eGovernment and Interoperability Framework

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e-Governance Academy (eGA) is a non-profit non-governmental organisation for the creation and transfer of e-governance knowledge.

- Founded by Open Society Institute, UNDP and Estonian Government in 2002.
- Activities with more than 50 countries.
- Over 2000 participants in training.
• 22 staff members
• Wide network of the international experts – all practitioners with hands-on experience
eGovernance Academy international cooperation
Balanced e-Governance

Combination of electronic services and participatory services

e- GOVERNMENT
Transaction of user-oriented services offered by government that are based on information and communication technologies.

e-DEMOCRACY
Digitally conveyed information (transparency) and the political influence (participation) exerted by citizens and business on the opinion-forming processes of public – state and non-state – institutions
eGovernment example:

Parental benefit – best eGov service in 2004 (interoperability of 5 information systems from 5 government institutions)
Tax declarations on-line
eParticipation example:

E-Voting in Estonia
e-Voting statistics in Estonia

![Bar chart showing voting statistics in Estonia from 2005 to 2015. The chart indicates a significant increase in the number of votes cast, particularly in 2015 with over 176,491 votes.]
Government

Ministries
  - Management representatives & IT managers of ministries
  - IT councils of ministries
  - Council directors

Informatics Council
  - ICT work groups of ministries
  - Department of State Information Systems (RISO)
  - IT manager

County governments
  - IT managers
  - Representative

Local governments
  - IT councils of counties
  - Council representative
  - Local government associations
  - Representative

Informatics Centre

ICT work groups of counties

MINISTRY OF ECONOMIC AFFAIRS AND COMMUNICATIONS
<table>
<thead>
<tr>
<th>Nature of document</th>
<th>Name of Document</th>
<th>Nature of regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and strategy documents</td>
<td>eGov Strategy, Interoperability Framework</td>
<td>Infopolitical agreement, strong recommendation</td>
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<tr>
<td>Laws and sub-acts</td>
<td>Databases acts, Personal Data Protection Act, Digital Signature Act etc.</td>
<td>Compulsory</td>
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<tr>
<td>Framework descriptions</td>
<td>Architecture descriptions</td>
<td>Strong recommendation</td>
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<td>Interoperability Related Standards</td>
<td>Documents, digital signature, security, message transfer etc.</td>
<td>Advise and recommendation</td>
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Legislation

- Public Information Act (2001)
- Act on Intellectual Property (applicable also for state databases)
- Personal Data Protection Act (1996)
Example: info-political principles in Estonia

- Citizen (customer) orientation
- Leading role for the private sector
- Efficient and transparent public sector. eDemocracy and participation.
- Functioning model for protection of personal data
- Measures against digital divide (ID-cards example…)
- Neutrality concerning technological platforms
- etc.
E-Gov Coordination:
- strategy
- budget
- regulation
- training

Management and implementation of shared, services infrastructure, portal, data exchange infrastructure, eID, payment gateway etc.

VISION

Ministries

Service Points

More and better services, More locations, 24/7, smaller Government, lower costs
Central coordination and IOF management – different roles

eGovernment Central Coordination Unit:

- eGov and Information Society strategy planning and monitoring.
- Collecting and analyzing ICT systems in government (forms available)
- eGov budget planning with Ministry of Finances and donors (structure available)
- Developing and giving approvals for legal acts related to eGov
- Preparing eGov strategies and action plans
- Monitoring Action Plan development
- Cooperating with CIOs. Trainings for CIOs.
- Planning and coordinating international cooperation on eGov.
Central coordination and IOF management – different roles

eGovernment Central Implementing Body:

Implementation of eGov interoperability platform.
- Data Exchange Infrastructure
- Portal
- Data Exchange Infrastructure management system - metadata
- Infrastructure
  - Network
  - eID
  - CA
  - Mobile and payment gateway
  - Cloud
eGovernment Central Implementing Body (X-ROAD CENTRE)

Interoperability Framework Center

Government portal

Infrastructure department and datacenter?

Management and assistant staff

Data sec. unit (ISKE implementation) with access to CERT

Trainings Unit (1..2 pers)

Administrative system (3 pers)

Technical Implementation (2 pers)

"marketing", development and quality control (3 pers)

Editorial Development Helpdesk (3 pers)
System Architecture

Heterogeneous environment:
- different operating systems, authentication and access methods

Unified security environment:
- Confidentiality, integrity, availability and non-repudiation in a unified way
- Single protocol and single interface (XML-RPC)

Heterogeneous environment:
- different database systems, technologies, protocols and interfaces

- Citizens database
  - Oracle
- Vehicles database
  - MS SQL
- Weapons database
  - Progress

Coordination:
- Certification, Time-stamping, Secure directory

www.ega.ee
Example:
X-Road Estonia

- Public sector: 160 DB
  - Population Register
  - Health Insurance Register
  - Vehicle Register
  - Document record management systems
  - Documents repository
  - Energy
  - Telecom
  - Banks
  - Security servers

- Private sector: 5

- Internet: X-ROAD
  - Security servers
  - Central server I
  - Central server II
  - HelpDesk
  - Central monitoring
  - Administrative system of the state information systems
  - X-road certification center

- X-GIS

- E-institution: institution view
  - E-county: county view
  - Governmental Portal: Your Estonia
  - State portal: www.eesti.ee

- Citizen view: KIT
  - Enterpriser view: EIT
  - Public servant view: AIT

- ~ 400,000 services
- ~ 45,000 services

- 3000 services

- 550 org.
- 500 DB
- 1,100,000 Certification Center

- 5
- 160 DB
MISH Architecture Overview

Example: Mauritius/Singapore

3-Tier Application

- GINS
- Intranet Web Server
- Apache Web Server
- Internet Cloud
- Internet Web Server
- App
- Application Server
- JBOSS SOA-P
- Data
- Database Server
- MySQL
National chip-based Identity Card

Issuing authority:
Estonian Citizenship and Migration Board

Service contractor:
TRÜB Switzerland

Start of issue: January 1, 2002

Conformance with:
ICAO Doc. 9303 part 3

Inside 16 Kb RSA crypto chip are:
2 private keys; authentication certificate;
digital signature certificate;
personal data file
The central components in the architecture:

- Government network GovNet
- Data Exchange Infrastructure (x-road);
- The layer of personalized portals (citizen portal(s), entrepreneur portal(s), civil servant(s) portals);
- The register of registers, catalogue of services and the management system for the state information system;
- The layer of geoinformation systems;
- The layer of document management systems and document exchange centre;
- The system of classifications;
- The system of address details;
- The security system
REMOTE ADMINISTRATION & SUPPORT

Support & administration services
Initial Installation and localization
Training
Operating of CA

INTEGRATION LAYER

LOCAL PARTNER

Operates local organization:
- Local policies
- Training
- Validation
- User support
- User administration of Portals

OPERATION: SUPPORT, MONITORING, TRAINING, ADMINISTRATION

REGISTRY 1

REGISTRY 2

Monitoring information
End-user queries
Database-dependent protocol
Thank You!

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