Entrust - World leader in Identity Solutions

- **Global security solutions provider**
- **Software & Cloud Identity Solutions**
  - **PKI, SSL, IDM, Credentialing**
- **HQ (US), R&D (Canada), Offices (Lots)**
- **Pioneer: 1st commercial PKI – 1995**
- **1500+ global PKI deployments**
- **16 ePassport Projects**
  - **US, Canada, UK, New Zealand, etc.**

The March of Travel Identities
Major Milestones (1998 – 2015)

1998 - Malaysia 1st Biometric Passport

October U.S. Digital photo for VWP entry

August EU BAC Deadline

September ICAO 9303 Pt. 1, Vol. 2

October U.S. eMRP for Entry

Singapore 1st EAC eMRP

PKD Deployed

October U.S. VWP Expansion to 34 countries

November Germany 1st EU EAC eMRP

June EU EAC Deadline

April All states must issue only MRPs

100th State To Issue eMRP

Additional / Expanded Identities

2015 Only MRPs in circulation

2004	2005	2006	2007	2008	2009	2010	2011	2012+

| 3 | 10 | 36 | 49 | 60 | 75 | 90 | 100 | 120? |

## *# Countries Deploying ePassports*

BAC PKI Progression

- 2006: ICAO 9303 Standards
- 2007: PKD deployment
  - ~27 countries, ~10 pending
- 2008: PKD Master List Signing (MLS)
- 2010: Validation channels
- 2011: Supplemental Access Control (SAC)
- **2012: *Cloud PKI / Mobile PKI***

1st Generation (BAC ePassport

1st Generation (BAC) ePassport Adoption (2011)

