The HBP Calls for Expression of Interest for SGA3

“EBRAINS- Service for Sensitive Data (EBRAINS SSD)”

Proposal Template

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| Project Number: | 945539 | Project Title: | Human Brain Project SGA3 |

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| Document Title: | HBP CEoI for SGA3 – EBRAINS - Service for Sensitive Data– Proposal Template |
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| Abstract: | Calls for Expression of Interest for SGA3, Proposal Template |
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| Call Publication Date: | 07 April 2021 |
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| Proposal submission online platform | [HBP Open Call Platform](https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-ebrains-ssd) |
| Total Call Budget: | EUR 1,000,000 Direct Costs. Maximum funding per proposal: EUR 1,000,000 (plus 25% Indirect Costs), one proposal will be selected. |
| More information: | [info@opencalls.humanbrainproject.eu](mailto:info@opencalls.humanbrainproject.eu) |

Instructions:

This template is for proposals made in response to the HBP CEoI for SGA3. The proposals have to strictly adhere to this template.

Page limits refer to this text style (Body Text HBP) in MS Word:

* **Font**: Trebuchet MS 11pt
* **Line spacing**: single
* **Paragraph spacing**: 6pt before and after
* **Page size**: A4
* **Margins**: according to this template
* **Page limit**: 18 A4 (in Section 4.3, 1 page could be added per additional Partner). Excess pages will be removed from the proposal. Note that the references are included in the page limit above. However, letters of support can be added to the proposal as appendices, which do not count towards the page limit. The page limit starts with the Abstract (Section 2).
* **Appendix page limit:** 10 pages, only containing the content requested for the White Paper.

This form must be submitted electronically any time before 20 May 2021 17:00 Brussels time to the [HBP Open Call Platform](https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-ebrains-ssd)1. Budgetary information must be provided via the electronic submission platform. Potential co-funding needs to be mentioned in this proposal, Section: Quality of the Organisation, not in the online budget table.

Instructions (in red) should be deleted.

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# Proposal information

Proposal name:

Proposal acronym:

Table 1: Proposal Consortium

|  |  |
| --- | --- |
| Project coordinator (contact person) | |
| First and last name |  |
| Email |  |
| Affiliation[[1]](#footnote-1) and short name |  |
| Country |  |
| Project partner 1 | |
| First and last name |  |
| Email |  |
| Affiliation and short name |  |
| Country |  |

Please extend the table for each partner of the consortium, if needed.

# Abstract

NOTE: length limit = 1 A4

Provide a short description of the project, of the central research question(s) and project goal(s).

# Excellence and expected impact

NOTE: length limit for whole chapter 3, including diagrams, images, etc. = 10 A4

Describe the contributions you will make to the EBRAINS Research Infrastructure (RI), its excellence, the expected results of your activities, how you will go beyond the state of the art and the expected impact to the field. Show how you are uniquely positioned to accomplish the objectives of the proposed work plan.

## Methodology

In this section, describe the methodology you will use to accomplish the activities listed in the Guide for Applicants (see [Call page](https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-ebrains-ssd)) and to reach the expected contributions. Explain the methodology in detail and state how it relates to your experience in other similar contexts.

## Contribution of the proposal

Describe the contributions you will make to the HBP and the EBRAINS RI and the expected results of your activities. Explain how they relate to the specific SGA3 Objectives (see ANNEX: SGA3 Project Objectives and Work Package Objectives at the end of this document).

Define your interaction with the existing Work Packages of the HBP. Explain in detail how your work contributes to or makes use of EBRAINS and its Service Categories. Show that your work brings new, unique elements to the HBP.

Your proposal should especially address the following aspects, as further detailed in the Guide for Applicants:

The new EBRAINS Service for Sensitive Data SSD is expected to build on an already established GDPR-compliant service for sensitive data. The characteristics of the already established service should be briefly summarised in the proposal and outlined in more detail in a system description / white paper added as an Appendix to the proposal. Information should also be provided on the strength and engagement of the community of users and partners around the already established service, as well as the approach taken to help troubleshooting and/or improve usage (and implementation) of the service. EBRAINS SSD is expected to respond to relevant requirements, including:

1) Infrastructure requirements

* Secure data uploading / transfer and data encryption, with automated monitoring (auditing)
* Data kept within the system behind firewall allowing only authenticated and authorised access, or distributed storage securely connected to the service.
* Strict data and user separation between projects defined by the SSD provisioning system, including 2 factor login for all users (including sysadmins)
* Access to computing resources available for processing (including HPC resources if offered) and storage of the data and description of how this can scale with increasing needs, also at the individual project level
* A common workspace (e.g. virtual machine) within each specific project to transfer, analyse and share data
* Support for metadata standards
* Container-based software deployment (such as through Singularity or Docker) to allow users to deploy their own software
* APIs that enable platform interoperability and advanced programmatic interaction that fulfil the security constraints of data uploading / transfer, authentication and authorised access, with additional network access restrictions
* Regular (encrypted) backup of data to tape and a method for fast recovery (e.g. snapshots) Various levels of data handling including (1) Ability to specify granular access within projects, (2) ability to share specific data across projects and (3) ability to specify which project members have export privileges
* Business model for sustainable operation after the funding period
* A MVP available 10 months after the project has started
* Other requirements critical for the successful operation of the new service

2) Process and regulatory requirements

* Risk assessment available
* Data, user, and access policies and related agreements, including administration of consent for use of data

3) Requirements for software solutions

* Micro-services architecture with container orchestration
* Continuous integration and continuous delivery DevOps workflow

4) Optional requirements

* A basic software portfolio supporting analysis of neuroscience data, including BIDS–compatible tools
* Capture of data lineage and provenance, connected to existing EBRAINS provenance tracking
* Support for data cataloguing and dataset versioning, connected to existing EBRAINS metadata storage

The proposal is also expected to include at least one-use case / usage scenario for the proposed system, demonstrating how a consortium of researchers at different institutions in Europe will be enabled to perform collaborative research using the system. The use case should describe how the users / actors will accomplish a defined goal using the system.

## Relevance to the aims of the Human Brain Project

In this section, describe the benefits and added value of your approach for the EBRAINS Research Infrastructure and possible user communities, in particular.

For a more detailed description of the current EBRAINS Service Categories, please refer to the supplementary document “HBP SGA3 CEoI - Work Plan and Outcome Overview” (see [Call page](https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-ebrains-ssd)).

For all aspects, please provide evidence of your specific expertise.

# Implementation

NOTE: the length limit of chapter 4, including diagrams, images, etc. is 5 A4 (plus eventual extra A4 pages per additional partner only for section A4.3), split as follows:

* sections 4.1 and 4.2, including diagrams, images, etc.: 3 A4
* section 4.3: 1 A4 per Organisation/Partner
* section 4.4 including diagrams, images, etc.: 1 A4 of text (excluding the online budget tables)

## Structure of the Work Plan

The proposed Work Plan should include one Task, one to three Outputs[[2]](#footnote-2), one or two Milestones and one or two Deliverables; a substantial and formal project result that will be written up and shared with the European Commission. The Task Leader, as the Project Coordinator or leading Principal Investigator of the proposal, and the related organisation need to be clearly identified. The planning should be sufficiently detailed to justify the proposed effort.

Table 2: Proposal Work Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Work Plan for <Proposal Name>  Task <Name>  <Lead Partner> | | | | |
| Task Number <Tx> | Task <Name> | Lead Partner / PI | Start Month | End Month |
|  |  |  |  |  |
| Output Number <OPx> | Output <Name> | Lead Partner / PI | Lead Partner | Due date (Month) |
|  |  |  |  |  |
| Milestone Number <MSx> | Milestone <Name> | Means of verification | Lead Partner | Due date (Month) |
|  |  |  |  |  |
| Deliverable Number <Dx> | Deliverable <Name> | Description | Lead Partner | Due date (Month) |
|  |  |  |  |  |

Please extend the table as needed.

## Description of the Work Plan

Describe the work you propose for the period of 15 months. Contribution to the project activity reports will be required from the new Partners; for example, Technical Periodic Reports or reporting on resources used in the period (Financial Periodic Reports). Your work will figure in ONE new Task in Work Package 4; in case the proposal fits better in another WP, this could be changed during the implementation.

Table 3: Proposal Work Plan description

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Work Plan for <Proposal Name>  Task <Name>  <Lead Partner>  Insert your concrete (SMART [[3]](#footnote-3)) Objective for the Task. Describe how you would reach the Objective and how you would measure the results, e.g. the method you will use, the Milestones of your work, etc. This will become your Task description in the SGA3 Description of Action (DoA). | | | | |
| Task Number <Tx> | Task <Name> | Lead Partner / PI | Start Month | End Month |
|  |  |  |  |  |
| Task descriptions should contain, in three separate sections:   * **Objective** of the Task * **Methods** to be used by the Task * **Outputs** (list of Outputs generated by this Task or to which this Task contributes) | | | | |
| Interactions with the other WP and their Objectives.  The proposal should interact with other WPs, contribute to the achievement of Work Package Objectives (see ANNEX). Please provide a short description for each relevant interaction. | | | | |
| HBP WP number/ WP Objective | Description | | | |
|  |  | | | |

Please extend the table as needed.

