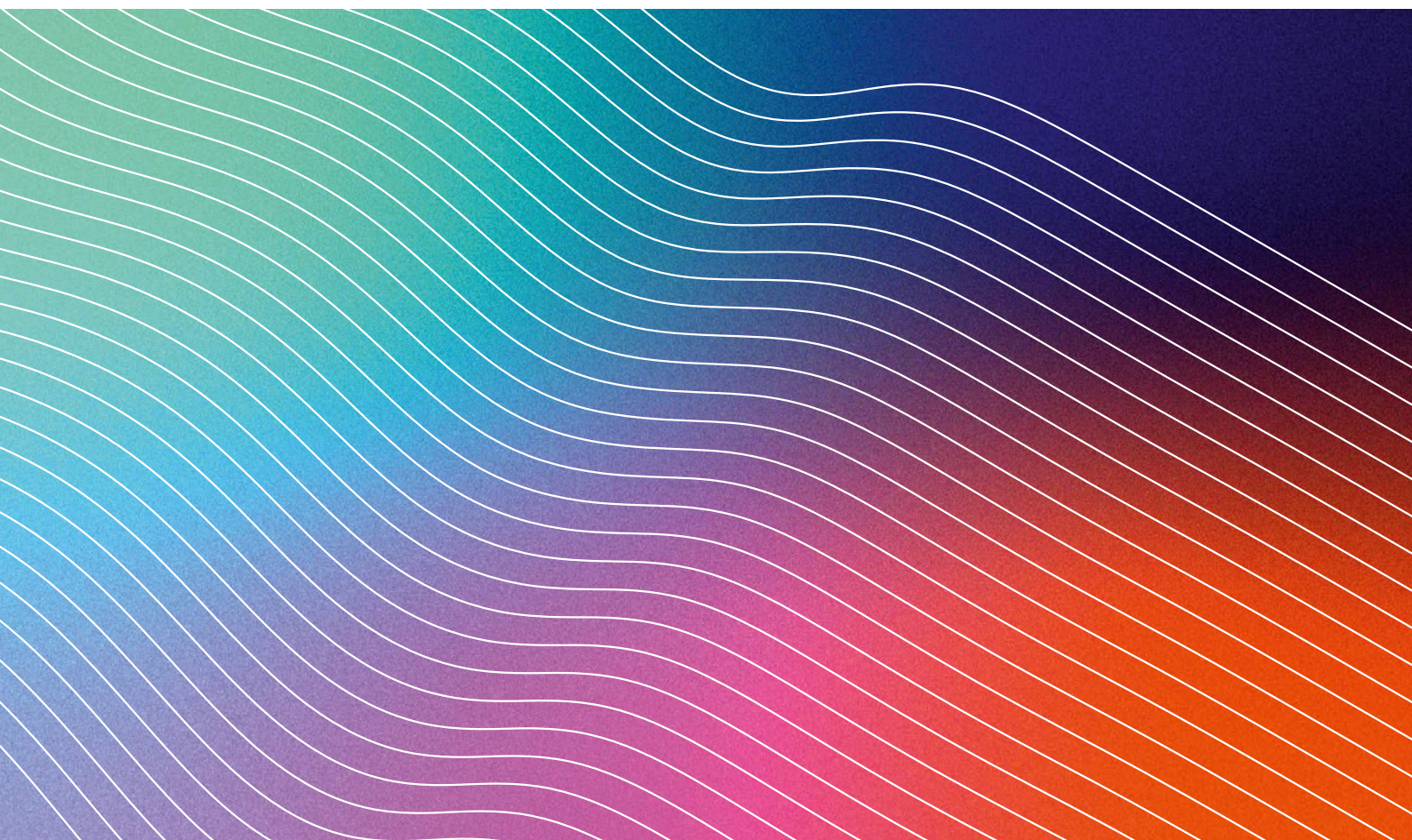
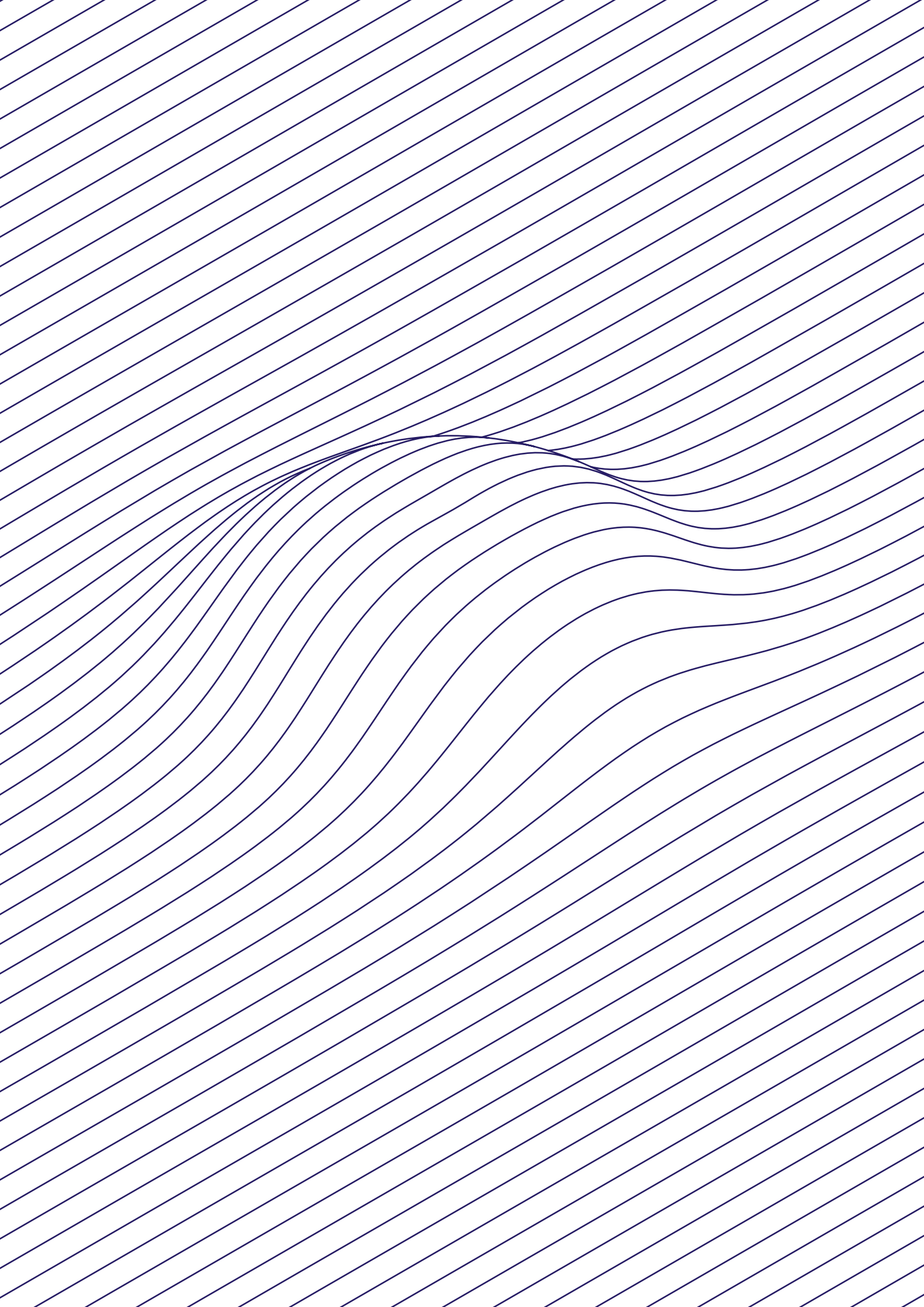


# Activity report 2022





# Editorial

by Nathalie Fargier,  
director of the CCSD

2022 saw the launch of the HALiance research excellence facility. This project is the outcome of in-depth thinking about the future of HAL and will make the archive truly exemplary in its mission of sharing and archiving scientific publications in the service of research. The project is ambitious, in line with the expectations and needs of our users: technical reliability and infrastructure sizing, automation of alignment with reference data, regulation of metadata flows, coordination of publications and data, and targeted collection of publications in addition to self-archiving. After a first year focused on carrying out studies and launching contracts, the operational phase of the HALiance project will begin in 2023.

We also continued the major task of modernising HAL interfaces with the deployment of new models, simplifying the deposit process, and not forgetting the large-scale integration of ORCID and alignment with the ROR.

HAL is not merely an information system, it is the meeting of various communities of users made up of scientists, librarians and institutions who participate

collectively in its enrichment and development. The HAL Partners' Assembly and the CCSD Steering committee and Orientation committee have highlighted this originality, a real asset for French higher education and research, in a common policy declaration. The aim is to emphasise the vitality of the existing ecosystem and the role of the governance bodies and the CCSD in leading it. The final piece in the puzzle came with the inauguration of the international scientific council. Against this background, the CCSD 2022-2027 road map has been updated and its 2023 Action plan published, to provide transparency to all partners and users.

Finally, the CCSD has initiated a process to assess its environmental impact. This is an essential step given the increasing success of its digital platforms: it has passed the milestone of one million documents in HAL and 100 million consultations, 12,000 conferences organised with Sciencesconf and 10,000 articles submitted to Episciences.

**Nathalie Fargier,**  
Director

March 2023

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# The CCSD

The CCSD published an updated road map (2022-2027) in July. It incorporates the dynamics created by the National Open Science Plans and takes into account the launch of the HALiance research excellence facility. The main goals are to anchor the CCSD within the Open Science ecosystem, both nationally and internationally; increase use of HAL, Sciencesconf and Episciences; and ensure the sustainability of these three platforms and their service offer.

## Missions

---

Serving researchers and their institutions (universities, schools and research organisations), the CCSD's main mission is to provide tools to facilitate all forms of direct scientific communication and to support the communities that use them.

It is a major player in national and institutional open science policies, including the National Open Science Plans (PNSOs), which aim to broaden open access to publications and to structure and open up research data.

The CCSD develops and administers the three platforms it has created for the archiving, distribution and promotion of scientific publications and data:

- HAL, the multidisciplinary open archive of French research, and its derivative portals;
- Episciences, for journal publication and editorial innovation;
- Sciencesconf, dedicated to the organisation of scientific events.

These platforms allow researchers and their institutions to make their results

visible, discoverable, usable and accessible in the long term and thus to take control of the scientific results process.

The CCSD has two main missions. The first is contributing to the work of developing and creating the repository systems needed to identify French scientific results. The second is participating in all initiatives in France and abroad, particularly in Europe, concerning open archives and open science, which will improve the quality of the service provided to scientific communities and the visibility of their results.

# Governance

## Setting up of the International scientific council

The first meeting of the International scientific council in May finalised the establishment of the CCSD's governance. This committee is made up of 11 French and international experts in the fields of Open Science, publishing,

open archives and research data. Its missions are to formulate opinions and recommendations, advise on partnership prospects and propose initiatives and areas of collaboration in Europe and internationally.

## A policy statement to affirm the collaboration around HAL

In June, the Steering committee, the Orientation committee and the Partners' Assembly released a statement which emphasizes the shared construction of the archive and affirms the partnership of the CCSD and the institutions with a HAL portal in this collaboration.

## Membership and calendar of the governance bodies

### Steering committee

CNRS, INRAE, Inria, MESR, France Universités, director of the CCSD.

