

Digiriigi arhitektuur

Tartu, 2022-10-26



Uuno Vallner, PhD
Certified Architect
E-Riigi Akadeemia vanemekspert



TOGAF® 9
Certified

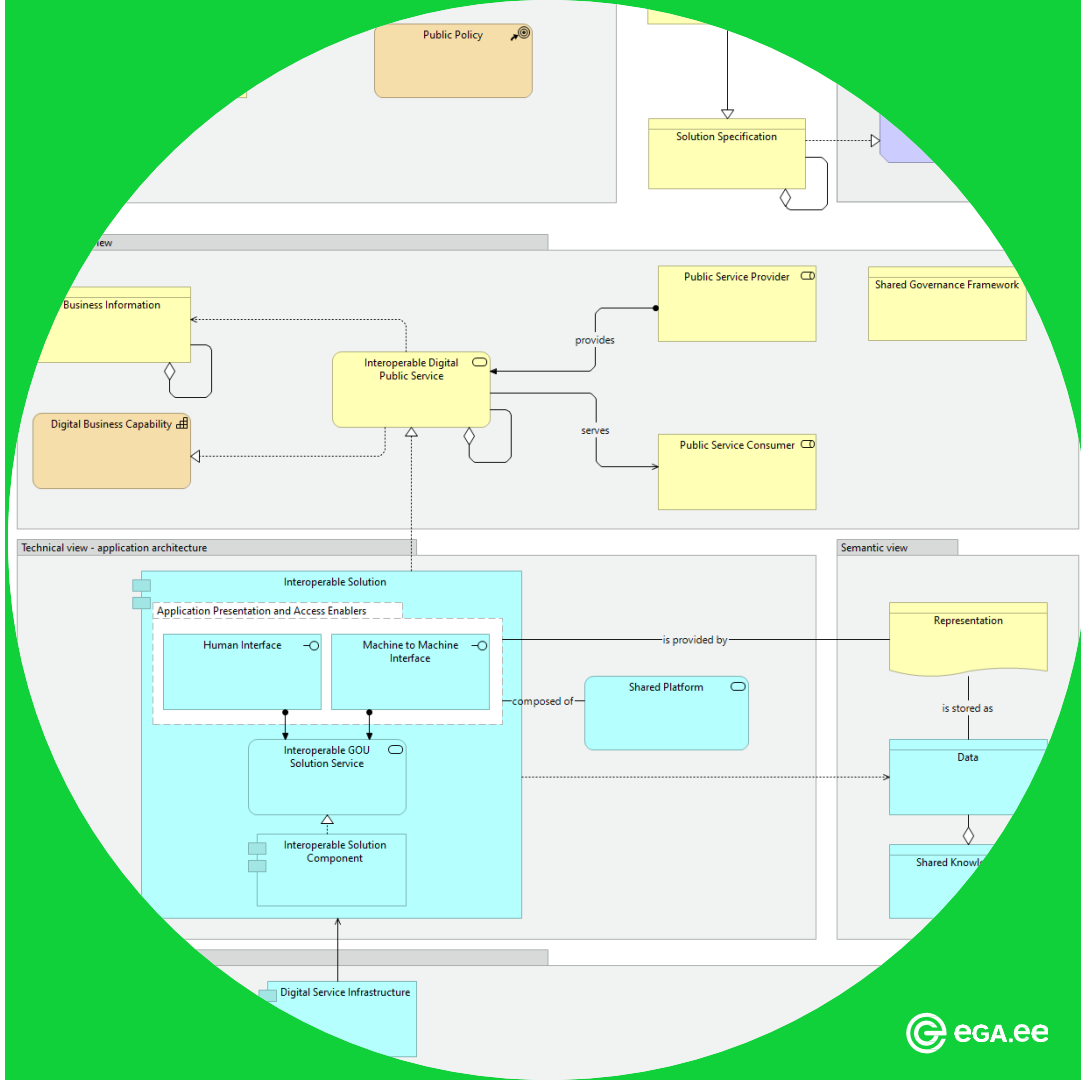
E-riigi Akadeemia

- Asutatud 2002
- Sihtasutus
- Valitsusväline
- **53** inimest Eestis, Kirgiisis, Sebias, Ukrainas
- Ekspertidel isiklik kogemus e-riigi ülesehitamisest
- Projektid 138 riigis
- Käive ca **5,96 M** EUR (2021)



Millest räägin?

- Arhitektuurist
- Endast
- Digiriigi (e-Eesti) arhitektuuri loomisprotsess läbi oma kogemuste prisma
- Teised riigid



Architecture (ISO)

The fundamental concepts or properties of a system in its environment embodied in:

- its elements,
- relationships,
- and in the principles of its design and evolution

Architecture Framework

An architecture framework is a foundational structure, or set of structures, which can be used for developing a broad range of different architectures. It should describe a method for designing a target state of the enterprise in terms of a set of building blocks, and for showing how the building blocks fit together.

TOGAF standard

The Open Group Architecture Framework (TOGAF) standard is a most popular architecture framework. It provides the methods and tools for assisting in the acceptance, production, use, and maintenance of an Enterprise Architecture. It is based on an iterative process model supported by best practices and a reusable set of existing architecture assets.

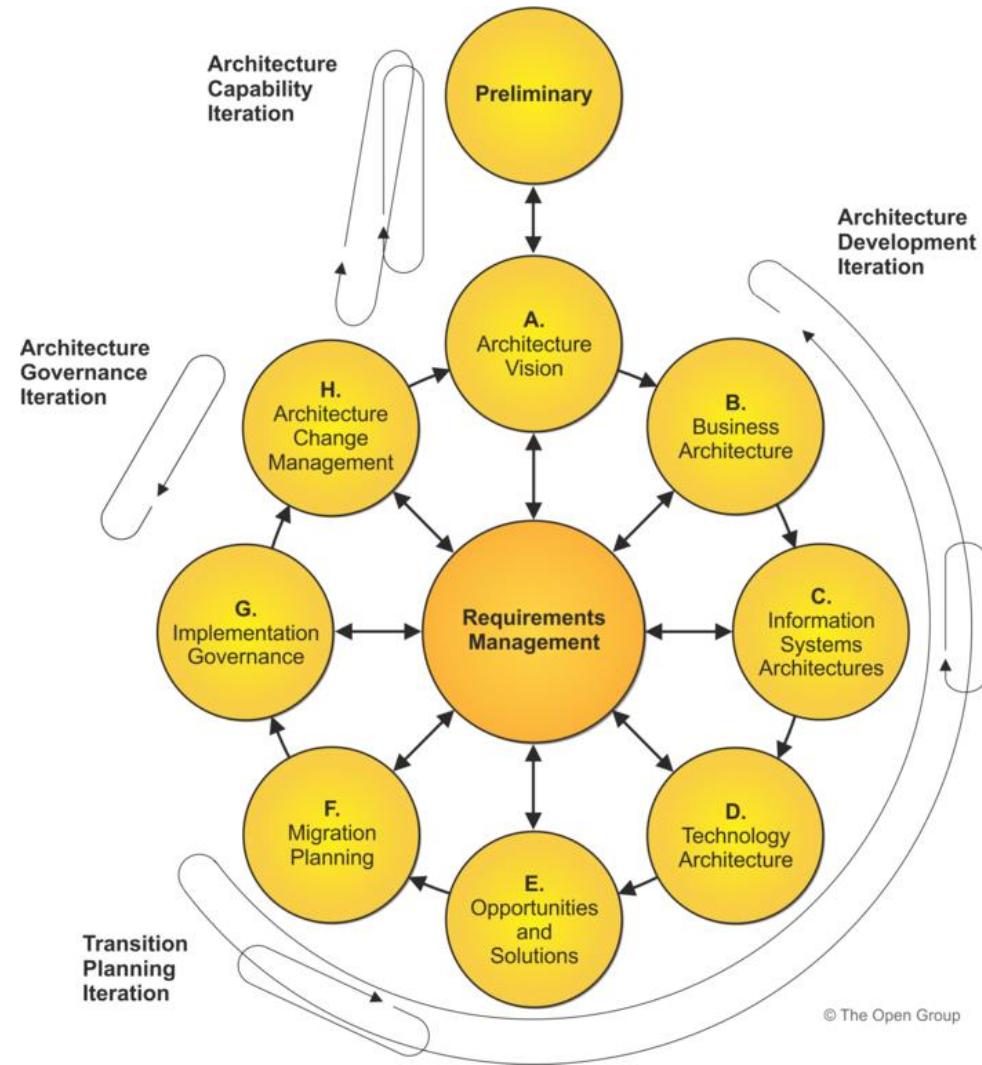
TOGAF considers an „enterprise“ to be

...any collection of organizations that have common goals.

