# **edssi**<sup>2</sup>

European Digital Student Service Infrastructure - Level 2 EU Student eCard Stakeholders Forum

> March 9-10, 2023 Venice

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## Day 2

## 08:45 Arrival 09:00 eSignatures in EDSSI 10:00 eArchiving Building Block: Creating a Proof of concept for eArchive services 10:30 Coffee break 11:00 The European Student Card: simplifying student mobility for students and Higher Education Institutions 11:45 The future of Student Card Systems. A roundtable

12:30 End of the Forum



## EU Student eCard Stakeholders Forum

#### eSignatures in EDSSI

## Stefan Liström

Service Manager Swedish Research Council



#### Agenda

- Why are we here today?
- What are e-signatures?
- Why and how do we use e-signatures?
- Dialogue / Questions
- e-signatures in EDSSI
- Other topics explored in EDSSI L2
- Dialogue / Questions



#### Why are we here today?



- What is the Erasmus program all about?
- What was the EDSSI L1 project all about?
- What is the EDSSI L2 project all about?
- What do you all want or need?

#### What are e-signatures?



- Digital vs Electronic signatures
- A digital signature always relies on a crypto-based technology.
- An electronic signature is a collective noun. Therefore, a digital signature can be an electronic signature, but an electronic signature is not always a digital signature.

#### **Aspects of e-signatures**



- Authenticity
  - Is the signature uniquely linked to the signatory?
- Identity
  - Can we be absolutely sure we can identify the signatory?
- Authentication
  - Can we be 100% confident that the signature is created under the sole control of the signatory?
- Integrity
  - Can we detect any changes in the document after it is signed?

#### Why and how do we use e-signatures?



- It is all about trust!
- Face to face agreements and hand written signatures on paper
- Erasmus without paper network
  - A set of applications that are interconnected and where information is transferred between organisations and individuals and agreements are made by pushing buttons and storing the result in databases.
- The more complex ecosystems we create the more likely someone will circumvent expected procedures, which can erode trust.
  - E-signatures is one way to enable Authenticity, Identification, Authentication and Integrity in a system and also increase trust.

#### **Trust in e-identities**



- eduGAIN identity interfederation
- Refeds assurance framework
  - Low
    - self-asserted identity together with verified e-mail address
  - Medium
    - the person has sent a copy of their government issued photo-ID to the Credential Service Provider (CSP) and the CSP has had a remote live video conversation with them
  - High
    - the person has presented an identity document that is checked to be genuine and represent the claimed identity and steps have been taken to minimise the risk of a lost, stolen, suspended, revoked or expired document

#### eIDAS



- Regulation on electronic identification and trust services
- Types of signatures
  - Simple
  - Advanced
    - An advanced electronic signature shall meet the following requirements:
    - (a) it is uniquely linked to the signatory;
    - (b) it is capable of identifying the signatory;
    - (c) it is created using electronic signature creation data that the signatory can, with a high level of confidence, use under his sole control; and
    - (d) it is linked to the data signed therewith in such a way that any subsequent change in the data is detectable.
  - Qualified

#### **Questions / discussion**



- Do you use e-signature services in your organisation?
  - Yes / No
- How high assurance is your organisations e-identity?
  - Low, Medium, High, Not sure
- How high assurance is demanded when doing an e-signature?
  - Low, Medium, High, Not sure
- What type of e-signature is used?
  - Simple, Advanced, Qualified, Not sure



#### slido











# How high assurance is your organisations e-identity?







#### slido











# What type of e-signature is used?





#### e-signatures in EDSSI L2



- Components of the eduSign signature service
  - Frontend (Graphical User interface)
  - Signature service backend
  - Validation service
- Components of the signature flow in EDSSI
  - MyAcademicID (Identity linking)
  - OLA portal (Application)
  - eduSign (Signature service with API)
  - Harica (CA)

