EBRAINS Compliance and Data Management Handbook (D4.10 – SGA3)

Figure 1: EBRAINS dedication to data governance, ethics compliance and data protection ensures that the rights and freedoms of data subjects, scientists and researchers is protected.

Project Number:	945539	Project Title:	HBP SGA3

Document Title:	EBRAINS Compliance and Data Management Handbook
Document Filename:	D4.10 (D41) SGA3 M30 SUBMITTED 220929.docx
Deliverable Number:	SGA3 D4.10 (D41)
Deliverable Type:	Report
Dissemination Level:	PU = Public
Planned Delivery Date:	SGA3 M30 / 30 Sep 2022
Actual Delivery Date:	SGA3 M30 / 29 Sep 2022
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Description in GA:	Including Ethics Compliance, Data Governance and Data Protection
Abstract:	This document provides a snapshot of the compliance processes across three key areas: Ethics Compliance, Data Governance and Data Protection, as they exist in September 2022. It should provide a comprehensive overview of how the compliance of data is managed in EBRAINS across the infrastructure - and should serve as a useful reference for users and developers seeking to understand how data is processed ethically, legally and responsibly across the infrastructure.
Keywords:	Ethics, Compliance, Data Governance, Data Protection
Target Users/Readers:	EBRAINS users, developers, consortium members,

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1. Introduction

EBRAINS ensures that its services are compliant with social, legal and ethical principles and expectations. EBRAINS users should find access to the compliance requirements they are expected to meet quickly, easily and without unnecessary detail. This handbook explains the various compliance processes that EBRAINS has implemented to ensure that necessary requirements are met.

This EBRAINS Compliance Handbook covers the compliance processes across three key areas:

- Ethics Compliance - EBRAINS Research Infrastructure (EBRAINS RI) shares a huge number of datasets through the EBRAINS Knowledge Graph (KG). These datasets must be compliant with ethical and legal requirements, and so EBRAINS has implemented a set of processes that ensure that these requirements are met for each dataset.
- Data Governance - In addition to the specific ethics compliance requirements, other issues related to the handling of data in EBRAINS are also subject to certain conditions. The EBRAINS Data Governance structure ensures that EBRAINS handles the broader questions of appropriate handling of data.
- Data Protection - EBRAINS has in place a rigorous data protection structure to ensure that personal data of natural persons are processed ethically, legally and in a socially acceptable manner.

These three pillars of our compliance structure constitute a set of services which are sensitive to the ethical challenges posed by the handling of neuroscientific research data and takes that responsibility seriously. This document should be a useful reference for any EBRAINS user who wants to familiarise themselves with how EBRAINS handles these complex and challenging issues.

It is also important to note that EBRAINS RI is a product of a great deal of work within the Human Brain Project (HBP), and as such, many of the supporting structures developed within the HBP now contribute to the development and maintenance of the EBRAINS RI. There is still a great deal of overlap between the HBP and EBRAINS structures (for example, the Data Governance Working Group (DGWG) discussed in Section 3 supports both the HBP and EBRAINS in matters of data governance).

2. Rationale and Methodology

This handbook serves as a useful quick reference for both EBRAINS users and developers who need to know how data are handled in the infrastructure with respect to compliance. The first part of this handbook focuses on three aspects of EBRAINS Compliance: ethics compliance, data governance and data protection across the infrastructure - this is a broad view of the motivations which drive the application of compliance processes in the infrastructure, followed by a detailed break-down of the processes themselves.

The latter half of this handbook covers the individual Service Categories (SCs). Each Service Category brings with it its own potential compliance challenges, and as such this section will explain how compliance is handled in each Service Category.

This handbook was compiled by the HBP Compliance, Data Governance, Data Protection and Data Management team. Section 1 on Ethics Compliance, Data Governance and Data Protection was compiled by the experts within this team based upon the existing policies and procedures which are present in EBRAINS. Section 2 was compiled by the Service Category representatives, who provided a description of their service and any measures in place to address potential compliance challenges that specific service might encounter.