### International scientific council

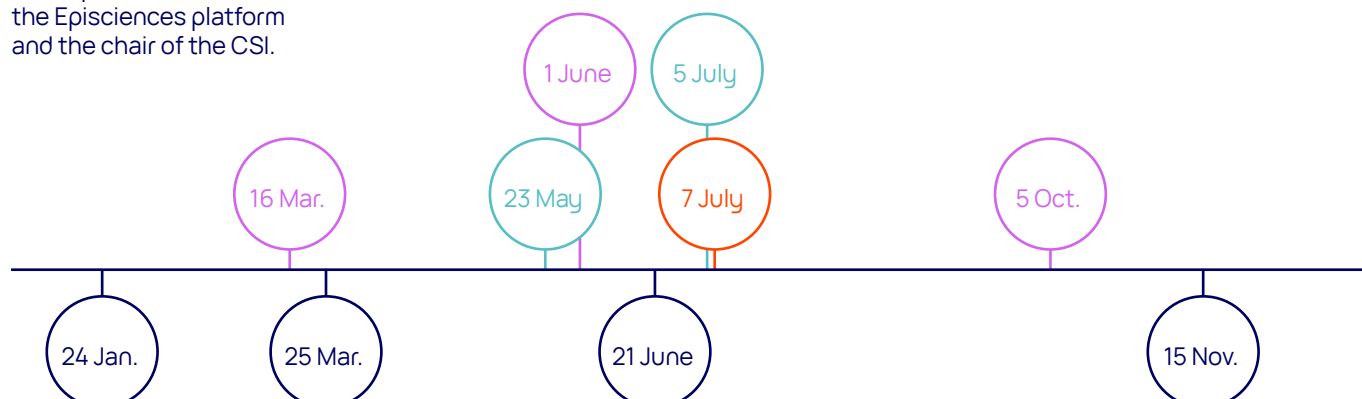
11 experts in the field of scientific publishing and open archives.

### Orientation committee

Members of the Steering committee plus 5 elected representatives from the Partners' Assembly, one representative from the Episciences platform and the chair of the CSI.

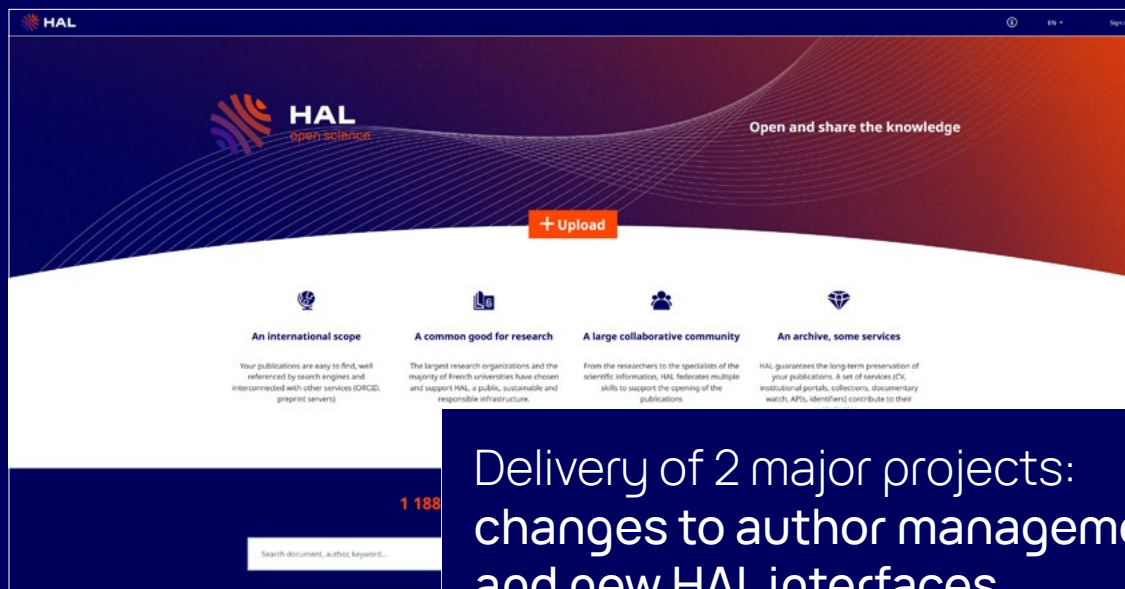
### Partners' Assembly

One representative from each institution with a HAL portal.



# Significant events in 2022

HAL is being modernised, the CCSD is developing its links with research communities, and collaborations with international Open Science organisations are bearing fruit.



## Delivery of 2 major projects: changes to author management and new HAL interfaces

HAL saw two major changes in 2022: a new data model for author management to optimise the use of researchers' identifiers (ORCID, IdRef), and the redesign of user interfaces to make them more intuitive. These two projects, which started in 2019 and whose benefits were

eagerly awaited, have required a lot of input from the team. To facilitate adaptation to the changes, particular attention was paid to user support, with the organisation of webinars, the development of tutorials and the creation of a training course.





## Creation of the HAL Ambassadors programme

The HAL Ambassadors programme provides the CCSD with a new tool to strengthen discussions between the scientific communities and HAL and to promote the practice of Open Science.

Nine young researchers from various disciplines, all committed to Open

Science and advanced users of open archives and HAL, have agreed to join this new programme and to engage with the CCSD and its team. In particular, they helped to test the new HAL interfaces in autumn 2022 and the training course on HAL deposits designed for researchers.

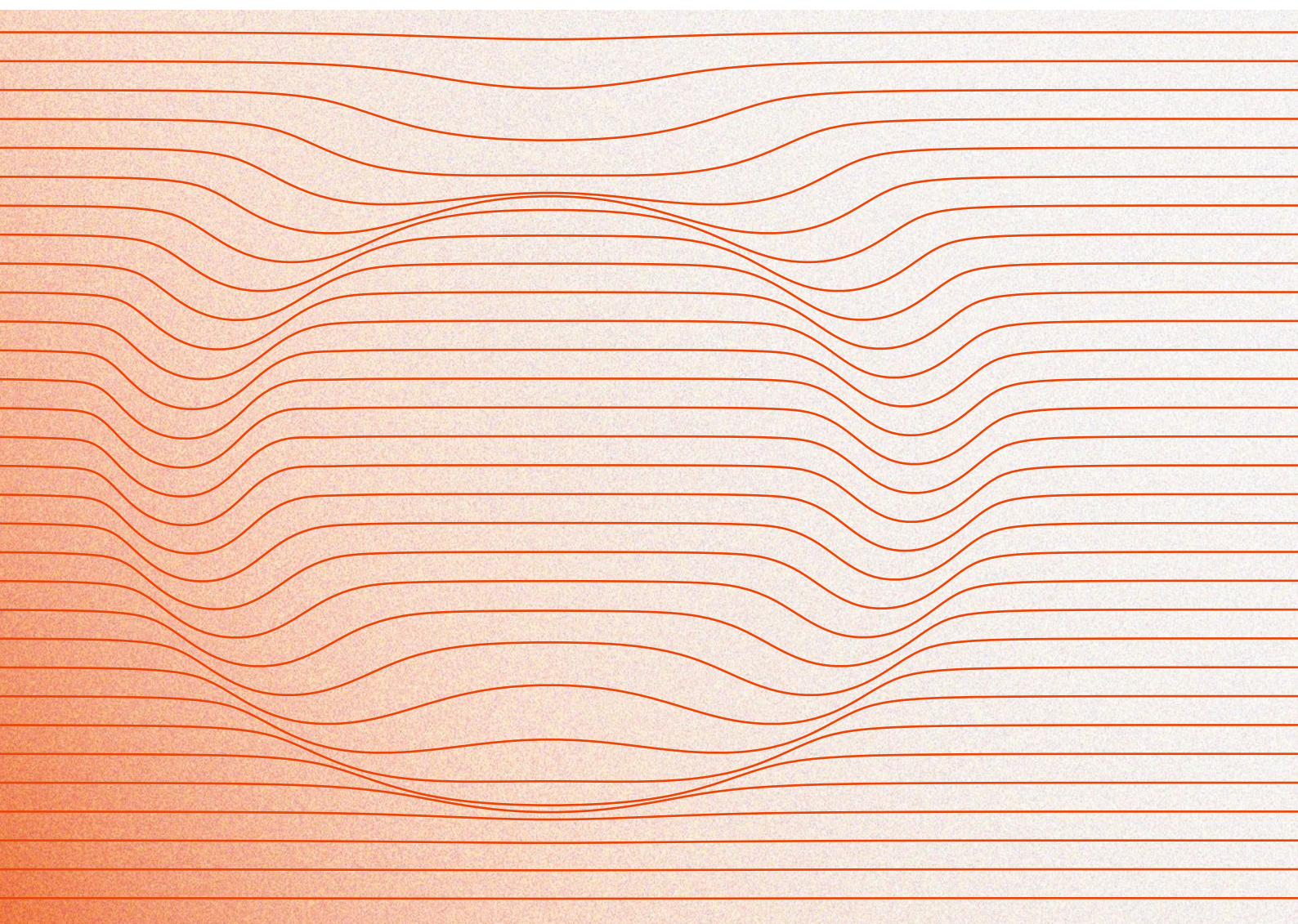
## Collaboration with COAR on a preprint directory

By listing preprint servers in a single database, the Directory of Open Access Preprint Repositories aims to help researchers select the platform best suited to their needs and to have an overview of the preprint ecosystem.

The directory is based on the results of a project led by the Open Science Committee's Pre-publication Platforms group, and is supported by the French Ministry of Higher Education and Research (MESR).

Launched in October, it is the result of a collaboration between the Confederation of Open Access Repositories (COAR)—which hosts the database—and the CCSD which curates it.

# Scientific open archive



# Change of HAL's user interface

The new HAL interfaces were delivered in November. The first phase of the user interface redesign project, which started in 2019, focused on the researcher's journey and aimed to ensure a more intuitive and natural interaction with the services. The change is immediately obvious on the home page: it makes it easier to consult the various disciplines and the search form takes centre stage. Among the many new features, it is no longer necessary to download a file to read its content: it is displayed directly in the record consultation window. Particular attention has been paid to the deposit form: navigating the form has been simplified, with more sections

allowing easier location of details such as document identifiers or funding.

The CCSD has chosen to leave both user interfaces available temporarily, with the possibility of switching between them, to avoid disrupting habits during deposit campaigns for activity reports.

To prepare the necessary change support for users, the CCSD has been running a trial training course devoted to deposits since the spring. In addition to traditional webinars, which have been offered for nearly three years, several types of material have been developed

(video tutorials, practical guides) and made available on an e-learning platform.

The new interfaces also have an impact on the portal websites: a migration site was made available before the summer so that the portal teams could check and adjust the websites, and sometimes completely redesign them. More than 60 individual interviews (1 hour on average) with members of the portal teams were organised and carried out, as well as web design work on about a hundred sites to adapt them to the new interfaces.

## Simplification of hal.science URLs

From the end of 2022, web addresses ending *archives-ouvertes.fr* are gradually being replaced by *hal.science*. The CCSD's aim is to shorten the URLs and improve the international visibility of the platform and its subsets (portals, collections, CVs).

The preparatory work consisted in setting up redirections, applying corrections to the URLs in the portals, while managing the impact on referencing, particularly in Google Scholar.

By December 2022, the change had been effected for HAL-SHS, TEL, MediHAL and CEL. Replacement of the URLs is continuing in 2023 for the portals.



## Incorporation of the new document typology

Delivered with the new interfaces, the new document typology, proposed in 2021 by a dedicated working group, has also been available since November. In particular, it aims to adapt HAL to new practices (Data Management Plan, Data Paper) and to clarify the types of document (editorship of collective works is no longer offered).

Here again, prior work was carried out to process existing data (correspondence rules, data migration for document types that have changed). INRAE also took the opportunity to simplify its list of specific metadata associated with document types, inherited from the migration of Prodnra. The portal team requested the support of the CCSD for data preparation and processing.

137,448  
fulltext  
documents

were deposited in 2022

Setting up a national  
licence agreement  
with the publisher  
Elsevier

7,213 deposits were  
added to existing  
records of articles  
published in 2020  
via Accepted Author  
Manuscripts (AAMs)  
provided by Elsevier.  
A total of 15,301 PDFs  
have been imported.