- A whole corporation or a division of a corporation
- A government agency or a single government department
- A chain of geographically distant organizations linked together by common ownership
- Groups of countries or governments working together to create common or shareable deliverables or infrastructures
- Partnerships and alliances of businesses working together, such as a consortium or supply chain

The Architecture Development Method (ADM) is iterative, over the whole process, between phases, and within phases

Business Architecture
Data Architecture
Application Architecture
Technology Architecture



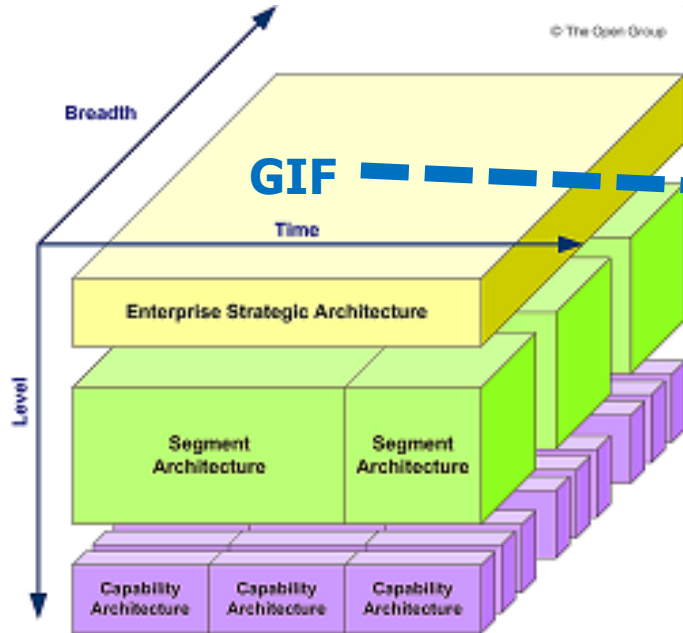
Interoperability Framework

Interoperability is the ability of organisations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organisations, through the business processes they support, by means of the exchange of data between their ICT systems

Interoperability framework is a commonly agreed approach to the delivery of public services in an interoperable manner. It defines basic Interoperability guidelines in the form of common principles, models and recommendations

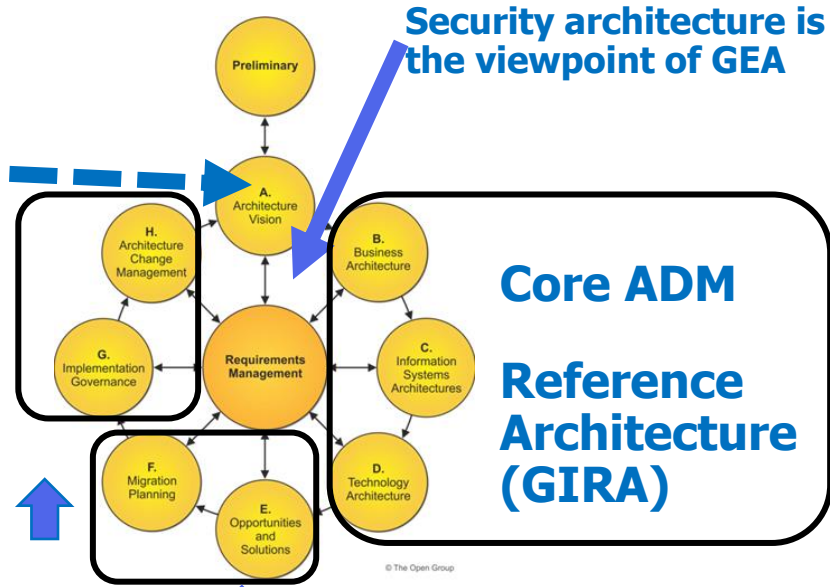
Government enterprise architecture (GEA)

GIF covers all ADM phases on strategy level.



Governance of GEA

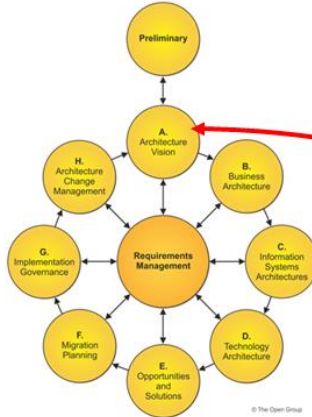
The GEAF covers the core components of ADM: business, information systems and technology architectures.



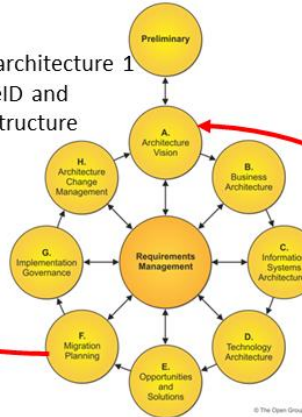
Implementation plan of GEA

Iterative continuation

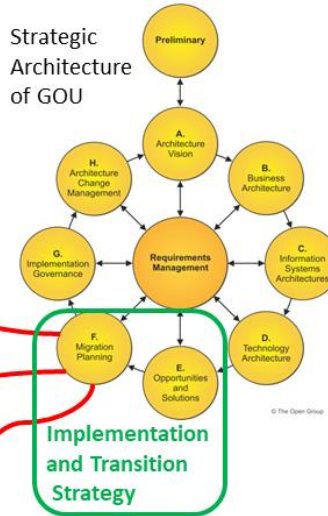
Subsegment architecture
Example: Timestamp service



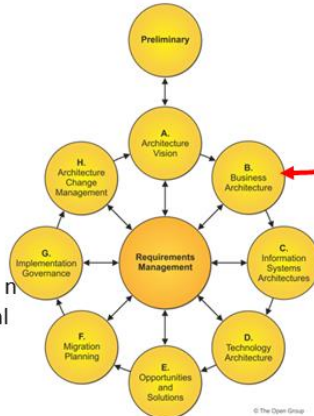
Segment architecture 1
Example: eID and
PKI infrastructure



