

## Quick Reference

Please note that you must read the full Call document for guidance before submitting your proposal

# Call for a Multiscale and In Situ Laboratory X-Ray Computed Tomography National Research Facility

**Call type:** Invitation for proposals

**Closing date:** 1<sup>st</sup> October 2019 16:00

**Funding Available:** Up to £10.0M

**How to apply:** Full proposals are invited with postal peer review and interview panel stage to make the final decision.

**Assessment Process:** Full proposals will undergo peer review, followed by assessment at an interview panel resulting in a rank ordered list. The interview will be based on the quality, resources and management, national importance, applicant's ability to deliver, pathways to impact and advocacy for the science and engineering.

### Key Dates:

Activity	Date
Call opens	23 <sup>rd</sup> July 2019
Deadline for Full Proposals	1 <sup>st</sup> October 2019
Interview Panel	Week of 13 <sup>th</sup> January 2020
Funding decision	Late January 2020
Grant start date*	From March 2020

**Additional information:** \*EPSRC will consider requests to start the grant earlier, with limited funding. Although applications may be multi-institutional, only one Je-S form should be submitted per bid, and it is up to the lead organisation to coordinate costs, documentation, etc.

Applicants must inform EPSRC (see contacts below) of their intent to apply prior to submitting a proposal.

### Contacts:

Lucy Hackett – 01793 44461 (lucy.hackett@epsrc.ukri.org)

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Engineering and Physical Sciences  
Research Council

# Call for a Multiscale and In Situ Laboratory X-Ray Computed Tomography National Research Facility

**Call type:** Invitation for proposals

**Closing date:** 1<sup>st</sup> October 2019 16:00

**Related themes:** Engineering, Physical Sciences, Manufacturing the Future, Energy and Research Infrastructure

## Contents of this call document

- [Summary](#)
- [Background](#)
- [Funding Available](#)
- [Equality, Diversity and Inclusion](#)
- [Equipment](#)
- [Eligibility](#)
- [Submitting an application](#)
- [Guidance on 'Writing an Application'](#)
- [Assessment process](#)
- [Assessment Criteria](#)
- [Guidance for Reviewers](#)
- [Guidance for \[host organisations/heads of department\]](#)
- [Moving Forward](#)
- [Key Dates](#)
- [Contacts](#)
- [Change Log](#)
- [Attachment Checklist](#)

## Summary

**This call is to identify and support an *in situ* Laboratory X-Ray Computed Tomography (XCT) National Research Facility (NRF).** The facility will enable world-leading research with the potential for commercial exploitation and ground-breaking impact on the UK economy as well as wider societal benefits. Total funding of up to £10.0M is available.

Proposals will undergo peer review, followed by assessment at an interview panel resulting in a rank ordered list. Standard eligibility rules apply. As a National Research Facility, we will be looking for strong evidence of user led input into

submitted proposals. An expert specification panel has identified detailed criteria and applications should make sure to address these in full.

## Background

Following a Statement of Community Need assessment process, EPSRC has identified a requirement to support a multiscale and *in situ* Laboratory X-Ray Computed Tomography (XCT) National Research Facility (NRF). An outline proposal for a XCT NRF was assessed during the EPSRC's 2015 National Research Facility Statements of Community Need exercise. The Statement of Need Panel recommended that the proposal be taken forward. In the light of this recommendation, the EPSRC explored the tomography infrastructure landscape further by commissioning a Tomography Roadmap, which reported in 2018.

In the light of the Roadmap, a refreshed Statement of Community Need was discussed by an expert Specification Design Panel in May 2019 and EPSRC is now inviting applications to provide a national centre for XCT competency delivering full user support for imaging, post analysis and education. EPSRC will support the facility with a five-year grant, which will undergo a mid-term review at the 2.5 to 3-year stage.

The facility will enable world-leading research with the potential for commercial exploitation and ground-breaking impact on the UK economy as well as wider societal benefits. It must facilitate timely access for a broad community of researchers with varying levels of expertise from the physical sciences, engineering and beyond. Users from a wide range of disciplines are expected to be supported via appropriate and tailored package(s) of support from experimental design to data analysis and interpretation, including provision of a central or distributed suite of analysis centres with local, or remote/cloud based systems that can be accessed from across the country with support provided.

The facility must provide ongoing effective training, support and development of the next generation of researchers and skilled instrument scientists/specialists. It must act as a beacon for researchers who use and develop XCT and a focal point for the development of new techniques and best practice. To this end, it is expected to work with relevant partners to carry out software, technique, and analysis and instrument development to generate new cutting-edge capacity for the community.

