



Canada's FASTER-PrivBio Project

Biometrics at the Virtual Border to enhance security and facilitation

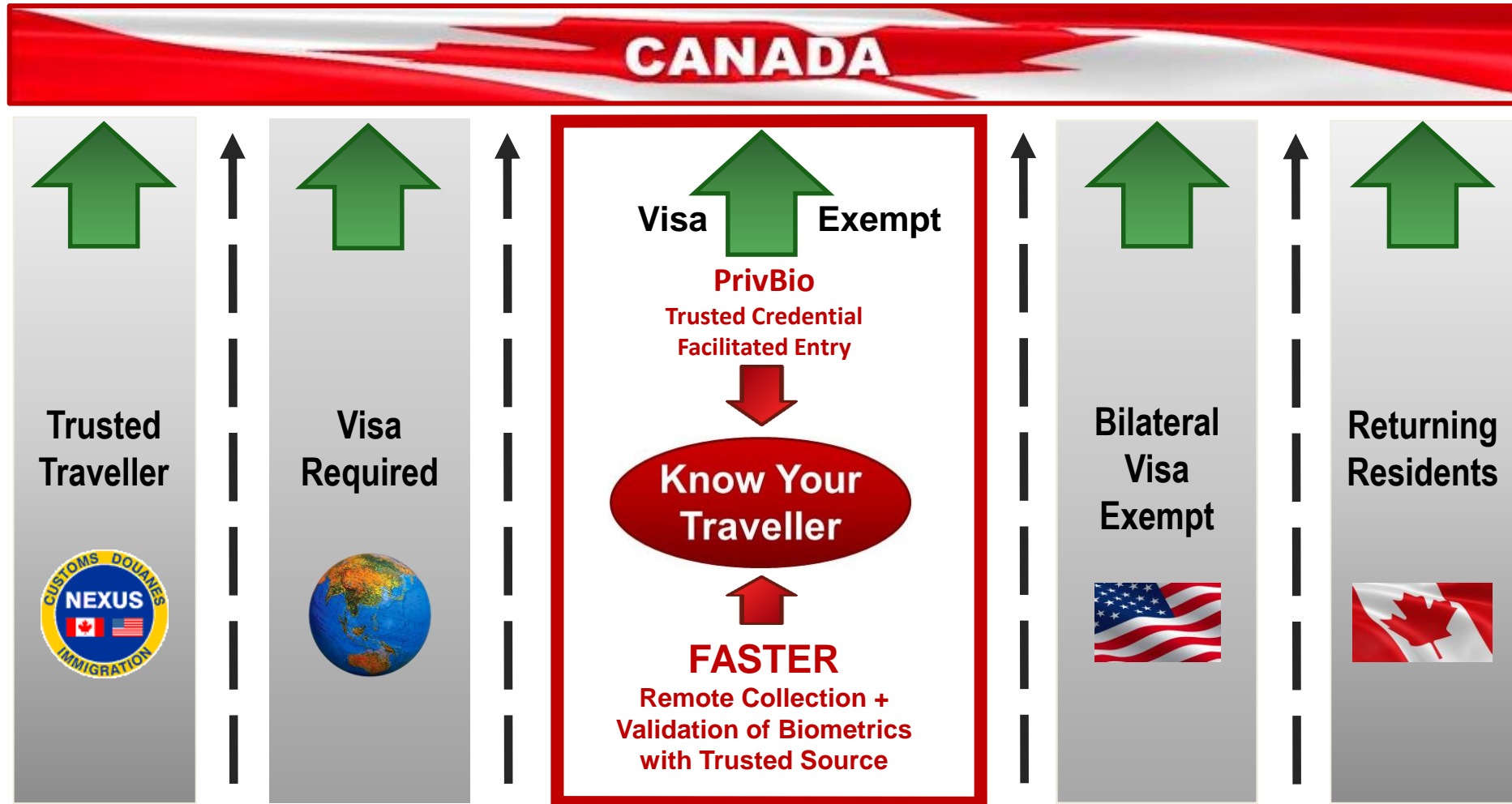
- Hubert Laferrière, Director, Immigration Refugees and Citizenship Canada, Government of Canada
- Gordon Wilson, President, WorldReach Software

