Overview of the digitisation initiatives

1. Further development of the Migration Asylum Reintegration System (MARiS)

Area of activity: Asylum proceedings
Digitisation level: I/II/III
Status: productive and in ongoing development

Brief description

All asylum procedures are processed in the Federal Office using the core application (MARiS). The ongoing development of MARiS involves regular adaptation to changed legal requirements, technical innovations and the resulting changed working methods. As a result of a change in the requirements for the Migration Asylum Reintegration System (MARiS) (increased load on the system, as well as necessary adjustments due to changed legal requirements), the system has been subject to fundamental technical revision in recent years. Recently, even more technical/functional requirements have been implemented. The application was expanded with regard to the requirements from the projects "XAVIA outgoing mail", "ASA" (hearing support tool) and "EGVP" (electronic jurisdictional and administrative mailbox), as well as with specialist functions (e.g. dual control for file deletion, administrable machines, admin tool for file distribution) and increased data protection requirements (new role concept). Infrastructure services based on a micro-service architecture are currently being implemented for ensuring platform independence, for which interfaces are to be provided by MARiS. This is being done with the aim of being able to use the resulting elements and data in a scalable and comprehensive manner for various application areas and load scenarios, following the BAMF software architecture and the SOA principle. These projects will be driven forward and deepened in the coming years. In addition, the focus for the coming years, in addition to further implementation of technical requirements, will be the transfer of message communication from the specialist application to microservices (further adaptation of the interfaces to the BKA and the BVA), as well as the expansion of communication with the immigration authorities (XAVIA-Outgoing mail) and in the technical switch-over to Microsoft.Net-Core.

2. Further development of the Integration Business File (InGe)

Area of activity: Integration measures
Digitisation level: I/II/III
Status: productive and in ongoing development

Brief description

When carrying out the integration courses, the Federal Office and the external bodies involved in the process (immigration authorities, course providers, test institutes, social security providers, providers of benefits under the AsylbLG and the Federal Administration Office) must collect and exchange a range of data in accordance with the Integration Course Ordinance (IntV). The Federal Office for Migration and Refugees has developed the IT application “Integration Business File” (InGe for short) so that it should no longer have to rely on a time-consuming and costly paper-based procedure, and instead should be able to efficiently coordinate and control the implementation of the integration courses. Since the integration courses are subject to an ongoing change and development process, the InGe core application has been and must be continuously adapted and optimised accordingly. With these adjustments, the Federal Office has been able to improve the speed, flexibility and ergonomics of the database and enable new functionalities and workflows.

3. Integration business file (Integrationsgeschäftsdatei, InGe) - online TGS

Area of activity: Integration measures
Digitisation level: II
Status: productive (job centre of the BA)/under implementation (job centre of the opted-in municipalities)

With its digitisation agenda, the BAMF sees itself as fulfilling a pioneering role over the long term. Here it concerns placing the "digitisation return" in the foreground, and not just digitalising processes for the sake of it. Those processes that bring the highest professional benefit should be digitalised, e.g. the identification of asylum seekers. In addition, the written material is also to be digitalised. A GUI design and a functional scope that keeps an eye on the needs of internal and external users (user-centric design) are important to us. In addition, consistent digitisation allows financial and time savings, which in turn benefit new digitisation initiatives - digitisation can to a certain extent finance itself with a positive digitisation return-on-investment.

Brief description

Social security providers (TGS) still transmitted the data on the course participation obligation of benefits recipients to the Federal Office using a paper procedure until late summer in 2016. The online connection of the Federal Employment Agency's job centre now allows electronic communication between the Federal Employment Agency's system, Ver-BIS (placement, advice and information system) and the Federal Office's Integration Business

File. The systems of the municipalities that have opted in are now to be connected. One of six service providers from the opted-in municipalities have now received approval for productive data transmission. A total of around 300 job centres of the Federal Employment Agency and 100 opted-in municipalities are participating in the digital exchange of data regarding the integration courses. In addition to higher data quality, the TGS online connection also promises more security in the management of integration courses: People can be identified more easily and invalid processes can be avoided. The system also reports on citizenship and residence permits.

