



EMPLOYING ICAO MRTD TECHNOLOGY FOR BORDER CONTROL AND SECURITY IN SINGAPORE

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The Third Symposium and Exhibition on ICAO MRTDs, Biometrics and Security Standards

Outline

- Introduction of Immigration & Checkpoints Authority (ICA), Singapore
- Automated and Seamless Clearance
- Use of MRTD for Secure Immigration Clearance
 - Enhanced Immigration Automated Clearance System (eIACS)
 - Biometric Identification of Motorbikers System (BIKES)



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Introduction of Immigration & Checkpoints Authority (ICA), Singapore



ICA Formation

- Formed in 1 April 2003
 - Merger of the then CED & SIR
- Responsible for
 - Security of Singapore's borders against the entry of undesirable persons, cargo and conveyances through our land, air and sea checkpoints
- The entrusted body that manages 27 Checkpoints in Singapore



ICA Function

➤ Performs immigration and registration functions such as

- issuing travel documents, identity cards to Singapore citizens
- various immigration passes and permits to foreigners



➤ Conducts operations against immigration offenders



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Automated and Seamless Clearance



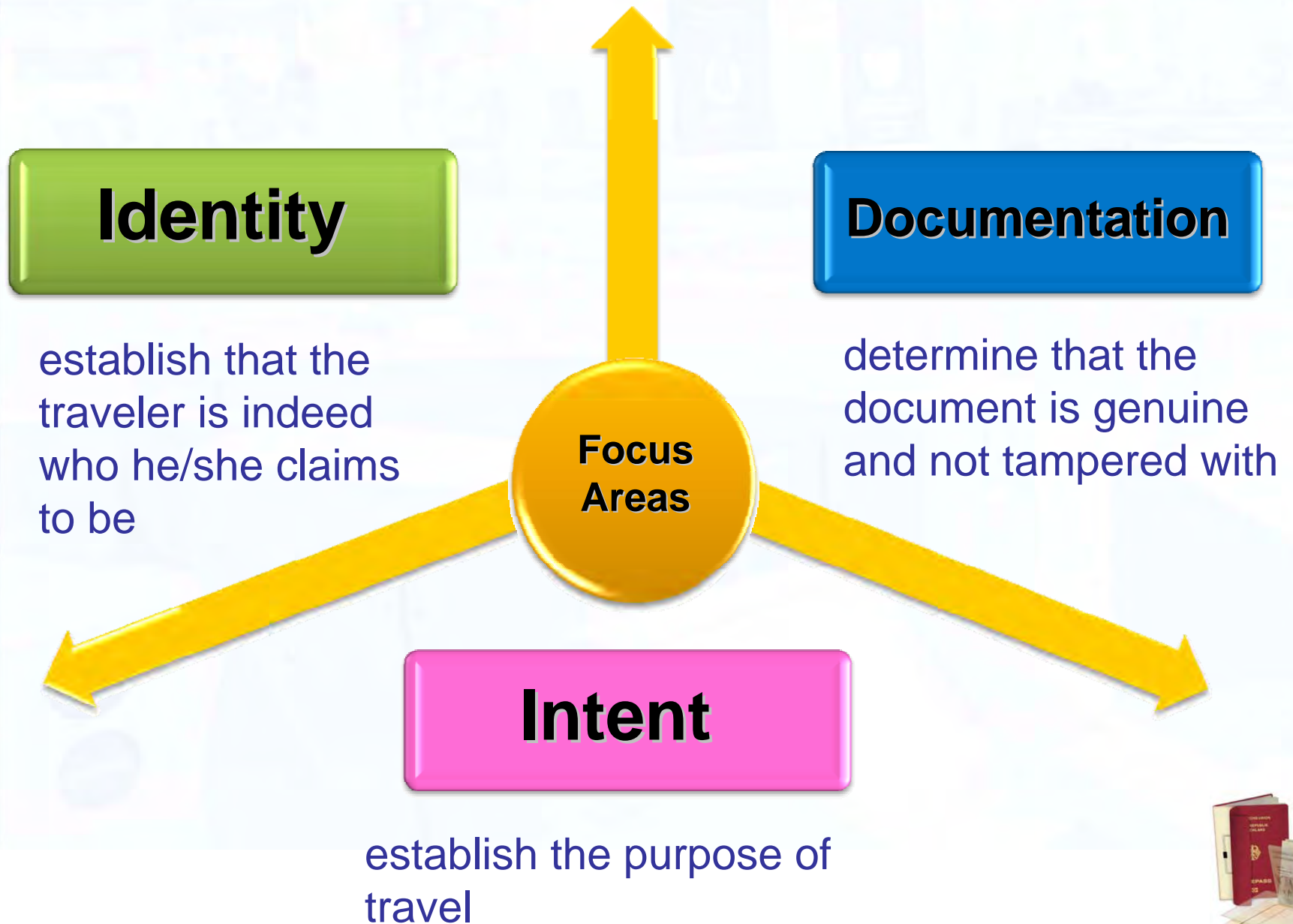
Motivations



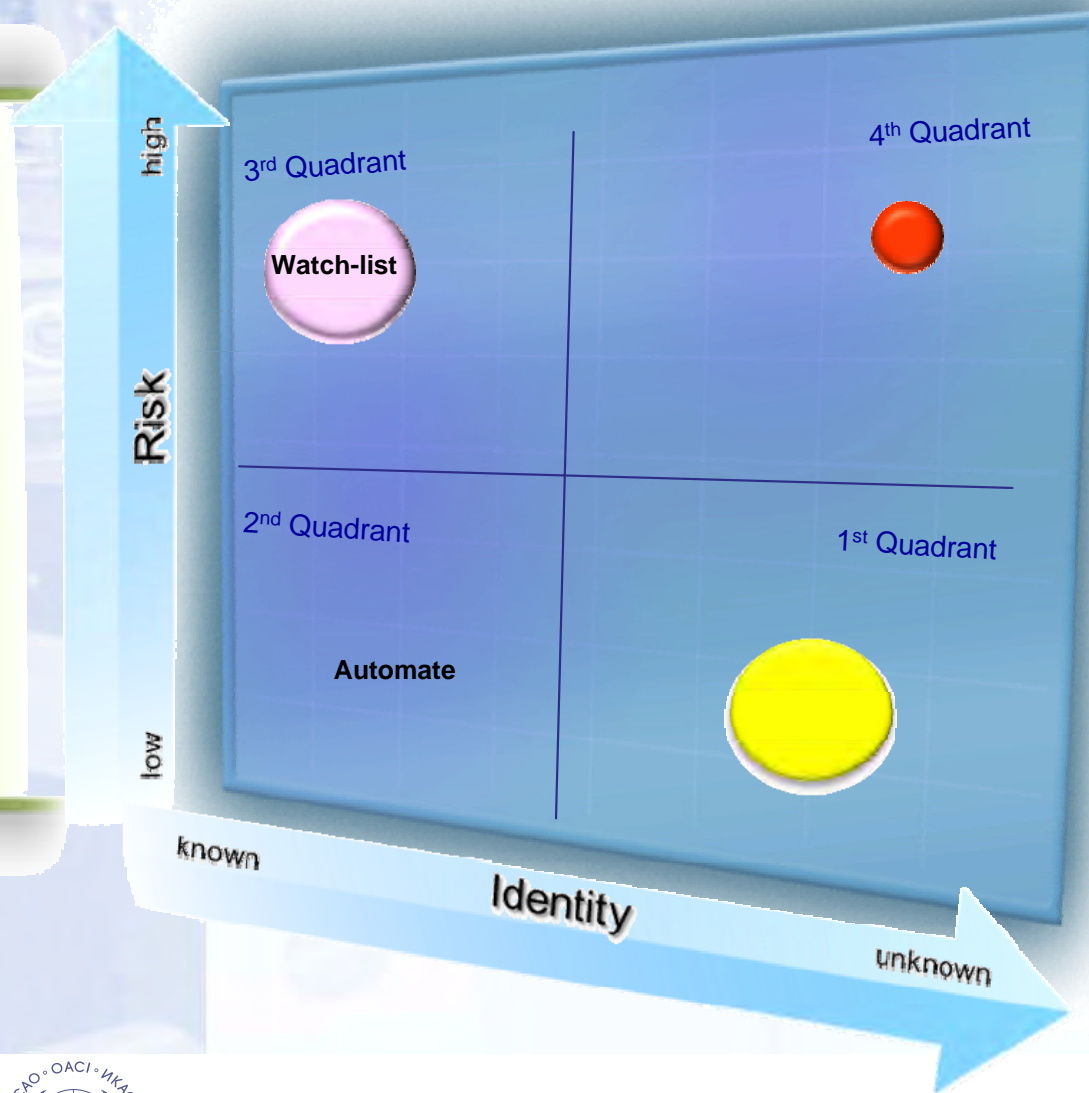
... **300,000** new passports a year,
60 million travellers a year,
40,000 motorcycles a day,
and countless vehicles