Purpose

Present the conclusions of a Government of Canada led research project which enabled the development and testing of the prototype of a dedicated smartphone App that:

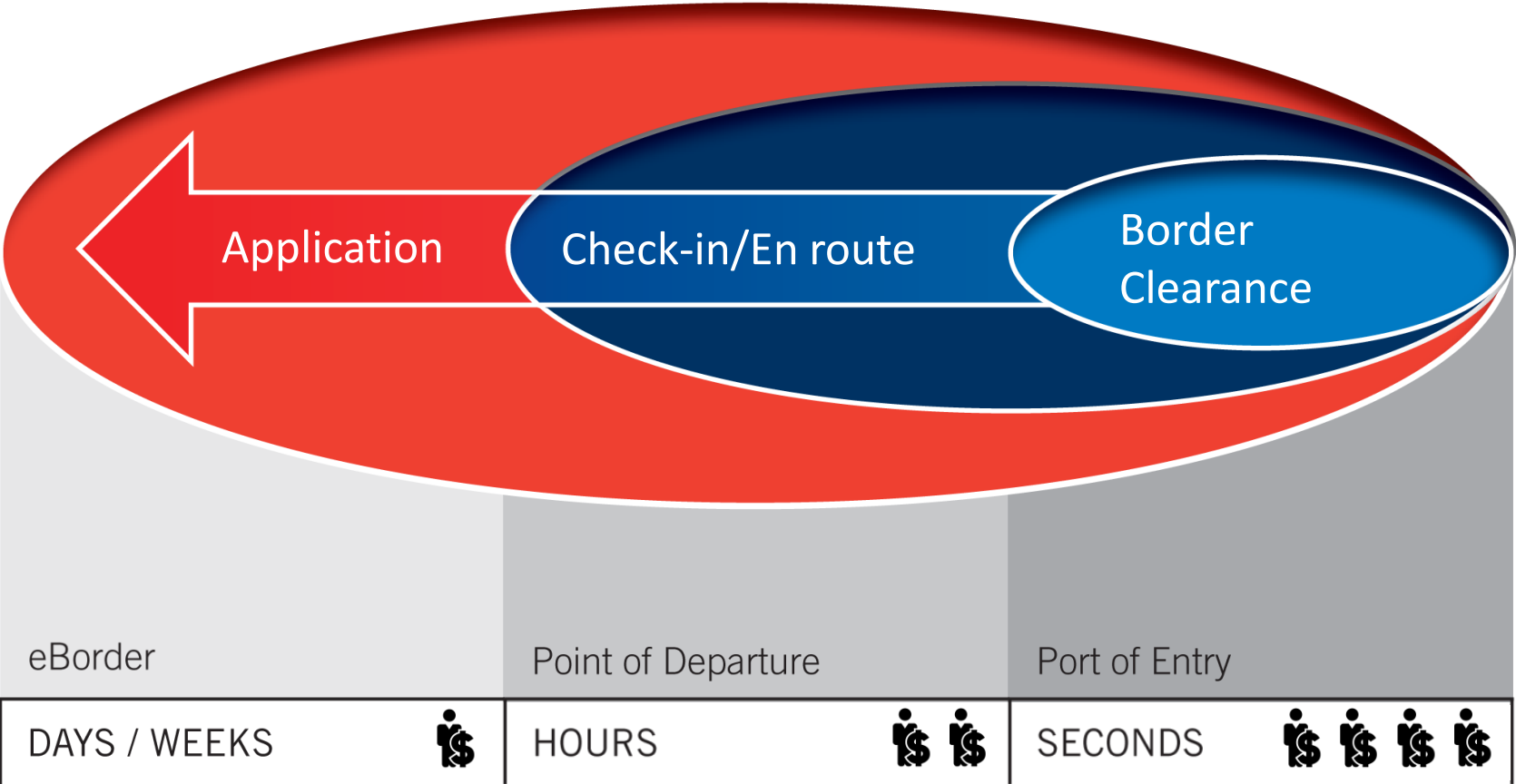
- simulates an Immigration, Refugees and Citizenship Canada Program Submission Request;
- Automatically filters travellers at border management self-service kiosks in accordance to risks assessment rules; and
- accelerates the clearance of low risk travellers.

