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European Platform for Neurodegenerative Diseases
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Table of Contents

Table of Contents

Abstract

European Platform for Neurodegenerative Diseases (EPND) is a 5-year (2021-2026) project that seeks to accelerate research into neurodegenerative diseases by enabling discovery, access, and reuse of the existing valuable biosample and data collections. With approximately 30 partner organizations contributing their expertise, tools and technology, the EPND consortium has been building solutions for its target audience, which comprises two key stakeholder groups: i) Europe-based biosample and data providers, and ii) researchers using these resources. The core component of EPND's offering to the community is the EPND Hub, an end-to-end technical solution designed to enable the discovery, access, and reuse of data and biosample collections. The EPND Hub has been successfully utilized by the EPND consortium during the project, supporting the storage, analysis, and reuse of neurodegenerative disease datasets generated as part of the project. The EPND Hub has been made available for the broader research community beyond the consortium.

This Deliverable (D2.3) is a report prepared by Work Package 2 (ethical and legal aspects) of the consortium. The deliverable has three objectives. First, it describes the EPND Hub, focusing on the data/sample access governance and legal compliance considerations. Second, it provides an overview of how the EPND's access governance framework has evolved since the start of the project. Third, the Deliverable offers reflections on the changing legislative landscape for the EPND, focusing primarily on the recently adopted European Health Data Space (EHDS) Regulation.

1. Introduction

Neurodegenerative diseases (NDs) pose an increasingly serious public health challenge globally, including in Europe. In the developed countries characterised by population aging, the incidence of NDs such as Parkinson's disease, Alzheimer's disease and dementias is rapidly rising. Apart from direct costs associated with NDs, estimated to be in the hundreds of billions of Euros annually in Europe, NDs are also responsible for significant indirect costs as measured by lost productivity and hours spent on informal care.[1]

The public health burden of the NDs, particularly in developed regions such as Europe, underscores the urgent need for new effective interventions for predicting, diagnosing, and treating NDs. To achieve this goal, it is essential to enable research using high-quality biological samples and associated data collected from across clinical and research contexts. Often, valuable biosample and data collections exist, but their effective use is hindered by various proprietary, institutional, governance, and legal restrictions. This is undoubtedly true in Europe, where the complex and fragmentary legal landscape makes cross-border sharing of biosamples and associated data a challenging task.[2]

In response to these challenges, the Innovative Medicines Initiative - subsequently renamed to the Innovative Health Initiative (IHI) - launched the European Platform for Neurodegenerative Diseases (EPND) in November 2021 (grant agreement number 101034344, epnd.org). The EPND is a 5-year project (2021-2026) involving the creation of a consortium comprising public and private partner organisations, with an overarching objective to help accelerate research into NDs by enabling discovery, access, and reuse of the existing valuable biosample and data collections.[3] Over the past four years, EPND has been developing an offering for the ND diseases community. With the support of its partners who are contributing their expertise, tools and technology, the EPND consortium has been building solutions that meet the needs and requirements of the target group: Europe-based sample and data providers on the hand, and the researchers using these resources on the other hand.

From the project's outset, the EPND consortium has taken a comprehensive approach to pursue its mission. First, the consortium has been developing the EPND Hub, an end-to-end technical solution designed to enable the discovery, access, and reuse of data and sample collections. As of late 2025, the construction of the EPND Hub is substantially completed,[4] with the current efforts mainly focused on populating the EPND Hub with data/sample collections and their associated metadata. Second, the EPND consortium has been committed to addressing the Ethical, Legal, and Societal Implications (ELSI) of ND research. Through its work package

[1] Linus Jönsson (2022). *The personal economic burden of dementia in Europe* https://www.sciencedirect.com/science/article/pii/S2666776222001685#:~:text=The%20study%20estimates%20that%20the,32%2C606.9%20million%20EUR%20in%20Germany

[2] Niranjan Bose et al. (2022). *Data and sample sharing as an enabler for large-scale biomarker research and development: The EPND perspective* https://www.frontiersin.org/journals/neurology/articles/10.3389/fneur.2022.1031091/full

[3] Pieter Jelle Visser et al. (2023). *The European Platform for Neurodegenerative Diseases (EPND)* https://alz-journals.onlinelibrary.wiley.com/doi/abs/10.1002/alz.079164

[4] EPND Hub technical paper (forthcoming)

dedicated to ELSI (WP2), the EPND consortium has set out to map the data governance, legal and institutional challenges to data/sample sharing in Europe, spanning the domains of data protection, biobanking, and retrospective biomedical research.[5] This work has informed the consortium's subsequent efforts when deciding on the optimal modalities for sample and data access governance through the EPND ecosystem. Third, the development and operationalisation of the EPND Hub, including the iterative refinement of its access governance framework, has been pursued in a participatory manner, incorporating input from various relevant stakeholders to inform the design choices behind the consortium's offering to the ND research community.

In this respect, the EPND consortium has been relying on several key sources of information to collect insights concerning the needs of its target community. High-level guidance and steering recommendations have been provided by EPND's External Scientific Advisory Board (ESAB) and thematic expert groups (Patient, ELSI, Regulatory, and Research Community expert groups), all established under the EPND's stakeholder engagement framework led by WP6 ("Stakeholder involvement, external communication and dissemination"). This guidance has been complemented by a competitive landscape analysis, in combination with surveys and qualitative interviews conducted with the members of the target audience, which have been undertaken as part of WP7 ("Sustainability") activities. Finally, WP4 ("Cohort Interactions") has been instrumental in onboarding biosample and dataset collections onto the EPND Hub, an ongoing effort that has elucidated invaluable insights into the access governance, legal compliance, and data stewardship needs of the research and clinical centers willing to make their data/sample resources available through the EPND Hub. The consortium's experience has shown that there is a significant heterogeneity across these organisations in their governance requirements, from varying restrictions as to where their data can be hosted, to how the data can be permissioned (by whom), and how it can be analysed (centrally or in a federated manner).

Aims of this Whitepaper

This white paper constitutes the EPND project Deliverable D2.3., entitled the "Final Governance and Data Protection Compliance Framework". As such, it has the following three aims:

1) Provide a description of EPND Hub, with the focus on the data/sample access governance and compliance considerations
2) Outline the evolution of EPND's access governance framework throughout the IMI/IHI project
3) Offer reflections on the evolving legislative landscape and its implications for the EPND

The core text of this document focuses on the first two points above. The third point is addressed through the analysis presented in Annex.