## Software source code: a new route for HAL deposits

The deposit of software source code has been operational since 2018. To adapt HAL to practice in the communities, a new deposit method has been developed based on the Software Heritage identifier (SWHID). If the source code has been harvested by Software Heritage and already has an SWHID identifier, there is no need to deposit the files in HAL. Users can simply enter the identifier and complete their deposit. Tested on the HAL-Inria portal in 2022, SWHID deposit was deployed in production in January 2023.

## EOSC-Pillar project: a prototype for interoperability between HAL and Nakala

Launched in 2019, the EOSC-Pillar project aims to coordinate and harmonise national and theme-based initiatives to support the European Open Science Cloud (EOSC). The CCSD, in collaboration with Huma-Num, is contributing to WP6, which is collecting use cases to improve the use of data in the context of FAIR.

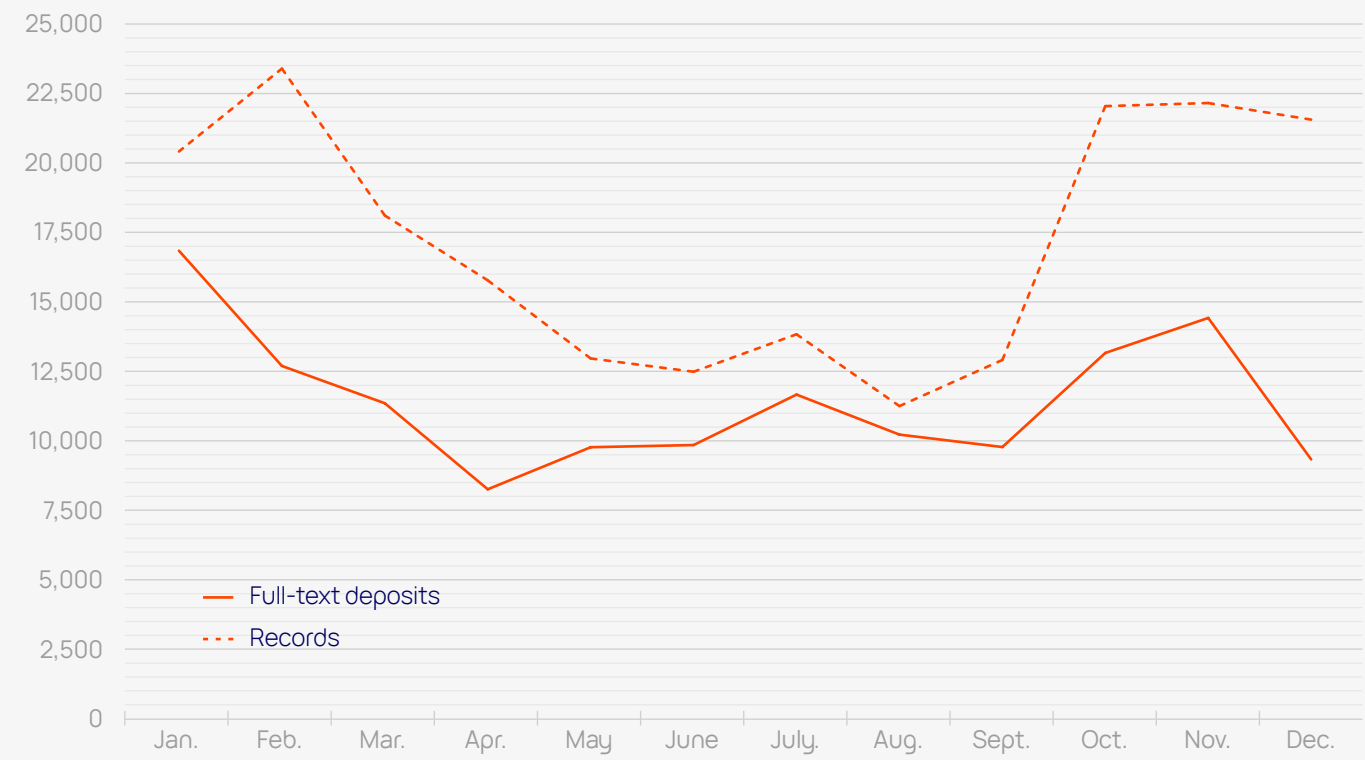
The main strong point of the project is the creation of a prototype (Proof of Concept or PoC) between the HAL and Nakala infrastructures, in particular the synchronisation and exposure of relationships within the two platforms. For HAL, this project allowed for a rethink of the system of relationships between

resources, both internally (between HAL deposits) and externally (HAL deposits with a resource available on Nakala), by drawing on the Datacite relationships vocabulary. It also allowed investigation of the exposure of Nakala metadata in a HAL record.

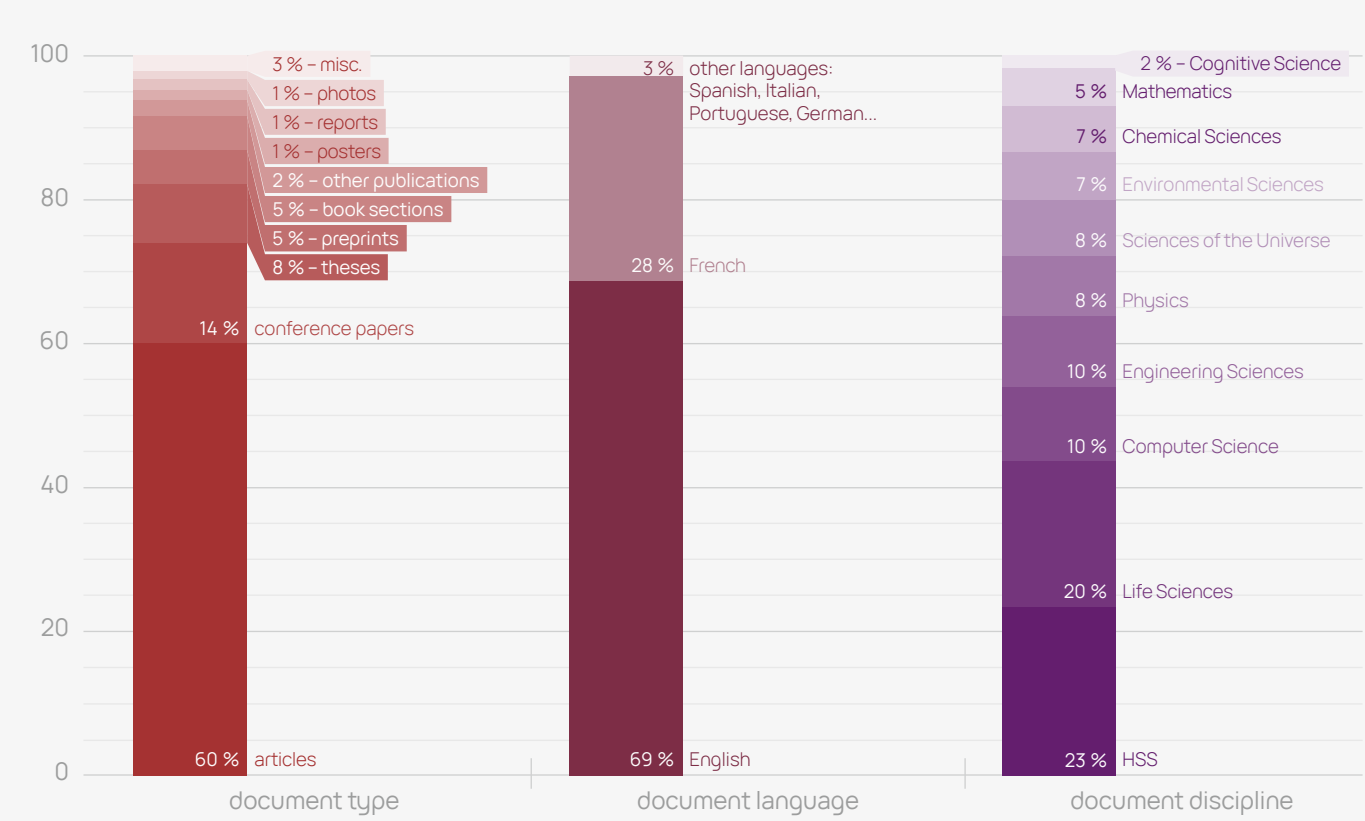
The data exchange protocol used in this PoC has not been adopted for implementation in HAL: the CCSD prefers the standardised COAR Notify protocol, implemented in Episciences.

The CCSD took part in the final project conference, which took place in Paris on 25-27 October.

Number of full-text deposits and records per month in 2022



Breakdown of full-text documents deposited in 2022 by type, by language and by scientific discipline



## Changes to author management

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The goal of changing the author management method is to optimise the management of identifiers (ORCID, IdRef) by making it possible to identify authors even if they are not users, which was the case until now. Whether the identifier is retrieved automatically—such as an ORCID in the metadata extracted from the DOI at the time of deposit—or imported—such as the IdRef of the author of a thesis imported by ABES—the new data model facilitates both their internal

processing and their use by other applications or platforms.

Preparing the migration of existing data (almost 3 million author names) into the new author data management model required a significant amount of data cleaning and recovery work, completed by the addition of more than 46,000 IdRef author identifiers in collaboration with ABES.

The migration itself required a one-off service outage over a weekend in June.

As a result of this change, portal administrators now have control over the disambiguation of authors in auréHAL. To promote uptake of the new model and its features, specific support was developed, consisting of 5 video clips and the organisation of 16 Q&A video sessions (from May to July).

## More than 100,000 ORCID

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The migration of author data into the new data model made it possible to import all the ORCID identifiers in the database into auréHAL: the 34,000 ORCIDs associated with an idHAL were supplemented with all the ORCIDs used for authentication, and those recovered via data mapping with the ABES IdRef database. By the end of the year, there were a total of 125,631 ORCIDs in auréHAL.

## Elimination of invalid email addresses

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Each user account has an associated email address which is used to send notifications (document watch alerts, sharing ownership, requests for moderation changes, etc.). An invalid address therefore makes the distribution of information ineffective. In addition, email service providers (such as Free) consider repeated sending to invalid or non-existent mailboxes as suspicious behaviour and block the messages sent.

To improve quality of service, an operation to identify invalid email addresses was carried out during the last quarter: more than 6,000 were thus inactivated (HAL no longer sends notifications to these addresses).

In addition, a new procedure was introduced in HAL: when users modify the email address in their profile, they must confirm it via a message in their inbox.