EBRAINS RI is an infrastructure that is growing and changing over time. This handbook is a snapshot of the compliance processes as they exist in September 2022. As new services are added, as existing services change and evolve and as new ethical challenges arise, responsibilities, processes and policies within the infrastructure will have to change also, as such this handbook too will change.

3. This Handbook as a Living Document

As EBRAINS changes so too will the compliance structures and processes evolve to account for those changes. In order to ensure that this Handbook remains up to date, the following review timeline will be implemented:

1) March 2023 this document will be reviewed by the HBP Compliance, Data Governance, Data Protection and Data Management team to assess what changes need to be made to account for any changes in EBRAINS.
2) September 2023 document will be reviewed again, before the end of the Human Brain Project, to ensure that it is updated to reflect changes in the compliance and data governance structures at that time.

At both the March 2023 and September 2023 milestones, the revised document will be shared with the HBP Data Governance Working Group and the EBRAINS Governance Taskforce to ensure that it is made available to any developers who require it as reference.

4. EBRAINS Data Governance

Data Governance is an integral part of EBRAINS. EBRAINS overall data governance framework is shaped for relevant EU laws and ethical principles. The EBRAINS framework aligns well with EU General Data Protection Regulation (GDPR) and the provisions of the EU Strategy for data, including policies and regulations within the EU Health Data Space. For animal data, the EU Directive 2010/63/EU on the Protection of Animals used for Scientific Purposes shapes EBRAINS governance mechanisms. For EBRAINS, Data Governance is the overall management of the availability, usability, integrity, and security of data used in an organisation. A sound data governance programme ensures that data are consistent, compliant, and trustworthy. To achieve this, EBRAINS adopts the PPT (People, Processes, Technologies) data governance model/framework.

The *People* include all identified stakeholders within all the data processing pipelines in EBRAINS, who are responsible for creating, applying, and maintaining data governance procedures. It also includes the identification of data subjects whose rights must always be upheld.

- Most importantly for HBP/EBRAINS, the stakeholders are established groups or committees and include:
    a) Data Governance Working Group. This Includes representatives from all the service categories and Work Packages (WPs). The DGWG works closely with other bodies in the HBP, notably the Science and Infrastructure Board (SIB), the Directorate, the Data Protection Officer (DPO), the Scientific and Technical coordinators, the Medical Informatics Data Governance Steering Committee, and other relevant bodies such as the Ethics Support team, and the independent Ethics Advisory Board (EAB). The DGWG is the central body that prepares data governance policies and addresses challenges and concerns in all service categories. The membership of this group includes the HBP Ethics Director who is the co-chair, the Compliance manager and the Data Protection Officers.
    b) Data Protection Officers. The HBP and EBRAINS have DPOs that ensure that personal data are processed in in compliance with the applicable data protection rules.
    c) Access Review Committee. This oversees access requests for data/service users.
    d) Curation Access Review Committee. This oversees access requests for data providers.

The *Processes* refer to the diverse technical, legal, and ethical policies, procedures and practical processes set up to ensure responsible data governance. Some of the processes and policies already established and implemented in EBRAINS include:

- **EBRAINS Access Policy:** A policy that details conditions and requirements for access to EBRAINS services including datasets. This policy aligns with the principles of the EU Charter on Access to Research Infrastructure and the EU Legislation on Research and Innovation.