[5] Link to D2.2 Download page: https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e503aa0eef&appId=PPGMS

2. The EPND Hub: description and governance

The EPND Hub is the consortium's offering to the neurodegeneration research community. The EPND Hub is a scalable, efficient, and collaborative platform facilitating access and reuse of study, dataset and biosample resources. The architecture of the EPND Hub includes a search and discovery user interface (UI) that is integrated with the Alzheimer's Disease (AD) Data Initiative's AD Workbench. AD Workbench is a secure, cloud-based data sharing and analytics environment that empowers researchers with access to powerful analytic capabilities in a collaborative, interoperable environment to support data-driven research into NDs including data access and analysis.[6] Accordingly, several features provided to the users of the EPND Hub (described in the sections below) are enabled by the AD Workbench.

Whilst the EPND Hub is built upon and utilises various core components of the AD Workbench infrastructure, the EPND Hub also incorporates several additional features tailored to the needs of EPND's specific target community. For example, some of the data governance processes and their associated contractual frameworks are adapted to offer additional options to the dataset providers based in Europe who seek support in meeting their legal compliance obligations under the applicable European laws. The legal and compliance-related support available for the user of the EPND Hub is further enhanced through the EPND ELSI Support Desk,[7] an informational service that can be contacted to ask compliance-related questions concerning EPND-facilitated research. Another key feature that the EPND Hub enables is the discovery and sharing of biosample collections, which is not currently supported by the AD Workbench, in addition to the studies and datasets. These biosample collections are findable, searchable, and requestable by anyone who has signed up as a user of the EPND Hub. Although the logistics of sample provisioning and analysis are subsequently arranged between the sample provider and the user, the EPND Hub offers support in negotiating and concluding material transfer agreements, where this support is requested.

In the remaining parts of this document, we provide an overview of the EPND-facilitated data and biosample research. In doing so, we zoom in on access governance processes and modalities available to the EPND target community.

EPND-facilitated data-driven research

The end-to-end process underpinning EPND-facilitated data research consists of the following phases: dataset hosting, dataset discovery, access request, access permissioning, data access, and data analysis. Due to the significant differences across the datasets in terms of their hosting

[6] Caitlin P McHugh, Matthew H S Clement, & Mukta Phatak (2025). *AD Workbench: Transforming Alzheimer's research with secure, global, and collaborative data sharing and analysis* https://pmc.ncbi.nlm.nih.gov/articles/PMC12086970/#alz70278-bib-0007

[7] https://epnd.org/resources/elsi-support-desk

and access conditions, the EPND consortium has chosen to adopt different ways for data providers to join the EPND Hub.

The options available to dataset providers along the different phases are delineated below.

Dataset hosting

In order to enable data analysis through the EPND Hub, a dataset must be hosted on a server that has access to the AD Workbench infrastructure. This is necessary for the cross-talk between the hosting environment and the AD Workbench secure workspaces from which eligible users analyse the data (described below). Currently, the AD Workbench is linked to over 12 (but that number continues to increase) such data servers or platforms located around the world, including 2 currently within the European Union (Netherlands and Sweden; a location in Luxembourg will soon be online) - the EPND Hub utilizes only EU-based servers. The dataset provider can choose any of the available locations. Subsequently, the dataset provider enters into suitable agreements (such as a data hosting agreement and, where applicable, a data processing agreement in accordance with GDPR Article 28.3) with the party managing the selected data hosting environment and transfers the data to that party.

Importantly, the dataset provider can also decide against transferring the data to any of the hosting nodes, choosing instead to connect its own data infrastructure to the AD Workbench and secure workspaces. Also in this modality, the dataset can be requested and (if the request is approved) accessed and/or analysed by the eligible users of the EPND Hub. This option is particularly relevant for large biomedical research organisations that manage sizeable datasets and whose institutional rules tend to be more restrictive when it comes to relying on external hosting services. Another reason for implementing local hosting approach would be to enable federated analysis of the data through remote querying, which is one of the data analysis modalities supported by AD Workbench (see data access/analysis section below). Therefore, for the dataset providers that prefer to make their datasets available in a federated manner, i.e., where no record-level data is accessed by the data user, connecting their local hosting environment to the AD Workbench infrastructure would be an appropriate approach.

Ultimately, the decision where the data will be hosted, in a GDPR compliant manner, is up to the dataset provider to make. The decision will be influenced by numerous factors, such as the nature of the dataset (its size, sensitivity, and associated restrictions), the availability of resources, institutional rules, and – crucially - the modality of the data and the type of analysis to be carried out by the downstream data users.

Dataset discovery

All datasets that can be centrally requested through the EPND Hub are listed on the EPND catalogue at discover.epnd.org under the “Datasets” tab. The catalogue of the datasets is rapidly expanding through both addition of new datasets by the EPND consortium itself (labelled in the dataset catalogue as “EPND Datasets”), and syndication with partner dataset catalogues globally.

The purpose of listing EPND datasets alongside other datasets from the partner catalogues is to streamline dataset discovery for researchers and to avoid fragmentation. The intention is to enable any researcher interested in accessing neurodegeneration data to browse a global catalogue of the relevant datasets connected to the AD Workbench data infrastructure. At the time of this writing, the syndication with the AD Workbench catalogue is complete, allowing the visitors of discover.epnd.org to search through a combined EPND and AD Workbench dataset catalogue; syndication of additional catalogue entries will occur in the coming year. By the end of the EPND IHI project, it will be possible for the users to request, and (if the request is approved) access and/or analyse all the datasets that study leads choose to list and make requestable via the EPND dataset catalogue.

The catalogue contains summary information concerning the listed datasets (metadata). The information covers the description of the dataset and its provider organisation, which is visible to all visitors of the EPND website. Registered users of the EPND Hub can additionally view access and use conditions associated with the listed datasets. To represent the access and use conditions in a consistent manner, the EPND Hub uses the Digital Use Conditions (DUC) framework in conjunction with the Common Conditions of Use Elements (CCE), that capture common restrictions/conditions applicable to each dataset.[8] Before the end of the EPND project, each requestable dataset listed on the EPND dataset catalogue will have a complete DUC/CCE profile associated with it.

Based on the descriptive information about the dataset, researchers will be able to assess whether the nature of the dataset meets their research needs and whether the intended use of the dataset satisfies the applicable use conditions. Subsequently, researchers can make an informed decision about whether to proceed with submitting an access request.

