Department for Digital, Culture, Media & Sport

5G Testbeds and Trials Programme

5G Create - Application Guidance

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1	06/04/2020	Original publication
1.1	28/05/2020	Clarification of non-UK development activity on page 5

Contents

1   Programme and policy context

The Department for Digital, Culture, Media and Sport (DCMS) 5G Testbeds and Trials Programme (5GTT) is a fundamental part of the Government's 5G ambitions for digital infrastructure in the UK. The rollout of 5G networks is of national strategic importance.

The Government has allocated £200 million from the National Productivity Investment Fund to help establish the conditions under which 5G can be deployed in a timely way to maximise the chances of the UK being amongst the leading countries in 5G adoption.

The 5GTT Programme is investing in testbed facilities and application trials in order to help address some of the deployment, technical and economic challenges facing 5G. The 5GTT Programme is working to deliver the following objectives:

- **Accelerate** the deployment of 5G networks and ensure the UK can take early advantage of the applications those networks can enable.
- **Maximise** the productivity and efficiency benefits to the UK from 5G.
- **Create** new opportunities for UK businesses at home and abroad, and encourage inward investment.

We recommend you join the [UK5G Innovation Network](#) (UK5G) for all the latest information on what is happening in the 5G ecosystem in the UK. UK5G is a national innovation network dedicated to the promotion of research, collaboration and the commercial application of 5G in the UK. It was created by DCMS to facilitate and encourage the engagement and coordination of organisations working on 5G activities across the UK. It enhances links between ongoing R&D and other activities being undertaken by organisations across telecoms and other sectors**.**

2   Competition outline

2.1   5G Create Introduction

5G Create is a competition within the 5G Testbeds and Trials Programme. Up to £30 million of government funding will be available in this open competition, aiming to explore and develop new use-cases and 5G technical capabilities, as well as demonstrate sustainability after government funding finishes.

This document provides guidance on the scope, funding, eligibility conditions and the structure of the application.

2.2   Scope

5G Create seeks to fund projects that explore 5G deployment and use cases from all sectors, industries and UK regions. Applications will be judged fairly and on their individual merits and benefits.

In the 5G Create competition we are keen that projects should address the question of how the 5G capabilities being developed will deliver sustainability after government funding finishes. Applications should look at the new opportunities and markets from the perspective of the new business models that 5G might enable.

The recent Government Telecoms Supply Chain Review identified the need to support market diversification in the telecoms supply chain and highlighted the important role that the 5G Testbeds and Trial Programme can play in this.

Section 5 of the review identified key areas where the 5G Testbeds and Trial Programme can have a positive impact, in summary these are:
- Stimulating R&D and encouraging new entrants into the UK market;
- Supporting the development and adoption of open standards and demonstrating interoperability between vendors; and
- Exploring the need for a security testing capability to help lower the barrier to market.

In addition, some examples of the cross-cutting challenges that we hope will be addressed - and which we think could lower barriers to entry and accelerate development of new products - are:

- Practical implementation of secure networks – including security assurance, resilience of services;
- Exploring ways of diversifying the UK Telecoms supply chain;
- Access to spectrum – e.g. spectrum sharing, neutral host networks, private networks;
- Intelligence and optimization – the combination of big data, AI and connectivity;
- Innovative virtualized and open RAN architectures;
- New human interfaces – e.g. voice recognition, AR/VR, conformable screens, neural interfaces;

- Interoperability between hardware and software; and
- Management of services across heterogenous network types (including 5G NSA and SA, public and private networks).

All testbed and trials activity must be carried out in the UK. Where a UK registered organisation wishes to use teams in their organisation based outside of the UK on development work, these costs will be considered eligible (in accordance with the other eligibility criteria). Strong justification must be provided why this work cannot be undertaken by a UK based team or another UK based organisation, as this should only be by exception.

2.3   Funding

2.3.1   Funding source and amount

Central government funding for 5G Create will come from the £200m of investment that has been allocated to the 5G Testbeds and Trials Programme from the National Productivity Investment Fund (NPIF). The investment is designed to help establish the conditions under which 5G can be deployed in a timely way to maximise the chances of the UK being amongst the leading countries in 5G roll-out and adoption.

There is up to **£30 million of funding** available from the Department for Digital, Culture, Media & Sport (DCMS) 5G T&T Programme in this competition.

Your project can apply for project funding from £250,000 to £5 million. You must complete all grant funded activities by 31 March 2022. Non-grant funded activities can continue beyond this date. Projects are not required to undertake funded activities up to 31 March 2022 if they are shorter by their nature.

Grant recipients will be required to confirm that the costs they wish to claim for are capital and/or treated as capital expenditure in line with UK GAAP and the requirements of the European System of National and Regional Accounts (ESA 2010).

Additional funding may be made available to projects at a later date at DCMS's discretion.

We may consider a larger grant funding request, but you should contact us through 5gcreate@culture.gov.uk to discuss this at least 10 days before submitting your bid. You will still be required to complete substantive delivery elements within the financial year 2021/22. Projects requesting less than £250,000 funding are not eligible for this competition.

Across all of its investments, the 5GTT Programme expects organisations receiving grant funding to sufficiently contribute to their own costs.Therefore, DCMS does not expect to fund more than 50% of the total eligible project costs. However, different projects and types of business can receive different levels of grant funding as outlined below.

