

ENGLISH

# CONNECTING IDEAS THROUGH OPEN SOURCE



FEDERATED IDENTITY MANAGEMENT.  
DIGITAL HUMANITIES.  
OPEN SOURCE.



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## Peter Gietz WORDS OF FOUNDER



DAASI International embodies professionalism, sustainability, social togetherness, engagement and fairness. These values are deeply rooted in our corporate philosophy and are the reason why we are one of the leading providers of open source products in the area of Identity & Access Management (IAM) and Digital Humanities (DH).

DAASI International originated in the field of research. By founding the company as a spin-off of a DFN (Deutsches Forschungsnetz, German National Research and Education Network) research project at the University of Tübingen, our goal was to create interesting and diverse jobs with innovative technologies and to grow into a committed team. By implementing a variety of projects in the following years, DAASI International did not only grow in terms of employees, but also in terms of knowledge and abilities.

Today, our expertise in federated Identity & Access Management is in high demand all over Europe. We help organizations to improve the efficiency and security of their IT systems, and to create a reliable and intuitive infrastructure using modern open source technology. In doing so, we are simplifying the daily work of many users, despite the increasing complexity of IT landscapes and are enabling new ways of working. Since IAM technologies and methods are also essential to many virtual research environments, we enjoy to contribute our technical knowledge to the Digital Humanities and thereby join both our business areas.

Our many years of experience, our support and promotion of open source initiatives and open standards as well as our commitment to research make us stand out as a company, and we are proud to make meaningful contributions to the common good.

Peter Gietz, Founder & CEO

In this project of all 9 universities of Baden-Wuerttemberg, DAASI International was an external service provider and decisively involved in setting up a nationwide public key infrastructure based on indexed directory services with standardized LDAP access mechanisms. DAASI International employees wrote an IETF Internet draft on a LDAPv3 schema for storing X.509 certificates.

PKI BADEN-WUERTEMBERG



2000

2002

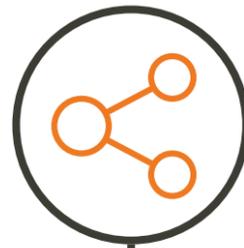


FOUNDING

The desire to continue research started in previous projects led to the founding of DAASI International. The company is a spin-off of the Tübingen University Data Centre, a successor organization of BMBF-funded DFN research projects, which dealt intensively with X.500 and LDAP – back then just a research subject, nowadays an important topic in every major organisation.

In cooperation with 17 universities in Lower Saxony, DAASI International designed and implemented a statewide learning cooperation for students in Lower Saxony. With StudIP, students were able to access all the resources of participating universities without having to set up additional accounts.

STATE-WIDE FEDERATION  
(NDS-AAI)



2007



DARIAH-DE & AARC

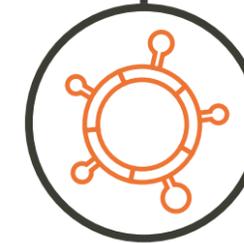
Building on the results of the TextGrid II and III projects, DAASI International played a key role in DARIAH (Digital Research Infrastructure for the Arts and Humanities), building infrastructure, integrating new technologies and developing a sustainable business unit. We also helped to design and build the DARIAH storage infrastructure. In the EU project AARC, DAASI International represented DARIAH and decisively shaped the innovative AAI concepts.

During this phase, DAASI International developed IdM modules for various customers based on an OpenLDAP-based metadirectory. Innovative concepts were implemented, in particular, in the work on ALOIS in cooperation with the University of Augsburg, the IdM system of the UdK Berlin and the system of the public service provider VRSG. These concepts finally eventually formed the basis for DAASI International's own IdM product.

LAYING THE FOUNDATION  
FOR DIDMOS



2014

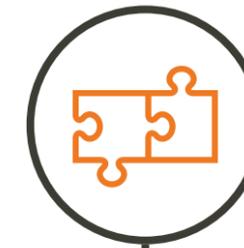


DIDMOS

With didmos, a modular IAM framework, DAASI International finally launched its own open source solution for Identity & Access Management. Thanks to its high standard conformity and its strong focus on expandability, didmos has the ideal prerequisites to be integrated into your IT landscape.