4. Integrated identity management (IDM)

Area of activity: Asylum proceedings
Digitisation level: I/II/III
Status: productive and in ongoing development

Brief description

Since 2016, a nationwide comprehensive infrastructure has been available for the early and standardised registration of asylum seekers and for the simultaneous issuance of proof of arrival. For the continuation of the programme, the personalisation infrastructure component (*Personalisierungsinfrastrukturkomponente*, PIK) was expanded to be used by other case groups. A separate Fast-ID workflow (system for the rapid comparison of fingerprints) is also available. With the introduction of the personalisation infrastructure component (PIK), a standardised nationwide procedure for recording asylum seekers, unaccompanied minors, and illegally resident foreigners has been available. This is helping to improve data quality. Processes are accelerated through preliminary storage of the electronic recordings. The data can be accessed at any time by all the authorities involved and for any pending proceedings, a system that increases the security of the asylum procedure. The associated program IDM-S qualifies and tests innovative tools with which decision-makers can classify the information collected during registration and check the plausibility of the information provided during the asylum procedure. The tools in the program include:

1. Name transcription: Standardisation of the transliteration of an applicant's name from a non-Latin spelling (currently for Arabic) to a Latin spelling and derivation of a country of origin prognosis based on the name.

2. Speech biometrics (currently for the major Arabic dialects): Comparison of an applicant's speech sample with a language database to determine the language and dialect in order to support the verification or falsification of information about the country of origin.

3. Image biometrics: Comparison of the photo of an applicant with the BAMF database to avoid duplicates/multiple registrations in the files. Thanks to the image biometrics, security queries with photographs can be processed more quickly.

4. Reading out data from mobile data carriers: Reading out of data from mobile data carriers (in particular cell phones and smartphones) via a specialised kiosk system to obtain information about the origin and identity of the applicant.

After the successful testing and comprehensive piloting of the tools mentioned in 2017 as well as the successful initiation of operation at the beginning of 2018, the tools were transferred as procedures into sustainable line structures. Further developments are in progress or planned for all tools for increasing the performance, improving the integration into the work processes and the IT landscape of the BAMF, and for maintaining data protection and data security at the required high level.
The possibilities of using the IDM-S IT tools at European partner authorities are systematically assessed. The exchange with representatives of migration authorities from other countries has revealed interesting starting points for cooperation, especially in the area of language biometrics and name transliteration.
The assistance systems support BAMF staff in collecting and checking the plausibility of data and information at many points within the overall process. As a result, decisions are reached using a broader information base, processes are further accelerated, and procedures are simplified. The further development shall also prevent any possible misuse while at the same time increasing public safety.

5. Middleware

Area of activity: cross-departmental
Digitisation level: II/III
Status: productive

Brief description

The BAMF's PaaS Middleware provides a range of services, software components and libraries that significantly simplify the development of cloud-enabled applications in accordance with the BAMF architectural guidelines.

1. The logging service provides a readily available "Representational State Transfer" (REST) endpoint, with the help of which technical logging data can be stored, retrieved and evaluated centrally. REST describes a programming paradigm for distributed systems, and especially for web services.

2. The file clipboard (FC) enables a readily available and high-performance intermediate storage and management of any type of file. The FC can be addressed from any programming language via REST. A client library is provided for Java systems, which enables an easy use of all functions.

3. Document Services (DS) and the Data Storage Gateway (DSG) provide various services via REST for filing and managing documents in the FC, in the electronic archive and in the longterm archive.

4. The ID service provides unique identifiers (ID) according to predefined templates which can be used to save files (in the FC) or documents in the archive.

5. The IP category returns information on the categorisation of IP addresses in order to enable access control depending on the access path (e.g. mobile workstations).

6. Microservices, client-servers and web applications can authenticate themselves at a REST endpoint using a so-called oAuth2 protocol and acquire the role information stored in the BAMF's IDM (Identity Management) infrastructure, which can then be used to authorise users: oAuth2 stands for "Open Authorisation Version 2". A client library is also provided for Java development.

7. The Datagrid (DGR) provides both master and MARiS data in the form of specialised REST services.

8. The Message Reporting Service (MRS) provides extensive functions for message-based, asynchronous applications and ensures the persistence of messages. It also serves as an abstraction layer for the Spring Dataflow server.

9. Special MRS streams (APS) provide special REST services which enable a simple connection to MARiS and the transfer of documents in MARiS files.

10. The Service Registry and a configuration server allow cloud operation on a VMware cluster (a farm of virtual computers).

