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D6.1: Use case scenarios & roadmap

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Editor(s)	Matīss Veigurs (VARAM)
Contributors	Matīss Veigurs (VARAM), Nikos Vasilakis, Dimitra Kotsokali, Petros Christopoulos, Iraklis Varlamis (GRNET), Jefferson Kühn, Lutfi Samo, Timo Behrmann (DATAPORT), Marit Hoefsloot (Waag)
Reviewers	Marit Hoefsloot, Max Kortlander (Waag), Jefferson Kühn, Lutfi Samo, Timo Behrmann (DATAPORT), Alexandros Melidis (GFOSS)
Document description	The purpose of the report is to examine use cases “Work abroad” and “Study abroad” more closely in each pilot country, as well as to shortlist possible digital services for integration and define further activities for ACROSS piloting.



About

The project is co-funded by the European Commission's Horizon 2020 research and innovation framework programme. Spanning through three years, ACROSS consists of a consortium of 10 partners from 7 countries: Athens Technology Center (coordinator), Tecnalia, Dataport, Engineering, Fraunhofer, GRNET, TimeLex, The Lisbon Council, Waag and VARAM. The project kicked off its activities in February 2021, with an energising online meeting, where all partners took the floor to present their plans to make the project a great success.

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Executive Summary

An examination of digital environments in pilot locations (Germany, Greece, and Latvia) revealed that all **pilot countries are in different stages of their digital transformation journey**. Germany has much stronger digitization of businesses and high human capital, but due to their federal political system, maintenance of unified e-government solutions such as public digital services lag behind developments in the private sector. Latvia ranks highly regarding technical infrastructure and availability of digital public services; however, there should be more resources invested in raising digital skills of its citizens and digitization of private sector. Greece recently accelerated efforts in their digital transformation by digitizing public service delivery, which has resulted in national platform <https://www.gov.gr/>.

Following trends in EU policies (such as the Single Digital Gateway Regulation) and increasing demand for faster and universal public services which was especially fostered by COVID-19 pandemic, **all three countries are planning to put more effort in centralized solutions and infrastructure for public service delivery online.**

Pilot partners (DATAPORT for Germany, GRNET for Greece, and VARAM for Latvia) **performed desk research and user research** in close cooperation with WAAG. Internal co-creation and co-design sessions resulted in user journeys and list of commonly used services in use case scenarios of “Studying abroad” and “Working abroad”. **This approach prioritised user-centricity and also yielded a list of user requirements.**

Based on user research common workflows of services were created and theoretically performed in current environments in respective pilot countries. A key takeaway of this exercise was that **it is not currently feasible to ensure an end-to-end user journey digitally**; therefore, initial use case deployment steps will concentrate on connecting and **showcasing a few relevant digital services to ACROSS to test their functionality in the cross-border scenario.**

Additional services will then be filled in as ACROSS team builds digital user journey to be more in line with the reality of the user journeys people encounter in real life. As a result, **relevant public services were sorted in “green services”** (immediate evaluation for connection – digital service is available) and **“yellow services”** (no full connection available currently (link can be provided or service is planned to be digital later) but will be kept under consideration in case of new developments) according to a traffic lights system.

Based on exercises performed online and in hybrid session in Amsterdam on 22-23 November 2021 pilot partners drafted individual roadmaps for next phases in use case deployment. As technical possibilities



are still being explored, no far-reaching activities were defined. **Pilot partners have concluded to a list of relevant stakeholders for services integration, cooperation, co-design, and co-creation.**

Also, various impact factors were listed of which the most significant are uncertainty of epidemiological situation which can impact the pace and timeline of ACROSS, limited control and ownership of services (especially important for DATAPORT and VARAM as they control few or no public services relevant for use cases), and national developments, especially regarding the Single Digital Gateway Regulation compliance.



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List of Terms and Abbreviations

Abbreviation	Definition
AFM	VAT registration number (Greece)
AMKA	The Social Security Number (Greece)
B2G	Business-to-government
DESI	Digital Economy and Society Index
DOATAP	Interdisciplinary Organisation for the Recognition of Academic Degrees and Information (Greece)
EC	European Commission
ECTS	European Credit Transfer System
EHIC	European Health Insurance Card
eID	Electronic Identification Card
eIDAS	Electronic Identification, Authentication and trust Services / EU Regulation on electronic identification and trust services



	for electronic transactions in the European Single Market (No 910/2014)
EU	European Union
EURES	The European Job Mobility Portal
ICT	Information and communication technologies
IT	Information technologies
LA	Learning agreement
OASA	Athens Urban Transport Organisation
OCMA	Office of Citizenship and Migration (Latvia)
OOP	Once-only principle
OZG	Online Access Act (Germany)
PPP	Public-private partnership
SDGR	Single Digital Gateway Regulation (No 2018/1724)
SEV	Hellenic Federation of Enterprises



1 Introduction

WP6 is dedicated to full cycle (definition, planning, execution, and evaluation of scenarios) ACROSS implementation in real-life environments. This is the first deliverable of the WP6, and it is dedicated to initial findings (definition and planning of use case scenarios) regarding future practical implementation of ACROSS platform in pilot countries.

1.1 Purpose and Scope

The purpose of this report is to more closely introduce use case scenarios which were defined in the project proposal and further shaped in co-design sessions by partners of the ACROSS consortium. In addition, findings of extensive desk research by pilot partners (DATAPORT for Germany, GRNET for Greece, and VARAM for Latvia) supplement use case scenarios with overall assessment of digital environments in respective countries.

This report outlines initial findings regarding citizen data flows and readiness of certain public digital services mainly in the context of Single Digital Gateway Regulation (SDGR) and Once-Only Principle (OOP). Roadmap defines further steps to be taken for use case initiation, further deployment, and execution, as well as maps out stakeholders and impact factors.

1.2 Approach for Work Package and Relation to other Work Packages and Deliverables

This report summarises the work and input of consortium partners of WP6 initial phase. It will serve as foundation for further WP6 tasks:

1. Use cases deployment and execution (report defines services and activities needed to initiate use cases);
2. Use cases evaluation and impact assessment (report outlines user requirements and describes digital environments in pilot countries which serve as points of reference for evaluation and impact assessment).

WP6 is closely related to WP2. Partners from both WPs worked together on definition of user journeys which served as basis for shaping and definition of use case scenarios through desk research, qualitative interviews, and co-design sessions. This deliverable, although created earlier, is related to WP2 deliverable “User Journey Methodology definition - Initial” due M12.



This report, especially defined user requirements, provides information on some gaps need to be addressed by ACROSS. Thus, it provides valuable insight for further development of data management, technical components, and integration for WP3, WP4, and WP5.

This deliverable describes the involvement of pilot partners in certain ACROSS communication and dissemination activities (roadmap section) such as project presentations for private sector stakeholders and universities which will be in line with WP7.

1.3 Methodology and Structure of the Deliverable

The report mainly consists of desk research performed by pilot partners in their respective countries – Germany, Greece, and Latvia. In order to ensure user-centricity of the project, a significant part of findings were also a result of internal co-creation and co-design sessions, including user research based on qualitative interviews, of which most were performed online, but one in hybrid regime (22-23 November 2021, Amsterdam, Netherlands). Through these sessions, various other design-thinking methods besides user research were used including creation of personas, user journey mapping, and stakeholder mapping.

This report is structured in five sections:

1. The **Introduction** lays out the general purpose, scope, methodology of this report, and its relation to other work packages.
2. **Overview of Current Digital Environments and Future Developments of Use Cases** describes overall situation in Germany, Greece, and Latvia regarding the development of respective e-government and public digital services infrastructure.
3. **Definition of Use Case Scenarios** sums up results of co-creation activities performed in WP2 and WP6. This section provides insight in qualitative interviews, user requirements, co-designed service workflows, and application of such workflows in current digital environments of Germany, Greece, and Latvia.
4. **Roadmap for Implementation of Use Cases** sets migration scenarios among pilot partners for piloting. It also maps out stakeholders which will be potentially involved in ACROSS in each pilot location. Furthermore, it describes impact factors as well as it briefly introduces directions for metrics which are based on barriers identified through desk research and user research.
5. **Conclusions** sum up previous chapters and highlight piloting challenges and opportunities identified through use case definition process.



2 Overview of Current Digital Environments and Future Developments of Use Cases

Even though there are numerous European initiatives, which are intended to bring digital environments of EU member states closer together, readiness of various member states for such solutions is very different. The purpose of this chapter is to introduce the digital environments of Germany, Greece, and Latvia and evaluate their overall level of digitization in the context of ACROSS.

2.1 Germany

Germany is a federal republic with a fragmented public digital ecosystem. The federation is a union of 16 federal states that contain 11,000 local governments. Every entity (local governments, federal states, the Federation) is providing online services for citizens, companies, and public administration authorities. Aligned with the SDGR, the Online Access Act (OZG) forces the Federation and the states of Germany to provide 575 administrative services and benefits online and make them accessible at one combined platform (Portalverbund) by the end of 2022. This portal is a central gateway that refers to all online services that are offered by the public administration of Germany. One level below every federal state has its own portal to provide online services to the citizens that are individual to the state. Online services are provided from the federal states by implementing the OOP.

Identity management is handled at a decentralized level by the 16 federal states. The identity of citizens is verified by using the eID as a digital version of the German identity card. To be user-friendly and not to force citizens to register an account at all portals, the Portalverbund and the state portals are interoperable. By registering an account at one portal (state or Federal), citizens are able to use all available German online services.

Germany's Online Access Act (OZG) and the EU's SDGR have the same goal: to make online services offered by the public administration more helpful and easier to use, through a single portal.

According to a survey by the Internet industry association *eco*¹, only 14.7% of German citizens consider Germany to be competitive when it comes to digitization.

¹https://www.lbbw.de/konzern/research/2021/studien/20210811-lbbw-research-digitalisierung-deutschland_adfpg7vxzv_m.pdf?origin=/2021-studie-stand-digitalisierung



In the IMD Digital Competitiveness Index 2021, Germany ranks 18th² out of 64 countries surveyed. Ready for the digital future (19th place), technology (31st place) and digital knowledge (12th place). Only the legal framework for digitization is good enough for the top 10 (9th place).

In the DESI Index 2021, Germany ranks only a modest 11th³. Currently, up to 4.7% of employees work in information technology or another ICT occupation⁴.

According to the Competence Centre Public IT, more than every second inhabitant in every federal state uses the Internet on a daily basis. More than 70% also use mobile Internet. Online shopping and video streaming are also very popular. More than a third of employees occasionally work in home office. However, administrative services are viewed very critically. Only one in four inhabitants submitted forms to authorities online last year. A lack of trust in the administration's handling of data does not seem to be the reason here, as this trust is comparatively high in all federal states. In an EU comparison of "Digital public services", Germany ranks 16th (DESI index 2021). Federalism, a lack of pragmatism in the authorities and differing IT architecture make the federal government's digital strategy more difficult.

A majority of citizens are in favour of a digital ministry to advance digitization in Germany. The federal government's current digitization strategy is based on 5 fields of action: Investment in digital skills, gigabit-capable networks for state and country by 2025, promotion of Industry 4.0, higher digital quality of life and security, and digitization of all administrative services.

Driven by the enormous desire for digitization on the part of its citizens, the federal states recognize that digitization takes place not only at the national level, but also at the European level. User journeys adapted to life situations could pick up users and guide them through the digital process so much more than individual services offered separately. ACROSS is an opportunity to think about the topics of study and work, two of the main reasons for mobility within the EU, on a European level.

2.2 Greece

Even though in most categories Greece's digital environment ranks below EU average, recent developments indicate a more focused approach towards digital transformation. Despite increasing investment activity in new technologies, Greece ranks 25th⁵ in the EC Digital Economy and Society Index (DESI) 2021 and last regarding user skills and literacy, according to the Hellenic Federation of Enterprises'

² <https://www.imd.org/centers/world-competitiveness-center/rankings/world-digital-competitiveness/>

³ <https://digital-strategy.ec.europa.eu/en/policies/countries-digitisation-performance>

⁴ Ibid

⁵ Ibid



(SEV) Digital Maturity Index. A survey carried out by SEV and Deloitte, which examined 100 indicators in the areas of business technology, connectivity infrastructure, policies and regulation, digital skills, digital business maturity, digital society maturity and digital public sector maturity, ranked Greece 28th⁶ in EU in terms of digital technology integration rates. This makes Greece the least prepared country to join Industry 4.0. A closer look reveals a slow rate of digital integration for businesses (26th) and ICT in public administration (25th)⁷.

According to the eGovernment Benchmark 2020, Greece stands at 30% on penetration of e-services (EU average 60%) and at 53% on digitization of public services (EU 72%). “Greece is characterized by a low level of penetration and a low level of digitization. Therefore, it belongs to countries that do not fully exploit the opportunities offered by ICT (Non-consolidated e-gov scenario).”⁸

Among the most prominent factors affecting the current state of play in the Greek public digital administration are the legacy systems used, which may no longer be supported, require special skills and significant spending to maintain, and create barriers to integration with new technologies. As old-fashioned procurement methods lead governments to maintain legacy systems instead of seeking newer enabling technologies, Greece must make a significant decision considering the skills costs, risk of losing the ability to support key systems, accumulating technical debt and cybersecurity risk. Human capital is another huge factor, as emerging talents keep driving away because of the debt crisis in Greece.