The facility is expected to actively promote XCT, and grow and expand the user base by bringing in new academic users (both within and outside the host institution(s)), and other users (incl. new companies) from across the UK. It should provide new communities and non-traditional users with a single point of access to a community of XCT experts, and support the triaging of users.

Applications are welcomed to propose the establishing of a NRF by whatever means that delivers the most appropriate outcome (i.e. a single site, a federated model, or a Hub and Spoke type, based across a number of institutions). Applicants should make the case for their proposed option.

Funding can include costs associated with equipment Total funding of up to £10.0M, software, and technique and instrument developments necessary for providing internationally relevant equipment and tools over the grant duration. No costs for research effort e.g. researcher time or resources will be provided.

However, funding is available for technical support staff to provide training to users.

### **National Research Facilities (NRF)**

As an integral part of its portfolio, EPSRC invests in a range of National Research Facilities (NRFs) to offer the UK research community access to excellent infrastructure and expertise. For more information about EPSRC's portfolio and strategies, see our website

EPSRC National Research Facilities are research facilities that provide resources of limited availability to UK researchers for one of several reasons including:

- The relative cost of the equipment and the supporting infrastructure required
- Dedicated equipment and supporting infrastructure is not required in every University
- Particular expertise is needed to operate the equipment or interpret the results
- Progress is enhanced by sharing information or software.

EPSRC holds an annual call for Statements of Community Need to identify community requirements for National Research Facilities. These Statements of Community Need are prioritised by an expert panel, which assesses the quality, usage, national importance, strategic case & context, potential impact, sustainability, charging & access of the submitted Statements.

### **NRF Requirements**

#### **1. Key requirements for service**

The service will provide researchers with access to XCT expertise and technical capabilities to tackle research questions from academia and industry including but not limited to the physical sciences. The facility will act as a focal point for driving forward leading-edge technique development and applications. The facility must take a leadership position within the research community and must describe where it sits within the national and international infrastructure landscape, and the proactive steps it will take to engage with, and enhance user access to this broader national infrastructure landscape. The successful proposal will have paid particular attention to how the new facility will interface with the national synchrotron facilities.

As a minimum, the service must meet the following requirements:

- a. Users will require access to a wide range of capabilities, and applicants must describe how available capability and the development of new capabilities addresses the broadest range of user needs now and into the future.
- b. The provision of tools to increase efficiency and productivity of the facility such as:
  - i. Access to experimental planning and training.

- ii. Provision of data processing and software tools with remote access for external users. Tools are expected to appropriately service the requirements of a wide variety of disciplines and application areas.
  - iii. Access to expertise and advice from a broad range of application domains.
- c. Provide a facility that enables longitudinal and time resolved studies.
- d. Sufficient computing capacity and power to enable short-term data retention and handling of data by users.
- e. Must provide *in situ* rigs (see g) below) and describe the long-term plan for their maintenance and support, at least to the end of the period of award, but preferably beyond.
- f. The facility must have the following capacity:
  - i) Large sample scanner micro focus system
  - ii) Medium scale X-ray scanner capable of hosting *in situ* experiments.
  - iii) High resolution fast Micro CT scanner
  - iv) Ultra-high resolution Nano CT scanner phase contrast system for lowly attenuating objects
- g) In-situ rigs:
  - i) A 10kN tension-comp, torsion thermomechanical test rig with heating to 1600 °C
  - ii) A 10kN fatigue rig
  - iii) A cryo-cooled environment (e.g., for bio-medical, food sciences).
- h) Provide and implement procedures and protocols for the calibration and verification of x-ray imaging systems.
- i) Sample preparation facilities to handle and study hazardous or challenging samples with routine pre-prescribed methods for scanning (including wet, powder, and cryogenically frozen samples) providing an interface to the life sciences and processing sciences.
- j) In the short-term, the facility should provide data curation and analysis provision for the datasets acquired.
- k) The infrastructure and other resources needed to maintain the Facility and to support users (including, for example, data analysis facilities, rig transport costs, training provision and funds for the Advisory Board) must be detailed and justified. These, for example, may include technicians, instrument scientists, experimental officers and a project manager and high-level leadership and management staff.

