



REPUBLIC OF ESTONIA
NATIONAL ARCHIVES

Electronic public records in the fully digital society of Estonia

Lauri Leht

National Archives of Estonia

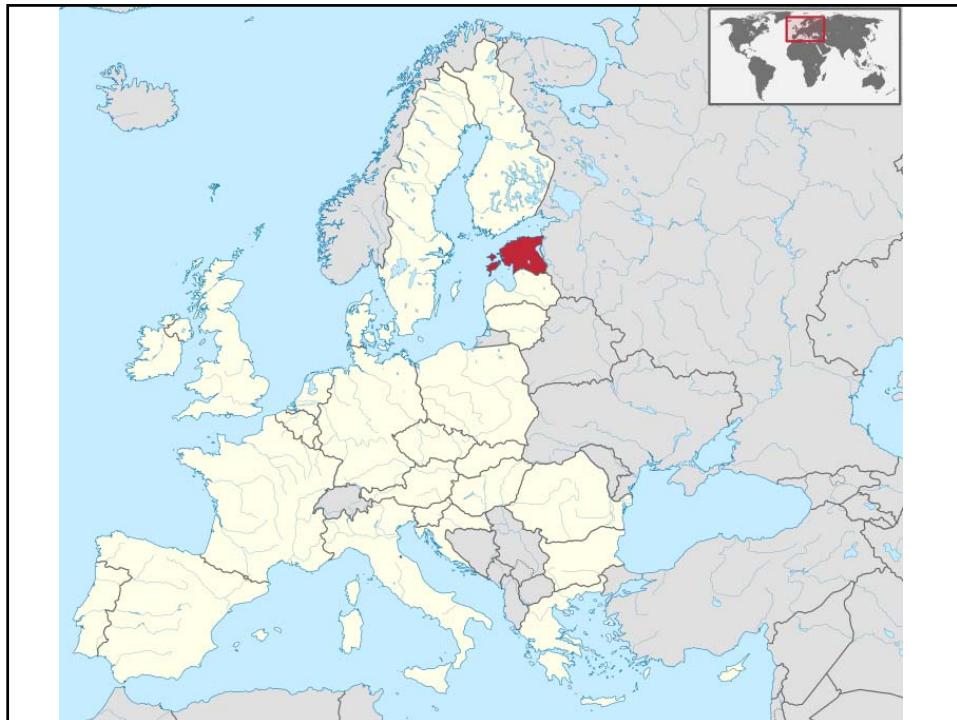
Taipei, December 13, 2016

5th International Conference on Electronic Records

Management & Technology

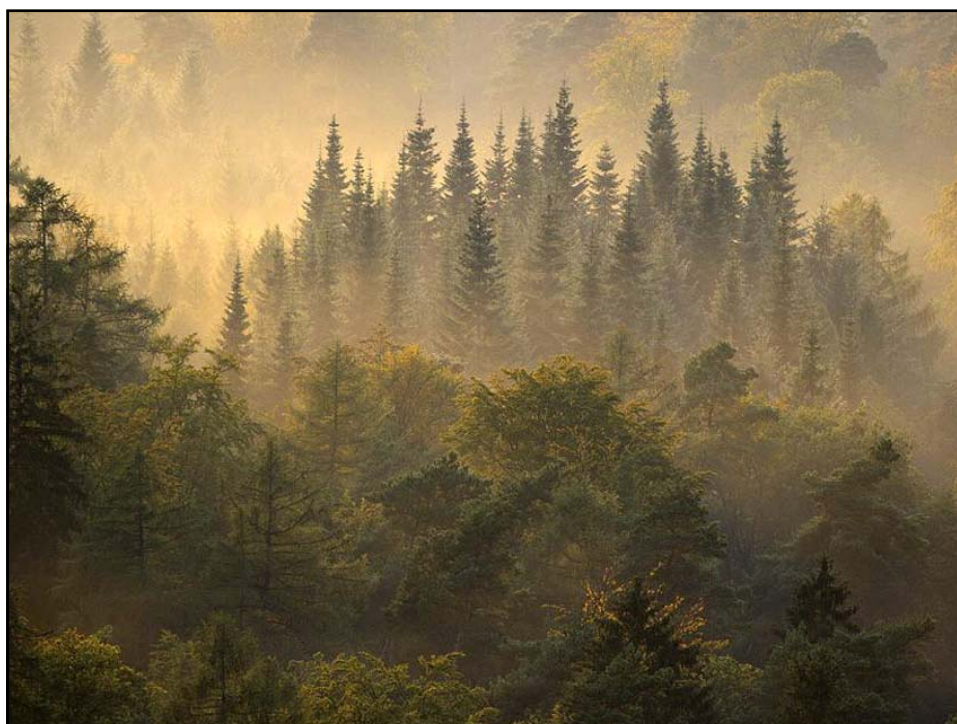
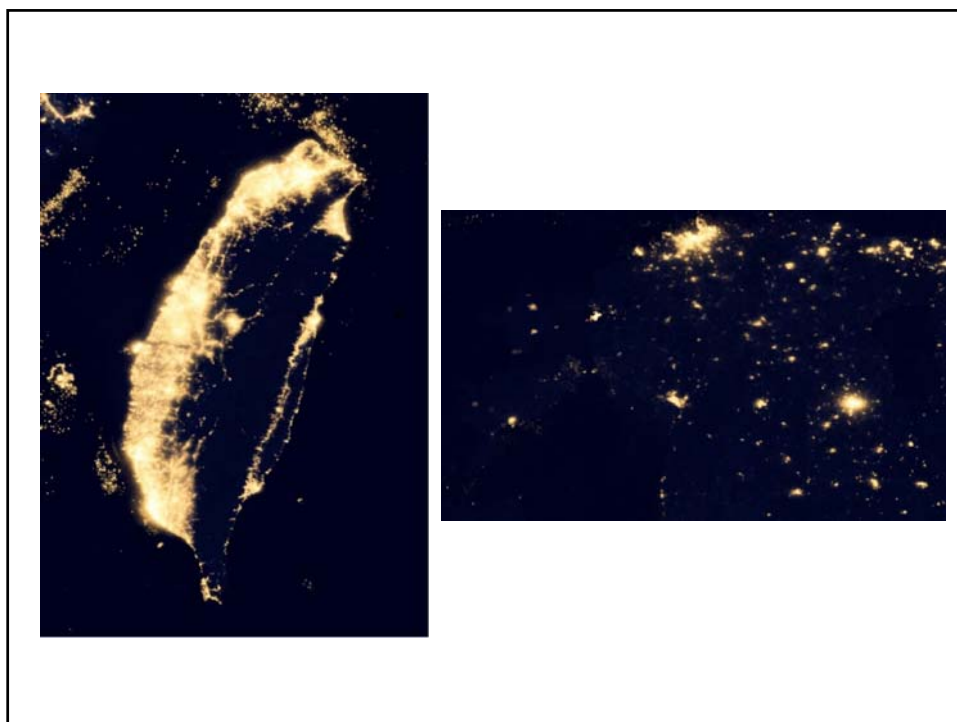
ESTONIA

- Where might it be?