## Quality of the Organisation

NOTE: length is limited to 1 A4 per Organisation.

In this section, describe the quality and relevance for the HBP of your Organisation/Group and what expertise it will bring to the HBP Consortium that is not already available. In particular, your proposal should address the following points:

* Brief description of the Organisation
* Brief description of the participating group/lab and their previous relevant experience to the task in the proposed work.
* Short profile of the main individual who will undertake the work, demonstrating their qualifications with respect to the task at hand.
* Up to five relevant publications. (NOTE: no extra annex for references is allowed!)
* Characterise the co-funding/proposed in-kind contributions the proposal will bring to the Project (approximately EUR 200,000). Do not include co-funding in your online budget table.

## Resources to be committed

NOTE: length is limited to 1 A4 of text, excluding the online budget tables.

You should address the following points:

* Describe how the totality of the necessary resources will be mobilised in the defined time frame including your own resources which you will be providing to complement the EU contribution.
* Identify **personnel costs** and any major **non-personnel direct costs**, and explain why they are necessary for the activity you propose. Justify equipment to be purchased, describe travel expenses, and other major cost items.
* Indicate whether you will include **subcontracting costs**, justify them, and state what they are and their amount. Subcontracting costs are not subject to indirect costs. Please note that you cannot subcontract core activities[[4]](#footnote-4). Services purchased in the frame of the funded activity only count as subcontracting if they consist in a part of the task to be accomplished. Support of the activity, such as event organisation or software development, is not a subcontracting cost, unless the activity implicitly involves such activities.

## Cost and funding breakdown by participating organisation for the specific time frame

Please fill the **online budget table** for every partner of your application. The online budget table will be manually added by the Open Call Management team to your proposal upon submission*.*

# Equal opportunities

NOTE: length is limited to 1 A4.

Please provide the following information:

* For teams, is the diversity aspect (gender, age, career stage, other factors) taken into consideration/ are there any measures in place? If there is a gender imbalance, are measures planned to improve gender equality? See Table 1 - Criterion 4 in the Guide for Applicants (see [Call page](https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-ebrains-ssd)).
* In research activities when human beings are involved as subjects or end users, gender differences or other diversity factors may exist. In these cases, is the gender dimension and relevance of scientific questions on gender or other diversity factors (e.g. age) in the research content addressed as an integral part of the proposal? See Table 1 - Criterion 1 in the Guide for Applicants (see [Call page](https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-ebrains-ssd)).

# Ethical implications

NOTE: length is limited to 1 A4.

Describe the ethical implications of your work and compliance with applicable international, European, and national law. Indicate which ethical approvals the project already has in place or will need to apply for. The proposal should also describe an approach to handle and mitigate possible risks related to data protection.

Appendix

NOTE: length limit = 10 A4

The Appendix should be a system description / white paper describing the already established service that the proposed new EBRAINS service will build on. The length of the Appendix is limited to 10 pages. The Appendix is mandatory and will be evaluated together with the main proposal.