- l) The facility should provide expert advice, support and training to all users with the expectation that, overtime, XCT becomes a sustainable area of study for the UK. If a Hub and Spoke or a federated model is applied for, it is likely that training support will be centrally coordinated. The training provision should, as a minimum, provide:
- i. Guidance for the user on their likely user experience; this is anticipated to be different for different levels of user, i.e., novice, experienced, expert user
  - ii. Access to expert advice and support for users from across a range of relevant disciplines and application areas
  - iii. Training provision in equipment use in accordance with user needs to include face-to-face training and remote support
  - iv. Site safety training at levels relevant to the user
  - v. Experimental design and feasibility support
  - vi. Imaging processing and interpretation support
  - vii. Sample preparation and storage support

## **Using Synchrotrons as an alternative**

It is possible that some of the specified performance might better, or more easily be delivered by a synchrotron beamline. Applicants may then wish to reflect this in their facility application. Any proposal that chooses to take this approach must detail how access will be funded, managed and supported at the host, addressing all of the requirements specified in this call, for *all* elements of the proposed facility.

## **2. Operational requirements**

Proposals must meet the following operational requirements. These must continue over the lifetime of the grant; plans and resource requests for these purposes must be clear in the proposal:

- a. Applicants must detail and justify the expected balance between the following, referencing the planned cost-sharing strategy (section 4) as appropriate:
  - i. User type (from/outside host organisation(s), academic, industrial etc.)
  - ii. Experiment/project type
  - iii. Time that will be dedicated to the various categories of use e.g., user imaging, technique development, instrument(s) maintenance & calibration.
  - iv. Access type (fast track etc.)
- b. Applicants must operate a suitable and transparent process for prioritising, allocating and scheduling instrument time for user access and how considerations such as but not limited to assessment of scientific quality, diversification of the user base, variety of access routes (charged usage/fast-track/free-at-the-point of access), and training will be tensioned in the process. Details should be given of options for a

percentage of the facility to be open to researchers in areas beyond EPSRC remit, e.g., business customers (referencing the planned cost-sharing strategy (section 4) as appropriate).

- c. The facility is expected to actively grow and diversify the user base (new universities, new research organisations, different research communities and new industrial users & companies) over the lifetime of the grant. The applicants should provide details about how they will assess the current and future size of the user base, their communication & engagement strategy to reach new user communities, and what growth they expect to achieve in the user base. Consideration should be given to how the facility will work with the wider imaging community to manage and triage user demand, with the aim of optimising the match between the user's requirement(s) and nationally available instruments.
- d. For the duration of the grant, the facility must maintain a fit for purpose website that provides a clear first point of contact, information on the procedure to gain instrument access, remote access to data, and software for data processing and analysis. The website must fully comply with accessibility best practise and promote the facility by describing and demonstrating the capability(s) offered and world leading outputs enabled.
- e. The facility is expected to collect usage statistics in line with relevant GDPR regulations and grant conditions. The facility must be able to report on individual users and record which equipment and services they used, the work carried out, and whether they obtained the data they sought. Usage data and user consultation should inform decision making regarding capability developments, user engagement, service improvements and future provision.
- f. Applicants will provide a plan with details on how the capability of the facility and associated preparatory, storage and ancillary equipment will be maintained. This should include details of agreements with the appropriate equipment manufacturer for upgrading and developing the equipment and facility, and a consideration of how these costs might be reduced over the lifetime of the grant. Outline plans for routine servicing and preventive maintenance should be provided, in addition to details of local technical expertise for equipment maintenance and repair.
- g. The facility must have a data management policy that is compliant with UKRI open data policy, and extends beyond the lifetime of the grant. The facility must have appropriate and robust systems and procedures to ensure Data Protection during collection, storage, processing, remote access and secure downloads of research data. Details should be provided about who will be responsible for data compliance.
- h. The facility must utilise instruments to a maximum extent possible. Applicants must set out how many days per year they expect the facility to be available and describe how this will be achieved. Options might, for example, include remote or programmed operation or out-of-hours services. Applicants must show how they will ensure the highest standards of operation at all times, including managing staff needs, i.e., work-life balance, in tandem with the provision of any appropriate out-of-hours support for users, policies and procedures.

- i. The facility must have a:
  - i. Policy for how the facility will be acknowledged in publications, presentations and other outputs attributable to the service.
  - ii. Strategy for capturing evidence of impacts over the short, medium and long term. This should include an approach for measuring, reviewing and reporting impacts over the lifetime of the grant in order to demonstrate the added value of the facility.
- j. Applicants should provide a clear plan to describe how the facility will progress from the offer of award to the 'Commencement of Service' and a 'Fully Operational Service'.

