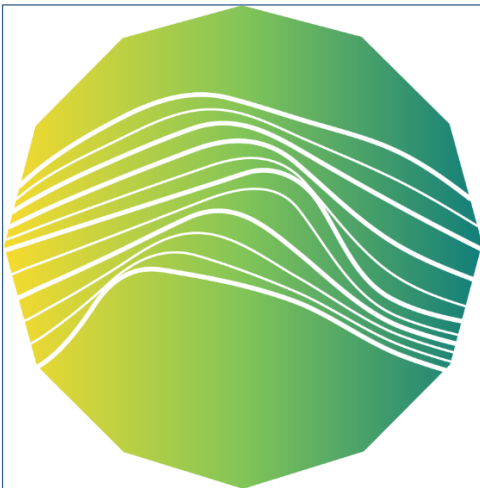


The HBP SGA3 Calls for Expression of Interest
“High-level neuro-symbolic processing for guidance of
goal-directed behaviour”

Guide for Applicants



Human Brain Project



EBRAINS

Project Number:	945539	Project Title:	Human Brain Project SGA3
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Total Call Budget:	EUR 450,000 Direct Costs. Maximum funding per proposal: EUR 450,000 (PLUS 25% Indirect Costs), one proposal will be selected.		
More information:	info@opencalls.humanbrainproject.eu		

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1. The Human Brain Project

The Human Brain Project (HBP, <https://www.humanbrainproject.eu/>) is an ambitious 10-year scientific research and infrastructure initiative that is part of the EU Future and Emerging Technology (FET) Flagship programme¹. The HBP is developing the European Brain ReseArch INfrastructureS (EBRAINS), an innovative ICT² infrastructure that will help neuroscientists and clinical researchers integrate data and knowledge about the brain across all levels of its spatial and temporal organisation. Using detailed digital representations, reconstructions, and simulations, it aims to make available ICT tools to thousands of researchers to advance and accelerate our understanding of the functioning of the healthy and diseased human brain.

Computing the Brain is at the centre of the HBP's scientific strategy in SGA3, the third Specific Grant Agreement, and the HBP focuses on Neuroscience at the interface with Computing, to create an added value in this field. More information is available in the supplementary document HBP SGA3 CEol - Work Plan and Outcome Overview (see [Call page](#)).

2. Scope of the specific Call

This Call for Expressions of Interest (CEol) is directly connected to the activities to be undertaken in the HBP's Special Grant Agreement 3 (SGA3), Work Package 3 (WP3): "Adaptive networks for cognitive architectures: From advanced learning to neurorobotics and neuromorphic applications". At the interface of neuroscience, AI and robotics, WP3 develops biologically inspired, embodied, large-scale neural models emulating a range of brain functions. The aim of this approach is to better understand how neural activity enables perception, cognition and action by (re-)creating these functions. The advanced learning principles developed to support this work are applied to train deep networks, solving challenging tasks. Simulations run on HBP platforms, including neuromorphic hardware. Insights gathered are applied to improve the manner in which artificial agents understand and act upon their environment. This work is characterised by a close collaboration between cognitive neuroscientists, researchers in learning theory, Artificial Intelligence (AI), and neurorobotics. It heavily relies on services provided by the HBP Research Infrastructure (RI), EBRAINS.

2.1 Challenge

Interdisciplinary teams in the HBP are developing increasingly sophisticated embodied biologically inspired visuo-motor models that perform tasks in a closed-loop system. The emulated tasks include execution of eye movements based on semantic saliency processing, arm movements, navigation and more recently in-hand object manipulation. A major aim of WP3 in SGA3 is to extend these models towards architectures that are able to perform more cognitively challenging tasks such as solving the Tower of Hanoi problem. Such tasks require more abstract representations about the objects in the visual scene and short-term storage capabilities to maintain and update knowledge about the state of the problem. These structures are needed to execute hierarchical plans guiding goal-directed motor actions.

The challenge of this Call is to contribute to the development of neural network modules serving cognitive functions such as working memory and attention in order to store and manipulate abstract representations in order to enable basic planning and problem solving. Since conventional (deep) learning neural networks lack the ability to perform symbol-like processing, innovative solutions are required to provide neural implementations of working memory, attention and executive functions that can be integrated into the large-scale cognitive architectures developed in WP3.