After joining the Shibboleth Consortium in 2016, a strong expansion of the partner network with various open source developers was to follow. Thus, close cooperations were formed with the US companies Symas, main developers of OpenLDAP and Gluu, developer of Gluu Server. Since 2018, DAASI International has been involved in the Irish company Crust Ltd, developer of an innovative CRM and messaging platform. The cooperation with Evolveum, developer of midPoint, culminated in DAASI International becoming first German Gold Partner.

EXPANSION OF THE  
PARTNER NETWORK



2017



DIDMOS2

In several projects first modules of the latest version of didmos were used. While didmos1 was dominated by XML and SOAP, didmos2 is a new development based on JSON and REST. With the didmos Authenticator, a sixth module was added, a Sato-sa-based proxy that enables SSO via the two protocols OpenID Connect and SAML as well as social login.

## Why OPEN SOURCE?

*Open source is happening!* Established global players such as Microsoft, Amazon, Google and Twitter are actively supporting open source projects and are already using open source technologies within their own products. Let us tell you why.

### OPEN, INDEPENDENT, SUSTAINABLE

Proprietary software is always licensed. The software producer is not just the only one who can make changes to the source code – they are also the only one who has access to it. The development of new features follows popular demand of the market and to further develop the code on your own is not possible. With open source software, you have access to the source code, which allows you to integrate new features yourself or with the help of an IT service provider, as well as to make further adaptations. Open standards ensure compatibility with other systems, while the absence of license fees spares your budget. Dynamic cloud computing for instance is only possible thanks to operating systems free of license costs. With open source products, you are independent and set the direction yourself.

### OPEN SOURCE BY CONVICTION

We strongly support the open source idea because we are convinced that open standards are the basis for innovation, progress, and efficiency. This is why DAASI International has been working together closely with developers of modern open source software in the area of IAM for years now, why it is part of many committees that advocate standardisation, and why it only develops products that are published under the open source license itself.

We help organisations to increase the efficiency and security of their IT using advanced open source technologies. We ensure a reliable infrastructure, create a great user experience through ease of use despite an increase in complexity, and thereby allow for new ways of working.

- + INDEPENDENCE
- + HIGH FLEXIBILITY AND ADAPTABILITY
- + TRANSPARENCY
- + OPEN STANDARDS

DAASI International highly values structured yet flexible project management, so that a collaboration is pleasant and transparent for everyone involved. This is why DAASI International works according to the agile project method Scrum. Let us reach your goal together - step by step.

## Agile PROJECT MANAGEMENT

### FLEXIBLE

We divide projects into two-week project phases, so-called "sprints". After every sprint, the team evaluates their work progress and plans the next phase of the project. This way, the project can continuously benefit from new knowledge incorporated into the work and hence, the course of the project is optimized. This creates an iterative working method which can easily adapt to changes in requirements.

### TRANSPARENT

The stakeholders always know the current stage of their project. They receive permanent feedback and can see results early on – and request adjustments accordingly if necessary.

### SUSTAINABLE

The periodic sprint meetings ensure the exchange between team members of a project on a regular basis. This way, clear structures during the work process can be established which does not only ensure high-quality of outcomes, it also increases productivity and satisfaction levels of all project partners.

### FIXED-PRICED PROJECTS

We offer you these if working with exact budget specifications. As we have to precisely calculate the scope and time requirement of services in advance, the planning phase usually takes a little longer. In order to calculate the total price, we need specifications, i.e. a requirements analysis for a conceptualisation, or a concept for the implementation.

### EFFORT BASED PROJECT

We will provide a cost forecast. The final price ultimately depends on the actual amount of work put into the project. As this method requires less planning time, one advantage is a sooner start of your project. Additionally, projects billed on work effort mean we can react more spontaneously to changes in concept or new requirements during the working phase.