3 Key Focus Areas



Key Guiding Principle



➤ Identify and Move

- Identify and move as many of the 'unknown' traveller a 'known' traveller

➤ Automate "Safe-list"

- Automate the 'known' and 'low-risk' group of travellers

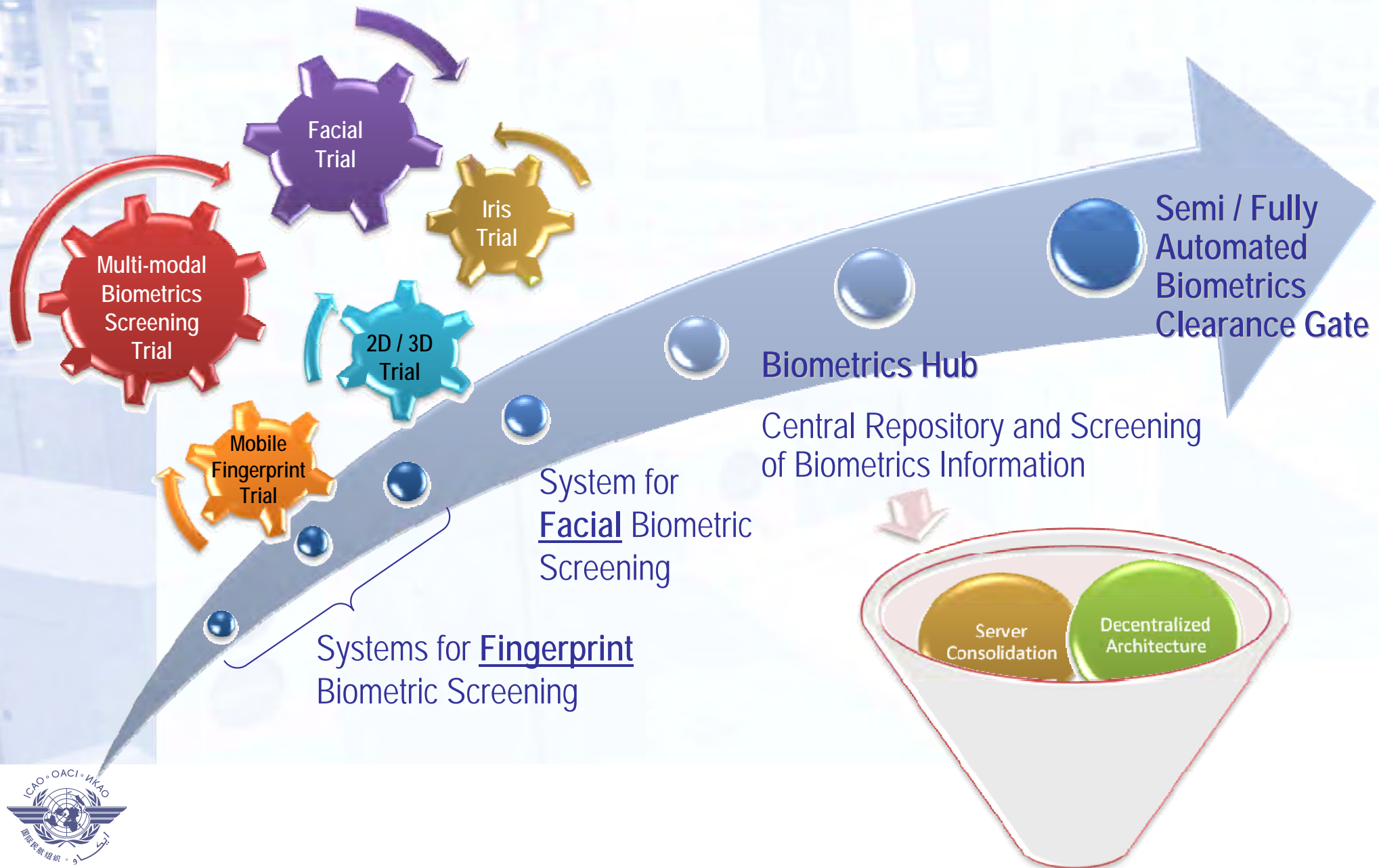
➤ Watchful Eye

- Place 'known' and 'high risk' travellers in "watch-list"

➤ Target

- Focus on truly 'unknown' and 'high risk' travellers for manual clearance

Biometric Roadmap



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Use of MRTD for Secure Immigration Clearance

- Enhanced Immigration Automated Clearance System (eIACS)
- Biometric Identification of Motorbikers System (BIKES)



The Parent - IACS

- Immigration Automated Clearance System (IACS) was implemented in Dec 1997
- Started as a pilot to automate immigration clearance for frequent foot travellers
- Use smart cards to store travellers' data. Fee of S\$30 for 3-years validity
- As of Aug 2007, there are about 128,000 registered IACS users – Singapore Citizens, Permanent Residents and Long-term Pass Holders



IACS – Very Successful, so Why Change?

- Changes in the global security landscape, checkpoint and border security presented with new challenges – the fight against terrorism
- Accurate identification of people and examination of goods - key in border control and security
- With increasing number of travellers seeking immigration facilities, essential to constantly improve upon current automated clearance facilities to cope with the higher traffic, without compromising on security and efficiency
- More robust mechanism and systems are required



