DE4A Cross-Border Pilot: Netherlands - Germany

Bilateral cross-border pilot between Netherlands and Germany in the context of Doing Business Abroad Pilot

From April 2022, different entities in Germany have been participating as observers of the DE4A project. This involves close work with the Doing Business Abroad pilot lead in the Netherlands, RVO, and cross-technical support from the project technical team.

The groundwork for this fruitful collaboration was prepared in 2021, when initial exploration started regarding possible DE4A involvement with the German organizations Federal Ministry of Interior, Federal Office of Administration, Ministry of Economic Affairs, Industry, Climate Action and Energy of the State of North-Rhine Westphalia, and the Coordination Office for IT standards (KoSIT). Towards the end of 2021, the decision was made to proceed with a feasibility study to extend the Doing Business Abroad pilot, focussing on registration at the economy portal, 'Wirtschafts-Service-Portal.NRW' (WSP.NRW), of the state North Rhine Westphalia. From April 2022, Dutch and German partners initiated the preparation phase (April – September) and are currently in the running and evaluation phase through the end of December.

The scope of piloting contemplates the scenario of Dutch representatives acting on behalf of a Dutch company (sole proprietorship) proceeding with the registration of a business activity in the Wirtschafts-Service-Portal of NorthRhine Westfalia. This scenario involves the use of eIDAS and eHerkenning ('eRecognition') for authentication and authorization (full powers); explicit request and preview according to SDGR Article 14; DE4A OOTS to retrieve company data from the Dutch Business Register, using real data, real companies and real representatives, in production environments.

The registrations will be invalidated after piloting concludes.

This piloting activity allows the participants to learn about technical, legal and organizational impact of implementing OOTS.

Ms. Birthe Rosenberg, representing the   Ministry of Economic Affairs, Innovation, Digitalization and Energy of the State of North-Rhine Westphalia participated in the pilots' interim review with the European Commission on October 7th in Brussels. Beforehand she explained to DE4A partners the implementation has been quick due to several factors such as:

- Matured DE4A components based on DE4A experiences during 2020-2022

- Gathered implementation experience in DE4A during 2020-2022

- Stable focus, prioritization, management-support

- Proper availability and dedication of resources

- Light weight and pragmatic approach

These are important lessons the partners learned looking forward to the mandatory SDG OOTS implementation before the end of 2023. As indicated by Ard Van der Heijden, Doing Business Abroad pilot leader,

"The bilateral pilot proves that the DE4A components and knowledge about SDG-implementation have matured throughout the DE4A project. When combined with a strong dedication and professional implementation-team, an excellent foundation is created to complete OOTS integration in a short period of time".

What is more, the work done so far and the positive experience with the piloting points to further collaborations with Netherlands, Germany, Luxembourg, Austria, and potentially other DE4A and non-DE4A Member State organisations in 2023.

For more information about the Doing Business Abroad pilot, visit:

https://www.de4a.eu/doingbusinessabroadpilot

The Semantic Interoperability Challenge

Implementing the Once-Only Principle (OOP) for public services at European level faces a great challenge: semantic interoperability. In DE4A, cross-border semantic interoperability has been addressed primarily by developing common data models and formats for the information to exchange.

In this sense, semantic interoperability agreements have been set up and managed as part of the interoperability governance. The main outcome of this effort is the DE4A semantic framework – a general framework for the semantically interoperable, cross-border, once-only principle implementation that capitalizes on available semantic standards. At the centre of this framework lies the "Information Desk", which constitute concepts and information that is required for a common understanding for facilitating the exchange of information between cross-border public authorities.