### **3. People and management arrangements**

The facility must meet the following requirements:

- a. The facility shall be led by an eligible academic who will be the nominated director and will be ultimately responsible for the execution of any grant. This named person shall have an international reputation and the ability to work constructively with multiple stakeholders and funders. Co-director(s) with a distinct role can also be included (e.g., in the case of a Hub and Spoke model the Spokes may have a Co-Director leading those activities).
- b. There must be a nominated technical director who will manage and lead the delivery of the facility. This may or may not be the same person as the nominated director. In the submitted documents, please clearly identify who will fulfil both posts and provide evidence of their ability to accomplish their roles and deliver the facility both operationally and strategically.
- c. The facility should have a clear and appropriate governance and management structure including an independent advisory board that reflects a diverse user community (the requirements of this board are described further under the 'additional grant conditions' section). There must be clear separation of duties between any management boards, advisory boards and allocation panels, and robust/transparent procedures for appointing/replacing members. An organogram of the proposed organisational structure should be provided.
- d. Applicants should give details of the staffing plans for the facility and evidence of how the staff expertise will meet the needs of the broad user community. The submitted management plan must include:
  - i. Measures to safeguard facility continuity in the event of the proposed director leaving and/or other senior staff changes.
  - ii. Consideration of the single-point failure risk for all key staff needed for optimal facility operation, including the maintenance of an effective website.
  - iii. A risk management strategy including a risk register focussed on achieving the highest productivity of the facility and a strategy for reducing risks and/or ameliorating their impact.
  - iv. A staff retention policy that includes evidence of commitments to staff development and training.



- v. Continued support and development of instrument scientists and research technical professionals (RTPs) associated with the operation of the facility.
- e. The facility should have appropriate management processes in place to support and improve user access including:
  - i. A health and safety policy that covers training of new users and assessment of user competency to use the facility.
  - ii. Robust Intellectual Property and confidentiality procedures for industrial users.
  - iii. A process via which users can raise a request, complaint or issue about any aspect of the service, and a procedure for resolution. The applicant(s) should detail how user feedback will be managed, analysed and used to implement facility improvements.
- f. Any grant(s) awarded as a result of this call will be expected to review performance against agreed KPIs. Applicants must identify a comprehensive set of KPIs that they propose to use for facility performance measurement and management. KPIs are expected to cover all aspects of the facility's key requirements; number of service users and evidence for engagement with new user communities, growth in usage, supported projects, service improvements, allocation process, outputs/impacts, and a vision for the future that addresses the cost recovery model/targets for the facility.
- g. The facility is expected to take a leadership and advocacy role in the relevant communities. Leadership in this context might involve
  - i. Supporting/contributing-to the development of future capital / infrastructure strategy, e.g. roadmaps and infrastructure reviews
  - ii. Outreach
  - iii. Demonstrating value of the service to the community (need and usage)
  - iv. Capturing and maximising impact

#### **4. Cost sharing**

EPSRC is committed to providing cost effective National Research Facilities that complement, but do not undercut, provision within the wider national infrastructure landscape. EPSRC continues to support NRFs by providing recurrent funding to maximise facility impact and broaden the user base. However, in line with other NRFs EPSRC will not fund the entirety of the facility and requires a proportion (%) of the recurrent (resource) costs for the facility operation to be recovered each year through charged usage. For the avoidance of doubt, in this context, recurrent costs mean operational expenditure that is not equipment spend.

The table below sets out what EPSRC considers to be reasonable minimum cost recovery targets for the XCT over a five-year funding period where the balance of funding is sourced from industry (in the order of 20% by year 5) and grant funded academic users (in the order of 50% by year five - including EPSRC awards). Applicants may wish to propose alternative targets and are welcome to

describe how further savings might be made and used to fund enhanced facility activities/capabilities. These should be reflected in the proposed grant payment profile that will need to be provided as part of the grant application.

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
% of recurrent (resource) costs to be recovered	10%	20%	30%	50%	70%

Applicants must detail the proposed approach toward meeting the(ir) cost recovery targets and provide evidence that the approach ensures optimal utilisation of the leading-edge facility equipment by a variety of user types (as detailed in Section 2. Operational Requirements). EPSRC expects applicants to identify non-UKRI sources of funding to underwrite the cost-recovery plan in the event of targets not being met, which should be documented in letters of support.