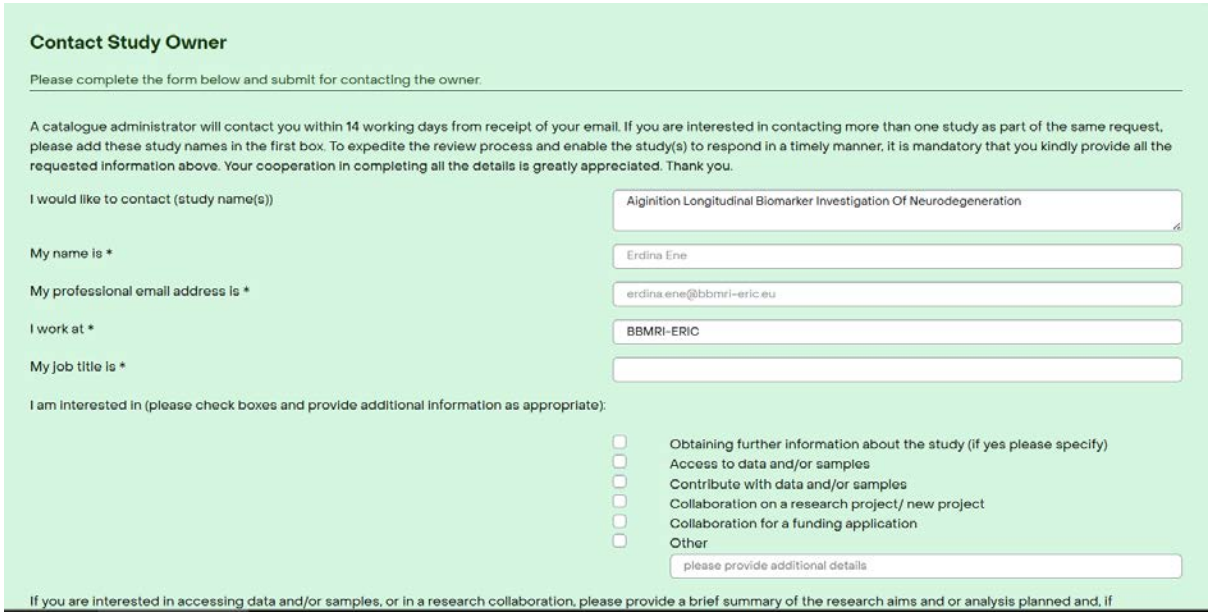
Access request

Submitting an inquiry to contact the study lead or a formal data access request is possible for users who have an account with the EPND Hub. After logging in, registered users of the EPND Hub can then submit either of these forms. The EPND Hub uses a common access request form that can be further customized to collect the information necessary for a data access committee to review. This form and approach are closely modelled on the Data Access Request (DAR) form of the AD Workbench.[9] The form contains standard fields to collect baseline information about the requestor and the research project, but the additional fields and information can be collected for each dataset, as needed. Consequently, whilst the baseline information collected as part of the access request step is standardised, there are some differences across the datasets, reflecting the diverging data access approval processes and different mandatory prerequisites. For example, if a dataset provider requires that an access request be accompanied by an ethics approval from a competent research ethics committee, attaching such an approval to the access request form will be mandatory for a researcher to submit the request.

[8] Maria del Carmen Sanchez Gonzalez et al (2024). *Common conditions of use elements. Atomic concepts for consistent and effective information governance.* https://www.nature.com/articles/s41597-024-03279-z

[9] For more information about the AD Workbench Data Access Request (DAR) process, see https://community.addi.ad-datainitiative.org/w/faq/180/request-access-to-data

Figure 1. EPND Hub's "Contact Study Owner" form



Contact Study Owner

Please complete the form below and submit for contacting the owner.

A catalogue administrator will contact you within 14 working days from receipt of your email. If you are interested in contacting more than one study as part of the same request, please add these study names in the first box. To expedite the review process and enable the study(s) to respond in a timely manner, it is mandatory that you kindly provide all the requested information above. Your cooperation in completing all the details is greatly appreciated. Thank you.

I would like to contact (study name(s)) — Aiginition Longitudinal Biomarker Investigation Of Neurodegeneration

My name is * — Erdina Ene

My professional email address is * — erdina.ene@bbmri-eric.eu

I work at * — BBMRI-ERIC

My job title is *

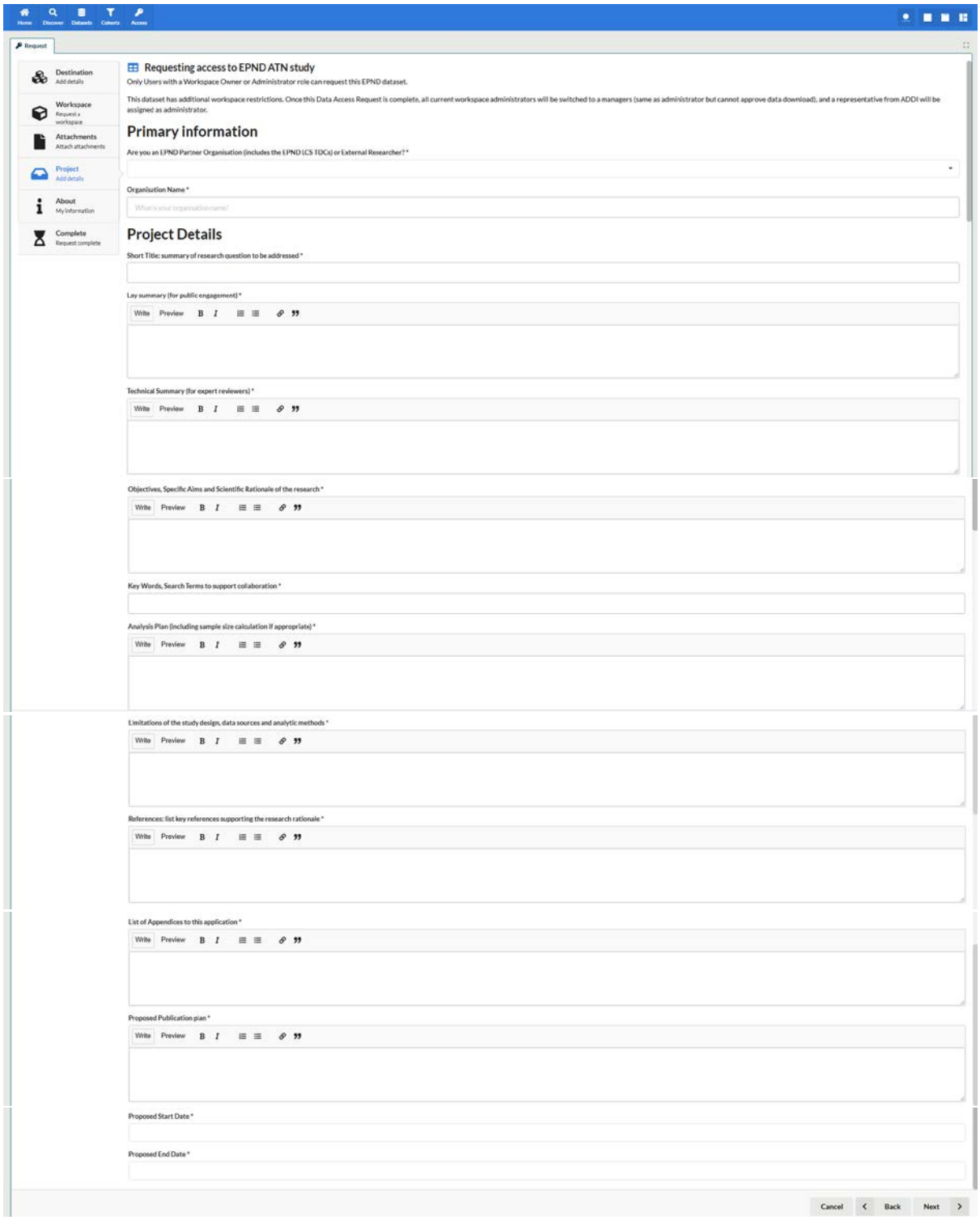
I am interested in (please check boxes and provide additional information as appropriate):

