



Smart Card Alliance Government Conference

Washington, DC

October 30, 2014



Never stop thinking

Smart Card Alliance Government Conference

Washington, DC

October 30, 2014

Infineon Technologies - a German Share Index 30 company

Long experience in GovID market with **~30% Market Share** ww

More than **120 GovID projects worldwide** on all 5 continents

Outstanding technology portfolio: **SLE78 w/ Digital Security, SOLID FLASH, EAL6+ high**, High Memory variants, **VHBR**, ...

Linda Brown, Business Development



The Value of an Electronic ID Document



Beside the initial idea of identifying its owner to the authorities, new electronic ID documents bring value to the citizens.

Why Moving to Multi Application Cards?



- Convenience for citizen
- Enabling & simplification of processes (B2B, B2C)
- Enabling of online services
- Increase of security for both citizen & providers

Government ID Landscape

Multi application with Public & Private applications

Various services in the public domain

- eTax, eSocial, ePension, eVoting, eHealth, eDL

Various services in the private domain

- eTicketing, ePayment, eTrading, eVoucher

Application based on

- On-card application
- Off-card application

Multi application with Public applications

Various services in the public domain

- eTax, eSocial, ePension, eVoting, eHealth, eDL

Application based on

- On-card application
- Off-card application

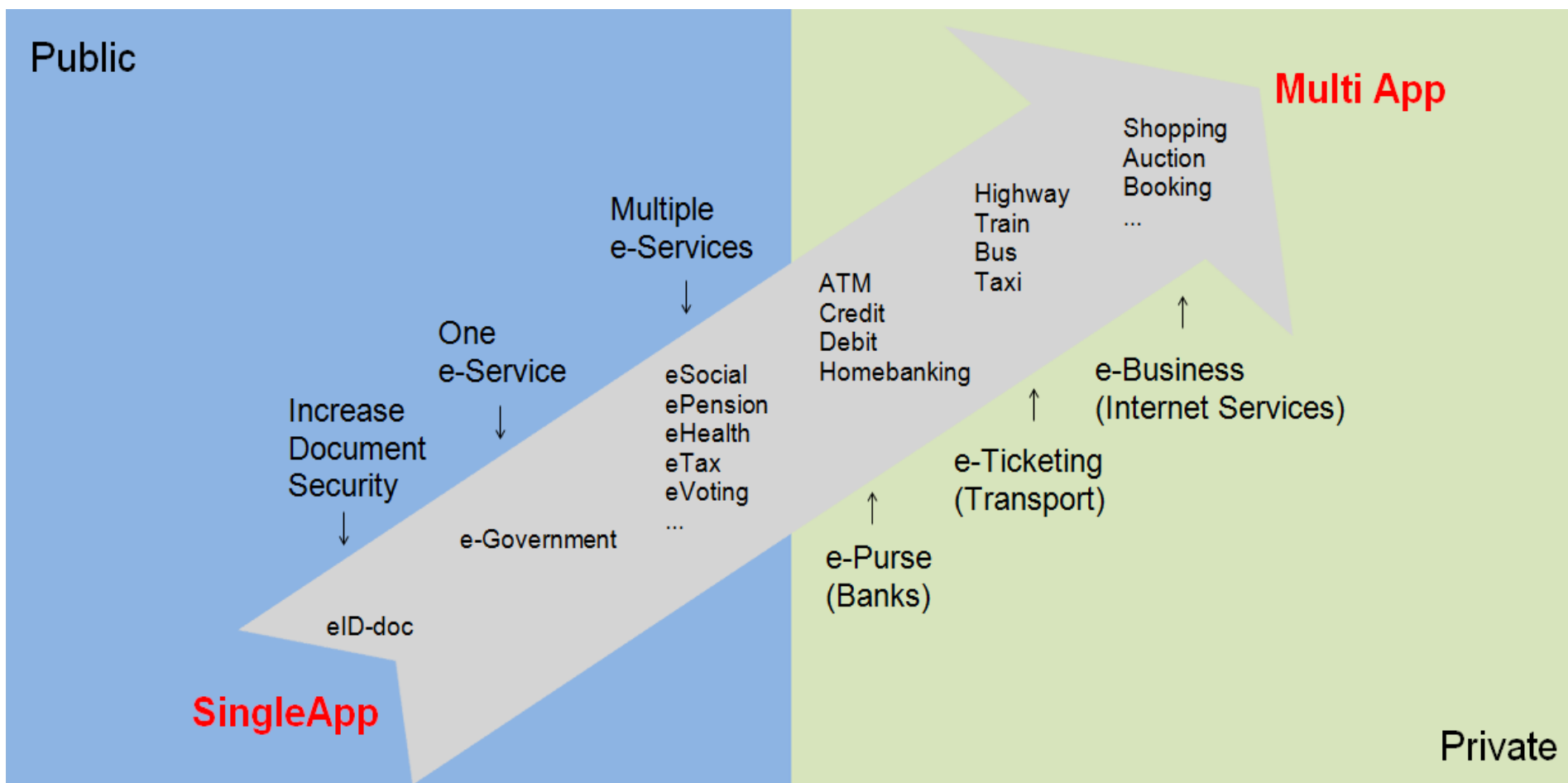
Single application

One application only

e.g. Electronic ID, eDL, ePass

Evolution Path to Multi App

From Single2Multi and Public2Private Application Cards

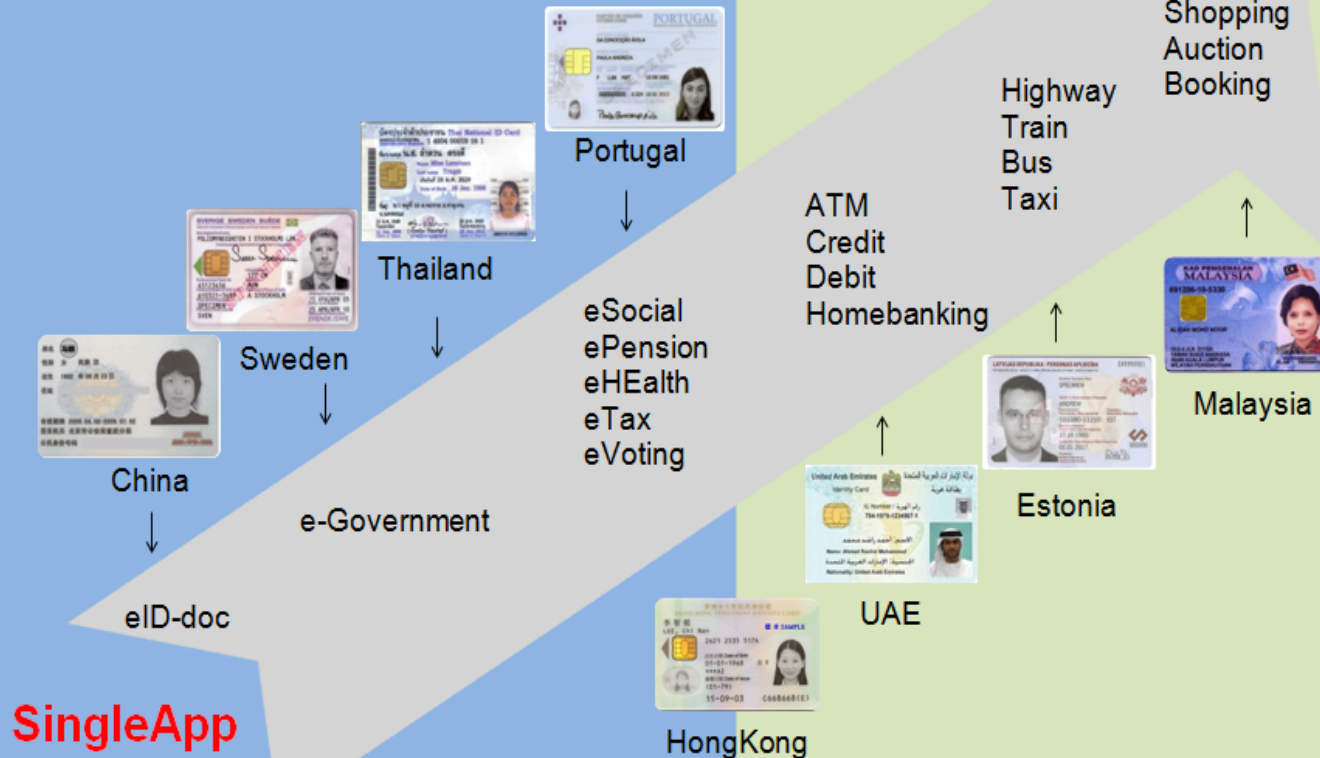


Evolution Path to Multi App

From Single2Multi and Public2Private Application Cards

Public

Multi App



Security Model

Business Model

Challenges for Multi Application eID



The key challenge for multi-app schemes worldwide is the early identification of key applications to drive citizens acceptance

Challenges for Multi Application eID

Clear ownership for the document

In field updates

Version control of SW

Isolated solutions

Missing program management to drive market acceptance

Single ministry (e.g. Mol) versus multiple ministries (Mol, MoT, MoH)

Development of own proprietary solutions

Security

Inclusion of private sector

Long lifetime of documents

Definition & Specification Phase

- **Multiple data groups SHOULD** be supported.
- **Flexible access condition** to the data group **SHOULD** be supported.
- International **standards** for technologies and app's **SHOULD** be used.
- Enough **memory SHOULD** be selected.
- **Flexible OS/Applet Architecture SHOULD** be selected.
