Building a ‘security chain’ in an eDocument issuance program

Introducing the eSAM (eSecurity Awareness Model) Free Web Tool
Governments need a secure, yet efficient way to manage the eDocument issuance process

This starts with a careful evaluation of risks

- Type of fraud
- Cost/impact of fraud

Find balance between:

1. Cost
2. Security
3. End user convenience

For their specific conditions
How to optimize the security, convenience and cost balance challenge?

Who to believe?

- Vendors will try to push their security features and their enrolment and personalization solutions

Where to find ‘Best Practices’?

- Security Awareness Model (eSAM) from
The eDocument Security Awareness Model (eSAM) has been developed by SIA

➢ To help governments with their secure document development program
➢ And to understand what is required to build a ‘security chain’

Self-assessment tool:
➢ For evaluation of an existing program or
➢ For trying different scenarios and see the effect on the security chain
The eSAM consists of three basic process flows and covers the complete security chain:

1. Application to Issuance (dataflow)
2. Document design to Personalization (material flow)
3. Support processes

Any data inputted is fully confidential
eSAM Sub-Processes

- Application/entitlement (first time/renewals; in person/on-line; lost or stolen document; limited breeder documents; biometrics)
- Design (design process; international standards; substrate material; durability; security features; how to inspect?)
- Personalization (central/de-central/overseas; safeguard transport and storage of blank documents and consumables)
- Issuance (in person/mail; how to mitigate risk of issuance to wrong person?)
- IT- and Facility security (how to protect data and prevent unauthorized access; security certification)
eSAM : How does it work?

➢ Go to SIA’s Website
➢ Create a Web account
➢ Login to access eSAM

The eDocument Security Awareness Model (eSAM) is designed to support governments in the development of their eDocument programs – helping them understand what is required to build an effective ‘security chain’. It can be used as a self-assessment tool to evaluate existing programs, the security impact of additional changes, or to test multiple new scenarios.

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Once logged in

- Access eSAM
- Create a new scenario
- Access a scenario you have created previously
eSAM : Sub-processes

New Scenario
➢ Select Type of eDocument
➢ Name Scenario
➢ Access sub-processes separately
➢ You may delete your scenario here
➢ Sections you have submitted appear here

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The questionnaire consists of a list of questions with multiple choice answers.
Two support processes are distinguished:

- IT security
- Facility security

These only contain some basic questions if not covered by a certificate in the first place.

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In the Issuance process the Issuing Authority (IA) can make different choices:

- Applicant picks up document in person
- Third party is permitted to pick up document
- Document is mailed to home address

The IA’s choices have a clear impact on the security, convenience and cost of the program.
Scores for Security Awareness (SA), Cost Effectiveness (CE) and Convenience (C)

Recommendations (if applicable) to improve security

Your scores for Security Awareness, Cost Effectiveness and Convenience against the maximum score
Security is not the only aspect you have to balance in your program

Convenience (ease of use) score only for processes that interfere with citizens (end users)
Examples

3.

Low-end and high-end security scenarios
Two scenario’s

<table>
<thead>
<tr>
<th>Process</th>
<th>High security</th>
<th>Cost optimized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Document</td>
<td>• Passport with PC e-data page</td>
<td>• PVC DL, no chip</td>
</tr>
<tr>
<td>Application</td>
<td>• Capturing biometrics</td>
<td>• Application by mail or web</td>
</tr>
<tr>
<td></td>
<td>• Background check</td>
<td>• Legitimation through previous documents or copy thereof</td>
</tr>
<tr>
<td>Issuance</td>
<td>• Pick-up in person</td>
<td>• Mailed to home address</td>
</tr>
<tr>
<td>Document design</td>
<td>• Design with security printing</td>
<td>• Basic design with CMYK printing</td>
</tr>
<tr>
<td></td>
<td>• Portrait and data laser engraved</td>
<td>• Portrait and data applied with D2T2 and protected with clear patch</td>
</tr>
<tr>
<td></td>
<td>• Inspection conditions considered</td>
<td></td>
</tr>
</tbody>
</table>
## Summary scenario’s

<table>
<thead>
<tr>
<th>Process</th>
<th>High security</th>
<th>Cost optimized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security elements</td>
<td>• High security print (offset, PMS, OVI)</td>
<td>• Basic security (digital, CMYK)</td>
</tr>
<tr>
<td></td>
<td>• Secondary portrait in MLI</td>
<td>• Security design for minimum cost</td>
</tr>
<tr>
<td></td>
<td>• Security design based on integral security concept</td>
<td></td>
</tr>
<tr>
<td>Manufacturing process</td>
<td>• Production in high security zones</td>
<td>• Production in standard industrial environment</td>
</tr>
<tr>
<td></td>
<td>• Serial numbering for blank documents</td>
<td>• Blank documents shipped by courier</td>
</tr>
<tr>
<td></td>
<td>• Secure transport</td>
<td></td>
</tr>
<tr>
<td>Personalization</td>
<td>• Central personalization in high security zones with high quality laser</td>
<td>• D2T2 desktop personalization with no special security measures</td>
</tr>
<tr>
<td></td>
<td>equipment</td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>• Production and personalization sites are certified</td>
<td>• No physical access system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No systematic checks on staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alarm system in place</td>
</tr>
</tbody>
</table>
Results High Security Scenario

› HIGH ON SECURITY
› LESS COST EFFECTIVE
› LESS CONVENIENT
Results Cost Optimized Scenario

LOW ON SECURITY
HIGH ON COST EFFECTIVENESS
MORE CONVENIENT
Sources of information

Main Sources

- ICAO Doc 9303 Part 1, Vol1
- ICAO Guide for Assessing Security of Handling and Issuance of Travel Documents
- Optical Document Security by Rudolf L. van Renesse
- Documents: the Developer's Toolkit by Diana Ombelli and Fons Knopjes

Many more sources have been used and combined with the experience from multiple document programs by the SIA members.
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