The proposal should include details on the proposed charging model, and how it would operate for different types of user and/or different access routes. The definition of the different charging-categories in the charging model should be included, as well as consideration of how charged usage will dovetail with free-at-the point access facility usage and how this may affect prioritisation of experiments. Applicants should describe how different access routes will be managed to protect the proposed balance of different users as detailed in Section 2 Operational Requirements.

If, following peer review, EPSRC considers that insufficient effort has been made to detail a cost-effective facility it may, in discussion with the PI, alter the profile of a successful grant to return maximum value to UK research users.

Progress towards increased sustainability will form a key KPI of the successful grant and will be reviewed by the independent advisory body and at the mid-term review.

## **Funding available**

There is a maximum research council budget of £10 Million comprising a maximum £6 million for capital and £4 million for recurrent (resource) funding of the facility. Applicants are not required to request all of the funds available and value for money will be an important consideration when decision which application to fund. Applicants, as part of the grant application, must propose a grant payment profile that sets out the expected pattern of expenditure over the lifetime of the grant. This payment profile for the facility must reflect the cost recovery targets for the recurrent (resource) costs proposed by applicants, and the planned schedule for capital/equipment expenditure over the duration of a five-year grant.

With regards to resource costs, funding for investigator time and public engagement activities should be costed as normal with funds requested at 80% FEC. All equipment should be costed at up to 100% FEC under the Equipment heading. All other costs are expected to relate to the running of the National

Facility and should be recorded under the Exceptions heading and requested at 100% FEC.

## **Equality, Diversity and Inclusion**

The long term strength of the UK research base depends on harnessing all the available talent. EPSRC expects that equality and diversity is embedded at all levels and in all aspects of research practice and funding policy. We are committed to supporting the research community, offering a range of flexible options which allow applicants to design a package that fits their research goals, career and personal circumstances. This includes career breaks, support for people with caring responsibilities, flexible working and alternative working patterns. With this in mind, we welcome applications from academics who job share, have a part-time contract, or need flexible working arrangements.

Peer review is central to EPSRC funding decisions, we require expert advice and robust decision making processes for all EPSRC funding initiatives. We are committed to ensuring that fairness is fully reflected in all our funding processes by advancing policy which supports equality, diversity and inclusion. Please see our Equality and Diversity webpages

<https://epsrc.ukri.org/funding/equalitydiversity/> for further information.

## **Guidance on Journal-based metrics**

As part of our commitment to support the recommendations and principles set out by the San Francisco Declaration on Research Assessment (DORA; <https://sfdora.org/read/>), UKRI reviewers and panel members are advised not to use journal-based metrics, such as journal impact factors, as a surrogate measure of the quality of individual research articles, to assess an investigator's contributions, or to make funding decisions.

The content of a paper is more important than publication metrics, or the identity of the journal, in which it was published, especially for early-stage researchers. Reviewers and panel members are encouraged to consider the value and impact of all research outputs (including datasets, software, inventions, patents, preprints, other commercial activities, etc.) in addition to research publications. We advise our peer reviewers and panel members to consider a broad range of impact measures including qualitative indicators of research impact, such as influence on policy and practice.

## **Equipment**

Equipment is available through this call and must be justified. Where possible, applicants are asked to make use of existing facilities and equipment, including those hosted at other universities. If equipment is needed as part of the NRF, applicants must follow EPSRC's rules for requesting equipment over £10,000 in value.

Individual items of equipment between £10,000 and £400,000 can be included if the equipment is essential to the proposed NRF and if no appropriate alternative provision can be accessed.

Additional justification of the requirement for individual items of equipment between £10,000 and £400,000, and details of the proposed contribution to the cost of the equipment, must be provided in the justification of resources.

Quotes for equipment are required as per EPSRC standard equipment rules.

For any items or combined assets with a value above £138,000 a two-page Equipment Business Case must also be included in the proposal documentation. Guidance on how to prepare an Equipment Business Case and requirements for quotes can be found on the following webpage:

<https://www.epsrc.ac.uk/research/facilities/equipment/process/researchgrants/>

For more information on equipment funding, please see:

<https://epsrc.ukri.org/research/facilities/equipment/>

Please see the **Funding Available** section of this document for further information about costing equipment on applications to this call.

## Eligibility

Although applications may be multi-institutional, only one Je-S form should be submitted per bid, and it is up to the lead organisation to coordinate costs, documentation, etc.

Please ensure sufficient time to create Je-S accounts for Investigators who do not currently have one.