The main concepts and the components that implement them are as follows:

Canonical evidence type is a canonical form for each evidence type (an agreement on the fact proved and the information provided with a structured data model that include a common set of attributes) that has been identified by the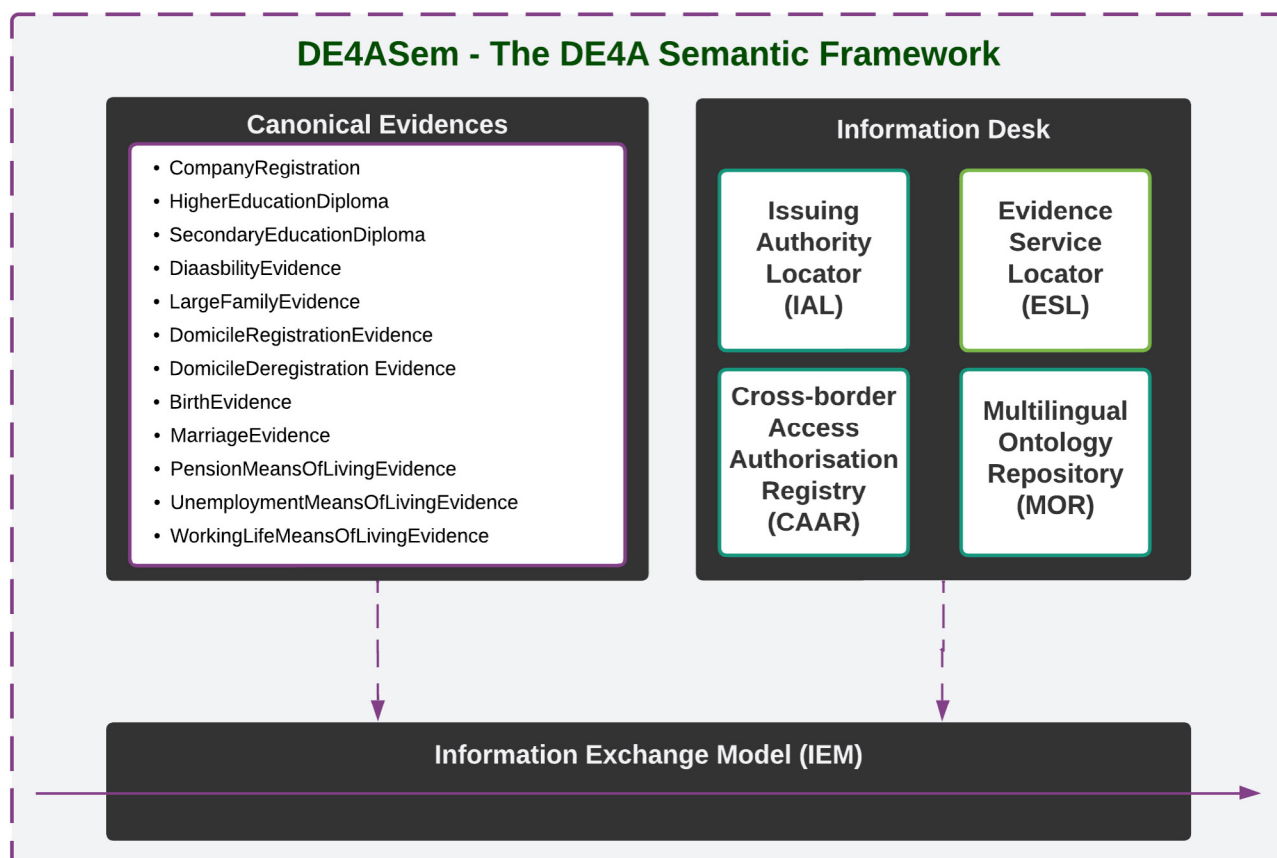 DE4A pilots as relevant for their online procedures. Each canonical evidence type has been designed in a collaborative way between the consuming and issuing authorities and the semantic experts in DE4A. Each canonical evidence type is identified by an Uniform Resource Identifier (URI) according to the DE4A policy of identifiers.

Canonical event catalogue is an agreement for a group of events regarding a specific topic. Each canonical event catalogue is identified by an URI according to the DE4A policy of identifiers.

Provision is the availability of a data service provided by an issuing authority (data owner) for issuing a canonical evidence type (evidence provision) or subscribing to a canonical event catalogue (subscription provision). The available provisions are located through the DE4A Issuing Authority Locator (IAL) by specifying at least a canonical evidence type or event catalogue and, optionally, an administrative territorial level or unit where the issuing authority has competences (national, regional, local or educational level or unit).