### Login





#### **Choose organisation**







#### **Upload document**







#### **Preview and approve**

#### eduSign

Signed in as Stefan Liström





If you experience problems with eduSign contact your local IT-support







#### Sign document









If you experience problems with eduSign contact your local IT-support





#### **Download document**





Signed in as Stefan Liström Logout





If you experience problems with eduSign contact your local IT-support

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#### **Validation service**







#### **Validation information**

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Signature 1		
Status	Signature is valid	
Type of validation	Signature validation	
Can be validated until	2023-08-30 15:23 CEST	
Coverage	The signature covers the whole document	
Signing time	2022-08-30 15:33 CEST	
Identity provider	https://login.idp.eduid.se/idp.xml	
Service provider	https://edusign.sunet.se/shibboleth	
Signer		
Display name	Stefan Liström	
Given name	Stefan	
Surname	Liström	
EDUPerson principal name	pufag-rarog@eduid.se	
Country code	se	



#### **OLA document signed**



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#### Signature page

This document has been electronically signed using eduSign.



#### eduSign

SUNKT



#### **Other topics explored in EDSSI L2**



- eTranslate
- eArchiving
- Student housing application

#### **Questions / discussion**



- What documents would you like digitally signed in the Erasmus program?
  - OLA, inter-institutional agreements, others
- What other aspects of e-signatures do you think the Erasmus program would benefit from?



#### slido

# What documents would you like digitally signed in the Erasmus program?



#### Ξ

What documents would you like digitally signed in the Erasmus program? 17  $\stackrel{.}{_{\sim}}$  …

#### OLA (Online Learning Agreement) 94% IIA (InterInstitutional Agreement) 94% other 65%

#### Links to eduSign



eduSign signature service

eduSign validation service

#### eduSign open source code repositories

Frontend: https://github.com/SUNET/edusign-app Backend: https://github.com/swedenconnect/signservice Validation: https://github.com/SUNET/docker-sigval



#### Thank you!

Stefan Liström steli@sunet.se



#### EU Student eCard Stakeholders Forum eArchiving Building Block: Creating a proof of concept for eArchive services

### **Ferran Abarca Peris**

Chief of e-Government & Records Manager Unit University of Barcelona




# **CEF eArchiving Building Block**

Simplify long-term access to information





# What is eArchiving?

Important information should be kept accessible and reusable for years to come, regardless of the system used to store it. eArchiving provides core specifications, software, training and knowledge to help people preserve and reuse information over the long-term.

### eArchiving and EDSSI2

One of the **main goals** of EDSSI2 is the eSignature service and applying it to the Online Learning Agreement portal in order to do a proof of concept of allowing students to **e-sign their Online Learning Agreements (OLA)**.

Online Learning Agreement, the perfect candidate to test eArchiving:

- . Document contains important information
- eSign document (can we keep integrity by using eArchiving?)



### Activity 2

Task 2.1	Géant	Updating requirements analysis for building blocks and e-services	M1 – M4	
Task 2.2	SRC	Building an eSignature solution	M5 – M12	
Task 2.3	UB	Creating a Proof of concept for eArchive	M13 – M23	
Task 2.4	AUTh	Usability report of eTranslate CEF building block	M13 – M16	
Task 2.5	SW-KA	Student housing Web-Application	M5 – M12	
Task 2.6	EUF	Connecting e-services to the interoperability infrastructure	M13 – M20	

EDSSI L2 Gantt 23.06.2022					2022									20	2023										
		Sep	Oct	Nov	Dec	Jan.	Feb.	Mar	. Apr.	May	Jun	Jul.	Aug	Sep	Oct	Nov	Dec	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug
Activities	Leaders	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M23
Activity 2 - Deploying CEF building blocks and e-Services	SRC																								
Task 2.1 - Updating requirements analysis for building blocks and e-services	GEANT	Analy	sis																						
Task 2.2 - Building an eSignature solution	SRC					Protot	ping			Finalis	sing														
Task 2.3 - Creating a Proof of concept for eArchive services	UB													Prototy	ping			Proof-	of-conc	ept		Report			
Task 2.4 - Usability report of eTranslate CEF building block	AUTh													Usabili	ty repo	rt									
Task 2.5 - Student housing Web-Application	STK									Protot	yping			Finalisi	ing										
Task 2.6 - Connecting e-services to the interoperability infrastructure	EUE													Monito	ring										