- **Lifetime** of document **SHOULD** be defined upfront

Operation & Life Cycle Phase

- Highest available **performance SHOULD** be selected
- Long lasting **security** concept **SHOULD** be used
- **Field update SHOULD** be supported (e.g. new data groups, new security key)
- **Post issuing** service **SHOULD** be supported (e.g. new function, new app's)

MSAR - Macao Multi Applications NeID

- 2002: Roll out
- 2012: New Design, higher security
- 2013: 2nd Generation
- 1G = contact-based, 2G = contactless



Public Sector



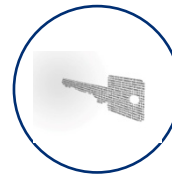
Identity Card



Health Voucher



Library



Public Key
Infrastructure



Kiosk

Private Sector



Identification in
Finance Sector

HKSAR - Hong Kong Multi Applications NeID

- 2004: Roll out
- 2005: eGovernment Service
- 2006: eBanking Service
- 2007: eDriving License Function
- Contact Interface
- Currently exceeding 8 Million



Public Sector



Identity Card



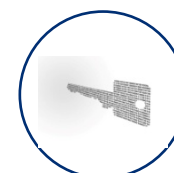
e-Gate



Driving License



Library



Public Key Infrastructure

Private Sector



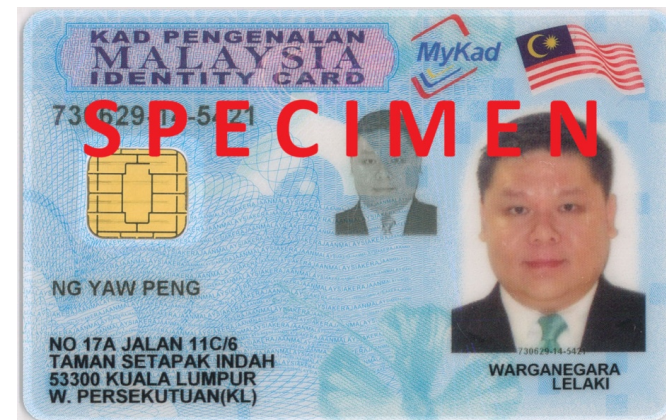
e-Banking



e-Business

MyKad Malaysia - Multi Applications NeID

- 2000: Roll-out
- 2005: Deployment completion
- 2007: Dynamic load enable
- 2012: New structure
- Hybrid Card approach
- Currently exceeding 28 Million