ESTONIA

- 1,3 million people
- 45 000 sq km
- Capital: Tallinn (0,4 million people)

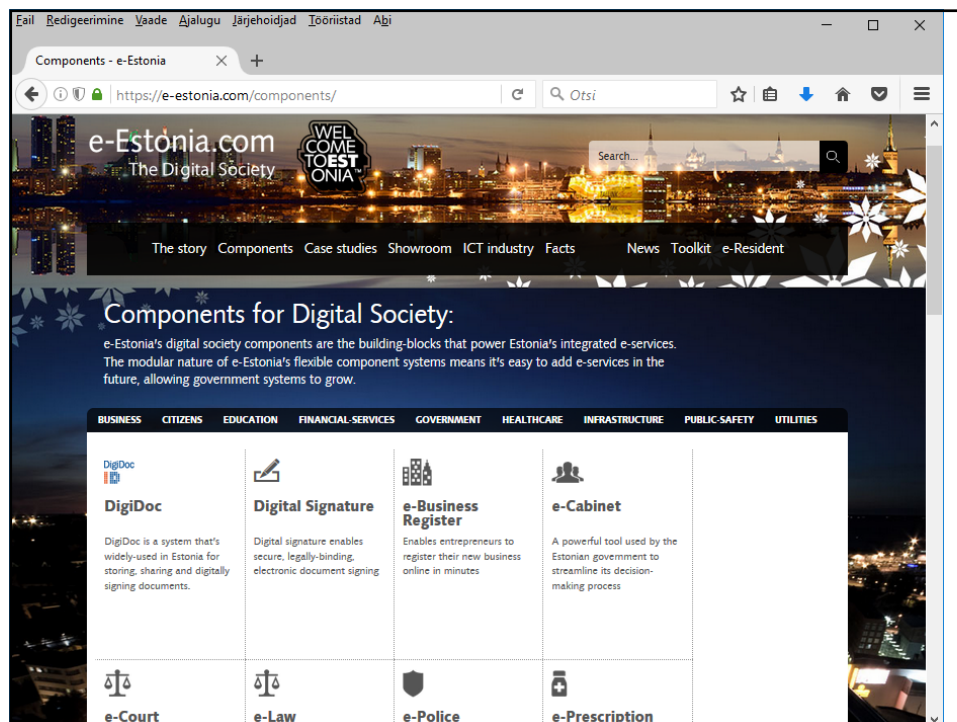






ESTONIA

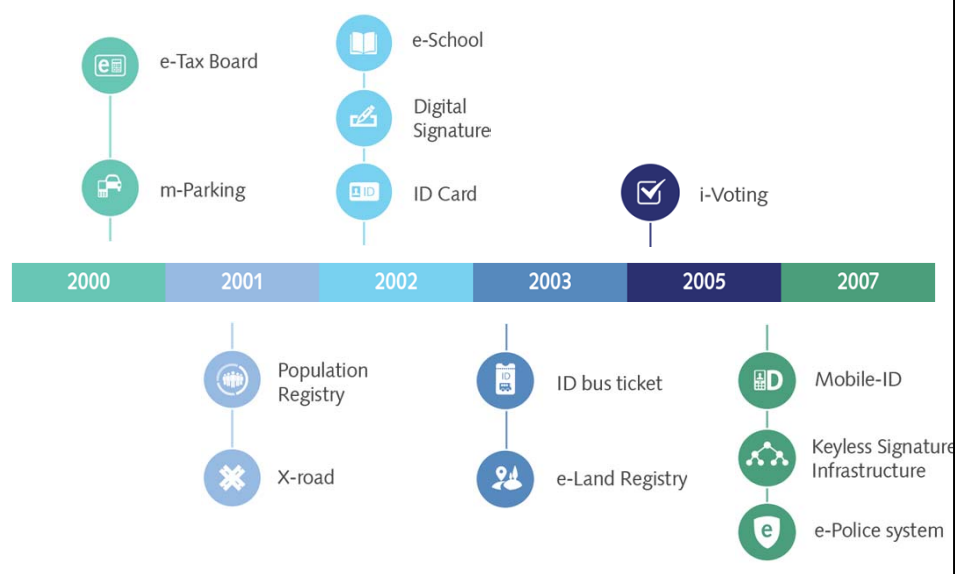
- Independent country: 1918-1940
- Soviet occupation: 1940-1991
- Independent again: 1991
- Member of European Union: 2004
- Member of NATO: 2004
- Euro as currency: 2011



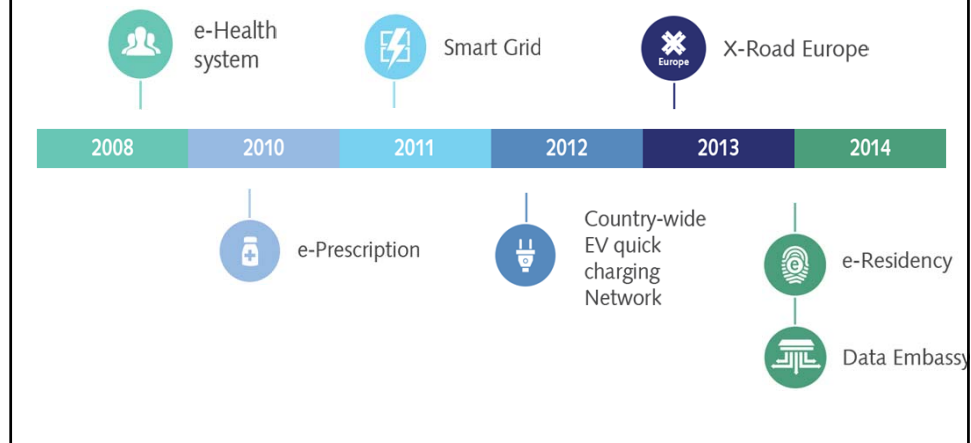
e-ESTONIA

- Everything can be done online, except for marriage, divorce and selling your house
- Once-only principle
- No legacy
- Digital by default
- User friendliness
- Omni-channel services
- Open standards