**~95-100 Production
+
~20 Considering**

Legend:
- Pilot or Production
- Considering / In Progress

BAC: 5 Tier PKI Architecture

TIER

BAC PKI COMPONENTS

#1   CSCA

#2   MLS

#3   Document Signer

#4   Inspection Station Concentrator

#5   Inspection Station Client

ISSUANCE

Border Control

Validation Channel

Entrust

PKI

Hosted BAC & EAC

6
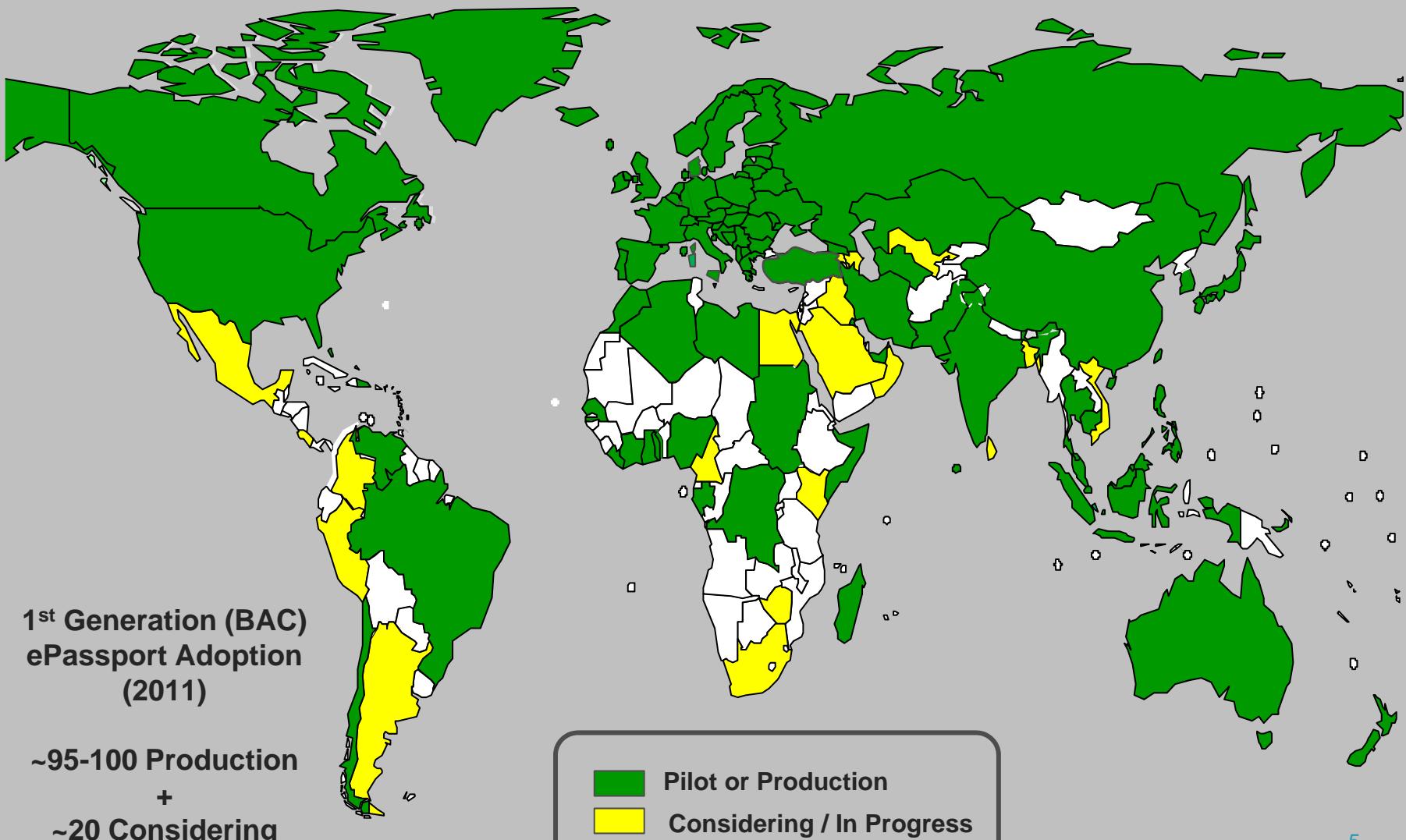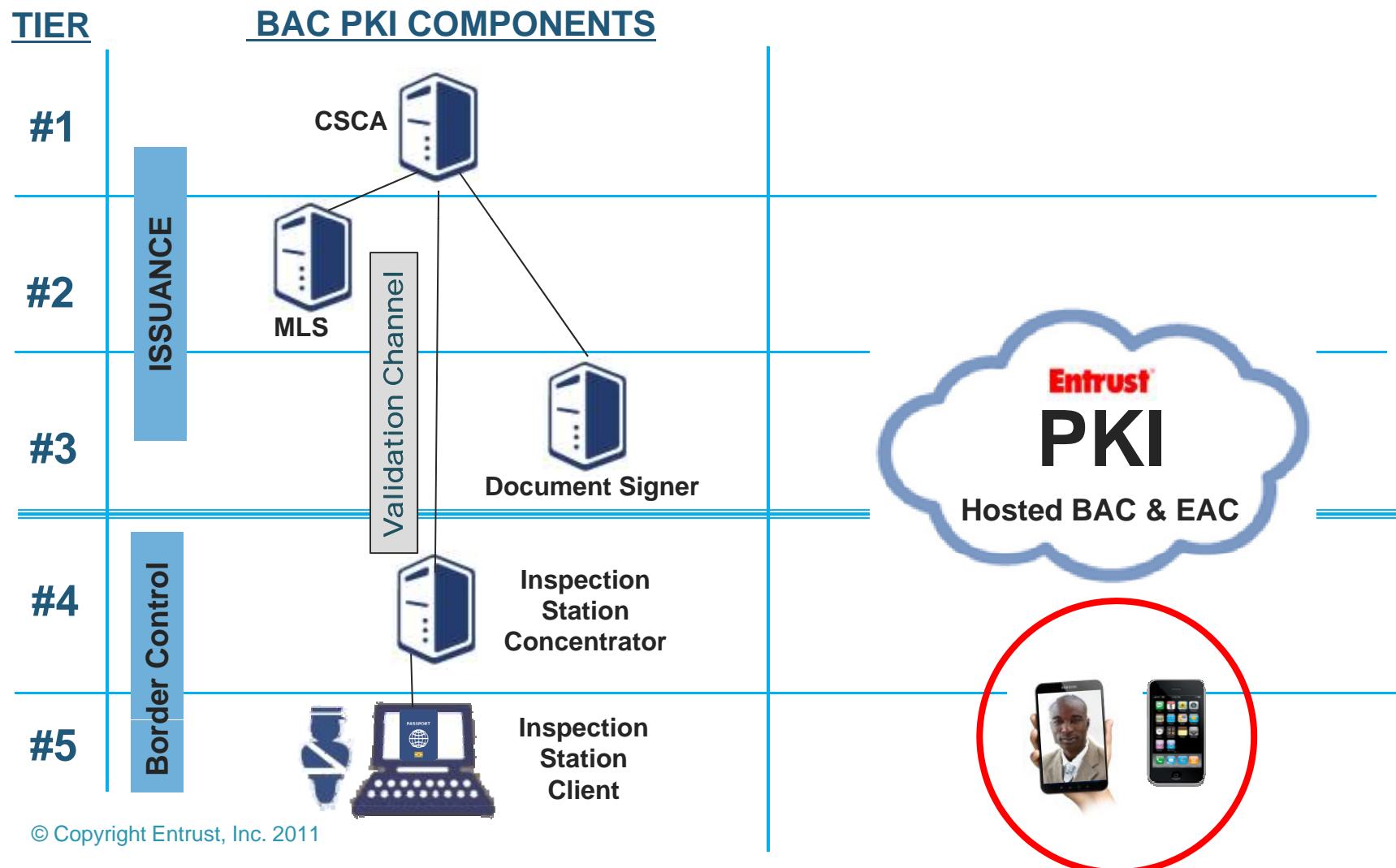
EAC PKI Progression