Anchor Applications



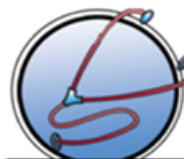
Identity Card



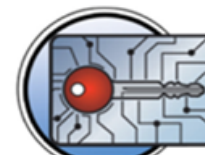
Passport Information



Driving License



Basic Medical Data



Public Key Infrastructure



Transit Card

New Structure Applications



Frequent Travelers Card



Off-Card Application



On-Card Application

Ceased Applications



Contact ePurse

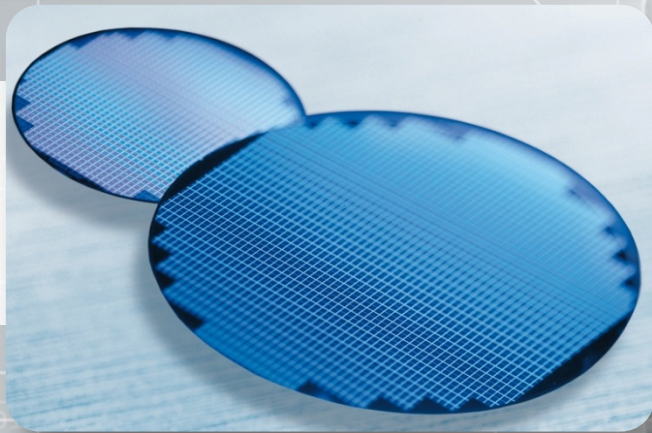


ATM

Examples for Multi App

		Public				Semi Public			Private	
		eID	eService	eGate	eDL	eHealth	eTicketing	eVoucher	eBanking	eShopping
Malaysia	1998	x	x	x	x	x	x		x	x
Estonia	2002	x	x				x			x
Hong Kong	2004	x	x	x	x	x			x	
Saudi Arabien	2005	x	x	x	x	x				x
Portugal	2006	x	x			x				
UAE	2007	x	x	x		x			x	x
Bahrain	2008	x	x	x	x	x				x
Germany	2010	x	x	x						x
RSA	2013	x						x		
Turkey	2014	x	x	x		x	x ¹⁾			x

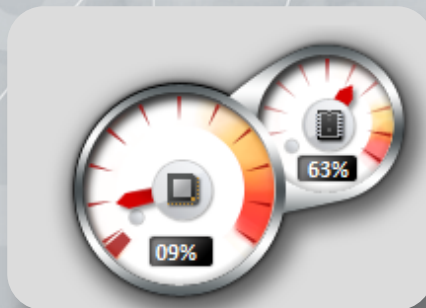
1) In discussion for 2G



New State-of-the-Art Semiconductor Technologies will enable new schemes for Government eID



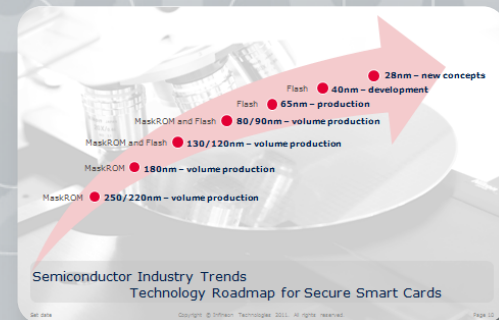
Security



Performance



MultiApp



Flash

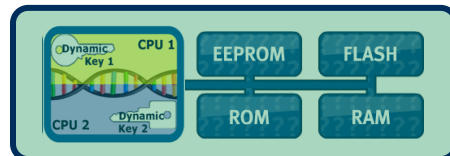
Challenges of Secure Electronic Documents