e-ESTONIA: (r)evolution



e-ESTONIA: (r)evolution

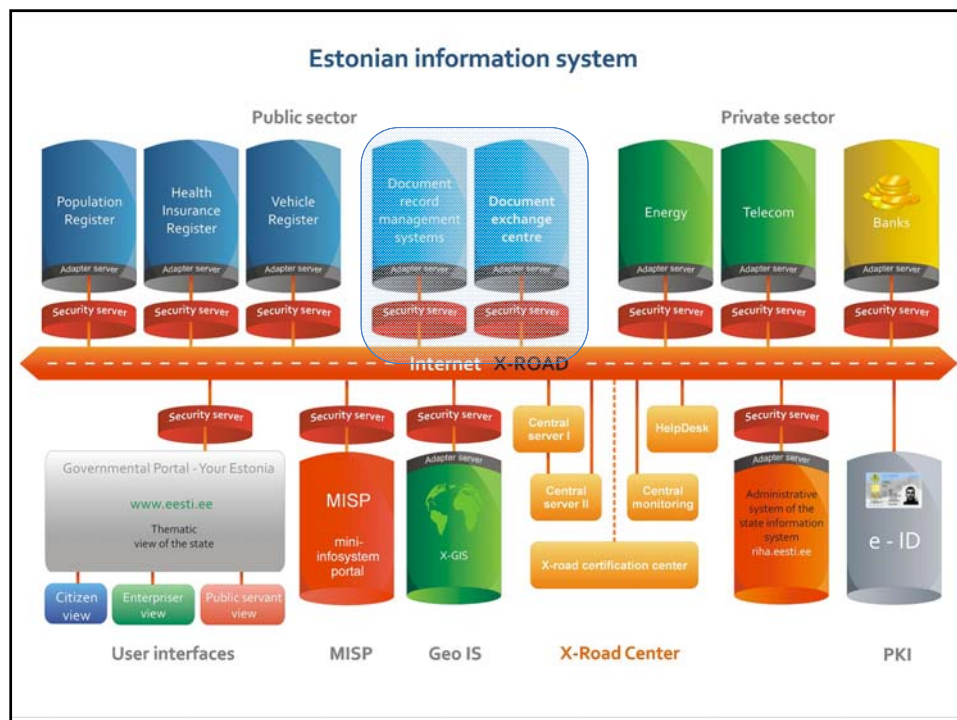
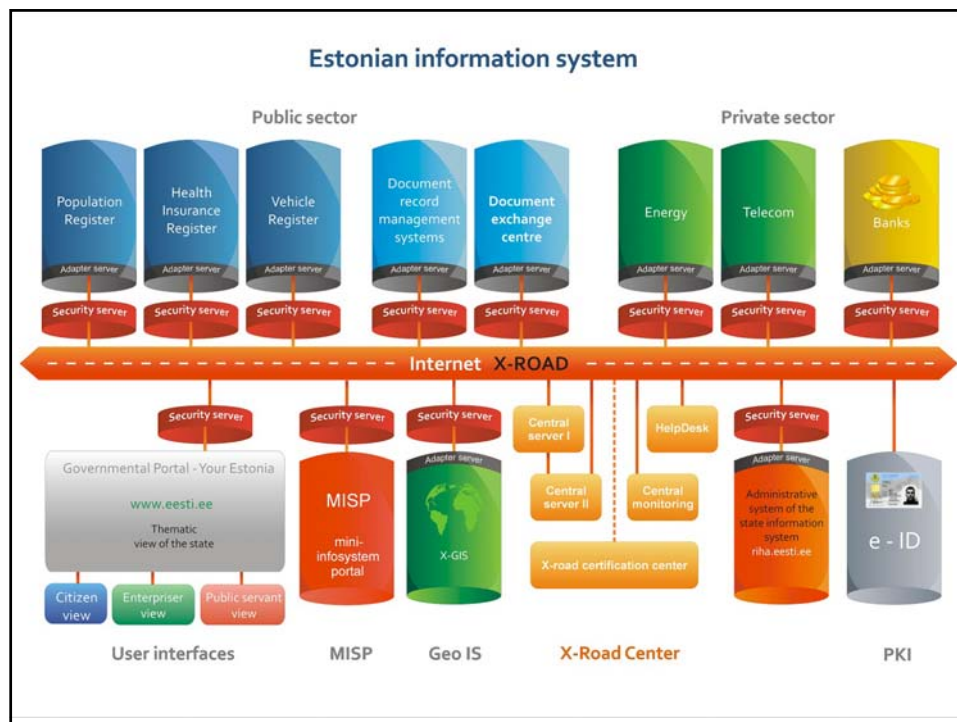


e-Identity

- ID-card is used for:
 - Identification
 - Travelling
 - Digital signature
 - State services
 - Healthcare
 - I-voting
 - Business: banking
 - Driving license
 - Public transportation card
 - Loyalty card
- Mobile ID → identification through Mobile SIM card
- E-residency → e-Identity as international service

Short video on e-health and e-prescription

<https://www.youtube.com/watch?v=2XOqsJh4Abg>

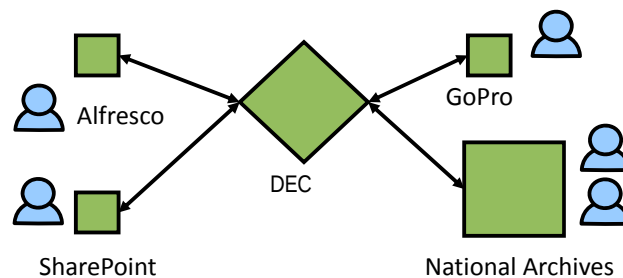


Electronic Records Management

- Public agencies have their own independent ERM systems
- It is forbidden to send paper documents to other public agencies since 2008
- E-mail is unreliable for sending official documents
- Special server for connecting ERMSs: Document Exchange Center (DEC)

Document Exchange Center (DEC)

DEC provides central records exchange service for various document and records managements systems and other information systems dealing with documents/records.



Document Exchange Center (DEC)

- Merits compared to E-mail:
 - secure transfer
 - no spam
 - tested with large files (several GBs)
 - agreed set(s) of metadata
 - asynchronous process; feedback (received)
- Huge time and money savings compared to paper records

General ERMS requirements

- Normal functionality (MoReq)
- Classification scheme based on functions of the organisation and activities
- National records management metadata set
- Registration of records
- Immediate disclosure of records without access restrictions
- Export functionality in XML
- Disposal of digital records without archival value

Immediate disclosure of records

Fail Redigeerimine Vaade Ajalugu Järehoidjad Tööriistad Abi

Avalik dokumendiregister

https://dok.hm.ee/et/document.html?i

3.3-7.1.1/16/5813-10 Tartu Tervishoiu Kõrgkooli projekti "Täiskasvanuhariduse edendamine ja õppimisvõimaluste

Asutus	Haridus- ja Teadusministeerium
Dokumendiliik	Sissetulev kiri
Registreerimise kuupäev	25.11.2016
Registreerimisnumber	3.3-7.1.1/16/5813-10
Pealkiri	Tartu Tervishoiu Kõrgkooli projekti "Täiskasvanuhariduse edendamine ja õppimisvõimaluste avardamine" raames toimuvate täiendkoolituskursuste oktoobrikuu kuluaruanne
Saatmisviis	e-post
Asutus	Tartu Tervishoiu Kõrgkool
Kirja liik	Kiri
Saatja kuupäev	15.11.2016
Fail	kuluaruanne_eakashooldustoo_ttk_2016_nr.5.bdoc

https://dok.hm.ee/api/v1/documents/138a8f5c-a05a-473c-9654-d7b0e460336c/file

Immediate disclosure of records

Fail Redigeerimine Vaade Ajalugu Järehoidjad Tööriistad Abi

Avalik dokumendiregister

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Faili kuluaruanne_eakashooldustoo_ttk_2016_nr.5.bdoc avamine

Avamiseks on valitud:

kuluaruanne_eakashooldustoo_ttk_2016_nr.5.bdoc
tüüp: DigiDoc signed document (54,2 KiB)
asukoht: https://dok.hm.ee

Mida peaks Firefox selle failiga tegema?