## DAASI International is an Expert on **IDENTITY & ACCESS MANAGEMENT**



As digitisation advances, organisations are challenged with the administration of many digital identities in an efficient and secure manner. Identities can be data and accounts of employees, customers or suppliers, but are recently found in the form of services and things (Internet of Things) as well. Identity and Access Management, short IAM, allows for a central provision of users with all necessary accounts and access rights. Sensitive resources are thereby protected from unauthorized access – without any chaotic demand for administration.

**Identity and Access Management and federated IAM with open source software are the core competencies of DAASI International.**

### MORE EFFICIENCY AND SECURITY THROUGH IAM

If an organization operates multiple systems with more than a few dozen users, it is already beneficial to consider a systematic approach to identity management. Users obtain an account and a corresponding number of passwords for every single system. Conventional user management usually saves and manages this data in different, separate databases. This leads to confusing structures as well as to a duplication of the administration process and unnecessarily takes time away from the users as well as from the administrator. In addition, a safety risk is created when accounts, for example of former employees, can not be deactivated consequently and timely.

IAM allows you to manage different systems through a central user data administration. This significantly reduces the complexity and enables a timely provision of accounts and access rights. Organisations and users also benefit increased data security and improved user experience, for instance through single sign-on and self-service.

### FEDERATIONS – MAKING RESOURCES ACCESSIBLE TO EVERYONE

By using federated IAM, users can not only access the resources of their own organisation, but also those of other organisations within the federation. The authentication of the users is completed using their already existing access data, so there is no need to create any new accounts. Those federations are created through contracts which ensure the processing of the data is up-to-date and according to current privacy regulations, as well as through a list of members of all servers involved.

### THE TECHNOLOGY

Identity and Access Management uses many different technologies to allow for the automated synchronization of central master data from different source databases (like HR systems). This master data is stored centrally in a database or directory, in this case called metadirectory. At this core, you can not only manage user data itself, but also administer the corresponding access rights, block accounts, or reset passwords. This aggregated data is then instantly provisioned to target systems, using different standardised or proprietary protocols. The protocols that are being used vary depending on the type of provisioning:

**Just in case** (before users access a service): SPML, SCIM, periodic LDAP request, or any proprietary protocol, like filling relational databases using SQL statements

**Just in time** (while users access a service): SAML, OIDC/OAuth2, or LDAP requests after login

In designing performant IAM systems, DAASI International uses open source software like OpenLDAP, midPoint, Shibboleth, Gluu Server, or our own IAM open source software framework didmos whenever possible.

## Our Products

### IAM SOLUTIONS



midPoint – midPoint is a comprehensive open source solution for Identity Governance and Administration and represents the standard software for Identity and Access Management. As complete solution and a modern alternative to Oracle Wavest midPoint includes all relevant tools and configuration possibilities for the introduction of an IAM system – and more. DAASI International is the only official gold partner of the company Evolveum, which develops midPoint within the German-speaking area.

**Credential Management** means automated generation of strong passwords compliant with conditions predefined by the administrator to ensure a high level of IT security.

**Workflow:** midPoint can be easily adjusted to per-existing processes and the individual workflow of an organisation, this is to ensure that the workflow is not disrupted while also protecting the system from unauthorised accesses.

**Organisational Structure:** midPoint comes with an integrated structure model for organisations so it can be adjusted to already existing hierarchies and structures within an organisation.

**Identity Governance** is the core of the software which manages roles and access authorisation for all users. Different policy options help to maintain high security levels within an organisation.

**Auditing** creates transparency and makes interactions within a system traceable. Additionally, all decisions are constantly revised by an integrated feedback mechanism that will notify the appropriate post if necessary.

**Entitlement** allows you to define and authorise individual access for users on all levels (users, roles, projects, hierarchies) to protect resources.



Gluu – Gluu is a versatile open source access management software that allows organisations to control access of their and their partners' resources within a federation. Gluu, the US partner company of DAASI International, offers the product of the same name as open source solution, in addition to a wide variety of add-ons and additional features. The program is based on the protocols SAML, OpenID Connect, and OAuth2 and can therefore be easily connected with a multiplicity of applications. Additional features such as two-factor-authentication (2FA), social login, identity management APIs or single sign-on for all services help to significantly improve security standards and user experience; even exceeding the limitations of the previously mentioned protocols.



