

 Newsletter

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This issue

1. **Executive Board / Technical Meeting in Spain**
2. **mGov4EU at EGOV-CeDEM-ePART**
3. **Assembling the Big Picture**
4. **Building trustworthy mobile services**
5. **SDG components journey**

The 6th issue of our newsletter is entirely about the latest developments and project progress of mGov4EU.

Some of our partners presented their excellent work at the EGOV-CeDEM-ePART conference in Linköping in September and an Executive Board / Technical Meeting was arranged in Barcelona in October. Work towards the integration of Building Blocks into the mGov4EU pilots, to build trustworthy mobile services in Europe, and to design and integrate SDG components is currently in progress. A lot has happened within mGov4EU in the last six months, which will be briefly presented in this issue.



Executive Board / Technical Meeting in Spain

The second consortium meeting in 2022 marked the beginning of the second half of the EU-funded project mGov4EU. The next 18 months of the project will focus entirely on the implementation of different building blocks and their validation by means of three project pilots. On the 13th of October, all partners met in Barcelona to report the project progress since the last meeting in Krems. The

first day was then rounded off with a Technical Integration Workshop on the topics of eIDAS and SDG in smart mobility, the follow-up of that workshop also started the meeting on October 14. The meeting then concluded with a „co-creation“ and sustainability workshop at midday and some of our partners stayed for a debriefing of the meetings in Barcelona and Krems.

mGov4EU at EGOV-CeDEM-ePART

In the first week of September, several partners of the mGov4EU project participated in the EGOV-CeDEM-ePART conference at Linköping University in Sweden.

The conference, organised by the Digital Government Society, annually addresses a wide range of topics related to e-government, digital transformation and society and is one of the most important conferences in this field.

During the event, Gregor Eibl (University of Continuing Education Krems) presented the mGov4EU paper „Towards a transdisciplinary evaluation framework for mobile cross-border government services“ in a session entitled „cross-border services“, co-authored with mGov4EU partners Lucy Temple (University of Continuing Education Krems), Rachele Sellung (Fraunhofer), Stefan Dedovic, Art Alishani and Carsten Schmidt (all University of Tartu).

After the presentation of the practical and theoretical background, method and framework as provided in the paper, a very interesting discussion took place among the

20 participants who attended the session and the authors who were able to attend the conference.

The event was not only a good opportunity to share information about the project and the ongoing results, but also to receive scientific feedback from experts on the development of a transdisciplinary assessment framework.

Participants pointed out, among other things, that the proposed framework should not only be suitable for the evaluation of mobile cross-border public services.



Jordi Cucurull from ScytI presented in an online session a paper with an analysis in which they assessed how voters are authenticated in internet voting experiences for political public elections in nine countries: Australia, Canada, Estonia, France, Mexico, Pakistan, Panama, Switzerland, and the United States of America (USA). The analysis revealed that the use of solely knowledge-based factors for voter authentication was the most common practice in the experiences studied. In most of the cases, also, a combination of several credentials was used (e.g., in Canada and Australia). Another alternative observed was to rely

on a different combination of knowledge (i.e. something the voter knows) and ownership-based (i.e., something the voter has). In most of these cases (e.g., as in France and Mexico) the authentication methods were based on voter credentials and the use of codes sent by SMS to the phones of the voters (i.e. the voter had a phone with a specific SIM card). Also, the combination of electronic IDs and credentials was found (e.g. in Estonia). And finally, in only one of the cases, in USA, the analysis showed that biometrics were used (i.e. something the user is).

Assembling the Big Picture: Integration of Building Blocks into mGov4EU Pilots

The mGov4EU project develops solutions to lift cross-border services supported by the Single Digital Gateway Regulation (SDGR) and by the eIDAS Regulation to new levels by enabling these services for access and use with mobile end-user devices. Technical solutions developed by mGov4EU are two-fold. On the one hand, mGov4EU develops building blocks (BB) implementing specific functionalities required for mobile cross-border services. The building blocks are developed in a use-case-neutral manner so that they can be integrated into and used by arbitrary cross-border services. On the other hand, mGov4EU develops three pilot applications, which implement concrete mobile cross-border services targeting specific use cases. The three pilots integrate and use the technical building blocks developed by mGov4EU. This way, the pilots implicitly evaluate the building blocks and demonstrate them under real-world conditions.