### More in detail, Task 2.3 aims to:

- **1.** Understand and test the CEF eArchiving building block
- **2**. Actually use it and check its viability in the edssi-L2 project:
  - Can we use it to guarantee long term preservation of documents and records?
  - Can we keep integrity of digitally signed documents?
  - How Higher Education Institutions (HEI) can use it?
  - Can we automate the use of the solution (web services?)
- **3.** Report our findings



- **1.** Gathering information about CEF eArchiving
  - The eArchiving Building Block is based on the outcomes of the E-ARK project (2014-2017)\* that piloted an
- an end-to-end OAIS compliant e-archival service.
  - OAIS (Open Archival Information System) is an archive system described on the Magenta book
- of the CSDS (The Consultative Committee for Space Data Systems).
  - Later on became an International Standard: ISO 14721:2015



### **OAIS DIAGRAM**





- 2. Contacting the CEF eArchiving project managers
  - Received additional contact information
  - Guided us through to up-to-date information (information on CEF website was no longer updated)
  - Pointed us to RODA solution and its Github repositories (<u>https://github.com/keeps/roda</u>)







An open-source digital repository designed for preservation\*

RODA is a digital repository solution that delivers functionality for all the main units of the OAIS reference model.

RODA is capable of ingesting, managing and providing access to the various types of digital objects produced by large corporations or public bodies.

RODA is based on open-source technologies and is supported by existing standards such as the Open Archival Information System (OAIS), Metadata Encoding and Transmission Standard (METS), Encoded Archival Description (EAD), Dublin Core (DC) and PREMIS (Preservation Metadata).





RODA-in is a tool specially designed for producers and archivists to create Submission Information Packages (SIP) ready to be submitted to an Open Archival Information System (OAIS). The tool creates SIPs from files and folders available on the local file system.

The tool includes features such as:

- · Create, load and edit classification schemes
- Automatic association of files/folders to SIP
- . Automatic association of metadata to SIP
- Definition of metadata templates
- Support for various metadata formats (EAD, DC, etc.)
- . Creation of SIP of unlimited size
- Creation of SIP in various formats: BagIt and E-ARK



- **3.** Using RODA Installation
  - RODA Demo online preliminary tests (information sent is deleted after a short period of time)
  - RODA Installed locally (on-premise) deeper tests and exploration. Limited availability
  - RODA Installed on Azure cloud "production" environment for task 2.3
    - Reported issues on installing latest version (not login module available / neither main menus).
    - . Downgraded to a **previous** version to proceed with full installation
  - RODA-in Installed locally for SIP (submission information packages) creation



- 3. Using RODA Archivists
  - Archivists work on RODA consisted on defining and creating:
    - . Authority Record
    - . File Plan
    - . Collection
    - . Series
    - . Metadata schemes (based on mets / dublin core / EAD)



- 3. Using RODA Archivists
  - Archivists also created a fake OLA file consisting on:
    - · "OLA" not digitally signed
    - "OLA" digitally signed
  - . Created the SIP and proceed with the pre-ingest and ingest process



### Proof-of-concept phase – M17 / M20

# **DEMO / SLIDES**







# **Entity creation**

(Authority Record)



🖀 Welcome Catalogue Search Ingest Administration Disposal Planning Help

#### O Catalogue

The catalogue is the inventory of all items or records found in the repository. A record can represent any information entity available in the repository ( sections, series, files, etc. This page lists all the top-level aggregations in the repository. You may drill-down to sub-aggregations by clicking on any of th

Search...

Could not find any intellectual entities in this context.