Digital capacities and skills of Greek enterprises also exhibit a very low digital intensity score (26th). Supporting a more efficient and effective usage of e-gov services, e-invoicing, electronic supply chain management and cloud-computing services, as well as the design and implementation of more sophisticated end-to-end and interoperable B2G digital services are some points to which particular attention has been given in current or under planning initiatives. Therefore, the substantial integration of ICT in the public sector and the socioeconomic environment of Greece is bound to play a critical role for both the restructuring and improvement of public services provision, and the reinforcement of competitiveness and extroversion of Greek companies.

Even though some information systems that have been developed over the last decade are considered reference models and also have a strong symbolic value, such as the e-prescription portal and the “Diavgeia” (Transparency) program, more must be done. The public sector is characterized by a lack of willingness and a resistance to change. Setting up IS to manage human resources in public administration,

⁶ <https://www2.deloitte.com/gr/en/pages/technology/articles/Deloitte-SEV-Digital-Observatory-Report.html>

⁷ Ibid

⁸ <https://www.cappgemini.com/resources/egovernment-benchmark-2020/>



interlinking IS throughout Greece's public sector and giving people access to all eGovernment services from a single access point, are a few examples of how the public sector could be digitally transformed (see further analysis, including SWOT, in 2018 diaNEOsis study on e-gov).

In this context, a series of reforms have been established since 2019. The Ministry of Digital Governance was founded, gathering both the political mandate, including that of process simplification, and the tools to enforce its policies by undertaking the supervision of all the public "IT excellence centres". A major extensive law has just been put into effect, modernizing the regulatory environment by aligning it with EU directions in e-government and ICT. A Registry for Public Procedures is under way, along with the National Program for Process Simplification. The new national IDs (currently under tender), which incorporates digital capabilities for e-identification and e-signature, are estimated to become available within 2022, along with the Unique Citizen ID Number. Till then, though, Taxisnet which was previously used for tax-related services, has been defined as the common eID component for gov.gr. Beyond Taxisnet, two-factor authentication has been set up as the 2nd level of security, whereas e-banking credentials are considered the 3rd level and are used for particular 'sensitive' services (solemn declaration, administrative authorization, national ID loss statement).

In addition, the new Digital Transformation Strategy 2020-2025 introduces two major changes compared to the previous digital strategies of the country: it includes not only the main principles and priorities but also a concrete action plan to apply them through an extensive catalogue of IT projects, and it multiplies the allocated budget (reaching ~6bn euro). It should be noted that about a quarter of the Greek program of the new Recovery and Resilience Facility (RRF) concerns (directly or indirectly) IT projects and interventions. Besides the medium-term projects, strong emphasis is given on short-term interventions that follow flexible development methodologies.

Ultrafast Broadband is another major project, also described in the NDS. In late 2019, ten companies have expressed their interest in participating in the construction and operation project of key fibre optic network, which will be implemented through a public-private partnership (PPP). This is the largest PPP in Greece today and one of the largest of its kind in Europe (€700 million) concerning 2.4 million citizens and businesses.

The most prominent and popular initiative is gov.gr, which is the single digital gateway for public services. Its beta version launched in March 2020 and had a significant impact on the public administration's response to the effects of the Covid-19 pandemic. Gov.gr is developed in an iterative manner. A key factor that guides its development is the prevailing international trend for central government portals that focus on citizens and businesses, use a citizen-friendly structure and language, and present their services



following user needs (life events, user-centric design). Gov.gr aims to replace the legacy public service design, with a friendly and expandable digital ecosystem of public services. The ultimate goal is to better serve the citizens and businesses through the creation of trusted services, the reduction of administrative burden and the increased efficiency in the operation of public administration.

Lastly, regarding regional authorities and municipalities, according to a survey conducted (Central Union of Municipalities), only 14 municipalities scored between 6 and 7 (out of 10) after being assessed for their performance on digital reform and e-government according to EC standards. A rather sizable number of municipalities (~160) have expressed their willingness to upgrade their services, but they point out their need to be further assisted and supported. 85 small municipalities, mostly in isolated areas, face serious problems such as low absorption of EU Funds, among others.

2.3 Latvia

Latvia has significantly improved its public digital services environment that places the country higher than the EU average in many aspects related to public digital services. According to 2021 DESI Index 85% of Internet users in Latvia also use public digital services (EU average is 64%)⁹ which is a result of public relations campaigns and digital training activities for civil servants, librarians, NGO representatives, journalists, teachers etc. who serve as mentors in the shift from in-person to digital services. Further work is needed to increase the number of people who have the necessary digital skills to access digital services independently. However, businesses in Latvia are less digitized comparing to the EU average, including e-commerce which is a prerequisite for developing a vibrant ecosystem of private digital services. Business digitization is limited due to the lack of qualified specialists in the job market.

A policy planning document named “Digital Transformation Guidelines 2021-2027” lists numerous policies, visions, and goals in terms of the development of public digital services which are also in line with the basic principles of ACROSS:

- State employees should regard the state as a unified platform; thus, customer service must be oriented towards complex help in life situations even if some services are not within the competence of the institution;
- Qualified e-identification tools and trust services must become ordinary in delivering public digital services and accessing the digital identity system until 2025; the vision includes the development of inclusive e-identification solution for resident foreigners (if they cannot use eIDAS) and the integration of national e-identification and trust services in cross-border sites;

⁹ <https://digital-strategy.ec.europa.eu/en/policies/countries-digitisation-performance>



- Opening of public digital services platforms to businesses to facilitate the overall digital transformation; it is expected that users will be able to control the sharing of their data among institutions and third parties;
- Public digital services platforms are envisioned to be open, interoperable, and easily accessible for cooperation outside public administration both nationally and within EU by 2027.

Also, boosting the digital skills of citizens/residents is listed as one of the top priority policies. It is regarded as one of the cornerstones in widening the access to public digital services. However, this policy is much more comprehensive than digital transformation alone as it involves educational institutions of all levels and is a part of the overall social welfare policy (e.g., boosting digital skills of seniors and unemployed).

Another comparative index “eGovernment Benchmark 2020” states that Latvia is characterised by high levels of digitisation (87%; EU average: 72%) and penetration (72%; EU average: 60%), placing it in the cluster of “fruitful eGov scenario”.¹⁰ This index also concluded that a peculiarity of Latvia is its lower than the EU average score in digital skills and digitisation of the private sector.

It has been stated in a mid-term planning document "Service Environment Development Plan 2020-2023" adopted by the Cabinet of Ministers in the beginning of 2020 that the national vision of service delivery is to provide user-oriented, proactive services for citizens and businesses equally accessible to everyone by exploiting modern technology capabilities, innovative solutions, and cooperation nationally and across borders. There are currently several regulatory enactments that define the implementation of OOP in Latvia, web accessibility, public service delivery, including digital services, etc. Information about all public services, including municipal level, and links to almost 800 public digital services are available on the national platform *latvija.lv* (in operation since 2006). Different life event descriptions can be accessed there as well. Apart from that, national and local authorities provide their digital services in their portals/websites, and there are almost 7000 different public services (both digital and non-digital) descriptions in Public Service Catalogue.

In 2017, the Cabinet of Ministers adopted a regulation No. 402 which stipulates the further digitization of public services. It states indicators (at least 5000 interactions a year, at least 10% of institution’s service stream, cost efficiency, and others) of which one is enough to prioritize digitization of service which overall has increased the number of available public digital services. Also, the government in general is moving towards the “digital by default” principle in communication with citizens and residents. This means that people will increasingly be receiving documents, answers, and other forms of interaction electronically. People may switch to face-to-face interactions by making a specific request. Even then, unified customer

¹⁰ <https://www.capgemini.com/resources/egovernment-benchmark-2020/>



service centres have all the means to provide access to services electronically at their premises in cases where the reason for face-to-face services is the limited access to technology.

Latvia currently maintains a decentralized data sharing procedure. Digital services are delivered by institutions individually and data sharing is regulated by legislation which defines the process of data sharing among institutions. Thus, data sharing is possible, but it is limited due to conditions set in legislation.

Currently, public and private digital services in Latvia are available with national personal identification credentials and solutions, of which the most popular is internet banking. Together with e-signature (which also has a user-friendly mobile solution) these two authentication methods provide access to all public and private digital services in Latvia. e-ID can also be used widely, however, it requires specific equipment, thus is less accessible to general population. There is also a private authentication solution smart-ID which is similar to mobile version of e-signature. Currently smart-ID is used mostly for private digital services authentication, for example, for accessing internet banking. Smart-ID has also introduced biometric accounts which can be used for electronic signatures through third-party solutions such as Dokobit service.

To implement the requirements of the eIDAS Regulation Latvia implemented eIDAS-Node in 2018. The software contains modules which enable communication among EU Member States with compliant eIDAS solutions. Latvia has established a solution for the identification of cross-border users, as a result of which currently three Latvian public digital services are provided to cross-border users of such countries as Estonia, Italy, Belgium, Spain, Portugal, Lithuania, Czechia, Luxembourg, Croatia, and Germany. The Latvian authorities also accept e-documents signed in the EU uniformed ASICE format, thus ensuring remote access to Latvian public digital services or procedures.

It is planned to open public digital services platforms to third parties (businesses). Currently this is a work in progress due to issues related to security, legislation, and data management. However, businesses themselves – such as banks, insurance companies, various utilities providers, telecoms etc. – maintain digital services with national authentication credentials.

ACROSS will complement the vision of Latvia's digital transformation policy. As it is aligned with several strategic goals, it will be an opportunity to test real-life solutions in practice, especially in the context of the implementation of SDGR. ACROSS will help to shift from services organised in an administrative manner to services organised by real life situations promoting a more user-friendly approach to citizens. Also, it will contribute to development of overall cross-border digital services infrastructure which at this point is in early stage.



3 Definition of Use Case Scenarios

Pilot partners together with other members of the consortium worked on definition of use case scenarios through the gathering of qualitative data from interviews and an analysis of the existing digital environment. Out of six individual use case scenarios, two common migration scenarios were created. Based on the information collected, each pilot partner examined the execution of these scenarios in their respective countries in the current environment.

3.1 Co-designed User Journeys

To determine which direction the ACROSS project would take, the consortium first had to map the current experiences and services used by the EU citizens who move abroad for working and studying. To do so, a co-creative process started in WP2 with the aim to make clear the user journeys of citizens who move across Europe to work or study. These journeys are what ACROSS calls the “user scenarios”, as they represent the experiences of the prospective end-users. The co-creative process consisted of several steps: the inventory of the existing services, a reflection on our own experiences moving across borders, two online co-creation workshops with the ACROSS partners, and interviews with people in Greece, Latvia, and Germany who have crossed borders for work and/or study purposes in the past.

In the first co-creation workshop, partners shared participatory methods, established a co-creative culture, and prepared for interviews with people who have moved across borders. Based on this workshop, a ‘starter pack’ was created to help partners embark on the interview and survey process. The pilot partners then carried out interviews over the summer of 2021 with people who actually moved across European borders for work or study. This was the main input for the user scenarios. In the second co-creation workshop, the WP2 and WP6 partners came together to collect and compile the content from the interviews. The outcome of this process was the development of two shared user scenarios that are applicable to the three pilot countries: one for working abroad and one for studying abroad. The next two sections will briefly introduce these two scenarios.

For more information on the methodology to find the user journeys, please refer to D2.1 (“User Journey methodology – Initial”). The user journey (as well as the interviews and inventory of existing services that fed into its development) also form the basis for the gap analysis presented in D2.3. The co-creation process initiated in this task is carried in T2.3 and presented in D2.5, most specifically through a second co-creation workshop hosted by Waag in Amsterdam in 22-23 November 2021.



3.1.1 Work Abroad Scenario

Based on interviews conducted, the “Work abroad” scenario is comprised of the most likely used public and private services, both digital and non-digital. Below is the list of steps and services that were identified by the consortium partners as essential:

1. Search for job offerings/applying to jobs;
2. Find accommodation;
3. Take care of everyday services (banking, telecommunications, transportation);
4. Deal with health services (apply for European Health Insurance Card, apply for private health insurance, apply for general practitioner);
5. Official registration at local authority (registration of address, applying for residence permit);
6. Deal with taxes (apply for tax ID, fill tax declaration);
7. Deal with social insurance and benefits (choose a pension plan, apply for benefits etc.);
8. Apply for child’s educational institution (optional).

The interviewees pointed out that the whole moving process required a lot of on-site visits, both while searching for accommodation and registering at local authorities and/or using other public services. Also, often times unclear terms of access to services were pointed out. Some services had also related expenses, which were not communicated in advance (for example, registering a car + insurance + taxes etc.). All processes were also hard to go through because of the language barrier.