Traveller Category



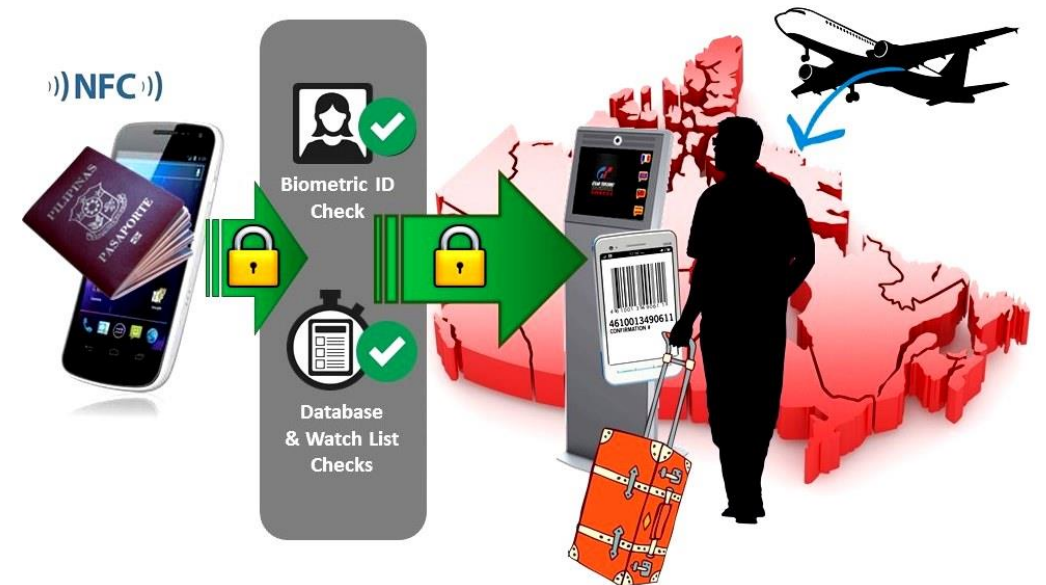
Incoming Traveller Categories

INDUSTRY - Moving towards Virtual Border



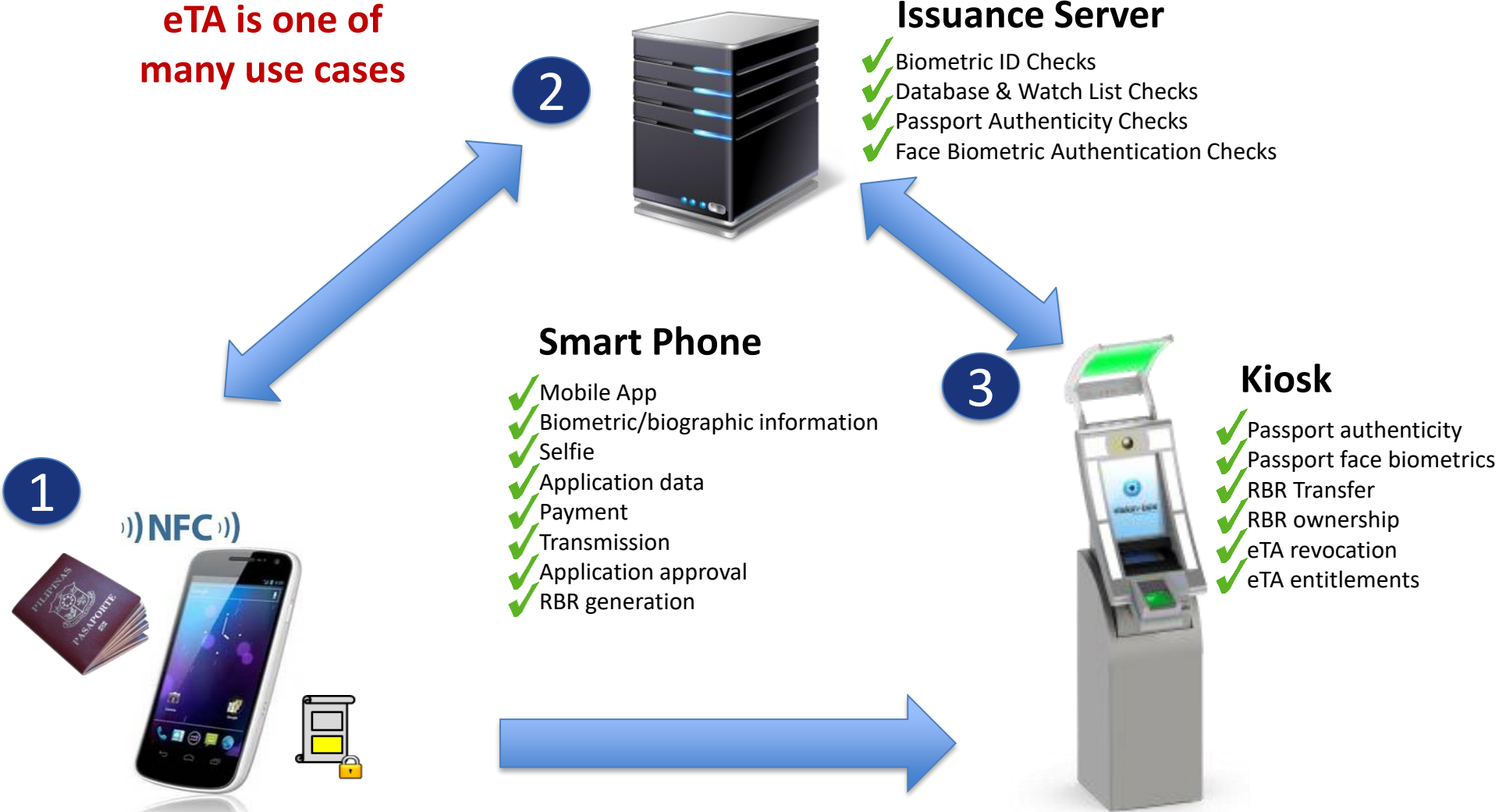
Project Team & Overview

- FASTER-PrivBio was supported by the Canadian Safety and Security Program, a federal program led by Defence Research and Development Canada's Centre for Security Science, in partnership with Public Safety Canada. Partners in the project include IRCC, CBSA, WorldReach Software Corporation, University of Ottawa and Ryerson University.
- Successfully developed a prototype smartphone App, verification software and secure token issuance that provides an innovative end-to-end process for Electronic Travel Authorization (eTA) submissions, from time of application to border management processing in Canada.
- Leverages the capabilities of the ePassport, smartphone technology, biometrics and self-service kiosks.
- Applied innovative encryption algorithms and Privacy by Design Principles to ensure the security of information.