OpenLDAP is an open source software solution for the today commonly practised centralised user management. OpenLDAP integrates the IETF-Standard LDAP (Lightweight Directory Access Protocol) and serves as framework for other implementations. OpenLDAP is also among the most powerful LDAP implementations. It can autonomously adjust to the performance levels of the used hardware, which increases the overall stability of the IT infrastructure. Further, OpenLDAP is a global community project; developers from around the globe are always working on improving the software further to accomplish the goal of a fully equipped Open Source LDAP Suite.

The US partner company of DAASI International, Symas Corporation offers the currently most resilient OpenLDAP version. Symas relies on established open source software, i.e. OpenSSL, Cyrus SASL, Heimdal Kerberos, or Berkley DB. Additionally, Symas offers with their database LMDB (Lightning Memory-Mapped Database) and the Hash method PBKDF2 state of the art technologies for better performance and higher security.



privacyIDEA is a system for multi-factor authentication (MFA) developed by NetKnights. The solution significantly increases the protection of particularly sensitive data by using more than one factor for authentication. The modular structure allows it to be individually modified to customer needs or extended as needed. Since the software is multi-client as well as multi-instance capable, it is suitable for organisations of all sizes. To communicate with other systems, privacyIDEA uses modern REST interfaces, which ensures a simple and seamless integration into already existing IT landscapes. privacyIDEA already supports the most common tokens for MFA. Since the programme is constantly developed further, new types of supported tokens and new procedures are added on a regular basis. This allows for a particularly individualised authentication flow suitable for any security level.

didmos (DAASI IdM with Open Source) is an IAM framework developed by DAASI International. Its biggest strength is its modular setup: It consists of a total of six highly customisable and well-matched complementary open source modules. Each of them can be expanded by adding plugin interfaces. Together they form a very efficient and comprehensive IAM system which is compliant with all common standards. At its heart is a metadirectory implemented with OpenLDAP. This way didmos can be customised according to any customer preference allows, no matter how specific it might be. Every component can be used separately, so that it is even possible to install single modules within a preexisting IT infrastructure.

## The IAM-Framework DIDMOS



LUI

The LDAP user interface, or LUI in short, forms the core of didmos and consists of three elements: a frontend component for administering users or for their self-administration, a backend for business logic and workflow engine, and a metadirectory as persistence layer. The workflow engine can, for instance, illustrate approval processes. The LUI back-end allows for an endless range of possibilities to add different modules, e.g. the Decision Point or other user-specific modules with their own API. As it is compliant with the international standard SCIMv2 for the distribution of identities within a cloud, LUI is universally applicable. As this module is completely customisable, even your corporate design can be included.



AUTHENTICATOR

Universally applicable authentication tool that will, thanks to its modular structure, meet any kind of individual requirement within a SSO environment. Due to the implemented protocols SAML and OpenID Connect, users can use local logins or external logins, i.e. use a social login in order to access a service. This way, users only need one account to access all services within a federation instead of setting up one account for each application. The possibility to include the open source software privacyIDEA, created by our partner NetKnights, ensures maximum data security with multi-factor authentication.



PWD SYNCHRONISER

Pwd Synchronizer allows the event-based synchronization of passwords from an Active Directory domain controller to other directories, such as OpenLDAP. The simple installation as a Windows service, the encrypted caching on the domain controller as well as the recording of the synchronization processes make Pwd Synchronizer an effective module for the integration of Active Directory.

ETL Flow stands for extract, transform, load, workflow; accordingly it extracts data from different sources, such as ERP-, SAP-, XML-, or SQL databases to synchronize them in a central metadirectory. The crucial processes are identifying data based on weighted attributes (duplicate detection), merging data into one coherent data set based on automatically generated attributes (data harmonization) as well as automated group formation.



ETL FLOW

Provisioner can transfer identity information into connected target systems in real time. Relevant changes are written as a JSON document into the queuing system RabbitMQ, from there a dedicated worker picks them up to install the changes in the target system. In order to do this, the worker relies on an ICF connector framework which allows the use of different interfaces, i.e. SOAP, REST, LDAP or SQL; or even individual connectors to integrate proprietary systems.