2.3.2 State Aid

Funds must be used for experimental development, as described in the [5G Testbeds and Trials - General Guidance for Grant Applicants](#) document (General Guidance). Experimental development covers research and development at [Technology Readiness Levels](#) 5-8.

Any UK business claiming funding must be eligible to receive state aid at the time we confirm you will be awarded funding. Please see the General Guidance for full details, a summary is provided below.

There are **two options to receive funding**. Firstly, Article 25 of the General Block Exemption Regulations. Secondly, as de minimis aid. All partners in a consortium must be funded under a single approach (i.e. a single application cannot propose different approaches for separate partners).

Firstly, for experimental development involving collaboration under Article 25, the maximum grant allowed towards each individual organlisation's eligible project costs are:

- up to 60% if you are a small business
- up to 50% if you are a medium-sized business
- up to 40% if you are a large business

Find out if your business fits the [EU definition of an SME](#).

Research organisations undertaking non-economic activity will be funded as follows:
- universities: up to 80% of full economic costs
- all other research organisations: up to 100% of eligible costs

Public sector and charitable organisations undertaking non-economic activities may claim funding up to 100% of their eligible costs.

Secondly, if all the businesses in your consortium are eligible to claim de minimis aid (please see [chapter 4](#) for more information), then up to 100% of eligible costs can be claimed.

Please note the de minimis restrictions including on organisations receiving more than €200,000 in a rolling three year period. Receiving de minimis aid this competition will reduce the de minimis aid you can receive from other public sector sources. Therefore, it is recommended to apply for funding in this competition under Article 25 where possible.

2.3.3 Eligible costs and funding allocations

Eligible costs include the costs of your labour, overheads, materials, subcontracts and T&S among others, that you incur during delivery of your project. Please see the [5G Testbeds and Trials - Eligible Project Costs Guidance](#) document for full details and explanation. Sample evidence of these costs being incurred will be required as part of the grant claims process.

The applicant(s) selected at the end of this competition will need to follow the process and criteria that will be set out in a DCMS grant funding agreement to access funding (a template for which is available on the competition webpage) for individual activities under 5G Create.

The following criteria apply to the distribution of funds amongst a consortium:

1. Total subcontracting cost is limited to 30% of the total project costs - a clear case must be made as to why subcontractors are not key project partners and why it is not possible for the work to be conducted by a project partner

2. No single partner can incur more than 70% of the total eligible project costs

3. At least 70% of total eligible project costs should be incurred by private sector business organisations

4. For all research organisations and public sector organisations the total level of project participation is set at a maximum of 30% of total eligible project costs - if your consortium contains more than one research or public sector organisation, this maximum will be distributed between them

Within your consortium, there must be a lead partner who will be the accountable body and recipient of any DCMS grant awarded. They will also be responsible for managing the consortium and for any distribution of DCMS funds to consortium partners, as set out in the consortium's collaboration agreement. Further details of the expected consortia are described in the "**Eligibility applications and proposing consortium**" section below.

Organisations engaged in the delivery of 5G Create must collaborate with other projects funded by the 5GTT Programme, and the wider 5G ecosystem. This is to boost 5G ecosystem development, ensure learning is shared between projects and so that common issues affecting projects and the wider 5G ecosystem can be explored or addressed.

Proposals for such collaboration activities should be included in applications and should make up 2-4% of the DCMS grant. Such activities should be conducted in partnership with UK5G and their working groups and should lead to the production of tangible outputs such as published reports, events and workshops. Applicants should refer any new proposals for collaboration with other projects to DCMS ahead of submission to enable potential sharing of these ideas with other bidders.

3   Eligibility criteria

3.1   Eligible applications and proposing consortium

This competition is open to applications from consortia from across the UK. Only UK registered organisations are eligible to receive funding. Organisations which do not have a UK presence may participate in the delivery of 5G Create but will not be eligible to receive DCMS funding. However, we welcome proposals that have an international outlook, building upon existing UK strengths and partnering with non-UK organisations to develop globally-viable business models, with the goal of accelerating the commercial adoption of 5G**.**

Consortia are likely to consist of a mixture of organisations. In order to attract the broadest range of proposals, we are open to receiving proposals from consortia that can be led by any type of organisation from the public, private, third or research sectors, providing that the consortium meets the below criteria. Only applications that meet the following eligibility requirements will be assessed:

1. There must be a lead organisation that demonstrates that it can act as the accountable body, has the capability, and is able to manage the delivery of the project across the consortium with clear project governance and leadership.

2. The consortium shows evidence of private sector partnership, including strong industry representation (please refer to our top 10 lessons learnt from previous projects).

3. The consortium has access to the spectrum and network capabilities required to deliver the project, or has a clear plan to acquire or build them in a timely manner. This may be in the form of an agreement with an existing network provider, or through the deployment of new network infrastructure, in addition to any required connections to existing or third-party infrastructure. Spectrum may be commercially licenced, by using an Ofcom Innovation and Trial Licence or by making use of Ofcom's new licensing approach to provide localised access to spectrum bands that can support mobile technology.[1]

4. To be considered a consortium, at least two organisations must be requesting grant funding from DCMS.

5. The consortium includes one or more organisations capable of providing access to 5G infrastructure and services in the area (this is not exclusive to Mobile Network Operators)

6. Projects must involve at least one micro, small or medium-sized enterprise (SME).

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[1] Ofcom are making spectrum in the 3.8-4.2 GHz, 1800 MHz and 2300 MHz spectrum bands available through local licences, as well as a section of the 26 Ghz band for indoor licensing. They are introducing a new way to access spectrum that is already licensed to mobile operators but which is not being used or planned for use in a particular area within the next three years.