- **EBRAINS General Terms:** Access and use of data in EBRAINS are in accordance with the General terms of use which all users must agree with.
- **EBRAINS Data Use agreement (DUA):** The agreement identifies the legal responsibilities when accessing pseudonymised human data. All users agree not to share the data, and not attempt to identify the data subjects. Failure to comply with the agreement will result to termination of access.
- **EBRAINS Data Provision Protocol (DPP):** DPP details the requirements and recommendations for Data Providers wishing to share Data or metadata via EBRAINS.
- **EBRAINS Privacy Statement:** This document details EBRAINS' commitment to the safe, transparent, and confidential collection and processing of your personal data.
- **Data Processing Agreements:** Standard data processing agreements for diverse data processors have also been set up.
- **Data Protection Impact Assessment (DPIA):** To ensure that the GDPR provisions are adhered to and that adequate technical and organisational measures and safeguards are in place, DPIAs are conducted for all EBRAINS services.
- **Informed Consent Protocol:** To assist data providers in complying with the provisions of the GDPR regarding consent as a lawful basis for data processing, EBRAINS provides a consent template to data providers and other researchers who may need it.

Technology includes all technologies developed and applied in EBRAINS workflows to ensure usability, FAIR and compliance to relevant laws and ethical principles. Some of these technologies include:

- EBRAINS Knowledge Graph (KG): The EBRAINS KG is the technical infrastructure to register, annotate, curate and consume scientific data including the data products of HBP research activities. With its metadata storage and heterogeneous interfaces, it provides controlled access to the data and the information required for its interpretation by scientists, and it also provides other software tools. It therefore aims to be the central platform for data exchange inside the HBP and EBRAINS.
- EBRAINS Human Data Gateway (HDG): This is a technical interface that ensures that personal data (e.g. pseudonymised neuroimages) are not made freely available without control. It provides security to pseudonymised datasets in the Data and Knowledge service. While other non-personal datasets (e.g. animal data and anonymous statistics from data) can be made available to users without an EBRAINS account, only authenticated users with an EBRAINS account and those who have signed the EBRAINS DUA can have access to datasets shared via the HDG.
- OpenMINDs: This is a metadata standard developed by EBRAINS which is focused on developing and maintaining a set of metadata models to facilitate access to neuroscience research.
- Encryption: Encryption at rest and on transit are also developed for datasets in some EBRAINS services (e.g. The Virtual Brain (TVB)).
- Pseudonymisation: Though EBRAINS does not provide pseudonymisation tools, there are measures in place to ensure that only pseudonymised data are shared via EBRAINS.

5. EBRAINS Ethics Compliance

5.1 Introduction

The EBRAINS Ethics Compliance Processes are built upon almost a decade of research ethics compliance expertise developed throughout the life of the Human Brain Project. These processes are implemented to ensure that any data processing applied by the infrastructure can be carried out in a manner which meets ethical, legal, and social requirements. EBRAINS users should also be

assured of the quality and ethical compliance of any dataset they access through the EBRAINS Research Infrastructure.

To ensure that these two goals are achieved, EBRAINS has implemented a rigorous, effective, and efficient ethics compliance process for all datasets going through the EBRAINS Knowledge Graph data curation process.

EBRAINS handles a large amount of human data (both personal and non-personal), animal and technical data and each data type comes with its own particular set of challenges. The specific requirements which data providers are expected to meet are detailed in the EBRAINS Data Provision Protocol, which is available on the EBRAINS website. This section of the handbook will detail the exact process that the EBRAINS compliance management team follow, and explore the rationale and justification for those processes.

5.2 To what data does this apply

All datasets processed through the EBRAINS KG data curation workflow must complete an ethics compliance check.

5.3 The ethics compliance process

The process to complete an EBRAINS Ethics Compliance Check is as follows:

1) Data Providers are prompted to complete an EBRAINS Ethics Compliance Survey by the Data Curation team. This survey will ask the data provider information relating to the ethics compliance status of their dataset:
    a) For living human data, this survey will ask for enough information for EBRAINS to be assured that the data can be shared on EBRAINS platforms within the bounds of GDPR.
    b) For all other data, including animal data, technical data and post-mortem human data, EBRAINS asks for confirmation that the data collection could have been conducted within an EU member state.
    c) For all data, EBRAINS asks for details of the ethical approval, which approved the conduct of the study to collect the data.
2) Once completed, the Ethics Compliance Survey is reviewed by the EBRAINS Compliance Team. If necessary, this might involve sharing the information with an internal ethics expert in the particular field to which the dataset pertains.
3) If more information is required from the data provider, the Compliance Team may contact them directly.
4) If the information provided in the survey demonstrates that EBRAINS can legally and ethically share the data on its platforms, then the compliance check is complete.
5) The EBRAINS Compliance team will update the Curation issues list, situated on a private gitlab, to indicate to the assigned data curator that the submission has been checked and approved to continue curation.