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide:

<https://epsrc.ukri.org/funding/applicationprocess/fundingguide/>

A list of eligible organisations is provided at: <https://www.ukri.org/funding/how-to-apply/eligibility/>

## Submitting an application

You should prepare and submit your proposal using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should select:

- Council 'EPSRC'
- Document type 'Standard Proposal'
- Scheme 'Standard'
- On the Project Details page you should select the 'Multiscale and In Situ Laboratory X-Ray Computed Tomography National Research Facility' call.

Please note that it is the responsibility of the lead organisation to ensure all the documentation is submitted correctly through Je-S. Late or additional documentation will not be accepted.

Note that clicking 'submit document' on your proposal form in Je-S initially submits the proposal to your host organisation's administration, not to EPSRC. Please allow sufficient time for your organisation's submission process between submitting your proposal to them and the call closing date. **EPSRC must receive your application by 16:00 on 1st October 2019.**

Guidance on the types of support that may be sought and advice on the completion of the research proposal forms are given on the EPSRC website (<https://epsrc.ukri.org/funding/applicationprocess/>) which should be consulted when preparing all proposals.

## Guidance on writing an application

### Case For Support

A case for support will be the primary supporting document and will be of a longer format than those submitted for standard proposals. The overall page length will be up to 22 pages. Applicants must include the following sections in the case for support:

- **Track Record** of Applicants (up to a maximum of 2 pages)
  - This should cover the suitability to run a large facility on behalf of the UK, outlining relevant management experience and community awareness.
- **Service Description**
  - Applicants should use this section to describe and detail the service they propose to provide covering the elements detailed in '**Key requirements for service**' (page 4).
  - Applicants should include details of their long-term vision and must describe how it sits within national and international XCT capability.
  - Applicants should justify their model for the establishment of the facility (single site, Hub-and-Spoke etc.).
  - As part of this section, applicants must provide details of their proposed user training provision, including the expertise and experience of those involved in training for the different levels of users. This should take into account the needs of different user groups (e.g., post graduate/doctoral researchers, academic researchers and industrial users). This should include how the service will engage with future generations of researchers, including the Centres for Doctoral Training:  
<https://www.epsrc.ac.uk/skills/students/centres/>
- **Operational Details**
  - Applicants should use this section to detail how they will meet the '**Operational Requirements**' (page 6)
  - As part of this section applicants should provide a clear **Communication & Engagement Strategy**. It is necessary that sufficient detail is provided in order for assessors to understand how information about the available capabilities and access to the service will be disseminated including, for example, website, user meetings, outreach events and dissemination material.

- **People and Management**
  - Applicants should use this section to detail how they will meet the **'People and management arrangements'** (page 8).
  - This section should provide
    - Plans for staff development and training
    - Detailed arrangements for career progression for staff
    - Information on how changes in key service staff will be handled, (continuity plans, short-term cover, contingency plans for unexpected loss of key staff). Recruitment policy and procedures.
  - Applicants should provide an **Organogram** of the proposed organisational structure for the facility showing lines of authority, responsibility of key posts, and details of any identified deputies
  - As part of this section EPSRC expects the applicants to provide details of their
  
- **Risk Management Strategy**
  - EPSRC expects that a governance structure for the service will be put in place. As part of this section applicants should provide details of this structure, which should include an independent steering/advisory committee composed of independent/external representatives from relevant communities to review/advise on provision, performance and strategy for the service.
  - As part of this section applicants should identify a comprehensive set of **Key Performance Indicators** that the service will aspire to meet.
  - EPSRC expects that a proposed service will have a process in place for complaints and monitoring of user satisfaction. As part of this section applicants should provide details of the proposed feedback processes and how feedback will be used to implement improvements.
  
- **Grant payment Profile**
  - Applicants must provide a grant payment profile that details the planned expenditure against each recurrent/resource and capital cost heading over the lifetime of a five-year award. Example below:

Fund Heading	Year 1				Repeated for Years 2, 3, 4 and 5
	Q1 Net Value (£)	Q2 Net Value (£)	Q3 Net Value (£)	Q4 Net Value (£)	
DI - Staff					
DI - T&S					
DI - Equipment					
DI - Other Costs					
DA - Investigators					
DA - Estate Costs					
DA - Other Directly Allocated					
Indirect - Indirect Costs					
<b>Resource Total (£)</b>					
<b>Capital/Equipment Total (£)</b>					

- **Host organisation support (mandatory)**

The facility should be run for the benefit of the national research community. EPSRC will, therefore, paying the majority of costs at 100% FEC. However, it is important that the host organisation(s) also commit to fully supporting the bid and this should be highlighted within the case for support. As a minimum, they must commit to:

- Relinquishing rights to university owned equipment for external users at the levels detailed in the application.
- Underwriting the meeting of the cost-recovery targets, in order to provide staff and other resource costs if targets are not met.
- Providing appropriate support and development opportunities for all staff, including instrument scientists and research technical professionals (RTPs) associated with the operation of the facility.
- A short-term data storage and retrieval policy in line with UKRI data policies.
- Supporting the applicants to develop and implement policies that provide safe, secure and legal access for external users to the facility.
- Supporting the applicants to utilise expertise on the design, creation and maintenance of a fit-for-purpose website for marketing, user support and data collection.

In addition, applicants must also provide the following documents:

- **Justification of Resources** (with a longer format of up to 4 pages).
  - The Justification of Resources should explain the necessity of your requested resources for service provision, including implementing the Impact Plan. This helps reviewers make informed judgements about whether the resources requested are appropriate and justified.
  - So nothing is missed, EPSRC recommend that you follow the 'Cost to the Proposal' headings used in the application form. For more information on what to do, see how to write a Justification of Resources for further guidance  
<https://epsrc.ukri.org/funding/applicationprocess/preparing/writing/jor/>.
- **Work plan** (1-page)
  - The work programme should be illustrated with a simple diagrammatic work plan, such as a Programme Evaluation and Review Technique (PERT) or Gantt chart.
- **Pathways to Impact** (up to 2-pages)
  - Applicants should request and justify project-specific resources and time needed to achieve their pathways to impact. Further guidance available  
<https://epsrc.ukri.org/funding/applicationprocess/preparing/writing/resourcesimpact/>
- **Proposal Cover Letter** (optional)

Applicants can use the Proposal Cover Letter to set out any other information they feel is relevant to their application. As the applicant is applying for a **grant which has an interview assessment stage, they should inform EPSRC of any personal circumstances for EPSRC to consider.**

This letter will only be seen by EPSRC officers and will not be sent to Peer Review. For sensitive information, the applicant should state clearly whether the information is confidential.

The Proposal Cover Letter should also be used to highlight anything that has been discussed and agreed with EPSRC staff beforehand. For example:

- applicant is on maternity leave until a certain date;
- declaration of interest;
- additional information about eligibility to apply that would not be appropriately shared in the record of accomplishment; and, conflicts of interest for EPSRC to consider in reviewer or panel participant selection.

Applicants should use the Ethical Information section on the Je-S form to demonstrate to peer reviewers that they have fully considered any ethical issues concerning the material they intend to use, the nature and choice, current public perceptions and attitudes towards the subject matter or research area. EPSRC **will not fund** a project if it believes that there are ethical concerns that have been overlooked or not appropriately accounted for. All relevant parts of the Ethical Information section must be completed. If the research will involve human participation or the use of animals covered by the Animals (Scientific Procedures) Act 1986 it is recommended that applicants pay particular attention to the guidance highlighted below. EPSRC reserves the right to reject applications prior to peer review if the Ethical Information sections are not completed correctly.

Further guidance on completing the Je-S form can be found at <https://je-s.rcuk.ac.uk/Handbook/pages/GuidanceonCompletingaStandardG/EthicalInformation.htm>. Other relevant guidance includes: EPSRC's policy on animal use in research (<https://www.epsrc.ukri.org/about/standards/animalresearchpolicy/>) and the Responsible Innovation Framework (<https://epsrc.ukri.org/research/framework/>).

Please note that on submission to EPSRC **all** non-PDF documents uploaded onto Je-S are converted to PDF, the use of non-standard fonts may result in errors or font conversion, which could affect the overall length of the document.

## Assessment

### Assessment process

Proposals will be submitted via J-eS. Each proposal will be initially assessed by peer review. Applicants will then be invited to respond to the reviewers' comments. Following this an expert panel will interview applicants and use the proposal, reviews, PI response and responses at interview to score the applicants against the following criteria. The interview panel will make the final recommendations to the EPSRC theme lead.



Each proposal will be assessed against the criteria listed below. Feedback on the decision will be given by e-mail after interview.

## **Assessment criteria**

Applicants should note that the assessment criteria differ slightly to the standard EPSRC criteria due to the nature of the programmes of work to be funded. We also wish to highlight that due to the increased importance of appropriate management and governance procedures for a national research facility, the secondary major criterion is Resources and Management as well as National Importance. This will be made clear to reviewers and panel members.