7. The project scope includes one use case dependent on 5G technologies or explores 5G technical capabilities and has the potential to create a viable, sustainable market opportunity.

8. The consortium demonstrates committed support from individuals with decision-making and budgetary responsibility from each member organisation.

All awards will be made subject to successful due diligence checks.

Organisations or consortia that have previously or are currently receiving funding through the 5GTT Programme are welcome to participate, but only by making proposals that are clearly new in scope and adding value beyond previous project activities that they have undertaken or are funded to undertake. Each proposal will be evaluated on its individual merits, although applicants should demonstrate that they are not duplicating commitment of their resources. Applicants should have the capacity to deliver in the event of multiple successful applications - either through 5G Create or through existing 5GTT projects.

3.1.1   In-eligible applications

For 5G Create:
- High risk vendors (HRVs) are not permitted to participate in 5G Create consortia as a consortium partner or supplier. See NCSC Advice for more information on HRVs.
- Public funds must not be used to pay for any HRV products or services through 5G Create.
- We understand that in the case of Mobile Network Operators (MNOs) for example, with pre-existing HRV equipment in their networks, these networks may reasonably be used to build testbeds. However, 5G Create funding must not be used to buy additional equipment or services from HRVs.

3.2   Roles

You should specify the following roles in your proposal, as applicable:

Organization Role	Notes
Lead Partner	The proposal should make it clear why the project lead is the most appropriate organisation to lead the project.
Project Partner	These will include all organisations which will receive grant funding from DCMS and any other public sector source. In addition, any other organisation which the consortium regards as critical to the delivery of the project but which is not receiving grant funding from DCMS or any other public sector source
Project Participants	These are any other organisations not receiving grant funding from DCMS or any other public sector source. These organisations may be identified at the proposal stage, or

	could be added to the project at a later date.

The lead partner and project partners will be required to sign a collaboration agreement between themselves before any claim to DCMS for grant funding for the project. The minimum requirements for this are set out in the draft grant agreement (provided as a separate document).

4   Further General Guidelines

4.1   Benefits monitoring

Because this competition is late in the 5G Testbeds and Trials programme we expect bidding projects to focus particularly on the measurable benefits that could arise from their work, rather than just running demonstrations. In bids we expect to see quantitative estimates of these benefits, how they will be measured and evidenced throughout and after the projects.

Once started, projects will be required to monitor the benefits arising from their projects in order to share lessons learned and contribute to the overall 5G Programme Evaluation. Projects will report quarterly to DCMS on any lessons arising and their progress towards achieving expected monetisable and non-monetisable benefits. Other benefits information collected will include Technology Readiness Level increases, investment in 5G areas in each consortium partner and a range of other information to be agreed with projects once selected. An example list of monitoring indicators and the template that will need to be reported in quarterly is provided for sight in supporting documents.

In addition, project partners will be expected to participate in occasional Programme evaluation activities, e.g. surveys and interviews of grant recipients, which will be conducted by DCMS or a third party acting on its behalf to assess the outcomes of the 5GTT Programme and its constituent projects. Evaluation activities are expected to be undertaken both during and after the lifetime of the project.

4.2   Collaboration with other consortia

Collaboration is the inter-working with other 5GTT projects, participation through UK5G channels and the wider 5G ecosystem, on topics of shared interest. The aim is that by combining the efforts and knowledge base, producing tangible and useful outputs that can be shared and demonstrated, the collaboration activities will help to foster the 5G ecosystem.

Potential areas for collaboration activity include key cross-cutting strategic issues outlined in section 2.2 (scope).

Projects will be expected to look for opportunities to collaborate with other ecosystem participants, on topics of shared interest. Once these collaboration activities have been agreed, the details will inform an expected early deliverable: a detailed plan for delivery of collaboration scope, timeline, representation, funding, reporting and expected outputs of the collaboration activities

All selected projects must also sign up to the 5G Testbeds and Trials - Programme Participation Agreement with DCMS as part of the application process. This outlines how members of the UK 5G ecosystem should collaborate, share knowledge and join-up through the five 5GTT Programme Participation Principles.

4.3   Dissemination

Communicating the findings and stories from projects will be a key responsibility of consortia that receive DCMS funding. Working with DCMS and UK5G, projects will be expected to plan and deliver communications activities to ensure the benefits of the project are demonstrated and shared as widely as possible.

5   Competition process

5.1   Competition Timeline

The evolution of the UK digital agenda is a key Government objective.

Due to the COVID-19 situation, we have amended the competition windows to allow more time for bids to be developed. We appreciate that as a result of COVID-19 we will need to keep the dates and priorities set out in this guidance under review (for example, we understand that some programme slippage may be inevitable).