3.1.2 Study Abroad Scenario

Based on the interviews conducted, the “Study abroad” scenario is comprised of the most likely used public and private services, both digital and non-digital. Below is the list of services that were identified by consortium partners as essential:

1. Search for universities/apply to university/exchange programme;
2. Apply for funding;
3. Find accommodation;
4. Deal with health services (apply for European Health Insurance Card, apply for private health insurance, apply for general practitioner);
5. Official registration at local authority (registration of address, applying for residence permit);
6. Take care of everyday services (banking, telecommunications, transportation);
7. Postpone military duty (optional).



The interviewees pointed out that the whole moving process required a lot of on-site visits, mostly while searching for accommodation. **Access to public digital services has been described with the same obstacles; however, based on their stories, students were more resilient in this process.** The language barrier was a prominent problem. This group of interviewees also pointed out cultural differences; their desire was to get more of such information (typical working times of institutions, level of bureaucracy, specifics of private housing market, and similar) in advance. There was also a limited access to experience reports of former students.

A scenario-specific pain point was the document management for exchange studies. A lot of document submissions are manual (printing, signing, scanning, uploading etc.), and there is no user-friendly exchange management portal or tool where all parties (sending and receiving universities, a student) could communicate together and make changes to the learning agreement. It is often difficult to get an overview of courses and credits available at the receiving institution, as there is no universal information system for exchanges.

3.1.3 User Requirements for ACROSS platform

Several significant user requirements, which were not initially covered in technical discussions, emerged through the examination of both scenarios and interviews conducted by the pilot partners. The list of user requirements and their descriptions is provided below.

Table 1: User requirements for ACROSS platform

No.	Title	Description	Relevance
Req_1	Interactive checklist	List of services and steps to be taken (completed, in progress, still needed). Workflow progress management tool.	High
Req_1.1	Stepper ¹¹ for progress monitoring	Service list is defined as a journey; possibility to render overall status of the service (successful, pending or denied).	
Req_1.2	Notification panel	Notifies the user of any additional actions that need to be taken (push notifications) or changes in status.	
Req_1.3	Interactive forms	Interactive stepper assisting the user for input all mandatory service input data (text, manual uploads etc.).	

¹¹ Definition of stepper element available here: <https://material.angular.io/components/stepper/overview>



No.	Title	Description	Relevance
Req_2	Data cockpit & interoperability tool	A place where the user can store and give consent to use data and documents created or uploaded (in general or service by service, owner etc.).	Medium
Req_2.1	Internal wallet for storing documents	Place to store and access manually uploaded documents in case users want to reuse them.	
Req_2.2	Consent panel	Place which stores information on user consents given regarding personal data. Represented as list with tick/untick options.	
Req_2.3	Notification panel	Notifies user of any additional consents that need to be given (push notifications) to move forward with user journey.	
Req_3	Tutorials & examples tool	A place where users can access examples on how to perform services, fill in forms, and access other relevant information on services depending on the country.	Medium
Req_3.1	Widget	A space in the user interface where a user can click, and access tutorials and examples related to personal user journey.	
Req_3.2	Information page	Page which stores relevant tutorials and examples for the user journey.	
Req_4	Information tool	A place where general information on migration to other countries is stored and constantly updated (descriptions on typical moving processes to all countries in “human language”).	Medium
Req_4.1	Widget	A space in the user interface where a user can click, and access general information related to personal user journey.	
Req_4.2	Information page	A page which stores general information relevant to the user journey.	
Req_5	Connections to outer sources	Connections in the platform to outer informational links – national platforms, suggestions on job search portals, housing market, education portals etc.	Medium



No.	Title	Description	Relevance
Req_5.1	Widget	A space in the user interface where the user can access external links related to personal user journey.	
Req_5.2	Information page	A page which provides external links for the user journey.	
Req_6	Education data exchange tool	Tool for communication between universities (management of learning agreements, credit transfer, financing etc.). Future vision: ACROSS as integral part of all EU study exchanges with connection to ERASMUS portal and quicker communication possibilities (direct messaging). Currently out of ACROSS scope.	Low

Respondents concluded that they would be interested in using such a platform as ACROSS if it would operate as one-stop migration portal where both, digital services and migration information would be available. They stressed that a platform with digital services alone would not be attractive if they could not learn about the best practices and steps needed to smoothen their migration process. For a better technical execution of the digital services and overall process management, users would enjoy interactive data management tools such as a checklist and a cockpit. Supplying this with examples, tutorials, information, and outer connections would make the platform more attractive and it would likely provide added value to the user experience. To a certain extent without implementing the above requirements, ACROSS would resemble the current “Your Europe” platform (<https://europa.eu/youreurope/>) .

3.2 Citizen Data Flows in Use Cases

Pilot partners examined the execution of common scenarios in their respective national environments. This exercise revealed various barriers of access as well as it established a set of public digital services for primary integration with ACROSS.

3.2.1 Use Case Scenarios in Germany

Based on the outcomes resulting from the work on WP2 concerning the development of user journeys, DATAPORT examined two scenarios. The first scenario relates to European students moving to Germany for study reasons and the second scenario relates to European professionals moving to Germany to gain experience by working abroad. **The overall situation suggests that there are some German public digital services that can be executed fully digitally while some require manual effort – but show a great potential for a full digitization in the future.**



Studying in Germany

DATAPORT elaborated the case “studying in Germany” by a qualitative approach that was carried out through interviews. By analysing the gathered information, DATAPORT worked out the four most important services, which are going to be described subsequently.

Information. The very first step of the user story “studying abroad” is gathering information regarding country and city, university abroad and entry requirements as well as the election of study courses and application to funding programmes. Informational events concerning those topics are mostly executed by home country universities, hence differing in scope and quality. Furthermore, experiences on those topics can be obtained by reports of former students who already studied abroad. These reports are mostly also provided by home country universities. Students are also facing the same problems already mentioned in terms of informational events regarding different quality levels as well as regarding the quantity of experience reports provided to them. Apart from personal events there are also German websites, which offer information, concerning studying in Germany as for example: [My GUIDE - The gateway to your German university](#) or [My GUIDE - The gateway to your German university](#).

Application for funding. Generally, there are many different European as well as German funding programmes offered to students ([Find Scholarships - DAAD](#)). DATAPORT concentrated on the official European funding programme Erasmus+ which can be obtained by every European student. One major outcome of interviews conducted by DATAPORT regarding the funding related topics is the current lack of clear and consistent processes. Currently, the application process demands applicants to execute partially digital as well as paper-based process steps. A registration at the Erasmus+ online platform is demanded, while following process steps can be quite different depending on home country university and university abroad. Some home country universities offer strong support concerning the Erasmus+ application as well as concerning the learning agreement in which the necessary amount of ECTS is defined. Furthermore, the learning agreement offers the election of specific study courses optimally matching those of the home country university. The matching process of study courses is experienced to be quite challenging, unfortunately there are some universities which offer no or only insufficient support to the students. Additionally, DATAPORT found that many students struggle overviewing which process steps they already executed, and which still are missing. Most help is offered by Erasmus+ agents via e-mail communication. A clear overview of the required process steps and documents as well as the corresponding counterparts (contact person or institution) would be a big support for the applicants.

Application at university abroad. The third step following the information gathering and application for funding is the application at the selected university. As already experienced at the information process



there are slight differences amongst the home country universities. In most cases, the students must first apply at their home country university for their selected German university. After receiving the confirmation, they subsequently must apply at their selected university abroad. Depending on the selected university they must follow the required processes. The application contains in most cases a formal application sheet addressing the personal information of the applicant. Additionally, a proof of the gained ECTS is needed as well as a CV and the learning agreement. Some universities also require a motivational letter and a language certificate. All requirements can be demanded either digitally, paper-based or even in both formats. Fact is that the students need to manage the whole process and, in some cases, have to provide identical requirements to both universities. More communication and cooperation between home country universities and universities abroad would help to make the application process easier. Especially an exchange of redundant documents between the universities would be meaningful.

Accommodation/housing service. As fourth most important service for students coming to Germany, DATAPORT considered the process of finding an adequate accommodation. The process bases on private services as for example searching in cooperation with real estate agencies. Working with real estate agencies is considered to be a convenient and trustworthy way of finding an apartment but unfortunately it is also experienced to be expensive as provisions have to be paid by the students. Alternatively, there are many websites offering apartments, shared apartments and student dorms as for example: WG-Gesucht.de or [Deutsches Studentenwerk | \(studentenwerke.de\)](http://Deutsches Studentenwerk | (studentenwerke.de))

Some home country universities cooperate with student apartments abroad and offer proposals after confirming the semester abroad. Finding an accommodation via this way is also considered as trustworthy and, in comparison to real estate agencies, way cheaper.

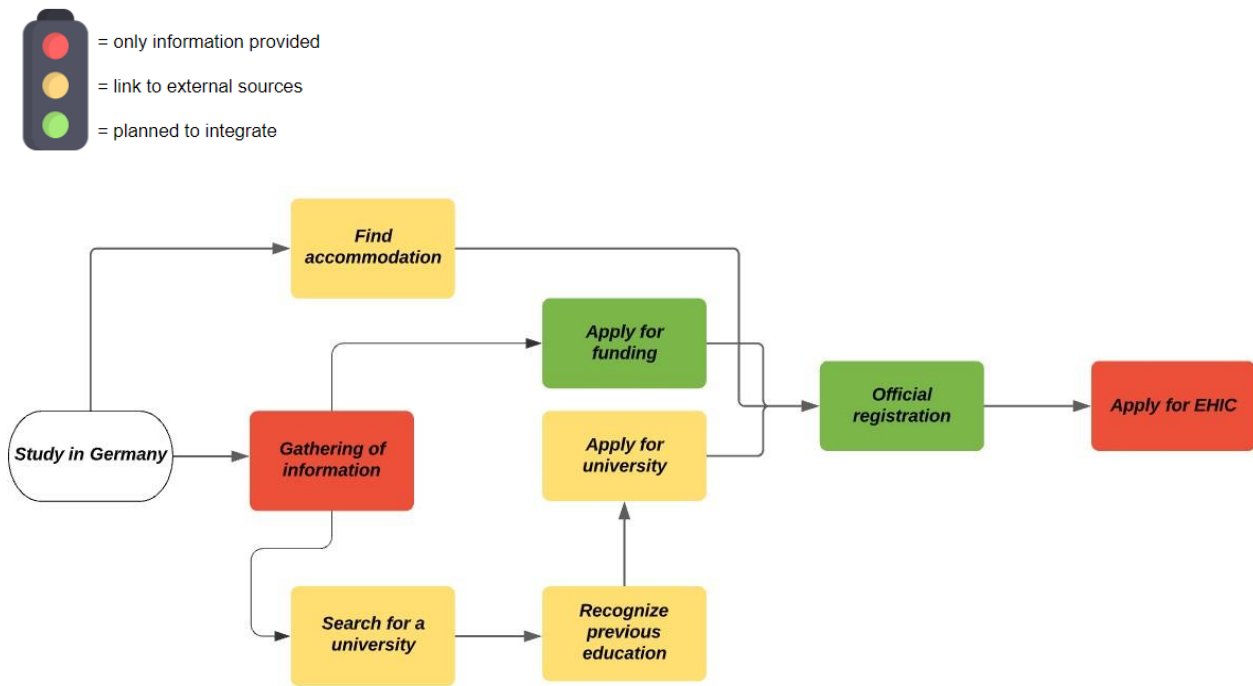


Figure 1: Studying in Germany – process visualization and feasibility of integration

The visualization above can be understood as roadmap clarifying the sequence of the most important process steps for students coming to Germany. Additionally, it addresses the realization possibilities concerning a service integration into an ACROSS platform. The traffic light system indicates which services could be completely integrated by adapting via API (green colour). For services coloured in red only general information can be integrated to an ACROSS platform, while yellow coloured service can be linked to the platform and vice versa.

Information. The first red box “Gathering of information” aims for the initial information gathering concerning country, city, university etc. It is red coloured as there is no technical implementation or linkage to other websites needed. For “studying in Germany” it is sufficient that the information sector of an ACROSS platform just need to offer basic content to the reader.

Searching and applying. The second box “Search for a university” and the fourth box “Apply for university” refer to the process of searching and applying at some university in Germany. They are coloured in yellow which means that not only content is provided but also links to corresponding websites for application reasons.

Apply for funding. The third box “Apply for funding” refers to the application for Erasmus+. It is coloured in green meaning that it can be completely integrated to an ACROSS platform. Students applying for an



Erasmus+ funding cannot only obtain all information but also conduct the whole application process without leaving the ACROSS platform.

Find accommodation. The process step of finding an accommodation (“Find accommodation”) in Germany is coloured in yellow. The ACROSS platform will provide informational content to the students as well as link to trustworthy real estate or student dorm websites.

Official registration. As already described in chapter 2.1, the Online Access Act (OZG) demands the German states to offer their public services online by the end of 2022. Accordingly, the official registration process can be embedded into the ACROSS platform. The authentication can be carried out by verifying the eID of the foreign students.

Apply for EHIC. The last process step refers to the European Health Insurance Card (EHIC). All information about it can be offered to the students.

