

HIP Projects 2020 - Call

funded by the Initiative and Networking Fund

July 14, 2020

Background

The Helmholtz Imaging Platform (HIP)¹ brings scientists and engineers in the Helmholtz Association together to promote and develop imaging science and to foster synergies across imaging modalities and applications within the Helmholtz Association. As an interdisciplinary platform, HIP will develop and promote imaging science for the benefit of all Helmholtz Centres. HIP is established within the association's activities to strengthen information & data science. HIP covers all aspects of information processing along the imaging pipeline from data acquisition up to the analysis of processed imaging data.



One essential component of the platform are HIP Projects that are granted to cross-disciplinary research teams to promote imaging science. This is the first annual call for proposals for HIP Projects that are based on the general concept for HIP and are in line with the future topics of the Initiative and Networking Fund (INF). These projects initiate cross-cutting research collaborations and identify innovative research topics at the intersection of imaging and information & data science. In addition, they underpin the launch of the HIP network.

Each project accepted for funding can receive expert advice from a designated Project Support Team (PST), which is individually formed according to the needs of the HIP project and supported as well as facilitated by the HIP core units. The PST is set up in consultation with the project partners and may include, for example, domain scientists of the respective field of

¹ HIP Concept:

https://www.helmholtz.de/fileadmin/user_upload/01_forschung/Helmholtz_Inkubator_HIP.pdf

application, an expert of the methodology in question and a member of the HIP Service Unit. The PST supports the project partners and is present at the project start as well as at the milestone meetings.

The scientific results and software tools that are obtained in the HIP Projects and in collaborations within the HIP network, shall be made available as open source HIP Solutions and a sustainability concept for its application as well as transfer shall be provided. They include published results, software and reference data, and will be hosted by the HIP Core.

The HIP Solutions framework will be established as a common platform for all solutions created within HIP. It serves to collect and generalize software created within HIP and the Helmholtz Association. The HIP Solutions framework facilitates implementing abstract algorithms so that they can subsequently be applied to a wide range of modalities. Furthermore, it provides container to store data together with their annotations in common formats that enable easy exchange in between research domains following the FAIR approach.

Objective of funding

The objective of this first call for HIP Projects is to initiate and facilitate activities that address challenges and methods across research fields and centres; special emphasis for HIP Projects is laid on developing innovative approaches, which tackle imaging problems. Such projects often are characterized by higher risk, and will therefore have demonstration character. Thus, HIP will provide seed funding for new ideas and aims at collaborative projects with the potential to facilitate collaboration in a larger context.

First impactful results are expected by end 2021, i.e. one year after the funding starts. The results shall contribute to a vibrant network within the Helmholtz Association, fertilize cross-research-field and cross-centre collaborations and contribute to international visibility.

Goals

A HIP Project combines two characteristic goals:

1. promote imaging science by innovative approaches in information & data science and synergies across imaging modalities and applications, and
2. foster cross-disciplinary research interaction and method transfer between applications and research fields (across Helmholtz Research Fields).

Ideally, HIP projects are co-created and iteratively developed with users and non-academic stakeholders (e.g. industry, NGOs or civil society) to ensure the quick adoption of results by a “customer”.

In order to allow for vigorous exploration of new approaches and to encourage disruptive ideas, HIP Projects explicitly call for 'high risk, high gain' project proposals.

Criteria

Projects shall be aligned with the goals formulated below. Applications that meet the following criteria will be evaluated based on the evaluation criteria (see below).

1. Thematic Criteria

- a. The projects aim at the development of new methods, algorithms, software solutions or benchmark data sets in imaging science and their (interdisciplinary, cross-disciplinary) application.
- b. Projects with a substantial share of or focus on imaging hardware development are not eligible for funding.

2. Further Criteria

- a. HIP Projects shall combine substantial and reasonably balanced contributions from scientists from at least two Helmholtz centres and two Helmholtz research fields.
- b. Each project must have 'problem – solution' fit at its heart and must identify early adopters willing to trial the solution and provide feed-back ("customer"). An external partner can also serve as a customer (e.g. industry).
- c. External partner(s) with outstanding expertise or access to specific resources may be included into the project team; funding can be provided for university partners in well-justified cases.
- d. The cooperation and management plan of the project should comprise effective communication, participation and decision-making mechanisms between the partners.
- e. Applications shall outline clear deliverables and measurable milestones that can be achieved over the course of the funding period. In particular, milestones have to allow for a decision on the advancement of the project such that success or failure can be identified early on. Applicants shall describe the expected results and impact of the project (e.g. for the participating centres, the Helmholtz Association and the research fields). If necessary the milestones can be adjusted together with the PST (approval by Head Office required).
- f. The application shall describe how a swift start of the project is ensured upon the funding decision (e.g. hiring, data provision). The project should start within 3 months after the funding decision.
- g. HIP Projects can apply for a total volume of approximately € 400k for a funding period of up to 3 years. Half of the financial volume and at most € 200k will be funded by the INF.
- h. Staff, travel expenses and cost for consumables (including internal services) are eligible for funding; investments are excluded.

- i. Applications submitted for HIP Projects must not have been submitted simultaneously to another funding line of the Helmholtz Association or to another organization. Resubmissions from this or other funding lines have to be indicated by the applicants.