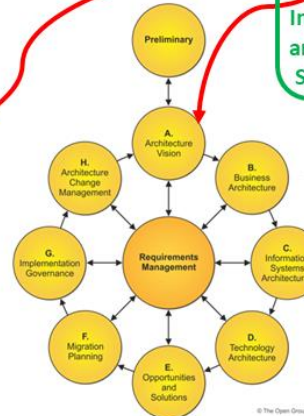
Strategic
Architecture
of GOU



Segment architecture n
Example: citizen portal



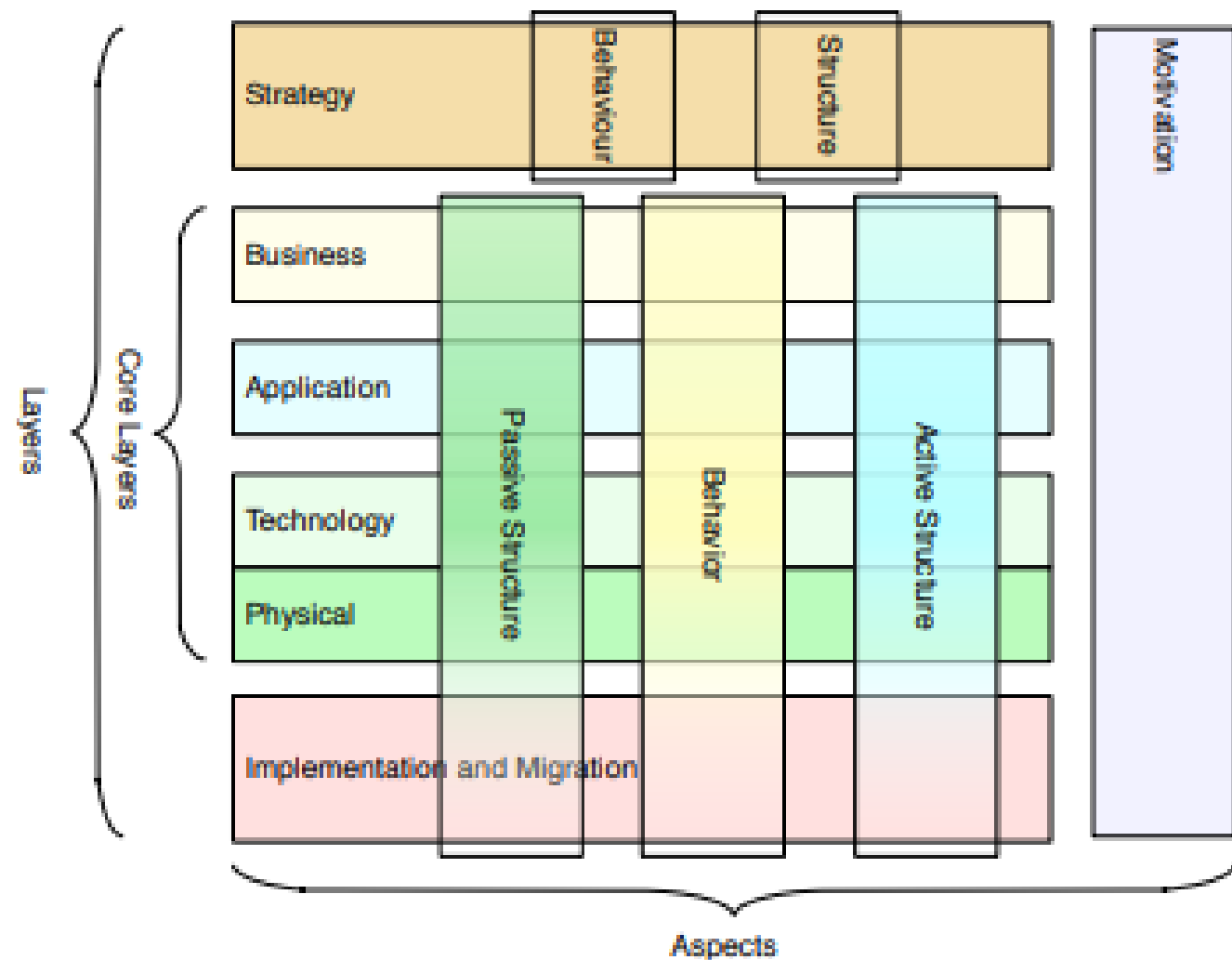
Segment architecture 2
Example: Secure data
exchange



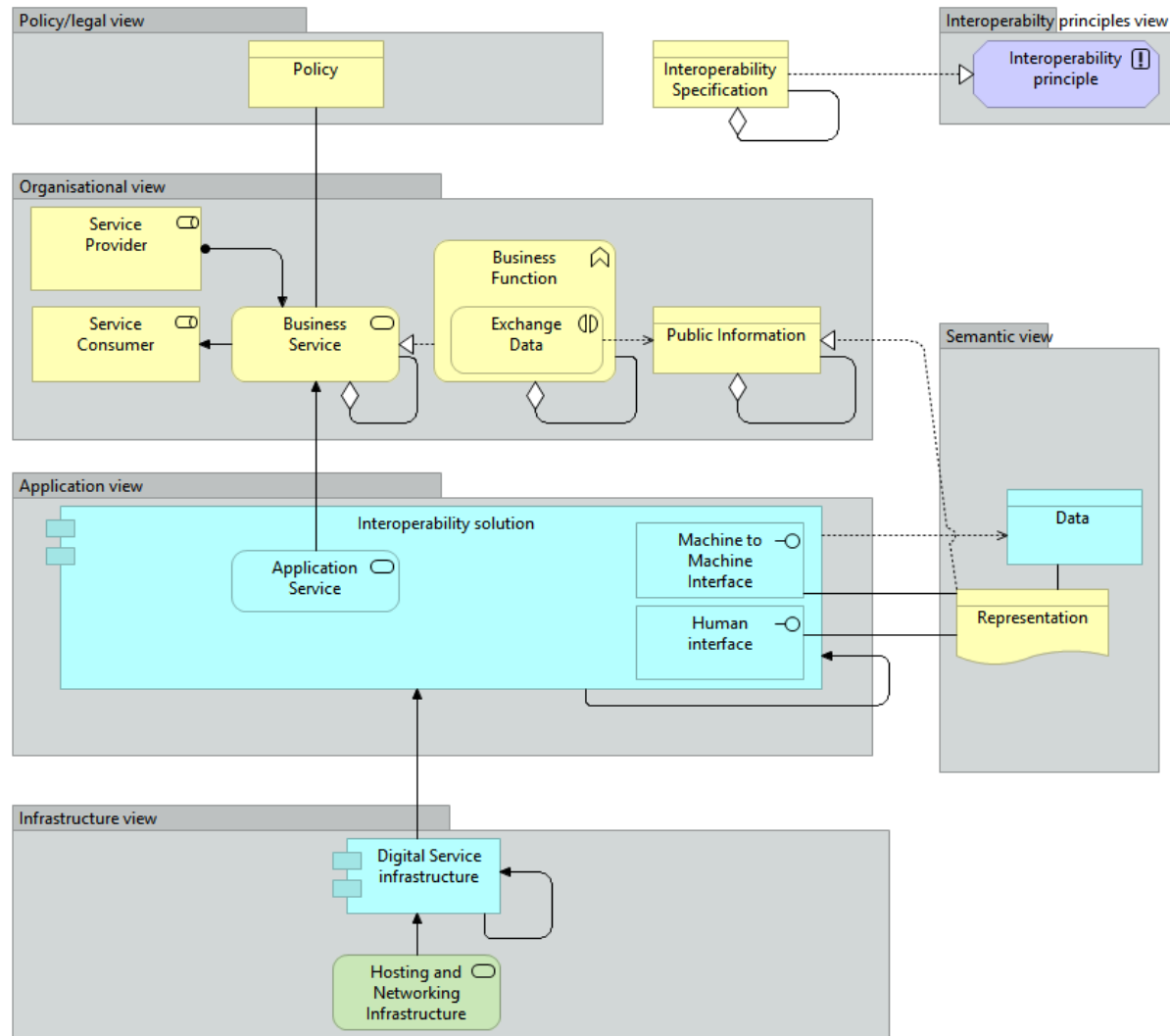
Tools: ArchiMate® Modeling Language

ArchiMate is one of the open standards hosted by The Open Group® and is fully aligned with TOGAF®. The Archi® modelling toolkit is targeted toward all levels of Enterprise Architects and Modellers.