6. Blockchain piloting

Area of activity: cross-departmental
Digitisation level: II
Status: Test phase

Brief description

With the FLORA (Federal Blockchain Infrastructure Asylum) project, the BAMF is also relying on blockchain technology as a component of its comprehensive digitisation agenda, in line with the federal government's digitisation strategy. The aim here is to support cross-agency communication and collaboration in the asylum process. The essential concept of blockchain technology is to manage the information to be stored through a subscriber network in place of a central location. In addition, new blockchain technologies allow parts of the cross-agency process management to be supported automatically, to the extent that this is permissible and deemed rational by all those involved. Blockchain is the best-known form of distributed ledger technology to date.
Building on the empirical values from a successful proof-of-concept, a pilot phase within FLORA as part of the AnkER facility in Dresden has been evaluating how blockchain technology can support communication and collaboration between different authorities since May 2020. The State Office of Saxony (LDS) has been involved in its role as the Central Immigration Office for Saxony (ZAB), as well as the BAMF in the form of the Dresden branch office.
Using the asylum procedure assistance system based on blockchain technology in the AnkER facility in Dresden, information required about changes in status of individual asylum procedures during the asylum process can be securely and immediately shared with the respective partner authority (ZAB Sachsen or BAMF Dresden), so that they can immediately receive the relevant information and initiate the following process steps.

The project is forming an important leading light, as it is developing both a concrete IT solution on a blockchain basis and a range of transferable solution concepts. These concepts can serve as a reference framework for using blockchain technology within authorities, especially in federal structures. The BAMF is therefore fulfilling its pioneering role in the implementation of blockchain technology in the federal administration.

7. Special electronic authorities mailbox (Besonderes elektronisches Behördenpostfach, beBPo for short), formerly electronic court and administration mailbox PE 2.1 (Elektronisches Gerichts- und Verwaltungspostfach, EGVP PE 2.1 for short)

Area of activity: Asylum proceedings
Digitisation level: II
Status: productive and in ongoing development

Brief description

beBPo 3.0 is the follow-up project to EGVP PE 2.1. Within the context of electronic legal transactions (*elektronischer Rechtsverkehr*, ERV), it is intended to optimise a legally secure digital communication between the BAMF and the legal profession. Specifically, this requires a harmonisation and further professionalisation of the ERV between the special electronic mailbox for authorities (beBPo) of the BAMF and the special electronic mailbox for attorneys (beA). The beA is the responsibility of the Federal Bar Association (BRAK), which as a new interest group conducts exchanges with the previous project participants (from EGVP PE 2.1). The aim of the project is to optimise and professionalise the bidirectional communication (incoming and outgoing mail) between the communication partners "end-to-end". Furthermore, version 2.1 of the EGVP incoming mail system (EGVP PE 2.1), which has successfully been piloted until now, is to be rolled out to all branch offices that receive electronic messages from (higher) administrative courts and the legal profession.

By optimising and harmonising the ERV between the BAMF, (higher) administrative courts and the legal profession, the personnel effort expended in this communication has been reduced considerably. The aim is to increase efficiency through the utilisation of machine-readable metadata. Digitalising communication using metadata offers considerable advantages. For example, a more rapid transmission can be guaranteed with high security standards. The digital transmission of machine-readable information via metadata allows information to be captured more quickly and processed quickly for the BAMF's internal MARiS procedure. This leads to faster processing while at the same time reducing errors and significantly improving the BAMF's response time to enquiries from the judiciary and the legal profession.

Currently, a daily average of 1,040 files and documents are sent to the courts and attorneys via beBPo and more than 1,750 messages are received.
(last revised September 2020)

8. Digital file management (Digitale Aktenverwaltung, DigA)

Area of activity: cross-departmental
Digitisation level: II
Status: in development

Brief description

The E-Government Act has been in force since August 1st, 2013, which obliges the federal administration to introduce electronic administrative access, provide machine-readable databases, and introduce electronic file management.
In line with the 2020 digitisation agenda of the Federal Office for Migration and Refugees, the first steps towards the introduction of electronic file management have been taken over the last years. In the asylum and legal proceedings, among other things, a solution for the digitisation of written material was established and a connection between the administrative courts at MARiS and the remaining IT structure of the BAMF was created. In addition, evidence-preserving storage and archiving of documents has already been implemented. Nevertheless, the technical procedures of the BAMF are currently still at very different levels with regard to the progress of digitisation. Within the context of a “preliminary study on efile (eAkte)”, various potential areas of action were uncovered, including in the areas of paperless file processing and the digitisation of written material.
The project "Digitisation of File Management - DigA" views itself as a professional and technical implementation support with regard to the complete digitisation of the BAMF's documents as well as the implementation of an electronic file management system that can be used across organisations. The focus is always on the individual requirements of the various departments of the BAMF, whose employees are consistently involved in the implementation of the digital file management solution right from the start. The digitisation of the BAMF's documents and the introduction of a uniform electronic file management system that can be used across organisations together create the essential basis for the agency-wide improvement and standardisation of processes. The introduction of paperless filing and digital file processing enable collaboration and the digital exchange of documents without any media disruptions.