- ☐ Obtaining further information about the study (if yes please specify)
- ☐ Access to data and/or samples
- ☐ Contribute with data and/or samples
- ☐ Collaboration on a research project/ new project
- ☐ Collaboration for a funding application
- ☐ Other

please provide additional details

If you are interested in accessing data and/or samples, or in a research collaboration, please provide a brief summary of the research aims and or analysis planned and, if

Figure 2. Data Access Request (DAR) form through AD Workbench (interoperable with EPND Hub)



Access permissioning

Before data access can be provided (or, in the federated scenario, before the federated analysis is initiated), an access request must be reviewed and approved by the designated approver.

The approver is designated by the party that enters into a data contributor agreement with the AD Data Initiative and makes the dataset available via AD Workbench. In practice, the approver is typically a Data Access Committee (DAC) - or a comparable local institutional body - of the organisation that has entered into the data contributor agreement with the AD Data Initiative. Insofar as the data being approved for the reuse constitutes Personal Data and is therefore subject to the GDPR, the permissioning of the request must be accompanied by signing an appropriate contractual agreement in accordance with the GDPR, such as a controller-to-controller data transfer agreement. This agreement must be concluded between the data provider organisation and the legal entity with which the approved data user is affiliated.

Dataset providers, including those based in Europe, can enter into a data contributor agreement with AD Data Initiative directly. Accordingly, dataset providers will become responsible for reviewing downstream data access requests with respect to the datasets they have made available through AD Workbench, alongside being responsible for concluding controller-to-controller data transfer/use agreements with the approved users (where applicable). However, dataset providers can in principle also delegate some of the operational, contractual, and legal responsibilities associated with the role of access request review and permissioning. This is a possibility the EPND consortium has decided to offer to dataset providers based in Europe. While the dataset provider has the freedom to decide whether to make use of this possibility, the consortium's experience thus far indicates that most dataset providers appreciate the available support and utilize it to simplify their workload and responsibilities associated with dataset permissioning.

This approach of supporting dataset providers in permissioning downstream use of their data has been piloted as part of the EPND case studies. EPND case studies are scientific research projects carried out as part of EPND Work Package 5 (called "Case Studies") activities. Each EPND case study seeks to address specific research questions in neurodegeneration by analysing both biosamples and data contributed by different participating organisations. Over its course, each EPND case study leads to the generation of a distinct dataset that incorporates harmonised, record-level data from across all sample and data resources utilised in that case study. These newly generated datasets containing EPND case study results are to be made discoverable, requestable, and accessible through the EPND Hub.

The task of making these newly generated datasets available through the EPND Hub presented the consortium with unique data governance challenges. In terms of their informational content, these datasets are just like any other dataset made available through the EPND Hub: they contain record-level data along the clinical, phenotypic, biological, and socio-demographic variables supported by AD Workbench. However, from the data governance perspective, these newly generated datasets are composed of multiple constituent datasets contributed by several organisations, with each constituting dataset being potentially subject to different access conditions, restrictions, and institutional approval rules. This made the matter of permissioning the reuse of EPND case study results, compared to other datasets made available through the EPND Hub, exceptionally challenging.

The solution proposed by the EPND consortium was to designate a single partner organisation as the sole contributor of the datasets containing EPND case study results vis-à-vis the AD Data Initiative, thus also making this partner organisation formally and contractually responsible for downstream access decisions regarding the dataset. The organisation selected for this role was University of Maastricht (UM), the scientific coordinator of the EPND project and one of the co-leads on several EPND case studies. Accordingly, UM negotiated with the other partners participating in the EPND case studies an acceptable data governance model, whereby the formal decisions would be made by UM in accordance with the DAC processes established at UM, while also ensuring that such decisions would reflect any access and use conditions prescribed by the contributing partners. Additionally, those dataset contributors who wished to retain the possibility to review (and potentially veto) UM's approval decisions, were given contractual mechanisms to do so.

This proposal was accepted by the research organisations contributing biosample and/or data resources towards EPND case studies. Consequently, the first harmonised dataset containing results of an EPND case study was made available through the EPND Hub in May 2025,[10] with UM becoming the party contractually responsible for access permission decisions. Seven institutes in different EU countries had contributed samples and data that led to the generation of this composite dataset. Over the remainder of the EPND project, multiple other composite datasets will be generated as part of the remaining EPND case studies and made available through the EPND Hub in a similar manner, with the number of contributing organisations ranging from 2 to 7, depending on the case study.

Designating an intermediary (UM) as the dataset submitter vis-à-vis AD Data Initiative, and hence the party responsible for downstream permissioning of the dataset has provided several advantages to the institutes contributing resources. Namely, this has shifted the operational workload of reviewing and assessing incoming access requests towards UM, while also reducing the legal liability for the contributors who no longer sign agreements with AD Data Initiative or the downstream data user. At the same time, the arrangements made among the parties ensured that the access and use conditions defined by the upstream partners are always respected. Where applicable, this includes giving the upstream partners the right to review and potentially veto an access decision by UM, an approach that was requested by a minority of the upstream partners whose institutional rules necessitate a review by their local DAC.

Reduced operational workload and simplified contractual framework have been viewed favorably by the EPND case study participant organisations, indicating a potential broader interest in similar support for the datasets brought to the EPND Hub. Consequently, the EPND consortium intends to make this option available to any dataset provider that would like to partially or fully delegate data governance-related activities relating to downstream access permissioning. The intermediary party that will offer this support to dataset providers will be the dedicated legal entity to be established by the EPND consortium before the end of the EPND project.[11] However, whether, and to what extent the support of the EPND legal entity will be utilised with respect to permissioning a particular dataset will be the decision of the dataset provider.