¹ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/fet-flagships>

² ICT, Information and Communication Technology

2.2 Details

The developed modules and functionality will be integrated with the ongoing work in WP3 developing architectures and learning methods for visual scene understanding, hierarchical cognitive planning and goal-directed behaviour of robotic agents. The envisioned performance scenarios of the jointly developed reference cognitive architecture are the execution of tasks that require storage and maintenance of information about the identity and location of objects in the scene in relation to the (virtual) robotic agent. This knowledge is used for hierarchical planning requiring storage about the state of the problem and the application of subroutines. For example, the task “grab the red cup on the table in front of you” needs to be stored in working memory, expanded as a sequence of sub-tasks (e.g. “move forward to the table”, “identify the location of the red cup”, “calculate reach and grasping movements”) that need to be monitored and updated while the task is executed by a robotic agent. The developed modules should contribute to such overall performance of the cognitive architecture of WP3. They should be developed as adaptive networks that learn to perform neuro-symbolic computations relevant for the envisioned tasks, preferentially via end-to-end training.

Since the HBP focuses on neuroscience-driven modelling, it would be desirable if the architecture and operation of the developed network modules (e.g. working memory, selective attention, executive functions) would relate to brain structure and function where possible, incorporating e.g. relevant neuroscientific findings about working memory and attention in prefrontal cortex of humans and non-human primates. WP3 will provide expertise and training in cognitive neuroscience, learning, AI, and neurorobotics to co-develop the embodied functional reference architecture. Furthermore, WP3 will provide support to integrate developed network modules in the co-developed embodied cognitive architecture. Successful applicants will complement the expertise already present within the Project and will build on the developed visuo-motor and cognitive modular network architectures using tools and services provided by WP3 and EBRAINS in conducting the proposed work.

3. Expected contributions and impact

Applicants are expected to provide a detailed description of the implementation of work plans within the defined timeframe (24 months, from 1 April 2021 to 31 March 2023), as well as plans on how to integrate such work into the HBP. In addition, all proposals are expected to briefly describe the long-term vision of the proposed research theme (i.e. in a timeframe of 5 years), as well as how it will contribute to the overall HBP [vision](#)³ and objectives.

Any duplication with existing HBP activities must be avoided.

4. Activities, eligibility and funding

Submission of proposals by single institutions are possible. It is recommended, but not mandatory, that a group of partners⁴ applies for the CEol. The group should be represented by a project coordinator with the principal investigator (PI) acting as the main contact person. Either HBP partners or non-HBP partners⁵ are eligible for funding under this CEol. At least 60% of the proposal budget must be assigned to non-HBP partners, while the HBP partners should not account for more than 40% of the allocation (based on direct costs on which EU contribution will be added in line with the H2020 funding rules for Research & Innovation Actions). Please note, a new unit⁶ of an existing HBP partner, not receiving any HBP funding in SGA3, is eligible to participate in the CEol and can

³ <https://www.humanbrainproject.eu/en/science/overview/>

⁴ Partner = a university or organisation, not an individual

⁵ Non-HBP partners are not part of the HBP Consortium, thus not receiving any HBP funding and need to join the Framework Partnership Agreement (FPA) via Amendment

⁶ Unit refers to a laboratory or department of a university or organisation

apply for up to 60% of the allocated budget. The same rule applies to former HBP partners not receiving any SGA3 HBP funding within SGA3 anymore. This rule allows (but does not force) new units to directly start in close collaboration with already integrated units. All proposals will be subject to the same evaluation criteria, whether they include HBP partners or not (see Proposal evaluation).

The HBP has committed itself to improving equal opportunities. As such, we explicitly encourage applications from women and groups of applicants who have considered gender equality aspects in their group of applicants (see Equal opportunities).

The European Commission's (EC) eligibility and financial rules apply⁷. The new partner organisations must therefore be established in the EU Member States or Horizon 2020 Associated Countries.

Out of this CEol one (1) proposal will be selected for EU funding for the HBP SGA3 period. Project duration will be 24 months maximum (1 April 2021 - 31 March 2023), depending on the inclusion of the new partner in the Consortium, and has a fixed end date which is the end of SGA3, 31 March 2023.