9. Secure external communication (Gesicherte Kommunikation, GeKo)

Area of activity: cross-departmental
Digitisation level: II
Status: in development

Brief description

The overarching goal of the GeKo project is that users and IT systems of the BAMF should be able to communicate securely and in compliance with data protection regulations across agencies without having to worry about requirements, restrictions or technical implementations.

All messages sent or received via the communication platform provided by GeKo are not only transmitted securely and in compliance with data protection regulations, but also converted in such a way that the transmitted data can be processed automatically without major media disruptions. The project is based on modern architectures and opens up new options for digitalising processes. Furthermore, important external services such as the User Account Alliance (*Nutzerkonto Bund*) as well as Self Sovereign Identity for Germany (*Self Souvereign Identity für Deutschland*, SSI4DE) are connected to make it easier for citizens to use the online access law services provided by the BAMF.

10. Centralised inbound mail (Zentraler Posteingang, ZPE)

Area of activity: cross-departmental
Digitisation level: II
Status: in development

Brief description

The objective is to digitalise the BAMF's own inbox for asylum procedures. This should depict the mail logic, control the high number of incoming and outgoing mail communications, and include an archive function. The implementation of the digitisation of the physical inbox in the Federal Office for Migration and Refugees in the area of asylum procedure follows the forward-looking strategy of the E-Government Act.
In compliance with the highest standards of data protection and data security, documents are digitalised, automatically indexed, electronically signed and forwarded to the BAMF in a total of four scanning centres. Central digitisation is a "scalable" solution that can for instance process the high volumes of documents that can arise during times of crisis without delay. Documents digitalised via the ZPE also have a qualified electronic signature. Thus paper originals digitalised can be destroyed by CI, since the electronic ZPE documents have the same evidential value in court as the paper originals. In addition, the ZPE relieves the employees of the Asylum Procedure Secretariat (*Asylverfahrenssekretariat*, AVS) from manual scanning and enables them to focus on the core activities of the AVS, especially in crisis situations. The ZPE serves as a model for the digitisation of written material in other specialist procedures of the BAMF, and thus as the basis for cross-departmental electronic file management. The BAMF client will be on the Federal Office’s DiBASIII solution until the end of 2021 and will use the Federal Office's scanning centres and transport logistics with administrative support. With the current tender "Replacement Scanning", the Federal Ministry of Defence (BMVg), Federal Administration Office (*Bundesverwaltungsamt*, BVA) and BAMF will probably set up their own scanning centres and their own transport logistics to use the central digitisation of incoming mail from 2022. 16 branch offices of the BAMF are currently connected to the ZPE. The project is currently being guided through a stabilisation phase. The nationwide introduction of the ZPE is currently planned for 2021. As part of the ZPE project, the uniform indexing for documents (*Einheitliche Indizierung für Dokumente*, EID) initiative was initiated with the aim of establishing uniform indexing standards in the BAMF.

11. Vocational German language promotion (Berufsbezogene Deutschsprachförderung, BerD)

Area of activity: Integration measures
Digitisation level: I
Status: productive and in ongoing development

Brief description

A centralised digital platform with a wide range of possible uses will be set up for the administration, coordination and assessment of vocational German language support (*berufsbezogene Deutschsprachförderung*, BerD).
Employment agencies, job centres, opted-in municipalities and course providers are connected to the system. The previous paper-based procedure for vocational language training will be completely replaced by the digital solution. Through digitisation, the entire management of vocational German language support will profit in efficiency and effectiveness - from course organisation to the accounting process. Manual data entry and the oral provision of information are becoming obsolete, while supply and demand can be brought together faster and more reliably. Last but not least, the digital BerD platform fulfils the legal mandate to monitor results and successes by making it possible to determine and evaluate relevant key parameters at the push of a button. The integration of the data exchange standard XAusländer creates additional benefits for increasing data quality.