- 2006: EU EAC specification
- 2009: EU SPOC specification
- 2010: Validation channels
- 2010: Emergence of other 'communities of interest'
  - Asia, Latin America
- 2011: Other applications (National ID smart cards)
- 2012: LDS 2.0, Border Control Optimization
- **2012: *Cloud PKI / Mobile PKI***

2nd Generation (EAC) ePassport

2nd Generation (EAC) ePassport Adoption 2010

Legend:
- ■ Pilot or Production (green)
- ▢ Considering / In Progress (yellow)
- ◯ EAC Communities of Interest (red circle)

EAC: 5 Tier PKI Architecture

TIER

EAC PKI COMPONENTS

#1

#2

ISSUANCE

#3

Border Control

#4

#5

Entrust
PKI
Hosted BAC & EAC

CVCA

Single Point of Contact (SPOC)

Validation Channel

Document verifier

Inspection Station Concentrator

Inspection Station Client
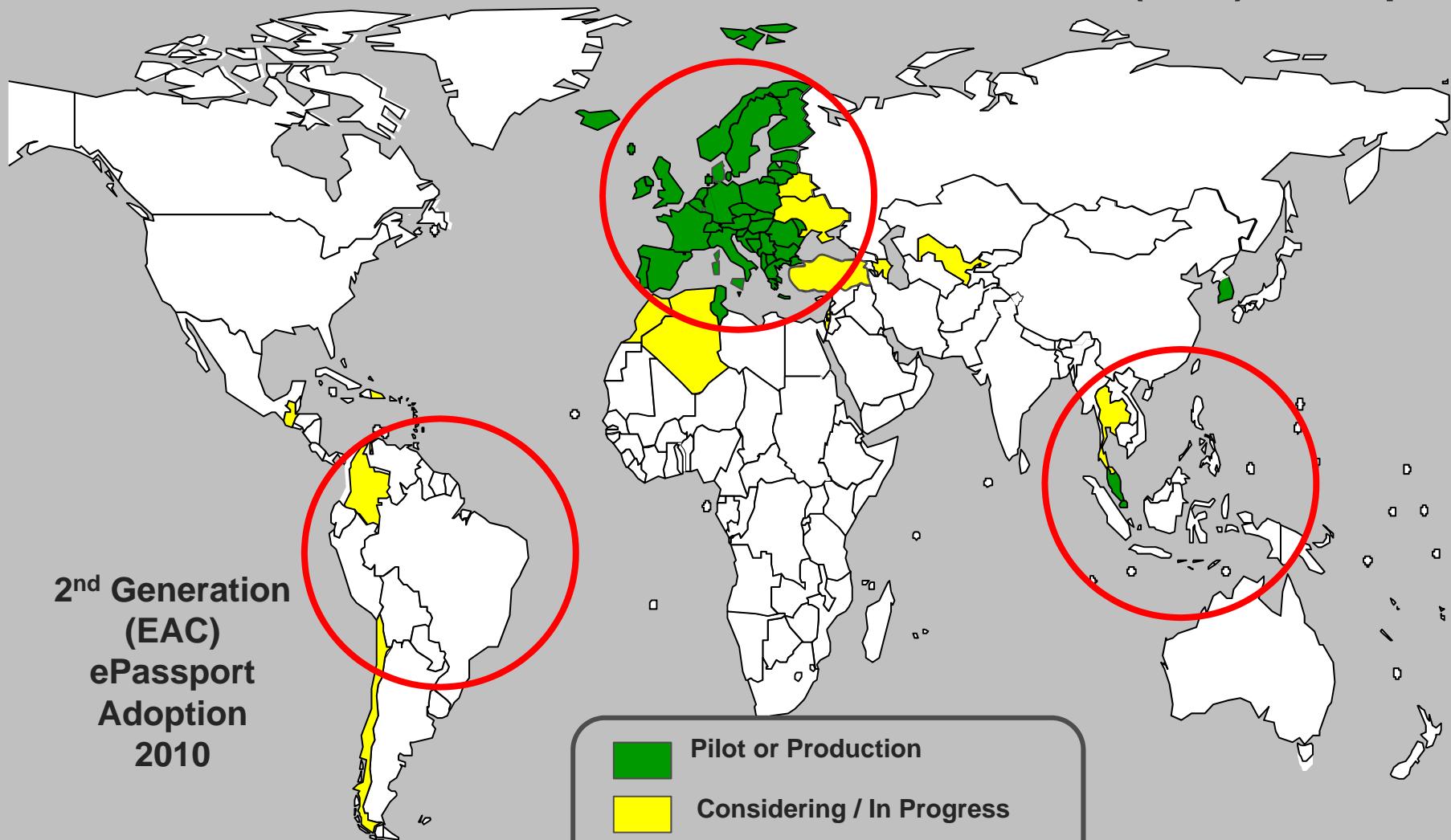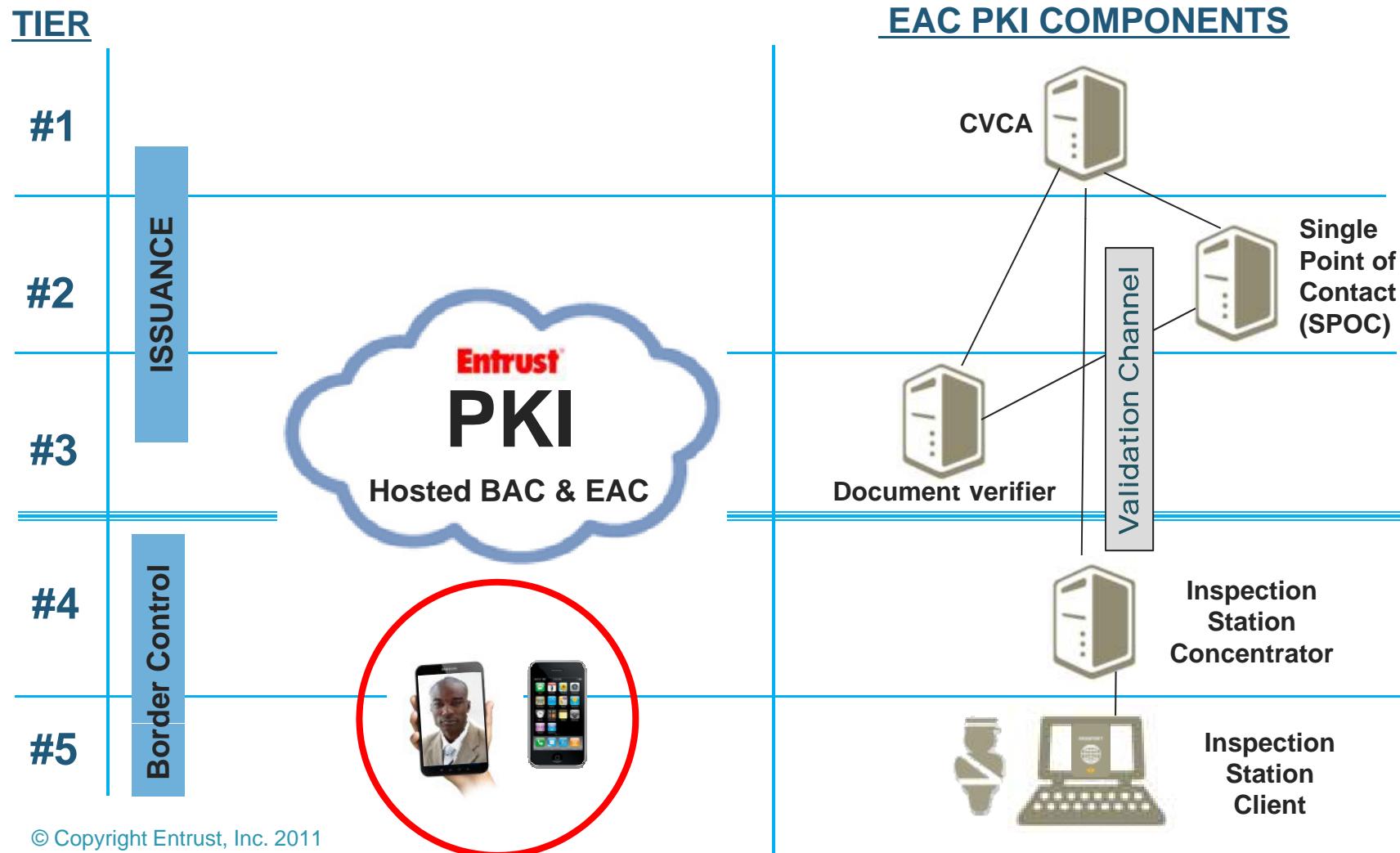
The March of ePassport PKI