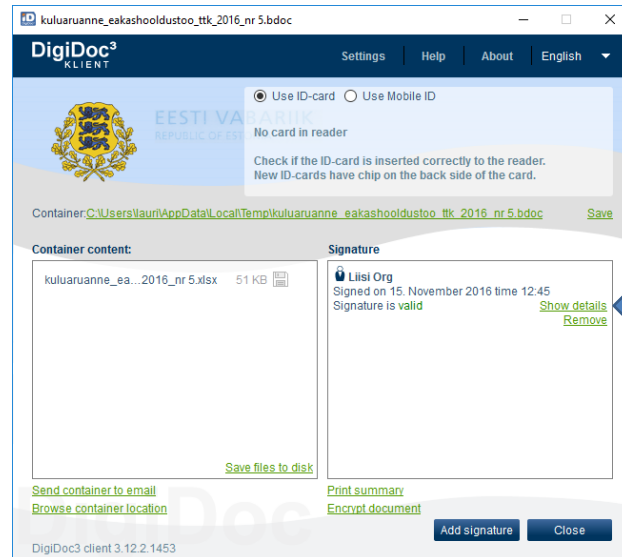
☒ Avama rakendusega DigiDoc3 Client (vaikimisi)

☐ Salvestama

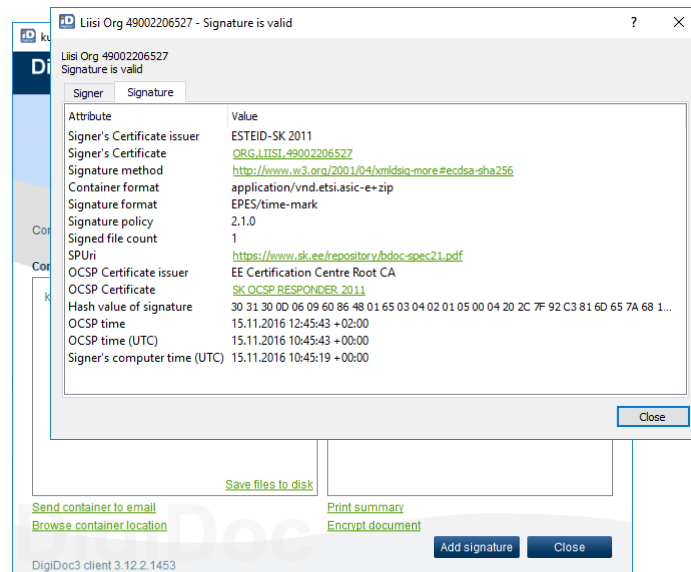
☐ Valitud toiming jäetakse antud tüüpi failide jaoks meelde

Sobib Loobu

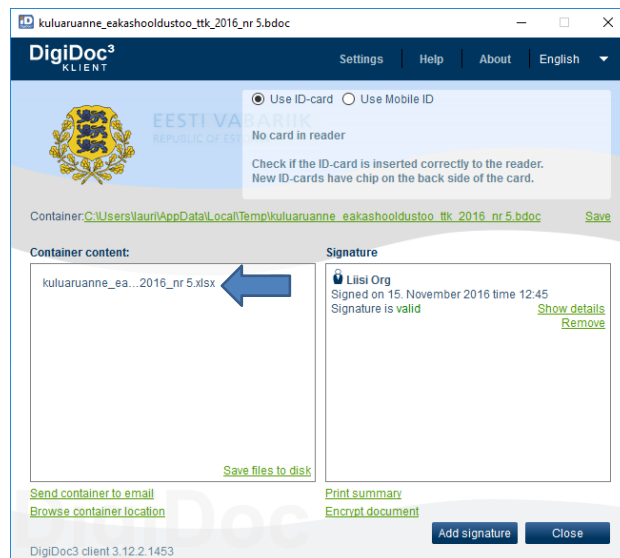
Immediate disclosure of records



Immediate disclosure of records



Immediate disclosure of records



Immediate disclosure of records

Microsoft Excel - kuluaruanne_eakashooldustoo_ttk_2016_nr 5.xlsx

Kursuse järgekorrarühm	Kursuse nimetus	Õppekavarühm	Kursuse kontaktundide arv	Kursuse lõpetanute arv KOKKU	Õppekavarühma (ühikuhind)	Kursuse kogumaksumus (kujuneb valijem alusel)	Kursuse maksumus RKT käskkirjas	Lõpp (arvutatakse automaatselt lõpetanute kogu maksumuse põhjal)
HM332166	Eaka toimetulekut mõjutavad tegurid	Sotsiaalsõo ja nõustamine	22	15	2,98	980,40	1180,00	
HM332161	Hoolustajate täienduskoolitus	Sotsiaalsõo ja nõustamine	40	14	2,98	1668,80	1668,80	
						0	0,00	
						0	0,00	
						0	0,00	
						0	0,00	

Valmis

Archives in Estonia

- Archives as a function is in every public institution
- Public archives:
 - National Archives (NAE)
 - 2 city archives (Tallinn, Narva)
- Private archives
- Most centralised archives system in Europe

Archives Act

- First law 1999, new law 2012
- Regulates archiving of records of public institutions
- For both paper and digital records
- Institutions are responsible for keeping their records
- Institutions must transfer records of archival value to NAE after 10 years (earlier: 20 years)
- NAE determines archival value of records through appraisal (macro appraisal)
- Institutions determine the retention period of records of non-archival value

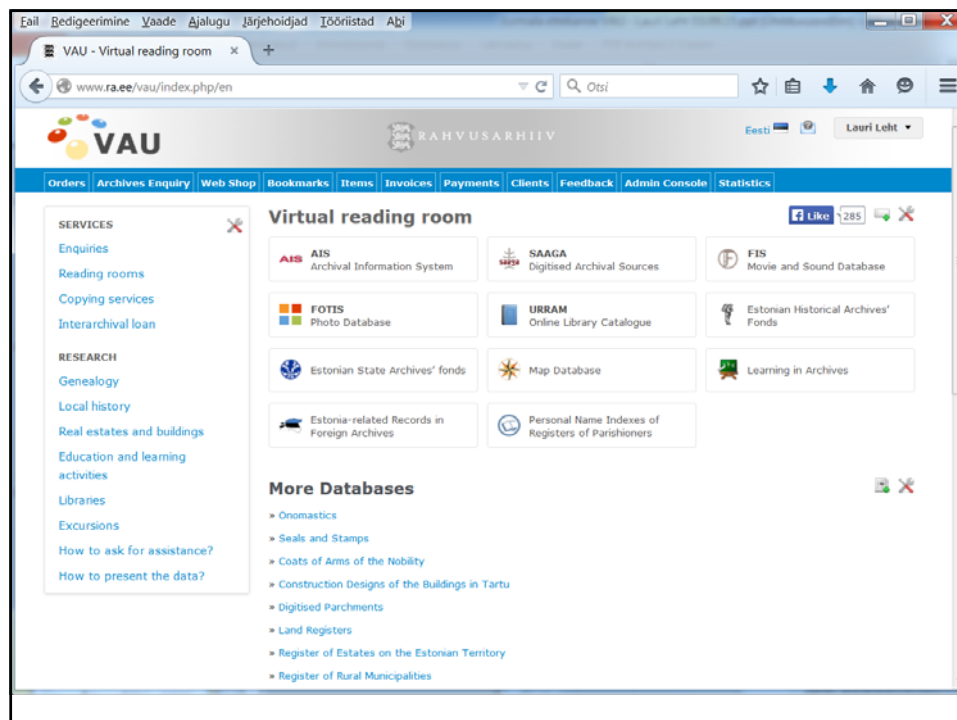
National Archives (Rahvusarhiiv)