## Enhancement of research structure reference data with the ROR repository

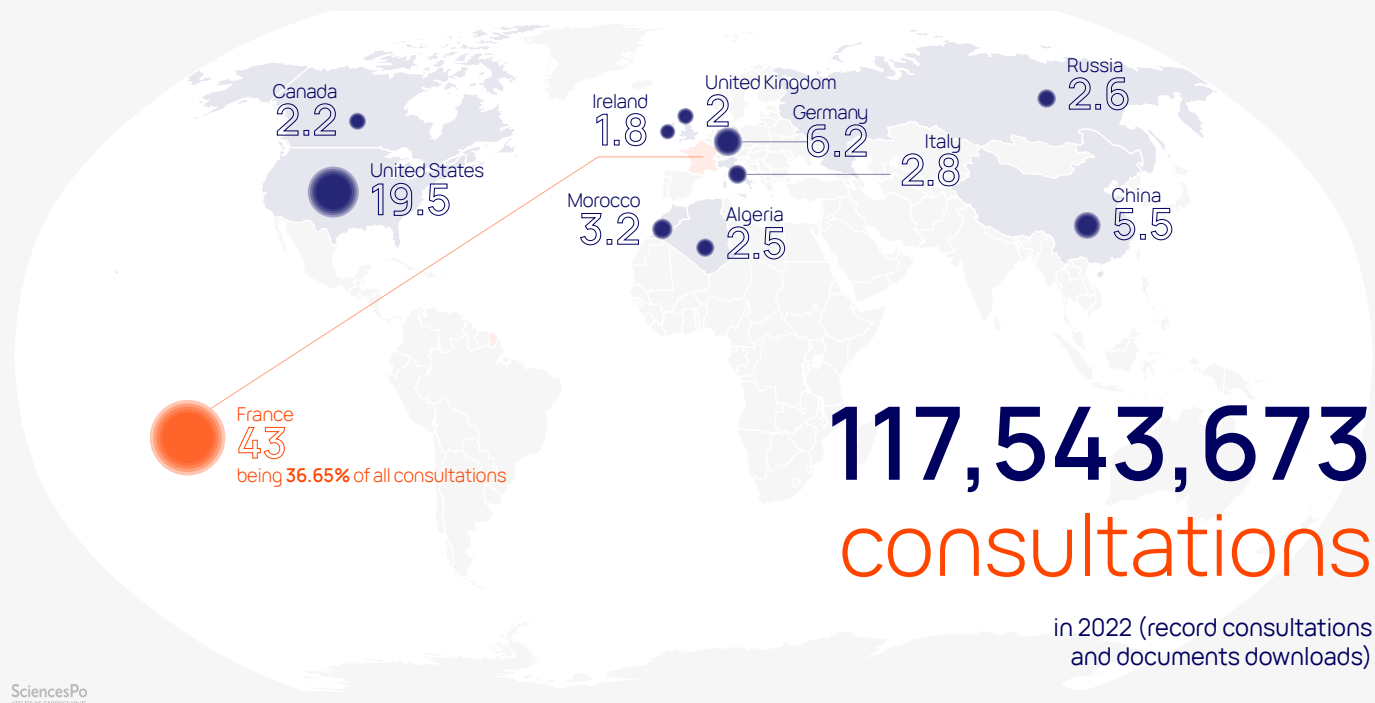
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Based on existing identifiers (ISNI for example) in the HAL database on the one hand and in the ROR (Research Organization Registry) on the other, an initial phase of enhancement of the metadata on research structures with ROR identifiers has been carried out.

At the start of the year, nearly 900 ROR identifiers had thus been added to the database. This will improve the interoperability of HAL and other sources of metadata. It will help to ensure the unambiguous affiliation of authors.

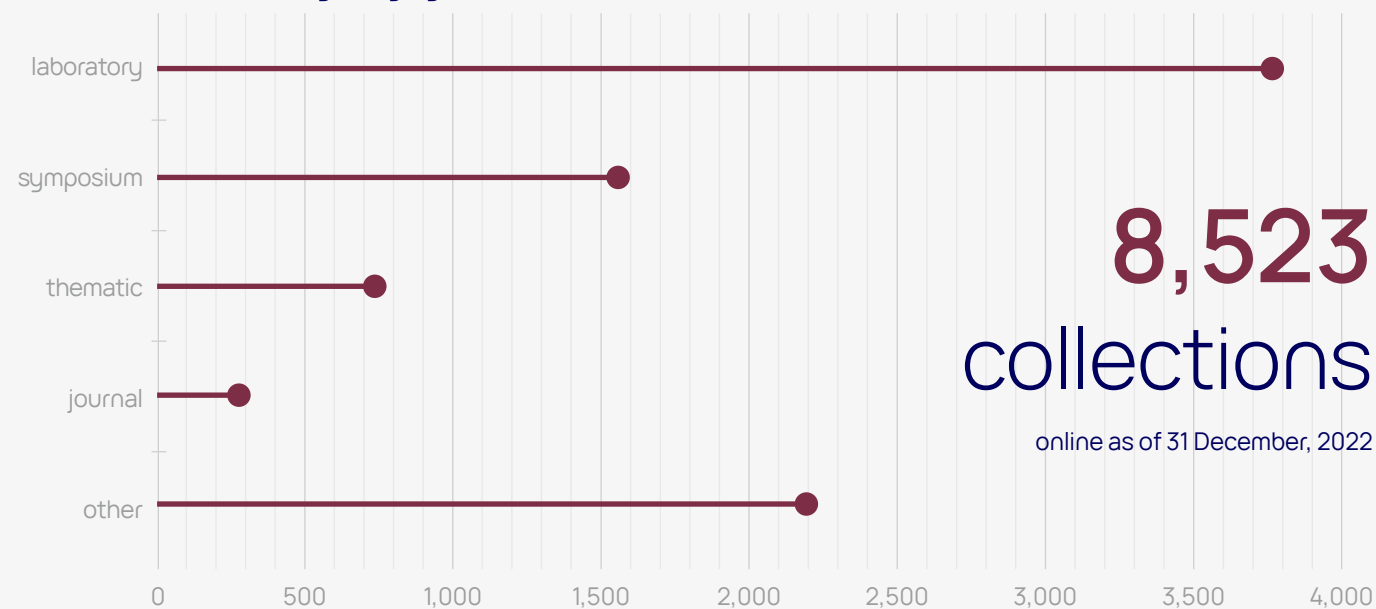


Top 10 countries—plus France—with the most consultation logs  
(record consultations and document downloads) in 2022 (millions)

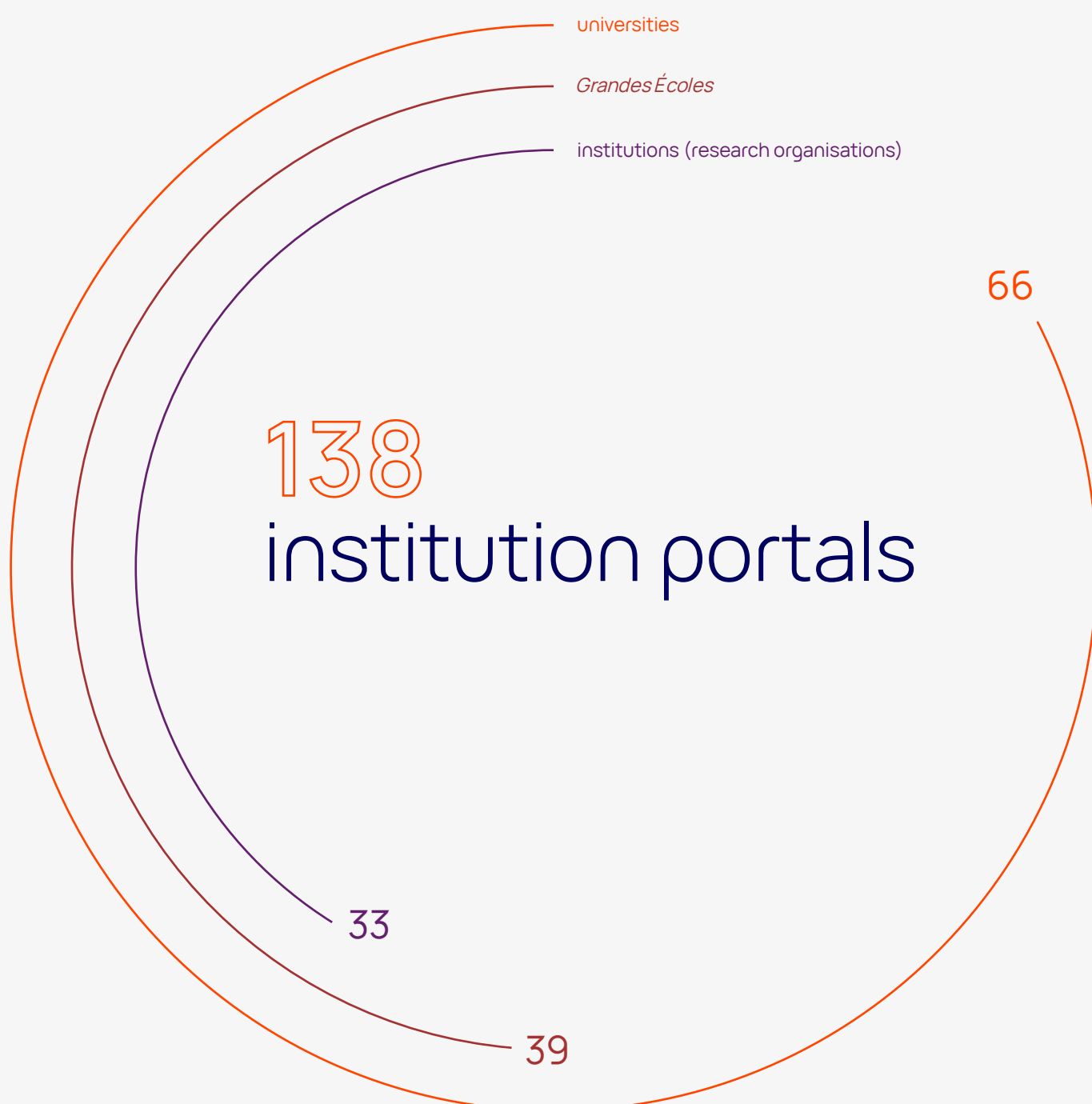


## Focus on the collections

Breakdown of collections by category



# Institutional portals



# Activities of the Partners' Assembly

A highlight of the year, the Assembly's annual meeting in July, again held remotely this year, brought together around a hundred participants. It was an opportunity to take stock of the Assembly's first year and to hold workshop discussions on the Open Science policies of institutions, the links between publications and data, and measures to open up science.

## New version of the T&Cs for HAL Portals

A consultation on the portal Terms and Conditions of Use (T&Cs) was a key focus in 2022. An initial phase of consultation with the institutions and their legal departments made it possible to collect comments and suggestions for improvement. Based on this data, the CCSD, in close collaboration with the legal department of the Rhône Auvergne Delegation of the CNRS, proposed a new version of the T&Cs, which was submitted to a panel of institutions during a consultation phase and then validated by the CNRS Legal Affairs Department. The new, better-balanced version was accompanied by a policy statement, drafted by a working group and validated by the CCSD Steering committee. This declaration underlines the joint construction of HAL and the partnership aspect of the collaboration between the CCSD and institutions with a HAL portal.

As of 31 December, 91.2% of the institutions had signed the T&Cs and 63% had paid their annual fee.

