User flows

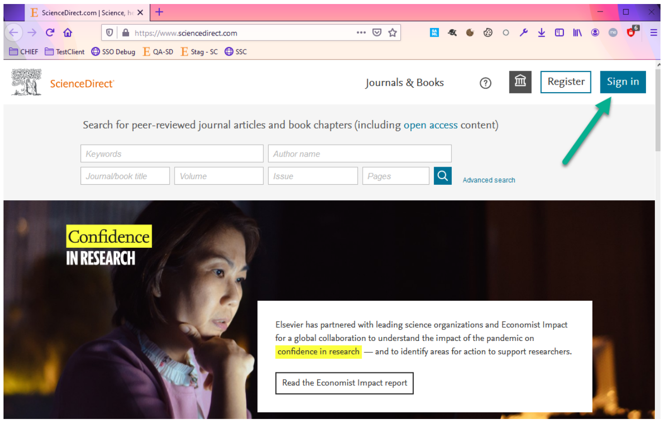
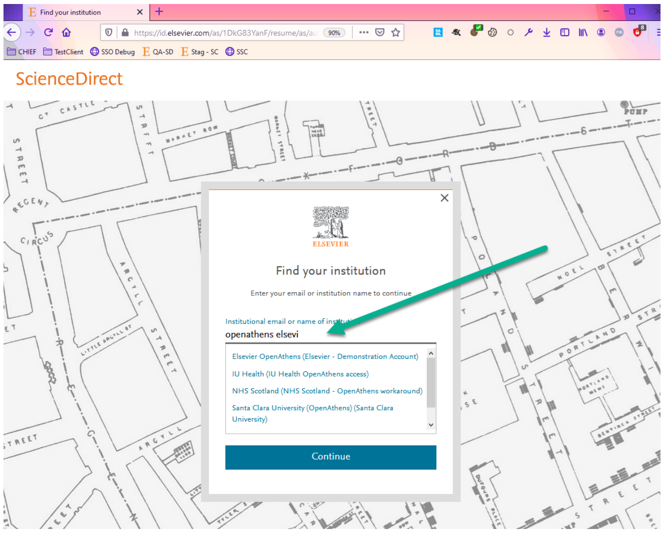
A user will want to visit a resource because they are researching a subject and want to read an article which is available at the resource. They will visit a resource by opening a browser and typing a resource name in address bar, or they'll use a bookmark. The user could also have been sent a link to the article so they'll click a link in the email, or they will click a link in a paper they are reading, either in saved PDF or online.