It is important to emphasise that the EBRAINS ethics compliance process and subsequent approval does not comprise an ethics review process and does not bestow ethics approval on a study to commence any research processes. The EBRAINS ethics compliance process does not seek to replace local processes of ethical approval, rather it simply checks that those local processes have been completed, that ethical approval has been obtained from the data providers' institution, and that EBRAINS can ethically and responsibly share the data on EBRAINS RI.

5.4 Expected Requirements for Data by Type

A wide variety of potential data types are handled by EBRAINS data curation. Each data subject type (humans, animals or technical data) requires a particular set of requirements. These requirements are set out in detail in the EBRAINS Data Provision Protocol (DPP). Here, we will cover the motivation and justification for the particular requirements covered in the DPP:

5.4.1 Living Human Subjects

Data derived from living human subjects are the potentially most sensitive data type handled by EBRAINS. The primary concern when handling such data is that the processing in EBRAINS is in accordance with the General Data Protection Regulation (GDPR, 2018). As such, when a data provider is seeking to share data from living human subjects on EBRAINS, the ethics compliance process asks questions which seek to identify whether the data can be considered sensitive or personal, where the data were collected, and whether that data have been appropriately anonymised or pseudonymised.

EBRAINS can only accept personal data that have been processed to remove or obfuscate direct or indirect identifiers in the dataset. Such data are given additional organisational and technical protection through the Human Data Gateway when they are shared on EBRAINS, compared to post-mortem human or animal data.

5.4.2 Post-mortem human data

Data derived from post-mortem human tissue samples are not covered by the GDPR. The EBRAINS compliance process asks for evidence that an appropriate ethical approval was given for the collection of the data but the data themselves can be shared freely on the platform once this compliance status has been confirmed.

5.4.3 Animal Data

EBRAINS asks its data providers to confirm that any animal data they are seeking to share meet certain ethical standards: namely that their collection complied with the EU Directive 2010/63/EU on the Protection of Animals used for Scientific Purposes[1]. As with all data types, EBRAINS asks for details of the ethical approval that approved the collection of the data.

5.4.4 All data collected outside the European Union

To ensure that the data shared on EBRAINS platforms meet a high ethical standard, in addition to evidence of ethical approval at their home institution, EBRAINS asks data providers outside the European Union to confirm that the data they are seeking to share could legally have been collected in an EU member state.

5.5 More information

Further information regarding the ethics compliance requirements for all data types processed by EBRAINS Data and Knowledge can be found in the EBRAINS Data Provision Protocol, available on the EBRAINS website, through this link: Data Provision Protocol.[2]

[1] EU Directive 2010/63/EU on the Protection of Animals Used for Scientific Purposes: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:276:0033:0079:en:PDF

[2] Data Provision Protocol:

6. Data Protection in EBRAINS

The underlying objective of EBRAINS is to provide shared, open computing tools, models and data that serve to integrate brain science across disciplines. It provides a platform for researchers to share, find, and use data, to perform modelling, simulation and virtual experiments, and to access the required computing resources. Data Protection is an integral part of Data Governance in EBRAINS which includes the overall policies and procedures informed by established law and regulations to ensure the availability, usability, accessibility, integrity, quality and security of data.