Data Service Endpoint consists of information for actual use of the data service that corresponds to a provision. This information is available through the DE4A Evidence Service Locator (ESL), obtaining the data service endpoint

DE4ASem - The DE4A Semantic Framework

Canonical Evidences

- CompanyRegistration
- HigherEducationDiploma
- SecondaryEducationDiploma
- DiaasbilityEvidence
- LargeFamilyEvidence
- DomicileRegistrationEvidence
- DomicileDeregistration Evidence
- BirthEvidence
- MarriageEvidence
- PensionMeansOfLivingEvidence
- UnemploymentMeansOfLivingEvidence
- WorkingLifeMeansOfLivingEvidence

Information Desk

Issuing Authority Locator (IAL)

Evidence Service Locator (ESL)

Cross-border Access Authorisation Registry (CAAR)

Multilingual Ontology Repository (MOR)

Information Exchange Model (IEM)

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information from a issuing authority (data owner) and a document type (either a canonical evidence type or a canonical event catalogue). Besides, the DE4A Information Exchange Model (IEM) implements the semantic agreement for the exchange of business messages through data services.

Multilingual ontology repository (MOR) is a repository of full semantic description of all the multilingual terms used in DE4A. An MOR term is uniquely identified and defined from the semantic and the syntactic point of view for a common understanding in every EU official language. Labels, descriptions and examples of a term in each language are provided by an automatic translation from English to be verified or corrected by domain experts for each language. The data type of a multilingual term can be a simple type (e.g. string) or a complex type which is composed by other simple and/or complex types.

DE4A followed a unique methodology for requirement elicitation, definition and implementation of the Semantic interoperability framework and the semantic building blocks. The methodology is guided by the following principles.

Participatory approach: From the beginning of the work the Member States (MS) involved in the piloting activities are engaged and the data models and other services are developed according to their need in principle.

Systemic design: In which every aspect of change is taken into account, evaluating the impact on each pilot

Member State, in an iterative (agile) manner.

Privacy by design and legal interoperability: Following the Member State specific requirements and the requirements of DE4A legal interoperability.

FAIR approach: The semantic assets are built and expanded on prior works on specific domains, for e.g. BRIS semantic assets, and methods for general-domain, such as web 2.0, the ISA Core Vocabularies and TOOP assets.

The DE4A semantic interoperability layer contributes to the interoperability community with many independent semantic components, such as the canonical evidences, and the semantic layer for the DE4A connector.

For more information visit: https://wiki.de4a.eu/index. php/DE4A_Semantic_interoperability and **https://github.com/de4a-wp3**
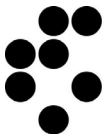
Latest semantic deliverables:

D3.4 Semantic framework – Final version
D3.6 Semantic toolkit – Final version
D3.7 DE4A machine learning algorithms

Spotlight on: Inventory of current eGovernment landscape

Jožef Stefan Institute
Ljubljana, Slovenia

As part of DE4A's cross-cutting activities Jozef Stefan Institut (JSI) in Slovenia has led the activity providing a view of the current EU eGovernment landscape. In particular, this activity has focussed on:

- Identifying and analysing the state of deployment of cross-border integrated Digital Public Services in the Member states;
- Inquiring on the status of existing solutions supporting online service for the Single Digital Gateway Regulation (SDGR) procedures;
- Taking stock of the implementation status and data strategies supporting the Once Only Principle (OOP) at national and regional level, digital-by-default principles and user centricity;
- Overviewing and catalogue of relevant EU building blocks and Digital Service Infrastructures supporting Once-Only, provided by EU programs and projects; and
- Inquiring on the risks and barriers for, as well as the enablers to the implementation of those services.

The methodology for performing these activities and validating the results includes a well-defined two-phased process of focused interviews and questionnaires with each Member State (MS) Chief Information Officer, internal (to the project) experts and external (DG CNECT, DG GROW, DG DIGIT, EBSI/ESSIF, mGov4EU and TOOP) experts. The results provide insights into both the encountered state of eGovernance across the Member States at the beginning of the project (January 2020), and into its progress with respect to a chosen set of indicators throughout the project lifetime.