For this competition, there will be two different timelines offered to applicants as follows:

8 week competition window

- Competition opens: 06 April 2020
- Competition closes: 01 June 2020
- Shortlist applicants notified: 12 June 2020
- Shortlisted applicants interviewed: 22 June - 26 June 2020
- Successful applicants notified: July 2020
- Grant funding period: August 2020 - 31 March 2022

16 week competition window

- Competition opens: 06 April 2020
- Competition closes: 27 July 2020
- Shortlist applicants notified: 7 August 2020
- Shortlisted applicants interviewed: 17 August - 21 August 2020
- Successful applicants notified: September 2020
- Grant funding period: October 2020 - 31 March 2022

We are making 16 weeks available for consortia to develop and submit proposals. However, we appreciate that some consortia may wish to maximise their funded delivery period by submitting as soon as possible. Therefore we have included an 8 week submission option.

We encourage you to submit into the 8 week window if your proposal is ready as this will maximise your grant funding period (the funded period of your project). If you are unable to submit a robust proposal by this date, then you are welcome to submit into the 16 week window.

Project applications can be submitted to **only one** of the competition windows, not both (though organisations may submit multiple different proposals).

Funding will be made available in both windows and DCMS aims to award an equal split of funding to each window. If the equal split allocated to the 8 week window is not all allocated to proposals, then it will be added to the allocated amount for the 16 week window, increasing the 16 week window total allocation.

Any projects that don't succeed in getting funding in the first window, but which pass the quality threshold for acceptance, will automatically be considered again at the second window.

The competition process will follow these steps:

● The lead partner will submit applications with detailed financial plans that cover the full funding period to March 2022.
● Only applications that meet the eligibility requirements of the competition will be assessed.
● Shortlisted applicants will be interviewed face-to-face by DCMS.
● The lead partner will be notified of the funding decision for their project.
● A grant funding agreement will be issued to successful applicants.
● All eligible applications will receive assessor feedback.

6 How to apply

6.1 What to complete

The following documents need to be completed as part of your application:

1. [Application Form](#) (one per project, plus any allowed appendices) - see **Application and Assessment** section below for further details of the application

2. [Project Finance Form](#) (one per applicant covering all proposed costs) - this document is used to understand how you have estimated your project costs - see [Eligible Project Costs Guidance](#) for further guidance.

6.2 How to submit your application

You must submit your documents to the following email address: 5GCreate@culture.gov.uk You will receive an email acknowledgement of your registration.

Applications for submission in the 8 week window must be submitted by midday 01 June 2020.

Applications for submission in the 16 week window must be submitted by midday 27 July 2020.

We strongly advise submitting well in advance of the deadline (i.e. days before) as there is always a risk that IT issues prevent you submitting promptly (e.g. issues sending large files).

6.3 Application format

You can only use the application form and templates provided. They contain specific guidance on information you must provide.

The application form and templates contain specific fields. It is important that you complete each field and submit a fully completed form. Incomplete forms may be considered ineligible and not sent for assessment. DCMS reserves the right to ask for additional clarifications and correction following the submission deadline.

The application form and templates must not be altered, converted or submitted as a different file type.

The submission must conform to the maximum length specifications stated in the "Competition questions" section below. Information in excess of this will be disregarded. Hyperlinks referencing further information may be included to inform more detailed understanding post-selection, but will be disregarded during the assessment of applications.

Additional information submitted at the request of the 5GTT Programme must meet any timing, format and length requirements we may specify at the time.

7 Application and assessment

7.1 Application structure
The structure for applications is as follows:
- **Applicant information** (not assessed)
- **Public Description (400 word limit)** (not assessed)
- **Section A - Project description, objectives and outcomes (35%)**
  - Question 1: Describe the project's delivery aims (what will you deliver?) - **11 %**
  - Question 2: Detail the project's measurable outcomes (what will be the measurable impacts?) - 11 %
  - Question 3: Describe, in technical terms, the system architecture and major technological components and innovations of the project. Refer specifically to the 5G, and non-5G, technologies that will be used - **8%**
  - Question 4: Describe your approach to the project's telecoms and cyber security? Explain any specific research in these areas you will undertake as part of the trial - **5%**
- **Section B - Outcome sustainability, benefits and route to market (25%)**
  - Question 1: How will the project test sustainability beyond government funding and how will your project bring the product(s) closer to deployment? If helpful, you may wish to use Technology Readiness Levels to support this - **12.5%**
  - Question 2: Describe your vision for the development and funding of the product(s) once the project is completed - **5%**
  - Question 3: Describe the project's benefits and compare the project's benefits

to its costs. Please specify the project's measurable monetisable and non-monetisable benefits or explain how you will determine these as part of your project - **7.5%**
- **Section C - Project Delivery (20%)**
  - Question 1: Provide a plan and supporting description that outlines: - **10%**
    - how the project will be delivered
    - key activities, including purpose and objectives of these activities
    - Mobilisation plan (from grant agreement to starting delivery)
    - decision points
    - milestones, including grant payment milestones
  - Question 2: How will the project be governed and decisions made? - **5%**
  - Question 3: Describe the project's benefits and compare the project's benefits to its costs. Please specify the project's measurable monetisable and non-monetisable benefits or explain how you will determine these as part of your project - **7.5%**
- **Section D - Financial (20%)**
  - Question 1:Identify the major cost components and explain how these represent value for money - **10%**
  - Question 2:Explain how you will ensure value for money through your sourcing approach and supply chain - **5%**
  - Question 3:Explain whether this project could go ahead without public funding and if so the difference public - funding would make. Why are you not able to wholly fund the project from your own or other private-sector funding? **5%**
- Attached documents
  - Project Finance Forms
  - Organisation accounts (not assessed)

7.2   Assessment

1   Sift
Initial eligibility checks will be undertaken on all applications against the scope in section 2.2, funding allocations in 2.3.3 and eligibility requirements in section 3.1 . If an application passes the sift it will progress to evaluation. If an application does not pass the sift, we will notify the lead partner with an explanation as to why.