The EBRAINS DPO focuses primarily on ways EBRAINS can improve overall accountability and compliance with the General Data Protection Regulation (GDPR). The DPO monitors compliance of the EBRAINS Research Infrastructure with privacy and data protection. This includes liaising with EBRAINS partners, Directorate, leadership and supervisory authorities to develop and implement policies, protocols and standards that seeks to safeguard rights and privacy of data subjects whilst advancing scientific research and innovation.

The DPO is also responsible for the development of privacy by design and default measures in accordance with Article 25 of the GDPR that takes into account the impact of data processing on the rights and freedoms of natural persons.

6.1 Lawful Basis for processing

The GDPR identifies two types of data – Personal data and Special category personal data. Personal data include data related to identified or identifiable individuals such as names, addresses, telephone numbers while special category personal data include data concerning health and genetic data. In any case, a lawful basis for processing is required under Article 6(1) (a-f) of the GDPR. For processing to be lawful, the controller must have legitimate grounds for the duration of the processing. This includes:

1) Consent
2) Performance of a contract
3) Legal obligation
4) Vital interests
5) Public interest
6) Legitimate interests

As defined under Article 4(11) of the GDPR, consent must be a freely given, specific, and informed indication of the data subject's wishes. This requires that a data subject has a genuine or real choice and control over their decision to consent. However, the GDPR provides an additional basis in addition to explicit consent for processing special categories of data including scientific research under Article 9(2)(j) where processing is necessary for archiving purposes in the public interest, scientific or historical research purposes. This processing must be done in accordance with Article 89(1) which includes development of specific measures to safeguard the fundamental rights and the interests of the data subjects.

In view of the above, EBRAINS as a data controller must be able to determine a lawful basis at the beginning of processing. For the processing of sensitive data such as medical data, additional basis must be provided. EBRAINS as a Research Infrastructure derives it lawful basis under Article 6.1.e of the GDPR, namely the performance of a task in the public interest entrusted to the controller, in this case to advance knowledge and innovation for a better understanding of the human brain. In addition, under Article 9.2.j of the GDPR, the processing includes special category personal data, such as health data for scientific and research purposes. This processing is subject to adequate

https://strapi-prod.sos-ch-dk-2.exo.io/EBRAINS_Data_Provision_Protocol_dfe0dcb104.pdf

technical and organisational measures under Article 89(1) of the GDPR to protect data subjects. This process starts with a Data Protection Impact Assessment discussed below:

6.2 EBRAINS Data Protection Impact Assessment

A Data Protection Impact Assessment (DPIA) is a tool for building and demonstrating compliance with the GDPR. DPIAs employ a systematic process for assessing the impacts of processing of personal data and the effect that processing has on the fundamental right to privacy of the data subject. As noted in Article 35 of the GDPR, a DPIA is required where a type of processing involves the use of new technologies, including where the nature, scope, context, and purposes of the processing, is likely to result in a high risk to the rights and freedoms of natural persons.

Due to the continued integration of various services, data and resources into EBRAINS, a number of data processing activities is conducted on the Research Infrastructure platform. This includes data processing operations targeted towards an integrated, multi-level understanding of brain structure and function through the development and use of information and communication technologies (ICT) that provide new opportunities for collaborative data analysis. This will more generally have the potential to "result in a high risk to the rights and freedoms of natural persons".

In view of this, an EBRAINS DPIA is conducted in accordance with the GDPR to systematically analyse, identify and minimise the data protection risks of EBRAINS data processing. The EBRAINS DPIA helps the Research Infrastructure to assess and demonstrate how data protection obligations will be complied with, including identifying potential risks involved in processing and developing technical and organisational measures for mitigating same.

6.3 Data Protection by Design and Default

Data protection by design and data protection by default require that data controllers design and implement systems that safeguard the rights of data subjects (Article 25, GDPR). For EBRAINS, this means integrating data protection requirements and principles into all aspects of the infrastructure design, development and operation.