Security

- ✓ Fully encrypted data path including CPU
- ✓ Comprehensive error detection
- ✓ Self-checking dual CPU



INTEGRITY GUARD



C'less Performance

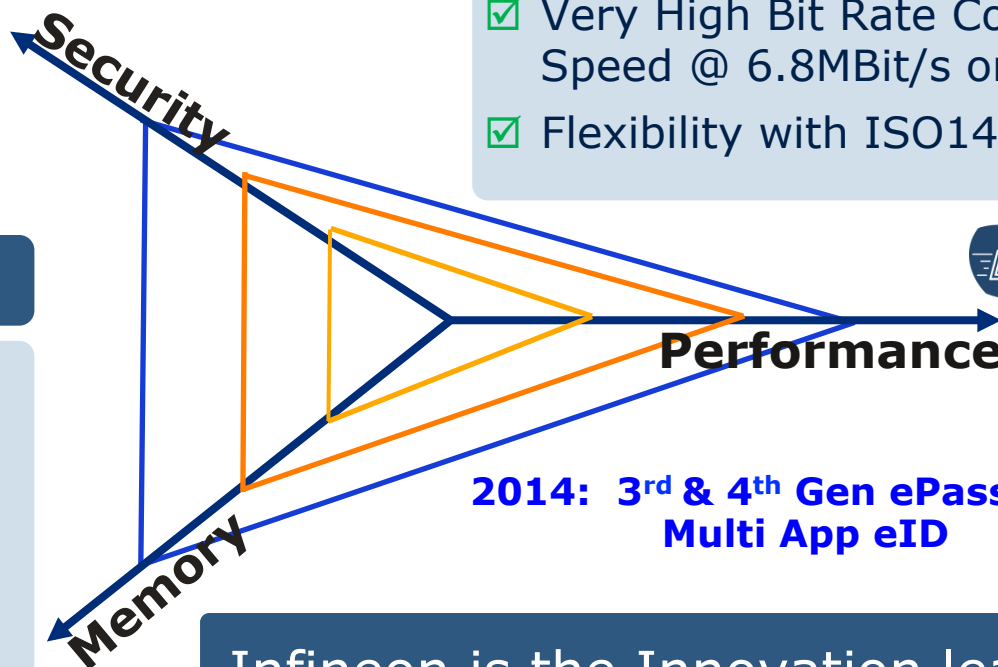
- ✓ 16bit cache-based architecture
- ✓ Support of higher frame sizes
- ✓ Very High Bit Rate Contactless Speed @ 6.8MBit/s on SLE78
- ✓ Flexibility with ISO14443 A&B

SOLID FLASH™

- ✓ Short time-to-market
- ✓ Perfect fit for multi application
- ✓ Secure adaptation to changing requirements
- ✓ Increasing Memory sizes



Mega Memory



VHBR

Performance

2014: 3rd & 4th Gen ePass & Multi App eID

Infineon is the Innovation leader for governmental IC products⁽¹⁾

(1) ABI competitive analysis, 2013

Worldwide eID Trends



Convergence between NeID & travel documents;
NeID for border control with ICAO or eRP

Convergence between NeID & token,
smart phone or tablet → Mobile eID

Increasing privacy
needs of citizens

Transport with open
CIPURSE™
standard

VISA information and travel stamps in
ePassports w/ LDS 2.0

VHBR interfaces to allow
fast data exchange



The number of successful
MultiApp eID schemes
worldwide is growing

Proper setup & program
management on the
application side is key for
success

Clear Ownership is required

Latest semiconductor
technologies enable new
opportunities in GovID with
flash and fast interfaces

A nighttime photograph of the Lincoln Memorial, Washington Monument, and US Capitol dome in Washington, D.C. A large, full moon is visible in the dark sky above the Lincoln Memorial. The Washington Monument stands tall in the center background. The US Capitol dome is illuminated on the right side. The Lincoln Memorial is brightly lit in the foreground.

Thank you!