## Deliberations on moderation arrangements

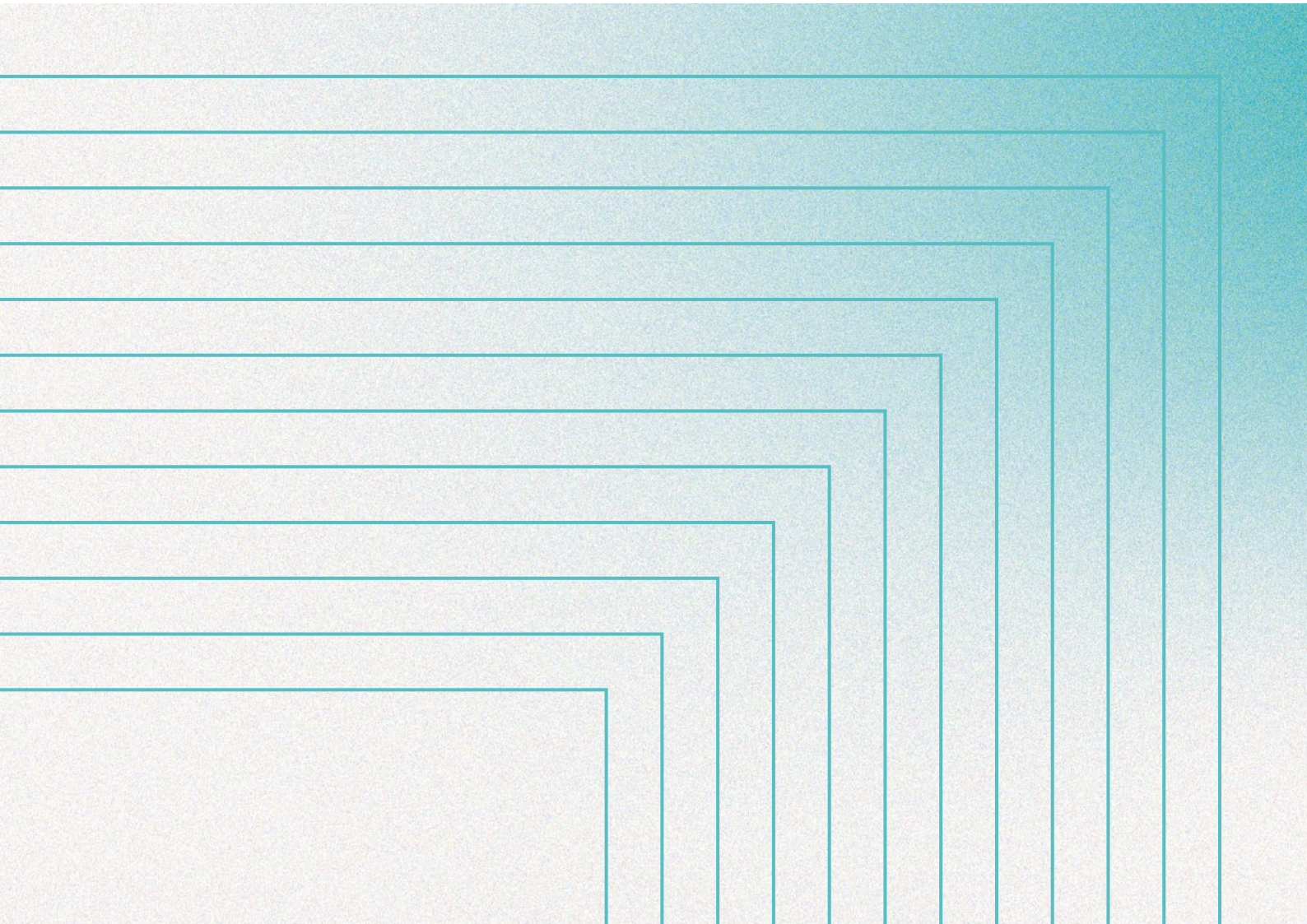
Bringing together members of the Assembly, representatives of the CasuHAL user club, Inist and Inria, a working group led by the CCSD deliberated on a shared definition of moderation and organisational models to strengthen its pooling.

Its work was partly based on the results of a survey of members of the Partners' Assembly in the first quarter of 2022. The answers highlighted the benefits (control of the entire HAL deposit chain, implementation of a local service for depositors and adaptation of the service offer) and the obstacles (lack of personnel and difficulty in taking on the workload). On 12 December 2022, the working group presented its ideas during a webinar for feedback and discussion, which was attended by over 80 participants.



**EPI**sciences  
overlay journals

# Open access scientific journals





# 25 journals

The platform includes 25 journals, of which 3 were put online in 2022:

- *Journal of Theoretical, Computational and Applied Mechanics*,
- *Les Cahiers Scientifiques du Transport*,
- *Mathematical Neuroscience and Applications*.

## Editorial support

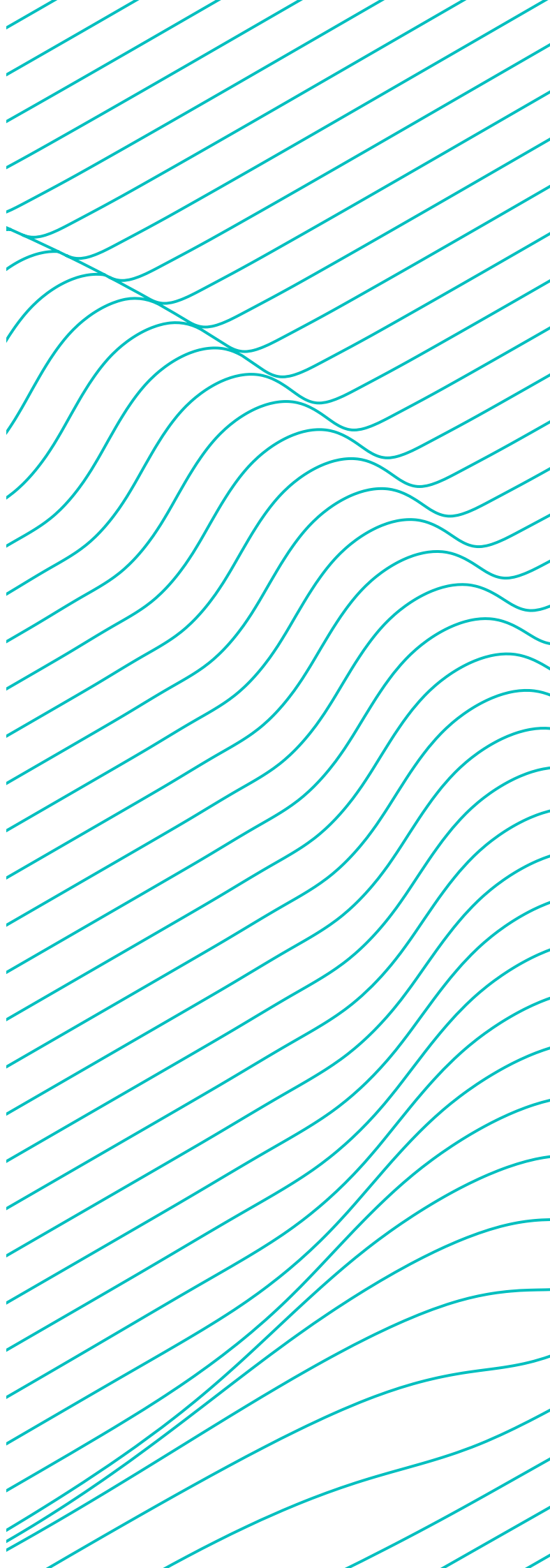
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2022 saw the consolidation of the editorial support service offer.

In particular, this resulted in the preparation of three grant applications for the 2023-2024 InSHS campaign. The obligation for a journal to be listed by the DOAJ, and to have an entry on the Mir@bel portal to complete these applications, supported and structured the referencing campaign in these two directories, led by the CCSD in collaboration with Inria and the Institut Fourier, for all the journals present on the platform. The journals' editorial policy statements were also published on Sherpa/Romeo on this occasion.

In addition, the CCSD organised the implementation of best editorial practice, in line with international standards: contract with authors, Creative Commons licence, publication policy.

Finally, in preparation for the redesign of the Episciences website, a journal cataloguing project was carried out at the end of the year (structuring and collecting bibliographic information).



## FAIR enhancement of metadata

### OpenAIRE Nexus project

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The OpenAIRE Nexus project, in which Episciences participates, brings together data producers and analytical tools to create synergies to facilitate sharing, monitoring and discovery of resources.

By interfacing with other services, Episciences can extract and enhance its own metadata with:

- the ORCID identifier of the authors (OpenAIRE Graph),
- the identifier of the research project (OpenAIRE Graph),
- the licence (Datacite, OpenAIRE Graph, HAL),
- the DOI and dataset linked to the article (ScholeXplorer),
- the DOI of documents that cite the article (OpenCitations).
- affiliations, free text or linked to the ROR.

The metadata and the source of the metadata have been displayed in articles since October 2022.

This system is part of a virtuous circle since Episciences, as a content producer, in turn enhances the embedded metadata with the DOIs it assigns, thus facilitating the discovery and accessibility of articles published by the journals.

11,189  
user  
accounts

of which 1,389  
were created in 2022

## Automation of notifications

### with the COAR Notify protocol (HALOWIN project)

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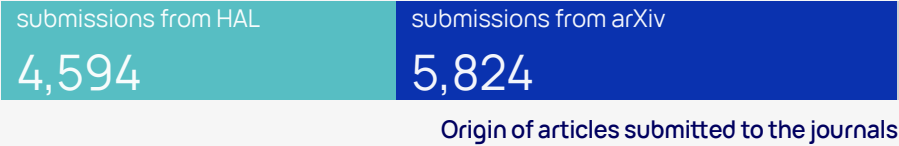
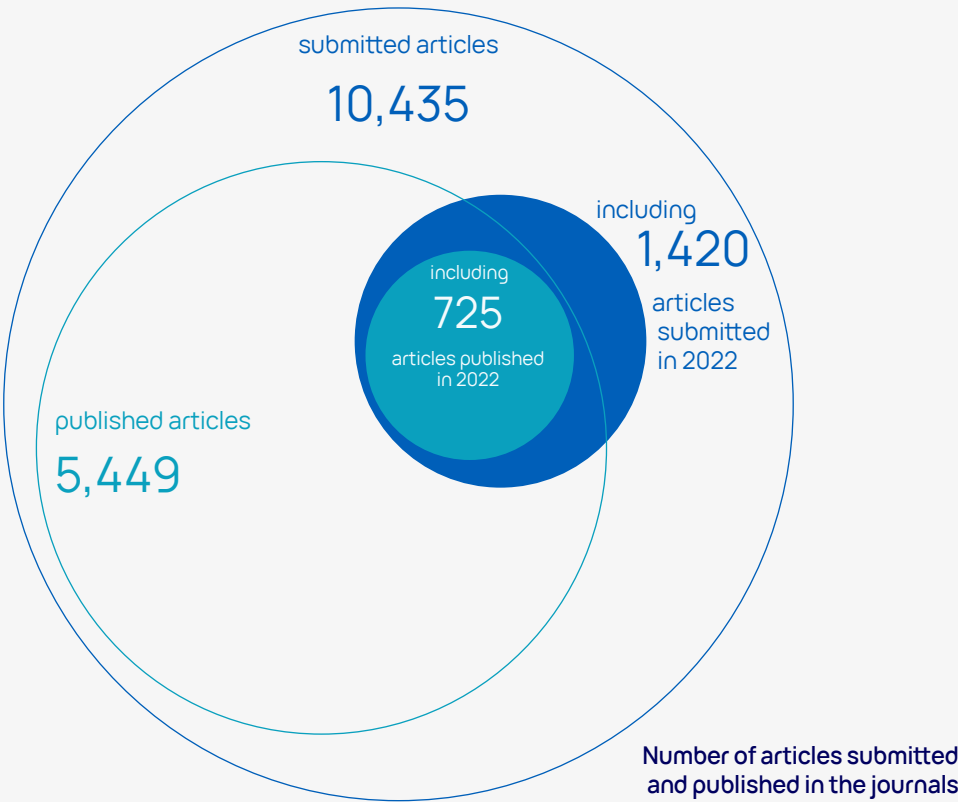
The HALOWIN project aims to improve interoperability between HAL and manuscript (preprint) review services by developing a technical framework for the automated exchange of documents, metadata and notifications.

Exchanges between Episciences and HAL, as well as between Peer Community In (PCI) and HAL are processed under the standardised COAR Notify protocol. HAL is notified automatically when a deposited preprint is either published in an Episciences journal or recommended in PCI.

As part of this project, the Signposting the Scholarly Web method has also been implemented: this approach promotes the automatic machine discovery of the available metadata formats (BibTeX, JSON, OpenAIRE, etc.) and strengthens the interoperability of Episciences.

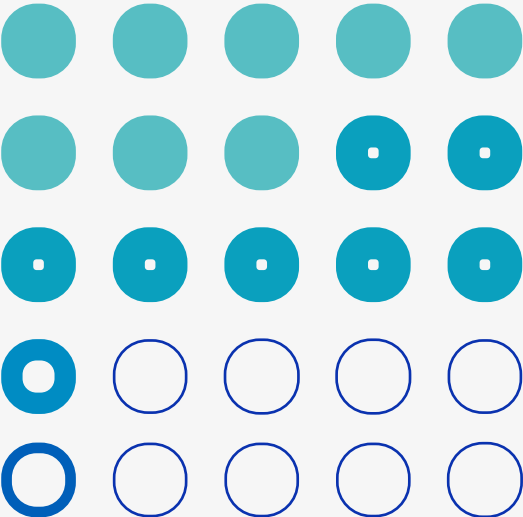
The project will be completed on 31 December, 2023.