The GDPR does not prescribe a specific formula or method for meeting data protection by design and data protection by default requirements. Like other areas of the GDPR, it requires applying a risk-based approach depending on the processing taking place. Technical and organisational measures to be adopted include the following:

- **Pseudonymisation:** Pseudonymising personal data as soon as possible. By applying pseudonymisation, encryption, and aggregation of personal data, the risk of loss or misuse is significantly reduced.
- **Data Minimisation**: This technique helps to reduce the amount of personal data collected and processed to what is: (1) lawful and (2) strictly necessary. Do not collect unnecessary or excessive information for the purpose.
- **Organisational measures**: This helps to adopt internal policies aimed at data protection by design. Current policies include Access Policy, Privacy Policy Data Use Agreement and Data Provision Protocol.
- **Technical measures**: This process adopts techniques such as encryption, access control, and other measures to limit the risks to data subjects and avoid linkability between different data sets. These techniques help to create different access requirements for researchers to find, share and use sensitive personal data. EBRAINS Access Control Mechanisms of Authentication Agreement and Authorisation helps to provide access to sensitive personal data.
- **Deletion/destruction**: Once the purpose of data collection has been completed, design processes for deletion. Further, follow best practices on data deletion and destruction.

7. Service Category Compliance

EBRAINS comprises a number of distinct but interlinked service categories each of which poses its own potential compliance challenges. The current Section of this handbook covers the various EBRAINS Service Categories and details their potential ethical challenges and how they are addressed. This Section reflects the status of the EBRAINS infrastructure in September 2022, and is particularly sensitive to changes in the operation of individual services and the addition of new services, and as such will be updated as changes occur within the Research Infrastructure.

7.1 SC1 - EBRAINS Data and Knowledge Services

EBRAINS Data and Knowledge services facilitate neuroscience research and discovery by providing online solutions to facilitate sharing of and access to research data, computational models, and software. These services revolve around an expert-driven EBRAINS KG which combines metadata ingestion pipelines, human-user input, and multiple quality assurance processes to help contributors and users by ensuring data consistency and quality.

7.1.1 SC1 Compliance

EBRAINS Data and Knowledge services handle data from both humans and animals. Some of the human data processed by EBRAINS Data and Knowledge services are strongly pseudonymised human data, and so are protected by the GDPR (2018). To ensure that additional organisational and technical measures are in place to protect the rights of human data subjects whose personal data are processed in EBRAINS RI, the Human Data Gateway (HDG) service controls access to strongly pseudonymised personal data.

EBRAINS ensures that these data are handled appropriately through the ethics compliance management process, which checks to ensure that applicable protections are in place for any personal data processed, and that ethics approvals are in place to account for the collection of both human and non-human animal data.

Furthermore, the EBRAINS Data and Knowledge services consult closely with the EBRAINS Data Protection Officer and the Data Governance Working Group to ensure that the applied organisational and technical measures in place are as refined and up to date as possible.

7.2 SC2 - Brain Atlas Services

Brain atlases provide spatial reference systems for neuroscience, giving the ability to navigate, characterise and analyse information on the basis of anatomical location. Atlases define shape, location and variability of brain regions in common coordinate spaces, and allow interpretation, integration, and comparison of observations and measurements collected from different sources and different brains. SC2 develops open-access 3D atlases for the human, rat, and mouse brain, as well as software services to work with them.

7.2.1 SC2 Compliance

Much of the data that inform the development of atlases in SC2 have been through the EBRAINS compliance process, which ensures that the data in question meet certain ethical and legal requirements.

7.3 SC3 - Brain Modelling and Simulation Workflows

Brain simulation tools and services which are developed within the HBP offer technical solutions for brain researchers to conduct sustainable simulation studies and build upon prior work, and the means to share their results. The tools and services provide integrated workflows for model creation, simulation and validation, including data analysis and visualisation. The simulation engines cover the entire spectrum of levels of description ranging from molecular and subcellular, to cellular, network and whole brain level. Multi-simulator interaction enables coupling of simulation engines operating at different levels of description and thus allows for concurrent simulation of detailed models of smaller scope embedded into more abstract models of larger scope.