2   Shortlisting
All applications passing the sift will be evaluated and moderated. Applications will be scored against the scoring scale below and any pass/fail criteria and then ranked based on total score. A shortlist of the top ranked applications will be invited to interview.

3   Outcome and feedback
The result of the shortlisting will be shared with all evaluated applications. Feedback will be provided to all applications that have been evaluated. It is the responsibility of the lead to communicate the feedback with the rest of the consortium, if applicable. No additional feedback can be provided.

**4	Interview**

Shortlisted applicants will be provided with a list of questions and requests for further information that must be supplied in advance of the interview. DCMS will tell the lead partner when their interview will be. Interviews are likely to be held in central London.

**5	Post-interview**

The evaluation scores of shortlisted applications will be updated following the interview, also taking into account any information provided, where requested by DCMS.

For the 8 week window, proposals scoring an average score of 6 or above (good confidence) will be eligible for selection as preferred applicants. Those achieving a score of 4 or above (adequate confidence) will be included on the reserve list for assessment with the 16 week window applications (this includes any applications scoring 6 or above but not being allocated funding due to exceeding the funding allocated to the 8 week window). DCMS reserves the right to raise or lower these thresholds if there is a significantly higher or lower number of high scoring applications, respectively.

Shortlisted applications will be ranked in descending order, based on total score. The highest ranked applications will be selected as preferred applicants. This will be done in accordance with the above, in the case of the 8 week window, and taking into account a portfolio approach to ensure that there is an appropriate balance of projects which support the 5GTT Programme, competition and policy objectives as set out in the guidance. The lead partners will be notified of the selection decision.

Across the 5G Create competition, DCMS aims to fund at least three projects requesting funding of less than £1m.

Following assessment of both windows, DCMS may elect to identify reserve applicants, in case the preferred applicant(s) is/are unable to complete a funding agreement with DCMS on a timely basis.

Following each window's assessment, we expect that a period of due diligence will be carried out to validate and revise where appropriate the project scope, delivery plan and funding arrangements prior to the award of a grant.

Due diligence checks will include financial and reputational checks. DCMS do not usually award grants where the amount requested in a financial year exceeded 50% of the recipient's turnover. Given this competition seeks to include small and innovative organisations, organisations will be considered on a case by case basis and the case can be made to request funding in excess of this with justification.

**7.3	Scoring**

Individual responses to each question will be scored in line with the following scheme.

The assessors will score your answers to these questions. Each question will be given a score 0-10:

- 0-1 – Serious concerns: for example, does not meet requirements, and/or raises serious concerns.
- 2-3 – Some concerns: for example, meets some requirements but with gaps and/or some concerns.
- 4-5 – Adequate confidence: for example, meets most/all requirements, but lacks sufficient detail in some areas.
- 6-7 – Good confidence: for example, meets most/all requirements and provides a response that demonstrates a good understanding of the requirements.
- 8-9 – Very good confidence: for example, meets all requirements and provides a detailed response that also exceeds expectations in some areas and/or demonstrates a strong understanding of the requirements.
- 10 - Outstandingly good confidence: for example, meets all requirements and exceptional detail that exceeds expectations in many areas and demonstrates excellent understanding of the requirements.

Scores for each question will be weighted by the amount indicated against each question. Your application's total score will be the sum of the weighted scores.

7.4   Quality threshold

Following evaluation of the applications and moderation of scores, any application with an unweighted score of one or below (serious concerns) against any individual competition question, including where an error has been made by the applicant, will not be considered further for shortlisting (Step One).

All remaining applications with an average evaluation score against all competition questions (i.e. the weighted score across all competition questions) of 4 and above will be considered for shortlisting (Step 2).

DCMS also reserves the right to consider applications for shortlisting that do not meet the threshold above in the following cases:

a. If an application fails to meet the threshold in Step 2 by a narrow margin as a result of the range of scoring by individual assessors being of significant variance from the average score for one or more competition questions for that application ("an outlier"). The application may be considered for shortlisting following a review of the outlier assessor's comments and approach if the outlier score may reasonably be eliminated and the average assessment score that is recalculated falls within the threshold above.

b. If there is a very low volume of applications meeting Step 2 in respect of grant funding available, DCMS may lower the threshold that applies to Step 2 for the consideration of shortlisting. This will be on the grounds that DCMS will not want grant funding to be unallocated if there is a realistic prospect of consortia being able to improve their assessment score to a satisfactory level.

If there is a significantly higher volume of applications meeting the thresholds in respect of grant funding available, DCMS may raise the threshold that applies to Step 2 for the consideration of shortlisting. This will be on the grounds that DCMS will not want consortia with lower assessment scores to invest time and effort in preparing for the interview stage if there is a very limited prospect of them being successful.