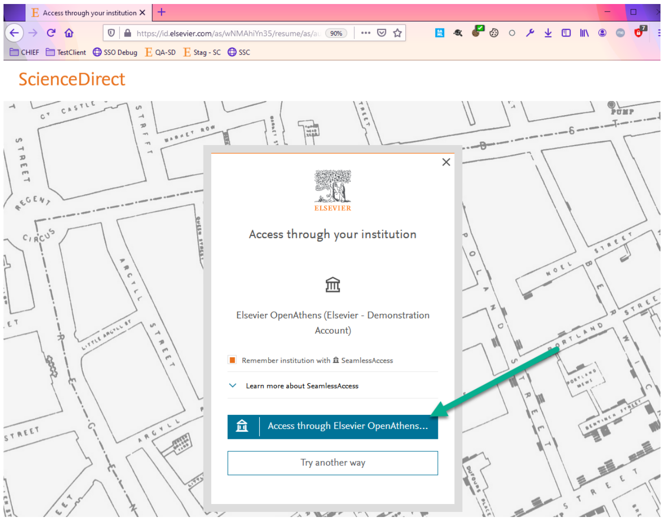
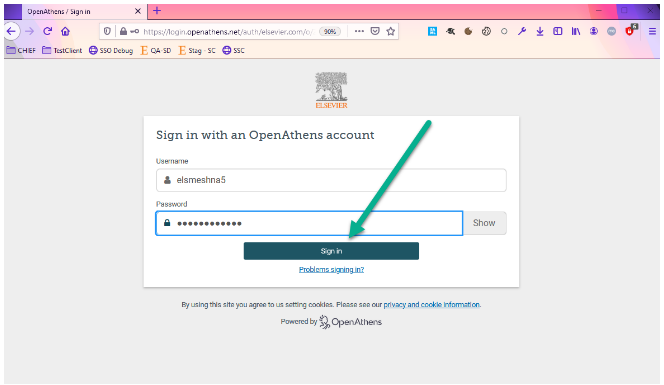
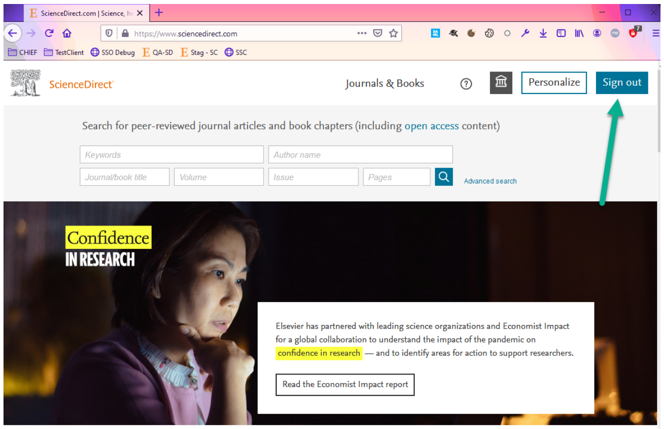
The user may also be researching a topic and using a search engine which contains articles from various resources, or they may use an application that specialises in a topic of their research, which is also integrated with other applications.

The user may also have been sent an invite to collaborate with a research group at another institution and they will share a wiki or a project or acess to some applications for a given period of time.

This is by no means an exhaustive list of use cases; what they have in common, for our purposes, is that the resource needs to know some level of user's identity in order to give the user access to what is due to them, that this identity is being passed from an IdP to an SP via a previously established trust infrastructure which also has user's interest in mind and operates within the law.

1 - SAML through WAYF discovery mechanism

Steps	Screen	Additional notes
1. A user visits a resource 2. The user clicks CTA that will take them to authn flow	 ScienceDirect.com | Science, he CHIEF TestClient SSO Debug QA-SD Stag - SC SSC ScienceDirect Journals & Books Register Sign in Keywords Author name Journal/book title Volume Issue Pages Advanced search Confidence IN RESEARCH Read the Economist Impact report https://www.sciencedirect.com Search for peer-reviewed journal articles and book chapters (including open access content) Elsevier has partnered with leading science organizations and Economist Impact for a global collaboration to understand the impact of the pandemic on confidence in research — and to identify areas for action to support researchers.	- the resource may be on the same domain as SP - the resource doesn't have to be on the same domain as SP - an SP can be a proxy for multiple resources - there are a lot of different SPs with a large number of resources behind them, with different attribute requirements and permissions, with a variety of UX
3. The user will search for their institution and select one from the results	 Find your institution 90% CHIEF TestClient SSO Debug QA-SD Stag - SC SSC ScienceDirect ELSEVIER Continue https://id.elsevier.com/as/1DkG83YanF/resume/as/au Find your institution Enter your email or institution name to continue Institutional email or name of institution: openathens elsevi Elsevier OpenAthens (Elsevier - Demonstration Account) IU Health (IU Health OpenAthens access) NHS Scotland (NHS Scotland - OpenAthens workaround) Santa Clara University (OpenAthens) (Santa Clara University)	- the user must find their institution - for some institutions that's simple, for other it is not (similar names, multiple IdPs, multiple languages) - the user may make the right choice from the start, or not, and they will have to return and make another choice - there's a variety of WAYF discovery mechanisms, some SPs build their own, others use the federation WAYF