Working in Germany

As already described for the case “studying in Germany” DATAPORT in this case also executed a qualitative approach based on interviews. Additionally, all necessary private and public online services were proofed regarding SDGR relevance and readiness. As a result of working on WP2 the four most important services concerning “working in Germany” are going to be described subsequently.

Housing/real estate service. The user journey of “working in Germany” starts with the “Search for an accommodation”. Most aspects described for the user journey “studying in Germany” apply to this user journey, too. European professionals coming to Germany for work reasons face the same process of finding an accommodation online via real estate agencies, platforms, or social media. In most cases the place of living has to be organized in advance which means that all communication with real estate agents or landlords can only be done via telephone, e-mail, or video calls.

Registration at local authorities. The process of “Official registration” contains the following steps: registration at local authority, registration for social security number and registration for tax declaration. They are all SDGR relevant but not yet SDGR ready. The official registration at local authorities is owned by the Federal Ministry of the Interior, Building and Community which offers English information on their website as well as online booking of an appointment. After booking an appointment the registration has to be done personally and on-site. Concerning the social security number there is no complicated registration process as it will be automatically sent by e-mail when starting to work in Germany. The tax

registration process is owned by the Federal Ministry of Finance. To start the process a German place of residence is demanded while the registration for the tax identification number can be done by filling out an online form on this website: [BZSt - New notification of the tax identification number](#). The tax identification number is demanded for the tax declaration. The authentication is done via e-mail. The tax declaration can be done online via this website: [Elster](#). Unfortunately, the online service is not yet provided in English.

Open bank account. Opening a German bank account is necessary to receive salary as well as to pay rent and other steady liabilities. As it is a private affair there is the freedom of choice at which bank to open an account. Most banks offer uncomplicated online registration services with video or photo authentication or via the eID. To open a bank account a German residency is demanded.

Social insurances + benefits. EHIC can be used in every European country. Information on EHIC can be obtained by contacting the home country health insurance company. All further insurances are private services in Germany as for example the liability insurance. A lot of insurances can be concluded via online registration. Most of them demand an official registration in Germany.

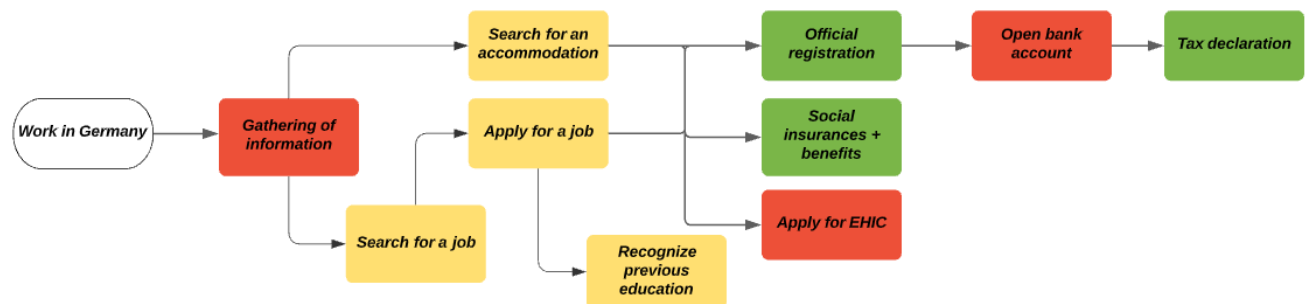


Figure 2: Working in Germany – process visualization and feasibility of integration

As already described for the user journey “studying in Germany” DATAPORT analysed the sequence of the necessary process steps and technical feasibility of integration to an ACROSS platform. The same traffic light approach was followed. Red-coloured process steps indicate informational content, yellow-coloured ones offer links to other websites, and the green ones are planned to be fully integrated to an ACROSS platform. The process steps of “searching”, “applying” and “recognition” are described subsequently as all other process steps are already described and do not differ from those regarding “studying in Germany”.



Searching and applying. The process steps of “Search for a job” and “Apply for a job” refers to the possibilities of finding a job offer in Germany. Basic information should be presented on ACROSS platform. Additionally, links to public job portals should be provided as for example to: [Looking for a job \(make-it-in-germany.com\)](https://www.make-it-in-germany.com).

Recognition. The process step of “Recognize previous education” refers to academic or professional education as for example an apprenticeship or a bachelor’s degree completed in another country than Germany. Professionals coming to Germany for work reasons can get recognition of their degree for example via: [Enic-Naric](https://www.enic-naric.de).

Services for Germans moving to another EU country

Generally, the same regulations as for every EU citizen apply for German citizens moving to another EU country. It is allowed to move to another EU country for work reasons without a work permit. Nevertheless, German citizens are obligated to de-register if they quit their permanent place of living in Germany.

Subsequently the case of working abroad is going to be examined closer as the process for German students who want to spend a semester abroad is way easier – most information can be gathered in cooperation with the German university and Erasmus: [Startseite - Erasmus+ \(erasmusplus.de\)](https://www.erasmusplus.de).

Few important services for outgoing German citizens are as follows:

1. *General Information:* General information for working abroad is provided on the website of Your Europe: [Arbeiten im Ausland - Your Europe \(europa.eu\)](https://www.youreurope.eu). More specific information for German citizens can be found on the website of the Ministry for foreign affairs: [Working in the EU](https://www.auswaertiges-amt.de).
2. *Personal consulting:* There are also official consulting services offered by the Federal Republic of Germany. More information on that is provided on following website: [BVA \(Bund.de\)](https://www.bva.bund.de).
3. *Searching for a job:* There are many different options for German citizens to find a job abroad. First information and impressions can be gathered at the official website of the German employment agency: [„Jobsuche“](https://www.jobsonline.de). Additionally, the German citizen can visit the website of EURES (European Employment Services): [europäische Job- und Informationsportal von EURES](https://www.eures.europa.eu).
4. *De-register:* German citizens are obligated to de-register if quitting their permanent place of living in Germany and staying more than three months abroad to work. German citizens can de-register themselves at the registration office. Therefore, they need their personal ID card and the official document, the new address is not mandatory but can be submitted. Students who spend a



semester abroad do not need to de-register themselves. Further information is provided on multiple websites as for example: [Wohnsitz abmelden bei Umzug ins Ausland \(wirelesslife.de\)](http://Wohnsitz_abmelden_bei_Umzug_ins_Ausland_(wirelesslife.de)).

5. *Certificate of conduct / official certificates:* Some employers demand a certificate of conduct. General information is provided on the website of the Department of Justice: [BfJ - Verwendung im Ausland \(bundesjustizamt.de\)](http://BfJ_-_Verwendung_im_Ausland_(bundesjustizamt.de)). All official certificates (certificate of birth, marriage or paid taxes) can be provided multilingual: [Internationaler Urkundenverkehr - Auswärtiges Amt \(auswaertiges-amt.de\)](http://Internationaler_Urkundenverkehr_-_Auswaertiges_Amt_(auswaertiges-amt.de)).

3.2.2 Use Case Scenarios in Greece

Building on top of the work performed in terms of WP2 on user journeys, GRNET proceeded with the analysis of two incoming scenarios and more closely looked also at the case of outgoing Greek citizen who is going abroad to work. **Besides some digital services available digitally, many Greek digital services are work in progress following the development of the national platform gov.gr.**

Studying in Greece

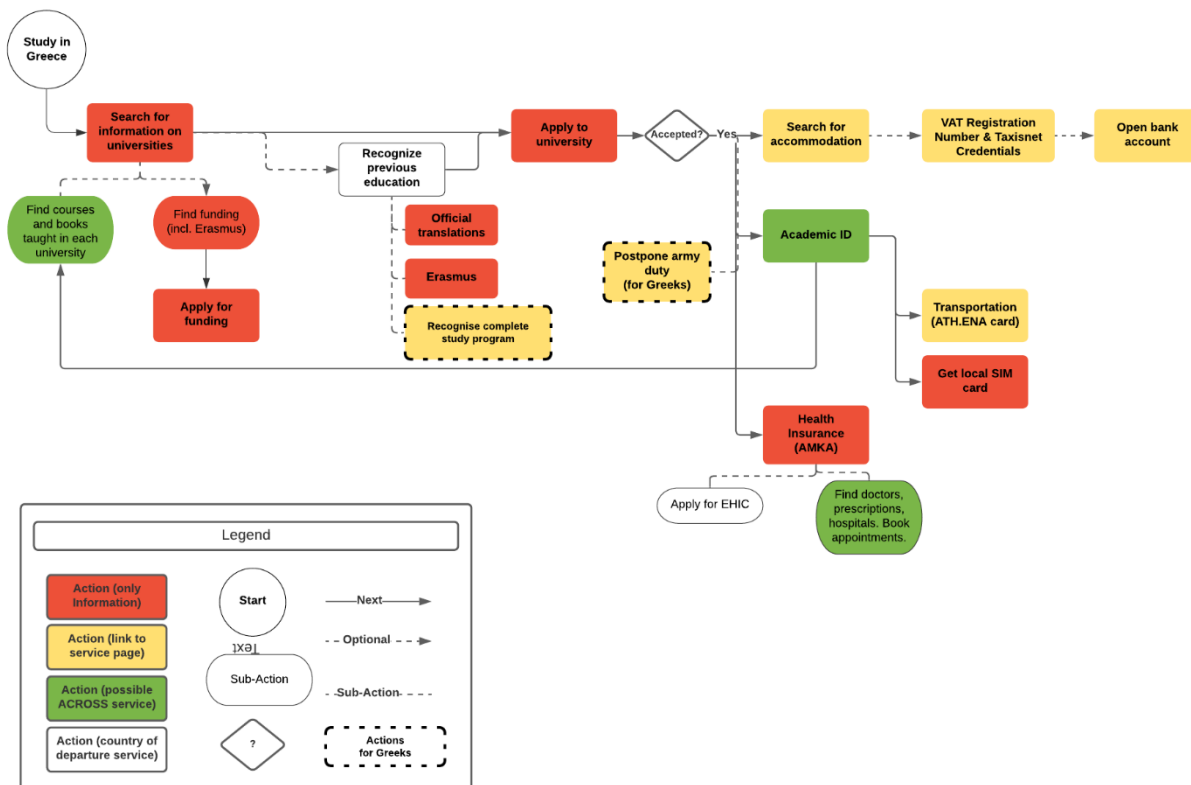


Figure 3: Studying in Greece – process visualization and feasibility of integration



Information. The first step of the study in Greece journey begins with searching for all the relevant information about the institutions, the programs they offer, the entry requirements etc. A large effort has been made in this direction by the “Study in Greece” portal (<https://studyinggreece.edu.gr/>), under the auspices of the Hellenic Ministry of Education and the Hellenic Ministry of Foreign Affairs. The portal provides information and links about all the long-term academic studies at all levels (BSc, MSc or PhD) that are offered in Greek as well as in other languages. It will soon also provide information about short-term programs including summer or winter schools and even e-learning courses for vocational training.

The portal also provides informative content relevant about applying for scholarships, as well as links to the Greek institute for Scholarships (<https://www.iky.gr/>) that is responsible for the Erasmus+ program.

In order to cover both the preparation and the execution phases of the study abroad scenario, the portal provides step by step guidelines and links for travel and transport arrangements, accommodation, getting an academic ID and health insurance, arranging the main necessities including communications (internet, phone, postal services) and health and safety.

Application. The application for the Erasmus+ programme is submitted to the university of origin, but the process requires information from the university of destination. The application process includes: i) selecting a University in Greece, ii) selecting the courses to attend during the study, iii) finding potential matchings between the modules to attend at destination and the modules in the university of origin. Undergraduate courses in Greek universities are, in their majority, provided in Greek. However, many universities provide courses in English for exchange students only or support exchange students separately in attending the courses they select. Learning Agreement (LA) is the document that contains all the information about the student exchange, all courses to be attended and their ECTS credits and mappings. The LA is updated during or after the completion of the study period given that both Erasmus coordinators (in the host and sending institution) agree and sign the changes. The Erasmus application process is described at European level at <https://erasmus-plus.ec.europa.eu/>.

Many universities in Greece have separate pages in their websites, sometimes in English too, for providing information about the courses taught each year. In addition to this, in Greece the Eudoxus service for the academic programs and their books (<https://service.eudoxus.gr>) provides at the beginning of each year an updated listing (<https://service.eudoxus.gr/public/departments>) of the courses taught in each university (as well as the books selected by the tutors).

Universities and colleges in Greece provide a wide variety of MSc programmes. The Study in Greece portal provides a comprehensive list of all programmes available by topic



(<https://www.studyingreece.gr/masters/home>) and in each case provides starting dates, the type of attendance (full or part time), the language taught, and entry requirements.

The Semifind education portal (<https://www.semifind.gr/seminaria/home>) provides a comprehensive list and a search engine for seminars given in Greece for all educational and vocational levels.

Financial Funding. All EU students that come to Greece for studies through the Erasmus+ program, have to apply and receive funding in their institution and country of origin. In Greece the National Scholarships Foundation (<https://www.iky.gr/en/>) is responsible for funding the universities annually for the Erasmus+ program and then universities share the funding among their outgoing students.