CREATE INTELLECTUAL ENTITY 😔







#### SIP – Creation process File Edit Classification Scheme View Help RODA SIP creation tool Select an item from Choose the folders Load your the information packages that contain your files classification scheme to inspect it Choose folder Load or create a new classification scheme La Download latest release Memory usage: 27.0 MB of 38.4 MB







#### Associations methods for the SIP

- . One SIP for each file or folder
- . One SIP with all files or folders
- One SIP for each file under a folder
- . Information packages alongside SIP

CREATE ASS	SOCIATION TO "Metadata scheme UB"
CHOOSE TH	IE ASSOCIATION METHOD
	One information package for each selected files or folders Use this option to create a SIP for each of the selected files or folders. If you selected five files and/or folders, the association will create five SIPs, i.e. five descriptive items. Each one of these items can correspond to a distinct description level.
	One information package with all selected files and/or folders Use this option to create one and only one SIP containing all selected files and folders. If you selected five folders and/or files the association will result in one SIP corresponding to one item with a set description level.
$\overline{\Box}$	One information package for each file under the selected folder(s) Use this option to create one SIP for each file under the selected folder(s). This operation will create a set of SIPs equal to the number of files under the selected folder(s).
ā	One classification scheme from folder structure This option creates information packages in addition to submission packages. It should be used when the folder structure is well organized and resembles the desired output plan. If a folder only has sub-folders, it creates a Series. When a folder's children are just files, the whole folder will be used to create one submission package. In a situation where a folder has a mixed contet, files and sub-folders, each file will be a submission package and each sub-folder will be a Series.
Cancel	X Continue >



RODA-In File Edit Classification Scheme View Help		- œ x	Creating SIPs
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K Semore folder Associate	Add	Implify Language       English         ASSOCIATIONS       #1         Created 1 item       Remove         One information package for each selected files or folders       input: 1 directory         Expand       Expand	Creating SIPs Created 2 of 2 (100%) Elapsed 00:00:00 Current SIP S124 Test serie for RODA UB Project Status Done Open folder Close



# Resulting SIP packages to be sent to RODA

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Welcome Catalogue Search Ingest Administration Disposal Planning Help	
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Drop files here	
CHOOSE FILES	
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### **Pre-ingest result**

### 🔵 RODA

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#### 💾 Ingest transfer

The Transfer area provides the appropriate temporary storage to receive Submission Information Packages (SIPs) from Producers. SIPs may be delivered via electronic transfer (e.g. FTP) or loaded from media attached to the repository. This page also enables the user to search files in the temporary transfer area, create/delete folders and upload multiple SIPs to the repository at the same time for further processing and ingest. The ingest process may be initiated by selecting the SIPs you wish to include in the processing batch. Click the "Process" button to initiate the ingest process.

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💄 Ferran 🛛 🌐 English



### Ingest process

Ingest workflow has several possibilities of configuration

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# **Selecting Authority Record**

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		Evitu information computation		



### Ingest process outcome

RODA

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#### Ingest process

The Ingest process contains services and functions to accept Submission Information Packages (SIPs) from Producers, prepare Archival Information Packages (AIPs) for storage, and ensure that Archival Information Packages and their supporting Descriptive Information become established within the repository. This page lists all the ingest jobs that are currently being executed, and all the jobs that have been run in the past. In the right side panel, it is possible to filter jobs based on their state, user that initiated the job, and start date. By clicking on an item from the table, it is possible to see the progress of the job as well as additional details.

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### Searching the package

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🐣 Ferran 🛛 🌐 English

RODA

O Catalogue

The catalogue is the inventory of all items or records found in the repository. A record can represent any information entity available in the repository (e.g. book, electronic document, image, database export, etc.). Records are typically aggregated in collections (or fonds) and subsequently organised in subcollections, sections, series, files, etc. This page lists all the top-level aggregations in the repository. You may drill-down to sub-aggregations by clicking on any of the items in the table below.

