Secure electronic IDs Made Simple

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General considerations
System Integration

System integration definition

• “A systems integrator is company that specializes in bringing together component subsystems into a whole and ensuring that those subsystems function together, a practice known as system integration” – Wikipedia

• “Systems integrators have to be good at matching customers’ needs with existing products” – Wikipedia
eDocument Issuance Systems

**Data Preparation**
- On Card applications
- Chip/OS platforms – flexibility on supporting multiple OS
- Secured Data preparation for eDocument with cryptographic operations

**Data Capturing**
- Capture and information verification
- 1:1 and 1:N Biometric verification solution

**Card Management**
- Manage eDocument Life Cycle from enrolment, issuance and usage of the eDocument
- Inventory control

**Key Management Service**
- Design of Key and certificates management and distribution facilities
- Design of secured key generation, storage, distribution policies

**Personalization & Printing**
- Physical and digital personalization with quality assurance

**External Entities**
Adaptability to Changes

eID Market Considerations

- “Rolls Royce” products may not address customers’ needs
- Non-homogeneous technology adoption
- Budgets may force projects to be delivered in phases
- Documents complexity increase
- Standards evolve quickly
- Local companies can bring value
- Countries need control over their national security
Adaptability to Changes

Agile system solutions and architectures

- Deep understanding of local skills, users’ requirements
- Flexibility for technology evolution, replacements & upgrades
- Need to shield business services from technology complexity
- Scalable architecture for capacity expansion

Minimize inter-dependency to Maximize adaptability
System integration approaches
Proprietary & Product Approach

- **Product-oriented design** to address customers’ needs
  - Products drive the solution design orientations
  - Agility within product family only
  - Upgrades dependency on product vendor

- **Point-to-point architecture** to integrate to existing operations
  - “Hard wired” fixed connection to
    - existing workflows
    - backend systems
Proprietary & Product Approach

- Consequences: limitations & inflexibility
  - On system manageability, reliability, performance
  - On system security
  - On capacity expansion and future upgrades possibilities

- Consequences: cost & timing
  - Huge replacement & evolution impacts
  - Evolutions → system re-write

- Typical company profiles
  - Companies with little domain knowledge
  - Product vendors
  - Locked-in approach SI
Holistic & Agile Approach

- Holistic solution with end-to-end view
  - Service Oriented Architecture (SOA) → Plug-and-Play
    - Easy application / technology replacement
    - Easy upgrades of individual modules
    - Best-of-breed technologies deployment

- Scalable infrastructure ensuring
  - End-to-end system security
  - Manageability, performance and reliability

- Open system architecture to merge with existing operations
  - Seamless integration with
    - Existing workflows
    - Backend systems
**Holistic & Agile Approach**

- **Benefits:** agility across the full system
  - Faster, more reliable and evolutive solution
  - “Technology agnostic” system
  - Minimized impacts on current operations & infrastructure
  - Increased end-users confidence and satisfaction

- **Key success factors are**
  - System Integrator’s experience
  - Will to adopt an open approach
  - Ability to understand & match local needs with
    - Available technologies, internal or external
    - Best-Fit selection of technologies
Many product-oriented vendors

- One-fits-all approach
- Closed systems
- Proprietary products

Very few systems integrators

- Plug-and-Play approach
- Open, scalable & evolutive systems
- Products matched with customers’ needs
Some concrete cases
Indonesia

- **Initial:** Issuance of MRP
  *Existing Captured Data, Data Processing and Personalization Solution*

- **Delivered:** Migration from MRP to eMRP (BAC/EAC)
  - Services-oriented Data Preparation Module
  - Scalable back-end environment for KMS with key generation, storage, distribution & document signing
  - Integration of secure chip encoding to existing personalization processes
  - Seamless deployment in existing environment with production training & ramp-up monitoring

2.5 months
Kazakhstan

- **Initial**: eID PC cards procured from Europe

- **Phase 1**: new factory built from the ground up
  - Unchanged final eID card (*Polycarbonate, Dual-Interface*)
  - Additional card making capabilities (*Bank, GSM*)
  - Machine selection & installation
  - Materials selection & process development
  - Production instructions writing, training
  - Ramp-up
Kazakhstan

**Phase 2: Chips & Operating Systems (COS)**

- Newer & faster OS for both eID and e-Passport
- Newer chips for both eID and e-Passport
- GOST local ePKI & certification of eID card COS
- Upgraded existing personalization system
  
  *Minimum operational impacts*
  
  *Multiple COS support, from Arjowiggins and 3rd party*

- Minimum training to existing staffs in Kazakhstan

- eID cards Chip & COS ready for future usage (*eGov, health*)

- Country-owned Chip Operating System for eID cards
Thank you
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