The National Scholarships Foundation (<https://www.iky.gr/en/scholarships/foreign-citizens-eng>) grants scholarships to foreign nationals for postgraduate studies and postdoctoral research in Greece as well as for studying Modern Greek Language and Culture at the universities of Athens and Thessaloniki. The application form is available for download.

Studying abroad for Greeks:

- The National Scholarships Foundation (<https://www.iky.gr/el/upotrofies-gr/upotrofies-gr>) is responsible for funding Greek students at all levels to study in Greece or abroad. The applications for scholarship vary depending on the level and type of studies and the scholarships can be funded by companies, national, international organizations, and bequests in various disciplines. All application forms are available for download from the website.
- The Ministry of Education maintains a catalogue of all scholarships for studying abroad (<https://www.minedu.gov.gr/odigos-upotrofiwn>) and a guide on how to apply.
- Websites specialized in education such as Eduguide provide comprehensive listings of scholarships for studying abroad (<https://www.eduguide.gr/ypotrofies/>).

Registration at the university - Academic ID. All the public universities in Greece provide an Academic ID to their students. Students that hold the Academic ID have several discounts such as in:

- public transportation;
- telecom companies;
- student refectories;
- cinemas, theatres, museums, and archaeological sites.

The application for an academic ID is available online, through the respective service provided by the Ministry of Education (<https://submit-academicid.minedu.gov.gr/Default.aspx?l=en>). Students have to



login to the online service using their academic credentials provided by the host University. They can get the ID from a designated delivery point.

All the undergraduate students at public universities in Greece can declare the courses they attend at each semester through the Online Service for Book Management, with the codename Eudoxus (<https://eudoxus.gr/StudentBookSelection>). Students log in to the service using their academic credentials provided by the host university.

Health insurance. The Social Security Number (AMKA) is necessary for having health insurance in Greece. For non-Greeks it is necessary to apply along with the following proofs:

- ID or passport;
- Certificate of family status translated in Greek if no ID or passport are available.

AMKA can be issued only in one of the service points which are available through the website (https://www.amka.gr/pdf/AMKA_Grafeia.pdf) and operate in all the Security Offices around Greece.

EHIC can also be used with public health providers to get access to health services. It is issued by the health insurance institution that the citizen is insured as described here <https://ec.europa.eu/social/main.jsp?catId=563&langId=en>.

Access to doctors and prescriptions is digital by registering to the respective service at <https://www.e-syntagografisi.gr/p-rv/p>.

Search for doctors is available through the find a doctor service: <https://eservices.eopyy.gov.gr/eFindDoctor/>.

In case they receive any diagnosis, treatment or hospitalization in Greece, they can have access to their Personal Health Folder through <https://eservices.eopyy.gov.gr/eHealthInsuranceRecordInsPerson/login.xhtml>.

Mobility/transportation. All users of Athens Urban Transport Organization (OASA) services of transportation can apply for the ATH.ENA card, which can be purchased on site in metro stations and loaded online through the OASA website. The personalized card may be loaded through the site in combination with a mobile phone or tablet with an NFC-enabled feature. Card issuing can be done at <https://www.oasa.gr/ath-ena-card/> and card delivery can be done at a ticket office or by post office at residence.

Personalised cards are available only to holders of a valid passport and a valid Greek Social Security number (AMKA).



Accommodation/housing services. The recent trend in accommodation seeking is to use global rental services such as Airbnb, FlipKey, HouseTrip or specialized search engines like Tripping (<https://www.tripping.com/>). In addition to these global services, there are many Greek local service providers, such as Spiti24 (<https://www.spiti24.gr/>) or Spitogatos with specialized listings for students (<https://en.spitogatos.gr/students>). The later also provides a Property Index page (<https://en.spitogatos.gr/property-index>) which shows the evolution of accommodation prices per quarter of the year.

Every rental agreement must be declared online to the authorities by the lessor and be approved by the lessee providing their AFM numbers, as it is described here <https://www.gov.gr/ipiresies/periouisia-kai-phorologia/diakheirise-akinetes-periouisias/misthoteria-akineton>. However, for foreign citizens it is not obligatory to have an AFM registration number and as described in the FAQ Section they can be declared only by their ID or passport number.

Registration of residence. There is no online procedure of registering one's residence in Greece.

Tax Identification Registration Number and Taxisnet Credentials. In Greece, registration for Tax Identification number (called AFM) is an important identification number not only for taxpayers in Greece but also for anyone who wants to have access to a series of services through the gov.gr portal, open a bank account, etc. The Taxisnet credentials, which are issued based on that number, are also used as an identification method for most online services.

One can issue an AFM registration number and Taxisnet credentials by applying online via a video-call as described here

<https://www.gov.gr/ipiresies/polites-kai-kathemerinoteta/stoikheia-polite-kai-tautopoietika-eggrapha/apodose-arithmou-phorologikou-metroou-aphm-kai-kleidarithmou-se-phusiko-prosopo>

and here

https://www.aade.gr/sites/default/files/2021-05/odigos_%20myAAElive_210521_0.pdf.

Bank account opening. Greece has a robust banking sector with domestic banks, regional banks, large international banks, and online banks. Opening a bank account in Greece requires having a tax identification number (AFM).

According to one of the domestic banks in Greece the list of proofs comprises (<https://www.piraeusbank.gr/en/personal-banking/proionta/katatheseis/logariasmos-personal-banking>):



- A document that contains full name and father's name;
- An ID or passport with the issuing authority and the date and place of birth;
- The AFM number, which is either on income tax slip or the income tax return, or a certificate of no requirement to submit a tax return;
- A home address and telephone number (a home lease contract filed to a tax office, or a recent utility bill);
- A valid foreigner's residence permit or copy of salary or professional ID card, or Social Insurance Institution Receipt to verify profession and business address;
- A customer signature sample.

Non-Greeks will also be asked to have their documents translated to Greek, although some banks do accept documents in English. In addition, a person will typically need to make a minimum deposit into the account, which varies by bank (around €100).

Of course, online bank accounts (e.g., Revolut, N26 etc.) that offer a Visa or Mastercard are widely acceptable in Greece.

Recognition of studies. Erasmus exchanges: Greek universities have adopted the European Credit Transfer System (ECTS) to allow students to move abroad and register their study periods abroad. 60 ECTS credits correspond to a full year of full-time studies. All Erasmus exchanges are valid and recognized if they have an LA, which is signed by both institutions (sending and host) and the student. LA details the learning outcomes that will contribute to the student's degree upon successful completion of the study programme abroad. For student mobility for traineeships, the LA sets out how the learning outcomes will be recognised depending on whether it counts towards the student's degree, is taken on a voluntary basis (not obligatory part of the degree) or is being carried out by a recent graduate. A sample of the LA is available through the EC website (<https://erasmus-plus.ec.europa.eu/resources-and-tools/learning-agreement>).

All Erasmus+ exchanges for studies are based on bilateral agreements between institutions who guarantee a minimum degree of course matching and the recognition of Erasmus+ studies according to the ECTS guidelines.

Complete study programmes: diplomas that have been awarded abroad are recognised in Greece by the Interdisciplinary Organization for the Recognition of Academic Degrees and Information (DOATAP in Greek) who is the official body of the Hellenic Republic for the academic recognition of degrees awarded by educational institutions of higher education abroad and for the valid information for the Higher Education Institutions and the qualifications in Greece and abroad.



The Ministry of Education has developed an online application service (<https://e-doatap.doatap.gr/>) for those interested in recognizing their degree. The application form is accessible using the Taxisnet codes (for Greeks) or using codes provided by the organization (for foreigners). The process of application processing is detailed at: <https://www.doatap.gr/anagnorish/poreia-mias-aitisis/>.

Satellite services

- Postpone army duty. Male Greeks who are permanent residents of foreign countries for more than 11 consecutive years (in one or more countries) or live and work abroad for more than 7 consecutive years can apply to postpone their army duty. They can apply for the postponement online by using their personal credentials on the Tax Services (Taxisnet) and providing a valid certificate of permanent residence abroad. This certificate of permanent residence abroad can be issued by making an appointment at myConsulLive to be served by a qualified employee of the Consulate of the Ministry of Foreign Affairs (<https://www.gov.gr/ipiresies/polites-kai-kathemerinoteta/ex-apostaseos-exuperetese-politon/myConsulLive>).
- Official translations. The Ministry of Foreign Affairs maintains a list of certified translators who can translate private and public documents from any language to Greek. The list is provided as a searchable service online at <https://metafraseis.services.gov.gr/>, allowing to search by the translator's location or by the original language. The cost of translation is defined by the page and the type of translation and is officially set by the ministry (https://www.mfa.gr/images/docs/ypiresies/B_3903.pdf). More details are available here <https://www.mfa.gr/ypiresies-gia-ton-politi/metafrastiki-ypiresia/i-metaphrastiki-ypiresia.html>.

Working in Greece

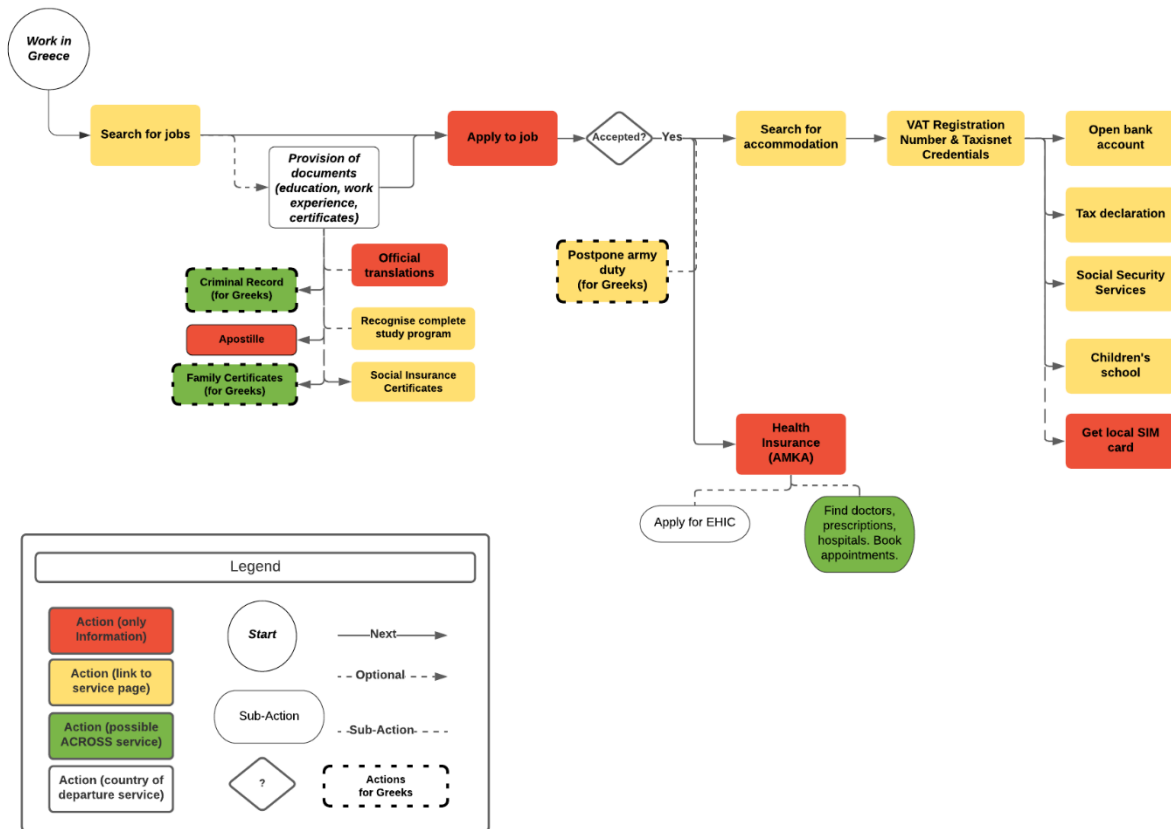


Figure 4: Working in Greece – process visualization and feasibility of integration

Searching for relevant information and job offerings. Looking for job opportunities in Greece requires searching through various platforms, from [LinkedIn](#) to platforms provided by recruitment agencies, or even searching or applying directly to the employer. In order to apply, the candidate should fill in relative online forms that are provided by the potential employer and provide a CV and a cover letter.

Provision of documents for onboarding when finding a job. An EU citizen that has accepted a job offer in Greece must apply for [acquiring a tax identification number, codenamed AFM](#), for the employment contract and for payroll. The tax identification number (AFM) is unique to each individual and it is used for the vast majority of interactions with both the Greek public authorities and private sector organizations.

Requests for obtaining the AFM number are possible by arranging an e-appointment with a representative of the Independent Public Revenue Authority (AADE), via [myAADElive](#). The process requires



to declare an e-mail address, a mobile phone number, ID or passport number as well as the electronic submission code of the digital AFM application.