Breakdown of the journals by scientific field

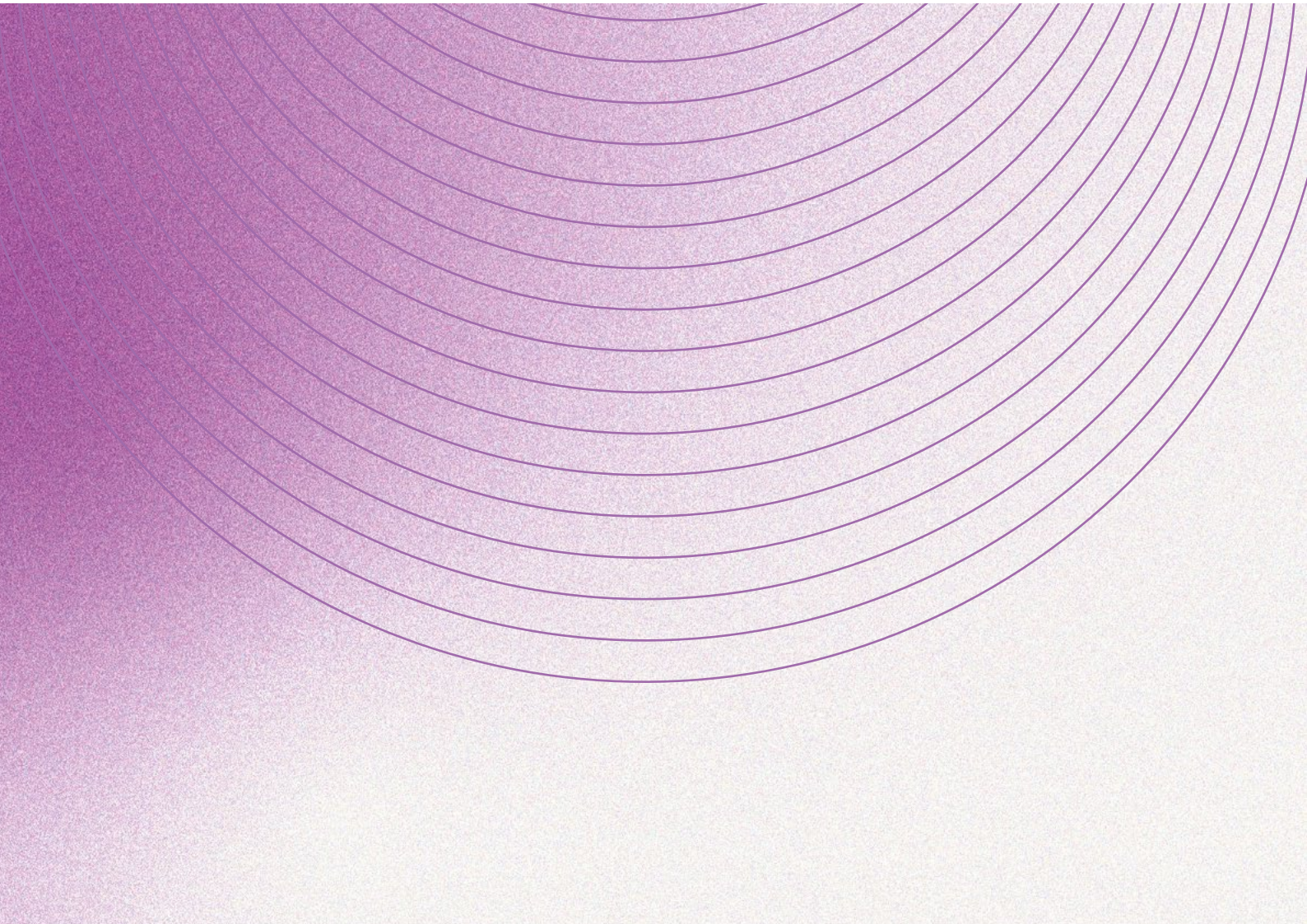
- informatics and applied mathematics (8)
- mathematics (7)
- mechanical engineering (1)
- environmental engineering (1)
- social sciences and humanities (8)





sciences **CONF**  
conference management

# Management of scientific conferences



# 104,654 registrations

In 2022,  
104,654 people  
registered for conferences  
created on Sciencesconf

## Strengthening interoperability with HAL

---

In 2022, Sciencesconf reinforced its interactions with HAL.

auréHAL is now a data source when entering the names of the authors of a paper in Sciencesconf (with the possibility of auto-fill).

Another theme of this consolidation is to facilitate the export of papers to the archive: conference managers can select those they wish to transfer to HAL (full text only). The exports take account of the idHAL if it is in the data.

## Improved security

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Developments have also been implemented to adapt Sciencesconf to European directives on the security of Internet payments: this mainly involves compliance, including the management of new fields, with Paybox switching to Secure3D v2 for paid registrations using this system.

The addition of a CAPTCHA on the account creation form prevents the mass creation of accounts by robots and thus increases the security of the platform's websites.

# 58,508 conference papers

In 2022, 58,508 papers (full text or abstracts) were submitted to Sciencesconf, an increase of 40% on 2021.

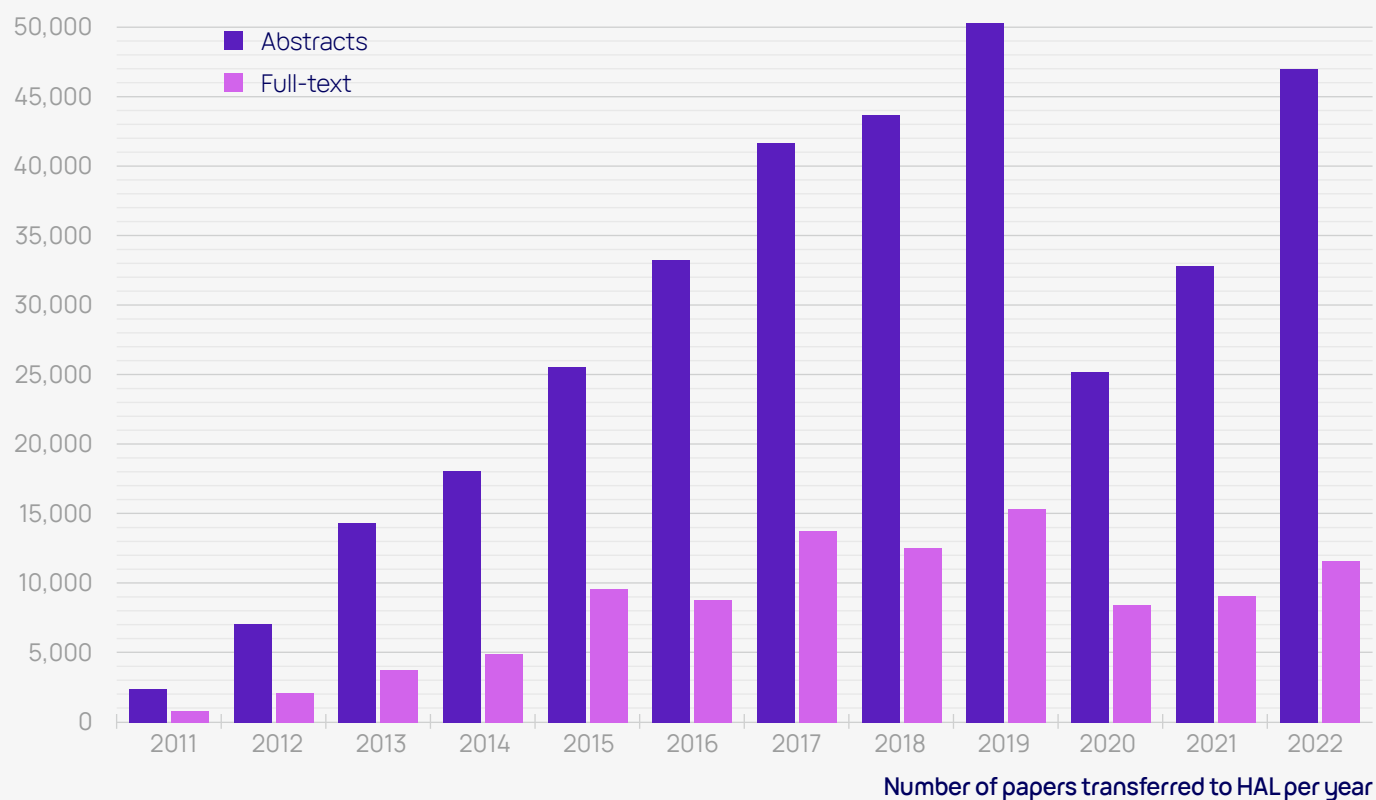
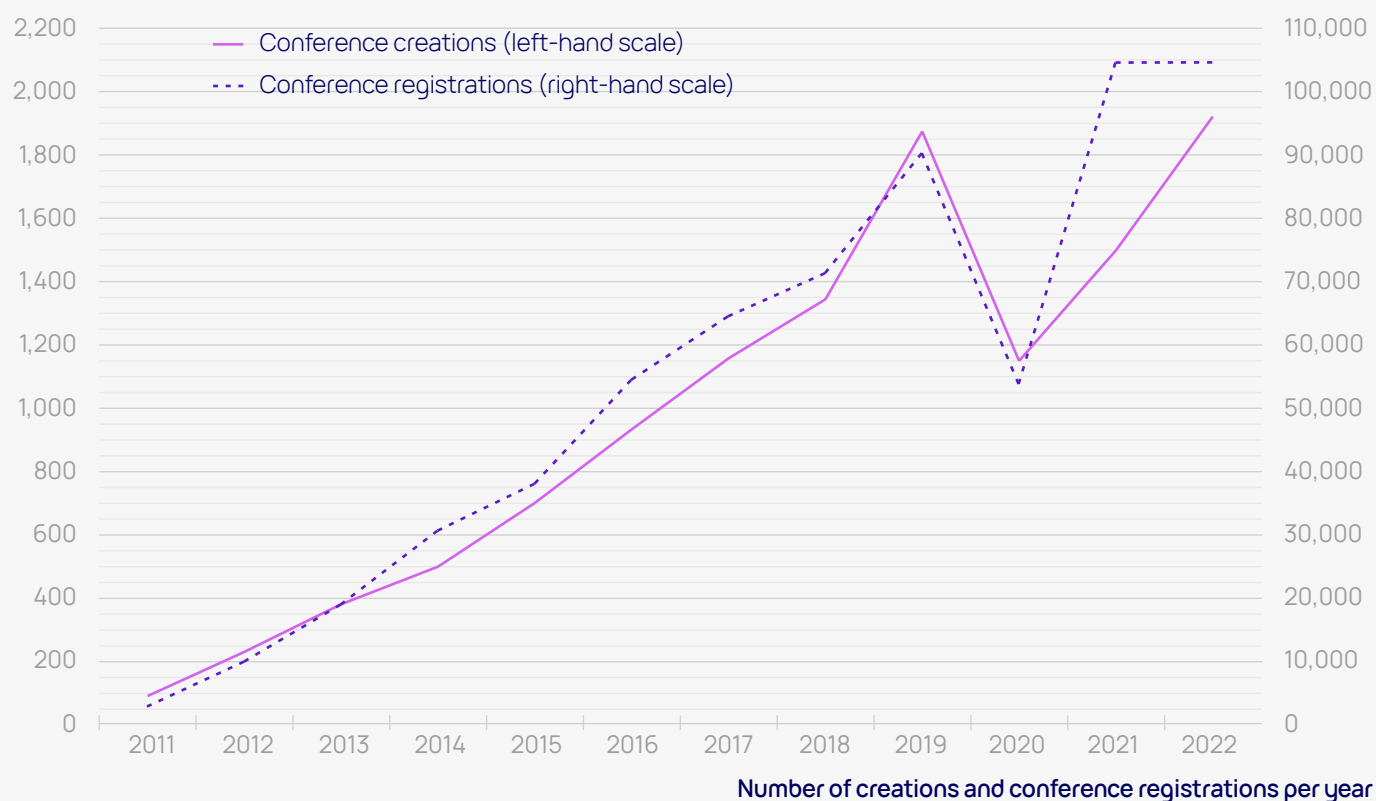
## Developments for interactions with the WordPress site

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The service for the redesign of the CCSD institutional website also includes a WordPress website to promote the Sciencesconf service offer. This site is the entry point to the platform, for conference creation requests and to consult the list of conferences or to search for one.