ArchiMate raamistik



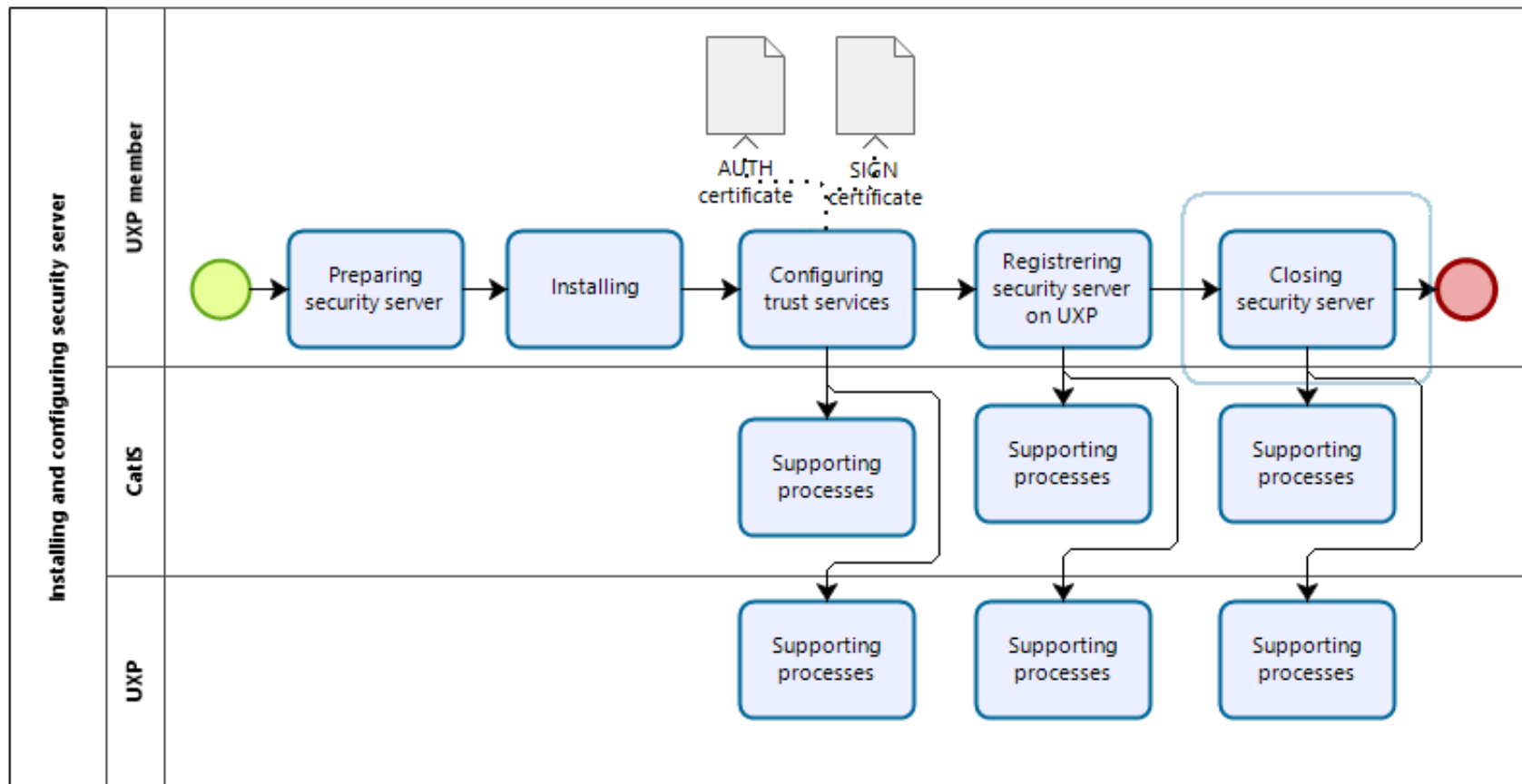
ArchiMate näide: Benini üldine arhitektuur



Tools: Business Process Model And Notation BPMN™

Business Process Model and Notation has become the de-facto standard for business processes diagrams. It is intended to be used directly by the stakeholders who design, manage and realize business processes, but at the same time be precise enough to allow BPMN diagrams to be translated into software process components. BPMN has an easy-to-use flowchart-like notation that is independent of any particular implementation environment.