Activities to be undertaken within the frame of the selected project will become a new Task, integrated within the HBP Work Plan for SGA3. The project will be integrated in WP3. The selected partner organisations will be incorporated in the HBP Consortium. The new partners will be requested to sign the relevant agreements with the EC as well as the Consortium Agreement that regulates the relations between the Partners of the Consortium.

The agreements with the EC include a Framework Partnership Agreement (FPA⁸) and a Specific Grant Agreement (SGA). The FPA Consortium Agreement applies to the Consortium during the entire Flagship period and is amended regularly for major changes. The addition of new Partners to the Consortium is subject to the approval of the required FPA Amendment by the HBP Stakeholder Board and the EC.

It is important to recognise that a two-step process is followed; only applicants that went through the pre-proposal submission step are eligible to submit a full proposal (see Section 5 Pre-proposal submission).

Success in this CEol should not be considered as a commitment by the HBP or the EC to continue funding the Partners after the end of the SGA3 period.

Note: Applicants will receive the final confirmation of project acceptance and funding only once approved for funding by the EC.

4.1 Budget of the proposal

The total Call budget is EUR 450,000 (direct costs).

The requested budget must not exceed EUR 450,000 per proposal.

The total Call budget refers to the direct costs (funded expenses) and does not include overheads/indirect costs (funded overhead). An additional 25% (overhead rate) of indirect costs following the H2020 funding rules for Research & Innovation Actions will be calculated automatically by the Open Call Platform and the sum will include direct costs (total call budget) plus 25% overhead (indirect costs).

The total Call budget includes a Voucher of EUR 45,000 (10% of the total Call budget) to fund technical support for integration of project results in EBRAINS, which will be performed by the HBP

⁷ The countries eligible to apply are all the EU Member States and the H2020 Associated Countries. For eligibility of other countries, see http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm and https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cp/h2020-hi-list-ac_en.pdf.

⁸ <https://www.humanbrainproject.eu/en/about/framework-partnership-agreement/>

High Level Support Team. The Voucher is allocated to the HBP Internal (40%) budget share and will be assigned to the HBP HLST partners providing support for the [EBRAINS⁹](#) tools and services most pertinent to the project proposed.

Co-funding of approximately EUR 200,000 is requested. The provided co-funding information will be included in the FPA to show the contributions towards the HBP by each Beneficiary. Proposals with lower contributions are not *a priori* excluded, but must be justified.

It is expected that the new partners have the operational capacity to carry out the activities related to the main objectives of this CEol. Nevertheless, subcontracting is allowed but will be reviewed on a case by case basis (see Financial Rules - [H2020-amga¹⁰](#)).

5. Pre-proposal submission

The pre-proposal **must** be submitted via the [HBP Open Call Platform¹¹](#). A competent member of the HBP Consortium will respond to the applicants within 1 week after the pre-proposal deadline. The response will be limited to clarifying whether the proposal fits into the scope of the Call and how the proposal could be improved.

Note: it is **mandatory** to submit a pre-proposal in order to be eligible to submit a full proposal. The pre-proposal has no influence on the score of the full proposal.

6. Proposal submission

The proposal is submitted via the [HBP Open Call Platform¹¹](#). The applicants are required to register a profile, enter the proposal information and partner data, and submit the proposal document as a PDF and the requested budget.

The applicants can edit the proposal before the deadline (e.g. submit revised versions); only the last version will be considered for evaluation. It is recommended to upload a pre-final version.

Shortly after the submission of the proposal, an acknowledgement of receipt will be sent to the e-mail address of the proposal's main contact person, registered in the platform. Sending of an acknowledgement of receipt does not imply that a proposal has been accepted as eligible for evaluation.

For any given proposal, the proposal main contact person will act as the main point of contact between the proposal partners and the HBP.

It is the responsibility of the applicants to ensure timely submission; proposals submitted after the deadline will not be considered. Failure of timely submission of the proposal for any reason, including communication delays, will automatically lead to rejection of the proposal. The time of receipt of the submission, as recorded by the submission system, will be authoritative.

Upon the Call deadline, the proposals have to fulfil the H2020 [admissibility¹²](#) and [eligibility¹³](#) criteria and the HBP-specific ones (see Section 4), in order to be retained for evaluation. In addition, the proposals have to strictly adhere to the template provided via the [HBP Open Call Platform¹¹](#), which defines sections and the overall length. Evaluators will be instructed not to consider extra material in the evaluation.