Concept-of-Operations

eTA is one of many use cases



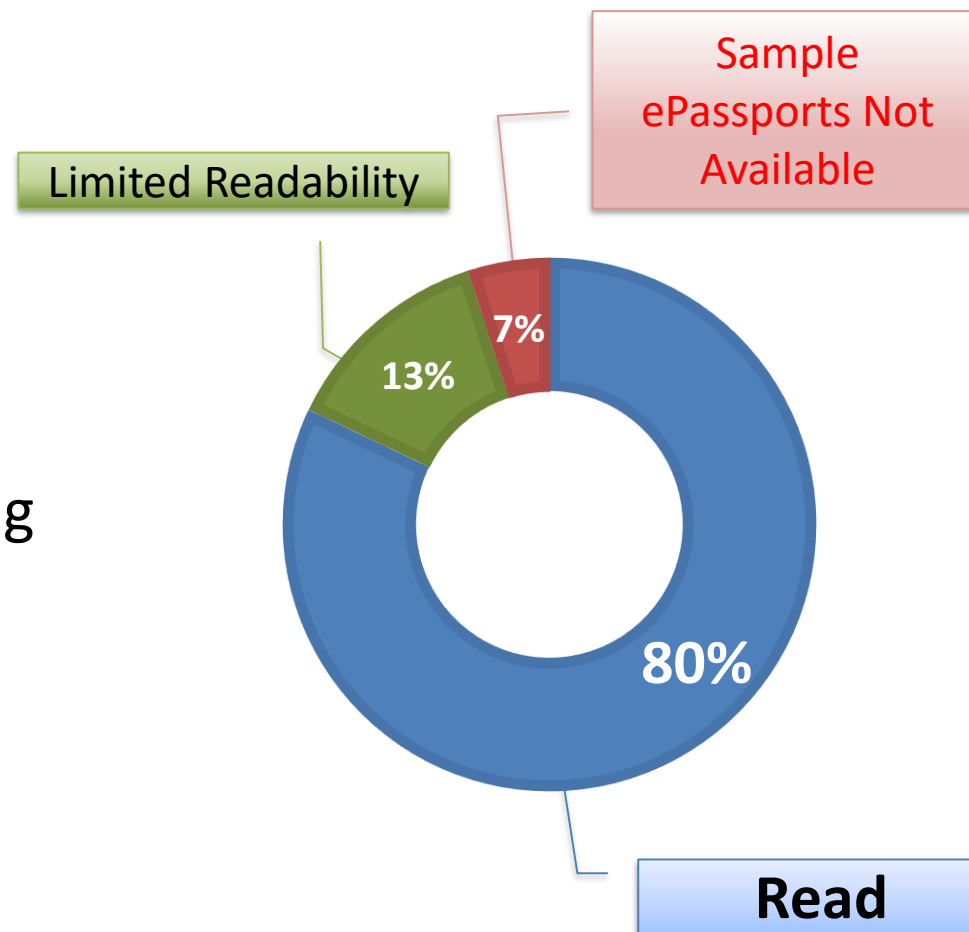
Process Innovations - Outcomes & Benefits

- Provides mobile eTA application channel (user experience design)
- Privacy of information built into software and App architecture/design
- ePassport biometric and biographical data to ensure data integrity
- Confirmation of applicant identity
 - ePassport biometric, 1:1 facial recognition
- Early adjudication process for eTA:
 - Authentication of ePassport as a trusted source
 - Confirmation of citizenship & eligibility for eTA
 - Early watch list checks using biometric as well as biographical data
 - Improved data integrity; cut adjudication time & improve service
- Electronic identity and travel authorization
 - Confirmation (QR code) on smartphone app

Key Findings – Technology Demonstration Testing

Technology - robust enough for substantial volume of travellers (Pilot phase consideration)

- 34 countries' ePassports tested
 - >50% of all eTA eligible countries
- 93% of Canada's eTA volumes tested
- 80% ePassport chips successfully read with various smartphones/NFC
- Smartphone “selfie” - reasonable 1:1 matching with ePassport image
- User experience design tested for acceptance by traveller
 - Privacy by Design principles built in
- ePassport chip read by smartphone – NFC 3-6 seconds