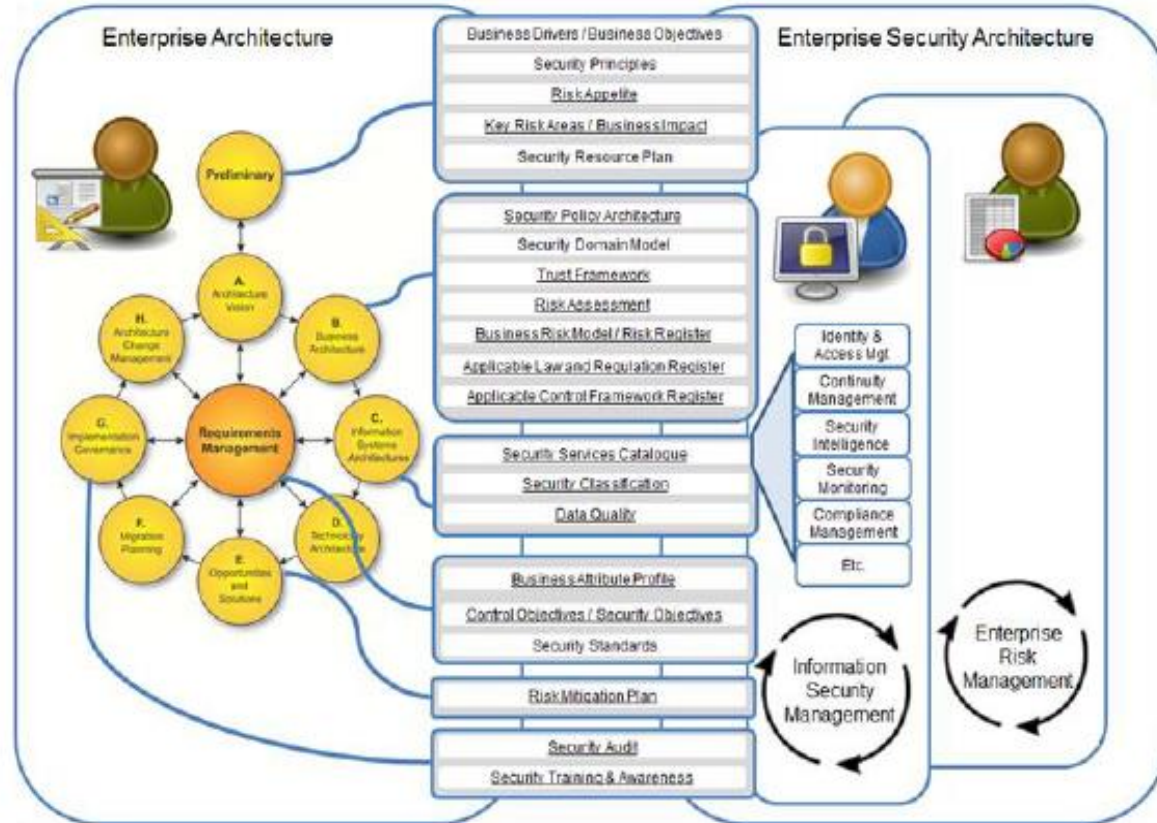
Näide: turvaserveri elutsükkel



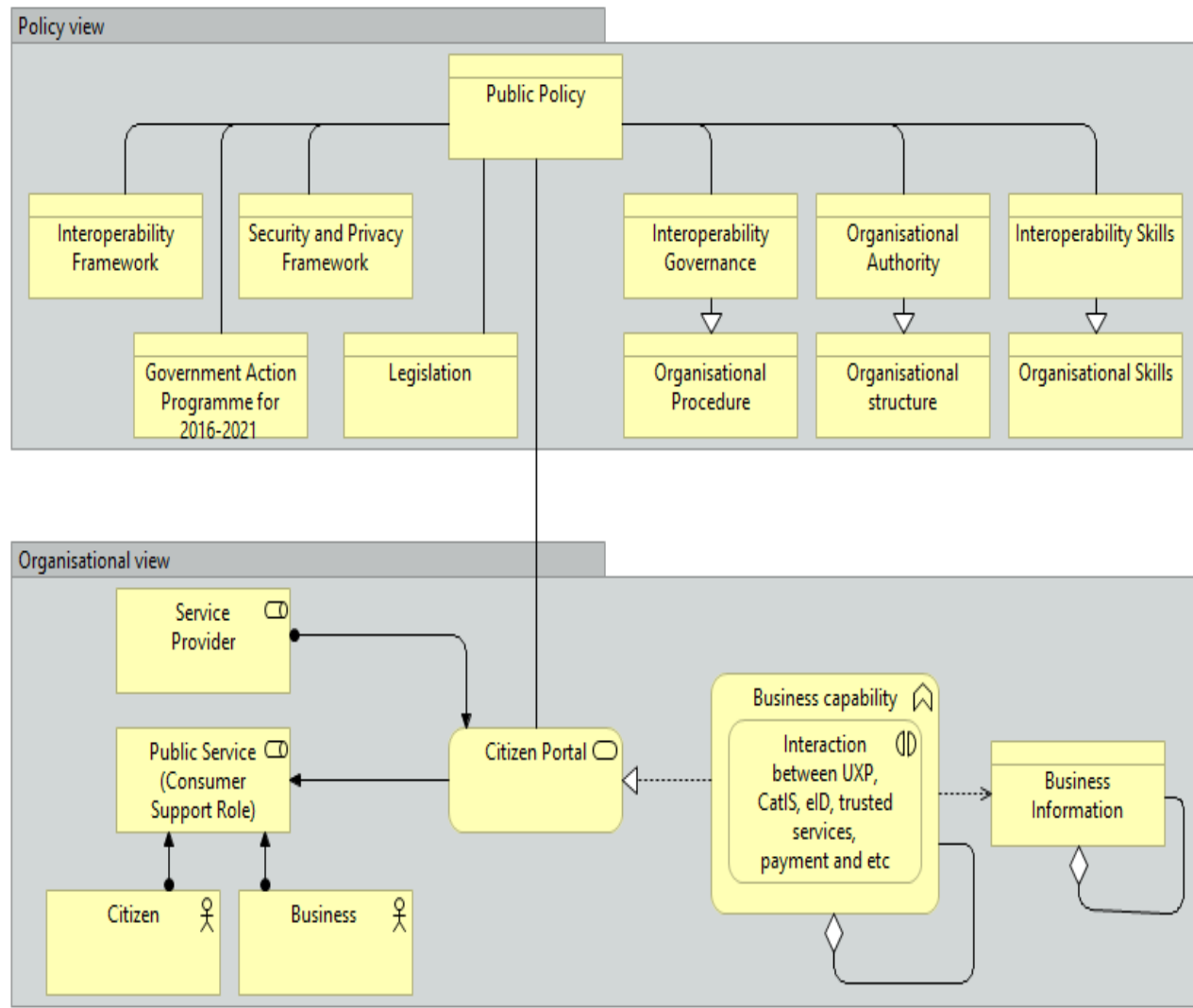
TOGAF +

- TOGAF is methodology for „big picture“
- Additional methodologies and tools needed
- SOA, SABSA, TRM, ITIL, IT4IT, Cobit, ArchiMate, BPMN,

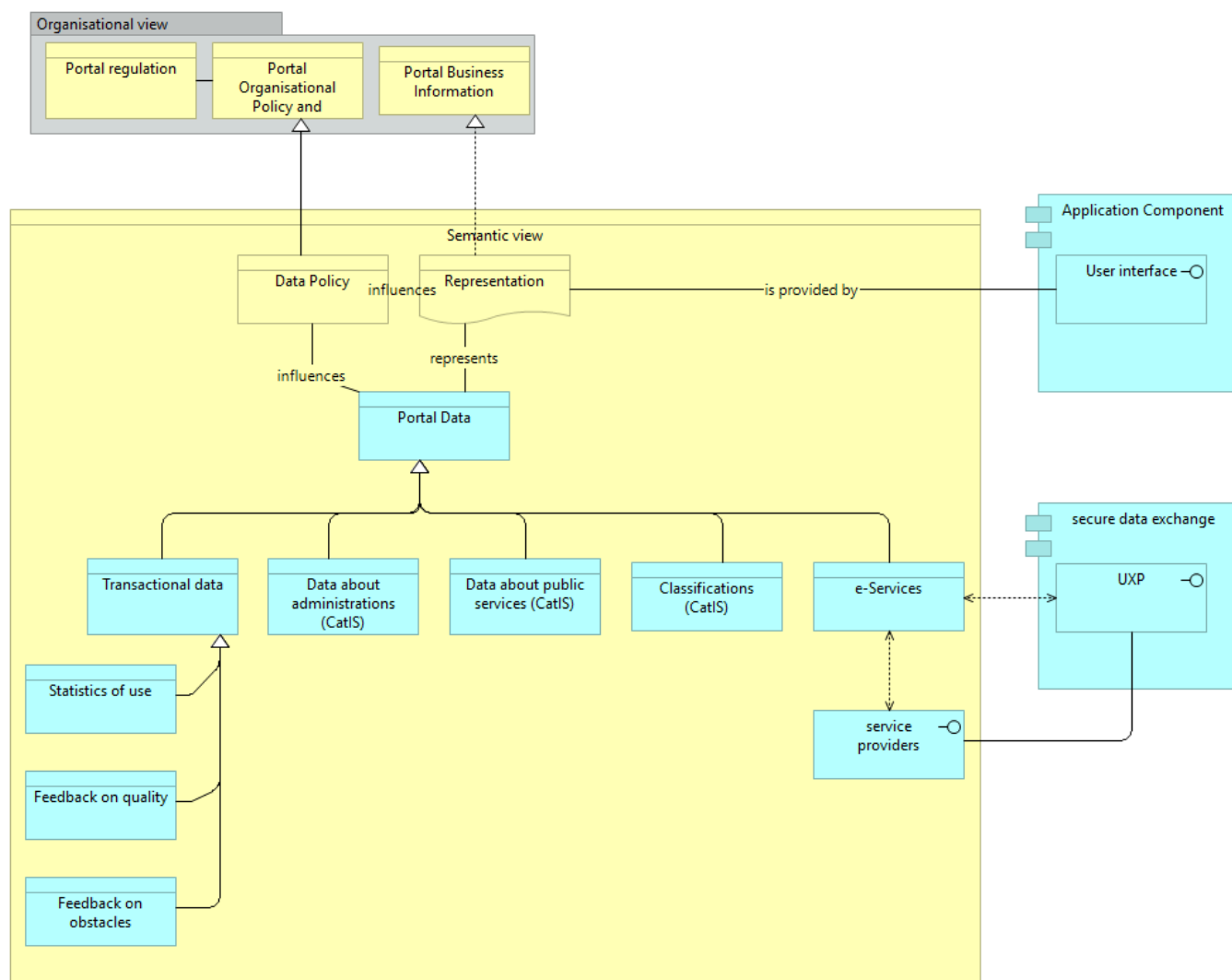
SABSA+TOGAF: security for Uganda



Exmple of Business architecture (Citizen portal of Benin)