5. The user will confirm institution, if needed	 Access through your institution https://id.elsevier.com/as/wNMAhiYn35/resume/as/a ScienceDirect ELSEVIER Access through your institution Elsevier OpenAthens (Elsevier - Demonstration Account) Remember institution with SeamlessAccess Learn more about SeamlessAccess Access through Elsevier OpenAthens... Try another way	• this is where SP sends a SAML request to the IdP • the SP and IdP have already established a trust partnership before, either through RE federation or bilaterally
6. The user is taken to IdP where: • they are asked to authenticate if no active session in browser; or • they are not asked if IdP maintains a session for them	 OpenAthens / Sign in https://login.openathens.net/auth/elsevier.com/o ELSEVIER Sign in with an OpenAthens account Username elsmeshna5 Password Show Sign in Problems signing in? Powered by OpenAthens By using this site you agree to us setting cookies. Please see our privacy and cookie information.	• this is the only screen that is consistent across the ecosystem for a user • it is the user's trusted point • the IdP / library manage attribute release, including PII • the library respects PII
7. The user comes back to resource and is authenticated	 ScienceDirect.com | Science, h https://www.sciencedirect.com ScienceDirect Journals & Books Personalize Sign out Keywords Author name Journal/book title Volume Issue Pages Advanced search Confidence IN RESEARCH Read the Economist Impact report Search for peer-reviewed journal articles and book chapters (including open access content) Elsevier has partnered with leading science organizations and Economist Impact for a global collaboration to understand the impact of the pandemic on confidence in research — and to identify areas for action to support researchers.	• an SP can be the only authentication at the resource, or • there can also be a number of different points between it and the resource, managing various authn and/or authz portions • the user doesn't understand this mechanism • the user has no idea what does SP represent, this knowledge is in the hands of IdP operator

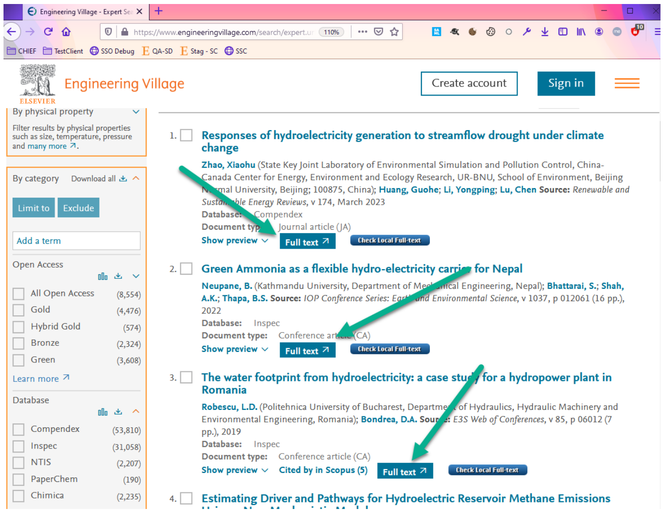
2 - SAML without discovery via an SP or IdP initiated session

The principle of exchange of SAML authn request and response is the same, but the user is spared a discovery journey, sent directly to the IdP and then forwarded to the intended SP.

Some more info about WAYFless journey; the page is Elsevier specific but the mechanism is not: https://service.elsevier.com/app/answers/detail/a_id/28537/supporthub/elsevieraccess/

Steps	Screen	Additional notes

1. A user starts a session at **resource A**,
2. The user finds an article and clicks on a link



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□ NTIS	(2,207)
□ PaperChem	(190)
□ Chimica	(2,235)