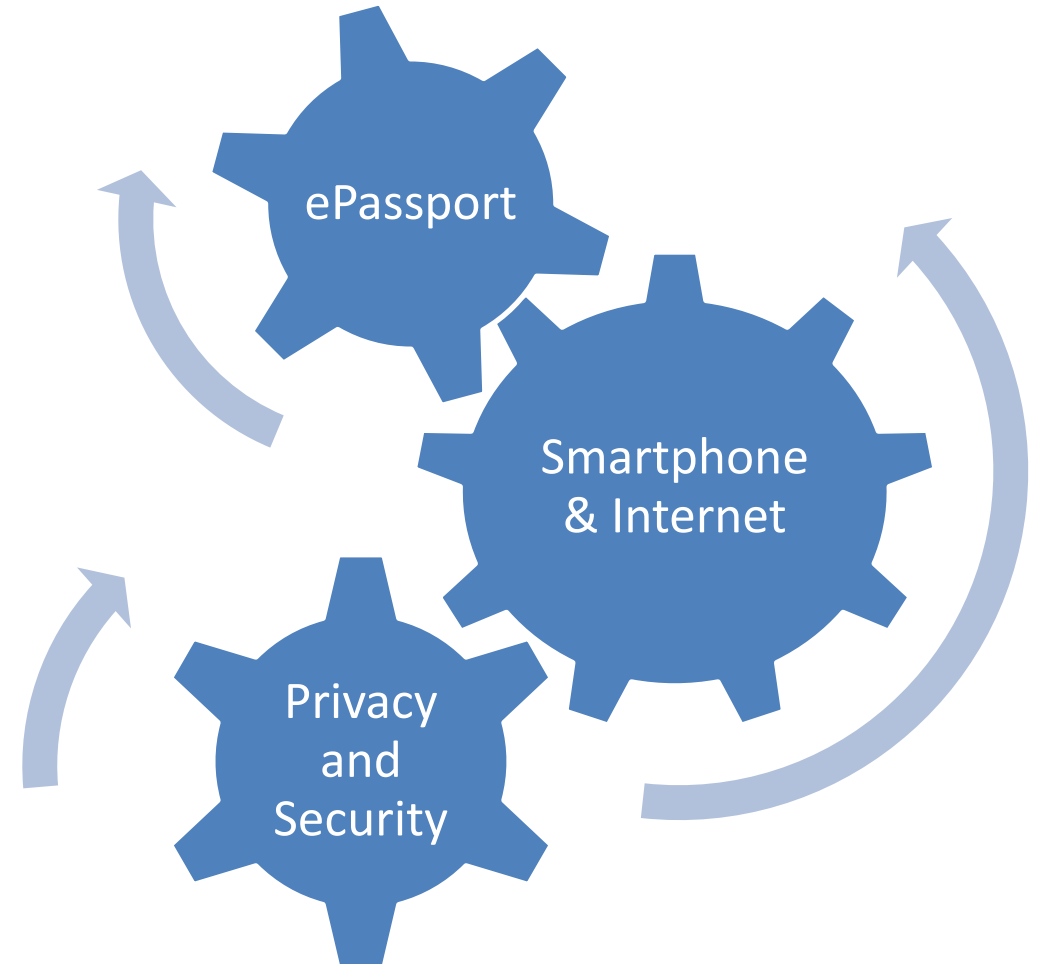
Key Findings – Technology Challenges

- Android smartphones only, ~ 80% of global smartphones run Android
 - iOS doesn't allow access to NFC currently
- ePassport variants
 - High power requirements of certain ePassports
 - Known non-conformances in ePassports to ICAO standard
 - Account for variations in ePassports from same country (versions)
- Selfie as added ID validation
 - Higher quality “selfie” – improving with newer smartphones
 - Testing for liveness of “selfie”; applying anti-spoofing – continuing R&D
- Consolidated source for authenticating the ePassport signing certificates
 - ICAO PKD without critical mass to date
- Interpol Stolen/Lost Travel Documents DB access
 - improving with iCheckit



INDUSTRY – Zero-wait time for admissible travellers

- Willingness to Share Information
- Smartphone – More Credentials
 - “My Travel” / Secure ETA app
- Richer e-services for Travellers
 - Baggage check, Entry-Exit Point, etc.
- Zero-Wait Time
 - Dynamic data dialog
 - Early channelling for risk-specific processing
- Privacy and Security
 - Privacy by Design – positive sum
 - Traveller convenience
 - Strong verification
 - No storage of biometric – transactional use



CANADA - The Way Forward

- This cutting-edge technology can easily be adapted for other similar client services within IRCC
 - Passport renewals
 - Passport applications
 - Applications to other IRCC programs
- Provides an easy way for people to access government services conveniently and securely when using their smartphone
- Next project – looking to apply continuous risk assessment through travel continuum, potentially leading to more facilitation and security

In Conclusion

Canada's FASTER-PrivBio – Addresses Key Priorities:

- Streamline border flows for millions of lower risk travellers (eTA/ESTA)
- Leverage automated border investments and analytics/risk assessments
- Enhance screening for persons of interest and preventing terrorist travel

Virtual Border Building Blocks:

- Pre-travel stage – Using trusted biometrics and biographical information collected remotely and earlier to better know the traveller and assess risk
- Provide enhanced facilitation for screened lower risk travellers at the border

Interested in More About:

- FASTER-PrivBio Project and beyond
- WorldReach's Secure ETA™ for Electronic Travel Authorizations

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