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### **Entity level search**

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Creator Ferran Abarca		
Date 2022-03-01		
Identifier uuid-9ec3ad81-1963-4ff5-a512-68ed4b720193		
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### File level search

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ntiner iid-a06cs9686-4ca8-403d-9b nguage Iglish Representations Searc	d0-dc660b01aa9b h	Size	Status	Creation date	Last modification	<u>advanced</u>	~ Q



9.2 KB

2.2 MB

988.9 KB

1-4 of 4 🔹 🕨

### **Records / documents**

EXPORT

RODA TEST UB 01.pdf

RODA\_TEST\_UB\_02\_digitally\_signed.pdf

RODA\_TEST\_UB\_03\_digitally\_signed.pdf



Acrobat PDF 1.6 - Portable Document Format 1.6

Acrobat PDF 1.4 - Portable Document Format 1.4

Acrobat PDF 1.6 - Portable Document Format 1.6



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# ADDITIONAL FEATURES TO BE EXPLORED

- Preservation actions module
- . Disposal module
- . Logs module

### Logs Module

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#### 🛢 Activity log

Event logs are special files that record significant events that happen in the repository. For example, a record is kept every time a user logs in, when a download is made or when an modification is made to a descriptive metadata file. Whenever these events occur, the repository records the necessary information in the vent log to enable future auditing of the system activity. For example, a record is kept every time a user logs in, when a download is made or when an modification is made to a descriptive metadata file. Whenever these events occur, the repository records the necessary information in the vent log to enable future auditing of the system activity. For each event the following information is recorded: date, involved component, system method or function, target objects, user that executed the action, and the IP address of the user that executed the action. Users are able to filter events by type, data and other attributes by selection the available in the rights ide panel.

Searcn	.d-236422c0ø3ø0						advanced
▼ Date	Component	Method	User	Duration	Address	Outcome	Components
2023-03-03 14:32:33	Index	Retrieve AIP Descriptive Metadata	Ferran	774ms	10.92.0.24	Success	🗌 Index (7)
2023-03-03 14:32:31	Index	Retrieve Browse Aip Bundle	Ferran	201ms	10.92.0.24	Success	Methods
2023-03-03 13:54:55	Index	Retrieve AIP Descriptive Metadata	Ferran	850ms	10.92.0.24	Success	Create Descriptive Metadata File (1
2023-03-03 13:54:53	Index	Create Descriptive Metadata File	Ferran	<b>7</b> s	10.92.0.24	Success	Retrieve AIP Descriptive Metadata ()
2023-03-03 13:54:53	Index	Retrieve Browse Aip Bundle	Ferran	264ms	10.92.0.24	Success	Retrieve Supported Metadata (1)
2023-03-03 13:54:31	Index	Retrieve Supported Metadata	Ferran	25	10.92.0.24	Success	
2023-03-03 13:54:29	Index	Retrieve Browse Aip Bundle	Ferran	240ms	10.92.0.24	Success	Ferran (7)
EXPORT						1-7 of 7 🔹 🕨	Outcome



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### **Preservation actions module**



#### Preservation actions

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Preservation actions are tasks performed on the contents of the repository that aim to enhance the accessibility of archived files or to mitigate digital preservation risks. Within RODA, preservation actions are handled by a job execution module. The job execution module allows the repository manager to run actions or a given set of data (AIPs, representations or files). Preservation actions include format conversions, checksum verifications, reporting (e.g. to automatically send SIP acceptance/rejection emails), virus checks, etc.





### **Preservation actions module**

### Several processes to be explored:

. Validation processes

• • • • •

- Management processes
- . Format identification processes
- . Risk management processes

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New process me P batch export (1.0) tegories Validation	at Kdentification 🗇 reindex	Process ceant o ceinaircomaaco a caacce o	
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AIP Virus check (ClamAV 0.103.6/26575/Fri Jun 17 08:08:05 2022)     AIP ancetes to hierardy fix (L0)     AIP bact(specify control (Ln)     AIP bact(specify control (Ln)     AiP bact(specify control (Ln)     Activity log truncation (L0)     Fiddy information computation (L0)     Index and the advection (L0)     Rebuild AIP index (L0)     Rebuild DIP file index (L0)     Rebuild AIP index (L0)	AlP batch export (1.0) Exports elected APD() to a 2PD() for of older on the server file system. To retrieve the results of the export action you must have access to the server file system. NDTE: This action can potentially generate a large amount of data. Male sure you select a destination folder that has enough storage appase to accommodate the results of the export action. Categories: management  Destination folder //mplexport //mpl		
8 Rebuild disposal confirmation index (1.0) 9 Rebuild file index (1.0) 8 Rebuild file index (1.0) 9 Rebuild job Index (1.0) 9 Rebuild job Index (1.0) 9 Rebuild preservation AIP event index (1.0) 9 Rebuild preservatind preservation AIP event inde			