Clearly distinguishing between the development of generic building blocks and specific pilot applications ensures that project results remain useful beyond the project's lifetime and that technical developments do not only serve the project's specific pilot applications but benefit any future cross-border service requiring eIDAS or SDGR related functionality. However, the separation of building-block and pilot development also raises the need

for close alignments and collaboration between responsible project partners. The situation is aggravated by the fact that mGov4EU comprises multiple building blocks and pilot applications.

To cope with these challenges, mGov4EU has identified relevant integration activities by mapping building blocks to pilots. This mapping, which is illustrated in the figure below, reveals which technical building block needs to be integrated into which mGov4EU pilot. This way, 9 relevant integration activities have been identified.

BBs ↔ Pilots	i-Voting Pilot	Smart Mobility Pilot	e-Signature Pilot
eID BB	x	x	x
e-Signature BB	x		x
SDG BB	x	x	
Wallet BB	x	x	

For each relevant integration activity, a focus group has been set up. Members of these focus groups are the project partners involved in the development and operation of the respective building blocks and pilots. Each focus group works on one specific integration activity. Necessary alignments between the various focus groups take place in regular online meetings, in which the progress of each focus group is reported, and potential barriers are identified and discussed among involved partners.

The approach followed allows for efficient and parallel work on the relevant integration activities. Focus groups have started their work on integrating building blocks into pilots in summer 2022. First results, i.e., successful integrations of building blocks into mGov4EU pilots, are expected until the end of 2022. The final project year (2023) will then be used to fine-tune these initial integrations and to

successfully deploy and operate mGov4EU's pilots. Lessons learned during pilot operation will be incorporated gradually into the mGov4EU building blocks to improve their quality and maturity. This way, mGov4EU will yield mature and evaluated building blocks, which will benefit mobile cross-border services far beyond mGov4EU's project lifetime

Building trustworthy mobile services in Europe – the opening bid for mGov4EU

The mGov4EU project has a relatively well delineated and clear scope on the surface: it aims to facilitate the use of inclusive mobile e-government services in Europe. More specifically, it was launched against the backdrop of the new European framework for once-only services, within the context of the so-called Single Digital Gateway.

Once-only services are fundamentally about helping citizens to access and use digital government services in the most efficient way possible. Rather than requiring them to request official digital documents over and over again, in order to ferry them from one public administration to the next, the citizens instead ask those administrations to exchange those documents directly between themselves. The citizen acts as a gatekeeper in the exchange, and can ensure that documents are only exchanged with their approval. Public administrations can obtain reliable information, directly from the source. Once-only exchanges are, from that perspective, a clear win-win.

mGov4EU moves the goalposts of once-only exchanges slightly further. In mGov4EU, citizens can use their mobile phone as the central interface for identifying themselves, and for signing specific documents and transactions. As a step forward, it may initially seem quite modest, but it is worth underlining that some Member States don't have advanced mobile identification and signing solutions in

place yet. Moreover, ensuring interoperability between such mobile interfaces across the EU can be complex – and if a citizen can only benefit from mobile applications in their own Member State, cross-border interactions are hamstrung. mGov4EU helps to bridge any interoperability gap.

More fundamentally, the use of mobile devices can increase the citizen's data sovereignty. Rather than acting as a mere gatekeeper who authorises or forbids once-only exchanges between administrations, a mobile device can also be used to store documents (like identity documents, diplomas, permits or extracts from official registers) in a secure and privacy-centric manner. This gives citizens more control and transparency, and also enables innovations outside of an e-government context, since documents can be made accessible to any interested party.