8. Competition questions

Applicants should answer all questions, using the application form provided.

Applicant information

Please provide the following information:

- Project name
- Name of application lead organisation
- Contact details for application lead organisation
- Name(s) of additional organisation(s) forming part of this application
- Contact details for additional organisations

Public description of the project

To comply with government practice on openness and transparency of public funded activities, DCMS has to publish information relating to funded projects. Please provide a short description of your proposal in a way that will be understandable to the general public. We will publish this information for all bids, including those not awarded funding, so do not include any commercially confidential information, e.g. intellectual property or patent details.

We would also like to publish the partners involved in your proposal and the public description of the project, but this is not mandatory. Please confirm in the application form to indicate if you are happy for these to be published as well.

Evaluated Questions

Responses will be evaluated using the general weighting scheme set out in the following table. Supporting questions, detailed marking and associated reasoning are set out in subsequent sections.

Section	Weighting	Ideal response
A. Project description, objectives and outcomes	35%	A clear description of the project, stating its aims, its objectives and expected outcomes. The description should describe which elements of 5G and other technologies will be adopted and why, detail the project's innovative elements and summarise the expected benefits of the trial's outcomes. The description

			should also outline the consortia and their roles, along with key members and who's doing what.
B. Outcome sustainability	25%		A reasoned and credible description of how a successful trial might lead towards deployment of commercially-viable products and services sustained without further government grant funding.
C. Project delivery	20%		Evidence that the project plan and work package tasks have been thought through and that there is a robust approach to controlling the project in flight that is proportionate to the funding levels sought.
D. Financial	20%		A clear overview and explanation of the costs of the programme and confidence that financial management and control of the project will deliver good value for money.

Your responses' lengths should be proportionate to the complexity and scale of your bid. Each question has a **250 - 600 word** limit. In evaluating your responses we value brevity and the maximum word limit is not a target, but please give sufficient evidence to support your bid.

Tables will not be included in this word limit but should be only used where necessary. Additional diagrams should not be provided unless requested.

Your response should provide sufficient **evidence** to support any assertions made and state any underlying principles or assumptions.

You should not include commercial sales messages about products or services being proposed.

Section A - Project description, objectives and outcomes - 35%

Please provide a clear description of the project, stating its aims, its objectives and expected outcomes. The description should describe which elements of 5G and other technologies have been adopted and why, detail the project's innovative elements and summarise the expected benefits of the project's outcomes, including on telecoms network supply chain diversification. The description should also outline the consortia and their roles, along with key members and who's doing what.

An ideal response to this section will provide a clear and compelling description understanding of the nature, scale and value of the proposed project, and why the proposed consortia is best

placed to deliver it. It should address the following **four** questions.

1. Describe the project's delivery aims (what will you deliver?) (11%)

2. Detail the project's measurable outcomes (what will be the measurable impacts?) (11%)

3. Describe, in technical terms, the system architecture and major technological components and innovations of the project. Refer specifically to the 5G, and non-5G, technologies that will be used (8%)
    a. Please provide a diagram illustrating the proposed network. Use the diagram to identify key components, including approach to spectrum and MNO connectivity (where relevant).

4. Describe your approach to the project's telecoms and cyber security? Explain any specific research in these areas you will undertake as part of the trial (5%)

Section B - Outcome sustainability, benefits and route to market - 25%

Please provide a reasoned and credible picture of how the project's expected outcomes might lead towards deployment of financially viable products including wider benefits of these telecoms network supply chain diversification.

An ideal response to this section will provide a reasoned and credible business case for the development of the project's products. It should address the following **three questions.**

1. How will the project test sustainability beyond government funding and how will your project bring the product(s) closer to deployment? If helpful, you may wish to use Technology Readiness Levels (TRLs) to support this (12.5%)

2. Describe your vision for the development and funding of the product(s) once the project is completed (5%)

3. Describe the project's benefits and compare the project's benefits to its costs. Please specify the project's measurable monetisable and non-monetisable benefits or explain how you will determine these as part of your project (7.5%)

To note, 'product' may refer to systems, processes, services etc.

Section C - Project Delivery - 20%

Please provide a detailed plan for the delivery of the project. A good response will provide evidence that project proposal is credible and that there is a robust approach to controlling the project that is proportionate to the funding levels sought.

It should address the following **three questions.**

1. Provide a plan and supporting description that outlines:
    a. how the project will be delivered
    b. key activities, including purpose and objectives of these activities
    c. Mobilisation plan (from grant agreement to starting delivery)
    d. decision points
    e. milestones, including grant payment milestones
    Gantt Chart or other supporting materials can be provided as an annex (10%)

2. How will the project be governed and decisions made? (5%)

3. Describe the most significant risks to the successful delivery of the project and how they might be mitigated (5%)

Section D - Financial - 20%

Please detail the project explain the financial and value for money approach of the project.

A good response to this section will provide a clear overview and explanation of the costs of the programme and confidence in financial management and control of the project.