Interaction with the WordPress site required development work: consulting the list of conferences is now adapted to smartphone and tablet screens, and RSS feeds have been added to provide a dynamic display of indicators on the home page (number of conferences, papers and transfers to HAL).





# EquipeX+ HALiance project

Equipex+ HALiance is a 5.5-year project funded with a budget of €3.4m. Centred on HAL, its goal is to expand the service offer, strengthen interactions with other players in the knowledge ecosystem and fully satisfy Open Science criteria of excellence, both nationally and internationally. It is based on renewal of the core hardware and software.

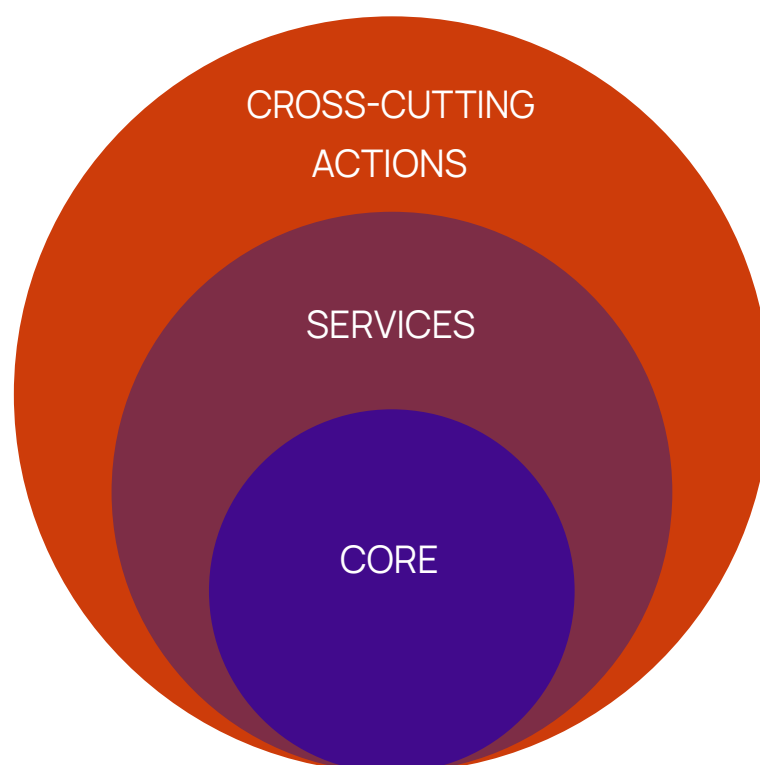
2022 saw the start of the project, with the organisation of human resources (setting up teams and recruitment), study and planning phases, and the use of service providers to support and implement some of the actions.

Recruitment of 1 fixed-term developer in September and a phase of 3 recruitments at the end of the year.



## Division into 9 Work Packages (WP)

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## Achievements in 2022

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WP1	Upgrading and securing HAL's physical infrastructure	<ul style="list-style-type: none"> <li>- Installation of the HAProxy ALOHA load balancer</li> <li>- Change of a switch (replaced with an optical switch)</li> <li>- Creation of the SolR cluster</li> <li>- Installation of a MySQL cluster for future use</li> <li>- Technical investigation of a redundant backup solution</li> </ul>
WP2	Migrating, securing and opening the HAL software code	<ul style="list-style-type: none"> <li>- Study of architectures and migration</li> <li>- Creation of a product backlog (inventory of features and tasks, prioritisation)</li> </ul>
WP3	Metadata extraction and alignment with HAL reference data	<ul style="list-style-type: none"> <li>- Feasibility studies for improved extraction of funding and licensing information from the full text</li> <li>- Definition of specifications for the automatic author affiliation service</li> <li>- Exchanges with partners Inria and Science-Miner</li> </ul>
WP4	Organising and documenting the life cycle of bibliographic metadata imported to HAL	<ul style="list-style-type: none"> <li>- Definition of specifications (metadata traceability, conflict management rules)</li> <li>- Exchanges with partner IN2P3</li> </ul>
WP5	Coordinating HAL with preprint review systems and making the publication cycle visible	Actions in this work package are a continuation of the HALOWIN project. This project has been extended to the end of 2023.
WP6	Implementing a new method for populating HAL by collecting scientific publications (full text)	<ul style="list-style-type: none"> <li>- Use of the corpus produced by Inist as part of the CorHAL project</li> <li>- Start-up of implementation of the service</li> <li>- Recruitment of a developer</li> </ul>
WP7	Coordinating publications in HAL and the research data associated with them	<ul style="list-style-type: none"> <li>- Exchanges with partner INRAE in the framework of the national repository <i>recherche.data.gouv</i></li> </ul>
WP8	Ensuring visibility and uptake of new HAL services by its users	<ul style="list-style-type: none"> <li>- Definition of a communication plan</li> <li>- Definition of an action plan for user engagement</li> </ul>
WP9	Ensuring consistency with FAIR principles	<ul style="list-style-type: none"> <li>- Recruitment of a data steward to take charge of Core Trust Seal certification</li> </ul>

# User support, training and assistance

## The support service in 2022

The CCSD has developed and implemented specific support actions to facilitate the adoption of recent developments.

Training of researchers in the HAL deposit process is now scenario-based: the one-hour webinar has been retained, but it now forms part of a training course that blends several learning methods (video tutorial, practical guide, webinar), available on an e-learning platform. The course was delivered at the same time as the new interfaces. This major project, which lasted several months, is a precursor for a broader range of training courses.

In 2022, the teams in charge of portal administration were impacted both by the changes in author management and adaptation of website appearance to the recommendations of the user-interface redesign project. Strengthening support for these teams was a priority for the CCSD. To guide them through the new author management model, the team designed and produced 5 video clips and hosted 16 Q&A sessions. For the appearance of the websites, one person specifically dedicated to monitoring the websites conducted 60 interviews to support the portal teams and worked on 47 sites. In addition, a web designer was assigned to identifying and reworking 55 portal websites (estimated time: 1.5 months/FTE).

### Trainings in New Caledonia

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The University of New Caledonia requested support from the CCSD to organise and implement a programme of Open Science conferences and training from the 24 October to the 4 November. One team member coordinated and facilitated the planned actions on site (40 hours).

## Panorama of the activity of user support

### Training delivered

**207** hours of training in a total of **83** sessions

**595** people trained, of whom **50%** were researchers

### Resources creation

**1** new training course on HAL deposits

**8** video tutorials

Update of the user documentation

### Moderation

**25,091** deposits posted on HAL

### Specific support

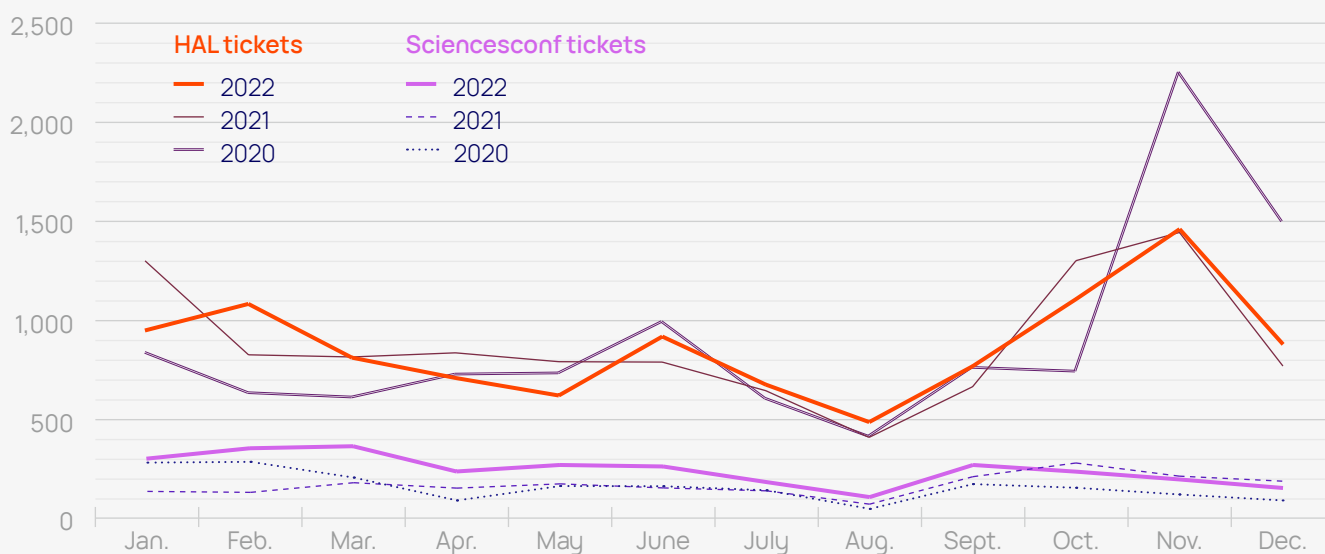
Support for the creation of portals

Adaptation to the new HAL interfaces

### Support tickets

**13,365** tickets handled in 2022 (HAL and Sciencesconf)

**45%** increase in Sciencesconf tickets in 2022 compared with 2021



Number of HAL and Sciencesconf tickets received per month (2020–2022)

# Communication review

## Open Science Talks

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The CCSD has compiled the video recordings of the 5 information webinars it organised under the “Open Science Talks” series. Initially designed for members of the Partners’ Assembly—with the exception of one session in collaboration with the CasuHAL user club—these webinars were later made available to all. In this first year of its existence, 718 people took part in these sessions.

## New websites

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The CCSD is consolidating its brand identity by continuing to work on application of the new graphic charter. Its strategy is based on the redesign of the CCSD institutional website and the creation of two websites to present Episciences and Sciencesconf. From the choice of service provider through to delivery, the project took place throughout 2022 and the sites were launched in January 2023.

## Creation of 3 distribution lists

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The CCSD created three distribution lists to keep HAL users informed:

- [portails-hal@groupe.renater.fr](mailto:portails-hal@groupe.renater.fr)
- [collections-hal@groupe.renater.fr](mailto:collections-hal@groupe.renater.fr)
- [moderation-hal@groupe.renater.fr](mailto:moderation-hal@groupe.renater.fr)

Only users with the corresponding rights in the database (administrator, collection manager and technical validator) can subscribe to each of these lists.