12. Quality assurance application for the asylum procedure (Fachanwendung Qualitätssicherung Asylverfahren, FA QS)

Area of activity: Asylum proceedings
Digitisation level: II
Status: productive and in ongoing development

Brief description

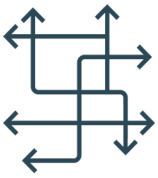
The quality assurance application is designed to implement electronically supported quality assurance in the BAMF, initially for the asylum area. MARiS data is used as part of the QA. Using an electronic checklist, options indicating deficiencies are checked by quality assurance officers for consistency with the MARiS file. This is a web-based application running in the intranet that can be accessed from any BAMF workstation computer. This enables an efficient and easier recording of the quality checking of products and processes compared to the current, Excel-based solution, as well as an integrated and standardised exchange of information between quality assurance personnel and staff handling the asylum seekers. Media disruptions as well as manual entries are reduced, and processes are harmonised. It can be assumed that there will be a more efficient workflow as well as a simultaneous reduction in errors, since a manual procedure that is only supported by Excel is being replaced by a standardised, webbased system with supporting automation and an integrated plausibility check logic.

13. Interpreter management at the Federal Office (Bundesamt Bereitsstellung Sprachmittlung, BABS)

Area of activity: Asylum proceedings
Digitisation level: II
Status: productive and in ongoing development

Brief description

The BABS system has been in operation since mid-2020 and supports interpretation activities in the areas of recruitment, contract management, booking and assessment for interpreters as well as the monitoring/controlling of interpreting assignments. The BABS application can have a significantly positive effect on the efficiency of interpreting assignments. In particular, the time spent on booking and travel costs are reduced for the interpreters, since those with lower travel costs are preferred by the system for booking. In addition, the interpreters' particular disposition is better supported. Among other things, this can also reduce waiting times. Furthermore, the BABS system can increase the quality of interpreting assignments, because people with high qualifications are preferred when booking. Ultimately, BABS will improve the controllability and transparency of interpreting assignments, e.g. via the central evaluation of key parameters for control purposes.

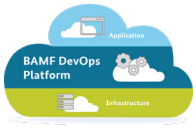


14. Interfaces with international public authorities

Area of activity: Asylum proceedings
Digitisation level: II
Status: productive and in ongoing development

Brief description

A prompt and direct exchange of electronic data is required when conducting asylum procedures. Only in this way can it be ensured that the data stored in various systems is always available in a satisfactory quality. An exchange of data with security organs is particularly important here. The interfaces enable various specialist applications to be connected. In addition, the Central Immigrants Registry (*Ausländerzentralregister*, AZR) is directly linked to the BAMF. Among other things, the newly created personalisation infrastructure component, which can be used simultaneously by the federal states and the federal government, uses various interfaces of the Federal Office. The initiative serves to develop and extend digital interfaces. The automation of the exchange of personal data with these agencies is a particularly important aspect in this respect. The aim is to gradually adapt these interfaces to the XAusländer communication standard (XStandard). The focus of this initiative is on accelerating processes, reducing errors and increasing security. With the introduction of electronic exchange systems using the XAusländer standard, cross-border communication processes between the agencies will be simplified, data will be easier to compare, and multiple registrations will be avoided. It will also be easier to link new specialist procedures to various services.



15. Cloud

Area of activity: cross-departmental
Digitisation level: II/III
Status: in development

Brief description

Cloud environments, as they are now established on the IT market, offer precisely the infrastructure needed for the implementation of the BAMF's digitisation agenda. In a cloud, resources such as storage space, computing power or application software are made available as a service via a protected network, so that no further application need be installed on the local computers. The entire IT industry is currently in a state of upheaval and will be completely converted to cloud infrastructures over the next two to four years. Cloud services are already established in the private sector, and the switch to cloud solutions is already well on track in public administration. By integrating additional cloud services from other organisations (infrastructure/platform-as-a-service providers), the potential of a private cloud solution develops towards a hybrid cloud approach. A hybrid cloud is characterised by both operating cloud services itself (so-called "private cloud services" based on the infrastructure operated by the ITZBund) and by integrating cloud services from various providers (so-called "public cloud services") . In the future, the IT of our Federal Office will operate a hybrid cloud platform upon which developmental work on IT applications and their operation will be carried out. By introducing platform solutions in the Federal Office and flexibly utilising private and public cloud services, the IT can better respond to the needs of our IT projects and processes, react faster to new requirements, and further promote efficient development approaches such as DevOps and the already established methods of agile software development (e.g. scrum). Now some additional ideas, the implementation of automation, and the provision of infrastructure on the part of the ITZBund will be required until the cloud platform is fully functional and can also be used for the operation of IT applications.