1995 – 2012+

1995
World's 1st commercial PKI solution

September
ICAO 9303 PKI Standards

1st ICAO Compliant BAC PKI eMRP

1st EAC ePassport

1st BAC/EAC 'Dual-Rooted' PKI

PKI PKD Deployed

1st EU EAC eMRP

Master List Signing (MLS) Introduced

1st EAC SPOC Demonstrator

1st Commercial 5-Tier EAC Architecture

1st ICAO Compliant Identity Card (INTERPOL)

EU BIG Dissolves

EU EAC Refocusing

BAC eMRP Mandatory?

2004	2005	2006	2007	2008	2009	2010	2011	2012+

"BAC" — ICAO BAC — PKD — EAC — MLS — SPOC — SAC — Cloud / Mobile

PKI Evolution

ICAO Efforts Influencing Global Travel and Identity Advancements

- **9303 Standard**
  - BAC PKI
- **PKD**
- **LDS 2.0**
  - eVisa
  - Travel Stamps
  - Additional Biometrics Protection

INTERPOL Related IDs

Seafarer's ID

National IDs

UN Officials IDs

Displaced Persons ID

Personal Identity Verification (PIV)
(e.g. PIV-I)
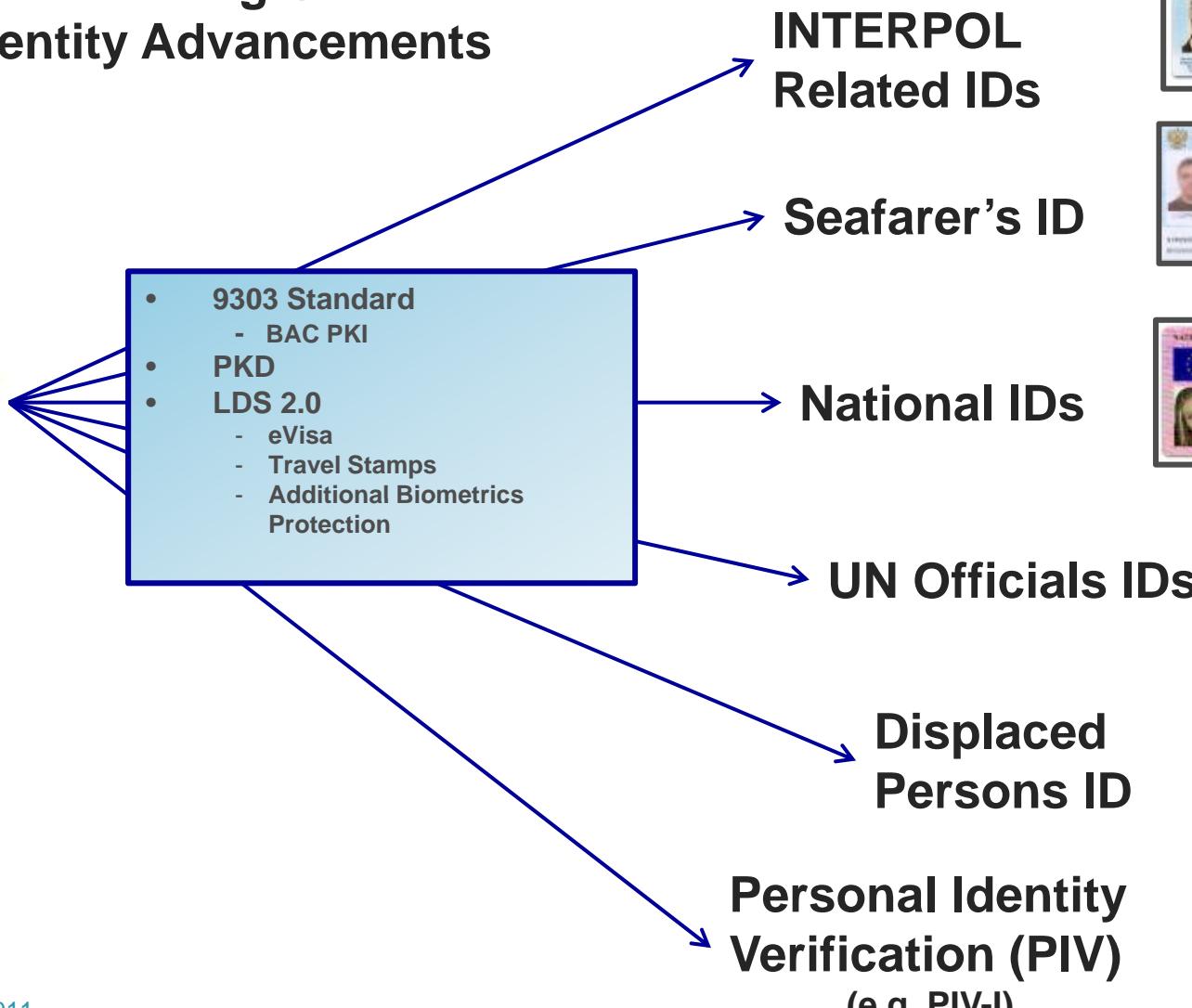
2011 / 2012 Advances
Cloud and Mobile PKI

