How chip technology enables multiple electronic identity applications

ID4Africa
DAR ES SALAAM, Tanzania
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There are many use cases in the real and the virtual world which require security and trust.
Infineon focuses on three areas with highly attractive future perspectives

Energy Efficiency

Mobility

Security

- Infineon Technologies AG exists since 1999, Headquarter near Munich, Germany
- ~34,000* employees worldwide (as of Jan. 2015)
- Revenue in Fiscal Year 2014: € 5.150 billion*

*non-audited figures
Why Multiple Electronic Identity Applications Will Dominate In Future

The combination of high use applications like health, transport and payment with a government-issued token seems to be attractive:

- **Combination**

  - Payment e.g.: Credit Card
  - Health e.g.: eHealth Card
  - Transport e.g.: bus ticket
  - Government e.g.: national eID

**Advantages of multi-applications**
- Cost-efficiency
- Trust
- Convenience for citizens
- Technical possibilities

**ABI research study (August 2014)**
- Volume of converged cards will increase to 2.03 billion units in 2019
- Africa is focal point for convergence
An Electronic ID Card with Multiple Applications Offers Benefits to Citizens and Public Services

Multi-Application eID Card

- eGov Online Services (e.g. eTax)
- eTravel Function (Public Transport)
- eTicket
- eVoting
- ePurse
- eHealth

Benefits

Citizens
- Convenience for citizens
- Citizens trust in government-issued cards
- Help for the unbanked

Public Services
- Paperless cost-efficiency for administrations
- Faster communication within public authorities
Key requirements for eID documents

Long Lasting Security

Flexible & Large Memory

High Performance
Digital Security – the standard for secure electronic ID documents

- Completely encrypted storage and processing of on-chip data (leaving no plaintext) – incl. calculation with encrypted data in the CPU itself

- Two CPUs – continuously checking each other - and a comprehensive error-detection

- **Long lasting security** – even protection against new upcoming attacks

- Widely independent from classic security sensors
Multi App Challenge

- Host different commercial and governmental applications
- Allocate memory space for each application provider
- Support different app lifespans and maintenance cycles
- Offer secure mechanism for post-issuance updates on card
An growing amount of user data needs to be read-out efficiently (performance)

### User data in eDocs is increasing

- Biometric information includes not only face, but also fingerprint, iris, etc.
- 4th generation ePassports with LDS 2.0 could store hundreds of travel records (eStamps) and eVISA
- Multiapplication cards combine several applications in one document

### Fast read-out required

- To avoid longer document processing times, data have to be read out faster
- Contactless eID documents should use the Very High Bit Rates (VHBR) transmission standard
How to meet requirements for state-of-the-art and next generation eID documents with modern chip technology?

**Digital Security**
- Comprehensive error detection
- Self-checking dual CPU

**Flash Memory**
- Flexibility & short time to market
- Memory size of up to 1MB

**Performance**
- 16 or 32bit architecture
- Very High Bit Rate Contactless Speed @ 6.8MBit/s required

**INTEGRITY GUARD**
**SOLID FLASH™**
**Mega Memory**
Thank you!

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