In order for the AFM to be issued, a European citizen card and a certificate issued by the employer are required. The certificate issued by the employer should have an official stamp by any Citizen Centre for certifying the validity of the (employer) signature.

European Citizen Card. The European citizen card is issued when EU citizens plan to stay in Greece for more than three months. They must apply to the Police Department of their residence area, in order to get a relevant registration certificate issued. The application submitted to the police authority is accompanied by a photocopy of valid ID card or passport and the reason for registration:

- In case of work or independent economic activity, an employment certificate/ confirmation of recruitment/proof of status as self-employed;
- In case of a person with sufficient resources, official evidence proving that they have sufficient resources, so as not to burden the country's social welfare system and proof of full insurance coverage.

Accommodation. The recent trend in accommodation seeking is to use global rental services such as Airbnb, FlipKey, HouseTrip or specialized search engines like Tripping (<https://www.tripping.com/>). In addition to these global services, there are many Greek local service providers, such as Spiti24 (<https://www.spiti24.gr/>) or Spitogatos with specialized listings for students (<https://en.spitogatos.gr/students>). The later also provides a Property Index page (<https://en.spitogatos.gr/property-index>), which shows the evolution of accommodation prices per quarter of the year.

Every rental agreement must be declared online to the authorities by the lessor and be approved by the lessee providing their AFM numbers, as it is described here <https://www.gov.gr/ipiresies/periousia-kai-phorologia/diakheirise-akinetes-periousias/misthoteria-akineton>. However, for foreign citizens it is not obligatory to have an AFM registration number and as described in the FAQ Section they can be declared only by their ID or passport number.

Officially register and obtain social security numbers. The Social Security number (AMKA) is the work and insurance ID of every employee, pensioner and dependent member of their family in Greece. AMKA is essential for services and transactions concerning employment and insurance, such as beginning employment and health insurance, paying insurance contributions, getting the pension or any benefits.



The following documents are required in order to apply for the AMKA number (requiring physical presence at a Citizen Centre or an [official AMKA office](#)):

- Identity card or certificate of marital status officially translated into Greek, when there is no identity card or passport;
- For minors born in Greece, the birth certificate is sufficient.

Health insurance – healthcare for self and family. The Greek national health system provides healthcare benefits/services through a network of public/state providers and contracted private providers of primary, hospital and ambulatory care. The Social Security number (AMKA) and in some cases the tax identification number (AFM) are needed for arranging medical visits.

Medical visits to certain Primary Health Care Units can be arranged and managed [online](#), as well as online applications for general practitioners.

Citizens can also check the availability regarding appointments with doctors, by selecting the time period they are interested in, the doctor specialty and the location of preference. Then they can see the availability, the address, the telephone, but also the opening hours of the doctor's office.

Apply for school for the children. Enrolment in Primary School requires the following documents:

- Proof of residence (e.g., water, telephone or electricity bill, or a house contract);
- Birth certificate of the child;
- A Kindergarten attendance certificate.

Deal with taxes and social insurance & benefits system. Each year taxpayers must [submit online via taxinet their tax declaration](#), where they register their annual income, expenses, assets, etc. In order to submit the tax declaration, personal credentials are needed, given by the tax authority.

The Tax Refund Status is issued yearly by the Ministry of Finance based on the declaration, in order to inform the taxpayer whether taxes are due or there is a refund. The document can be used as a proof of income.

Services for Greeks moving abroad for work

Searching for relevant information and job offerings. A central platform for labour market services gathering information about work opportunities in the destination country, possibly via a network of agencies, facilitates the process of finding a job. Posting a job profile on the platform, including qualifications, career highlights and aspirations can help in the matching with the desired company/job the candidate is looking for.



Provision of documents for onboarding, when finding a job. A number of documents are required by the employer in order to complete the employment process. These are the following:

- **Criminal record:** via gov.gr, the single digital portal of the Greek Public Administration, citizens and public agencies can access the relevant online application and receive a [copy of their criminal record](#). Authentication of users is performed with the use of their Taxisnet (Taxisnet is the portal for financial and clearance information of citizens) credentials.
- Official translation of criminal record, certificate of working experience (originally provided from the previous employer), University degrees: currently the users may [access the official translations Register of the Greek Ministry of Foreign Affairs](#) through the information system of gov.gr, where they can search for a Certified Translator.
- Apostille: all relative information on [how to acquire an apostille](#) for the authentication of documents of Greek citizens is available on the official website of the Greek Ministry of Foreign Affairs. The process of obtaining an apostille requires physical presence at the relative authority.

Accommodation. A platform that enables checking the housing market independently, or links to housing agencies and logistics companies.

Officially, register and obtain social security numbers. In order to apply for (unique) identification numbers for tax and/or pension insurance issues, a translated [certificate of marital status](#) and the employment contract or employment certificate are required. Marital status certificates are obtained via gov.gr, while for the translation of the document, users can [search for a Certified Translator](#) via gov.gr. The employment contract or an employment certificate is also required for obtaining a social security number.

Health insurance – healthcare for self and family. A portal containing detailed information about health insurance options. In order to apply for health insurance, EHIC is needed, issued by the National Social Security Fund of Greece (e-EFKA). The service is also [available via gov.gr](#).

There is an additional option when financial obligations for health insurance have been fulfilled in Greece, to apply for a S1 form that constitutes a proof of the right to healthcare if you do not live in the country where you are insured. In order to register for the S1 form, the following steps are required:

1. online application to the National Social Security Fund of Greece (e-EFKA);
2. proof of residence in the destination country: a registration certificate is a proof of address, given to expatriates and local citizens of the destination country;
3. proof of residence in Greece: submission of energy bill is accepted as proof of residence;
4. [Certificate of marital status](#) can be obtained via gov.gr;



5. ID photocopy for the parents;
6. Passport copies for the children;
7. recent proof of payroll, provided by the employer;
8. tax clearance document, which can be obtained via the [Taxisnet portal for financial and clearance information of citizens](#). Through their Taxisnet codes, citizens can check their insurance clearance as well as other, more detailed official data relating to their financial employment status;
9. Submission of the S1 certificate to the Insurance Organization of the destination country requires physical presence.

Apply for school for the children. In order for the children to be registered at school, a number of documents and forms must be submitted to the local office, responsible for the allocation of preschool places and school places. Depending on the destination country, the parents can register their child directly through the chosen school.

The following documents will be necessary when registering:

- [Birth certificate](#) which can be acquired via gov.gr;
- Passport;
- A certificate from the State Health Office confirming the child's good health;
- Other documents, such as:
 - residency permit;
 - certification of completion of studies at the Greek school;
 - application form for transition to other school, with official signature and stamp from the Greek Ministry of Education - directorate for primary education, as well as [Apostille](#);
 - [Translations of documents](#).

Opening bank account. The customer's personal ID card and a proof of residence are required in order to open a bank account.

Deal with taxes and social insurance & benefits system. When moving abroad, citizens must update their status in the Greek Tax Office Registry ([Taxisnet](#)). This includes updating their contact details – new address, new phone & cell number, etc. Additionally, they keep the obligation of declaring their zero annual income if they possess assets in Greece. Regarding Insurance and social benefits, they apply for resignation from the Greek Insurance Fund, and they can also apply to the National Social Security Fund of Greece (e-EFKA) in order to incorporate their Greek pension stamps into the pension system of the destination country.

3.2.3 Use Case Scenarios in Latvia

WP2 user journeys laid out typical scenarios for moving abroad life situations. **The overall assessment suggests that in Latvia it is possible to access many important services digitally.** However, they currently are not available without national credentials (while few public services are, but they are not relevant to use cases) which is a major gap addressed by ACROSS.

Latvia just recently (in October 2021) introduced a scheme of foreigner’s eID card which gives access to Latvian public digital services for persons without certain residence status in Latvia. However, it does not prove any kind of status in Latvia as well as it does not count as a valid traveling document. It is available for a fee of 80 EUR while asylum seekers (persons who have handed in applications for refugee or alternative status and are still waiting for a decision) can obtain it for free. It is one step closer to cross-border service delivery. However, currently such scheme can be regarded as more of a commodity and should not be perceived as a valid solution in ACROSS context.

In the following chapters, typical user journeys of foreign students and workers in Latvia are being examined, not considering the possibility to obtain a foreigner’s eID card.

Studying in Latvia

Foreign EU students in Latvia may not execute essential public services at all if they decide to travel back and forth between Latvia and their home country. However, normal practice suggests that EU students also must acquire a residence permit at a certain point, thus enabling them access of public digital services with Latvian national credentials.

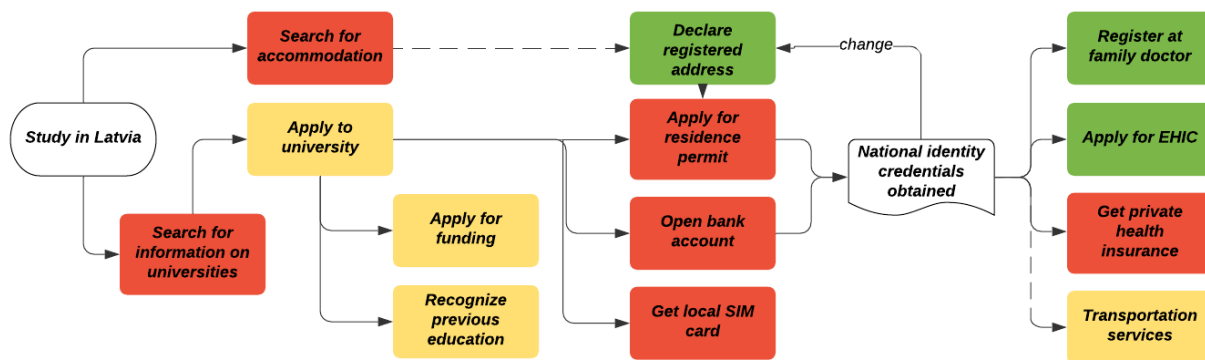


Figure 5: Studying in Latvia – process visualization and feasibility of integration



Admission to a higher education institution in Latvia is possible remotely, depending on the institution. Some universities maintain the application process as an e-service, but it is normally available for prospective students with Latvian identity credentials. Riga Technical University is responsible for national e-service, which allows prospective undergraduate students of 12 higher education institutions to apply for 20 programmes at once (unified application procedure) through a national public digital services platform (<https://latvija.lv/>). It is not available for prospective postgraduate students, also not available for foreign students without Latvian identity credentials. Prior to application, prospective students can consult the portal “Study in Latvia” (<https://www.studyinlatvia.lv/>). However, it may lack information, thus contacts with individual higher education institutions would be more beneficial. Normally foreign students must comply with admission dates set individually by universities and provide documents on an individual basis as requested by the higher education institution. Applicants typically must include a copy of ID to perform authentication and attach any other data and documents asked by the higher education institution.

Recognition of previous education documents, if needed, is a [manually performed service by Academic Information Centre](#), which takes one month. Documents required – copies of ID, diploma, diploma’s supplement, and application form. The translation should be provided in Latvian or any other EU official language by request.

Exchange programmes (namely, Erasmus+) are administered through bilateral learning agreements between sending and receiving institutions which agree on funding and recognition procedures in writing. As described before in previous sections on Germany and Greece, there is not much that individual states can do to smoothen this process, and Latvia is no exception, thus making room for a European-wide solution.

Funding for studies can be sought through a scholarship programme administered by State Education Development Agency. As Germany and Greece offer government scholarships to Latvian citizens, citizens of both countries are eligible for Latvian government scholarships, too. It is possible to apply using an online application form (<https://scholarships.viaa.gov.lv/en/login>). However, it is not a classic e-service. Applicants are asked to fill out a form with relevant personal data without specific authentication.

Accommodation services normally are offered by educational institutions or sought in the private market. Upon drafting a rental agreement, individuals must provide proof of ID. There are no relevant state-run e-services. It is possible to search for accommodation remotely using real estate agencies or ad portals, sometimes video tours are offered.



Registration of address is required. There is a [fully digital e-service available](#) on a national platform with national identity credentials. It requires information of address and reason for updating it (e.g., rental agreement, permission by owner etc.).

Applying for a residence permit is normally required. This service is available only in person at the Office of Citizenship and Migration (OCMA). Eventually, it grants national identity credentials which can be used to access public and private digital services because OCMA is the holder of physical persons' data registry.

Health services is another relevant group of services for students. The bare minimum of services is an application for EHIC. There is a [relevant e-service](#) with national identity credentials on a national platform or health platform (<https://www.eveseliba.gov.lv>). It is possible to acquire EHIC with foreign identity credentials only through physical application. It requires basic ID information (name, surname, address, personal ID number – code, tax number, or similar). Individuals with registered addresses can also apply for a family doctor (general practitioner) [using national platform](#) or health platform. A doctor is allocated depending on address; however, it still may include manual steps such as contacting available doctors. Doctors outside of the allocated neighbourhood must surely be contacted and agreed with if they are chosen for registration. Private health insurance is available as a partly digital service. Normally it requires individual consultation.