- Established 1999 by joining together 18 small public archives
- 200 people
- 7 buildings in 4 cities
- Headquarters in Tartu
- Under Ministry of Education and Science



National Archives collections

- 9 million archival units (since 1240)
- 1 million photos
- 100 000 maps
- 9 million meters of film
- Some thousands digitally born documents
- Some digital databases (state registries)
- 500+ TB of digital data (mostly digitised + films)



Fail Redigeerimine Vaade Ajalugu Järehoidjad Tööriistad Abi

AISI otsing

ais.ra.ee/index.php?module=202&op=1&sess_id=6ab2a0667

Otsi

ARHIIV AIS INFOSÜSTEEM

Kirjeldusüksuse päring

Pealkiri: Taiwan

Algusaeg: alates kuni

Lõppaeg: alates kuni

Viitekode: Asukoht: Leidandmed: Aste: Sisestatud: Näita ridu: 10 Järjesta vastused: Otsi Tühjenda vorm

Arhiivimoodustaja päring

Nimetus: alates kuni

Algusaeg: alates kuni

Lõppaeg: alates kuni

Sisestatud: alates kuni

Näita ridu: 10 Järjesta vastused: Otsi Tühjenda vorm

Fail Redigeerimine Vaade Ajalugu Järehoidjad Tööriistad Abi

AISI otsing

ais.ra.ee/index.php?tyyp=2&sess_id=6ab2a0667fb02863907

Otsi

ARHIIV AIS INFOSÜSTEEM

Väljastatakse: 1; Lehtede arv: 1
Filter: Pealkiri = Taiwan

Uus otsing

Jnr	Pealkiri	Liik	Asukoht	Leidandmed	Piiridaatumid	Lehti
1	Fotod (33 tk.) ja ajaleheväljalõiked Maailma Antikommunistliku Liidu (WACL) XIV konverentsist, Aasia Antikommunistliku Liidu (APACL) XXVII konverentsist ja Antikommunistliku Noorteliidu III kokkutulekust Taibeis (Taiwan) 03.-07.08.1981	Arhivaal	Rahvusarhiiv Tallinnas	ERA.5010.1.114 -	-	-

Uus otsing

Esilehele

Photos (33 pieces) and newspaper articles of the 14th conference of the World Anticommunist Union, the 27th conference of the Asian Anticommunist Union and the 3rd meeting of the Anticommunist Youth Union in Taipei (Taiwan) at August 3-7, 1981.

Fail Redigeerimine Vaade Ajalugu Järjehoidjad Ioonistad Abi

AlSi otsing

ais.ra.ee/index.php?module=202&op=4&tyyp=2&otsing_id= Otsi

ARHIV AIS INFOSÜSTEEM

Tagasi nimekirja Uus otsing Teata veast

Arvo Horm, majandusteadlan... > 6. Pagulas- jt. organisats... > 16. Maaailma Antikommunistli... > Fotod (33 tk.) ja ajalehev...

Leidandmed	ERA.5010.1.114
Pealkiri	Fotod (33 tk.) ja ajaleheväljalõiked Maaailma Antikommunistliku Liidu (WACL) XIV konverentsist, Aasia Antikommunistliku Liidu (APACL) XXVII konverentsist ja Antikommunistliku Noorteliidu III kokkutulekust Taibeis (Taiwan) 03.-07.08.1981
Piirdataumid	-
Liik	Arhivaal
Ainese keel	-
Märkused	-
Lehti	-
Kirje sisestatud	07.01.2010
Asukoht	Rahvusarhiiv Tallinnas
Vaata dokumenti	
Telli	

Nüüd on võimalik säilikuid VAU kaudu uurimissaali tellida. [Vt täpsemalt!](#) Terminite seletus | Tagasiside | Lingid | Esilehele

Fail Redigeerimine Vaade Ajalugu Järjehoidjad Ioonistad Abi

Saaga: Fotod (33 tk.) ja ajalehe... X +

www.ra.ee/dgs/browser.php?tid=173&iid=111704505274&i Otsi

Fotod (33 tk.) ja ajaleheväljalõiked Maaailma ...; ERA.5010.1.114 Thumbnails | FAQ/Feedback | EST | Account | Preferences | Log out | Lauri Leht

42/108 25%

版五十五 二期星 錄 合 聯共

政暴權極

刊特會大屆

第一部份 亞盟的創始與奮鬥目標

第二部份 亞盟的組織與主要活動

第三部份 成立及其任務

第四部份 世界反共聯盟的成立及其任務

亞盟與

會大亞盟食份國區學學理聯共

Fail Redigeerimine Vaade Ajalugu Järjehoidjad Ioonistad Abi

VAU - Virtuaalne uurimis... Kaardid - Home Filmiarhiivi infosüsteem - ...

www.ra.ee/kaardid/index.php/en

Kaardid RAHVUSARHIIV Eesti

Home Advanced Search

Title Place from to [Advanced Search](#)

Register of the maps in the National Archives of Estonia

The register of maps contains the descriptions and digital images of the maps that are stored mostly in the two largest archives of Estonia — the Estonian Historical Archives and the State Archives.

The register of maps in **the Historical Archives** is our country's largest and most valuable collection of historical maps — the total number of documents has been estimated at 80000—100 000. The register of maps is very diverse. Border and land use plans form the largest group among general geographical, topographic, hydrographic, soil amelioration, road communications and other specific maps.

The oldest maps in **the State Archives** originate from not before the second half of the 19th century. There can be found topographic, hydrographic, administrative division, road communications and other such maps and plans. There are also many land and forest use and ownership related plans. These border maps form a major part of the cartographic materials. In addition, military plans can be found: battle operations and sketch maps of troop positions, land allotted to the army.

[Read more](#)

Register of maps contains

- 142941 described maps;
- 44286 digitized maps.