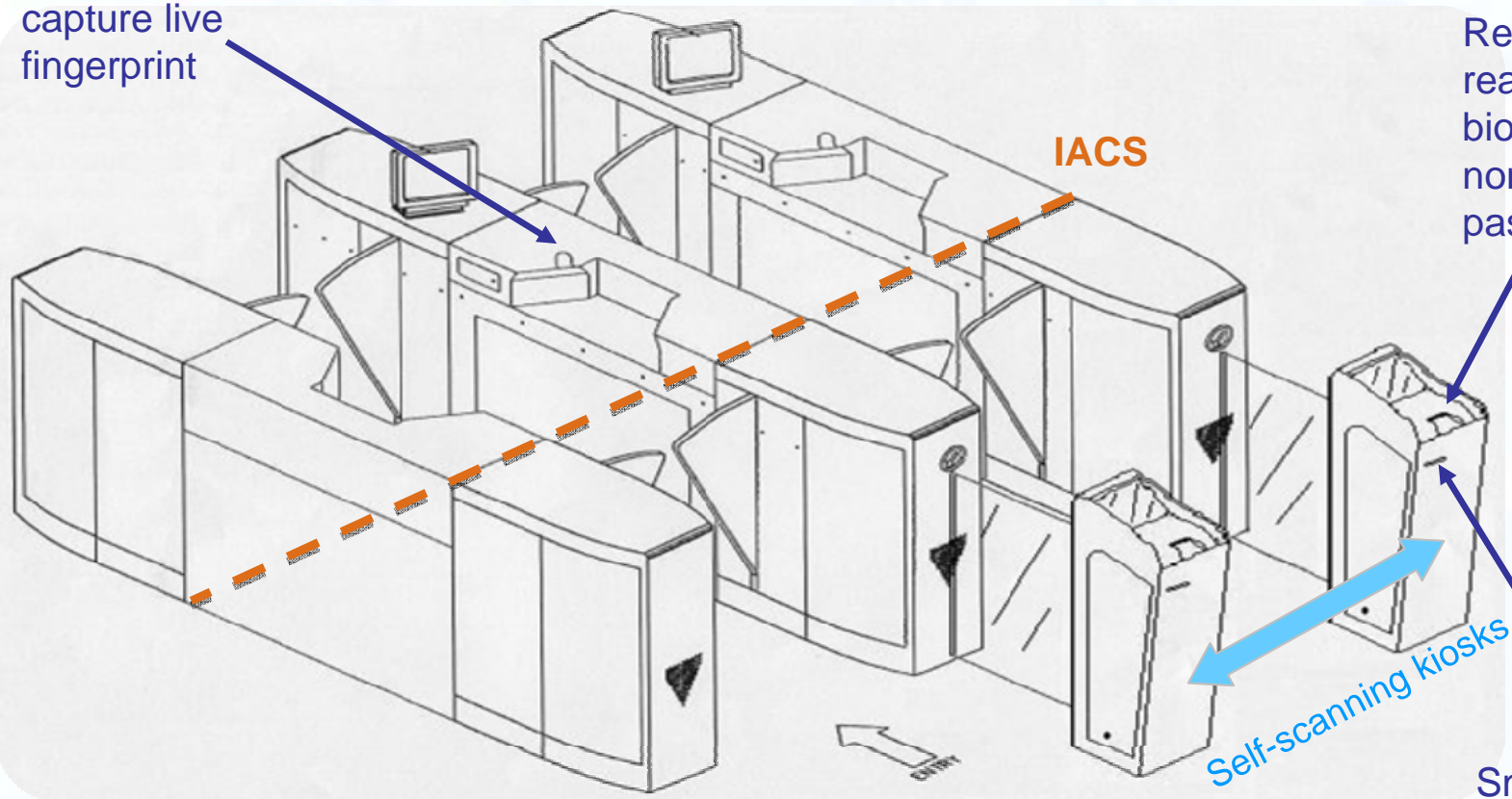
The Child - eIACS

- ICA brainstormed on the challenges of extending the reach of IACS (the parent)
- Challenges : need for enrolment and cost (S\$30)
- Innovative idea of added a self-service kiosk to all existing IACS lanes
- Birth of **Enhanced** Immigration Automated Clearance System (eIACS)