The set of indicators includes: level of adoption of e-services across MSs at both national and cross-border level; legal, business, technical, organisational, political and human-oriented barriers to cross-border interoperability; implementation and adoption progress of the OOP technical system; and harmonization of national laws with EU legislation. The analysis are done for several areas: eIDAS and trust services, EU Digital Identity Wallets, Single Digital Gateway Regulation, Digital Service Infrastructures and OOP and data strategy.

In 2022, DE4A has concluded the second round of this activity, and comes back with the following results:

Generic results

As part of the more general outcomes of the activities on eGovernment cross-border services that can also be reused by other projects and initiatives, are the following:

- Methodology for analysing eGovernance landscapes with respect to eID, OOP Technical System and Digital Service Infrastructures (DSI);
- Architecture-based catalogue of Building Blocks (re)used across large scale EU pilots and Digital Service Infrastructures;
- Catalogue for Building Blocks assessment for (re)use by DE4A;
- Set of risks, barriers and recommendations on eGovernment relevant for both the Member states and EU in general.

As a result of the implementation of the above methodologies and frameworks, a list of more specific and project-related results can be extracted:

Specific results

eIDAS and trust services: Almost all MSs have an eID scheme with high level of assurance. The majority also has an eID scheme suitable for cross-border use, with high integration of monitoring mechanisms over the eIDAS progress. This address one of the major drawbacks pointed out by the revision of the eIDAS, namely – the poor monitoring mechanisms. Considering the new requirements for developing a Toolbox for the support of the technical system for the revised Regulation, the knowledge base from these monitoring systems can be used in a coordinated manner for various purposes: sharing insights on risks and barriers, as well as good practices that can catalyze the implementation progress.

Most of the responding countries have not established a Digital Identity Wallet solution yet. However, it has been considered for inclusion as part of the electronic services to be offered to the citizens. All reported DIW solutions have been issued by public entities.

SDGR and Life events: While there is a relatively high digitalization levels for all procedures, none of the procedures appears to be fully digitally enabled. The overall cross-border availability of SDG procedures is relatively high, ranging from 50% to 83%. There is also high level of online availability, with a few procedures still being eID-disabled.

Mobile accessibility varies from 40% to over 80%, with a few procedures that can only be carried out through a dedicated eGovernment app or a desktop-enabled website.

The introduction of fees for carrying out the SDG procedures is of greater concern for private companies and citizens, for both national and cross-border transactions.

Although OOP implementation in the 21 life-events has in general been advancing, it is still insufficient for effective SDG implementation. Clearly, this varies across MSs, depending on the overall readiness for digitalization.

Once Only Principle and data strategy: There is an increasingly positive trend on setting up a strategy for reusing data in the public sector, going from 50% at the beginning of the project to 81% towards the end. Access to personal data is widely available for the citizens. However, most areas still lack the capability to provide means for verification of access by others. This is an important aspect to address, considering the fact that access to medical records is often needed by care-givers in critical cases when patients are not able to access data themselves.

There are high expectations for the benefits of implementing OOP, both for the national and for the cross-border context, most notable of which are: Administrative simplification, Increased digitalization, Increased efficiency, and Improved interoperability. The main concerns from technical aspect are the adaptation of data sources and the adaptation of SDGR procedures to the national context.

Digital Service Infrastructures: There is high access (from 90 to 100%) to reusable public sector information, realized via eInvoicing and eDelivery, along with sector-specific DSIs such as BRIS, eProcurement, and e-exchange of social security. EU student card, Online Dispute Resolution (ODR) and Automated translation show considerably lower level of advancement. However, within their relevant contexts, the employment of the latter DSIs have also been on the rise.

Finally, identified and elaborated were 104 risks and barriers of different nature: legal, technical, organizations, business, political and human factor. For each risk and barrier, a list of policy recommendations was complied, amounting to 44 enablers. The prevalent types of barriers MSs face are of Legal and Organizational nature, whereas the most critical to address is the Human factor. Lack of resources and lack of expertise are the most painful points from organizational point of view, while non-harmonized law – from a legal point of view. Lack of awareness on availability of services and reluctance to change and adoption are the most critical problems that require immediate action.

Considering the fact that most of the efforts on OOP implementation are recent or ongoing, it is reasonable to expect that the overall state of the OOP implementation across Europe will significantly improve in the upcoming period.

