Human Organ Atlas Hub (HOAHub)

Peer Review Process
General Guidelines

1. Access Mode for HOAHub

There are two main routes for beamtime allocation:

1. **Biomedical challenge beamtime (BC)** – normally 2-6 shifts (1 shift = 8 hours) beamtime, and is a planned series of scans that will help solve a biomedical challenge. Principal investigator must be a HOAHub Member.
2. **Feasibility beamtime (FT)**[1] – normally 1 shift beamtime, short scan(s) to provide small proof of concept datasets for e.g. external funding applications for a larger grant, while trainees are present (and being trained) for 1-2 days helping run the feasibility studies. Principal investigator can be either HOAHub Members or Collaborators.

Both BC and FT may utilise new samples or may apply to rescan samples currently held onsite at ESRF (highly encouraged). Please use data from the HOA to demonstrate feasibility where appropriate. Applicants must provide anonymised donor meta-data (that is ethically allowable).

2. Proposal Procedure for Beamtime Allocation

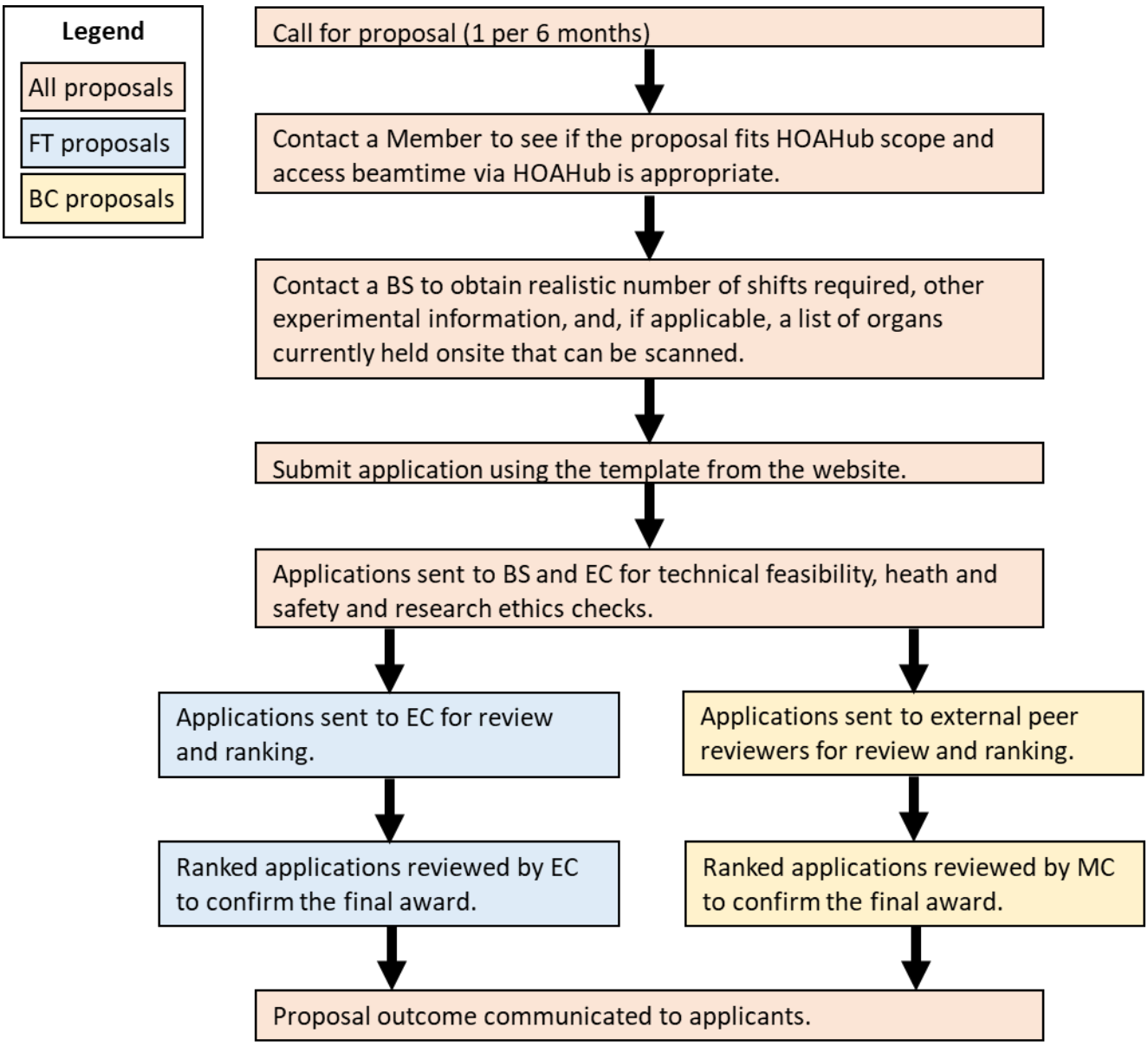
1. **Announcement of Beamtime Proposal Call**: Every **6 months**, a call for beamtime proposals will be made. Note that **FT beamtime** will occur **once every 12 months**.
2. **Initial Discussion with HOAHub Member**:
    - Before submitting any proposals, proposers must engage in a discussion with a **HOAHub Member**. This step ensures that the proposed experiment aligns with the scope of HOAHub and that accessing beamtime via HOAHub is appropriate.
    - It is highly recommended to initiate this discussion as early as possible to avoid potential delays during the application process.
3. **Discussion with Beamline Scientist (BS)**:
    - If the proposal falls within the HOAHub scope, proposers should further discuss the experiment with a **Beamline Scientist (BS)**.
    - The BS will provide information on the realistic number of shifts required, other relevant experimental details, and, if applicable, a list of organs currently available onsite for scanning.
    - Again, contacting the BS promptly is advisable to prevent application delays.
4. **Application Submission**:

[1] Data access only requests – Request for access to existing HOAHub data for novel image analysis method development may be considered. Please email the request to hoahubesrf@gmail.com.

- Once the proposal has been checked by the BS, proposers must submit their application using the template available on the **HOAHub website**. The submission email address is **hoahubesrf@gmail.com**.

5. **Review Process**:
    - Submitted applications undergo a thorough review process:
        - **BS** and **HOAHub Executive Committee (EC)** assess technical feasibility, health and safety aspects, and research ethics.
        - For **FT applications**, the EC evaluates scientific and biomedical excellence and other relevant criteria.
        - For **BC applications**, a panel of external peer-reviewers evaluates scientific and biomedical excellence and other relevant criteria.
6. **Ranking and Confirmation**:
    - **Ranked FT applications** are reviewed and confirmed by the EC.
    - **Ranked BC applications** are reviewed and confirmed by the **HOAHub Members Committee (MC)**.
7. **Outcome Notification**:
    - The EC will inform applicants of the review outcome.
    - If successful, necessary transport arrangements and documentation will be initiated.
8. **Specific Beamtime Allocation**:
    - Upon completion of transport arrangements and documentation, applicants will receive confirmation of their allocated specific beamtime shifts.

The following flowchart summarises the aforementioned procedure.



3. Peer Review

Access to submitted proposals will be available online via a web application.

BS will

- indicate whether the experiment is technically feasible on their beamline or they will recommend another beamline
- give the recommended number of shifts including setup time
- give any relevant technical comments.
- recommend whether this proposal should be deferred to the following scheduling period due to technical limitations of the beamline.

The EC and BS will indicate if the submission has indicated that ethical approval for sample collection in the country of origin are already in place.

The Health & Safety team will indicate the safety assessment. This will be graded.

- black - experiment cannot go ahead
- red – experiment needs close supervision
- yellow – experiment needs monitoring at the beginning of the experiment
- green - no restrictions

Peer review panel:

- need to be external to the submitted proposals.
- for FT applications, will consist of EC.
- for BC applications, will consist of at least two experts independent of EC.

Members of peer review panel will:

- assign an initial grade for the proposal based on its scientific and biomedical merit. The grades will be between 1 and 5 with 5 being the top score.
- create a list in order of scientific and biomedical excellence.
- give comments on each proposal which can be sent back to the Principal Investigator.
- extra information – additional information will be required if this proposal is given beamtime.

4. Peer Review Criteria

1. Scientific and Biomedical Merit:

- a grade between 1 and 5 will be assigned, with 5 being the top score, defined below:
    - 1 - The proposed research is not well planned. Results would not make important contributions to fundamental or applied understanding, and/or to solve biomedical the challenge proposed, and work is not likely to result in publication.
    - 2 - The proposed research feasible but may not significantly impact a specific field or scientific discipline and/or solve the proposed biomedical challenge. Publication may not result from this research.
    - 3 - The proposed research is important in a specific field or scientific discipline and/or in solving a biomedical challenge, and is likely to produce publishable results.
    - 4 - The proposed research is of high international quality and has potential for making an important contribution to a specific field or scientific discipline, and/or solve the biomedical challenge proposed. The work is likely to be published in a leading scientific journal.
    - 5 - The proposal involves highly innovative research of great scientific and biomedical importance. Proposed research will significantly advance knowledge in a specific field or scientific discipline, and/or solve the proposed biomedical challenge.
- If existing data for similar organ is available, will this fulfil feasibility?

2. Impact on HOAHub:

- graded 1-5, based on
    - establishing new, or building on existing HOAHub collaborations, both academic and industrial
    - supporting the HOAHub aims
    - helping develop personnel

3. Prior Track Record

- grade 1-5, based on outputs from prior beamtimes, including:
    - publications
    - grants
    - building on / establishing new, collaborations

4. Number of people trained

5. Proposal Decision & Scheduling

Schedules for each beamline will be determined by Principal Beamline Scientists (or delegated beamline scientist). This will be dependent on the type of experimental setup, any additional equipment & resource. Consideration will be given for requested dates from the Principal Investigator but this cannot be guaranteed.

When beam-time has been scheduled, invitations for experiments, together with detailed instructions, are then communicated to the Principal Investigator 4 months ahead of the experimental date.

The Principal Investigator must ensure that Principal Beamline Scientists (or delegated beamline scientist) has all the information 1 week before scheduled beamtime.