The eIACS Lanes

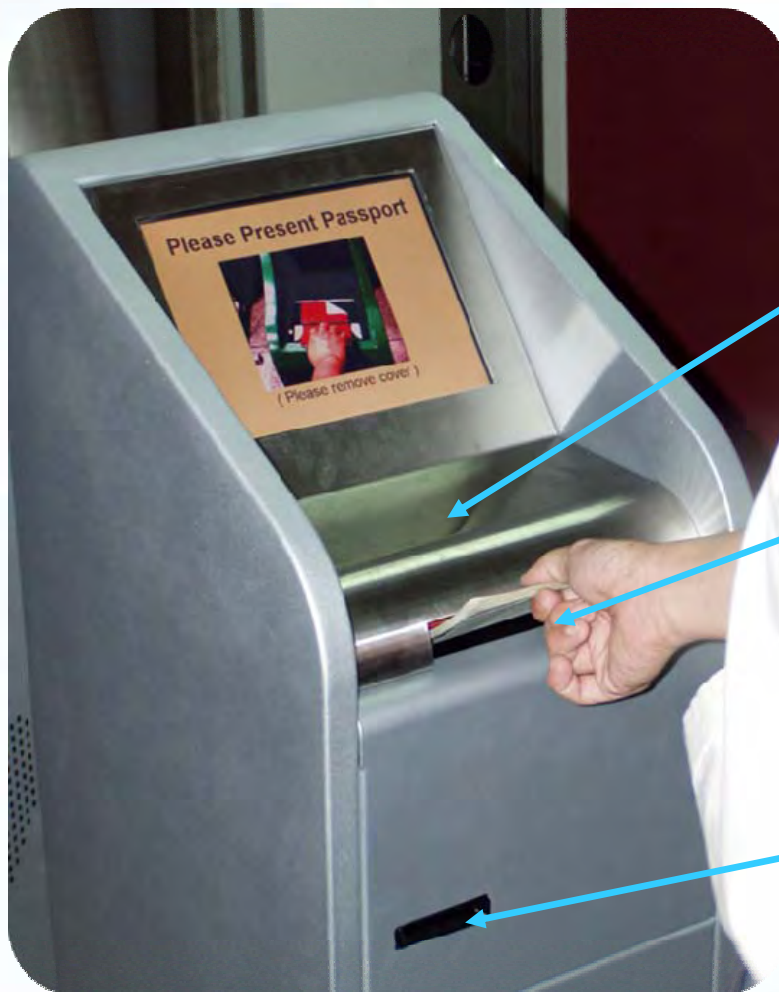
Fingerprint scanner to capture live fingerprint



The eIACS Lanes

3,000,000 Registered Users (Overnight!)