1. □ **Responses of hydroelectricity generation to streamflow drought under climate change**
Zhao, Xiaohu (State Key Joint Laboratory of Environmental Simulation and Pollution Control, China-Canada Center for Energy, Environment and Ecology Research, UR-BNU, School of Environment, Beijing Normal University, Beijing; 100875, China); **Huang, Guohe**; **Li, Yongping**; **Lu, Chen** **Source:** *Renewable and Sustainable Energy Reviews*, v 174, March 2023
Database: Compendex
Document type: Journal article (JA)
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2. □ **Green Ammonia as a flexible hydro-electricity carrier for Nepal**
Neupane, B. (Kathmandu University, Department of Mechanical Engineering, Nepal); **Bhattarai, S.**; **Shah, A.K.**; **Thapa, B.S.** **Source:** *IOP Conference Series: Earth and Environmental Science*, v 1037, p 012061 (16 pp.), 2022
Database: Inspec
Document type: Conference article (CA)
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3. □ **The water footprint from hydroelectricity: a case study for a hydropower plant in Romania**
Robescu, L.D. (Politehnica University of Bucharest, Department of Hydraulics, Hydraulic Machinery and Environmental Engineering, Romania); **Bondrea, D.A.** **Source:** *E3S Web of Conferences*, v 85, p 06012 (7 pp.), 2019
Database: Inspec
Document type: Conference article (CA)
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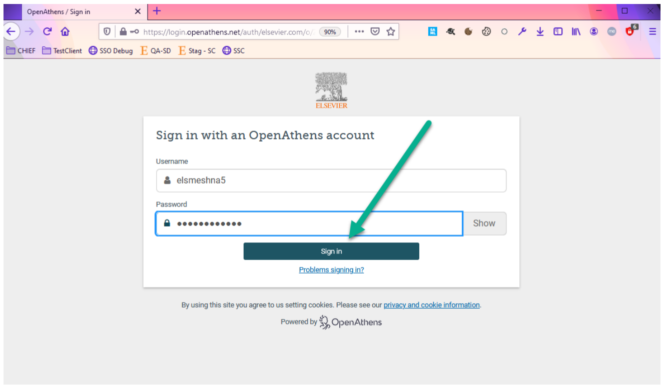
4. □ **Estimating Driver and Pathways for Hydroelectric Reservoir Methane Emissions**

- resource A doesn't need to be on the same domain as IdP nor SP nor resource B
- these links can be set up as WAYFless URLs
- these links can be set up as a redirector (such as OpenAthens redirector) and generate WAYFLess URLs
- they can be set up as IdP initited links (if SP supports that)
- the links exist on library managed pages and integrated search discovery engines; they can be set up anywhere
- resource A can also just be an IdP such as Azure or Okta

3. The user is taken to IdP where:

- they are asked to authenticate if no active session in browser; or
- they are not asked if IdP maintains a session for them



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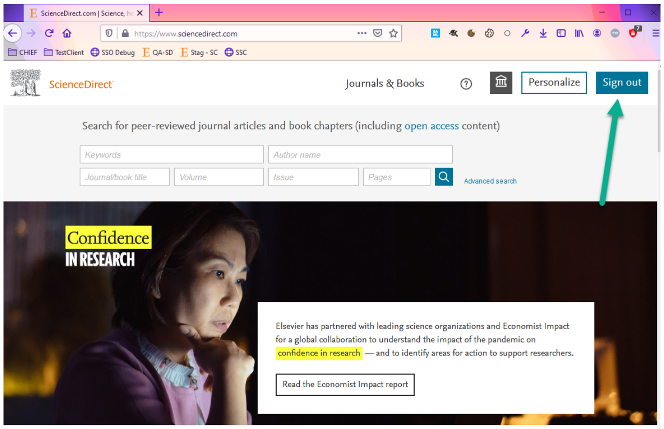
- this is the only screen that is consistent across the ecosystem for a user
- it is the user's trusted point
- the IdP / library manage attribute release, including PII
- the library respects PII

4. The user lands on **resource B** and is authenticated



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Elsevier has partnered with leading science organizations and Economist Impact for a global collaboration to understand the impact of the pandemic on confidence in research — and to identify areas for action to support researchers.

Read the Economist Impact report

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