Example of Beninese Citizen Portal: data architecture



Kooliaeg

- Sündisin 1947 Karula metsades
- Isa käis Siberis
- Põhiaridus: Külakoolides
- Antsla Keskkool 1965, vabariiklikud olümpiaadid, matemaatikaolümpiaadil Tartus sain mängida Ural 4-ga trips-traps-trulli
- 1965-1970 Tartu Ülikool
- Plaanisin jääda ülikooli, kuid abielu, laps, ... viisid Tallinna
- Juhendaja Gennadi Vainikko
- Lõputöö: "Kõverad funktsioonid Banachi ruumis"



Razdan 3

- 1970 Eesti Infoinstituut
- Tekstipõhised infosüsteemid masinkoodis
- NSVL TA Pronksmedal süsteemi "Sirru" eest (vist 1974)
- Vabariigi teadus- ja tehnikainfosüsteemi VATTIS loomine



Teadustöö

- Infosüsteemid, ES 1045, PL/1
- Magnetlintidel info Moskvast ja paar välismaa baasi
- Trükiväljaanded printisime fotoladumismasinatel Moskvast
- Doktorikraad "Masinloetavate andmebaaside kasutamine"
- Moskvast saime IBM originaaltarkvara
- Üleliidulised töögrupid, formaadid



Riigikantselei, Internet, veebid, infosüsteemid

- Interneti populariseerimine: KKK, A&A, raamat ...
- Loengud: Internet, Unix, e-riigi tehnoloogiad
- Riigikantselei Internetti
- Riigikantselei/valitsuse sait 1993 (esimene avaliku sektori sait maailmas?)
- 1996 veebipõhine Riigi Teataja, esimene OpenData: SGML, digiallkirjastatud
- Veebipõhised andmekogud
- Veel veebisaite: Riigikogu sait, valitsus.ee, peaminister.ee, riso.ee, orion.ee...
- Dokumendihaldussüsteemid TRIP ja SEIRA
- Keeletehnoloogia: lemmatiseerija, ...



Eesti CTO (Chief technology Officer) period

Digiriigi
ehituskivid

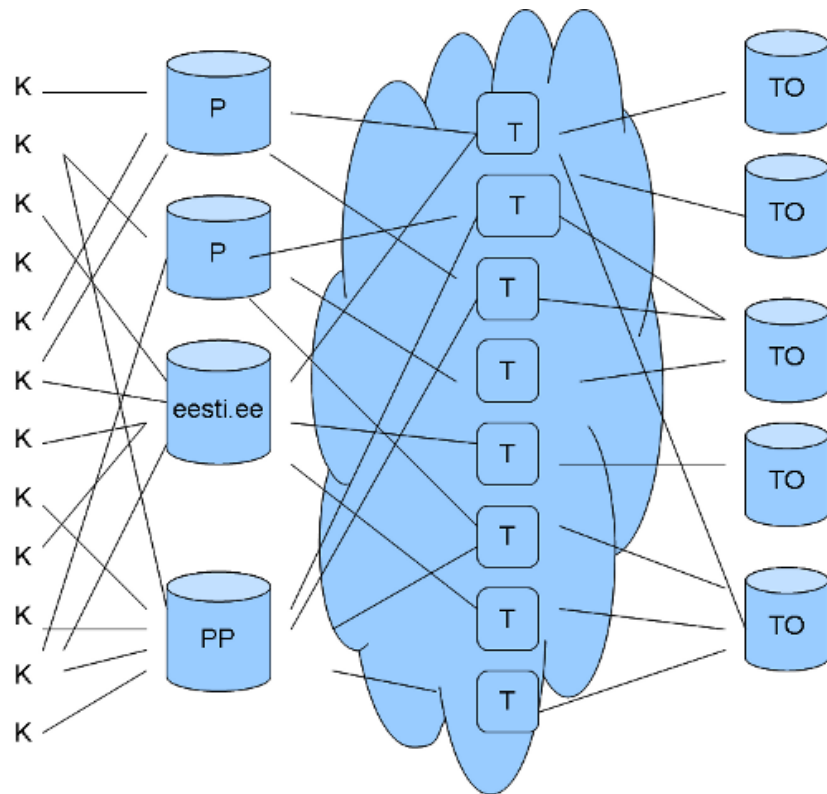
Building
blocks

- Riigi infosüsteemi osakond (RISO) alustas 7 inimesega, hiljem loodi eraldi Riigi Infosüsteemi amet (praegu 150 inimest)
- Õigusaktide register (96)
- Registrate register (RIHA) (98)
- Riigivärv: riik.ee, @riik.ee (98)
- Kodanikuportaal: eesti.ee, @eesti.ee
- Turvaline andmevahetus, X-tee (2001)
- eID ökosüsteem
- E-valimised
- Usaldusteenuste register: sr.riik.ee
- Avaandmete teabevärv: avaandmed.eesti.ee

