Polymer

Gary Fleetwood – Manager

National Firearm Trace Program
National Firearm Identification Database

Australian Criminal Intelligence Commission
June 2024

www.acic.gov.au
International instrument to enable States to identify and trace, in a timely and reliable manner, illicit small arms and light weapons

III Marking - Polymer
• …method is a national prerogative…

III Marking - Polymer
• Exposed surface
• Conspicuous without technical aids or tools
• Recognizable and readable
• Durable
• As far as technically possible, recoverable
International instrument to enable States to identify and trace, in a timely and reliable manner, illicit small arms and light weapons

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International instrument to enable States to identify and trace, in a timely and reliable manner, illicit small arms and light weapons

### III Marking - Polymer
- Dot Peening
- Laser engraving
- ‘Window’ - allowing viewing to metal internal components
- Covert marking
International instrument to enable States to identify and trace, in a timely and reliable manner, illicit small arms and light weapons
International instrument to enable States to identify and trace, in a timely and reliable manner, illicit small arms and light weapons

III Marking - Polymer
• Applying metal serial number plates is not marking polymer
• Evidence of where ITI requirements & polymer have been a success?
• What technology can recover serial numbers applied to polymer?
• Covert marking - between industry & law enforcement only.
International instrument to enable States to identify and trace, in a timely and reliable manner, illicit small arms and light weapons

www.nfid.acic.gov.au

www.gunnumber.com

Industry participants
MOBILE MARKING
Total number of weapons registered: 30,219
UN MANDATED END USER VERIFICATION
TECHNOLOGY USED IN TRACING

TRACING THE UNTRACEABLE

Programme of Action RevCon 4
Henry Leach
Head of Somalia Operations

26 June 2024
New York
AmTag
Secure Materiel Tracing
Non-Destructive Serial Number Recovery (ND-SNR)
Fry’s Reagent

- 5g of copper chloride in 25ml of ethanol
- 40ml of hydrochloric acid in 30ml distilled water
Effects of Marking on Metal

Applied with downward force
Stamped, Dot Peened

Applied without downward force
Laser Engraved, Etched

Area of Localized Density
Use of Technology for Communication and Information-Sharing

Inter-American Framework
PACAM
Program of Assistance on Control of Arms and Munition

• Umbrella program to support OAS Member States in reducing armed violence and implementing CIFTA obligations
  – Holistic approach: actions to reduce illicit trade of firearms and ammunition through a supply and demand perspective

• Current phase is implemented with the support of the European Union
  – 2019-2025
  – 28 countries in the Caribbean and Latin America assisted
  – Components:
    ◦ Legislative Assistance to Harmonize and Modernize Firearms Normative Framework
    ◦ Operational Support on Weapons and Ammunition Management
    ◦ IT tools for Record-Keeping and Information Sharing
    ◦ Strengthening Transfer Controls
    ◦ Promotion of Regional Coordination Tools
    ◦ Prevention of Armed Violence at the community level

See details
Inventory Control Software (SAM)

• Simple tool to promote inventory control of arms and ammunition of national stockpiles

• Considerations:
  – Developed considering PSSM good practices (MOSAIC 05.20 - Cap 11, 11.1.2 - 11.1.3 e IATG 03.10)
  – Open-source coding to promote sustainability
  – Software installed locally or in the network of countries (countries own the software)
  – Developed in 2020; improved in 2023 (v. 2.0)
  – 15 institutions of 9 countries are using it

• Functionalities:
  – Available in Spanish and English
  – Multi-layer
  – Two-factor authentication
  – Auditable
  – Physical description, location, condition, entry and exit of arms and munition, external transfers, assignment to officers
  – Configurable alerts to users
  – Reports and statistics
Exchange of Information - Transfers

- Strengthening of control over international transfers and border crossing points → effective measure to support the fight against illicit trafficking
  - Dispositions of PoA on licensing systems and export control
  - Obligations of CIFTA, Firearms Protocol, and Arms Trade Treaty
- CIFTA – Article IX:
  1. Establish or maintain an effective system of export, import and transit licenses
  2. States Parties shall not permit the shipment or transit of materials without the issuance of the corresponding licenses by all countries involved in the transfer
  3. Prohibition of shipment and transit without licenses
  4. The importing State Party shall confirm receipt of materials, at the request of exporting State Party

- Paragraph 15 – Recommendations from the V Conference of States Parties to the CIFTA: “To develop, implement, and participate…in mechanisms, consistent with CIFTA, that facilitate the exchange of information on export, import and transit authorizations or licenses between the States Parties, as well as direct communication between the national authorities in charge of issuing such licenses.”
Regional Situation*

National Level:
- 89% have national legislation and systems for issuing licenses/authorizations of export/import/transit
- 82% of countries do not have effective channels of communication between licensing authorities and customs

Regional Level:
- 80% of the participants identified a need to strengthen tools to oversee international transfers, including communication with other countries:
  - 63% of countries do not have a direct channel of communication with their counterparts in other countries
  - 82% of countries do not communicate about the denial of licenses
  - 75% of countries do not inform participating countries over the revocation of previously approved licenses
  - Transit countries receive information mostly from transport carriers
  - Almost 50% of requests to confirm receipt are left unanswered by importing countries

*Survey applied to OAS Member States in the context of developing the design of the MCTA (18 countries answered it)
Challenges or Opportunities?

Operational
  • Absence of electronic legal frameworks and national systems that issue licenses
  • Lack of standardization in information and nomenclature
  • Data privacy laws

Technological
  • Information security
  • Integration with national systems
  • Data Servers

Sustainability
  Financing for the maintenance and management of the system
• Objective: Offer a secure and direct communication channel between licensing authorities to exchange information about international transfer processes to reduce vulnerabilities and gaps that facilitate diversion

• Characteristics:
  ◦ Safe web tool with different access levels and multiple languages
  ◦ Decentralized system with data encryption → only countries involved in transfer will have key to access information
  ◦ Real-time notifications (issuance/denial/revocation of licenses, delivery receipts, etc.)
  ◦ Formulate alerts and exchange information
  ◦ Standardize information through equivalence tables
  ◦ Risk management repository
  ◦ Database of processes (record-keeping)
  ◦ Optional Modules:
    ◦ National licensing system (52% of countries still use paper-based systems)
    ◦ Platform to integrate customs authorities
Development Process

1. Planning (Finalized)
   - Definition of the scope of the system and basic needs
   - Development of methodology

2. Design (Finalized)
   - Definition of requirements and functionalities
   - Identification of technological solutions

3. Design Validation (Finalized)
   - Review of the Technical Specification (20 countries)
   - Political approval (V Conference of State Parties of CIFTA)

4. Development (2024)
   - Development of solution for national system
   - Piloting of national system
   - Beginning of development of regional tool (MCTA)

5. Development and Implementation (2025)
   - Finalization of regional tool (MCTA)
   - Pilot with countries
   - Adjustments and expansion
   - Agreements with countries to implement the tool
Thank you!

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