#### **Disposal policies module**

#### Retention policies available:

- Retain permanently
- Review at the end of the retention period
- Destroy at the end of the retention period

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Disposal policies In this page you can consult the different disposal policies that are associated with this repository. Information about the disposal schedules, disposal holds and disposal nules created for the propose of manage the life cycles of intellectual entities.	Actions Disposal schedules CREATE DISPOSAL SCHEDULE O
Disposal Schedules Disposal Schedules Disposal schedules at the minimum requirements for the maintenance, retention or destruction actions to be taken in the existing or future intellectual entities in this repository. A intellectual entity may only be destroyed as part of a disposal process governed by the disposal schedule assigned to that entity. It is the intellectual entity disposal schedule that determines how long a record is retained and how it is subsequently disposed of at the end of its retention period. Could not find any disposal schedules in this context.	Disposal rules CREATE DISPOSAL RULE  PRIORITIZE RULES  APPLY RULES  O
Disposal rules Disposal rules are a set of requirements that determine the disposal schedule for each intellectual entity in this repository. The disposal rules can be applied at any time in order to maintain the repository consistency. Disposal rules can also be applied during the ingest process. Disposal rules have a priority property in which they are executed. If a record is not covered by any of the rules, it will not be associated to a disposal schedule. Could not find any disposal rules in this context.	Disposal holds CREATE DISPOSAL HOLDI
Disposal holds Disposal holds are legal or other administrative orders that interrupts the normal disposal process and prevents the destruction of an intellectual entity while the disposal hold is in place. Where the disposal hold is associated with an individual record, it prevents the destruction of that record while the disposal hold is in place. Where the disposal hold is associated with an individual record, it prevents the destruction of that record while the disposal hold is in place. Where the disposal hold is associated with an individual record, it prevents the destruction of that record while the disposal hold is in place. Under the disposal hold is associated with an individual record, it prevents the disposal hold is in the disposal hold in this context.	



#### **Conclusions so far:**

- No software needs to be created to use CEF eArchiving (RODA is a plug and play software)
- Real solution for to long term preservation purposes of information, documents and records
- . International standards compliant
- May be used to guarantee integrity of outdated digitally signed documents
- "Manual" solution: No web services found so far (connect OLA portal and RODA)



#### **NEXT STEPS:**

- Make a test with a real Online Learning
   Agreement
- . Test preservation functionalities and actions
- Test disposal functionalities and policies
- Proceed with the EDSSI2 task 2.3 Report



# **THANK YOU**

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> Ferran Abarca Peris Ferran.abarca@ub.edu



## **edss**<sup>2</sup>

### European Digital Student Service Infrastructure -Level 2 EU

Student eCard Stakeholders Forum

#### **Coffee break**



#### EU Student eCard Stakeholders Forum

The European Student Card: simplifying student mobility for students and Higher Education Institutions

#### Jeroen van Lent

IT Project Manager NTT Data





## EUROPEAN STUDENT CARD

#### EU Student eCard Stakeholders Forum, Venice

Erasmus+ Enriching lives, opening minds Jean Monnet Sport Youth School education Vocational education and training Adult education

Higher education



EU Student eCard Stakeholders Forum The future of Student Card Systems. A roundtable

Tamas Molnar Alexander Loechel Victoriano Girard Senne James



# **edss**<sup>2</sup>

## European Digital Student Service Infrastructure -Level 2 EU

Student eCard Stakeholders Forum

## Thank you!