⁹ <https://www.ebrains.eu/>

¹⁰ https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

¹¹ <https://opencalls2.humanbrainproject.eu/call/hbp-sga3-ceoi-neuro-symbolic-processing>

¹² https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga_en.pdf#page=5

¹³ https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga_en.pdf#page=7

The HBP offers an email-based helpdesk system for applicants at info@opencalls.humanbrainproject.eu. Applicants are encouraged to use this facility for any queries in relation to the Call and the submission.

With the upload of the proposal template and the completion of the contact information, the applicants agree that partner(s) names, affiliations and proposal titles of the winning proposals (only) will be announced on the HBP website.

Remember: a full proposal submitted without the pre-proposal will not be considered eligible for the evaluation.

7. Ethical issues

Research activities in Horizon 2020, and particularly in the HBP, must respect fundamental ethical principles as outlined in the [Horizon2020_Ethics_Guidance](#)¹⁴.

If there are ethical issues specific to the proposal (see the ethical issue table in the [Horizon2020_Ethics_Guidance](#)¹⁴), before and during the runtime of the research activities within the HBP, an HBP Ethical Issues and Approvals survey must be submitted, including the documents that are required under national law (e.g. proof of approval by the competent authority).

The HBP Ethical Issues and Approvals survey should describe how the proposal meets the national legal and ethical requirements of the country or countries where the tasks raising ethical issues are to be carried out, and explain, in detail, how issues in the ethical issues table are addressed, in particular with regard to research objectives (dual use, etc.), methodology (protection of collected data, etc.) and potential impact of the research (dual use issues, benefit-sharing, misuse, etc.).

Applications, especially from non-European countries⁷, must make sure to comply with the above Horizon2020 Ethics Guidelines and clarify ethical issues before submission of the proposal.

Proposers should demonstrate that they are mindful of the fact that the citizens of Europe trust the public R&D endeavour to produce tangible results benefiting society by advancing health, economic growth, and quality of life across all communities.

The applicants are responsible for ethical compliance. They will work with the HBP contact persons, the respective HBP ethics rapporteur and ethics support team to ensure compliance with ethical and legal requirements. Their ethics compliance will be included in the HBP ethics compliance management processes. An Ethics Pre-Screening will be performed prior to inclusion of new partners into the HBP Consortium.

8. Equal opportunities

Gender equality concerns all parts of Horizon 2020 (see the [Guidance on Gender Equality in H2020 and the Gender Equality Strategy “A Union of Equality: Gender Equality Strategy 2020-2025”](#)¹⁵). HBP has committed itself to offer [equal opportunities](#)¹⁶, especially to balance the proportion of male and female scientists in leadership positions, as well as among PhD students and post docs, but also to overcoming artificial barriers, prejudices or preferences. The HBP created the [Gender Advisory Committee](#)¹⁷ which provides advice and feedback on the HBP Gender Action Plan on [activities](#)

¹⁴ http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf

¹⁵ https://ec.europa.eu/info/sites/info/files/aid_development_cooperation_fundamental_rights/gender-equality-strategy-2020-2025_en.pdf

¹⁶ <https://www.humanbrainproject.eu/en/about/gender-equality/>

¹⁷ <https://www.humanbrainproject.eu/en/about/gender-equality/gender-advisory-committee/>

[planned to improve equality in their respective areas of responsibility¹⁸](#). This [document¹⁹](#) shows guidelines developed by the HBP for researchers.

The HBP aims to demonstrate how diversity drives scientific excellence, innovation, and collaboration and aims to become a European best practice example for fostering equal opportunities across different institutions, member states, disciplinary cultures, and intellectual environments.

In line with the European Commission (https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/gender_en.htm), applicants are encouraged to promote gender balance at all levels in their teams and in management structures. Applicants should seek at having a balanced participation, as close as possible to 50/50, of both men and women in the teams and among the leading roles (following [H2020 recommendations²⁰](#)).