It should address the following **three questions.**

1. Identify the major cost components and explain how these represent value for money. To support this explanation, please also provide: (10%)
    a. Include a resource plan that consolidates the information in the financial annexes to show the full labour requirement for the project (role title, day rate, days required, total cost), Use this to explain the level of resourcing required and indicate where roles are filled using known individuals or where recruitment is required.
    b. Provide an appendix separately identifying the following:
        i. The cost of each work package (which should correspond with your project plan and milestones) with the estimated costs to be incurred by each partner and the requested DCMS grant funding.
        ii. Monthly cost profile summarising the costs incurred by month

2. Explain how you will ensure value for money through your sourcing approach and supply chain (5%)

3. Explain whether this project could go ahead without public funding and if so the difference public - funding would make. Why are you not able to wholly fund the project from your own or other private-sector funding? (5%)

Note: As part of assessment of Section D, Assessors need to be confident the project is good value can be delivered to the stated cost. They will consider:

- The response to these questions and the supporting financial information provided
- The suitability of the proposed costs - costs considered excessive will be a cause for

serious concern
- The total amount of grant funding requested from DCMS
- Whether there is an appropriate level of contributions from public sector organisations who are project partners

Supplementary Information

Information provided here will be used to aid understanding of the (above) assessed responses.

Ref	Question/Request	Bidder Response (guidance in *italics*)
1	Please complete the finance summary table	Complete the table in the Application Form
2	Please confirm that your consortium has reviewed and understands the State Aid regime under which you intend to receive grant funding, and that your application complies with said rules?	*Please state: 'Yes' or 'No' and which regime you intend to use*
3	Has the financial contribution of each partner to the project been signed-off at an appropriate level within their organisation?	*[For each organisation please state: 'Yes' or 'No'* *If No, when would this be expected to occur?]*
4	Can you confirm that your bid conforms to the DCMS High Risk Vendor (HRV) policy outlined in guidance.	*Please state: 'Yes' or 'No'*
5	Do you require radio spectrum to carry out your project? If yes, what spectrum do you require and have you yet secured it?	*Please state: 'Yes' or 'No'* If not, please explain why not, and how you intend to secure this spectrum prior to the project commencing
6	Please provide the addresses of the key locations in the project?	**Location & address** *[Insert location name and address]*
7	Please confirm that the grant amount requested from DCMS includes any irrecoverable VAT, all fees and charges, and appropriate allowance has been made for any price inflation during the project period.	*[Enter 'Confirmed']*

8	Please confirm that if you are successful in this competition, the Project Lead will accept the terms and conditions in the draft grant funding agreement provided?	*[Enter 'Confirmed']*
9	Confirm your project has reviewed and understand the 2-4% collaboration requirements outlined in the guidance.	*[Enter 'Confirmed']*
10	Please confirm whether partners have provided a letter of support or commitment to the project? Please submit a copy of this letter as a PDF.	*[Enter 'Confirmed' and partner name]*

9. Further information

9.1   Additional documents

The following additional documents are provided to support you in your application:

- 5G Testbeds and Trials - General Guidance for Grant Applicants - which contains general information relating to this competition and the processes DCMS will use to deliver it, including: funding rules guidance, information on the different categories of funding and the rules around our state aid framework
- 5G Testbeds and Trials - Eligible Project Costs Guidance - which contains detailed information on which project costs are eligible for funding
- 5G Testbeds and Trials - Guidance for academics applying via the Je-S system - which explains how academics should make use of the Je-S system
- 5G Testbeds and Trials - Template Grant Funding Agreement - which is the template grant agreement the lead partner will sign with DCMS available on the competition webpage
- 5G Testbeds and Trials - Potential Monitoring Indicators / Quarterly Benefits Reporting Template - which will help inform the benefits realisation approach and includes a reporting template
- 5G Testbeds and Trials - Programme Participation Agreement - which is provided for information and will need to be completed upon award (one per applicant)

10. Notices

This document is issued in text format to organisations wishing to make an application to 5G Create. Should you require access to this document in another format (e.g. Braille, large font or audio) please contact us at 5GCreate@culture.gov.uk.

All applicants are solely responsible for all their costs and expenses incurred in connection with this selection process at all stages. Under no circumstances will DCMS be liable for any costs or expenses borne by or on behalf of the applicant or any party associated with this selection process.

We reserve the right to cancel the competition at any point. We will accept no liability for any losses caused by any cancellation of this competition nor any decision not to award grant funding as a result of the competition.

At any time prior to the deadline for receipt of proposals, we reserve the right to amend, add to or withdraw all or any part of the competition material at any time during the competition. Any such amendments, additions, or removals will be notified identified in the documentation on the competition webpage.

Answers must be in English. Bidders should note that where any supplementary documents are not published in English, certified translations into English must be provided with the proposal (if applicable).

Proposals should remain valid for a period of 120 days from the competition closing date. A proposal valid for a shorter period may be rejected.

Applicants must not inform anyone outside of their proposed consortium, even approximately, what their total proposal costs are, or will be. Furthermore, bidders must not try to obtain any information about anyone else's proposal or potential proposal.

We reserve the right to discuss, for the purpose of clarification, any aspect of a proposal with the relevant bidder prior to the award of grant funding.

We reserve the right to undertake a detailed financial and technical appraisal of each bidder and their proposal and for this process to continue up to the award of any grant funding. Any such appraisal will be conducted in line with government policy at the time of assessment. Further appraisal may continue if required through the duration of the grant funding period.