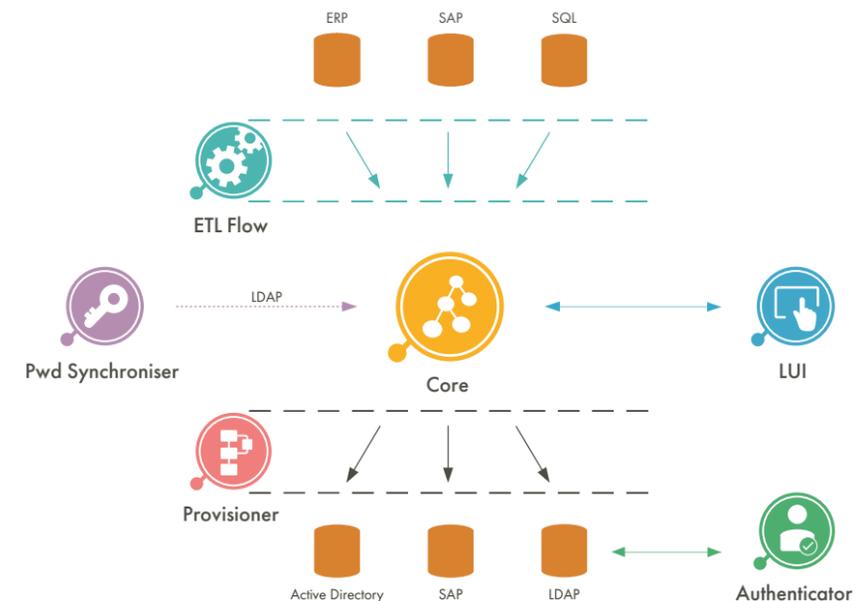


PROVISIONER

didmos Core facilitates the administration of objects, users, and groups. It is written in Python while relying on the Django framework. This allows developers to partially automatise writing app codes, and thus makes the development process a lot easier. Core provides SCIM-v2 endpoints as well as endpoints for the administration and query of access control information, as well as for the implementation of multilevel workflows, which have been realised with REST calls. A metadirectory in the form of an LDAP server acts as the data backend. Hence, didmos Core also functions as web service interface which can write in and read the LDAP server. This way it is also possible to implement business logic. As SCIM is much simpler to implement compared to LDAP, slim JavaScript based frontends can also access LDAP data with didmos Core.



CORE



## SINGLE SIGN-ON

Single Sign-On (SSO) describes authentication methods, which allow users to access different applications after logging in just once. This is made possible by outsourcing the authentication of the application to a central component – the identity provider (IdP).

DAASI International markets and supports three open source products, that have established themselves in the domain of SSO.

## Our Products SSO Technologies

### SHIBBOLETH

Shibboleth enables organisation-spanning (federated) authentication and authorisation for web applications. This solution is primarily used in federations of universities, authorities, and large companies and is based on the SAML (“Security Assertion Markup Language”) standard. Shibboleth offers the following two components:

1. The Shibboleth Identity Provider (IDP) achieves a centralized log-in, to which the services of the own organisation or of an entire federation can be connected.
2. The Shibboleth Service Provider (SP) is a tool to protect web applications, so they do not need to support the complex SAML protocol.

Upon request, DAASI International is happy to extend Shibboleth beyond its standard functionality, for example by using plugins to support a two-factor authentication, or even the new modules to support OpenID Connect, which were created by the community.



### SIMPLESAMLPHP

Much like Shibboleth, SimpleSAMLphp enables Single Sign-On based on the XML standard SAML. Out of the box, only a limited set of functions is available, but changes in configuration are much easier to implement. For this reason, SimpleSAMLphp is usually the best choice for “proof of concept”. Further, SimpleSAMLphp is entirely based on PHP, which helps the integration of PHP applications.

DAASI International happily assists you in adapting SimpleSAMLphp to your individual needs.