Before your start using system

- [Take the Tour;](#)
- [Explore the Features.](#)

Useful and Interesting Web Site

- [Map collection of Tallinn City Arc](#)
- [Estonian Land Board Geoportal](#)
- [Online Georeferencing Tool For S](#)

Fail Redigeerimine Vaade Ajalugu Järjehoidjad Ioonistad Abi

Kaardid - Detailed descript... +

www.ra.ee/kaardid/index.php/en/map/view?id=29415&_xr=e

Detailed description

[Back](#) | [Print](#) | [Help](#)



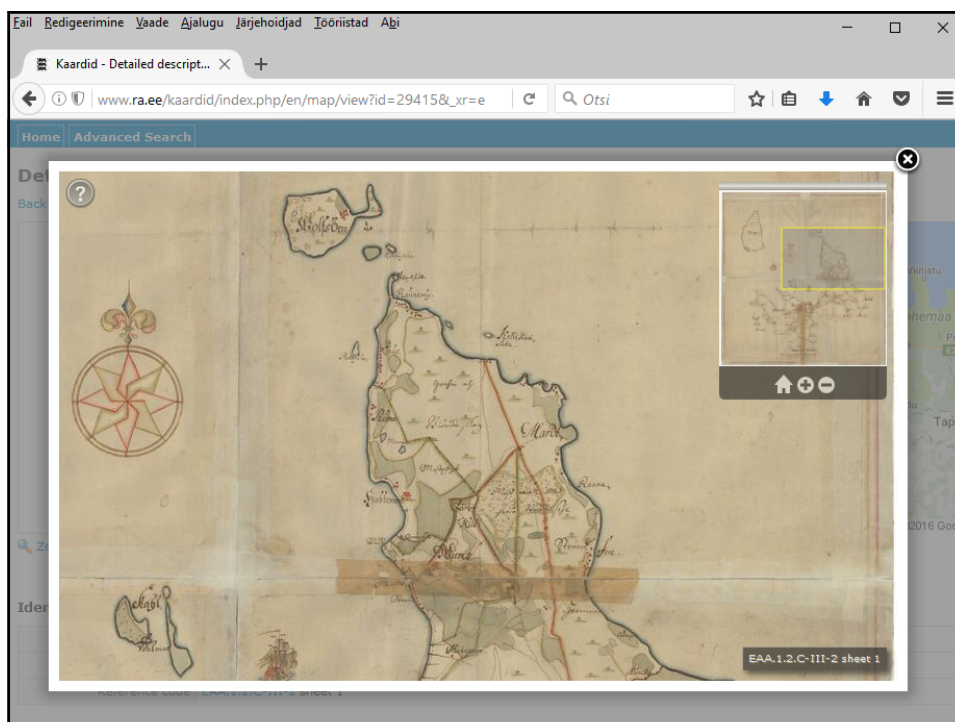
[Zoom image](#) [Open in new window](#) [Save or Print](#)



[Zoom image](#)

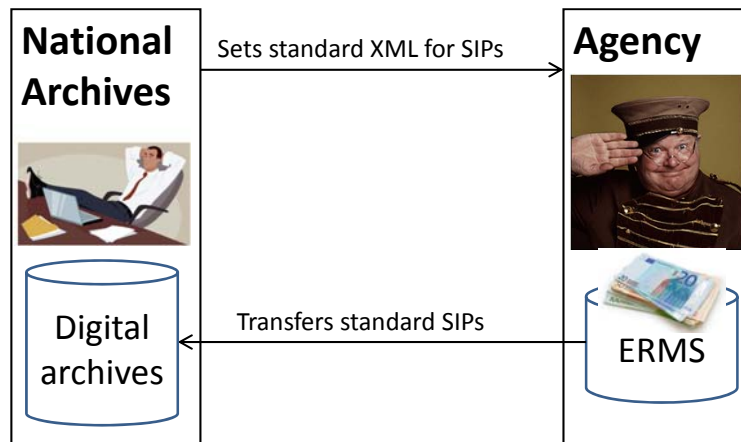
Identity Description

Title	[Karta över Tallinn, Naissaare ön och Viimsi halvön]
Map type	Single sheet map
Reference code	EEA.1.2.C-III-2 sheet 1

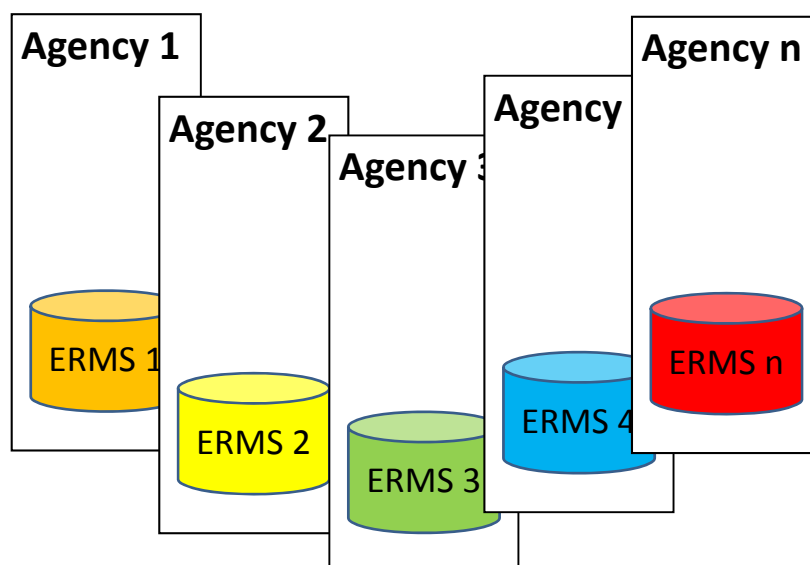


**The Estonian way of
ingesting digital records:
cooperation between
the National Archives and agencies**

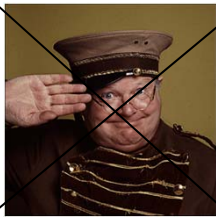
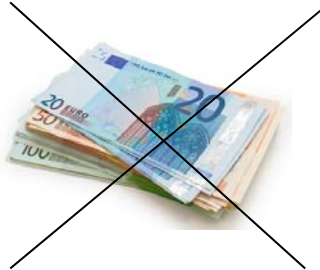
Ideal world would look like this:



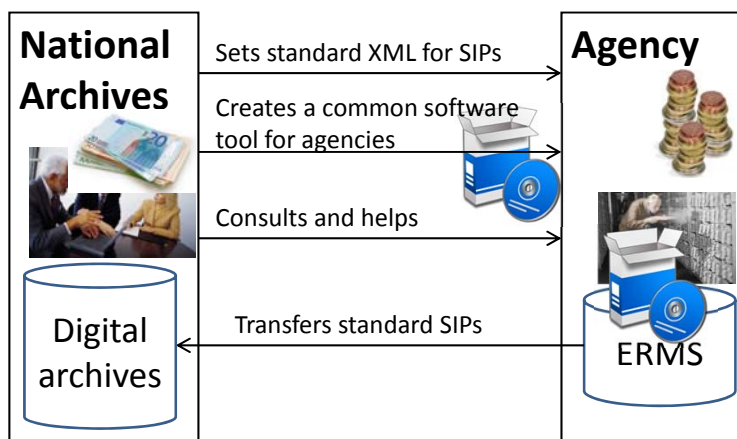
But in practice...