# ANNEX: SGA3 Project Objectives and Work Package Objectives

| Project Objective | Work Package Objective |
| --- | --- |
| **PO1.** Establish a sustainable European scientific research infrastructure, EBRAINS, leading to an increased use and adoption of FAIR data, web-based analyses, model building, simulation, atlasing, and virtual experiments for brain research and brain-inspired sciences. | * **WPO4.1.** FAIR data services: Access to and storage of high-quality neuroscientific data, facilitating data re-use in the scientific community * **WPO4.2.** Brain atlases services: Increased performance, functionality and use of the HBP multi-scale and multi-modality brain atlases, and related tools and workflows * **WPO4.3.** Human Intracranial EEG data service: Established curated multiscale neurophysiological (intracranial EEG) database available in Europe with supporting tools and workflows * **WPO4.4.** High-Level Support Team (HLST), EBRAINS community, and science incubation: Increased use of EBRAINS by expanding engagement with brain scientists, AI researchers, and other stakeholders * **WPO5.1**. Brain modelling and simulation * **WPO5.2.** Closed-loop Neuroscience, Robotics and AI service * **WPO5.3.** EBRAINS software components integration, testing and delivery * **WPO6.1.** Neuromorphic computing: Improved online, interactive Neuromorphic Computing (NMC) resources. * **WPO6.2**. Federated infrastructure: Improved, operable and sustainable federated HPC, Cloud, storage and network infrastructure available to the EBRAINS community based on ICEI resources and services * **WPO6.3.** Collaborative workspaces: Increased maturity of collaborative tools and improved integration into the infrastructure to lower the barrier to adopting the EBRAINS RI * **WPO6.4.** ESFRI: Secured long-term sustainability of EBRAINS |
| **PO2.** Provide a multi-level atlas of the human brain - the first of its kind that links microstructural detail and inter-subject variability. | * **WPO1.1**. Increased capacity of neuroscientists for multiscale neural activity modelling of the human brain network * **WPO2.2**. Strengthened ethical and philosophical framework for the experimental and computational explorations of cognition and consciousness |
| **PO3.** Increase the capacity of neuroscientists for multiscale neural activity modelling of the human brain network. | * **WPO2.1**. Increased availability of integrated data and computational models supporting brain state transitions, network complexity and cognitive functions |
| **PO4.** Increase the availability of integrated multiscale data and computational models supporting brain states transitions, network complexity and cognitive functions. | * **WPO3.1**. Enhanced real-world task performance through biologically plausible adaptive cognitive architectures running on neuromorphic hardware and closed-loop Neurorobotics Platform |
| **PO5.** Enhance real-world task performance through biologically plausible adaptive cognitive architectures running on neuromorphic hardware and a closed-loop Neurorobotics Platform. | * **WPO1.1**. Increased capacity of neuroscientists for multiscale neural activity modelling of the human brain network * **WPO2.2**. Strengthened ethical and philosophical framework for the experimental and computational explorations of cognition and consciousness * **WPO3.1**. Enhanced real-world task performance through biologically plausible adaptive cognitive architectures running on neuromorphic hardware and closed-loop Neurorobotics Platform * **WPO4.1**. FAIR data services: Access to and storage of high-quality neuroscientific data, facilitating data re-use in the scientific community * **WPO9.1.** To consolidate HBP international collaboration in the articulation of an ethics strategy for identifying, addressing, and managing the ethical and social issues that neuro-ICT faces at both the local and global level by the end of SGA3 * **WPO9.2**. To strengthen the ethical and social acceptability and desirability, and to increase understanding of legal compliance of HBP research and EBRAINS infrastructure to ensure societal benefit" |
| **PO6.** Ensure that neuroscientific insights at the interface of neuro-inspired computing and technology are being translated into a benefit for patients with brain diseases. | * **WPO4.5.** Medical Informatics Platform (MIP): Expand deployment, optimize end-users experience and develop early stage clinical application |
| **PO7.** Ensure an ethically and legally compliant infrastructure and promote embedding of Responsible Research and Innovation, and of neuro- and data ethics in EBRAINS. | * **WPO9.1.** To consolidate HBP international collaboration in the articulation of an ethics strategy for identifying, addressing, and managing the ethical and social issues that neuro-ICT faces at both the local and global level by the end of SGA3 * **WPO9.2.** To strengthen the ethical and social acceptability and desirability, and to increase understanding of legal compliance of HBP research and EBRAINS infrastructure to ensure societal benefit * **WPO9.3.** To enhance the proportional representation of genders at all career levels, the collaboration in a diverse workforce as well as gender and diversity as research topics." |

1. Affiliation = university or organisation, laboratory, department, etc. [↑](#footnote-ref-1)
2. **Outputs are tangible results** such as a software release, a dataset, a model, a prototype – e.g. something that we can provide a URL to. Outputs can also be scientific results leading to a new understanding or a theory. Outputs contribute to deliverables and are intended for use by both internal and external beneficiaries, in some cases they can be for use only by internal (Consortium) beneficiaries. [↑](#footnote-ref-2)
3. SMART: Specific – target a specific area for improvement. Measurable – quantify or at least suggest an indicator of progress. Achievable – state how the results can be realistically achieved. Realistic – state what results can realistically be achieved, given available resources. Time bound – specify when the result(s) can be achieved. [↑](#footnote-ref-3)
4. [AMGA](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwichvyCy-HqAhVk-yoKHUoBBvYQFjAAegQIBhAB&url=https%3A%2F%2Fec.europa.eu%2Fresearch%2Fparticipants%2Fdata%2Fref%2Fh2020%2Fgrants_manual%2Famga%2Fh2020-amga_en.pdf&usg=AOvVaw2I9oj3oqxOaOlJefIb2iQn) ARTICLE 13 — IMPLEMENTATION OF ACTION TASKS BY SUBCONTRACTORS 13.1 Rules for subcontracting action tasks 13.1.1 If necessary to implement the action, the beneficiaries may award subcontracts covering the implementation of certain action tasks described in Annex 1. Subcontracting may cover only a limited part of the action. [↑](#footnote-ref-4)