In this way, a project like mGov4EU not only creates building blocks for future once-only exchanges, but also opens the door to much more fundamental shifts in e-government and in data driven services. As an opening bid, that's already quite promising indeed!

SDG Components Journey: from Design to integrated Building Block

What is SDG?

The Single Digital Gateway Regulation (SDGR) targets “facilitating online access to the information, administrative procedures and assistance services that citizens and businesses need” in a cross-border context, in order to enable the citizens “to trade, establish themselves and expand their businesses in another Member State” making use of the Once Only Principle. The Once Only Technical System (OOTS) enabling the first [European Data Space](#) is currently defined by the EU Commission. One of the procedures is the Evidence retrieval, where Evidence defines an official, governmental document, for which the end user has to authenticate at the data requestor side (the Service Provider side) and when necessary also on the data provider side (where the data is stored and retrieved from) through a mechanism based on eID (eIDAS or [EU Digital Identity Wallet](#)).

What is the design and purpose of the SDG components in the mGov4EU Project?

When focusing on the SDG components from the mGov4EU architecture, the Data Exchange and Data Provider provide the SDG data plane and the Authorization Server is part of the SDG control plane. The Data Exchange has the role of providing SDG capabilities to the Service Provider and runs on the initiating leg, in the country that the user is accessing the eGov service. It receives requests from the Service Provider and enables user interaction for discovering the Data Provider and retrieve the evidence from the selected Data Provider. The Data Provider has the role to store the citizen evidences and reply to evidence retrieval requests. The Authorization Server enables citizen consent management. Both the Data Provider and the Authorization Server run on the terminating leg, in the country where the evidence should be retrieved from. Mapping these components to the User Managed

Access – [UMA2.0 architecture](#) gave the components a new dimension: the Data Exchange as the client acting on behalf of the requesting party and the Data Provider as the resource server. Together these three components complete the inner triangle of trust.

How can you build such a complex set of components in less than 1 year?

To achieve a fast implementation of the prototype and interoperability (e.g. with existing AS4 gateways), the project embraced the open-source implementation of the [TOOP4EU Project](#) for the Data Consumer and the Data Provider and extending these components for the authentication and authorization features. The other open-source project adopted by the project was the Authorization Server from the [Gluu](#) community.

And how does it fit in the big picture of the mGov4EU pilots?

The first integration of the SDG components prototype implementation is already finalized and it regards the interface towards the Service Provider. The integration with the iVoting pilot is already started and it supports session matching as well as error case handling and informing the Service Provider on the results of the evidence retrieval process (e.g. Authorization Server or Data Provider not reachable, evidence not found at the Data Provider, user closes the Web interface before finalizing the evidence retrieval). A very important part of the implementation covers guiding the user during this process and inform the user on the current status and the available options:

- for successful evidence retrieval to review and forward to the SP
- selecting another Data Provider in case of no evidence found

Would you like to get a deep technical dive?

You are welcome to quench your thirst with reading the article published in the proceeding of the DG.O 2022 conference describing the design of the mGov4EU [building blocks interaction](#) at describing the mGov4EU architecture and the building blocks interaction.

Ok, what about user interaction?

Usability principals of user interaction that were used focused on minimizing the cognitive load of the user while using the interface. Thus, displaying only the currently needed information and available actions (buttons) as well as built-in redirect towards the Service Provider have brought the user interaction to the next level.

Stay tuned for the next steps!

The next steps of the SDG components implementation comprise of:

- integration of the eID building block for authentication reasons
- integration with the user's mGov4EU Wallet for allowing the user to save the retrieved evidence for further use.
- finalization of the consent management policy enablement for ease of use using, as the main targeted users are also the evidence respective owners

The current design will be aligned in a next phase with the recent developments of the OOTP in which the preview is located at the Data Provider. The SDG components will be made available using a license compatible with the EUPL from the TOOP4EU refactored results.

For any questions regarding SDG please refer to:

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100% EU-funded



Consortium

10 Partners

5 countries



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