For more information, check:

D1.2 Updated Member State eGovernment Baseline

D1.4 Updated Member State Once Only and data strategy baseline

D1.6 Updated EU Building Blocks supporting Once Only and standard data sharing patterns

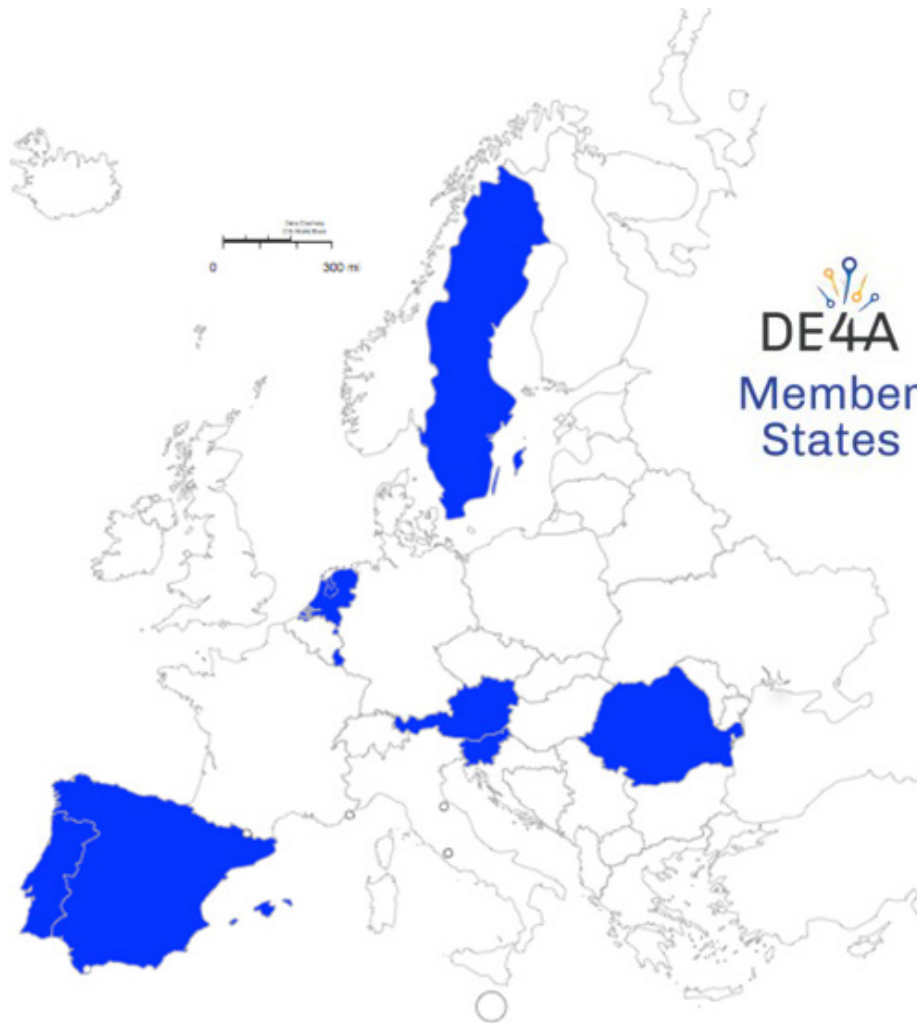**D1.8 Updated legal, technical, cultural and managerial risks and barriers**

News shorts

DE4A carried out a half-day review of the progress of the pilots in Brussels on October 7th. DE4A presented the progress of the project pilots (Studying Abroad, Moving Abroad and Doing Business Abroad), as well as the NL-DE external collaboration.

DE4A has been presenting at the following conferences:

• 2022 ICEGOV conference, 5th October, Guimaraes, Portugal: A canonical evidence-based approach for semantic interoperability in cross-border and cross-domain e-Government services.

• 21st European Conference of eLearning (ECEL), 28th October, Brighton, UK: Supporting Learning Mobility With Student Data Harmonisation: A European Perspective.

• SEMIC conference, 6th December 2022: Reusable semantic component prototype for interoperable e-Government: A case from Digital Europe for All (DE4A)

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