Other everyday services include *transportation, bank account, and local SIM card*. Depending on the city and provider, e-services with national identity credentials for transportation can be available, for example, in Riga (municipal transportation company “Rīgas satiksme”). Bank account may not be crucial for foreign students. However, in Latvia, having one entitles a person to have valid national identity credentials (similar to OCMA, the bank holds physical person's data and shares them case-by-case and with consent of the user), thus offering access to wide variety of public and private digital services. For EU citizens, it is possible to open an account by providing ID in person. Currently, online opening of a bank account is possible only for Latvian citizens with a valid personal ID document. A similar process is required for post-paid SIM cards.

Working in Latvia

The process is very similar to the previous scenario. However, while students sometimes do not apply for a residence permit and extensively travel between their home country and Latvia, workers typically need to get a residence permit as it also requires a more permanent presence in the country.

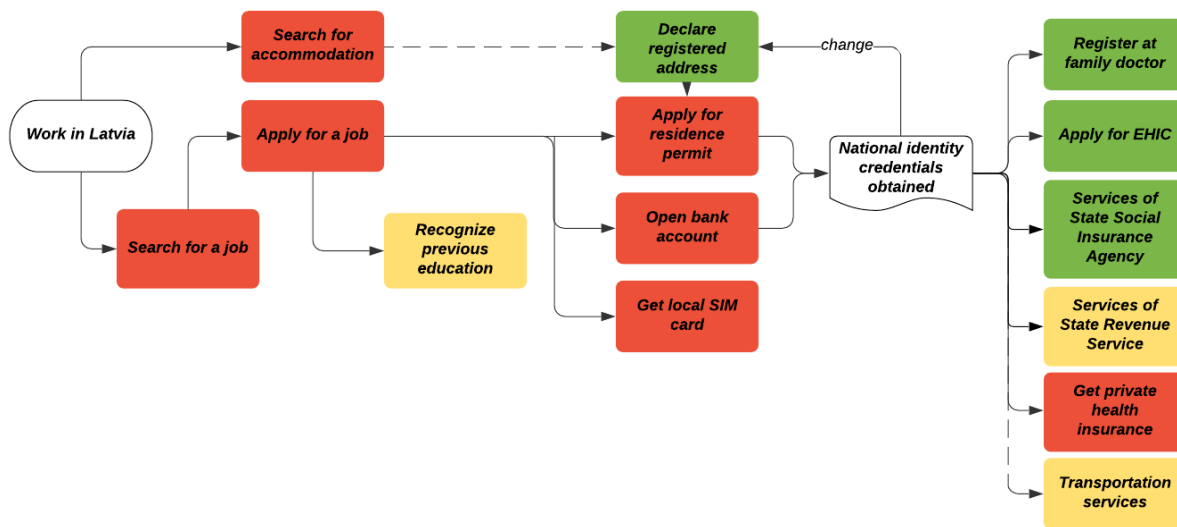


Figure 6: Working in Latvia – process visualization and feasibility of integration

Additional to the services described, workers also tend to use job search services before moving to a particular destination. Normally that is limited to private providers, job portals etc. However, there is a possibility to register at State Employment Agency ([fully digital service on their platform](#)) as unemployed or as a job seeker which can help with job search and can provide with some learning opportunities. It requires personal ID data (name, surname, date of birth, ID number, number of ID document) and address.

Tax services are provided by the State Revenue Service, which maintains their own platform (<https://eds.vid.gov.lv/login/>) for tax declarations and other e-services relevant for economic activity of individuals and legal entities. It is accessible with national identity credentials. Normally there is no need to upload any documents except documents of payments that qualify for tax return (healthcare payments, education payments, donations, and similar). All income and tax data is stored and managed by the institution. Therefore, an annual tax declaration is created automatically, and it requires only approval (consent) by the individual in the tax authority's platform.

Social insurance and benefits are provided by State Social Insurance Agency. Several e-services are available on the national platform (e.g., application for 2nd pillar pension scheme, the status of pension capital etc.). These services are also accessible only with national identity credentials. This institution also stores a wide variety of social insurance data. Therefore, there is no need to provide employment data, tax data, and data on other relevant payments, as by requesting services agency itself can proceed with calculations and benefits allocation.



Services relevant for Latvian citizens moving abroad

A lot of information about moving abroad can be sought in through EURES website which provides information on vacancies and living conditions in various European locations. It is promoted by the Latvian State Employment Agency.

For Latvians moving abroad for work or studies there are several public digital services which can be accessed with national identification credentials prior to moving in order to collect documents needed in host country or to deal with the status in their home country:

1. [Registration at Latvian Consular registry](#) (especially relevant for repatriation cases; it proved to be extremely useful at the start of COVID-19 pandemic);
2. [De-registration of the address / Registration of address abroad](#);
3. Make changes in [State Revenue Service portal](#) (register/de-register form of employment and similar);
4. [Application for EHIC](#);
5. [Acquisition of Certificate of family status](#): it is possible to acquire a list of information from Physical Persons' registry as e-service; however, specific certificate should be requested manually (paid service; can be done remotely through official state e-mail or application signed by the e-signature);
6. [Acquisition of Certificates of good conduct and administrative penalties](#):
 - a. Criminal record of a natural person (paid e-service; it is possible to acquire it also in English and Russian directly);
 - b. Statement on administrative penalties imposed on a private individual (paid e-service).

In most cases digital services are executed in Latvian, thus private translation and notary verification services must be sought additionally in the private sector.



4 Roadmap for Implementation of Use Cases

Pilot partners concluded through co-design sessions that at this stage of digital environments of respective countries **it is not feasible to fully execute end-to-end user journeys digitally**. In some areas there are no relevant public or private digital services (most notably, search for accommodation, search for a job, and other services which require personal research and decision-making) and they will not be developed in foreseeable future (within ACROSS project timeline). Some public services require manual input or physical visit while only few are available digitally. Therefore, next phases of use case deployment will concentrate on connection of existing digital services to ACROSS environment in order to showcase functionality of fully digital user journey elements while different other steps (public and private services or information) of user journeys can be integrated for showcase purposes up to the level of their digitization.

The pilot partners evaluated all directions of moving and studying abroad among Greece, Germany, and Latvia. Based on connection potential, actual migration flows and possibilities to cover balance between directions, these are the scenarios that will be worked on primarily:

1. Latvian going to Greece for studying;
2. Latvian going to Germany for working;
3. Greek going to Germany for working;
4. Greek going to Germany for studying;
5. German going to Latvia for studying.

At this stage of the project, definition of use case scenarios stays at high level as technical possibilities to make connections between countries and/or services is still being explored. Further research in use case definition carried out by pilot partners will continue in deployment phase which will set more specific framework for integration of services within ACROSS.

4.1 Further Activities Planned by Pilot Partners

Partners have evaluated public and private services available in respective countries (level of digitization, likelihood of connection, and other relevant factors). Workflows of services depicted in Section 3 of this report define which services are the ones each pilot partner will focus on primarily (“green services” as per traffic lights system used in evaluation). **Digital environment and service availability is different in each country; thus, each pilot partner will have to carry out also engagement, planning, and research activities individually and together with relevant stakeholders in respective countries further on in the project.**



4.1.1 Further Activities Planned in Germany

In Germany, as it was mentioned in chapter 2.1, the digital transformation of the public sector is driven by official regulations and laws such as the OZG that forces the 16 federal states and its federal government to digitize 575 necessary services. In order to achieve this goal, certain stakeholders and federal states take the responsibility for specific topic areas, e.g., education. The respective administrative services are divided into smaller services, which are developed by one party and can be used by all other national parties. This is the current plan.

Considering the progress over time, the digital transformation of the German public sector will approximately take longer than expected. Hence, the necessity of 21 key service packages that must be digitized until 2023 (according to the SDGR from 2018¹²) gains in importance, especially since it covers the entire EU and its member states. The German project team, contributing to ACROSS, takes this into serious consideration and focuses on those 21 key services, listed in Annex 2 of the SDGR from 2018.

In order to analyse the German use case implementation of ACROSS, the DATAPORT project team specifically looked at the development status of individual online services, distinguished between the private and public sectors, identified respective stakeholders, and in some cases already contacted them to talk about connecting or involving them in ACROSS.

This has resulted in the following list of "green services" that the DATAPORT project team believes could be considered for ACROSS implementation. The relevant stakeholders with whom contact is made or with whom there is still a will to talk to discuss contribution are also listed there.

Table 2: List of services and stakeholders to be engaged in ACROSS use case deployment in Germany as well as impact factors

Tasks and activities to be performed ("Green" and "yellow" services)	<p>Primary "green services" (firstly to implement; planned to integrate):</p> <ul style="list-style-type: none"> Official registration of address Apply for funding Tax declaration Social insurance number <p>"Yellow services" (secondly/optionally to implement; link to external sources):</p>
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¹² [EUR-Lex - 32018R1724 - EN - EUR-Lex \(europa.eu\)](#)



	<p>Search for university Apply for university abroad Recognize previous education Find accommodation</p> <p>Link to according flowcharts for the two incoming scenarios of ‘studying’ and ‘working in Germany’: Work & study in Germany: Lucidchart</p>
Stakeholders to be involved	<p>Primary Stakeholders, with whom contact is already established and regular meetings take place (+ their potential topic(s) that add(s) value to ACROSS). First ACROSS related actions should arise from this until 06/2022.</p> <ol style="list-style-type: none">1. German Ministry of Education (German educational platform, PIM, myguide, Hochschulstart);2. German Federal Ministry of the Interior, Building and Community /BMI (SDGR readiness of German public services);3. German Academic Exchange Service/ DAAD (Funding & scholarships; The Digital Campus: a portal of networked platform services);4. Governikus KG (eID infrastructure; AusweisIdent Online);5. Bundesdruckerei (eID infrastructure + nodes; eIDAS – opportunities offered by the digital internal market);6. Several DATAPORT project teams, dealing with the implementation of digital public services, driven by the OZG;7. Office of Citizenship/ Federal state of Hamburg (digital service ‘electronic residence registration’ (eWA)). <p>Secondary stakeholders, that are potentially interesting for future development and analysis of ACROSS implementation:</p> <ol style="list-style-type: none">1. Federal Institute for Vocational Education and Training/ BIBB (Europass);2. Government office of public university funding (BAföG);3. Elster (tax declaration);4. German Rectors' Conference/ HRK (Study in Germany - Hochschulkompass);5. Private health insurance companies;6. Private real estate agencies / online portals;7. Private banks.



<p>Initial impact factors assessment for use cases</p>	<p>Brief description of factors which might interfere with use case implementation:</p> <ol style="list-style-type: none">1. Time: Lack of time due to national duties (not only at DATAPORT, but especially of other national stakeholders that are quite relevant for ACROSS because they are under huge pressure due to national regulations such as OZG).2. Finances: Compared to the other project partners, the DATAPORT project team only has quite little or limited capacities with 26 personal months in total (second least capacity; on paper; according to proposal). That might lead to some challenges or obstacles as soon as more effort is needed in connecting to national stakeholders and implementing digital services.3. Communication: COVID-19 also effects ACROSS. One leads to another: Since the number of physical meetings is decreased, progressive communication within the international ACROSS project consortium (phone, mail, e-mail, and other means) becomes more challenging; increase in correctly performed steps – access to the service from the first time/no need to return to the service to conclude missing parts.4. National regulations: Driven by the national regulations in each partner country, especially the pilot country Germany with its OZG, the implementation of ‘SDGR ready’ digital services appear to be challenging since ACROSS use cases depend on the completion of national services.5. Identity management: less authentication steps and times (for example, access to services with one ACROSS authentication and not service-by-service); there is a clear need for an increased usage of eID and more use cases for eID within the EU (without leaving one system to the other).6. Language barrier: effective translation and assistance (virtual assistant metrics).7. Data security: As this topic is highly considered in Germany and there are still a few things to be clarified around the German initiative ‘data cockpit’^{13 14}, the DATAPORT project team cannot promise that the data
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¹³ [Datenschutzcockpit soll Vertrauen schaffen \(egovernment-computing.de\)](https://www.egovernment-computing.de)

¹⁴ [Germany WP3 contribution from Dataport.pptx \(sharepoint.com\)](#) (as of p. 3)



	governance dashboard that is planned in ACROSS can be served from Germany as it is expected.
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While primary public digital services and stakeholders have been identified, there are still some limitations for further actions. As DATAPORT actively and largely contributes to numerous developments of digital online services in Germany, it still has no direct control over them. In ACROSS, DATAPORT rather serves as project management office for its use case implementation. Therefore, there is need for more synergy with political partners within Germany and technical partners within the ACROSS consortium. At this point of the project, there is no final list of technical requirements for digital services to be connected. As soon as it will be concluded, DATAPORT will be able to engage with service owners meaningfully by providing full information on the project.

4.1.2 Further Activities Planned in Greece

Although Greece ranks low in indices relevant to digital economy and skills, major reforms are taking place recently which provide some tools and services that could be useful to ACROSS. The newly founded Ministry of Digital Governance organizes, encourages, and accelerates the digitization of services through new legislation, IT projects and coordination of the governmental agencies in their efforts for digital transformation.