Equal opportunities represent an evaluation criterion (see Table 1). In their proposal, applicants have to outline which measures will be undertaken to foster equal opportunities:

i) see criterion 1 - in relation to content (e.g. analysing and taking into account the possible differences between men and women, sex of animals, cells or tissues in the research and innovation content of the proposed research project). Sex and gender might intersect with further diversity traits, such as age or culture. Additionally, research findings might have different implications for different user groups or stakeholders.

ii) see criterion 4 - in respect of human resources (e.g. the balance between women and men in the research teams, who will implement the project and how sex, gender or other diversity issues are addressed).

9. Proposal evaluation

All submitted proposals will be evaluated by acknowledged external experts from relevant research fields and by reviewers from the broader scientific community (all referred to as ‘experts’). To avoid conflicts of interest, the experts are independent of the HBP Consortium and the applicants. The conflict of interest rules for this Call are set out [here²¹](#).

Experts will **maintain strict confidentiality with respect to the entire evaluation process**. Experts perform evaluations in their private capacity, not as representatives of their employer, their country or any other entity. Under no circumstance may an expert attempt to contact an applicant directly, either during the evaluation or afterwards. Experts cannot submit an Expression of Interest (EoI) proposal for the Call they are reviewing.

The proposals evaluation will be performed in two steps.

In the **first step**, at least **three external experts** will review individually each proposal assigned to them. They evaluate each proposal considering the evaluation criteria in 9.1 - Table 1. The experts score each criterion (0 to 10, detailed in 9.1 - Table 2), with explanatory comments.

In the **second step**, the experts discuss and compare all proposals during a panel meeting. They establish the final ranking of the proposals, providing a list of proposals being above and below threshold (defined in Table 1). A proposal is eligible for funding if all thresholds are met or exceeded. However, the highest ranked proposal will be recommended for funding. If all proposals fall below threshold, no selection will be made and the CEoI might be reopened.

¹⁸ <https://www.humanbrainproject.eu/en/about/gender-equality/measures-and-materials/>

¹⁹ https://sos-ch-dk-2.exo.io/public-website-production/filer_public/23/1e/231e7bc7-bd5c-4c90-92b1-35aa403f0f13/hbp_guideline_diversityinresearch_190204-1207.pdf

²⁰ https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/gender/h2020-hi-guide-gender_en.pdf#page=10

²¹ https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/pse/h2020-guide-pse_en.pdf#page=12

The experts will be advised by an invited group of HBP members of the Directorate (DIR) and WP leaders, who will clarify the procedure and need of the HBP prior to the evaluation, and offer their opinion on what is especially relevant for the specific Call, during a **kick-off meeting**.

The ranked list of the proposals will be presented to the HBP Science and Infrastructure Board (SIB) and the DIR for endorsement. The selected proposal(s) will be funded and integrated into the HBP SGA3 Work Plan via Amendment.

To ensure transparency, the results of the evaluations will be made available to the EC prior to announcement and integration.

After completion of the Call, applicants will receive the evaluation summary report for their proposal, showing the results of the evaluation for a given proposal. Any request for redress can only be based on procedural grounds and must be submitted by the proposal coordinator within 30 calendar days from the receipt of the official letter (Evaluation Summary Report).

Note: The addition of new Partners to the Consortium is subject to the approval of the required FPA and SGA Amendments by the HBP Stakeholder Board and the EC. Following this process, the partner(s) will be welcomed into the HBP Consortium.

9.1 Proposal evaluation criteria and scores

The evaluation criteria for this CEol are provided in Table 1. The criteria reflect the expected impact of the project funded under this HBP CEol.

The proposal evaluation scores are provided in Table 2.

At the evaluation stage, equal opportunities for teams, gender balance in staff and diversity aspects in general (gender, age, career stage, other factors) will be considered as a ranking factor (see 4. Equal Opportunities in Table 1). Evaluators will compare the shares of men and women in the personnel named in the proposals and will rank a proposal with the share closer to 50/50 higher. Other explained taken measures for Equal Opportunities and Diversity might be considered in the same way as number of men and women. A proportion of women considered in the proposal, similar to the proportion in similar scientific disciplines, is the expected bare minimum to be found in proposals.

Scoring

Scores for each evaluation criterion are in the range 0-10. Evaluators will be asked to score proposals as they were submitted, rather than on their potential if certain changes were to be made.

Thresholds & weighting

The standard threshold for individual criteria is **6**; no threshold is foreseen for the Equal Opportunities score. The standard overall threshold (including the Equal Opportunities score), is **6**.