But in practice...



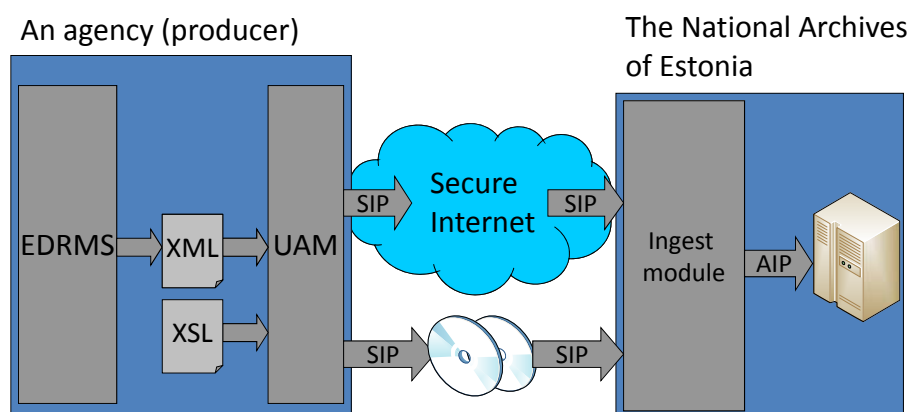
A possible solution



In short, we...

- set a national XML SIP-structure and helped agencies to export data from ERMS into it
- gave agencies' archivists the responsibility for the quality of digital transfers
- (reduced the central archives' archivists need to rearrange digital descriptions.)
- made an adjustable software that can be connected to all ERMSs.

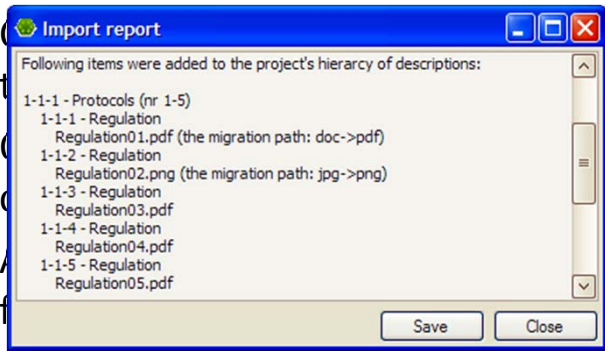
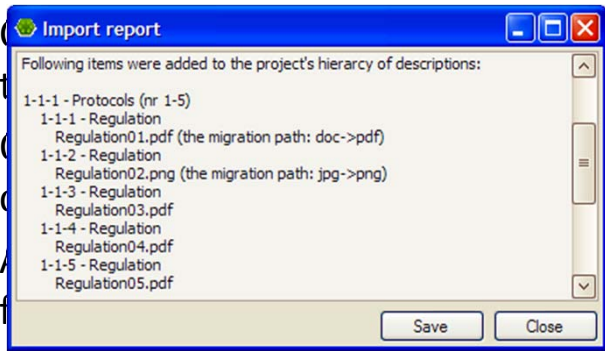
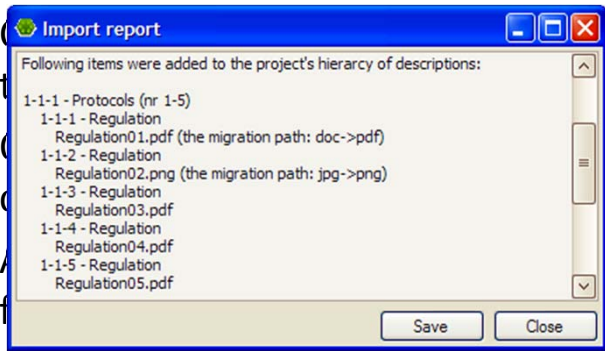
Universal Archiving Module (UAM)



UAM Import

- Configurable import engine using XML technologies (XSLT, XPath)
- Original XML is not changed, new XML is created based on the existing one
- Automatic conversion of files into archival formats (OpenOffice converter)

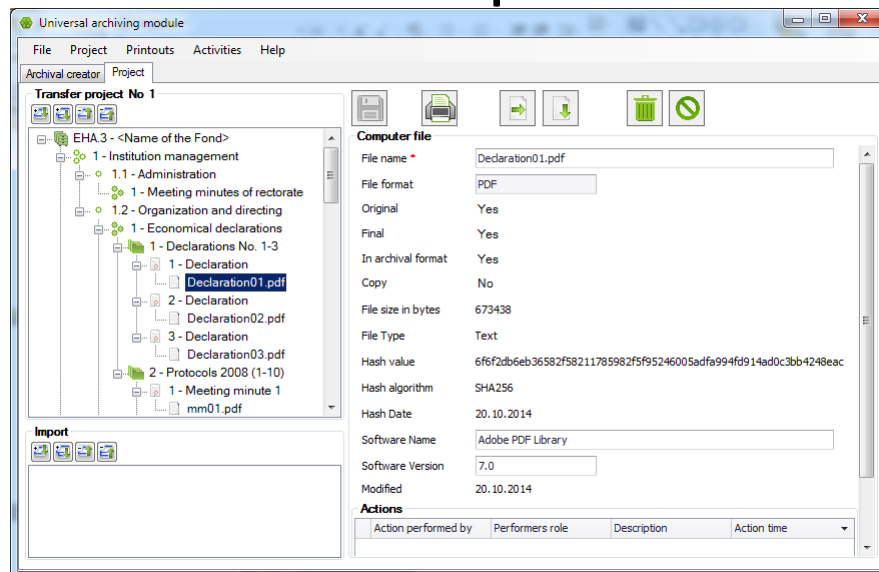
UAM Import

-  ML
-  ML is
-  archival

UAM Import

- Configurable import engine using XML technologies (XSLT, XPath)
- Original XML is not changed, new XML is created based on the existing one
- Automatic conversion of files into archival formats (OpenOffice converter)
- Identify imported computer files and create technical metadata (JHOVE component)