[10] EPND news article: https://epnd.org/news/new-atn-biomarker-dataset-now-available-on-the-epnd-hub

[11] For more information about the forthcoming legal entity, see Deliverable D7.4 of the EPND consortium, the Final Sustainability Plan.

Access and analysis modalities

After an access request has been granted to the user of the EPND Hub, data access and analysis are carried out through AD Workbench workspaces. AD Workbench workspaces are secure, cloud-based environments preloaded with commonly used data science tools such as RStudio and Jupyter Notebook, with the possibility to install other software packages required for carrying out intended data analyses. Thanks to the interoperability between the EPND Hub and AD Workbench, which includes fully harmonised user authentication and authorisation processes, the users of the EPND Hub can be granted access to workspaces.

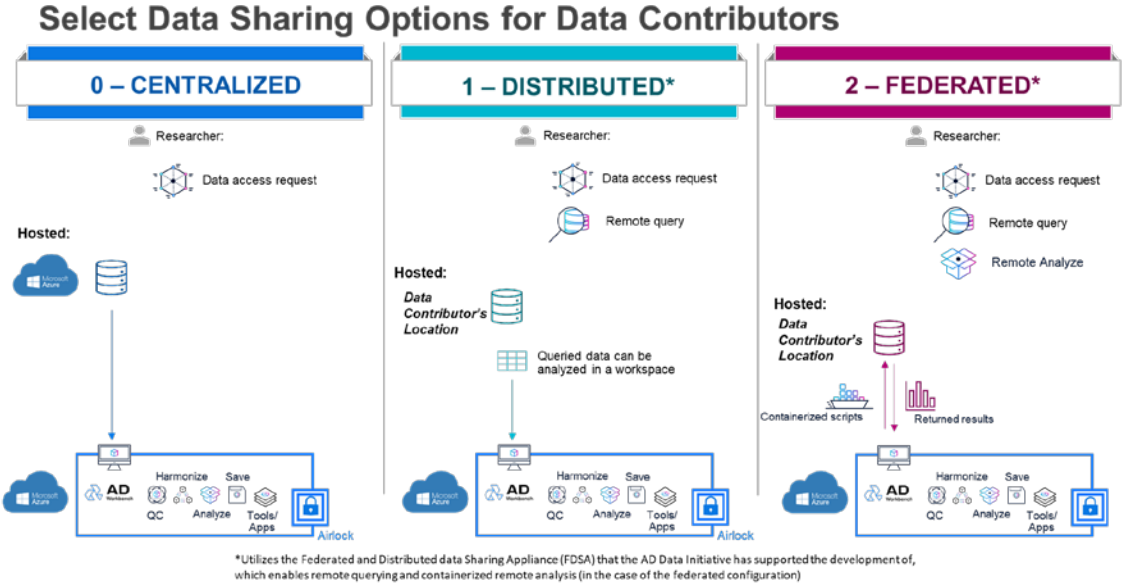
There are two main modalities in which data analysis can be carried out via Workspaces, alongside a third hybrid approach combining features of both. Where the permissioned user can access (view) record-level data and carry out analysis directly on the data, this is called Centralised data analysis. This approach entails transferring the dataset to the approved user's AD Workbench workspace.

An alternative approach, where no record-level data gets disclosed to the user, is called Federated data analysis. This entails submission of remote queries by the approved user, with the federated analysis taking place where the dataset is hosted. After the completion of the analysis, the results are generated. These results are subsequently reviewed by the designated administrator (also predefined by the party that enters in the data contribution agreement with AD Data Initiative) to ensure the results don't contain any sensitive information, including personal data. After the results have been approved by the administrator, they can be released to the user in the user's workspace.[12]

Finally, the Distributed modality of data analysis combines aspects of both approaches. In this scenario, it is possible to transfer segments of the dataset to an approved user's workspace (as per the "Centralised" modality), while also enabling remote hosting and querying of the data (as per the "Federated" modality).

[12] For a more detailed information about the federated data analysis enabled by AD Workbench, see https://www.alzheimersdata.org/product-suite/fdsa/fdsa-information-for-researchers

Figure 3. Three options for data sharing and analysis enabled by AD Workbench



Once again, the decision as to the appropriate modality of data analysis rests with the dataset contributor, a decision that should be coupled with the dataset contributor's choice of the data hosting option.

EPND-facilitated biosample research

With respect to biosamples, the EPND Hub enables biosample collection discovery, access request, and contact with the biosample holder. Access decision-making, as well as logistics of providing biosample access and laboratory analysis take place outside the EPND ecosystem.

Biosample resources can be found at https://discover.epnd.org/catalogue under the "Biosample Collections" tab. The holders of these biosample collections can be contacted directly by registered users of the EPND Hub. In some cases, it is also possible to submit a biosample access request form through the EPND Hub. One such example is the Luxembourg Luxpark biosample collection whose sample access request form has been fully implemented in the EPND Hub's user portal. The EPND consortium seeks to ensure a similar level of integration for all biosample collections listed on the EPND Hub's biosample catalogue. The biosample collections will also be characterised by their access and use conditions, using the latest DUC/CCE scheme, thus enabling prospective users to assess whether the intended study meets the applicable sample governance requirements.

Following the submission of the sample access request, the degree of EPND's involvement will be informed by the contractual and negotiation support needs of the sample provider and the (prospective) sample user. Where the two parties have adequate in-house expertise and processes to negotiate and conclude suitable agreements such as a Material Transfer Agreement (MTA), these matters may be arranged bilaterally. In other cases, negotiation and contractual support may be provided by the (forthcoming) EPND legal entity, if/when requested.

3. Conclusions

The European Platform for Neurodegenerative Diseases (EPND) is a five-year (2021-2026) project funded by the Innovative Health Initiative. The goal of the EPND is to help accelerate research into neurodegenerative diseases by enabling discovery, access, and reuse of the existing biosample and data collections. To meet the needs of its target audience, - i.e., the sample and data provider organisations on the one hand, and the researchers using these resources on the other hand - the EPND consortium has created the EPND Hub. At the time of this writing, the construction of the EPND Hub is substantially completed, with the efforts currently focused on populating the EPND Hub with the data and sample collections, and their associated metadata. The EPND Hub leverages AD Workbench for the purposes of dataset hosting, permissioning, access and/or analysis. However, the EPND Hub also provides additional features currently not supported by AD Workbench, notably the discovery of, and access request for, biosample collections. The access governance processes of the EPND Hub, alongside the Hub's ancillary ELSI and operational support services, have been designed to meet the specific governance needs of the sample and data provider organisations in Europe.