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PKI
Hosted BAC & EAC

PKI Certificates
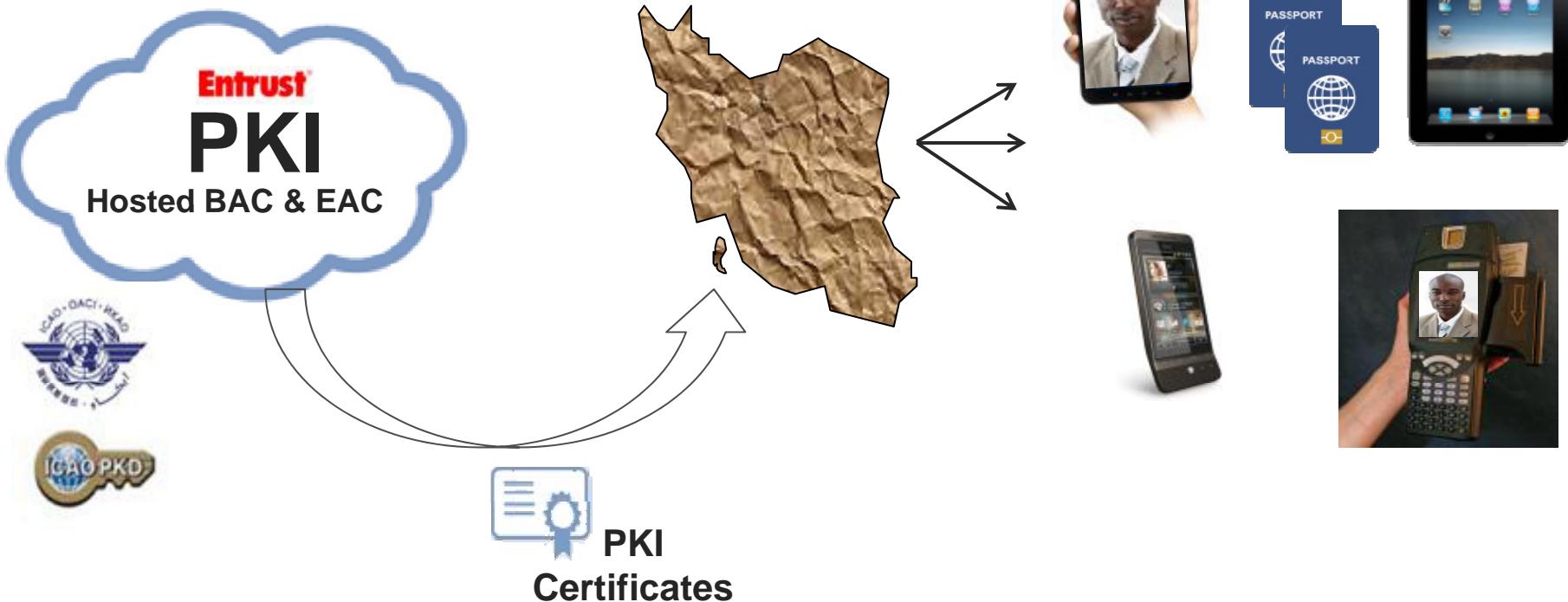
Summary

- eTravel documents and services are increasing
- BAC and EAC evolution continues
- Moving to the Cloud
- Moving to more Mobile
- PKI is keeping up!
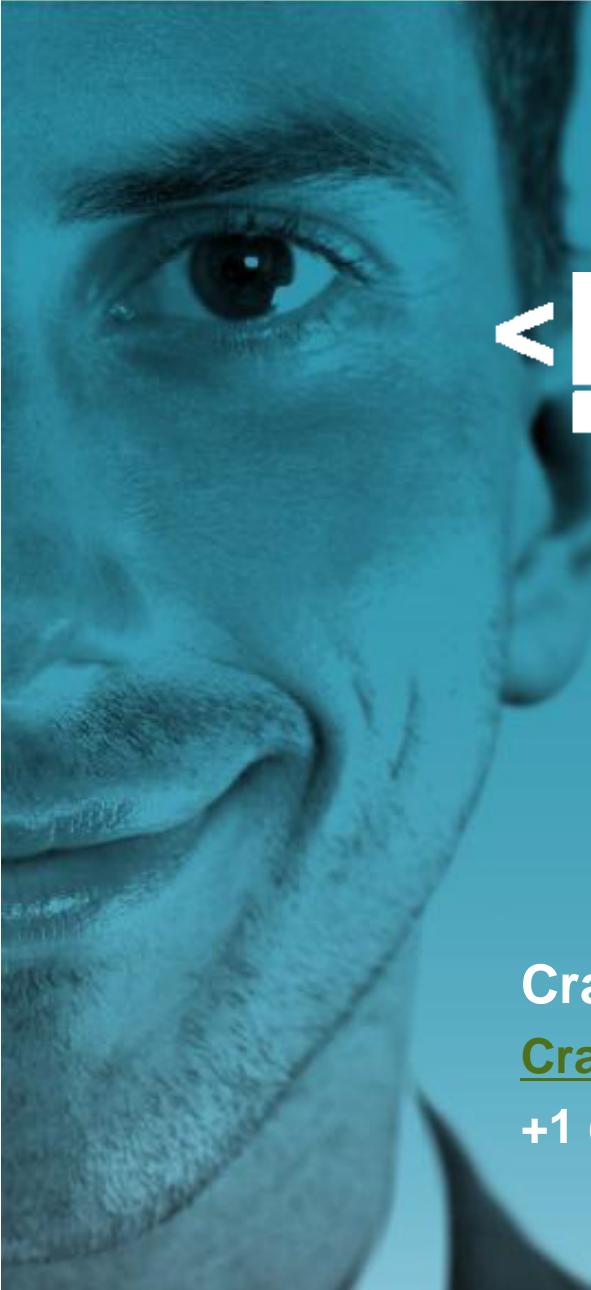
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