## Communication channels of the CCSD

### CCSD blog

**23** posts

**13,000** cumulative visits  
on blogposts

### ActuHAL newsletter

**1,577** subscribers

**5** editions

Average opening rate of **37.8%**

Average click rate of **14.87%**

### Youtube CCSD

**10** videos uploaded

**3,372** views on uploaded videos

**306.7h** of cumulative watch time

### Twitter account @hal\_fr

**9,645** followers, including  
850 new followers in 2022 (+ **10%**)

**152,187** tweets impressions

**3.35%** average engagement rate

### CCSD LinkedIn account

**406** followers, including 251 new  
followers in 2022 (+ **162%**)

**8,710** cumulative single impressions  
on posts

**8.66%** average interaction rate

### Twitter account @ccsd\_fr

**3,616** followers, including 287 new  
followers in 2022 (+ **9%**)

**166,933** tweets impressions

**3.79%** average engagement rate

# List of communications and trainings

## January

### 25 January 2022

Yannick Barborini, *Recommandations pour les sites des portails et collections (nouvelle IHM de HAL)*, Casuhal webinar

## March

### 29 March 2022

Anaïs Elizéon, *Introduction aux archives ouvertes*, Mediadix

## April

### 5 April 2022

Céline Barthonnat and Raphaël Tournoy, *Publier en Open Access diamant : un modèle de collaboration avec HAL*, arXiv, Zenodo ou CWI, CCSD webinar

### 7 April 2022

Anaïs Elizéon, *Comprendre et mettre en œuvre l'Open Access via HAL*, Mediadix

## May

### 18 May 2022

Anaïs Elizéon, *Le dépôt et la recherche dans HAL*, Enssib (curator students and librarians)

### 31 May 2022

Bruno Marmol, *Les logiciels dans HAL : une collaboration entre Software Heritage, Inria et le CCSD*, CCSD webinar

## June

### 6–9 June 2022

Raphaël Tournoy, Silvio Peroni, Jose Benito Gonzalez Lopez, Marion Gaigeot and Agnès Magron, *Episciences: enhancing interoperability and metadata between an overlay journal platform, linked repositories and OpenAIRE open sciences tools and services*. OPEN REPOSITORIES 2022–17th International Open Repositories Conference (OR2022), Denver, USA. (<https://doi.org/10.5281/zenodo.7514339>)

### 9–10 June 2022 – Journées CasuHAL

- Yannick Barborini, *Présentation des nouvelles interfaces chercheurs*
- Céline Bray and Isabelle Guay, *Sciencesconf : gestion scientifique et export vers HAL*
- Hélène Begnis and Bruno Marmol, *Point sur les projets en cours et à venir*

### 14 June 2022

Céline Barthonnat and Raphaël Tournoy, *Episciences : workflow éditorial de revues au-dessus des archives ouvertes* (workshop), Salon de l'édition scientifique en accès ouvert, Journées Prairial

### 28 June 2022 – Les nouveaux modèles d'édition, Centre Mersenne

- Nathalie Fargier, *Aspects économiques et organisationnels de plusieurs plateformes de diffusion ou maisons d'édition en libre accès* (round table)
- Nathalie Fargier, *Quels défis pour les plateformes ou maisons d'édition en libre accès afin d'assurer la stabilité, la pérennité de leur modèle et d'accompagner les revues ?*

## September

### 14–16 September 2022 – 10<sup>e</sup> journées du réseau Medici

- Céline Barthonnat, Marion Gaigeot, Agnès Magron and Raphaël Tournoy, *Episciences : une solution complète pour la publication de revues scientifiques en accès ouvert diamant* (poster)
- Agnès Magron, *Circulation des savoirs et mesure* (round table)

### 19 September 2022

Agnès Magron, *La Science ouverte* (round table), start of the year for master's degree students, Enssib

### 27 September 2022

Bénédicte Kuntziger, *La politique Science ouverte des agences de financement et leur mise en œuvre dans HAL*, CCSD webinar

## October

### 10 October 2022

Anaïs Elizéon, *Ribac*, InSHS along with an online training cycle by Sylvain Besson: 26 October, 18 November, 30 November, 16 December

### 17 October 2022

Sébastien Mazzaresse, *HAL, un atout français pour la Science ouverte*, Digital training for new students in French Schools Abroad

### 17–19 October 2022

Sébastien Mazzaresse, *Ateliers HAL : dépôt, idHAL et CV HAL*, Digital training for new students in French Foreign Schools



#### Key

Intervention in a scientific conference

Publication of an article in a scientific journal

Organisation of a training session for an external structure

#### 18 October 2022

Émilie Cassagne and Agnès Magron,  
*Les nouveautés de HAL*, réseau  
Démocrite-IN2P3

#### 24 October – 4 November 2022 – Université de Nouvelle-Calédonie

- Anaïs Élizéon, *Conférence d'introduction : présentation des principes et des axes du PNSO*
- Céline Barthonnat, *Les nouveaux modes de publication et l'exemple de la plateforme de revues Episciences*
- Anaïs Élizéon, *Présentation générale de l'archive ouverte nationale HAL et de son écosystème*
- Anaïs Élizéon, *Science ouverte : plateforme HAL et gestion des données de la recherche*

#### 26 October 2022 – EOSC-Pillar final conference

Adeline Joffres, Nicolas Larrousse,  
Alice Ball, Yannick Barborini  
and Bénédicte Kuntziger, *FAIR  
principles in data life for humanities*  
(poster). EOSC-Pillar Final Conference,  
Oct 2022, Paris, France. (<https://dx.doi.org/10.5281/zenodo.7156780>, <https://hal.science/hal-03805632>)

#### October 2022 – Archimag

Anaïs Elizéon and Agnès Magron.  
*Valoriser les publications scientifiques  
de son institution avec un portail HAL*,  
Archimag, October 2022, pp.44-45

## November

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#### 15 November 2022

Émilie Cassagne, *Accompagner les  
chercheurs dans l'utilisation de HAL*,  
*Dépôt, Export, idHAL et Valorisation*,  
Université Gustave-Eiffel

#### 17 November 2022

Émilie Cassagne, *Gérer une collection  
dans HAL : fonctionnalités, API  
et valorisation des données HAL*,  
URFIST

#### 24 November 2022

Hélène Begnis, *Comment encourager  
et faciliter les dépôts en archive  
ouverte ?*, Enssib

## December

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#### 5 December 2022

Bruno Marmol, *ORCID et HAL*, ORCID  
France Consortium general assembly

#### 6 December 2022

Céline Barthonnat and Raphaël Tournoy,  
*Episciences : une solution complète  
pour l'édition et la publication  
de revues scientifiques en accès  
ouvert diamant*, URFIST

#### 12 December 2022

Émilie Cassagne, *Gérer une collection  
dans HAL*, URFIST

#### 13 December 2022

Bénédicte Kuntziger, *Workshop  
ORCID pour les DU*, Université Claude  
Bernard – Lyon 1

#### 13 December 2022

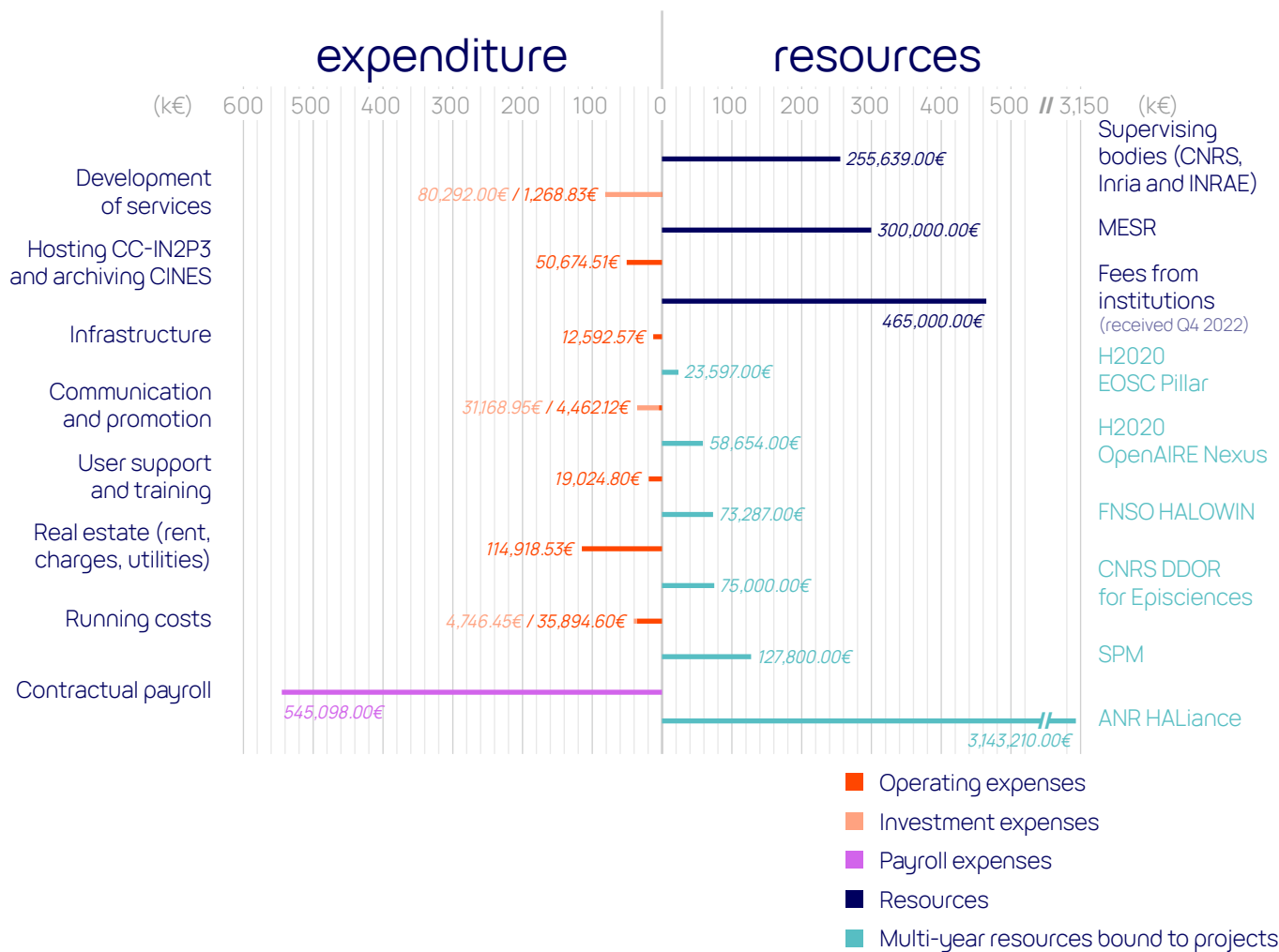
Émilie Cassagne, *Accompagner  
les chercheurs de son établissement  
au dépôt dans HAL* (training for  
trainers), URFIST

#### 15 December 2022

Bénédicte Kuntziger, *Nouveaux  
enjeux pour les plateformes d'archives  
ouvertes : l'exemple de HAL, archive  
ouverte nationale*, IMST EISO Master's  
degree course, Université Claude  
Bernard – Lyon 1

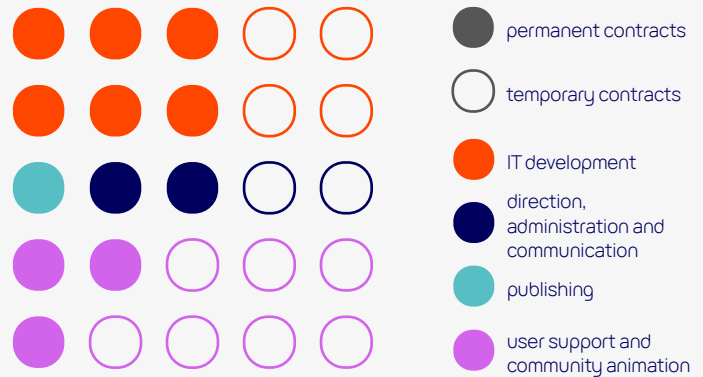
# Resources

## Budget data



# Human resources

The CCSD had 24.8 FTEs (full-time equivalents) on the payroll in 2022, working in IT development, network system administration, scientific and technical information, publishing and communication. During the year, 6 people were hired and 6 left the CCSD.



# Infrastructure

## Reinforcement of the infrastructure

Implementation of HAProxy on ALOHA appliance (HALiance)

Change of the website entry switch and move to fibre optics (HALiance)

Messaging:

- Installation of a SMTP relay specific to the CCSD
- Implementation of DKIM, SPF and DMARK to combat HAL being treated as a spammer.

Creation of the Solr cluster for HAL (HALiance)

Installation of a MySQL cluster for future use (HALiance)

Installation of servers for the SSO project

**31.6 To** of documents backed up at the IN2P3 Computing Centre

**6.3 To** of documents archived at CINES, being 1.3 To archived in 2022

## A fully available infrastructure

in 2022, and only 3 days of planned interruption