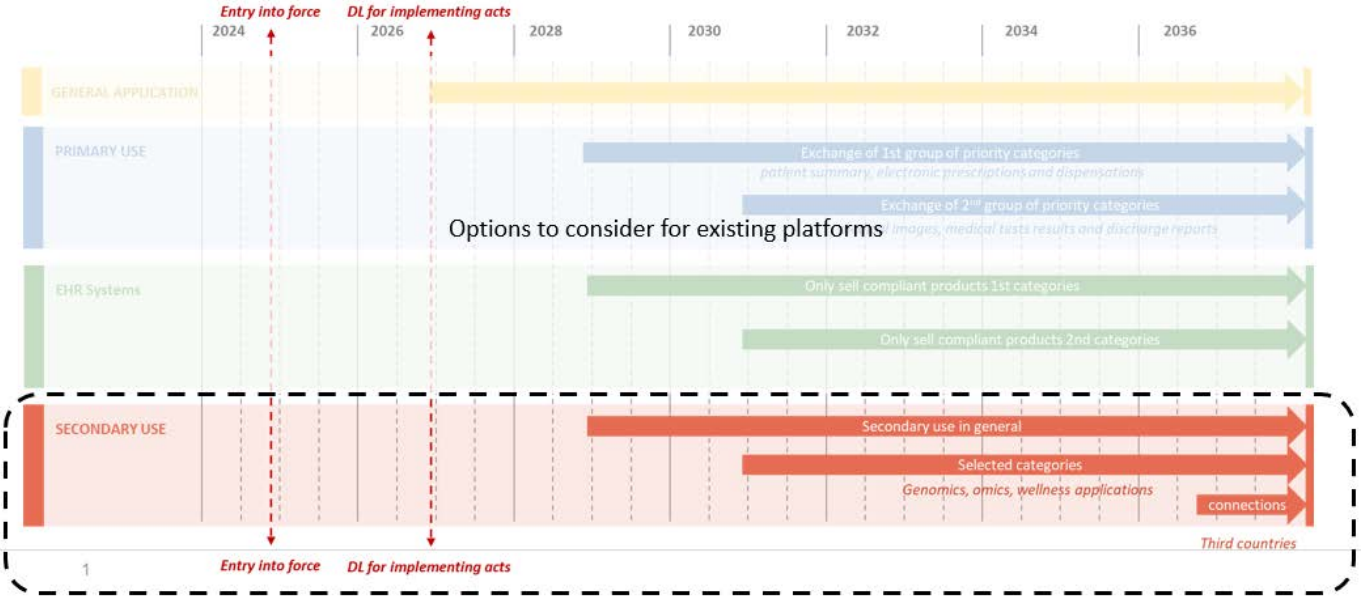
As the project enters its final year, the EPND consortium is prioritising long-term sustainability of the project's legacy. To this end, the consortium will be establishing a legal entity to ensure the EPND Hub and its associated services remain operational beyond 2026. The data and sample access governance framework to be adopted by the forthcoming legal entity will be informed by the consortium's learnings that have been described in EPND's public deliverables, including the present white paper. In the coming years, special attention will be devoted to ensuring smooth integration of the EPND Hub and its governance into the emerging health data ecosystem in Europe shaped by the implementation of the European Health Data Space regulation.

Annex A. Legislative development: the EHDS Regulation

(This Annex has been contributed by BBMRI-ERIC)

The Adoption of the EHDS Regulation (https://eur-lex.europa.eu/eli/reg/2025/327/oj/eng) has changed the rules for electronic health data sharing considerably within the EU. It provides for a uniform data access schema in addition to the traditional gateway described above. The EHDS infrastructure is non-exclusive, but to benefit from the access facilitating resources requires full compliance with the technical restrictions; e.g., the use of a Secure Processing Environment (SPE)[13] to analyse personal data in the first place.

The EDHS Regulation intends to open data silos within the EU and make electronic health data available on a large scale. It has been adopted in February 2025 and entered into force on 26 March 2025. Major implementing acts as referred to in Article 70, Article 73(5), Article 75(12), Article 77(4) and Article 78(6) of the Regulation shall apply from 26 March 2029. The European Commission (EC) is expected to publish these implementing acts by March 2027, and the application of the Regulation to unfold between 2029 and 2034.



[13] The Secure Processing Environment is defined in a related European Regulation, 2022/868 (Data Governance Act). According to Article 2(20) of the Data Governance Act, " *'secure processing environment' means the physical or virtual environment and organisational means to ensure compliance with Union law, such as Regulation (EU) 2016/679, in particular with regard to data subjects' rights, intellectual property rights, and commercial and statistical confidentiality, integrity and accessibility, as well as with applicable national law, and to allow the entity providing the secure processing environment to determine and supervise all data processing actions, including the display, storage, download and export of data and the calculation of derivative data through computational algorithms*"

What is made available for secondary use?

Art. 51 EHDS Reg defines the minimum categories of electronic health data that must be made available. Member States can always extend those categories. They are, however, quite exhausting and cover most of the data categories used in research:

(a) electronic health data from EHRs;
(b) data on factors impacting on health, including socioeconomic, environmental and behavioural determinants of health;
(c) aggregated data on healthcare needs, resources allocated to healthcare, the provision of and access to healthcare, healthcare expenditure and financing;
(d) data on pathogens that impact human health;
(e) healthcare-related administrative data, including on dispensations, reimbursement claims and reimbursements;
(f) human genetic, epigenomic and genomic data;
(g) other human molecular data such as proteomic, transcriptomic, metabolomic, lipidomic and other omic data;
(h) personal electronic health data automatically generated through medical devices;
(i) data from wellness applications;
(j) data on professional status, and on the specialisation and institution of health professionals involved in the treatment of a natural person;
(k) data from population-based health data registries such as public health registries;
(l) data from medical registries and mortality registries;
(m) data from clinical trials, clinical studies, clinical investigations and performance studies subject to Regulation (EU)
(n) other health data from medical devices;
(o) data from registries for medicinal products and medical devices;
(p) data from research cohorts, questionnaires and surveys related to health, after the first publication of the related results;
(q) health data from biobanks and associated databases.

Of course, only data that is available within the EU can be provided. The data is available if it is stored by a data holder based in the EU. A data holder is by definition any data controller as defined in the GDPR acting in health care and/or research (Art. 2(2t) EHDS Reg, see below for details).

In the case of personal data, which also includes pseudonymised data, however, only data whose use has not been objected to by the individual by means of opting out will ultimately be made available.

To whom are data made available?