Originally, SimpleSAMLphp was developed by the Norwegian research cluster Uninett but now is supported by the big open source community.

### SATOSA

Satosa is an authentication tool much like Shibboleth. However, Satosa is actually a proxy, which operates between a service and an identity provider. This proxy consists of two components; each of them communicates either with the service or the identity provider and among each other. Satosa enables forwarding or modifying the communication between a service and an identity provider in a transparent manner. In doing so, attributes can be altered or requested from an additional database. Even the authentication protocol can be changed, which might be necessary to make communication possible. Satosa supports Single Sign-On exceeding the protocols OpenID Connect and SAML, without the user even noticing. Satosa is also the base for the didmos Authenticator by DAASI International.

## Experts on IAM

### OUR SERVICES

As a full-service provider, DAASI International accompanies you from the very first thought, over conceptualisation, development, training and migration into the product distribution, at every stage of your IAM project.



#### CONSULTING

DAASI International will advise you on your project. We evaluate the current status of your IT infrastructure, create a needs analysis as well as rough and detailed concepts, carry out feasibility studies and consult you on questions regarding IT security and project management.

#### INTEGRATION

Every new introduction of IT systems presents challenges. DAASI International will tackle these together with you. We integrate new applications into a wide variety of IT systems, restructure them as needed and optimally adapt them to your processes. We build federations or integrate third-party systems into existing federations.

#### SOFTWARE DEVELOPMENT

The standard solution does not fit your IT landscape or cannot fully meet your requirements? DAASI International develops customised plug-ins, overlays and connectors for existing products, creates functional specification documents and evaluates software libraries. Let us customise the software according to your wishes. We are happy to develop individual solutions for you.

#### TRAINING

As an ambassador for IAM with open source products, DAASI International is happy to pass on the knowledge. Our IAM experts train your staff on technologies such as LDAP, SAML, OIDC and OAuth2, as well as our open source solutions. For a purposeful transfer of knowledge, we adapt the presentation material to your individual needs and provide training material.

#### SUPPORT

After commissioning a new system, many questions arise in the initial phase and regular maintenance is essential for smooth operation. Therefore, DAASI International will be happy to assist you even after the project is completed. We provide dependable support for customised solutions and for all of our standard products. We take care of the software maintenance, answer your questions via help desk and provide with our managed services a comprehensive operating package including hosting, backup and monitoring for your life system in the form of software as a service.

## THE PROJECT

The main focus of the GESIS Institute for Social Sciences project was connect them to the DFN-AAI, as well as simultaneously establishing the institute's own authentication infrastructure.

## REQUIREMENTS

Besides introducing single sign-on, another goal was to make the institute's own resources accessible to users from other organizations, and to allow GESIS users to access resources provided by other DFN-AAI members.

## CHALLENGES

Enabling single sign-on for GESIS employees when using their applications and the connection to the DFN-AAI.



## OUR CONTRIBUTION

We set up a Shibboleth identity provider which pulls up the necessary information from an OpenLDAP-based directory. By connecting to an active directory component, user credentials are automatically entered into the directory, so users' passwords are synchronized directly.

## THE PROJECT

The Max Planck Institute for Solid State Research hired DAASI International to establish an Active Directory (AD) with the goal to continue using the existing OpenLDAP Server as the primary system for users and group memberships.

## REQUIREMENTS

Users must be able to change their passwords for applications and systems using the computer on their desk. For this purpose, a solution was designed which can synchronize passwords from the AD into the OpenLDAP directory.

## CHALLENGES

Up until then, this OpenLDAP server was connected to a Samba-server which was configured as NT4 domain controller. It was to be replaced with the Active Directory described above.



## OUR CONTRIBUTION

We used the didmos module ETL Flow configured in a way, to enable repeated complete synchronization of all data at any time in case of erroneous target data. For a permanent solution, didmos Provisioner was implemented for reading and transferring changes of user attributes within seconds from the OpenLDAP server into the AD, which ensures the system is constantly updated.

## THE PROJECT

As part of the Federal Government's IT investment program, the Information Technology Service Center was to migrate its Novel-software-based directory service infrastructure in the business area of the Federal Ministry of Traffic, Building & Urban Development to open source.

