Using PKD for Validation at the Border – Canada’s Experience

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Agenda

1. ePassports in Canada - Overview
2. ePassports in Canada – Governance
3. Canada’s Next Generation Automated Border Controls (“ABCs”)
4. Canada’s PIKs – First Year
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6. Helpful Resources
1. ePassports in Canada - Overview

- 2009: pilot (diplomatic/special passports) launched, including sharing certificates through the ICAO Public Key Directory (PKD)
- 2013: following successful pilot, full ePassport issuance began
- Factors in Canada’s decision to opt for full ePassport issuance:
  - digitized version of photo
  - digital signatures/PKD validation
  - growing global consensus: in 2013, 62 countries were already issuing ePassports
- Bottom line: ePassport issuance seen to be a demonstration of Canada’s commitment to both:
  - the safety of Canadians, and
  - international security.
2. ePassports in Canada - Governance

- **Immigration, Refugees and Citizenship Canada (IRCC)**
  - **Role**: Canada’s authoritative issuer of travel documents for eligible Canadians. Includes the whole range of activities from procurement to issuance to control.
  - IRCC houses Canada’s national *Public Key Infrastructure* (PKI), which is where:
    - Canadian ePassports are digitally signed; and
    - ePassport certificates from other countries are managed (facilitated by ICAO PKD membership)

- **Canada Border Service Agency (CBSA)**
  - **Role**: responsible for enabling efficient processing of people/goods at Canada’s borders; leads on implementation of Canada’s border control systems (including Automated Border Controls – “ABCs”)

- **Canada’s Airport Authorities**
  - **Role**: Canada’s airports collaborated with IRCC/CBSA to deliver both space and infrastructure needed to support ABC roll out in Canada’s arrivals halls
3. Canada’s Next Generation Automated Border Controls (“ABCs”)

- 2017: latest generation ABCs (Primary Inspection Kiosks, or “PIKs”) implemented; now operational in arrivals hall of 8 Canadian airports
- “PIKs” perform the full range of ID validations, including:
  - PKI/PKD validation;
  - 1 to 1 person matching via facial recognition
  - Check against lost/stolen documents
- As of May 2018 – 15 million travellers processed in Canada
- *collaboration between issuer and border control – IRCC a full participant in CBSA’s 2014 strategic process that laid the foundation for PIKs
- Following this first year, CBSA already working on tweaks to these latest gen. ABCs, with full IRCC support
4. Canada’s PIKs – First Year

• Canada’s implementation of advanced ABCs (PIKs) represents a significant shift in business processes for border services officers
  – the PIKs represent a change in what border services officers do, away from traditional manual document inspections towards a more risk-based approach, anchored in the trustworthiness of ePassport issuance processes (PKD!)
  – CHALLENGE: ensuring border services officers are aware of the verifications that are now automated by PIKs, and how these verifications fit in to their own broader business processes

• “Pass” and “Fail” output may not be sufficient
  – In Canada, PIK output still requires refinement in order to better enable action by border services
  – CHALLENGE: finding right level of detail for PIK output to enable quick yet confident decisions by border services officers; accordingly tweaking PIK programming
5. Canada’s Lessons Learned

- **Early** and **ongoing** collaboration between issuing and border authorities is critical
  - Feedback loop is critical. Following PIK first year of implementation, Canada is just now formally establishing that loop
  - Issuance is not enough! To leverage full benefits, issuance/border control are two sides of the same coin. Without alignment, investment in ePassport issuance is largely lost

- Don’t take **knowledge of ePassport technology for granted**
  - ePassport technology (PKI/PKD in particular) is **complicated** and may **not be immediately understood** by those outside of the issuance or IT worlds
  - take advantage of opportunities to pass along this knowledge - ICAO has lots of publicly-available resources and guides
6. Helpful Resources

- **ICAO – ePassport – Doc 9303**
  - for ePassport, the following parts are relevant:
    - Part 9 - Biometrics
    - Part 10 - LDS
    - Part 11 – Security Mechanisms
    - Part 12 – Public Key Infrastructure

- **ICAO – ePassport Validation and Public Key Directory (PKD)**
  - [https://www.icao.int/Security/FAL/PKD/Pages/default.aspx](https://www.icao.int/Security/FAL/PKD/Pages/default.aspx)
  - in particular…see “Publications” on left-hand menu for PKD primers, technical and other documents

- **ICAO TRIP and Border Control Management**

- **Canada’s Primary Inspection Kiosks (“PIKs”)**