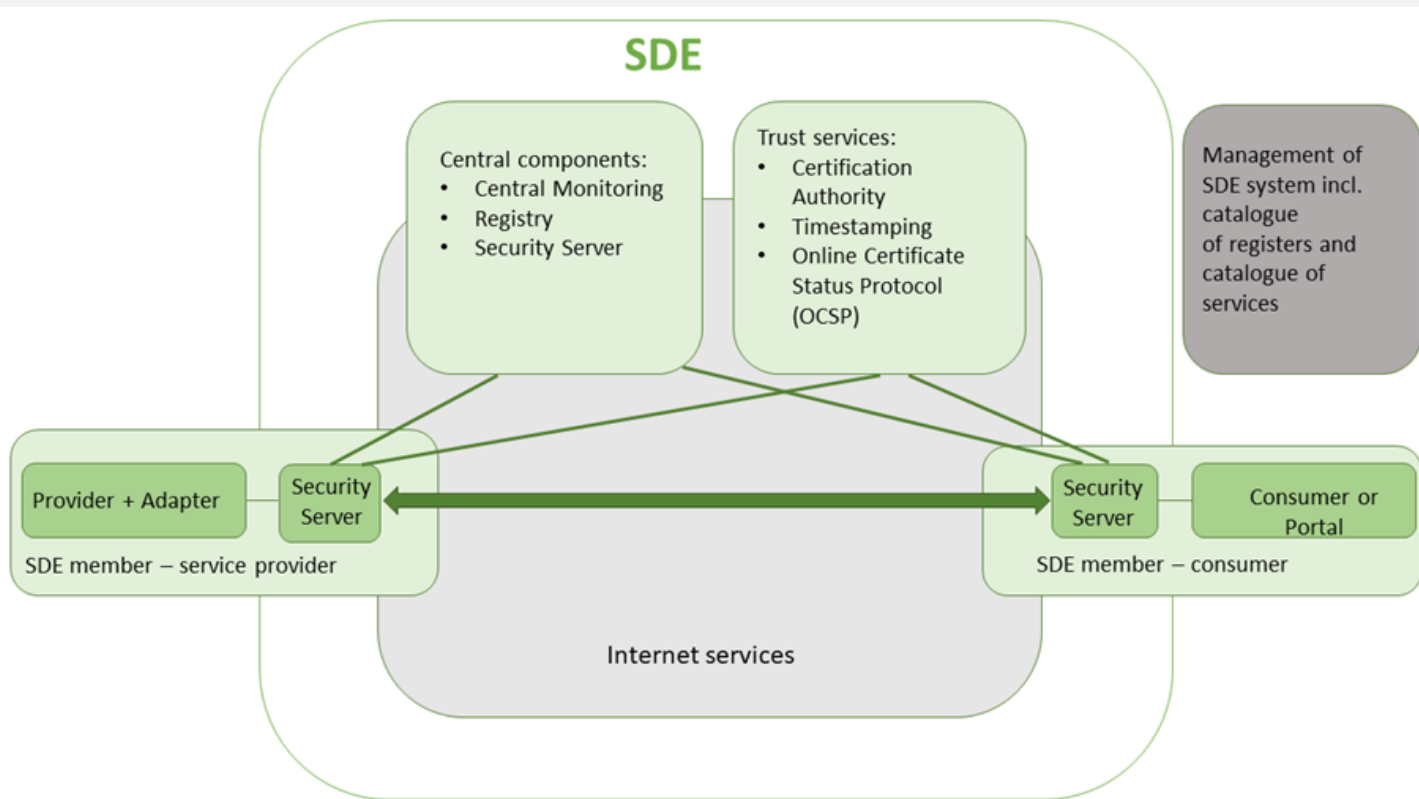


X-tee printsiibid

- Teenuste ruum, hajus nagu Internet
- Kaitseme andmeid, mitte kanaleid
- Once only
- XML
- Tõestusväärtus
- Kõrge käidelduvus
- Konfidentsaalsus (ainult kaks osapoolt näevad)
- Front-end ja back-end lahutaatakse



X- Tee arhitektuur



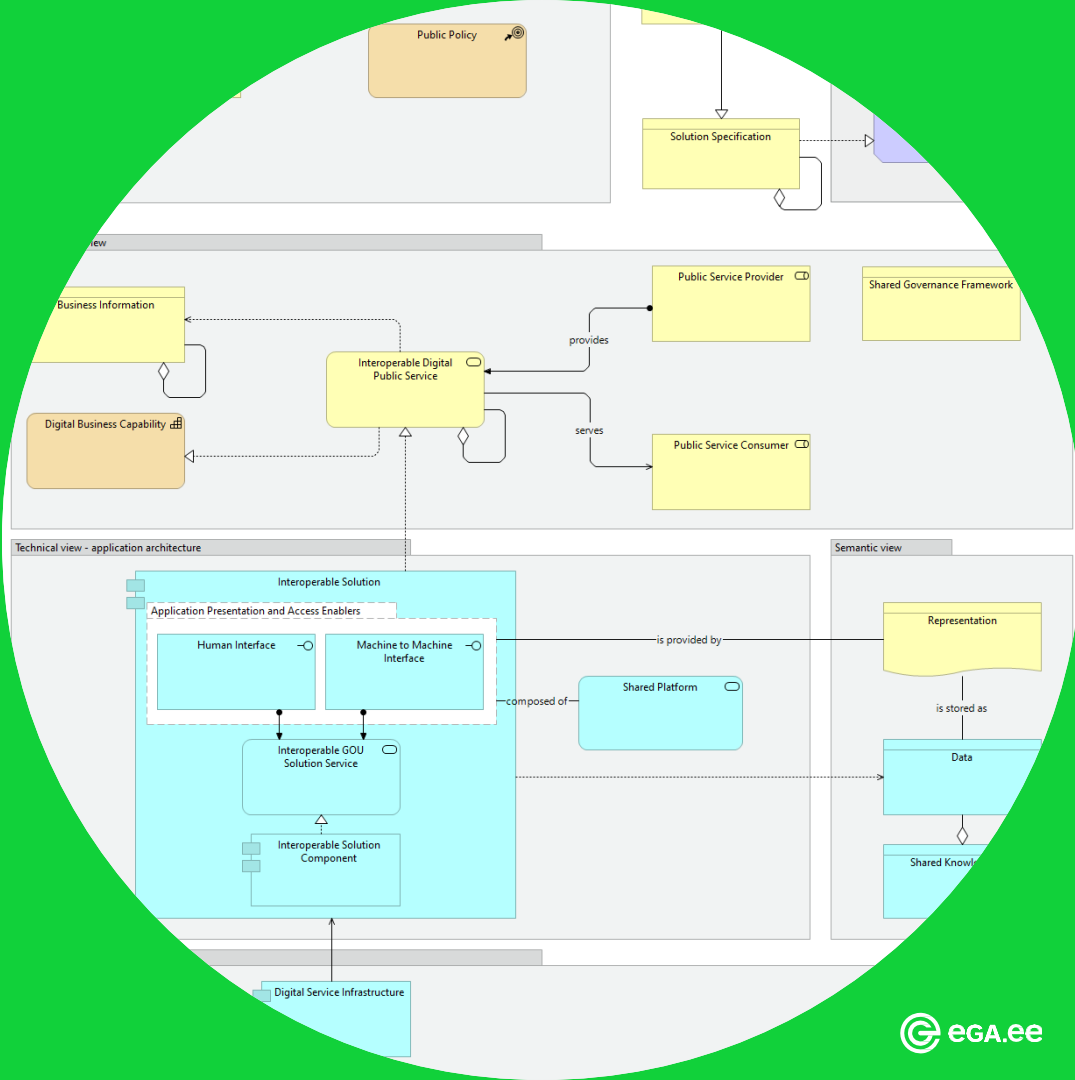
Tunnustused (building blocks)

- Aasta tegija 2001:
 - X-tee,
 - Eesti.ee,
 - Internet,
 - Unix
- EU eGovernment nominent – X-Road (2003)
- EU eGovernment nominent – Digital Signature



Raamistikud

- Koosvõime raamistik
- Arhitektuuri raamistik
- Tarkvara raamistik
- Veebide raamistik
- Avaandmete roheline raamat
- Osalemine EU raamistike töögruppides



- Lahkumine riigisektorist 2015
- Presidendi aukiri 2015
- Aadu Luukase missioonipreemia 2018
- Valgetähe teenetemärk 2018



Teevee kuvandus: J. Luuk

E-Riigi Akadeemia projektid 2015-

- EU
- Ukraina
- Uganda
- Kyrgyzstan
- Benin
- Djibouti
- Fääri saared
- Tonga
- Armeenias
- Kaimanisaared
-



eGA tehnoloogia valdkond

- Rahastajad: Riigid, EU, World Bank, UNDB, USAID, IDB, European Bank, giz, Rootsi (SIDA), Välisministeerium
- Analüüsid
- Lahendused: X-tee, teenuste portaalid, CatIS, e-Cabinet, ...
- Koosvõime raamistik
- Referentsarhitektuur
- Digiriigi Strateegia
- Õigusaktid, korrad
- Koordineeriva organisatsiooni ülesehitamine
- Roadmap
- Koolitused

SCOOP4C
STAKEHOLDER COMMUNITY
FOR ONCE-ONLY PRINCIPLE

H2020-SC6-CO-CREATION-2016-2017
CO-CREATION-05-2016

Deliverable 1.2: State of play report of best practices

Work package: WP 1– Stocktaking and building up a knowledge base

Project Number: 737492

Acronym: SCOOP4C

Title: Stakeholder community for once-only principle:
Reducing administrative burden for citizens

Type of action: Coordination and Support Action (CSA)