## REQUIREMENTS

In compliance with the given requirements, the solution ideally should be equipped with the same functionality as the to be replaced system, i.e. the option to grant permissions or password synchronisation. Preferably, the new system would also include single sign-on and an implementation of automated processes.

## CHALLENGES

The infrastructure consisted of a central metadirectory, into which data was synchronised from ADs of over sixty different decentralised offices as well as an additional directory. This complex infrastructure was to be migrated while the systems were online.

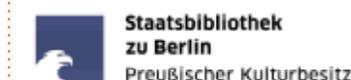
Federal Ministry of  
Traffic, Building &  
Urban Development

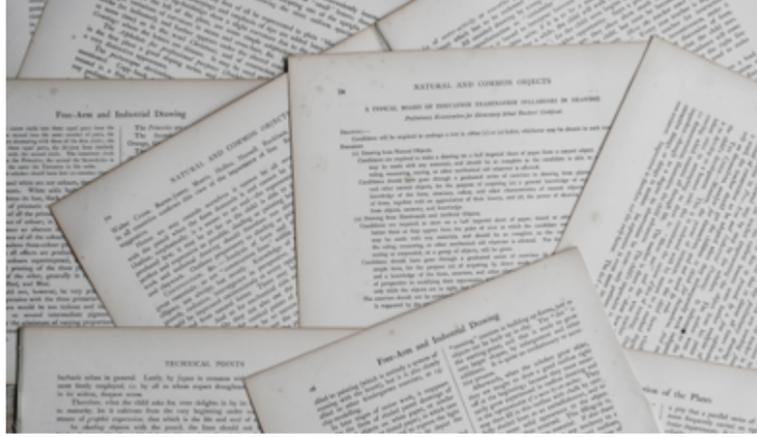
## OUR CONTRIBUTION

Our solution did not only match existing functionality of the old system (i.e. very flexible and complex permission management system as well as protected synchronisation of passwords), but also added new features, such as federated single sign-on and an interactive approval workflow to issue access permissions.

## Our Customers

## FURTHER REFERENCES





## The Scholarly Future

# DIGITAL HUMANITIES

The term digital humanities refers to the usage of algorithms to gain knowledge in the research field of humanities. Methods from information technology are used, for example, to gain new insights in linguistics, archaeology or history and cultural studies and to answer innovative research questions. The IT components used include but are not limited to long-term archiving, collaborative work, visualization, statistics, complex search algorithms, and text mining. Systematic use and analysis of digital resources, as well as global networking of scholars enable novel forms of collaboration and working methods. Der oft synonym verwendete Begriff eHumanities betont dabei eher die infrastrukturellen Aspekte.

DAASI International offers various tools for research and teaching which seek to support scholars and teachers in their everyday work.

## Get more Insights with DH-TOOLS

### FELDPARTITUR

Feldpartitur is a digital tool for video and film analysis, which is used mostly in social research thus far. This software enables manual editing of text-based information (i.e. descriptions), keywords, transcripts, or visual symbols for short sequences of film material – similar to a musical score. The tool was created by Christine Moritz, PhD. and within the means of her own research. The software is sold by her company of the same name, Feldpartitur GmbH. DAASI International offers additional technical services, such as setup, development, and support services for the software.

### CONEDAKOR

ConedaKOR is an innovative database especially useful to semantically annotate data, especially images, within a network structure. Using so called graph database technology to manage information more easily, faster and with more details than before. ConedaKOR offers many innovative functions which lighten information management immensely. For many years already, academic institutions all around the globe trust ConedaKOR with their media management.

DAASI International offers ConedaKOR in form of software as a service, so that scholars can concentrate on their actual work with the tool instead of having to take care of operational questions.

### HYPERIMAGE

The virtual research environment HyperImage enables linking of annotations and meta data with images, image details, and text. This way, any kind of data reference can be made without textual connection. Hence, the references are kind of “pre-lingual” pictorial footnotes, applying the concept of hypertext to images. The project was initiated by Prof. Martin Warnke of Leuphana University of Lüneberg, Germany. DAASI International supports the Leuphana University in their efforts to continuously develop and improve HyperImage.