See the list of tools here: https://www.humanbrainproject.eu/en/science-development/focus-areas/simulations/ (from 'whole-brain level simulation' to 'data analysis and visualisation')

7.3.1 SC3 Compliance

SC3 only indirectly faces challenges such as personal data, as it is mostly concerned with technology development for modelling and simulation including data analysis and visualisation. Secure storage of sensitive data is part of the Data and Knowledge services, whereas secure transfer of data to be used for modelling/analysis is part of the middleware services (both not in SC3). Commercial use of the service is a potential future challenge but not relevant at the moment of writing this document.

7.4 SC4 - Brain-Inspired Technologies

The backbone of SC4 Closed-Loop Neuroscience service is the HBP Neurorobotics Platform, NRP, which is an open-source integrative simulation framework that enables *in silico* experimentation and embodiment of brain models inside virtual agents interacting with realistic simulated environments:

- Closed-loop embodied simulations
- Virtual prototyping and testing of robotic systems and associated control schemes

7.4.1 SC4 Compliance

SC4 handles potential ethical challenges by:

- Consistent and continuous participation and contribution to all meetings, webinars and initiatives organised by the HBP Data Governance and Dual Use working groups and Ethics Rapporteur Programme.
- Dedicated efforts to promote a constructive dialogue and raise awareness around relevant RRI topics and recommendations during SC4 internal meetings and discussions.

7.5 SC5 - Medical Data Analytics

The EBRAINS Medical Data Analytics Service addresses growing needs in harmonising, sharing, federating, and analysing complex brain-health data. It provides innovative solutions to security and IT challenges, promotes collaboration, and works to accelerate progress in brain health, clinical neuroscience and medicine in general. The Medical Data Analytics Services (SC5) make data sharing and data federation more accessible, and contribute to the digital transformation of research and medicine.

The services offer distinct solutions for federated and centralised data processing, with technologies and algorithms accessible online, in a browser, and with minimal user and IT requirements. Two unique EBRAINS platforms, the Medical Informatics Platform (MIP) and the Human Intracerebral EEG Platform (HIP), co-designed with HBP developers, researchers and users, serve to address real needs

and challenges of the clinical neuroscience community. Their adoption in clinical settings, with real use-case data, will allow paving the way to future data standards, federation methodologies, and collaborative solutions in digital medicine.

SC5 includes two distinct services:

- Medical Informatics Platform (MIP)
- Human Intracerebral EEG Platform (HIP)

7.5.1 SC5 Compliance

The MIP and the HIP are operating within a tight governance framework including charter, Data Sharing Agreement, Terms of Service, Data Transfer Agreement and Installation Agreement. Legal aspects are handled between the CHUV and the external partners. EBRAINS Authentication and Accreditation process is strictly controlled.

7.6 SC6 - Interactive Workflows on High Performance Computing or Neuromorphic Computing

High-performance computing (HPC) has become an important aspect in neuroscience research, to process and analyse high-resolution data sets, or for simulating large and complex neuronal network models and analysing the simulation and/or experimentation results. Neuromorphic Computing within the HBP complements the HPC-based interactive workflows by providing access to different kinds of specialised hardware systems, targeting aspects of the emulation of spiking network models difficult to approach by standard simulation methods.

7.6.1 SC6 Compliance

SC6 activity poses few particular compliance concerns, however, SC6 representatives maintain a presence in the Data Governance Working Group, as well as the HBP Ethics Rapporteur programme.

8. Looking Forward

This text is a snapshot of the compliance processes, policies and responsibilities as they exist in September 2022, but EBRAINS is an infrastructure which is growing and changing over time. As such, as EBRAINS services change, so should this document. This Handbook will be reviewed in line with the timeline described in Section 3 of this document to ensure that it remains accurate and up to date with the current status of the infrastructure.