No representation, warranty or undertaking, express or implied, is or will be given by DCMS or any of its agents or advisers with respect to the information contained in the competition material, including with respect to its accuracy, adequacy or completeness.

Information provided in response to this document, including personal information, may be published or disclosed in accordance with access to information regimes, primarily the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 2018 (DPA) and Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and 25/37 repealing Directive 95/46/EC (General Data Protection Regulation) OJ L 119/1, 4.5.2016 (GDPR).

If you would want the information that you provide to be treated confidentially, please be aware that, in accordance with the FOIA, public sector organisations are required to comply with a statutory code of practice which deals, amongst other things, with obligations of confidence. In view of this, it would be helpful if you could explain to us why you wish that information to be treated confidentially. If we receive a request for disclosure of that information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances.

DCMS will process your personal data in accordance with the DPA and the GDPR and, in the majority of circumstances, this will mean that your personal data will not be disclosed to third parties.

Department for Digital, Culture, Media and Sport
 www.gov.uk/dcms

Annex A: Characteristics of 5G

5G is the next evolution of mobile networks as defined in releases 15 and 16 of the 3GPP global standards. The deployment and roll-out of 5G will see significant enhancements on previous mobile generations (2G, 3G, 4G). Taking the connectivity beyond the consumer focus on speed and data volume, to be the first network that is designed so that a single physical network can simultaneously support multiple diverse use cases. From changing the future of Augmented and virtual reality applications, high-density low-power sensors, through to connected autonomous vehicles and advanced manufacturing.

It aims to enable new ways of integrating mobile communication and cloud services together, and offer ultra-low latency. 5G is being designed to blend the requirements of previous communication technologies into a new mobile network architecture. The main features of 5G and the value they add to mobile services are set out below:

Feature	Value Added
Ultra-High Bandwidth	Increases overall capacity of the mobile network, facilitating growth in users, devices and traffic demands. 5G will also enable novel use-cases such as streaming video and 3D content such as immersive or augmented reality environments, or simply more reliable video services, including video-conferencing to support connectivity for health and other people services.It will also allow for high data throughput and processing that will come from high density / large volume deployments of internet of things sensors that may also connect "dumb" low power sensors with long battery lives to artificial intelligence / machine learning capabilities in the cloud.
Ultra-Low Latency	This feature will bring about improvements to existing mobile connectivity, such as improved Voice over Internet Protocol (VoIP) quality, the streaming of Ultra High Definition video, and other tasks that are reliant on m/s accuracy such as real-time time-critical alerts for decision makers (e.g. in emergencies or for health and safety) or the visualisation of highly accurate data that can be interpreted and visualised using advanced analytics and machine learning techniques. This may include, for example, remote control of infrastructure, robotics or machinery.
Massive machine type communications	Massive Machine type communications are crucial to large deployments of Internet of Things and machine-to-machine use cases, particularly for devices distributed in rural environments with a high cost of maintenance.
High-motion mobility	Better able to support users and devices on fast moving transport such as high-speed trains.
Improved security	Better protection of large amounts of data produced, as 5G technology is meant to be secure by design.

Spectrum	5G will be deployed in a variety of spectrum bands at low, medium and high frequencies, each of which have different characteristics and can be used to deliver different benefits. Sub-1GHz spectrum will support improved coverage; mid-frequency spectrum (1-6 GHz) will meet demand for increased network capacity; high frequency spectrum (so-called mmWave) is likely to be used to support new 5G applications, in particular those that require very high capacity and very low latency.
Enhanced performance	With 5G, higher orders of MIMO can be deployed, increasing the capacity of the network significantly and provides more reliable links. Network Slicing can provide service level differentiation, enabling the provision of business-critical and mission-critical services to different customer types. Mobile Edge Computing will enable content and services to be generated and consumed locally and data to be analysed and processed locally, enabling real time services to be performed and reducing the requirements for backhaul and connections to the cloud.

Therefore, for the purposes of this project, we will assume the following characteristics for 5G in 5G Create:
- It is largely a wireless system.
- It is mainly terrestrial, and may involve some satellite capability.
- It will have capabilities significantly beyond today's commercially available 4G networks, although the capability to integrate existing technologies such as Wi-Fi, 4G/LTE and low power IoT networks into a managed 5G heterogeneous network are considered in scope.
- It will support a wide range of applications for industry sectors, in addition to mobile broadband and consumer applications.
- The usage scenarios for 5G are expected to include:
  - o   Enhanced mobile broadband (eMBB)
  - o   Massive machine-type communications (mMTC)
  - o   Ultra-reliable and low latency communications (URLLC).

5G radio access technologies
We will accept a broad interpretation of 5G that includes the 3GPP release 15 standard for 5G New Radio as well as pre-standard versions (16 onwards) which may utilise innovative communications technologies. Bids could include elements of new radio access technologies and systems that will be important for 5G (such as massive MIMO, self-optimising networks, beam-forming, mmWave and mobile-edge computing). Bidders should explain where the innovation lies and that there should be significant, but not exclusive, use of 5G New Radio capabilities.

Network architectures
Network architectures could include network slicing, software defined networks, network function virtualisation and mobile edge computing.

Convergence
This could include convergence between mobile and fixed networks or satellite networks or broadcasting.