### **Quality (Primary)**

Assessors will be asked to comment on the excellence of the application making reference to:

- The ambition, long-term vision, and transformative aspects identified
- The appropriateness of the proposed approach(es) and fit to the key service requirements and operational requirements sections.
- The quality of the science enabled.
- Engaging and adapting to the needs of a diverse user community.

### **Resources and Management (Secondary Major)**

Assessors will be asked to comment on:

- The effectiveness of the proposed planning, management and governance and the fit to the people and management arrangements section.
- Whether the requested resources are appropriate and have been fully justified.
- An unsatisfactory governance (including KPI's) plan will result in a delayed start for a successful proposal until the plan has been updated.

### **National Importance (Secondary)**

Drawing upon what the applicant has said, assessors will be asked to comment on:

- How the proposed service contributes to, or helps maintain the health of other research disciplines, contributes to addressing key UK societal challenges, contributes to current or future UK economic success and/or enables future development of key emerging industry(s)
- The extent to which the service proposed has the potential to meet national strategic needs by establishing or maintaining a unique world-leading research activity (including areas of niche capability)
- How the service fits with and complements other UK research already funded in the area or related areas, including the relationship to the EPSRC portfolio and our stated strategy set out in "Our Portfolio".

### **Applicant's Ability to Deliver (Secondary)**

- Appropriateness of the track record of the applicant(s) to deliver the service

### **Pathways to Impact (Secondary)**

- How convincingly has the potential impact of the service/facility has been described?

- How appropriate/effective are the arrangements described for facilitating the impact?
- An unsatisfactory impact plan will result in a delayed start for a successful proposal until the plan has been improved and approved.

**Advocacy for engineering and the physical sciences** (Secondary) (assessed at the interview panel only)

- The proposal must demonstrate how the group will be advocates for the engineering and physical sciences. Applicants should specifically address how they will influence its policy makers on the importance of engineering and physical sciences. Advocacy through public engagement activities can also be considered, as long as these activities are directly related to the programme of research applied for.

## Guidance for reviewers

Information about the EPSRC peer review process and guidance for reviewers can be found at: <https://epsrc.ukri.org/funding/assessmentprocess/review/>

A standard reviewer form will be used for this call; however, reviewers should note the nature of a National Research Facility when considering quality. As such, **reviewers are requested to comment on the quality of the potential research enabled** by having such a facility in the UK. Within the quality field, reviewers should comment on how the proposed service meets the key requirements of the facility including technical, operational and management aspect as detailed in the call document.

Guidance for reviewing standard grants can be found here:

<https://epsrc.ukri.org/funding/assessmentprocess/review/formsandguidancenotes/standardgrants/>

## Moving forward

Submissions to this call will NOT count towards the Repeatedly Unsuccessful Applicants Policy. Further information about the policy can be found at:

<https://epsrc.ukri.org/funding/howtoapply/basics/resubpol/rua/>

## Key dates

Activity	Date
Call opens	23rd July 2019
Deadline for Full Proposals	1 <sup>st</sup> October 2019
Interview Panel	Week of Jan 13 <sup>th</sup> 2020
Funding decision	Late January 2020
Grant start date*	From March 2020

\*EPSRC aims to adhere to the key dates as published, however there may be exceptions where the sift, prioritisation or interview meeting may have to change due to panel member availability.

## Contacts

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## Je-S attachments Check List

### Attachment Checklist

#### Standard:

Attachment Type	Maximum Page length	Mandatory/Optional	Extra Guidance
Case for Support	22 pages including governance and KPIs and Host Support details	M	Guidance on writing an application section of this call
Pathways to Impact	2 pages	M	
Work plan	1 page	M	
Justification for Resources	4 pages	M	
Project Partner Letters of Support	No page limits	As Required by EPSRC	Must be included from all named project partners. Must be on headed paper, and be signed and dated within six months of the proposal submission date.
Equipment Quotes	No page limits	As Required by EPSRC	
Equipment Business Case	2 pages each	As Required by EPSRC	Required for any items or combined assets with a value above the OJEU limit.
Technical assessment	No page limit	Not required	

Other attachment	No page limit	Not Required	
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Please ensure you adhere to the above attachment requirements when submitting your proposal. Any missing, over length or unnecessary attachments may result in your proposal being rejected.

### Change log

Name	Date	Version	Change
Paul Rouse	15 May 2019	1	First draft XCT call document
SimonCrook	11 <sup>th</sup> July 2019	2	Final Version