## SERVICES around Digital Humanities

DAASI International decided to take on the task of supporting scholars who use DH-methods in order to encourage developers and users of DH-tools to continue their work. As one of the most important corporate IT-providers for digital humanities in Europe, DAASI International offers a diverse service portfolio for technical as well as project support.

### TECHNICAL SERVICES

We develop and implement innovative AAls (Authentication and Authorisation Infrastructures) as well as databases and visualisation tools, and we design sustainable operating models.

### PROJECT SERVICES

Upon request we will support you with our know-how in project management and help to compile a research proposal, or to search for new commercial cooperation partners for your research project.

### DARIAH-DE

DARIAH-DE is the German partition of the European project DARIAH (Digital Research Infrastructure for the Arts and Humanities). The goal of the project is among others, to provide a virtual research environment for scholars in order to develop new digital research methods. DARIAH-DE supports the setup through consultation, joining activities that have been separate before, and with generic services of the technical infrastructure. Existing digital resources as well as applications and findings are matched-up regardless of their respective discipline or research proposal, and used together. Unsere DH-Projekte Besides the AAI setup and operation of the AAI, the implementation of new technologies, and the development of sustainable operational models, we also contributed to the conceptualization and setup of the DARIAH-Storage-Infrastructure.

### TEXTGRID

TextGrid is a virtual research environment for all text-based disciplines of the humanities. It serves as a tool for scholarly editing, and offers modules for methodological, collaborative text data processing and comes with standardised interfaces for publishing software, research data and tools. The idea behind TextGrid is the vision of a digital ecosystem for the humanities in which a free exchange and specific adaption of individual components according to the specific needs of each expert community is possible. Among other services, DAASI International especially helped to set up the user management as well as the rights and license management of TextGrid. Additionally, we aided the development of the workflow user interface and the data repository including the AAI. Now, TextGrid is one of the offered tools by DARIAH-DE.

## PROJECTS in the Field of Digital Humanities

### DARIAHDOCS

DARIAHdocs is a service offered by DAASI International for the European scholarly research infrastructure DARIAH-EU. Using this service, scholars can share documents with their peers to simultaneously work on them without having to expose the content to a cloud provider DARIAH-docs for scholarly collaboration is based on Collabora, which is a commercially supported version of the open source product Libre-Office-Online. DAASI International hosts and operates DARIAH-docs in compliance with German data privacy laws to ensure the security of sensitive research data.



As spin-off of research projects on X.500 and LDAP, funded by the German Federal Ministry of Education and Research, DAASI International has been involved in research right from the beginning and maintains this relationship until today. Even as a private company, it continues to participate in innovative research projects with its own research department.

DAASI International does not earn any money with the participation in research. Nonetheless, the time we spend working on state of the art technologies and to be in touch with the brightest minds in the field of Authentication and Authorisation Infrastructures (AAI) research is invaluable to us. The resulting experience, know-how and contacts drive the company forward and are therefore an evident asset.

## We are highly involved in **RESEARCH**

DAASI International participated to a great extent in projects within the framework of the D-Grid initiative as well as other projects in the fields of research infrastructure and Digital Humanities. Particularly important projects worth mentioning are the BMBF-funded projects TextGrid and DARIAH, in which DAASI International participated in all three phases and, above all, was responsible for setting up an internationally compatible AAI for humanities research environments and research infrastructures. In DARIAH, DAASI International also contributed to the efforts to promote sustainability and helped to set up and built the so-called DARIAH eInfrastructure Service Unit (DeISU).

Of particular importance was the involvement in both phases of the EU AARC project, which explored and specified blueprints for modern AAI that most of the research infrastructures, including those exposed to CERN, adhere to. The knowledge gained in AARC has already been successfully used by DAASI International in several large projects.

After all, DAASI International does own fundamental research on AAI and federations and subsequently monitors and maintains them for universities – an excellent way for us to scout for young talents for our company.



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