

# Challenges of Supporting Education and Research to Make Use of eduGAIN

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## Keywords

eduGAIN, federated identity management, collaboration, research

## 1. Summary

eduGAIN, a service developed within the EC-Funded GÉANT Project, interconnects SAML2-based identity federations around the world, simplifying access to services and resources for an international research and education community. In this technical presentation, a short overview of eduGAIN is provided along with a summary of the work that the GÉANT Project has done for and together with various research communities. The benefits of joining eduGAIN for universities and researchers are outlined and a set of challenges that universities and campus IT need to address in order to allow their researchers to make better use of eduGAIN is discussed, along with suggestions and best practices for how to address them.

## 2. eduGAIN introduction

An (identity) federation is a group of organizations that agree on a set of common standards, policies and practices to issue and accept identity assertions. Identity assertions are issued by an Identity Provider (IdP) that authenticates a user (e.g. by password). The Identity assertions then are consumed by Service Provider (SP), which uses the attributes of that assertion to perform access control and to provide the user attributes to the web applications it protects.

eduGAIN's main purpose, as an interfederation service, is to interconnect academic identity federations around the world, simplifying access to content, services and resources for the global research and education community. eduGAIN thus enables the trustworthy exchange of information related to identity, authentication and authorization (AAI) by coordinating the federations' technical infrastructures and providing a policy framework that controls this information exchange.

More than 35 national federations currently participate in eduGAIN. This amounts to more than 1500 Identity Providers worldwide allowing their users federated access to more than 1000 Service Providers offering their services in eduGAIN.

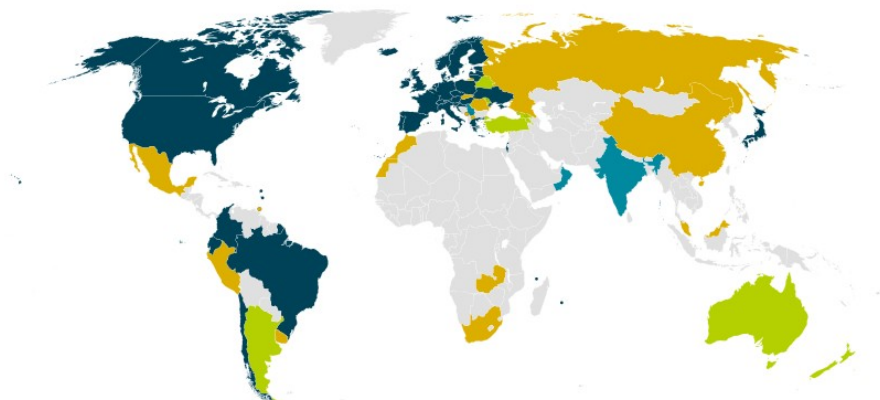


Figure 1: Map of national federations participating in eduGAIN

### 3. Benefits of joining eduGAIN

Through eduGAIN, universities and their researchers and students can access a great range of services, operated in the member federations in a collaborative environment. Researchers are able to use their local university accounts to access any service connected to eduGAIN that might otherwise be unavailable and without the need to create and manage additional, service specific accounts. Research communities and their services gain exposure to a wide international academic audience while avoiding the cost of user management and user support.

### 4. Challenges for eduGAIN participants

While eduGAIN offers considerable benefits both for researchers and for services addressed to them, these benefits come associated with a certain cost and additional challenges. Operational cost burdens mainly universities since interfederation adds an extra complexity layer to their existing identity management solutions. Participation in eduGAIN also unveils new administration and policy dilemmas for campus IT. They are now responsible for ensuring that the privacy of their users is respected while at the same time releasing enough information for them to access services in meaningful manner. The presentation offers recommendations, stemming from the experience of the GÉANT Project, on how campus IT can mitigate some of these issues in order to better support their researchers getting access to eduGAIN enabled services.

### 5. eduGAIN collaboration with research communities

Research communities, driven by their need for fine-grained access management for research data, have produced a paper entitled 'Federated Identity Management (FIM) for Research Collaborations' in which they detail their requirements for federated identity management identify issues that pose challenges for the wider adoption of FIM technologies offered by national federations and by eduGAIN. The GÉANT Project, addressing these requirements and issues, has worked closely with a number of research communities with the end goal of assisting them to satisfy their use cases. Namely, it has worked closely with CERN, DARIAH, ELIXIR, UMBRELLA, ESA and other research communities in order to allow them to:

- Enable researchers to access data sets that cannot be publicly disseminated using a federated identity model that ensures sufficiently reliable authentication and proper authorization.
- Expose their services to international and cross-organization groups of researchers via eduGAIN, offering proper authentication and authorization in user friendly way and at the same time taking away the burden of a complex user management infrastructure
- Simplify the access to their web-based service offerings for researchers by allowing them to use their existing - now federated- university credentials instead of obliging them to create service specific accounts.

The presentation provides an insight of the work that has been completed in collaboration with some of the aforementioned research communities, of the key outcomes and conclusions and explores how these are used to structure guidelines and best practices for the benefit of the rest of the research community.

### 6. REFERENCES

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### 7. Author Biography

**Ioannis Kakavas** holds a degree in Electrical and Computer Engineering from National Technical University of Athens and a M.Sc. in Information and Communication Systems Security from the Royal Institute of Technology (KTH) in Sweden. He has been with GRNET S.A. since 2014, working with Identity and Access Management, Identity Federation and Security. He is a member of the team that operates the national identity federation and the security officer for GRNET. Ioannis participates in

the Geant Project, and specifically in the Enabling Users task, collaborating with international user communities to assist them to increase their usage of AAI infrastructures.