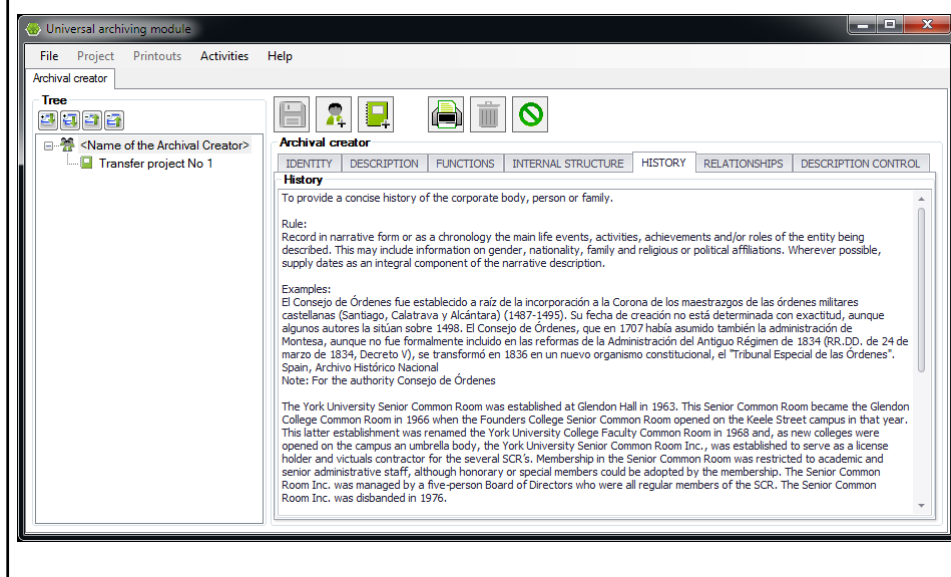
UAM Import



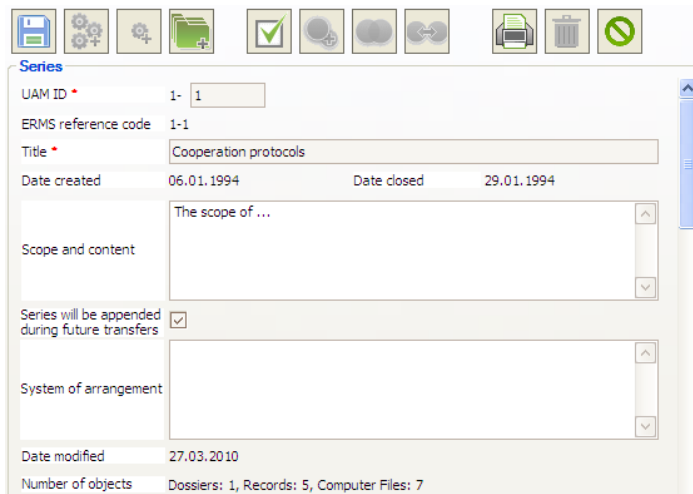
UAM Core

- Classification schema
- Input additional metadata
- Support ISAD(G) and ISAAR(CPF) standards

UAM Core



UAM Core



The screenshot shows the UAM Core interface with a toolbar at the top containing icons for file operations, settings, and status. Below the toolbar is a form titled "Series" with the following fields:

- UAM ID**: 1- 1
- ERMS reference code**: 1-1
- Title**: Cooperation protocols
- Date created**: 06.01.1994
- Date closed**: 29.01.1994
- Scope and content**: The scope of ...
- Series will be appended during future transfers**: ☒
- System of arrangement**
- Date modified**: 27.03.2010
- Number of objects**: Dossiers: 1, Records: 5, Computer Files: 7

dards
ats are

UAM Core

- Classification schema
- Input additional metadata
- Support ISAD(G) and ISAAR(CPF) standards
- All actions on metadata and file formats are logged

UAM Core

- Classification schema
- Input additional metadata
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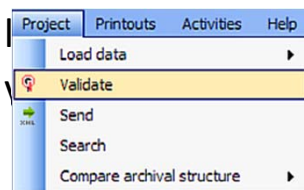
Actions			
Action performed by	Performers role	Description	Action ...
Tarvo Kärberg	archivist	File 'Report04.pdf' is automatically converted from computer file 'Report04.doc'	30.03.2010

UAM Core

- Classification schema
- Input additional metadata
- Support ISAD(G) and ISAAR(CPF) standards
- All actions on metadata and file formats are logged
- Validation to find gaps and errors in data

UAM Core

- Classification schema
- Input additional metadata
- Support ISAD(G) and ISAAR(CPF) standards
- All actions on metadata and file formats are



- \ gaps and errors in data

UAM Export

- Create SIPs
- Transfer to long-term digital archives
- Transfer via secure internet or to a offline file
- SIP structure can be modified using XSLT engine

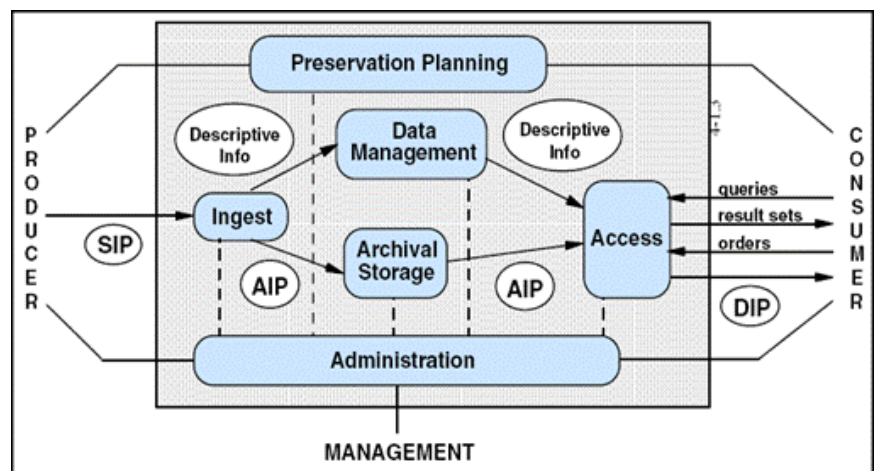
General data: UAM

- development 2008-2010, in use since 2010, third version of metadata schemas → soon to E-ARK standard
- In Estonian and English
- Several pre-ingest projects, including non-ERMS import
- Used also by inhouse archivists
- Used also for metadata without computer files
- See more: <http://www.ra.ee/en/universal-archiving-module/>

- A special tool at pre-ingest can help solving several problems very effectively!
- The tool at pre-ingest should be in compliance with existing infrastructure to gain more efficiency

Digital archives

- Based on OAIS standard (Open Archives Information Systems)



Digital archives

- Migration strategy
- Preservica software

Preservica
Enterprise Edition

- Archival formats defined by government act:
 - text: PDF, TXT, XML
 - images: TIFF, PNG
 - sounds: WAV, BWF, AIFF
 - movies: TIFF, DPX, JPEG2000

Digital archives

- Preserving the digital signature:
 - 1) extract document file from digitally signed container to Preservica
 - 2) extract digital signature data to the digital archives database
 - 3) maintain trust to and audit trail in the digital archiving software and database
 - 4) (the original digitally signed file is also kept, just in case)

Future challenges

- Number of ingests will grow very soon
- Keeping archiving software up-to-date (€€€)
- Managing access rights and restrictions
- Archiving databases – snapshot strategy?
- International cooperation – let's invent the bicycle together

Read more, if interested:

- www.e-estonia.com
- National Archives website: www.ra.ee
- Implementation of the MoReq2 Model Requirements for the Management of Electronic Records in Estonia (Estonian “chapter zero” for MoReq2; 61 pages):
https://www.mkm.ee/sites/default/files/estonian_et_-_chapter_0_english.pdf

Thank you!



REPUBLIC OF ESTONIA
NATIONAL ARCHIVES

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