If a User needs to cancel their beamtime then this must be done with at least 1 month notice. The Executive Committee will make use of the ranking list and offer the beamtime to the next experiment. If a user cancels beamtime with less than a month notice then the Executive Committee will try and ensure that the beamtime is used appropriately. This could be by working through the ranking list, giving access to FT proposals, bringing forward scheduled beamtime or offering beamtime to HOAHub members.

Appendix 1. Assessment of technical feasibility, health and safety, and research ethics.

Technical feasibility								
Proposal ID	**Feasible?**	**Shift requested**	**Shift estimated**	**Exp. sessions**	**Whole sample res. (um)**	**Zoomed res. (um)**	**Estimated data (Tb)**	**Comments**

Health and safety, and research ethics					
Proposal ID	**Organ**	**Local research ethics**	**French transport ethics**	**H&S grade**	**H&S comments (e.g. new procedure required?)**

Appendix 2. Peer Review Scoring Sheet

1. Please add your name:	
2. Please add the Proposal ID provided on the email (eg: BC1):	
3. Please rank the Scientific and Biomedical Merit of the proposal, graded 1-5: 1 - The proposed research is not well planned. Results would not make important contributions to fundamental or applied understanding, and/or to solve biomedical the challenge proposed, and work is not likely to result in publication. 2 - The proposed research feasible but may not significantly impact a specific field or scientific discipline and/or solve the proposed biomedical challenge. Publication may not result from this research. 3 - The proposed research is important in a specific field or scientific discipline and/or in solving a biomedical challenge, and is likely to produce publishable results. 4 - The proposed research is of high international quality and has potential for making an important contribution to a specific field or scientific discipline, and/or solve the biomedical challenge proposed. The work is likely to be published in a leading scientific journal. 5 - The proposal involves highly innovative research of great scientific and biomedical importance. Proposed research will significantly advance knowledge in a specific field or scientific discipline, and/or solve the proposed biomedical challenge.	Choose an item.
Comments on the Scientific and Biomedical Merit of the proposal:	

4. Please rank the Impact on HOAHub of the proposal, based on: **a. supporting the HOAHub aims[2] (see footnote for full list)** **b. establishing new, or building on existing HOAHub collaborations, both academic and industrial** **c. helping develop personnel.** **Graded 1-5:** 1 - The proposal does not align with HOAHub aims, AND has no positive impact on collaboration, AND has no impact on personnel development. (no criteria met). 2 - The proposal partially aligns with HOAHub aims, AND/OR will establish new collaboration AND/OR train new personnel. (partial support of HOAHub aims with one other criteria met). 3 - The proposal partially aligns with HOAHub aims, AND/OR will establish new collaboration AND/OR will train new personnel. (partial support of HOAHub aims with two other criteria met). 4 - The proposal fully aligns with HOAHub aims, AND/OR will establish new collaboration AND/OR will train new personnel. (full support of HOAHub aims with one other criteria met). 5 - The proposal fully aligns with HOAHub aims, AND will establish new collaboration AND will train new personnel. (full support of HOAHub aims with two other criteria met).	Choose an item.
Comments on the Impact on HOAHub of the proposal:	

[2] HOAHub Aims:

1. Bridge clinical imaging (radiology, millimetre scale) to molecular modalities (nanometre scale), providing unprecedented insights into our bodies in health, ageing and disease, helping cure or mitigate diseases from neuro-degeneration to musculoskeletal disorders to cancer.
2. Bring together interdisciplinary groups to produce the novel experimental and computational technologies needed to analyse and interpret the scale-bridging data.
3. Enable the clinical impact of synchrotron imaging to be realised, by transforming HiP-CT into an efficient tool (from autopsy to beamtime to quantification).
4. Advance biological, computational and medical fields.
5. Provide anatomical training resources and a new Gold Standard for validating CT, MRI and 3D histology, inspiring a new generation of techniques and real-world clinical insights.

5. Please rank the Prior track record of the proposal, graded 1-5 based on outputs from prior beamtimes (or other relevant imaging modalities), including publications, grants and collaborations. 1 - The proposer does not have previous experience in beamtime or other relevant imaging modalities. 2 - The proposer has some previous experience in beamtime or other relevant imaging modalities, which resulted in outcomes: some publication, AND/OR research grant and AND/OR new collaborations (some experience leading to 1 out of 3 outcome). 3 - The proposer has some previous experience in beamtime or other relevant imaging modalities, which resulted in outcomes: some publication, AND/OR research grant and AND/OR new collaborations (some experience leading to 2 out of 3 outcome). 4 - The proposer has some previous experience in beamtime or other relevant imaging modalities, which resulted in outcomes: some publication, AND research grant and AND new collaborations (some experience leading to 3 out of 3 outcome). 5 - The proposer has extensive previous experience in beamtime or other relevant imaging modalities, which resulted in outcomes: some publication, AND research grant and AND new collaborations (extensive experience leading to 3 out of 3 outcome).	Choose an item.
Comments on the Prior track record of the proposal:	
Overall Comments:	