Gov.gr is a portal which gathers most governmental services and acts as a single digital access point for the citizens to public services. Greek citizens can access these services using their Taxisnet credentials which were previously used for tax-related services but now have been defined as the common eID component for gov.gr. Some governmental agencies offer their services outside gov.gr but they use the same Taxisnet credentials. There are a lot of things yet to be done and the whole process of digital transformation is ongoing.

For European citizens, there are more problems since there is no extensive use of eIDAS credentials and also most services are offered only in Greek. However, universities provide their students some credentials with which they can access a lot of relevant services and issue student ID cards.

After researching the available digital services offered to local and foreign citizens and considering the needs of people who move across Europe as depicted during the interviews, the GRNET project team has concluded to propose the following services to be included in ACROSS for the Greek Use Case.

In the flowcharts of the scenarios in subsection 3.2.2 (Figures III&IV), there is a distinction in colour between the steps for which there are interoperable online services (green colour) which can possibly be



integrated in ACROSS and the steps for which the online services can't be integrated in ACROSS (yellow colour) and users will have to be redirected to these services' websites. In red colour there are also steps which only have information services. GRNET team has prioritized the "green" services, but yellow and red services can also be used in the ACROSS user journeys for completeness. A list of the stakeholders who are involved or have developed these services is also provided in case there is a need to communicate with them.

Table 3: List of services and stakeholders to be engaged in ACROSS use case deployment in Greece as well as impact factors

<p>Tasks and activities to be performed</p>	<p>Primary digital services for integration ("green services")</p> <ol style="list-style-type: none"> 1. Apply for ACADEMIC ID (student ID card) 2. Select courses and books for studies (EUDOXUS) 3. Apply for EHIC 4. Search for doctors. Book appointments. 5. Criminal record certificate 6. Birth certificate, Certificate of family status <p>"Yellow services" (secondly/optionally to implement; link to external sources):</p> <ol style="list-style-type: none"> 1. Issue a VAT Registration Number & Taxisnet Credentials 2. Issue Transportation card (ATH.ENA) <p>1. "Red Services" (optionally to implement; link to external websites): Search for information on universities</p> <p>The flowcharts for Studying and Working in Greece with links to relevant services for each step, can be found here and here respectively.</p>
<p>Stakeholders to be involved</p>	<p>Ministry of Digital Governance</p> <ul style="list-style-type: none"> • Gov.gr • GRNET SA <p>Ministry of Education and Religious Affairs Ministry of Justice Ministry of the Interior Ministry of Health Ministry of Labour and Social Affairs</p> <ul style="list-style-type: none"> • National Social Security Fund



Initial impact factors assessment for use case	<ul style="list-style-type: none"> • HDIKA SA <p>Factors which might interfere with use case implementation are:</p> <ol style="list-style-type: none"> 1. Control over services: Dependence on services which are under the control of stakeholders that GRNET can't influence can pose risks if there is any need for adjustments. 2. ACROSS Framework: the main benefit from ACROSS project that GRNET expects is a clear framework for interconnection of services provided to European citizens. Partners should be cautious not to deliver just a platform with a few services for showcase but rather a method that could be implemented by national/state portals like gov.gr.
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4.1.3 Further Activities Planned in Latvia

E-government development is one of driving forces for public administration reforms and modernization. Various indexes and overall performance places Latvia at the top tier of government digitization in EU. Thus, there is a great potential to comply with SDGR regarding 21 public services included in its Annex 2. However, development of some of the public services might not fit in initial deadline. Also, there might be exceptions such as need to show up in person at least once at the respective institution as service, according to the Law, cannot be performed fully digitally (currently this might be the case with motor vehicle registration). These concerns together with other factors (no digital service at all, service consists of manual inputs, current need for national authentication credentials etc.) drove pilot partners to introduce traffic lights system where “green services” are those which potential will be explored first-hand in initial use case deployment phase. However, as public services develop over time, partners have marked “yellow services” which have some parts digitized (such as link to application form, in development etc.) and can be explored for ACROSS purposes in later stages as they develop.

Analysis provided in Section 3 marks such services (“green services”) from Latvia as priority for integration with ACROSS:

1. Applying to university;
2. Declare registered address;
3. Register at family doctor;
4. Apply for EHIC;
5. Services of State Social Insurance Agency (various pension and benefits services).



Application to university, however, is still explorable (adjusting unified application service OR using one university as showcase) as currently universities tend to maintain their own application services.

So-called “yellow services” which will also be monitored closely for ACROSS purposes will be as follows:

1. Apply for university funding;
2. Recognition of previous education;
3. Services of State Revenue Service (tax declaration);
4. Transportation services.

Flowcharts for both scenarios in Latvia can be found [here](#) and [here](#). Based on services’ list stakeholder group as described in Table III can be concluded.

Table 4: List of stakeholders to be engaged in ACROSS use case deployment in Latvia

Stakeholder	Relevance	Engagement activities
<i>Primary stakeholders (immediate engagement; related to “green services”)</i>		
Ministry of Environmental Protection and Regional Development (VARAM)	Responsible for digital transformation policy in Latvia. ACROSS consortium partner.	Engagement with other departments (not directly linked to ACROSS) regarding progress of SDGR and OOP policies.
State Regional Development Agency	Responsible for technical aspects (implementation) of digital transformation policy in Latvia.	Direct subordinate of VARAM. Engagement in consultations regarding technical capabilities for ACROSS needs.
Riga Technical University	Responsible for unified university application service in Latvia. Attracts significant share of foreign students.	Engagement regarding connection of university application systems to ACROSS. Potential for co-creation and co-design. Cooperates with VARAM in various fields.
University of Latvia	Largest classical university in Latvia. Attracts significant share of foreign students.	Exploration of application system, potential connection to ACROSS. Potential for co-creation and co-design.



		Cooperates with VARAM in various fields.
Riga Stradins University	Largest medical university in Latvia with strong social sciences direction too. Attracts significant share of foreign students, most of which are EU citizens.	Exploration of application system, potential connection to ACROSS. Potential for co-creation and co-design. Might be interested in research. Cooperates with VARAM in various fields.
Office of Citizenship and Migration	Owner of the digital service “Declare registered address”.	Engagement regarding connection of the service to ACROSS.
National Health Service	Owner of digital services “Apply for EHIC” and “Register at family doctor”.	Engagement regarding connection of services to ACROSS.
State Social Security Agency	Owner of the universal digital service “Services of State Social Security Agency” (pension and benefits).	Engagement regarding connection of the service to ACROSS.
<i>Secondary stakeholders (future engagement)</i>		
Ministry of Education and Research + subordinate institutions	Responsible for education policy in Latvia. Oversees funding and education recognition processes.	Engagement regarding future developments of funding and education recognition services which are owned by Ministry’s subordinates.
State Revenue Service	Owner of the service “Tax declaration”.	Engagement regarding connection of the service to ACROSS.
Private companies with international workforce	Usually are mediators for employees who need assistance in moving process.	Engagement regarding research of barriers; potential source of individuals for ACROSS testing purposes. Potential for co-creation and co-design.



General public (EU citizens)	Potential end users of ACROSS.	Potential for co-creation and co-design. Potential for ACROSS testing, if needed.
Private companies	Companies which might be interested in offering private digital services through ACROSS.	Currently engagement regarding exploration/research purposes.

While primary public digital services and stakeholders have been identified, there are still some limitations for further actions. As VARAM does not own any digital service and has no direct control over them and serves as project management office in ACROSS use case implementation, there is need for more synergy with technical partners of consortium. At this point of the project, there is no final list of technical requirements for digital services to be connected. As soon as it will be concluded, VARAM will be able to engage with service owners meaningfully by providing full information on the project. VARAM projects it to be initiated by January-February 2022.

VARAM has a regular working group with universities (named in the table – University of Latvia, Riga Technical University, and Riga Stradins University). It is planned to present ACROSS to universities to explore other cooperation options besides connection of application services, too. It is projected to take place in January 2022.

Regarding all secondary stakeholders, their engagement will most likely be needed in later use case deployment phases, if ever. It purely depends on the direction ACROSS will take.

One of main impact factors in following periods of ACROSS will be the development of COVID-19 pandemic. Up to this point it had certain impact on communication among consortium partners, subsequently it also slowed down definition of use cases. Co-creation session in Amsterdam on 22-23 November 2021 proved to be beneficial for finalizing work performed up to this moment. If epidemiological situation worsens in certain periods of ACROSS lifetime, it can slow down also ACROSS integrations depending on situation in pilot locations as it is dependent on meaningful engagement with relevant stakeholders.

4.2 Possible Directions for Use Case Deployment Metrics

Previous sections of this report described work performed by consortium partners regarding research of digital environments in respective countries as well as user research. It revealed that ACROSS end users in current environment face different obstacles and barriers which make their access to public and private



services stressful. As ACROSS is being implemented to tackle some of those barriers use case deployment metrics should also focus on them. As part of the roadmap, pilot partners propose these directions for metrics:

1. Time and other resources: decrease amount of time, finances or other relevant resources used for access of digital services;
2. Administrative barrier / Guidance: decrease in number of physical visits, manual input, and communication (phone, mail, e-mail, and other means); increase in correctly performed steps – access to the service from the first time/no need to return to the service to conclude missing parts;
3. Identity management: less authentication steps and times (for example, access to services with one ACROSS authentication and not service-by-service); increased usage of eID;
4. Language barrier: effective translation and assistance (virtual assistant metrics);
5. Data security: dashboard of data security related data.

As technical components of ACROSS are being developed, this list of directions remains broad. It will be possible to implement concrete metrics after first connections with national digital services, and it remains under discussion, and must be concluded together with technical partners.



5 Conclusions

It can be concluded that pilot countries until now have had different approaches to creation of digital infrastructure and e-government solutions which has resulted in different environments of public service delivery. Germany as a federal republic still has a lot of decentralized solutions and services. Latvia has been performing central service delivery among other forms by running a national platform since 2006 and trying to unify the delivery of services. Greece recently introduced overarching solutions politically and technically to navigate digital transformation, which was fragmented before. All three countries are moving towards central digital infrastructures which can be exploited for faster and more ample public service delivery in the digital environment. In the long-term, these infrastructures will also be beneficial for cross-border service delivery.

Pilot partners put a lot of effort in balancing the technical needs with user-centricity for ACROSS. In order not to mix services with different readiness level needed for use cases, a sorting system was introduced. Internal discussions and analysis showed that it is beneficial for planning next steps. Not to engage with stakeholders who might not be ready to initially deliver a service for integration, only a handful of stakeholders (owners of “green services”) will be involved in the first phase of ACROSS use case deployment. Also, engagement of stakeholders is planned through co-creation activities planned in the first half of 2022 within WP2. As ACROSS timeline overlaps with the SDGR compliance timeline, **partners agreed to look at the project from the perspective of SDGR empowerment rather than compliance.** “Green services” are most likely to be SDGR ready or at least close to it. “Yellow services” will be monitored closely for engagement in later steps.

In order to examine possibilities for end-to-end user journeys, **pilot partners examined different directions and also most likely migration flows in real environment. Five directions were agreed to be used.** It will also be beneficial in case the project consortium decides to use actual end users for testing, co-creation, user research or other purposes as it will allow the pilot partners to perform recruitment of individuals early on.

Pilot planning is very dependent on technical development of ACROSS platform. As various technical details are still under consideration, there is no concrete timeline of use case deployment apart from the one laid out in the project proposal and initial months of ACROSS. Pilot partners in their roadmaps performed stakeholder mapping and possible engagement activities in near future. As work in ACROSS continues, those plans will be supplemented by new activities on a running basis. Also, limited ownership of public services currently prevents pilot partners of detailed roadmap as it must be examined together with relevant stakeholders – service owners. Nonetheless, uncertainty related to epidemiological



situation may also play a role forcing pilot partners to adjust deployment phase according to developments of COVID-19 pandemic.

Current analysis highlighted several gaps (Sections 2&3) which may be addressed by ACROSS. **In addition to technical metrics, pilot partners believe that metrics addressing these gaps can also be included. They relate to resources spent, administrative barrier, language barrier, identity management, and data security.**



6 References

- [1] Digital Economy and Society Index 2021. Online: <https://digital-strategy.ec.europa.eu/en/policies/countries-digitisation-performance>
- [2] Digital Maturity study of Greek Economy and Greek Enterprises. Online: <https://www2.deloitte.com/gr/en/pages/technology/articles/Deloitte-SEV-Digital-Observatory-Report.html>
- [3] eGovernment Benchmark 2020. Online: <https://www.capgemini.com/resources/egovernment-benchmark-2020/>
- [4] IMD Digital Competitiveness Index 2021. Online: <https://www.imd.org/centers/world-competitiveness-center/rankings/world-digital-competitiveness/>
- [5] LBBW. Zimmerman, G. Deutschland vor der Bundestagswahl. Online: https://www.lbbw.de/konzern/research/2021/studien/20210811-lbbw-research-digitalisierung-deutschland_adfpg7vxzv_m.pdf?origin=/2021-studie-stand-digitalisierung