Any natural or legal person can apply to get access to electronic health data through the EHDS infrastructure. Access to the data is limited by eligibility of purpose of intended use not by eligibility of person. Eligible purposes for secondary use include supporting policy making, regulatory activities, research, innovation and development of health products, training of AI algorithms e.g. for medical devices. Expressly prohibited purposes are for example the use of

data against persons, commercial advertising, increasing insurance rates, develop dangerous products.

The data user must formally apply through an HDAB (Health Data Access Body) and then fulfil the legal obligations and constraints outlined in the permit issued by a competent HDAB.

How are data made available?

Legally: To access health data via the EHDS infrastructure, an application must be submitted via a competent HDAB. The application form is harmonized across The EU by an implementing act and differs only in terms of national specificities. The competent HDAB decides on the application in the form of an administrative act (permit), the essential content of which is determined by the EHDS Regulation.

The EHDS Reg creates a closed system. This means that only an HDAB established under the EHDS Reg and national law has the competence to issue data access permits based on the EHDS Reg. Other access mechanisms, such as data access committees, cannot rely on the EHDS Reg, but must operate as usual within the framework of the GDPR.

Technically: The EHDS Reg stipulates that personal data, including pseudonymised data, may only be made accessible in an SPE. There, authorised users can analyse the data and export anonymised results. Only anonymous data can be downloaded directly or, in the case of other legal restrictions such as fees, obtained through a simplified procedure known as a data request.

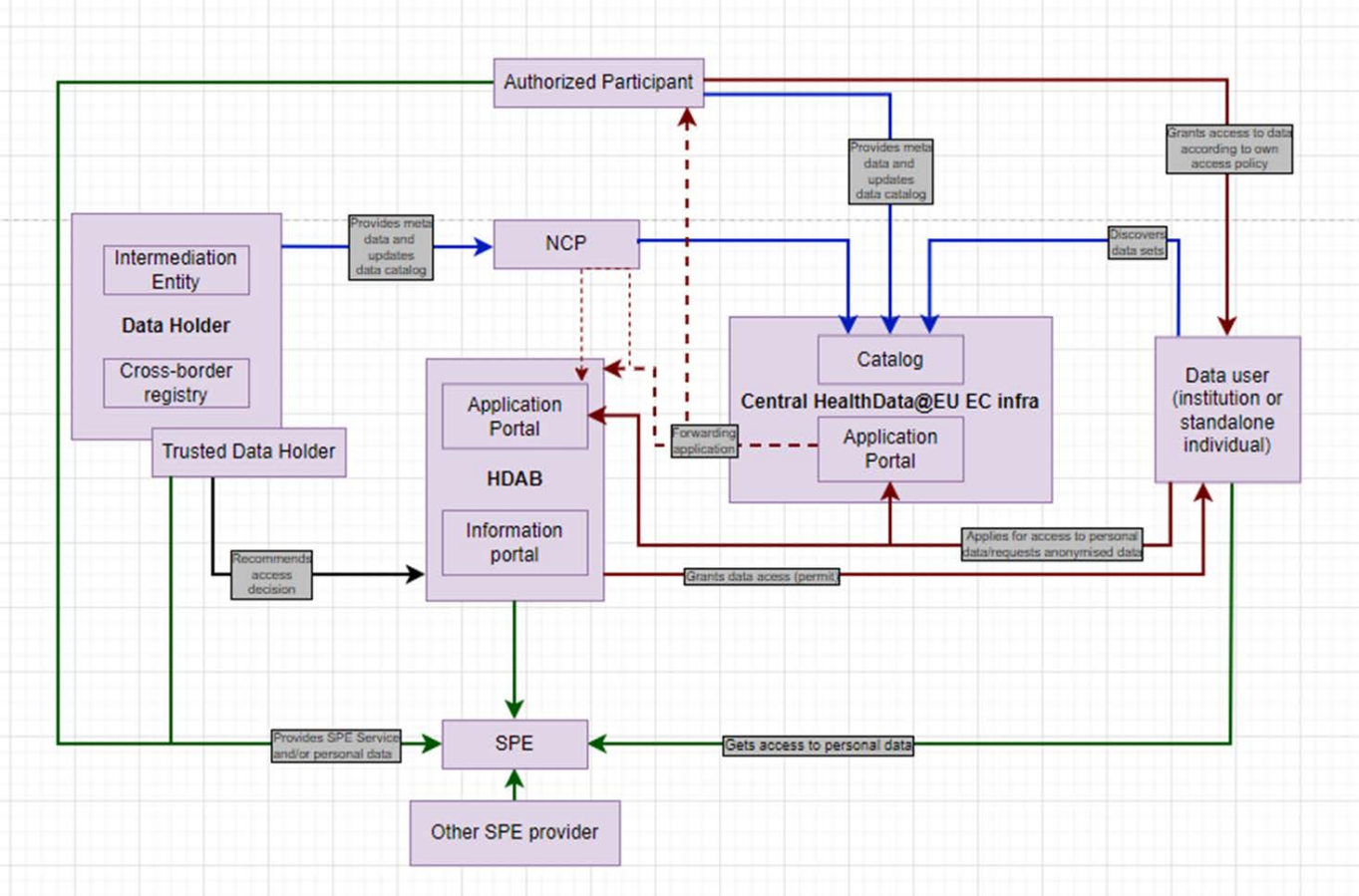
Access to data is generally subject to a fee. Details will be laid down by national HDABs.

Obligations of data holders

According to Art. 2(2t) EHDS Reg, a data holder is any data controller in the healthcare or the care sectors, including reimbursement services where necessary, as well as any natural or legal person developing products or services intended for the health, healthcare or care sectors, developing or manufacturing wellness applications, performing research in relation to the healthcare or care sectors. Qualifying as a data holder entails extensive obligations under the EHDS Regulation:

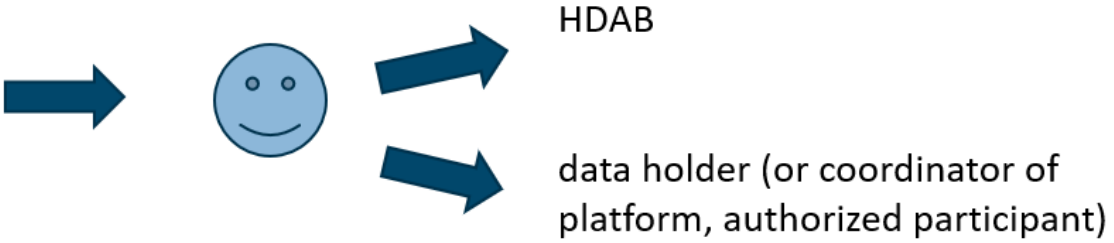
- to share electronic health data on request of an HDAB in pseudonymised or anonymised format through SPE or trusted open public database (Article 51, 60 (3))
- to provide meta data in a certain format (Art. 60 (3))
- to generate data in a certain format under a certain Quality and Utility Label, if funded by EU (Art. 78)
- to feedback significant findings to natural persons (Art. 58 (3))
- to collaborate in implementing opt-out.