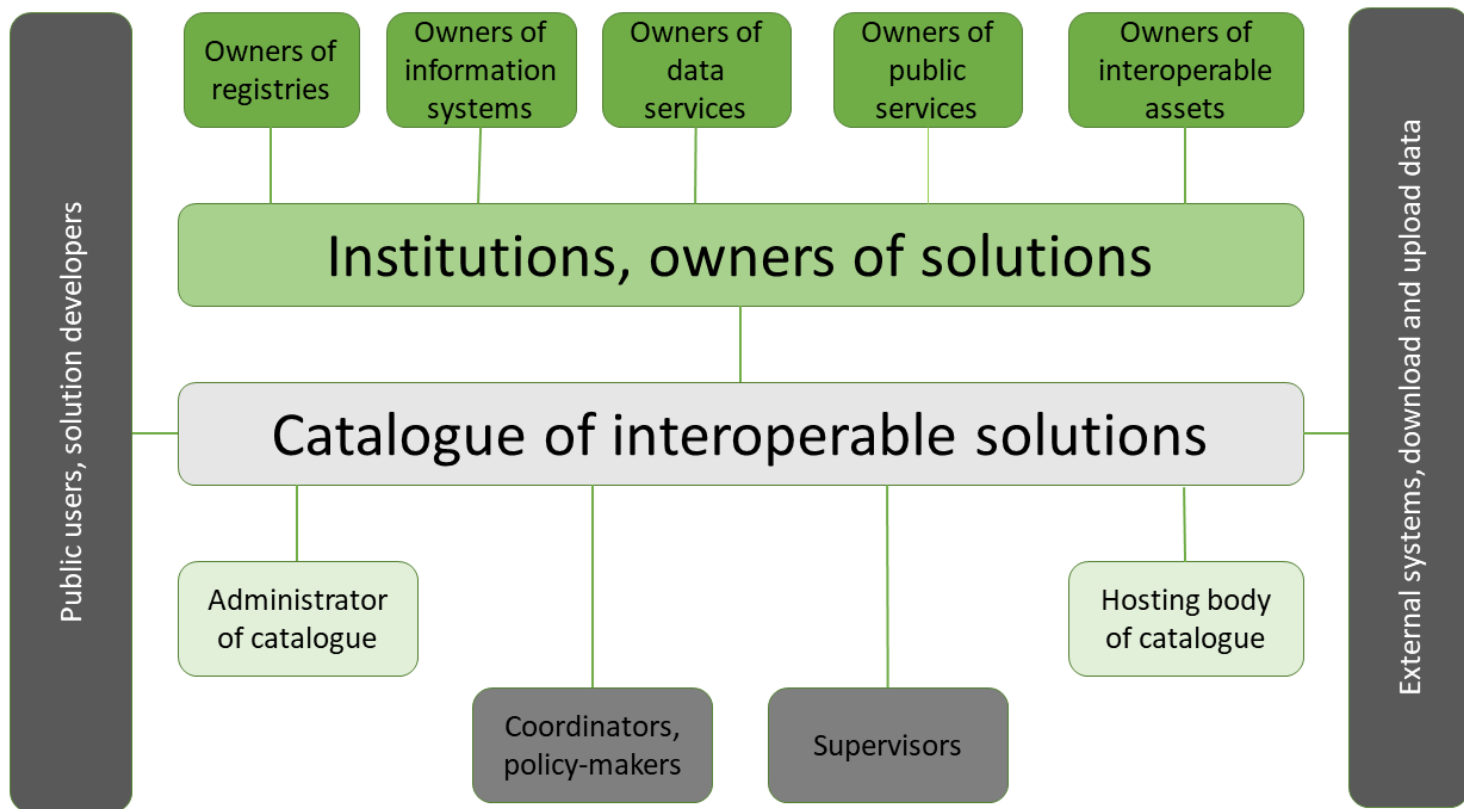
Work Package Lead: EGA

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Coordinators: Uuno Vallner (EGA), Kristina Reinsalu (EGA)

Version 1.0 of 10th August 2017

eGA oma toode: CatIS



Näited: Benini CatIS ja teenuste portaal

Postkast (14) - uuno.valner@gn... X | valgetähe ordeni kavalerid - Go... X | Projects - e-Governance Academ... X | CatIS - Home X

catIS.xroad.bj

History era www diagram eng ega catIS koosvoime linked Once-Only OpenData or OS semantika X-Road openpm

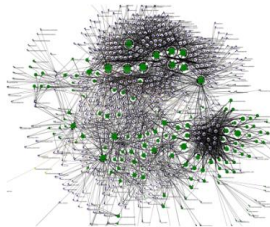
Public Services Institutions Systems Services Assets Sign in EN

The catalogue of interoperable solutions

PUBLIC SERVICES 1102 INSTITUTIONS 258 SYSTEMS 97 SERVICES 6 ASSETS 1

The catalogue of interoperability solutions (CatIS) provides trustworthy assistance and tool for the developers, administrators and users of the state information systems. It can be used to manage an organizations IT assets also.

CatIS is supplementary instrument for coordination of state information systems, the support systems for the development of information systems and services, the tool for maintenance interoperability assets.



Catalogue of interoperable solutions
Contact: http://ega.ee e-mail: info@ega.ee

Postkast (14) - uuno.valner@gn... X | valgetähe ordeni kavalerid - Go... X | Projects - e-Governance Academ... X | CatIS - Home X | Portail National des servi... X

service-public.bj/public/services/e-services

History era www diagram eng ega catIS koosvoime linked Once-Only OpenData or OS semantika X-Road openpm

Service-Public.bj

Services RECHERCHER UN DOCUMENT DE CONNECTER Créer une demande EN

Services PAR ADMINISTRATION Services PAR THÈME

Trouver un service

Tous les e-services

- Affaires/Entreprise
- Affaires sociales
- Affaires étrangères/Diplomatie
- Artisanat
- Aviation
- Cadre de vie
- Commerce
- Communication
- Culture et Tourisme
- Digitalisation
- Doing Business
- Domaine et foncier
- Décentralisation
- Eau
- Economie
- Education/Enseignement
- Energie
- Environnement
- Etat civil et Citoyenneté
- Famille
- Finances
- Fiscalité
- Fonction publique
- GUCE
- Gouvernement
- Import/Export
- Industrie
- Investissements publics/privés
- Jeunesse

Tous les e-services

- 15 Transformation véhicules « tous et plus »**
Ce service permet à un particulier pour un véhicule administré de dossier de dossier sans charge au lieu, il doit procéder les...
[Afficher les détails](#)
[Faire une demande](#)
- 15 Accès au Guichet Unique du Commerce Extérieur**
Ce service permet d'accéder au portail des services dérivés par le CUCER.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Accès aux Indicateurs DONG BUSINESS**
Le Berrin accède aux points comparables à celle des autres pays d'Afrique de l'Ouest dans le classement Doing Business.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Accès aux marchés publics**
Ce service permet de consulter les appels d'offre et de soumissionner aux marchés publics à l'égard la place forte.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Accès à la base de données des Entreprises du Bénin**
Ce service est intégré à la base de données nationale de service aux entreprises - ANED-EN pour permettre à...
[Afficher les détails](#)
[Faire une demande](#)
- 15 Affiliation du travailleur au régime de sécurité sociale**
En quel compte la prestation ?
Le contrat d'un travailleur étranger son affiliation qui concerne à l'entrée la CISE...
[Afficher les détails](#)
[Faire une demande](#)
- 15 Annonce Radiologique TV**
Ce service vous permet de faire une demande de diffusion d'annonces de services de télévision (COTV).
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation Tenant Livre de Carte d'Importateur**
Cet acte permet de valider toutes personnes physiques ou morales d'importer des marchandises conformément aux lois.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation d'identification de la MPMAC**
Intervention d'identification de la MPMAC.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation de Non Faillite**
Ce service permet d'obtenir une attestation de non faillite d'une entreprise non inscrite.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation de Validation de Biens**
Faire acte de reconnaissance de biens.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation de confirmation cadastrale**
Attestation de confirmation cadastrale.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation de fin de stage**
Attestation de fin de stage.
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation de jouissance de droits à une action de**
Attestation de jouissance de droits à une action de...
[Afficher les détails](#)
[Faire une demande](#)
- 15 Attestation de non litige**
Attestation de non litige.
[Afficher les détails](#)
[Faire une demande](#)

Aitäh

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