Scores are weighted. The weight for each score is provided in Tale 1.

Table 1: Proposal evaluation criteria

1. Excellence	Weight: 30%
<ul style="list-style-type: none"> Clarity and pertinence of the objectives Credibility and soundness of the proposed concept, credibility of the proposed methodology and degree of conformity to provided specifications Extent that the proposed work is beyond the state of the art, and demonstrates innovation potential (e.g. ground-breaking objectives, novel concepts and approaches, new products, services or business and organisational models) Quality and effectiveness of the detailed research plan (including appropriateness of tasks and experiments, milestones, and indicators to monitor progress) 	<p><i>Score 1:</i></p> <p><i>../10</i></p> <p><i>(Threshold: 6/10)</i></p>

<ul style="list-style-type: none"> Appropriate consideration of interdisciplinary approaches and, where relevant, use of stakeholder knowledge and gender dimension in research and innovation content. Regarding the gender dimension: in research activities where tissues, living materials and human beings are involved as subjects or end-users, differences based on sex, gender, age, health conditions etc. may exist. If applicable to the present research: are diversity factors like sex, gender, age etc. addressed as an integral part of the proposal? 	
2. Impact	Weight: 40%
<ul style="list-style-type: none"> Contribution to the design and development of EBRAINS, the HBP research infrastructure Contribution to scientific activities pursued within the HBP (e.g. human neurosciences and to theory development) Any substantial impacts not mentioned, that would enhance innovation capacity, ability to create new market opportunities, to strengthen competitiveness and growth of companies, address issues related to climate change or the environment, or bring other important benefits for society Quality of the proposed measures to exploit and disseminate the project results (including management of IPR) and to manage research data where relevant 	<p><i>Score 2:</i></p> <p><i>../10</i></p> <p><i>(Threshold: 6/10)</i></p>
3. Implementation	Weight: 20%
<ul style="list-style-type: none"> Quality and effectiveness of the work plan, including extent to which the resources assigned to the tasks are in line with their objectives and deliverables Co-funding provided by the Partners (institutional staff, access to facilities, etc.) Quality of the Organisations and of the group of applicants as a whole (including complementarity, gender balance, involvement of key actors, prior history, relevant experience of the individual partners) and extent to which the consortium as whole brings together the necessary expertise Appropriateness of the management structures and procedures, including risk and innovation management 	<p><i>Score 3:</i></p> <p><i>../10</i></p> <p><i>(Threshold: 6/10)</i></p>
4. Equal Opportunities	Weight: 10%
<ul style="list-style-type: none"> Equal Opportunities for teams, diversity aspects (gender, age, career stage, other factors) must be considered: Are there measures in place and described in detail to enhance fair work distribution and equal opportunities for career development? Is the proportion of women scientists and contributors justified in detail? In case of an imbalance compared to the proportion of women in similar scientific disciplines, are measures planned to improve gender equality? 	<p><i>Score 4:</i></p> <p><i>../10</i></p> <p><i>(NO Threshold)</i></p>
5. Ethical implications and compliance	Mandatory
<ul style="list-style-type: none"> Ethical implications and compliance with applicable international, EU and national law Ensure that the study proposed will not promote indications that raise ethical issues 	<i>No Score</i>
OVERALL SCORE:	<p><i>Overall score:</i></p> <p><i>../10</i></p> <p><i>(Threshold: 6/10)</i></p>

Table 2: Proposal evaluation scores

0	The proposal fails to address the criterion	The proposal fails to address the criterion under examination or cannot be judged due to missing or incomplete information.
1-2	Poor	The criterion is inadequately addressed, or there are serious inherent weaknesses.

3-4	Fair	While the proposal broadly addresses the criterion, there are significant weaknesses.
5-6	Good	The proposal addresses the criterion well, but a number of shortcomings are present. Improvements will be necessary.
7-8	Very good	The proposal addresses the criterion very well, although a small number of shortcomings are present. Some improvements are still possible.
9-10	Excellent	The proposal successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.

10. Additional information

You can find more information on the HBP [here](#)²².

A list of Frequently Asked Questions (FAQ) is available [here](#)²³.

²² <https://www.humanbrainproject.eu/en/>

²³ <https://www.humanbrainproject.eu/en/collaborate/hbp-open-calls-frequently-asked-questions/>