The EHDS Infrastructure: Healthdata@EU



User perspective: 2 gateways to get access to data

Article 1 EHDS Reg stipulates in paragraph (8), that the EHDS Regulation shall not affect access to electronic health data for secondary use agreed in the framework of contractual or administrative arrangements between public or private entities. This means, that all existing and future databases can still be contacted directly by potential users and request data access beyond the EHDS infrastructure according to the traditional rules. The same holds true for the data infrastructure and its governance framework being established by the EPND, as it will have been fully operational well before the EHDS infrastructure starts serving secondary use needs of the diverse stakeholders.



Where potential users choose to directly contact data holders or authorised participants, they need to be aware that those cannot issue a data permit and cannot rely on the legal basis provided by the EHDS Reg. Instead, the data provider will have to observe all legal constraints stemming from the GDPR and the underlying legal basis on which the data have been captured (informed consent in most cases) and will reflect these constraints in the DUA concluded with all accepted data users.

Who is the data holder under the EHDS Reg for cross-border platforms?

Article 76 EHDS Reg addresses the situation of existing cross-border data platforms as there are already many in Europe. There are two options:

"1. In the case of **cross-border registries and databases**, the health data access body with which the health data holder for the specific registry or database is registered shall be competent to decide on health data access applications to provide access to electronic health data pursuant to a data permit. Where such registries or databases have joint controllers, the health data access body that decides on the health data access applications to be used to provide access to electronic health data shall be the health data access body of the Member State where one of the joint controllers is established.

2. Where **registries or databases from a number of Member States organise themselves into a single network of registries or databases at Union level**, the associated registries or databases may designate a coordinator to ensure the provision of data from the registries or databases' network for secondary use. The health data access body of the Member State in which the coordinator of the network is established shall be competent to decide on the health data access applications to be used to provide access to electronic health data for the network of registries or databases."

Whereas the first option is rather the exception, the second option is widespread. EPND would certainly fall under the second option. The future legal entity will therefore be the contact point for the HDAB where the entity is located.

Authorised participants – a still unknown territory

The term 'authorised participant' was added to the EHDS Reg to take into account the fact that there are already well-established Europe-wide organisations with their own legal personality that should have access to the EHDS infrastructure. These are primarily so-called ERICs and EDICs, which are also explicitly mentioned. However, this term is also open to other international organisations and to third countries. This was meant to foster single applications, whereby, with one application, the health data user can obtain authorisation from multiple health data access bodies in different Member States or authorised participants in HealthData@EU. Art. 67 EHDS Reg therefore states: "The health data access application shall be automatically forwarded to the relevant authorised participants in HealthData@EU ."

Becoming an authorised participant requires according to Art. 75 EHDS Reg an implementing act issued by the Commission.

Authorised participants grant access to their data through access approvals that are not further defined and follow the sharing policy of the respective organisation. (Art. 75 EHDS Reg). Art. 68 (5) clarifies that access approvals fall into the sole responsibility of the authorised participant.

In the end, it is still quite unclear whether international organisations or third countries will be eager to become an authorised participant. The sole benefit seems to be that they are technically connected to HealthDatat@EU, that they can receive access applications through an HDAB and that their data can be transferred to an SPE managed under the EHDS infrastructure. In return, they must comply with the requirements of both the EHDS Regulation and the GDPR.

The EPND is being planned as a private legal entity under Irish law. It will therefore not qualify as an international organisation to potentially become an authorised participant. Consequently, in the coming years, other paths will be explored for the EPND legal entity to ensure its meaningful participation in the EHDS ecosystem. The EPND consortium's strategy towards EHDS participation will be outlined during the final year of the project, through internal discussions to be coordinated by WP2 (ELSI). To that end, WP2 will also organise at least one consortium-wide virtual workshop dedicated to the EHDS during the first half of 2026. The outcomes of these discussions will be summarised and fed to WP7 (Sustainability) to inform the updated Final Sustainability Plan (Deliverable D7.5), as needed.

Options to consider for existing platforms

1st option: Data holders may consider letting all datasets be hosted on one central platform owned or coordinated by one single institution. As a result, no consortium partner holds data anymore on their local databases. Thus, the coordinating partner of the platform will be the contact point for the HDAB, which is the competent HDAB in the country, were the coordinating partner is established. If the central platform owner is an authorised participant, which might be the case, when it comes to an international organisation such as an ERIC or EDIC, the EHDS rules for sharing data will not be applicable, but the international organisation will still decide about access according to their own governance rules. That means that data cannot be shared through permit issued by an HDAB.

2nd option: If data holders decide to have no central platform, but all data remains with generating consortium partners, then every controlling partner is a data holder under EHDS and must make data available according to the EHDS Regulation. In concrete terms, this means that the data holder must make data available at the request of the HDAB responsible for him/her.

3rd option: Many data holders might prefer to combine both approaches and transfer the data to a central platform plus having a copy in their local systems, so that they can use them themselves as they are used to. This leads in the end to duplication of obligations under EHDS, if both, the central platform and the consortium member, are data holders under the EHDS.

Annex B. Role of the ELSI Support Desk

The main intention of the ELSI support desk is to enable cohorts and biosample collectors to join the EPND platform. Thus, the platform can grow into a unique hub for neurogenerative disease research resources.

Cohorts and biobanks are highly professional in setting up their data/sample collections and developing guidelines for data/sample sharing within their initial remit. They are experts in their national legal framework and the local requirements of their competent ethics committees. When it comes to joining an international platform however, they often lack ethical and legal expertise and resources to adapt to the respective sharing policies of these platforms. In many cases, this would require the in-depth assessment of those sharing policies and to compare it with the ethical and legal constraints stemming from the underlying informed consent or other legal basis the cohort or sample collection is built on.

The ELSI support desk is there to offer support in explaining the EPND options and policies and to help cohorts willing to join to find their appropriate way. It can also support the discussion with local ethics committees and data protection officers. This support is based on vast experience with onboarding cohorts to EPND which is a valuable resource in navigating the fragmented and complex landscape. Knowing the typical reasons for reluctance to make data available beyond one's own sphere of control makes it easier to deal with barriers which might not be final ones but rather trust building exercises.

Furthermore, the ELSI Support Desk is available to assist any prospective user of biosample and data collections with questions related to the ethical, legal, and regulatory compliance around the intended data/sample reuse