Close-up of the Self-Scanning Kiosk



contactless reader to read data in the chip of ICAO biometric passports

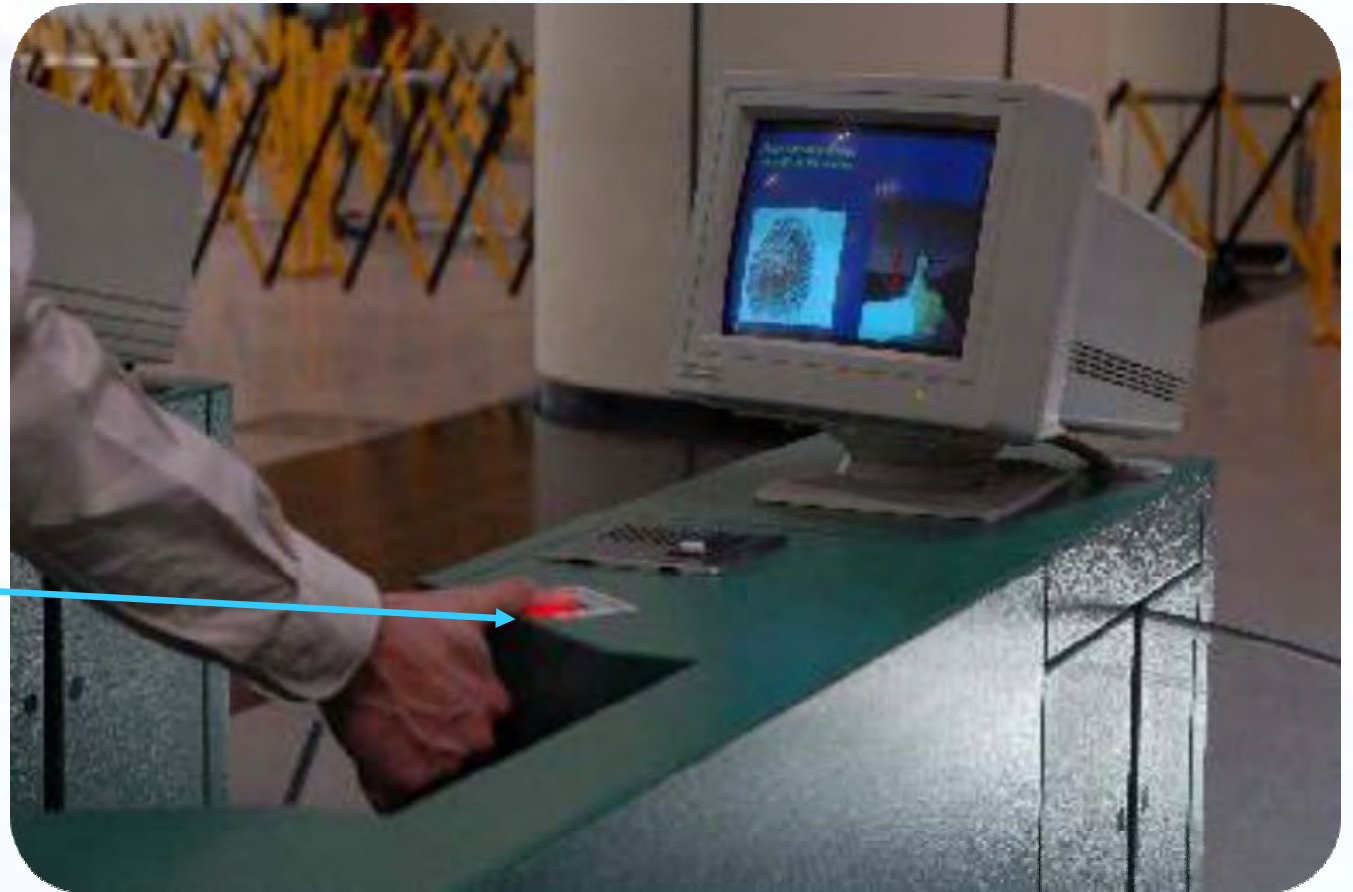
document reader to read data from the MRZ of passports

smart card reader to read data in the chip of IACS card



Close-up of Clearance inside elACS

fingerprint
scanner
for fingerprint
biometric
verification



Video – Crowd @ Manual Lanes

Singapore Woodlands Checkpoint – at the Bus Hall



Video – Crowd @ IACS Lanes

Singapore Woodlands Checkpoint – at the Bus Hall



Video – eIACS in action



Benefits of eIACS



- No enrolment required for almost 3,000,000 SCs
- No fee charged and additional token required
- Reduced congestion at manual counters

- Enjoy faster automated immigration clearance
- More secure through fingerprint verification
- Biometric identifier (fingerprint minutia) retrieved from server provides greater level of security



- Expandable to include other registered users

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Use of MRTD for Secure Immigration Clearance

- Enhanced Immigration Automated Clearance System (eIACS)
- Biometric Identification of Motorbikers System (BIKES)



Biometric Identification of Motorbikers System (BIKES)

- The first step to automate clearance of people & vehicle
- Uses fingerprint biometric – similar to eIACS
- Self-immigration clearance – similar to eIACS
- Requires registration – unlike eIACS
- Presently – for single rider



➤ BIKES2 – include pillion rider

BIKES - Objectives

- Ease traffic congestion
- Overcome manpower constraints
- Enhance clearance security via biometric technology



BIKES - Population

- Implemented in Tuas and Woodlands Checkpoints on 2 Oct 06 and 1 Feb 07
- Registered more than 16,000 users
- Mostly Malaysian nationals
- Eligible users:
 - Singapore Citizens
 - Singapore Permanent Residents holding Malaysian passports
 - Long-term Pass holders holding Malaysian passports



Video – BIKES in action





Thank You

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