Rights and Obligations

1. During the funding period, projects commit to actively participate in project topic related cross-field activities of HIP to a reasonable extent, such as progress workshops, method exchange workshops or hackathons, and to present their results. Projects can seek advice from the PST.
2. Projects commit to share short updates about their progress (e. g. on the HIP website) on a regular basis.
3. Annually and at the end of their respective funding period, all HIP Projects will submit a short written (final) report demonstrating progress and results (referencing deliverables) to the HIP Core. These reports form part of the general reporting of the Helmholtz Imaging Platform.
4. The results of an HIP Project are to be made available to the imaging community as an HIP Solution hosted and communicated by the HIP Core. This means, e.g., that software and algorithms must be open source (complying with an OSI approved license) and methods, reference data, reports and publications of the project results must be open access. The HIP Core will give support in compiling the HIP Solution to make it available in a sustainable way.

Applications

1. The application consists of:
 - a. Cover page including English and German abstracts (max. 0.5 page per language), this cover page will be automatically generated by the Project Proposal Portal based on your input,
 - b. Main body (max. 5 pages),
 - c. Appendix (work packages, deliverables, milestones, budget, CVs, information about resubmission),The main body and the appendices shall be submitted as one pdf-document via the respective page of the Project Proposal Portal.
2. The application shall be written in English, with the exception of the German abstract, and formatted in DIN A4, Arial, 11pt, 2.5 cm margin and single line spacing. A full template specifying the structure and formatting is provided as Appendix 1 to this call.
3. The main body's structure is:
 - a. Scientific case,
 - b. Uniqueness, innovation and main goals,
 - c. Imaging methods, applications and/or data sets,

- d. Scientific impact, impact beyond academia, and sustainability, including HIP Solution,
 - e. Implementation and management.
- 4. Important elements on the cover page include (generated by the portal):
 - a. title and acronym,
 - b. up to 10 keywords,
 - c. names and contact information of primary contact Helmholtz Centre and person, coordinator(s) and Principal Investigator(s),
 - d. names of participating centres and external partners,
 - e. requested funding and matching funds (as stated in budget)
 - f. resubmission information (if applicable, differences to previous submissions shall be explained in an annex of maximum one page).
- 5. CVs of the principal investigators should be submitted in the appendix. Please indicate the relevant expertise for the project. Please note that the CVs should also contain references to relevant accomplishments beyond scientific papers and citation metrics; such accomplishments may for instance be software packages, policy papers, standards, data sets, patent filings, entrepreneurship and industry collaborations.
- 6. A budget plan has to be included.
- 7. The application can include a list of six unbiased independent experts with expertise relevant to the application (experts could be invited to participate in the selection process). The list should be gender balanced.
- 8. An incomplete application may lead to the exclusion of the application from the selection procedure.

Evaluation process, selection, and evaluation criteria

Proposals are subject to the following evaluation procedure. Proposals are checked with regard to formal requirements. The panel performs a pre-assessment of all applications prior to the meeting. Proposals are evaluated by a panel of independent experts (no presentation). Based on this evaluation, the panel will recommend a ranked list of projects for funding. The president will review the ranked list of proposals and decide which projects shall be funded.

Proposals will be evaluated by a panel of experts, on the basis of the evaluation criteria 'innovative potential', 'research impact', 'methodology impact' and 'quality and efficiency of the implementation'.

Evaluation criteria	Aspects
Innovative potential	• Extent to which the proposed project is beyond the state of the art, demonstrates unique innovation potential (e.g. ground-breaking objectives, novel concepts and approaches) • Clarity of the objective(s) • Soundness of concept and credibility of proposed methodology
Methodology impact	• Extent to which the output(s) of the project would contribute to advance the development, implementation, or use of the specified method • The potential to transfer and disseminate the methods, including a concept to make the expected results a sustainable HIP Solution for HIP, Helmholtz, and/or external partners
Research impact	• Extent to which the output(s) of the project would contribute to advance the specified research field(s) • Potential to contribute to establishing and strengthening a long-term cooperation between the partners
Quality and efficiency of the implementation	• Quality and effectiveness of the work plan, including the extent to which the resources assigned to work packages are in line with their objectives and deliverables • Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role • Complementarity of the partners and balance of expertise • Readiness of applicants to commence the project within the timeline indicated in the call

The evaluation will be managed by the Helmholtz Association Head Office. The scientific leadership of HIP (i.e. the scientific directors and steering board members) will have no access to submitted proposals or assessments at any stage during and after the evaluation procedure. They will not contact the panel of experts.

The HIP Core management unit supports the head office in the management of the projects. At the beginning of the assessment the HIP Core verifies the formal criteria and towards the end of the process the HIP Core Team can contribute to the formation of the PST.

Once a HIP Project is accepted, the project partners need to confirm the matched funding by their centre or home institution according to the rules of the INF by a signed letter from their board of directors.

Schedule

Date	Event or action
14 July 2020	Publishing of the call for HIP Projects
Starting August 2020	Submissions accepted for HIP Projects; applications to be submitted via projects.helmholtz-imaging.de by the primary contact Helmholtz Centre in electronic form (max. 10 MB) as a single PDF file.
11 September 2020	Application deadline
September - October 2020	Proposals meeting the formal selection criteria are reviewed and scored by panel members according to evaluation criteria. Panel members meet to decide which projects to recommend for funding to the President of the Helmholtz Association. The President takes the final decision.
October - November 2020	Funding contracts between Helmholtz Association and submitting centres are being drawn up.
Starting from November 2020	Start of HIP Projects

Contact information

For further inquiries, please contact:

- HIP: projects@helmholtz-imaging.de
- Helmholtz Head Office: inkubator@helmholtz.de

Annexes

- Template
- Conflict of interest for suggested reviewer
- Data protection information